# BROOMER BILLE UN SLOWER BILLE UN BROOMSTERFRONT GREENWAY

a concept plan for community board 1 Fall 2008



## **Credits**

Planning for the Brooklyn Waterfront Greenway takes place under a Technical Advisory Committee coordinated by Brooklyn Greenway Initiative and Regional Plan Association. All elected representatives, public agencies, community boards and organizations with management jurisdiction over portions of the route were invited to participate on the committee. We thank and acknowledge the following for their valuable contributions to this work.

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### Introduction

#### The Brooklyn Waterfront Greenway

When complete, the Brooklyn Waterfront Greenway will be a 14-mile safe, landscaped separated from traffic that connects neighbors and neighborhoods to four major parks and over a dozen local open spaces on Brooklyn's historic waterfront. Separate paths for bicycles and pedestrians will allow cyclists and walkers to commute, exercise, explore, and relax from Newtown Creek to the Shore Parkway. This Brooklyn Waterfront Greenway will also serve as one of the integral links of New York City's expanding greenway network - linking the Queens Greenway to the Shore Parkway Greenway and the Manhattan greenway network.

#### About the Authors

This plan was produced by Brooklyn Greenway Initiative (BGI) and Regional Plan Association (RPA). BGI is a non-profit organization formed in 2004 to plan and implement the Brooklyn Waterfront Greenway. BGI staff members and volunteers have worked since 1998 to build and sustain the political, public, civic and governmental partnerships necessary to create a continuous 14-mile waterfront greenway from Greenpoint to Bay Ridge, Brooklyn. RPA is an independent, not-for-profit regional planning organization that improves the quality of life and the economic competitiveness of the 31-county New York-New Jersey-Connecticut region through research, planning, and advocacy. RPA sees the Brooklyn Waterfront Greenway as one of the key investments the City and State must make in order to realize the full potential of the New York/New Jersey Harbor and its adjacent communities.

#### The CB1 Concept Plan

This plan identifies the publicly endorsed route through Community Board 1 and details the steps and partners necessary to ensure the route's implementation. Developed by working together with local communities through public planning workshops and events, as well as consulting with technical and policy experts, the Concept Plan is one of a number of publications that outline the planning principles of the Brooklyn Waterfront Greenway. These publications include:

- Concept Plan for Community Boards 2 & 6 (Summer 2005)
- A User's Guide to the Brooklyn Waterfront Greenway (March 2007)
- Brooklyn Waterfront Greenway Design Principles (Fall 2008)
- Brooklyn Waterfront Greenway Stewardship Plan (Fall 2008)

The Design Principles document will help to ensure consistency and presents proven solutions to Greenway design challenges as the Greenway is built. The Stewardship Plan anticipates maintenance costs and responsibilities for the greenway and its amenities. Altogether, these publications help to bring the Brooklyn Waterfront Greenway through to its Third Phase. Work will soon begin on a master design plan, engineering analysis and cost estimating for the 14-mile route, funding for final design and construction and establishment of Brooklyn Greenway Initiative as the stewardship entity that will insure that the greenway is appropriately maintained as it is built.

#### Funding

This report was prepared for the New York State Department of State Division of Coastal Resources with funds provided under Title 11 of the Environmental Protection Fund. The project was sponsored by Brooklyn Borough President Marty Markowitz.



## **Planning Principles & Design Objectives**

#### **Brooklyn's Waterfront**

The Brooklyn Waterfront Greenway should be more than a simple sidewalk or bicycling route. It should provide the means to connect, celebrate, restore and explore Brooklyn's diverse waterfront - its neighborhoods and residents, recreational and industrial users and its unique environment.

The following principles - generated by the participants at our 2004 Public Workshop - are a framework for how the Greenway can accomplish this. They underlie the physical and programming recommendations that follow:

**Create** a healthy green edge on the Brooklyn Waterfront. Establish public access to the Harbor waterfront and waters. Improve public health in communities that line this historically industrial waterfront by providing improved recreational amenities and programs. Restore and enhance ecological functions in the shoreline environment.

**Connect** the waterfront neighborhoods with each other, the rest of Brooklyn and neighboring bikeways in Queens, south Brooklyn and Manhattan. Knit together regional and community parks, unique neighborhood attractions and the transit system.

**Explore** the complex and rich urban landscape along the Brooklyn waterfront and its neighborhoods. Respect the needs of Brooklyn's successful maritime industries while increasing the public's understanding. Provide a variety of experiences that reflect this dynamic and changing landscape.

**Celebrate** the diversity of Brooklyn. Showcase neighborhoods, natural environments, culture, art and industry. Accommodate the needs of a wide variety of people from local residents to destination-oriented visitors.

#### Designing a Safe, Continuous Greenway

To ensure continuity and the safety of its users, the Greenway should meet certain consistent parameters throughout its route. These can be accomplished in a variety of ways that also meet the objectives and standards of individual landowners and implementing agencies.

Off-street so it is family-friendly, safe and inviting.

**Separated** bike and pedestrian paths to accommodate a diversity of users.

**Green** so that it provides relief from paved, hard surfaces and reveals and restores ecological functions.

**Amply-built** to handle the volumes of users that will result from the development of the Brooklyn waterfront and from full connection to the wider network of bike and pedestrian facilities. Meeting this vision will require a 30-foot wide right-of-way to safely and enjoyably accommodate the diversity of users with a minimum of 20 feet at pinch points for very short distances.

**Continuous** so that users can reach waterfront destinations and attractions in a single, connected experience.







## **CB1** Route - Greenpoint



## **CB1** Route - Williamsburg



## **CB1** Route Implementation

#### Introduction

This concept plan was launched by a community design workshop held in Williamsburg in the Fall of 2006. Around 80 participants gathered for two hours of presentations and facilitated small group discussions. Ahead of the Workshop, 8,000 post card invitations (below) were distributed throughout Greenpoint and Williamsburg. Invitations were left at the door of all residential buildings within two blocks of Kent Avenue and West Street. The results of the workshop are included in the first appendix. Following this engagement of the public, subsequent meetings and discussion with CB1, NYC DOT, NYC Department of Parks & Recreation (NYC Parks) and NYC Department of City Planning (NYC DCP), the following preferred route of the Greenway has been determined along with steps for implementation.



#### **Developing a Pedestrian-Friendly Space**

The plan envisions creating a more pedestrian friendly streetscape that will maintain existing pedestrian space and increase pedestrian traffic and retail activity. Benefits for pedestrians include:

- Greater separation from moving traffic on the retail sidewalk
- Improved streetscape with hundreds of additional street trees in the divider separating vehicles from bicycles
- A pedestrian refuge on the divider for pedestrians crossing the street
- Improved pedestrian markings that establish pedestrian priority at intersections

Vehicular access to the west curbs of these streets will be impacted by the installation of a dedicated bikeway on the west side of the street. To make the greenway work seamlessly with the emerging built environment, both the greenway plan and the previously envisioned objectives of site designs will need to respond in subtle ways to each other during the preliminary design of the greenway. To mitigate some of the challenges the following considerations should be strongly encouraged in the design of new properties on the west sides of these streets:

- The eastern wall of the buildings facing the street should be dedicated to retail uses and residential entrances. Creating a residential and retail orientation toward Kent Avenue and West Street is an important objective toward the goal of creating robust street activity and new walking centers where the need for driving is reduced by the proximity of the necessities of daily life.
- Entrances for loading and unloading should be located on the side streets or internal to the sites.
- Creating a residential and retail orientation toward Kent Avenue and West Street is an important objective toward the goal of creating robust street activity and new walking centers where the need for driving is reduced by the proximity of the necessities of daily life.
- Curbside spaces for loading and unloading for the retail and possibly for residential uses should be located on the side streets just west of Kent Ave. and West St.

Overall, creating a more inviting streetscape and reducing vehicular volumes and congestion, will create a unique pedestrian village effect that will positively impact properties on both sides of these streets. By intensifying pedestrian and bicycle activity on these streets the retail environment will be dramatically improved. The efficacy of increasing pedestrian and retail volumes by giving priority to non-motorized uses is well established.

It must be emphasized that while these are the objectives for the design of these streets, the accompanying illustrations are conceptual only. In the preliminary design process the intended configuration will be developed further taking into consideration all relevant factors.



#### Waterfront Esplanade

The pedestrian route of the Brooklyn Waterfront Greenway will be the waterfront esplanades required by the Greenpoint-Williamsburg comprehensive rezoning and the site-by-site rezonings in South Williamsburg. As specified in the rezoning's Waterfront Access Plan and the NYC Parks' Greenpoint-Williamsburg Waterfront Open Space Master Plan, the esplanade will be a minimum 40-ft. wide open space area at the water's edge to be built and maintained by developers of new residential properties. It will contain a minimum 12-ft. clear path along with seating and landscaping, larger supplemental open spaces and occasional piers. It is possible, and widely anticipated, that the balance of waterfront properties in South Williamsburg will be converted to residential use. In that case, the esplanade would reach from Newtown Creek to the Brooklyn Navy Yard where the pedestrian esplanade and bikeway components of the greenway will join.

BGI and RPA will work with NYC Parks, NYC DCP and the Open Space Alliance to encourage the use of incentives for developers to turn over the waterfront open spaces and esplanade to NYC Parks so that it is operated and maintained as a single open space network serving the public. BGI will engage each of the developers individually to become supporters of the overall greenway.

To help ensure connections between the waterfront pedestrian route of the Greenway and the bikeway route of the Greenway, BGI and RPA will work together with NYC Parks and NYC DOT to identify opportunities for street tree plantings and Greenstreets, as well as amenities such as benches and bike racks. River Street could serve as an on street esplanade unless the waterfront becomes available in this region of the community board. Implementation of the pedestrian way in the new waterfront esplanades will occur as developers certify their waterfront access plans in connection with the approval of building plans for the new residential properties. Certification is under the jurisdiction of NYC Parks and NYC DCP.

For the area in Williamsburg, south of the rezoned district (below N. 3rd Street), RPA and BGI will encourage the creation of an overall waterfront master plan to guide the development in this area to follow the same guide-lines for waterfront esplanades and transfer of open spaces.



#### Bikeway

Implementation of the bikeway on NYC DOT streets will be carried out by NYC DOT with construction completed by the Department of Design and Construction following community approval. A Master design plan for the entire 14-mile Brooklyn Waterfront Greenway including engineering analyses and cost estimating has been commissioned by NYC DOT using funding secured by Congresswoman Nydia Velazquez. The bikeway will be created on West St. in Greenpoint and on Kent Avenue in Williamsburg by the elimination of parking and the installation of a planted median to separate cyclists from moving vehicles. The bikeway will be established on the west side of the streets with connections to the esplanade via the street ends and will contain two bike lanes of minimum 5 feet width.



It is recommended that the bikeway intersection with the cross streets be raised to the level of the sidewalk to create a uniform "speed table" that will slow vehicles entering the water side street-ends for access to the new parking garages. In the design process other measures will be investigated for mitigating potential conflicts and maximizing pedestrian and cyclist safety at these intersections.

The loss of parking on Kent and West can be mitigated by reallocating the spaces within a few blocks of the bikeway route, so that inconvenience to parking stakeholders is minimized. RPA and BGI, working with NYC DOT have identified opportunities to create 519 new parking spaces on adjoining blocks by updating parking regulations from industrial (no parking 8 AM to 6 PM) to residential (alternate side parking regulations), largely avoiding a net loss of parking within the two-block strip running parallel to the bikeway (See Appendix 2 & 3 for more information).

As of Fall 2008, NYC DOT has eliminated parking regulations along West St., and has implemented interim Class 2 bike lanes. These lanes should serve as a short term interim measure while the permanent facility is designed and constructed. As with the preparation of this Concept Plan, this interim step should be undertaken in consultation with affected residents and businesses.

Design and construction of the permanent bikeway should be achieved within as short a time as possible following approval by the community. A portion of the \$6.6 million in TEA-LU funding secured for the Brooklyn Waterfront Greenway by Congresswoman Nydia Velazquez can support the design and construction of the permanent facility.

## **CB1** Route Implementation

#### **Connections to Parks and Open Spaces**

Between Huron Street and Milton Street in Greenpoint, community members endorsed the idea of a separate path for bikes at the waterfront open spaces, however demand for other uses there have dictated otherwise. Thus, connections to these spaces from the street Greenway - including Greenstreets and amenities like benches and bike racks - take on grater importance here.

At the planned Bushwick Inlet Park, a bike/pedestrian mixed-use path will run through the park. In order to achieve a viable route for both paths and because there is insufficient space to build paths around the west end of the inlet, the creation of a ped/bike bridge across the inlet at its narrowest point will be pursued. The bikeway will be located along the outer edge of East River State Park to preserve its more natural and pedestrian-oriented state.



#### **Connections to Bridges**

The Williamsburg Bridge and the Pulaski Bridge represent important connections for the Brooklyn Waterfront Greenway to the rest of the NYC greenway network. Class II bike lanes on Eagle and Freeman Streets, installed by NYC DOT in 2007, connect the bikeway on West Street to the Pulaski Bridge path, as endorsed by the community at the workshop.

South 5th Street connects Kent Avenue to the Williamsburg Bridge ped/bike paths. NYC Parks will green this low traffic street with street trees and will investigate the possibility of a Greenstreets installation at the entrance to the bridge paths. For bikes, it should not be necessary to install a median for this stretch.



#### Greening

A key component of the planned bikeway will be a substantial increase in greening with trees and shrubs on the new medians to transform Kent Ave. and West St. into compelling pedestrian streets and mitigate the canyon effect that would result from the full build-out of the residential zoning envelope on these narrow streets with narrow 10-foot sidewalks. The design must deliver a substantial environmental and aesthetic benefit to all residents and visitors to the area.

Additionally, stormwater management will be a major focus of the Greenway through CB1. Incorporating features such as permeable pavement, drainage swales, trench drains, detention basins, and/or rain gardens as part of the Greenway's design affords the City a great opportunity to address stormwater and combined sewer overflows along six drainage areas as well as areas draining directly into the East River. It's possible that plans for West Street could also tie into storm water management plans being prepared for the adjacent waterfront development sites.

#### Partners

Complete implementation of the Brooklyn Waterfront Greenway through CB 1 will only be possible through the effective collaboration of a number of public and private partners. The following actions have been identified as priorities for implementation of the Greenway through CB1:

#### New York City Department of Transportation

- Completion of the Brooklyn Waterfront Greenway Master Plan
- Implement interim Class 2 bikeway on West St and Kent Ave
- Find suitable Greenstreets locations
- Street improvements at bridge connections as reconstruction projects occur

#### New York City Department of Parks and Recreation

- Develop appropriate bike and/or pedestrian routes through City parks properties, supplemental open spaces and esplanades
- Implement the Greenpoint Williamsburg Waterfront Open Space Master Plan
- Identify suitable Greenstreets locations and areas for street trees

#### New York City Department of City Planning

• Encourage the productive interaction between the Greenway and waterfront public access areas in Greenpoint and Williamsburg.

• Encourage provisions of the comprehensive Greenpoint-Williamsburg rezoning to apply to any rezoned areas south of N. 3rd Street

New York State Office of Parks Recreation & Historic Preservation • Accommodate the Greenway through and/or around East River State Park

#### Open Space Alliance

• Help to encourage the transfer of waterfront open spaces to NYC Parks

It is through collaboration with many of these partners that the Brooklyn Waterfront Greenway has progressed to its current status of completed conceptual planning. Whether working to secure right of ways, change current regulations, develop a master plan or move from concept to construction, each of these partners will play a critical role in ensuring the future of the Brooklyn Waterfront Greenway.

## Appendix 1

## **CB1** Workshop Findings



The planning goal for the Brooklyn Waterfront Greenway is for it to be separated from traffic, with separate paths for bikes and pedestrians, continuous, and landscaped. Experientially, it should offer maximum possible relief from the built environment. Workshop participants were asked to consider the following 5 issues and choose 1 - 3 of them as priorities to focus on.

### **1**. Street treatments to accommodate bikeway on Kent Ave and West St

In the rezoned sections of the Greenpoint and Williamsburg waterfront, a 40 ft. esplanade and supplemental open spaces will accommodate pedestrians along the water as development proceeds. Kent Ave and West St are currently the identified through-bike routes for the greenway. The Waterfront Open Space Master Plan shows a new street connection between Commercial St and West St. As indicated by Sam Schwartz PLLC, an off-street separated bike lane on Kent Ave and West St is feasible from a traffic perspective. Making this change will involve different trade-offs particularly with parking. The more the bikeway stays in parks and on the waterfront, the lower the impact on parking. While the standard 40-foot waterfront esplanade cannot support separate paths for both bikes and pedestrians, there are 5 blocks along the waterfront from Huron to Milton Streets in Greenpoint where the waterfront open space will be 70 to 90 feet.

#### **Questions:**

- \* Plot a preferred route for the bikeway through CB 1
- \* Consider the trade-offs required to achieve an off street greenway

#### Constraints:

- \* Bike lanes must be at least 5 ft. wide (10 feet for two directions).
- \*Kent Ave (a truck route) must have at least 12-foot traffic lanes.
- \* Parking lanes must be at least 7, preferably 8 feet wide.
- \* Tree pits must be at least 5 feet square or 4 feet wide if continuous.

#### Major community considerations:

- \* Changing of streets from two-way to one way,
- \* Removal of parking,
- \* Truck loading, and truck turning
- \* Bike/pedestrian conflicts,
- \* Bike/traffic conflicts at intersections
- \* Potential Operational Concepts

Below: Matrix illustrating participants' priorities for West St and Kent Ave



#### **Findings:**

Workshop participants overwhelmingly chose this issue as their top priority. In particular, participants weighed-in on physically separated bike lanes - nearly all in favor of an on-street separated lane. Participants felt a separated lane could support their preference for both fast and slow bike lanes - accommodating commuters and recreationalists - with preference for the recreational (slower) lane closest to the waterfront. Recognizing the potential conflicts between autos and bikes, participants recommended incorporating speed tables at intersections to improve the safety of separated bike lanes. Intersection safety was the primary reason for those not in favor of a physically separated lane. Accommodating a physically separated lane on Kent Ave and West St involves a number of trade- offs that most participants were willing to make including the removal of some or all parking on these roads. Participants recognized that removing parking comes with challenges - particularly in a growing neighborhood yet all but one group felt the greenway was a greater priority over removing parking. Participants also supported changing West St from two-way to one-way to accommodate the greenway. For the overall route, participants supported connecting Commercial St to West St and there was general consensus among groups to situate the greenway - both pedestrians and bikes - along the waterfront as much as possible. While bikes may not be accommodated on portions of the waterfront esplanade - due to width restrictions - numerous participants supported diverting the bikeway from the road to sections wide enough for bike lanes like the Supplemental Open Spaces "Waterfront Gardens" and Transmitter Park. Diverting the bike lane to the waterfront in these areas will allow for the preservation of parking in those sections of West St and Kent Ave.

#### 2. Greenway in new large parks

Two major waterfront parks are being constructed in North Williamsburg: the recently opened East River State Park and the adjacent Bushwick Inlet Park -currently in the planning stages. A dedicated bike lane has been designated through the City's Bushwick Inlet Park. Most New York City State parks do not support biking, but East River State Park lies in the route of the greenway.

#### **Questions:**

- \* Is the bike route shown through Bushwick Inlet Park the best route?
- \* Should the bike route continue through the State Park?
- \* If so, what is the best route for a bike path through East River State Park
- \* And, how should a State Park bike path connect with Bushwick Inlet Park on the north and to the street greenway on the south?



Above: Matrix illustrating participants' priorities for the greenway through large parks and a map of the two large parks.

#### Findings:

Participants overall supported the greenway route that is planned to go through Bushwick Inlet City Park, many recommending it be a slow route. A couple of the groups recognized the opportunity to bridge the inlet at the City Park, reducing pedestrian conflicts, creating a looped pathway through the park and adding a signature element to the Brooklyn waterfront. There was a mixed reaction to the idea of routing the bikeway through East River State Park. Some groups supported the idea - recognizing the natural connection from the City park - while others felt that this park should be left as is in a more natural state and without the conflicts between bikers and pedestrians. Some suggested keeping the bike route around the perimeter of the State park.

Right (clockwise): Participants' illustrations showing 1) bikeway thru supplemental open spaces; 2) cross section of a separated greenway; 3) suggestions for West St: and 4) cross section showing speed tables at intersections



Participants' sketches illustrate two different alternatives for the greenway at East River State Park: through the park (right) and around the perimeter of the park (bottom).





#### 3. Connections to bridges

The greenway will connect to Queens and the Queens East River Greenway via the Pulaski Bridge in Greenpoint and to Manhattan and the Manhattan Waterfront Greenway via the Williamsburg Bridge in Williamsburg. The street connections to the bridges include Eagle and Freeman for the Pulaski Bridge; and South 5th and a portion of Broadway for the Williamsburg Bridge. NYC DOT is currently considering traffic calming alterations for Broadway and connections to South 5th should be discussed.

#### **Questions:**

- \* What improvements should be made to the Broadway and/or South 5th Street approaches to the Williamsburg Bridge?
- \* How should connections to the Pulaski Bridge be improved?

#### Constraints:

- \*Bike lanes must be at least 5 ft. wide (10 feet for two directions).
- \* At least a 12 foot traffic lane.
- \* Parking lanes must be at least 7, preferably 8 feet wide.
- \* Tree pits must be at least 5 feet square or 4 feet wide if continuous.



Above: Matrix illustrating participants' priorities for the Pulaski and Williamsburg Bridges

#### **Findings:**

A number of participants felt that improvements at the two bridges in their community was a priority issue for the greenway. For those that focused on the Pulaski Bridge in Greenpoint, a number of participants noted the dangerous intersections around the bridge and the difficulty in accessing the bridge from the East. Some suggested improved signage and street markings around the bridge as well as greenstreet-like improvements. One group suggested building a new bikeway under the existing bridge and several others suggested a pedestrian/bike bridge at Manhattan Ave. At the Willamsburg Bridge, participants suggested a variety of improvements around the foot of the bridge, particularly at South 5th St. These included park-like amenities, better signage and car-free areas for bikes and pedestrians.



**Above:** Workshop illustrations highlighting the dangerous intersections around the foot of the Pulaski Bridge in Greenpoint (left) and the opportunities for improvements around the foot of the Williamsburg Bridge (right).

#### 4. Connections between the street greenway and waterfront esplanade

As a result of the recent rezoning, a continuous waters' edge esplanade is planned for the entire waterfront except from North 4th Street to Grand Street. The esplanade path and the bikeway are intended to run parallel. (See Issue # 1.) However, bicyclists will naturally seek the water during rest stops or as a destination.

#### **Questions:**

- \* What are the most appropriate streets for connections between the esplanade and bikeway?
- \* What treatments will support connections between the bicycling and pedestrian routes (e.g. bike racks at connecting street ends, park-like design treatment of street ends, signage at connecting streets)?
- \* Should River Street be improved to help fill the gap in the esplanade between North 4th Street and a future esplanade at Domino?



**Above:** Matrix illustrating participants' priorities for connections between the bikeway and the waterfront esplanade

#### **Findings:**

Participants focused on the importance of safety and aesthetics in connecting the road bikeway to the waterfront greenway. A number of groups envisioned the connecting streets as greenstreets with park-like amenities and facilities like bike racks and water fountains to invite bikers to experience the waterfront. Some expressed the desire for some or a portion of some of these streets to be closed to vehicular traffic. Recognizing the limited space on the waterfront between North 3rd and Grand St, due to the power plant, one of the groups supported the idea of making improvements to River St to serve as an on-street extension of the future waterfront esplanade.



One group's illustration suggesting autofree greenstreet connections between West St and the waterfront esplanade (left). Another illustration supporting continuation of the esplanade on River St (below).



#### 5. Future waterfront development south of N. 3rd Street

The waterfront south of the North 3rd Street is currently a patchwork of industrial and residential uses. This area is anticipated to be rezoned from industrial to residential on a site-by-site basis. In conducting these future rezonings, the City has the opportunity to encourage greenway connectivity and continuity and to foster a seamless open space network on the CB1 waterfront.

#### **Questions:**

- \* Should there be an overall Waterfront Master Plan for this area (as is being developed in the North)?
- \* Should property owners be incentivized to transfer ownership of esplanade property to Parks, as is being done to the North?
- \* Where should waterfront parks, supplemental open spaces and upland connections be located?



Above: Matrix illustrating participants' priorities for future development south of N 3rd

#### **Findings:**

A number of groups prioritized this issue, recommending that there be an overall Waterfront Master Plan for the future waterfront development in the south. The Master Plan would help to ensure consistency with the waterfront open spaces in the northern rezoned section and ensure good access to the waterfront in developed areas. To help encourage the transfer of ownership of the privately developed open spaces, participants encouraged the use of incentives for property owners.



#### Thinking outside of the box:

Many of the participants in the workshop developed ideas outside of the scope of questions laid out for the workshop. Some ideas were practical and achievable; others would require great resources and overcoming numerous obstacles; all of them were thoughtful and creative. Here are some of the most relevant:

- Build an in-water/floating bike route
- Work with developers to build arcade sidewalks into new buildings
- Build new or move Willis Ave. bridge to Manhattan Ave for bikes & pedestrians
- Add bike lane to Pulaski Bridge
- Add space to waterfront esplanade for bikes
- Divert bikeway through the Domino Factory
- Foster connections between Eagle/Freeman and waterfront esplanade
- Incorporate signature lighting
- Preserve wooden sidewalks
- Develop parking nodes away from the waterfront to serve regional destinations
- Provide greenway-ferry connections



### Workshop Summary

## Street treatments to accommodate bikeway on Kent Ave and West St

#### **Concepts generally supported:**

- Physically separated bike lanes
- Places for both fast and slow bike lanes
- Speed tables at intersections to improve safety
- · Removal of some or all parking
- Changing West St from two-way to one-way
- Connecting Commercial St to West St
- Diverting the bikeway from the road to wide, waterfront Supplemental Open Spaces

#### **Greenway in new large parks**

#### **Concepts generally supported:**

- Planned route through Bushwick Inlet Park
- Bridging inlet at Bushwick Inlet Park

#### **Mixed support for:**

- Extending bikeway through E. River State Park
- Perimeter bikeway around E. River State Park



#### **Connections to bridges**

### Concepts generally supported for Pulaski Bridge:

- Improving access & safety with better signage, street markings and greening
- Adding new bike lane to bridge
- New pedestrian/bike bridge at Manhattan Ave

### **Concepts generally supported for Williamsburg Bridge:**

- Improving access & safety with better signage, street markings, park-like amenities
  - & car-free areas around South 5th & Broadway

#### **Connections between the street** greenway and waterfront esplanade

#### **Concepts generally supported:**

- Adding park amenities &/or Greenstreet areas to streets connecting bikeway and esplanade
- Making a number of connecting streets bike/ pedestrian-only
- Making improvements to River St to serve as non-waterfront extension of esplanade

## Future waterfront development south of North 3rd St

#### **Concepts generally supported:**

- Develop overall waterfront master plan for area
- Provide incentives for developers to transfer ownership of open space to Parks

## Appendix 2

### Sam Schwartz Parking Study Conclusion

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#### Conclusion

The LOS impact to nine intersections in the West Street/Kent Avenue corridor was analyzed by SSC for BGI based on two potential scenarios for the future Greenway.

#### One-Way Scenario

The one-way scenario would convert West Street to one-way southbound (except for the most northern block between Freeman and Eagle Streets, which would be northbound). Kent Avenue would be converted to one-way northbound, with southbound traffic diverted to Wythe Avenue between North 14<sup>th</sup> Street and Clymer Street. North 14<sup>th</sup> Street would be converted to one-way for one block between Kent Avenue and Wythe Street.

This scenario would accommodate a 12-foot wide Greenway on Kent Avenue, a 12-foot lane of northbound vehicular traffic, and two 8-foot parking lanes. On West Street, this scenario would accommodate an 18-foot Greenway and a 12-foot lane of southbound vehicular traffic. Two additional options for West Street were considered but not analyzed: (1) The Greenway could be expanded to 20-feet by reducing the vehicular lane to 10 feet. (2) The street could be configured with a 12-foot Greenway, a 10-foot lane of southbound vehicular traffic, and an 8-foot parking lane.

Six of the nine intersections analyzed would operate within the range of acceptable LOS, with their overall LOS the same as the 2013 No Build condition. Three intersections, Wythe Avenue and North 14<sup>th</sup> Street, Wythe Avenue and Metropolitan Avenue and Wythe Avenue and Broadway, would operate at an unacceptable LOS. Mitigation of intersections to bring them up to acceptable LOS would require the removal of parking from both sides of Wythe Avenue to accommodate two lanes of southbound vehicular traffic, the instillation of a signal at North 14<sup>th</sup> Street and the optimization of the signals at the other two intersections.

This scenario would retain two lanes of parking on Kent Avenue, no parking on West Street, and no parking on Wythe Avenue to mitigate the LOS impact caused by the diversion of southbound traffic from Kent Avenue to Wythe Avenue.

Given that Kent Avenue is currently a designated truck route, this scenario would require Wythe Avenue's designation as such as well for southbound trucks. With the rezoning of this neighborhood from primarily industrial and manufacturing land uses to mixed uses, including substantial residential development, community issues may arise as a result of adding another designated truck route to a neighborhood roadway. The one-way scenario would also require rerouting the southbound Q59 bus from Kent Avenue to Wythe Avenue for the portion of its route between Grand Street and Broadway.

#### Two-Way Scenario

The two-way scenario would result in no modification to the existing street directions in the study area. This scenario would accommodate a 16-foot wide Greenway on Kent Avenue and two 12-foot lanes of northbound and southbound vehicular traffic (one lane in each

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### Sam Schwartz Parking Study Conclusion

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direction). West Street would accommodate a 10-foot Greenway and two 10-foot lanes of north- and southbound vehicular traffic (one lane in each direction). Two additional options for Kent Avenue were considered but not analyzed: (1) The Greenway could be reduced to 12-feet, the vehicular lanes to 10 feet, and a parking lane could be added. (2) Alternatively, the Greenway could be reduced to 10-feet and the vehicular lanes to 11 feet. A parking lane could be also be accommodated in this case.

The overall LOS for each of the nine analyzed intersections is the same as the 2013 No Build Condition: eight operate within the range of acceptable LOS.

This scenario would remove all parking from Kent Avenue and West Street, and requires no modification to designated truck or bus routes.

Table 7 summarizes the differences between the two analyzed scenarios.

Scenario	Greenway Width	Transit	LOS	Parking	Truck Route
One-Way	Kent: 12 feet West: 18 feet <sup>1</sup>	Reroute SB Q59 bus from Kent to Wythe	With mitigation, at acceptable levels (often better than No Build)	Kent: 2 parking lanes West: No parking <sup>2</sup> Wythe: Potentially no parking <sup>3</sup>	Kent Avenue (NB) and Wythe Street (SB)
Two-Way	Kent: 16 feet West: 10 feet	NA	Eight of nine intersections at acceptable levels (At or better than No Build levels)	Kent: No parking West: No parking Wythe: 2 parking lanes	Kent Avenue only
<sup>1</sup> Possible ex	xpansion to 20 feet				
<sup>2</sup> Parking lar	ne could be provided i	f greenway width	reduced to 12 feet and ve	ehicular lane reduced to 10 feet	
<sup>3</sup> Mitigation r	nav require removal c	of all or most of V			

Table 7. Comparison of Analyzed Scenarios

Mitigation may require removal of all or most of Wythe Avenue parking

In general, there is no net difference in the impact to parking in either the one-way or the two way scenario. Both scenarios would result in no parking on West Street. The two-way scenario would require the removal of parking from Kent Avenue and the one-way scenario might require the removal of parking from Wythe Avenue, depending on the necessary mitigation efforts. Detailed analysis of parking supply and demand would be necessary to determine more specific impacts to parking supply.

This analysis should be considered preliminary. As discussed, the reconfiguration of the streets in the study area would potential impact the LOS of the area's intersections, particularly in a one-way scenario. While mitigation of these impacts is guite feasible, given the potential impacts, further analysis of all intersections in the study area and a more thorough mitigation plan may be warranted. Prior to proceeding with further analysis, discussions with the City should occur to gauge their reception of the scenarios described here.

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## **Appendix 3**

## **CB1** Parking Study

## **Brooklyn Waterfront Greenway** CB 1 Parking Study

March 2008



## Introduction

On May 24, 2007, Regional Plan Association (RPA) and Brooklyn Greenway Initiative (BGI) held a community planning workshop at the Brooklyn Brewery. The purpose of the workshop was to gather community feedback and ideas for the planned Brooklyn Waterfront Greenway through Community Board 1 - Greenpoint and Williamsburg.

The topic most consistently addressed by workshop participants involved street treatments necessary to accommodate a bikeway on West St and Kent Ave. The vast majority of participants endorsed the idea of incorporating a physically-separated, on-street bike lane onto West St and Kent Ave.

In order to install either a separated Class I or striped Class II bikeway on these streets, the removal of at least one lane of parking will be required. A traffic study conducted by Sam Schwartz LLC found that removing all parking from these streets and adding a separated greenway would not negatively impact traffic in the neighborhood.

Removing parking in any community can be challenging. Recognizing this, RPA and BGI have carried out a parking study to evaluate opportunities for changing parking regulations around West St and Kent Ave to mitigate the loss of parking that would be required to install the Brooklyn Waterfront Greenway.

Because large areas of CB1 were recently rezoned from Industrial to Residential use, areas of opportunity exist to update outdated industrial parking regulations on the streets surrounding West St and Kent Ave to create new parking spaces and mitigate for any loss the Greenway would create. This report presents the findings of the parking study.



### **1. West St and Kent Ave Street Treatments**

## **Method & Study Area**

In order to determine opportunities for creating new parking spaces a number of tasks were carried out, including:

#### Task 1. Establish project boundaries

The project boundaries included a 2-block radius around West St and Kent Ave from Eagle St in Greenpoint to Division St. in Williamsburg (see figure at right).

#### Task 2. Research precedence

City agencies including the Department of Transportation (DOT) and Parks & Recreation were queried to determine the efficacy of altered parking regulations to accommodate increased residential parking.

#### Task 3. Study existing parking regulations

Working together with Sam Schwartz, LLC and DOT, current parking regulations for the streets in the study area were obtained to help identify opportunities for changing regulations to accommodate greater residential parking.

#### Task 4. Study aerial photos

Aerial photos and land use maps of the study area were studied to provide a snapshot of current conditions in the study area and to help determine field visits.

#### Task 5. Collect data on parking regulations & land use

A number of site visits were made on foot and by auto to document current land usage (residential, industrial or mixed-use) and to collect data on parking regulations and measurements. Measurements were taken for those streets with regulations that restricted parking for residents ("No Parking throughout the day;" "Truck loading;" and "No Standing Anytime")

#### Task 6. Collect data on current parking usage

Site visits were made to West St and Kent Ave within the study area to record usage of existing spaces at 4 different times including a Friday at 11am, a Sunday at 11am, a Tuesday at 11am and 7pm.

#### Task 7. Recommend regulation changes

Following site visits, areas of opportunity for changes to parking regulations were be identified and characterized as either green (restricted parking on streets with residential land usage) or yellow (restricted parking on streets that have been zoned for residential or mixed-use, but are not yet residential) This information was coded into GIS and maps were made that recommend changes to regulations.

The following pages contain the results of this parking study and should be used as a general estimate of the number of parking spaces available with regulation changes. It is likely that there are even more opportunities for parking regulation changes both inside and outside the study area.

Note: 35 feet per block was removed from each full block to account for fire hydrants which require 30 feet of no parking.



## Results

Results for the parking study take into account both current parking regulations and zoning as well as current and future land use. Field researchers collected detailed information on the type of parking restrictions and the distance they covered, while also noting the type of land use along the blocks in the study area. Parking regulations that were considered restrictive to residents included "No Parking throughout the day;" "Truck loading;" and "No Standing Anytime." By far the most commonly occurring restrictive parking regulation was "No Parking throughout the day."

<b>Commonly-Occurring Industrial Parking Restrictions</b>	
No Parking Throughout the Day	
Truck Loading	
No Standing Anytime	

Overlayed with current zoning information, two distinctions of potential parking spaces were realized. Green spaces typically include those spaces found in areas that are zoned residential and have current residential land use (apartment buildings, etc), but do not currently have residential parking regulations. Those areas coded as green signify places where regulations can and should be changed within a short timeframe. Yellow spaces are located in those areas with restricted parking on streets that have been zoned for residential or mixed-use, but whose current or future land use is not residential or is unclear. Yellow areas signify those places where regulations chould change as land use shifts to residential.

Category of parking space	Description
Green	Spaces to be created in areas zoned residential and with residential land uses
Yellow	Spaces to be created in areas zoned residential or mixed-use but with no current residential land use

A total of **519 residential parking spaces could be created** by shifting to residential parking regulations on the streets within a two-block radus of West St and Kent Ave. A traffic study conducted by Sam Schwartz LLC in Spring 2007 found that if the Brooklyn Waterfront Greenway were to be installed on West St and Kent Ave as a physically separated lane, 571 parking spaces would need to be removed.

The results of this traffic study thus indicate that **over 90% of the spaces that would be removed to accomodate the Greenway could be found at existing locations** within a reasonable distance of West St and Kent Ave if regulaions are changed.

## Results

It is first important to consider the current usage of existing spaces on West St and Kent Ave to get a sense of the need for parking on these streets. The following table illustrates the estimated usage of parking along West St and Kent Ave in comparison with the available number of spaces.

Av	Available Spaces Par		Park Pa	Parking Use - Actual Parked Vehicles		% of Spaces Used			
Block	Unadjusted for Night Regs	Adjusted for Night Regs	Fri 11am	Sun 11am	Tue 11am	Tue 7pm	Weekday	Weekend	Night
West St from Eagle St to Quay	232	232	125	46	117	72	54%	20%	31%
Kent Ave from N 14th St to Clymer	339	275	170	95	164	88	50%	35%	26%
Total	571	507	295	141	281	160	<b>52</b> %	28%	<b>29</b> %

From these results, it can be inferred that **the current demand for parking on West St and Kent Ave does not appear to approach the 571 available spaces along these roads.** (It is important to note that night street cleaning regulations prohibit overnight parking two nights per week, limiting residential use on West St and Kent Ave to 507 spaces). The greatest count of parked cars on both streets never exceeded 300 during the time periods where parked cars were counted, meaning that nearly 50% or more of the spaces were always available.

Parking Regulation Study Results		
Streets Adjacent to West St and Kent Ave	Spaces Created	
West St from Eagle St to Quay	295	
Kent Ave from N 14th St to Clymer	224	
Total	519	

Creating 519 new spaces through changes to parking regulations on streets within 2 blocks of West St and Kent Ave would be more than adequate to meet the current demand for parking on West St and Kent Ave. Analyzing the two roads distinctly, it was found that the 295 spaces

created around West St and the 224 spaces created around Kent Ave would meet peak demand for parking as illustrated above.

The following maps illustrate the specific locations where both green and yellow parking spaces could be created by changing outdated restrictive industrial parking regulations to alternate side of the streets regulations found in residential neighborhoods. The maps are divided into four "zones" that range from north to south. It is the final recommendation of this report that all green parking spaces be immediately changed to alternate side parking and that all yellow parking spaces shift to alternate side parking as residential land uses are established. 23

## Zone One

#### **Dupont Street to Oak Street**

Category	# of Potential Spaces
Green	51
Yellow	122
Total	173



## Zone Two

#### **Oak Street to N 9th St**

Category	<b># of Potential Spaces</b>
Green	20
Yellow	108
Total	128





## **Zone Three**

#### N 9th St to S 4th St

Category	# of Potential Spaces
Green	105
Yellow	67
Total	172

## **Zone Four**



Category	# of Potential Spaces
Green	20
Yellow	26
Total	46

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