

Appendix A
References & Literature Review

A. REFERENCES

Document	Agency	Description	Date
Traffic and Pedestrian Safety Improvements for Commercial Streets with Elevated Subway Lines	NYC DCP	NYC DCP Study	Sep-93
Verrazano Pedestrian/Bicycle Access: Planning/Design Feasibility	NYC DCP	NYC DCP Study	Dec-97
New York City Bicycle Lane and Trail Inventory	NYC DCP	NYC DCP Study	Apr-00
Subway Sidewalk Interface Project* - Tech Memo III: Existing Conditions: Brooklyn Edition (* Study is in progress)	NYC DCP	Identifies access, congestion, orientation, and safety problems for the areas where subways meet the street, at various stations in Brooklyn. Stations in study area are Church Avenue (2, 5), Kings Highway (D, Q), Sheepshead Bay (D, Q)	1-Jan-01
New York City Bicycle Master Plan	NYC DCP	City-wide bicycle Master Plan	19-Jun
A Greenway Plan For New York City	NYC DCP	Overview and future vision of greenway system in NYC	1993
Brooklyn Retail Corridors Final Technical Memorandum III	NYC DCP/NYC DOT	Study of pedestrian safety and mobility at 4 Brooklyn retail corridors- in 1)Brighton Beach between Ocean Parkway and Coney Island Ave. 2) Flatlands: Flatbush and Ave U and 3) Bay Ridge 86th between 4th and 5th - two of these overlap with other DOT projects.	1999
Pedestrian Safety Study for Ave U and Flatbush	Brooklyn Borough President's Office	Reports conditions at accident Brooklyn accident prone intersections and makes recommendations for Flatbush and Ave U	2002
Subway Sidewalk Interface Project, Tech Memo IV - Issues and Opportunities	NYC DCP, NYC DOT	Identifies operational and capital deficiencies and offers prelim recommendations	8/20/2002
Traffic Safety Plan Maps	NYC DOT/Urbantrans	Existing facilities maps. Part of citywide child pedestrian safety project; includes all schools w/ 250+ students in Southern Brooklyn	Oct-02
Gateways to Bay Ridge/ Bay Ridge Enhancements Proposal :	NYMTC	Proposal to develop traffic and pedestrian safety improvements and streetscaping. Submitted by Empire State Development Corp (ESDC) and Bay Ridge Development Corporation (BRDC)	1999
Mode of Access to Transit Study	MTA NYC Transit	Database of responses from 300,000 riders at most stations in city.	1990

Appendix A: References & Literature Review

Document	Agency	Description	Date
Flatbush Avenue Enhancements Proposal	NYMTC	Proposal to develop pedestrian safety and mobility improvements; streetscaping enhancements. Submitted by Flatbush Avenue Business Improvement District.	1999/2002
13th Ave Dyker Heights Streetscapes Enhancements Proposal	NYMTC	Proposal to develop traffic and pedestrian safety improvements and streetscape enhancements. Submitted by Bay Ridge and Bensonhurst Alliance (BRB) Empire State Development Corporation (ESDC)	1999/2002
Coretlyou Road Enhancements Proposal	NYMTC	Proposed to develop streetscape improvements for Cortelyou Road retail corridor. Submitted by Flatbush Development Corporation (FDC), NYC EDC	1999/2002
Pitkin Avenue Enhancements Proposal	NYMTC	Proposed to develop pedestrian safety and mobility improvements Submitted by Pitkin Ave Business Improvement District.	1999
Reach the Beach Enhancements Proposal	NYMTC	Proposal to develop better connections to NYC's beaches, including Manhattan and Brighton Beaches.	2002
Fort Hamilton Pkwy Streetscape Improvements Enhancements Proposal	NYMTC	Proposal to develop improvements to streetscape.	2002
CEQR No. 98DCP038K, "The Home Depot – Cropsy Avenue Final Environmental Impact Statement"	NYCDCP	Environmental Impact Statement (EIS) with balanced 1998 flow volumes. Some of the ATR and turning movement count locations are same as the Baseball Stadium at Steeplechase Park FEIS	Aug-99
CEQR No. 99DPR003B, "The Baseball Stadium at Steeplechase Park - Final Environmental Impact Statement"	NYCDPR	Environmental Impact Statement (EIS) with Draft Technical Memorandum Data Collection Program Summary: <ul style="list-style-type: none"> - ATR & TMC (1998) - Site Data Inventory - Travel Time Study (1998) - Parking Inventory (1998) - Transit System Survey (1998) - Pedestrian Survey (1998) 	Feb-00
NYC Economic Development Corp. Flatbush Avenue project EIS	NYCDCP	Environmental Impact Statement (EIS)	
Barnes & Noble EIS	NYCDCP	Environmental Impact Statement (EIS)	
Gateway Retail	NYCDPC	Environmental Impact Statement (EIS)	
International Air Cargo Statistics	PANYNJ	January to September 2001 air cargo statistics for PANYNJ airports	2001

Document	Agency	Description	Date
NYC Truck Routes	NYCDOT	NYC Truck Routes (web-based map)	2002
NYC Traffic Rules	NYCDOT	NYC Traffic Rules (including legal description of local and through truck routes)	2002
Freight Facilities and System Inventory	NYMTC	Freight facilities inventory, maps, and data	2000
Transearch Commodity Flow Data	Reebie Associates	County-to-County commodity flow data for truck, rail, and waterborne freight originating, terminating, or passing through Kings County	2000
Strategic Plan for the Redevelopment of the Port of New York	NYCEDC	Site studies, access studies and development plans for the Howland Hook, Red Hook and South Brooklyn marine terminals.	
The Directory of Shippers	TTS	Business listings of major shippers in Kings County	2001
Cross Harbor Freight Movement Major Investment Study	NYCEDC	Examination of freight movement alternatives between freight rail lines east and west of the Hudson River.	2000
Truck Terminals & Warehouses Survey Results in the New York Metropolitan Region	NYMTC	Report was based on truck terminal and warehouse survey performed in 1999	Feb-01
1998-1999 Truck Toll Volumes	NYMTC	1998 & 1999 Truck traffic volumes over toll bridges and crossing in the New York-New Jersey Metropolitan area	Apr-01
List of TIS Subjects and Issues	Brooklyn Borough President's Office	Outlines subjects worthy of focus in the Southern Brooklyn Transportation Investment Study.	#####
On-Street Parking Regulations Review and Reevaluation Study	NYC DCP	NYC DCP Study	1-Jun-99
Plan for the Brooklyn Waterfront	NYC DCP	Brooklyn Borough Office report with descriptions of waterfront reaches and actions to achieve goals related to the City's Comprehensive Waterfront Plan of 1992	Nov-94
Recreation and Open Space: Brooklyn	NYC DCP	NYC DCP Study	#####
NTAD Transportation Networks	US Bureau of Transportation Statistics	Electronic (ArcView GIS) National Transportation Atlas Database (NTAD) maps for the following networks in the study area: National Highway Planning Network (NHPN)---Federal-aid roads from the Federal Highway Administration; National Railway Network at 1:100k scale---includes all railway mainlines, yards, and major sidings; National Transit Network---includes all fixed guideway transit lines.	2001

Document	Agency	Description	Date
US Census	US Census Bureau	<p>Socioeconomic indicators from the 1990 and 2000 Census: For the year 2000 Decennial Census, file SF 1 (the 100% Data)</p> <p><i>Specifically Tables:</i></p> <ul style="list-style-type: none"> - P1 Total Population - P4 Hispanic or Latino, and Not Hispanic or Latino by Race - P12 Sex by Age - P13 Median Age by Sex - P17 Average Household Size <p>For the Year 1990 Decennial Census, file STF3 (additional sampled questions)</p> <p><i>Specifically Tables:</i></p> <ul style="list-style-type: none"> - P49 Means of Transportation to Work - P70 Sex by Employment Status - P80A Median Household Income in 1989 - P117 Poverty Status in 1989 by Age - H40 Vehicles Available - H43A Median Gross Rent - H61A Median Housing Value 	1990, 2000
Brooklyn Community District Profiles	NYCDCP: modified data of New York City Department of Finance (land use), NYC Department of Health (vital statistics), NYC Human Resources Administration (Income Support)	Statistical Profiles, Income Support Data and 1999 Land Use by lot by Community District	2002
Selected Facilities & Program Sites in New York City, Brooklyn	NYCDCP	Community Facility sites with capacity for the Borough of Brooklyn by Community District, including schools, recreational and cultural facilities, public safety and criminal justice facilities, hospitals and health services, daycare, residential facilities,	Summer 1999
Labor Statistics from <i>Employment in New York State</i> Newsletter	New York State Department of Labor	“A Closer Look at the Big Apple” article and November 2001 Unemployment Rate Data by County	Feb-02

Appendix A: References & Literature Review

Document	Agency	Description	Date
2000 Census Maps	NYCDCP	2000 Census Maps for the following indicators: - Map PL-1: Population Density by Census Tracts, 2000; - Map PL-2: Change in Total Population by Census Tract, 1990 to 2000; - Map PL-3: White Nonhispanics by Census Tract, 2000; - Map PL-4: Black Nonhispanics by Census Tract, 2000; - Map PL-5: Hispanics by Census Tract, 2000; - Map PL-6: Asian Nonhispanics by Census Tract, 2000; - Map PL-7: Multiracial Nonhispanics by Census Tract, 2000	2001
Insured Employment and Payrolls data	New York State Department of Labor	ES202 Data indicating number of firms and jobs by Zip Code	2002
InfoUSA Business Listings	InfoUSA	Employment, SIC, and address information	2002
NYMTC Best Practice Model	NYMTC	Multi-modal travel demand model with model and data sets encompassing 28 county NY Metro region with supporting data including Regional Household Interview Survey Data (1996/1997); socioeconomic data forecast to 2020 (2000); and highway and transit network	2002
Shore Parkway Service Road Study	NYC DCP	NYC DCP Study	#####
Shore Parkway Service Road Study - Addendum	NYC DCP	NYC DCP Study	Sep-91
Southern Gateway Corridor Information Exchange	NYC DCP	Summaries of selected findings from not-yet-completed Major Investment Studies in the Southern Gateway Corridor, encompassing Hudson County, NJ, Staten Island, Brooklyn, and Southeastern Queens.	Aug-99
Gowanus Expressway Corridor Photos	NYC DCP	NYC DCP Study	1-Sep-99
Citywide Congestion Bottleneck Study (pp. 57-64)	NYCDCP	Identifies locations of major traffic bottlenecks, and analyzes several in depth, including Ocean Parkway at Church Avenue. Copy only includes introduction and section on Ocean Parkway/Church Avenue bottleneck.	1-Oct-99
Brooklyn Junction Development Study – ATR Data/Reduction	NYCDOT	2000 ATR and turning movement count data	Jun-01
CEQR No. 99-DOS-002Y, “Final Comprehensive Solid Waste Management Plan Modification”	NYSDOS	This FEIS compiled a comprehensive environmental review of 24 transfer sites/facilities in the proposed plan within the metropolitan area.	Feb-01

Appendix A: References & Literature Review

Document	Agency	Description	Date
Scope of Services for Coney Island/Gravesend Sustainable Development Transportation Study”	NYCDOT	This project is at the preliminary stage and no traffic data is available at present time. The study will include land use, traffic, pedestrian & bikes, accidents, parking, goods movement, and transit in the southwest Brooklyn area. SIMCO will contact NYCDOT for available count data later	Feb-00
CEQR No. 01-DOS-001K, “Delivery of Municipal Waste from Brooklyn Districts 6, 11, 13 and Other City Department Waste to Facilities in Brooklyn and New Jersey - Supplemental Report to the Environmental Assessment Form”	NYCDOS	Balanced 2000 traffic flow volumes	Jul-00
“Weeksville/Utica Avenue Transportation Study”	NYCDOT	Balanced 2000 flow volumes in the East Flatbush and Crown Heights vicinity	22-Jun
CEQR No. 94DCP019K, “Davidson Shopping Center, Final Targeted Environmental Impact Statement”,	NYCDCP	1993 ATR & Turning movement count data in the 39th Street and 3rd Avenue vicinity	1-Aug
CM-1093.04, “Stillwell Avenue Terminal Reconstruction – Traffic Study”	MTA	Turning movement count (1999) Pedestrian count at all platform level access points in Stillwell Avenue Terminal (1999) Pedestrian count at other subway station (2000)	22-Jun
D005710, PIN X729.94, “Gowanus Expressway Project”	NYSDOT	Current Traffic Data Summary - ATR (1999 & 2000) - TMC (1999 & 2000) - Classification Count (1999 & 2000) - Occupancy Count (1999) - Travel Time Speed Run (1999) - Travel Survey Report, January 2001	23-Jun
Gowanus Expressway HOV Lane Continuation Study – Traffic Data Collection”	NYSDOT	Volume 1 - Traffic Data, January 1998 Volume 2 - Incident Data, January 1998 Volume 1 - Traffic Data, January 1998 – Revised February 1999 Volume 4 - February 1998 Traffic Data, March 1998 Draft Summary Report, April 1998 Phase II Volume 2 - Traffic Data, May 1999 Phase II Volume 5 - Traffic Data, May 1999 (Post-Prospect and Pre Lower Gowanus HOV lanes)	21-Jun

Appendix A: References & Literature Review

Document	Agency	Description	Date
D010081, PIN X730.79, "Gowanus Expressway Mainline and 3rd Avenue Traffic Diversion Analysis",	NYSDOT	ATR Count (1999) Turning Movement Count (1999 Weekday & Saturday)	21-Jun
ATR Count from New York City Department of Transportation	NYCDOT	ATR Data	99, 00, 01
ATR & Classification Count from New York State Department of Transportation	NYSDOT	ATR Data	99, 00, 01
Potential for Small Commercial Vehicles on Selected Parkways	NYC DCP	NYC DCP Study	Jul-94
Transit Corridor Analysis: Hylan Boulevard/Staten Island Railway and Flatbush Avenue Corridors	NYC DCP	Analysis of access and congestion issues along Flatbush Avenue in Brooklyn, along with short- and long-term recommendations. Copy only includes section on Flatbush Avenue.	Oct-96
2000 Subway and Bus Ridership Report	NYCT	NYCT Study	Jul-01
B13/B18 Route Combination Route Report	NYCT	NYCT Study: Presents a proposal to combine underutilized bus routes B13 and B18 in Brooklyn into a unified service	#####
Better Transit For Brooklyn: A Discussion Document	NYMTC	Presents a Brooklyn transit agenda and short- and mid-term improvements to transit service in the borough.	#####
Commuter Van Service Policy Study	NYCDCP	Identifies existing van service corridors, number of vans providing service, areas underserved by mass transit, areas for van service expansion and methods to expedite the approval process for new commuter van services. Includes a list of licensed commuter van authorities.	1-Oct-98
New York City Transit Committee Agenda Report	NYCTCC	Charts and tables detailing operating performance, financial status, recent procurements, service changes and ongoing construction.	#####
Contract Bus Route Data	NYCDOT	Number of buses assigned to each route, bus fleet information for Command and Green, ride checks from each route, revenue and ridership information for each route for 2000 and 2001, mileage, revenue hours and bus trips information for 2000 and 2001, schedules, maps, fare information for each route (with span of service, running times, and headways). Updated express bus information is provided to reflect post-9/11 ridership increases.	1-Feb-02

Document	Agency	Description	Date
Field Observations of Brooklyn Bus Service	Urbitran	Notes from several field outings to observe operations of buses in Southern Brooklyn, as well as land use patterns in the study area.	8/2001-1/2002
New York City Subway Electronic Data	NYCT	Diskette containing May 2001 24-hour weekday, Saturday and Sunday turnstile registrations of subway ridership by station and time periods; diskette containing GIS files of subway lines and stations; CD containing weekday, Saturday and Sunday subway in effect in May 2001.	2001
2000 Bus Route Profiles	NYCT	Provides route descriptions, service spans and headways, operating statistics, cost recovery charts, average ridership charts, and ridership demand/capacity figures.	Dec-01

B. LITERATURE REVIEW: TRANSIT

Several transportation-related studies have been conducted that are relevant to transit in Southern Brooklyn, or the surrounding area. During the data collection phase of this study, the consultant team contacted organizations that had performed relevant work to provide a “baseline” of available information regarding critical transportation issues. Two reports conducted by MTA - New York City Transit (NYCT), the Southwestern Brooklyn Transit Study and the East River Crossing study have not been released to the public and were not made available to the consultant team. Table A-1 lists the nine prior reports that were reviewed by the consultant as part of this effort. The table is followed by a summary of each report.

**TABLE A-1
SOUTHERN BROOKLYN REPORTS**

Study	Prepared For	Completion Date
Better Transit for Brooklyn	Community Consulting Services, Inc.	September, 2001
Subway-Sidewalk Interface Project	NYC Department of City Planning NYC Department of Transportation	January, 2001
2000 Subway & Bus Ridership Report	New York City Transit	July, 2001
New York City Commuter Park and Ride Program	NYC Department of Transportation	August 2000
Southern Gateway Corridor Information Exchange	NYC Department of City Planning	August, 1999
Citywide Congestion Bottleneck Study	NYC Department of City Planning	October, 1999
Commuter Vans Service Policy Study	NYC Department of City Planning	October, 1998
Transit Corridor Analysis: Hylan Boulevard, Staten Island Railway and Flatbush Avenue Corridors	NYC Department of City Planning	October, 1996
Plan for the Brooklyn Waterfront	NYC Department of City Planning	Fall, 1994

Better Transit for Brooklyn – Better Transit for Brooklyn is a study that recommends transit improvements throughout Brooklyn. Community Consulting Services (CCS), who authored this report, is a not-for-profit Brooklyn-based organization that provides technical services to community leaders seeking to meet transportation and environmental challenges. This report provides short and medium term recommendations for meeting the transit needs for all of Brooklyn as well as system-wide service changes. Most of the recommendations would have direct impacts to the transit network of Southern Brooklyn. The short-term recommendations include: increasing service on all subway lines, adding F-express trains in Brooklyn, extending the G train to Church Avenue, extending peak level services on IRT (#2, 3, 4, and 5) lines in Brooklyn, restoring weekend service on the West End Line (B/W), and making other Brooklyn bus enhancements. The mid-term recommendations that would impact Southern Brooklyn include: extending the tracks of the Nostrand Avenue station terminal at Flatbush Avenue, realigning the tracks of the IRT trains at the Nostrand/Eastern Parkway junction, proper planning for the use of Manhattan Bridge capacity, adding direct rail service to Kennedy Airport, and potential improvements from other ongoing studies. The system-wide service change

recommendations include revising service guidelines, and upgrades to the transit system make it more accessible and less noisy.

Subway-Sidewalk Interface Project – This study evaluates access to various subway stations from the communities. Three stations that were inventoried are in the study area: Church Avenue on the Nostrand Avenue Line, Kings Highway on the Brighton Line, and Sheepshead Bay also on the Brighton Line. This study includes an inventory of the sidewalks immediately around the station, as well as an analysis for the area within a quarter mile of the station. The quarter mile analysis includes a land use inventory, traffic condition analysis, and a demographic profile. The existing conditions report was provided for the consultant team to review.

Subway & Bus Ridership Report – Published in July 2001, this report provides year 2000 ridership for all MTA-NYCT buses, as well as counts at each individual subway station. Besides providing year 2000 ridership data, this report provides the historical ridership trends for the last few years for both bus and subway. For the subway, ridership is also traced back to 1920, with data given in 10-year increments.

Southern Gateway Corridor Information Exchange – Prepared by the Department of City Planning, this report focuses on the Southern Corridor from the NYMTC regional transportation plan, ‘Critical Issues, Critical Choices.’ This corridor is comprised of several of the region’s highway facilities, including the Goethals Bridge, Staten Island Expressway, Verrazano-Narrows Bridge, Gowanus Expressway, Brooklyn-Queens Expressway, and Belt Parkway. The purpose of this report was to ensure a long-term strategy for the region that would integrate the planning endeavors taking place at the time in a series of Major Investment Studies (MIS) concerning such issues as vehicle capacity and operations, infrastructure deficiencies, safety, and goods movement. This report provides a variety of recommendations that have surfaced from other Major Investment Studies, including plans to place the Gowanus Expressway in a tunnel with HOV and bus lanes, and the rehabilitation of bridges on the Belt Parkway.

Citywide Congestion Bottleneck Study – This report identifies bottlenecks on New York City’s heavily traveled arteries, and to determine low cost solutions that would improve the flow of traffic. The intersection at Ocean Parkway and Church Avenue, located in the Southern Brooklyn study area, was one of the five sites examined in the Study. Besides the high amount of automobile traffic, this is the interchange of B35 and B68 bus routes, both of which are important Southern Brooklyn bus routes. The report noted heavy traffic flow at this site, which was slowed by numerous turning restrictions, and recommended use of an existing trolley tunnel under the intersection for through traffic as a means of alleviating congestion. A second site, the interchange at the Cross Bay Boulevard and Shore Parkway, is located just east of the study area and created traffic bottlenecks through confusing intersections and poor signage, impeding access to JFK International Airport. The Study recommended the replacement of signs and guiderails, along with landscape redesign to reduce driver confusion in the area.

Commuter Vans Service Policy Study – New York City Department of City Planning conducted this study in 1998 to evaluate the potential commuter vans have to be an effective mode of transportation to increase the mobility of city residents. This study evaluates what other cities have done in encouraging/responding to commuter van operations, and examines the role commuter vans could serve within each community district in New York City. Within the

Southern Brooklyn Study Area, Community Districts 14, 15, and 18 were identified as areas that may be able to support additional commuter van service. Finally, the report makes recommendations on implementing and enforcing commuter and neighborhood van services within the city. Some of the recommendations include operating vans in areas that are not well served by buses, making connections to subway stations, and providing premium service into Manhattan.

Transit Corridor Analysis – In 1996, the Department of City Planning prepared the Transit Corridor Analysis as an addendum to the Long-Range Plan of the New York Metropolitan Transportation Council (NYMTC). This report identifies three transit corridors for detailed analysis, the goals of which include the following: better integrating new development with existing transit services, providing innovative services to meet non-traditional (reverse commute) travel patterns, promoting travel demand management and increased transit use for non-work trips and enhancing the environment for pedestrian and bicycle travel, especially at transit access points. Of the three corridors analyzed in this report, Flatbush Avenue in Brooklyn is located in the study area. Some of the recommendations from this study include providing bus stop amenities on Flatbush Avenue and rerouting the Q35 bus at its terminus at the Flatbush Avenue Station terminus to allow improved operations.

Plan for the Brooklyn Waterfront – Part of New York City’s Comprehensive Waterfront Plan, the Plan for the Brooklyn Waterfront serves several purposes: to examine Brooklyn’s ‘reaches’ (continuous water expanses), to determine existing conditions, to identify waterfront planning issues and to recommend actions to achieve goals articulated within the plan. The Department of City Planning determined four principal functions of the waterfront, which served as the basis for the organization and goal setting of the plan. These functions include protection of the natural waterfront, reestablishment of the public’s connection to the public waterfront, ensuring sufficient manufacturing-zoned land to accommodate the working waterfront, and the promotion of waterfront redevelopment to initiate beneficial changes in vacant or underutilized properties. This study recommends developing an enclosed ferry terminal at 69th Street, with improved bus connections.

C. LITERATURE REVIEW: BICYCLE AND PEDESTRIAN TRANSPORTATION

Existing studies and reports on pedestrian and bicycle facilities, as well as recently completed and on-going studies, were reviewed for their content and information.

- *A Greenway Plan For New York City* (NYC DCP), Fall 1993
- *New York City Bicycle Master Plan* (NYC DCP, NYC DOT), May 1997
- *A Greenway Plan For New York City – internet version* (NYC DCP), October 1997
- *Verrazano Pedestrian/Bicycle Access: Planning/Design Feasibility* (NYC DCP), December 1997
- *New York City Bicycle Lane and Trail Inventory* (NYC DCP), April 2000
- *New York City Bicycle Lane and Trail Inventory Phase II* (NYC DCP), October 2001
- *Bicycle Survey Report, draft* (NYC DCP), January 1999
- *Subway/Sidewalk Interface Project, Technical Memorandum I-IV* (NYC DCP), January 2000-August 2002
- *School Safety Engineering Project*, (NYC DOT), ongoing since January 2002
- *Pedestrian/Traffic Safety Mitigation Project*, (Brooklyn Borough President's Office), June 2002
- *Brooklyn Retail Corridors Pedestrian and Vehicular Congestion Study, Technical Memorandum 1-III* (NYC DCP, NYC DOT), December 1999
- *Federal Transportation Enhancements Proposals* (Various Authors), 1999 and 2002.

A description of and key findings from each of these studies and reports follows:

Title: A Greenway Plan for New York City

Author: NYC DCP

Date: Fall 1993

Description: This document provides an overview and future vision of the greenway system in New York City. The greenway system consists of transportation and recreation paths along natural and manmade linear spaces such as rail and highway rights-of-way, river corridors, waterfront spaces, parklands, and streets. Maps of the existing and proposed greenways for each borough within New York City are included.

Key Findings

- Greenways and trails are ideally suited to the flat, compact urban environment of New York City and connect different neighborhoods and boroughs.
- Sections of the greenway system are in a state of disrepair or missing. Many sections are in the proposal stage.
- Abandoned rail corridors present an opportunity for trail use.
- A connection is recommended between the Shore Parkway and Rockaway-Gateway Greenway. A Sunset Park connector is recommended to connect the Brooklyn-Queens Greenway to the Shore Parkway Greenway.

Priority greenway routes were identified based on the following criteria:

- Potential for completing a system already in place or connecting to another trail
- Creating an option for corridors with roadway congestion or air quality problems
- Potential for a high volume of use because of proximity to major employment, cultural or educational centers, or to regional parks
- Geographic balance
- Relatively low cost to establish

In this report, the following priority routes within the study area were identified (see Figure 1):

- Brooklyn-Queens Greenway
- Shore Parkway Greenway
- Rockaway-Gateway Greenway
- Verrazano-Narrows Bridge
- Sunset Park Connector

In this report, other potential greenway routes within the study area were identified (see Figure 1):

- Cross Brooklyn Greenway
- West Brooklyn Bikeway
- Olmstead Bikeway

Title: New York City Bicycle Master Plan

Author: YC DCP, NYC DOT

Date: May 1997

Description: This document describes the benefits of cycling and provides descriptions of both the greenway system and the bicycle program. Bicycle network plans for each borough within New York City are also included.

Key Findings

Routes were selected based on:

- Accessibility and directness to major origins and destinations
- Connections with other routes
- Attractiveness of the route
- Low conflict with other modes
- Feasibility of implementation
- Safety to cyclists and pedestrians

Selected Routes

In this report, the following on-street priority routes within the study area were identified (see Figure 2):

- **Bedford Avenue:** This north-south route will link Brooklyn and Medgar Evers Colleges, Pratt Institute, Long Island University, Brooklyn Law School and the Long Island Hospital.
- **Sunset Park Connector:** This route will link Prospect Park, Sunset Park and the Shore Parkway bicycle path.

In this report, funded greenway projects within the study area included (see Figure 2):

- Shore Parkway Bicycle Path (Knapp Street – Pennsylvania Avenue)
- Shore Parkway Bicycle Path (Bay Parkway - Knapp Street)
- Sunset Park Connector
- Rockaway/Gateway Greenway
- Ocean Parkway Bicycle/Pedestrian Corridor

Priority funded greenway projects are based on the existence of partially completed routes and potential usage. In this report, priority funded greenways included:

- Shore Parkway Bicycle Path (between Bay Parkway and Knapp Street): An on-street connection is needed between Bay Parkway and Knapp Street in order to create a continuous, 17 mile waterfront path.
- Rockaway Gateway Greenway: A connection to the Shore Parkway bicycle path will create a 20 mile loop around Jamaica Bay.
- Shore Parkway Bicycle Path connections: Connections to neighborhoods along Jamaica Bay are feasible due to the proximity of parkland.

Title: A Greenway Plan for New York City (current internet version)
Author: NYC DCP
Date: Launched October 1997
Description: This document is an updated version of “A Greenway Plan for New York City” from the Department of City Planning web site. Also, an updated greenway map shows the current status of the greenway system in each borough.

Key Findings

- The priority routes must be established and then the remaining linkages must be resolved.
- A gap within the Shore Parkway Bikeway needs to be closed and a connection needs to be made with the Rockaway-Gateway Greenway.
- A Sunset Park connector will connect the Brooklyn-Queens Greenway to the Shore Parkway route.

Title: Verrazano Pedestrian/Bicycle Access: Planning/Design Feasibility
Author: NYC DCP
Date: December 1997
Description: This document is a study to determine the feasibility of pedestrian and bicycle access between Brooklyn and Staten Island to encourage a pollution-free commuting option and improve recreational opportunities. Four alternatives were assessed for the feasibility of reestablishing bicycle and pedestrian access between Brooklyn and Staten Island including: (1) Bike-on-bus or van across the bridge, (2) Ferry across the Narrows, (3) On-lane path across the Verrazano-Narrows Bridge, and (4) New, separate path across the Verrazano-Narrows Bridge.

Key Findings

- All four proposed alternatives could be linked to other Greenways and would not impact vehicular traffic.
- Any proposed access alternative has the potential for significant demand, given the growing commuter market between Staten Island and Brooklyn, major employers, the need for access between the Brooklyn and Staten Island Gateway National Recreation Area, and other significant visitor attractions.
- Greenway access across the harbor between Brooklyn and Staten Island is important both locally and to the national greenway efforts.

Title: New York City Bicycle Lane and Trail Inventory

Author: NYC DCP

Date: April 2000

Description: This document is a comprehensive inventory of New York City's Class II on-street bicycle lanes and Class I off-street bicycle trails. The report includes existing conditions data for all New York City bicycle lanes and trails collected from May 1999 to November 1999, Manhattan bicycle lane counts, 1998 bicycle lane accident data, and a photographic inventory of all lanes and trails.

Key Findings

An analysis of the bicycle lane facilities in Brooklyn revealed that the majority were in good condition, though cyclist symbols were largely missing. The bicycle trail facilities were shown to lack signs calling attention to the start or finish of the trail or access points. The analysis included pavement, striping, signs, and symbol condition for each of the five boroughs.

Title: New York City Bicycle Lane and Trail Inventory Phase II

Author: NYC DCP

Date: October 2001

Description: This document is the second phase of the Bicycle Lane and Trail Inventory project. The second phase focuses primarily on the usage component of New York City's Class II on-street bicycle lanes and Class I off-street bicycle trails. Additionally, the report updates the conditions inventory by recording newly built and reconstructed bicycle facilities.

Key Findings

Three main factors influence the usage of bicycle facilities:

- Continuity of the facility
- Proximity to destinations
- Condition of the facility

No changes occurred within the borough of Brooklyn, in terms of newly built or reconstructed bicycle facilities, since data was originally collected between May – November of 1999 for the previous phase of the project.

Title: Bicycle Survey Report, draft

Author: NYC DCP

Date: January 1999

Description: This document reports the results of the first bicycle questionnaire conducted by the Bicycle Network Development (BND) program of the NYC DCP-Transportation Division. The questionnaire focused on issues relating to on – street cycling and cycle commuting. It was designed to gather data to support other ongoing initiatives. The questionnaire was distributed to the local bicycle clubs, and a small number were distributed randomly. Approximately 1400 surveys were returned out of 8000 distributed. Eighty-eight percent of the survey respondents were club members. Approximately 28% of the respondents lived in Brooklyn.

Key Findings

- 60.4% of respondents use their bicycle to get to work.
- Average commute distance was 6.2 miles. Average duration was 36.4 minutes. Average years commuting by bike was 7.1. 71% reported commuting by bike 3 or more times a week. 69.1% reported commuting by bike year round.
- Lack of secure bike parking was the number one reason for not commuting by bicycle. Other reasons were lack of changing facilities, fear of motorists, poor roadway conditions, and working too far from home.
- On average, respondents who commuted by bike were slightly younger than those who did not. 52% of bike commuters were age 21 to 40, 43.5% were age 41 to 52, and 3.3% were over 62 years of age.
- 69.8% of bike commuters were men, while women were 30.2%. The total sample already included a high percentage of men - 65.2% of all survey respondents were men, 34.8% were women.
- In addition to the 28% of the respondents reporting Brooklyn as their typical commute origin, 11% (100) reported that Brooklyn was their typical commute destination. 74% of the commute activity reported in Brooklyn began in the borough, while 26% ended there. The net loss for the borough represented 39% of reported commutes.

Title: Subway/Sidewalk Interface Project, Technical Memorandum I-IV (NYC DCP)

Author: NYC DCP/NYC DOT

Date: January 2000-August 2002

Description: These documents report on pedestrian conditions in the vicinity of subway stations in Brooklyn, Queens and The Bronx, including access, congestion, and orientation and safety problems. The project's goal is to improve pedestrian access to transit by planning, designing and implementing improvements to the sidewalks and intersections adjacent to subway entrances. Ten stations in each of the three boroughs were selected for a total of 30. Three stations are located in the study area.

Key Findings

The project selected three stations in Southern Brooklyn, based on criteria that included, among other things, accident data, ridership, terminus, transfers, and distribution by line.

- Church Ave (2-5 train)
 - Out of 41 reportable collisions from 1996 through 1998, 13 were pedestrian collisions, and 28 were vehicular only.
 - Bus transfer problems
 - No orientation signage
 - High volumes for pedestrians and motorist, standard crosswalks and signals.
 - Corners crowded with retail displays, furniture.
- Kings Highway (Q)
 - Elevated columns and bus stop shelter blocks visibility
 - Insufficient lighting under dark elevated train line.
 - Corners cluttered with street furniture and vendors.
 - Midblock entrances encourage jaywalking
 - Pondering
 - Missing stop signs
- Sheepshead Bay (Q)
 - Out of 11 reportable collisions from 1996 through 1998, 6 were pedestrian collisions, and 5 were vehicular only.
 - Elevated columns block visibility
 - Pondering
 - Busses must stop and load in middle of roadway
 - Missing stop signs and hard to see signals
 - Insufficient sidewalk lighting
 - Sidewalks too narrow on Sheepshead Bay Road
 - Discontinuous sidewalks
 - Midblock entrance encourages jaywalking

Title: School Safety Engineering Project, (NYC DOT)
Author: Urbitran Associates and RBA Group for NYC DOT
Date: Ongoing since January 2002
Description: The goal of this project is to improve pedestrian safety conditions for school children at each of the City's public and private elementary schools having at least 250 students.

Key Findings

- Project will collect data in the vicinity of 350 to 390 Brooklyn elementary schools. In addition, 135 priority schools will be identified, and 32 capital improvement schools will be selected citywide.

Title: Brooklyn Retail Corridors Pedestrian and Vehicular Congestion Study, Technical Memorandum 1-III
Author: NYC DCP/ NYC DOT
Date: December 1999
Description: These documents report the results of a joint effort of the NYC DCP and DOT to examine four shopping corridors in Brooklyn with heavy pedestrian and vehicular congestion. Both operational and physical actions are to be taken to improve mobility and safety, while enhancing the pedestrian environment.

Key Findings

Three of the four study areas were in Southern Brooklyn:

- Bay Ridge: 86th St. from 4th Avenue to Hamilton Parkway
 - Pedestrian-vehicular conflict and vehicular congestion
 - Lack of pedestrian amenities and lighting
 - On-street parking and garage underutilization
 - Bus route problems
- Brighton Beach Avenue, from Ocean Parkway to Coney Island Avenue
 - Severe sidewalk congestion, especially at corners.
 - Elevated supports block sightlines
 - Ponding
 - Lighting
 - Missing crosswalks
- Flatlands: Kings Plaza Shopping Center at Avenue U and Flatbush Avenue
 - Peds jaywalking make crossing Flatbush in one pass, and crossing midblock to avoid intersection.
 - Problem bus stop locations

Title: Pedestrian/Traffic Safety Mitigation Project
Author: Urbitran Associates for Brooklyn Borough President's Office
Date: June 2002
Description: This document is the product of a traffic safety study of three of Brooklyn's most accident-prone locations, including one in Southern Brooklyn. The goal of the study was to identify and recommend operational and engineering improvements for pedestrian and vehicular safety. One of these three locations was within the Southern Brooklyn Study Area.

Key Findings

- Flatbush Avenue and Avenue U was selected for the project as a high accident location.
- Problems were documented with midblock crossing between points of interest not located near signals, bus layover issues.
- Recommendations include such measures as: installing and relocating stop lines, pavement markings, lane stripes, high visibility crosswalks, speed limit signs, red light camera usage, reconfiguring the raised median, and reconfiguring bus layover area.

Title: Federal Transportation Enhancements Grant Proposals
Author: Various, submitted to NYMTC
Date: Round 1, 1999; Round 2, 2002
Description: These documents are proposals submitted to NYMTC by local sponsors and agencies, addressing pedestrian scale issues relating to one or more of a number of criteria including environmental quality, economic development, neighborhood quality of life, historic preservation or connectivity. None of the 1999 projects were selected for funding. Final selection for 2nd round of funding has not been made.

Key Findings

Applications for projects within Southern Brooklyn include:

- Gateways to Bay Ridge/ Bay Ridge Enhancements Proposal (ESDC, Bay Ridge Development Corporation), 1999/ 2002
- Flatbush Avenue Enhancements (Flatbush Avenue Business Improvement District), 1999
- 13th Avenue Dyker Heights Streetscapes (ESDC, Bay Ridge and Bensonhurst Alliance) 1999/2002.
- Cortelyou Road Enhancements (NYC EDC , Flatbush Development Corporation), 1999/2002
- Pitkin Avenue Enhancements (Pitkin Avenue Business Improvement District, NYC EDC), 1999
- Reach the Beach Enhancement (NYC DCP), 2002
- Fort Hamilton Pkwy Streetscape Improvements (not available), 2002