

First Stakeholders Committee Meeting  
3/5/2009 - Slides 2-19

Second Stakeholder Committee Meeting  
6/17/2009 - Slides 20-54

Public Meeting  
11/18/2009 - Slides 55 – 75

# **Downtown Brooklyn Surface Transit Circulation Study (DBSTCS)**

**Engineering Services Agreement (ESA) for Transportation Planning,  
Transportation Engineering, Urban Design and Related Services, City Wide  
(PIN 84107MBTR187)**

**First Stakeholder Committee Meeting  
Thursday March 5, 2009**



**URS**

# Presentation Outline

- Introductions
- Purpose of the Study
- Schedule
- Study Area
- Goals and Objectives
- Previous Studies
- Next Steps
- Questions and Discussion



## Project Context

- Current and Future Development: Downtown Brooklyn's Roadways are Congested and Will Get More Congested
- Getting Around Downtown Brooklyn by Transit is Increasingly Difficult



## Study Purpose

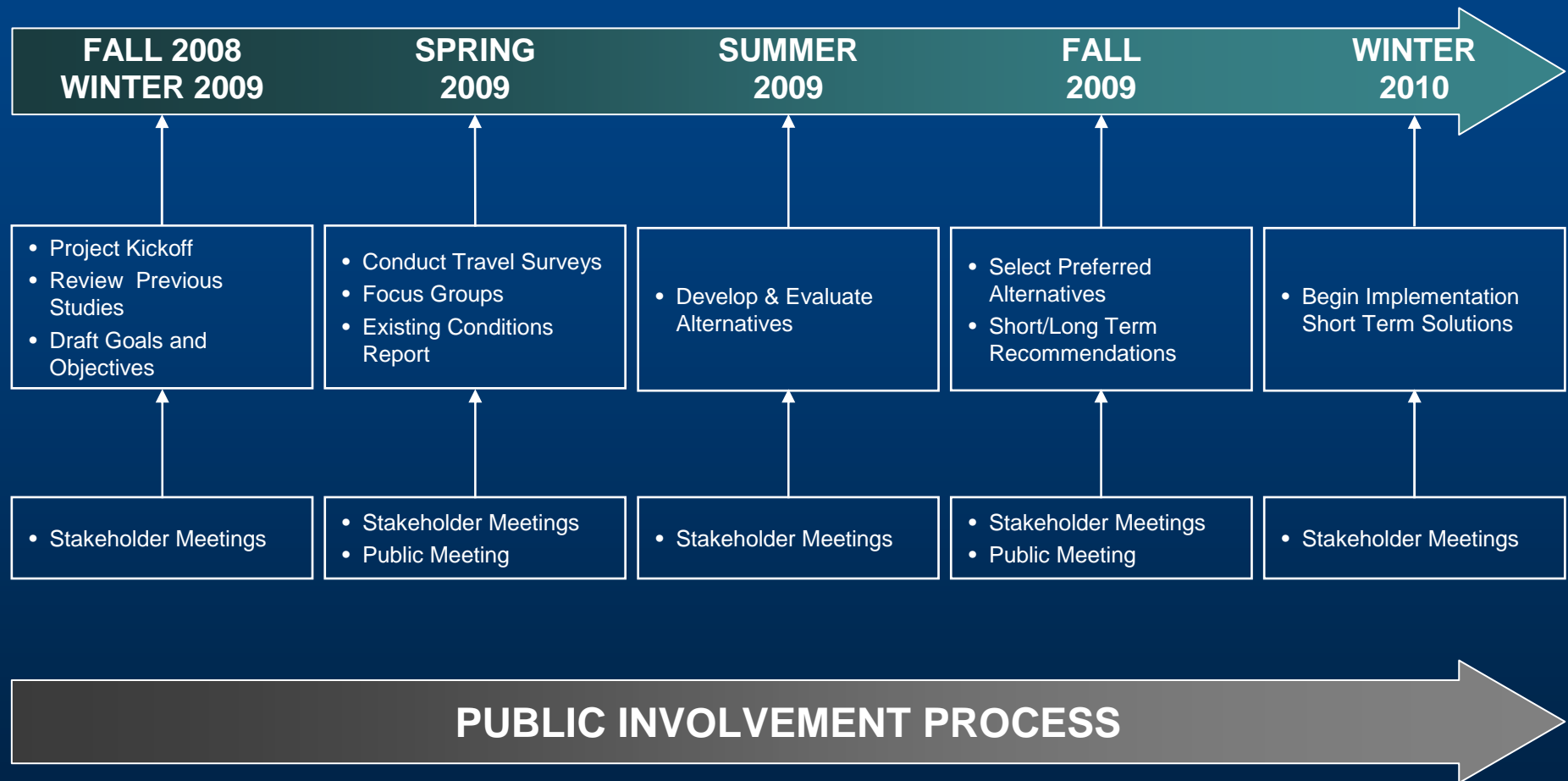
- Review Existing Transit Travel Patterns in the Study Area
- Identify Who is and Who is Not Using Transit and Why
- Forecast Future Trip Demand
- Develop Short and Long Term Implementable Solutions

# Key Tasks

- Review Previous Studies
- Develop Maps for Analysis
- Conduct Focus Group and Traveler Surveys
- Document Existing Conditions
- Project Future Land Use and Travel Demands
- Develop and Evaluate Alternatives
- Recommend Short and Long Term Solutions

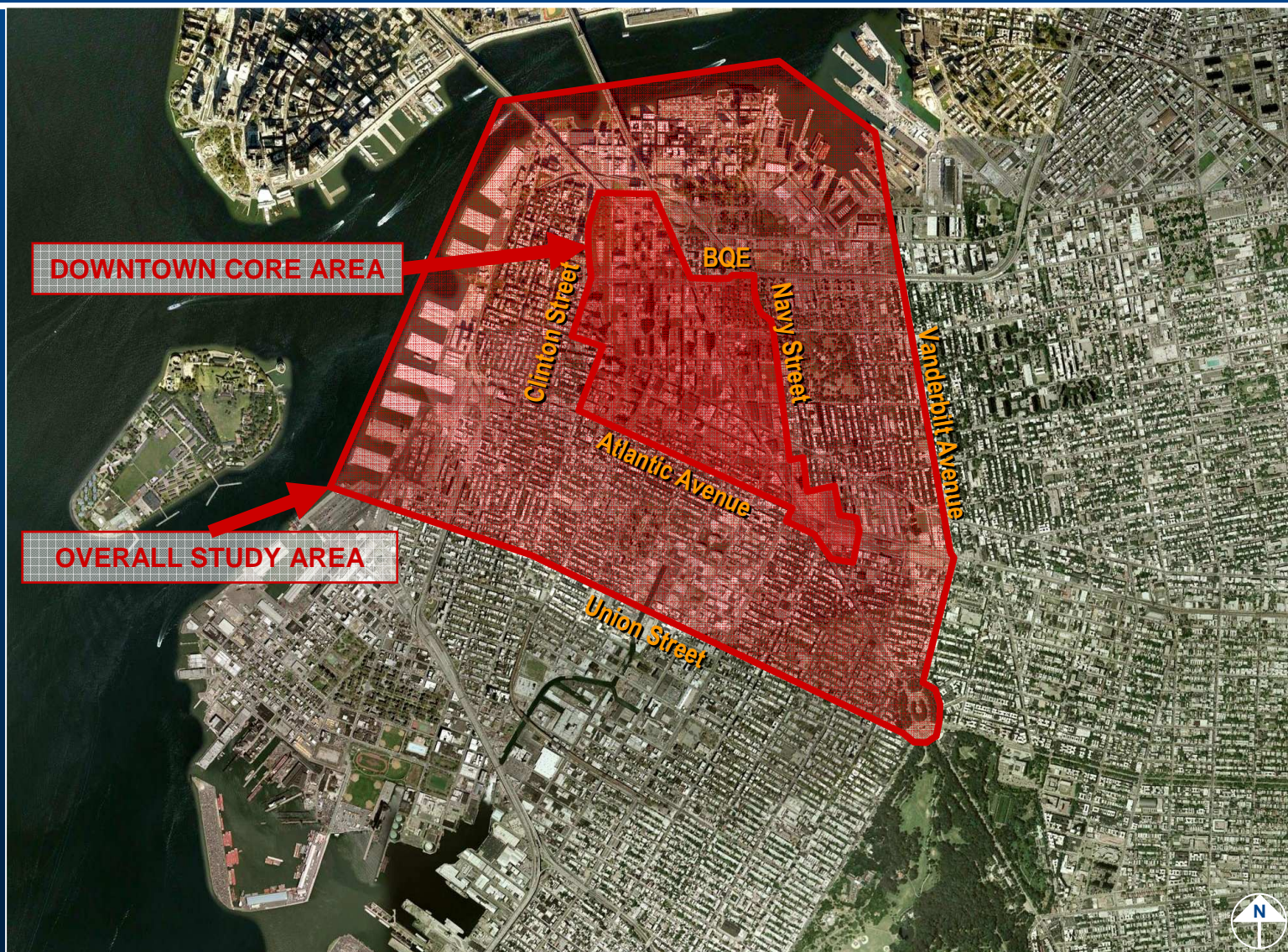


# Schedule



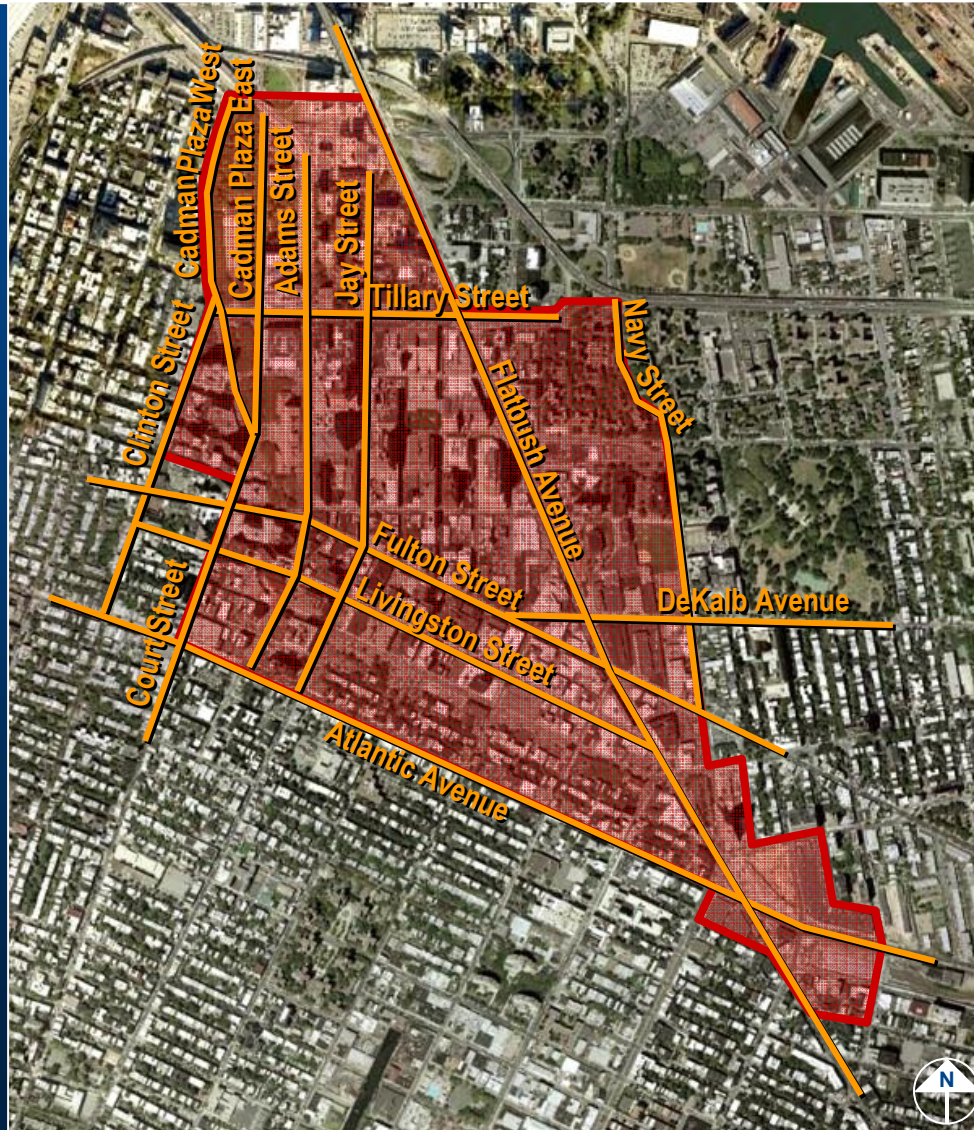


# Study Area



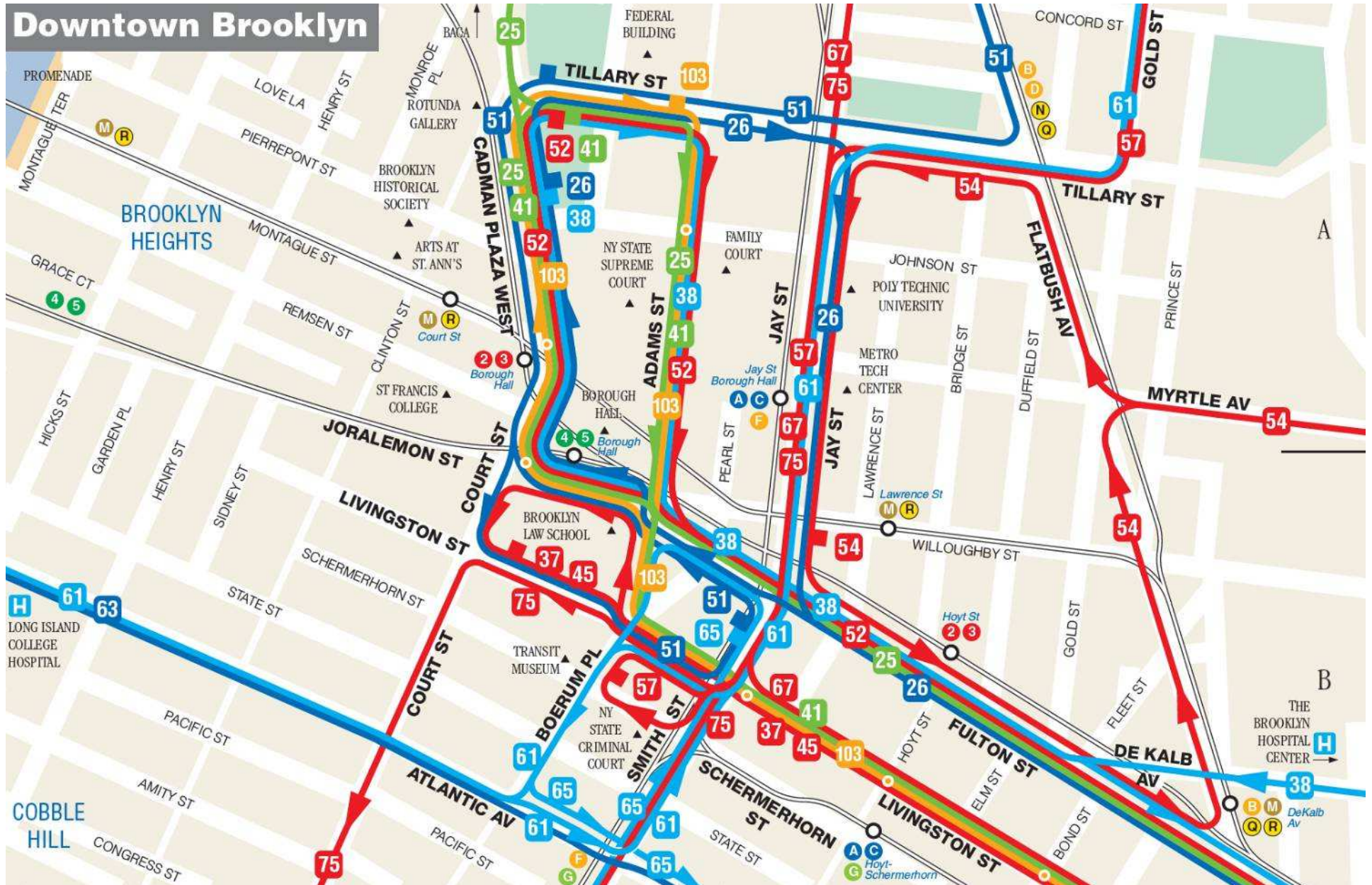


# Core Study Area





# Downtown Brooklyn Bus Map



# Proposed Corridors – Core Area





# Project Goals and Objectives

## Goal #1

- Enhance Effectiveness of the Study Area's Surface Transit Network to Provide Improved Access and Mobility

## Objective

- Increase Quality of Transit Service Options





# Project Goals and Objectives

## Goal #2

- Provide Transit Connectivity Throughout the Study Area

## Objective

- Increase Transit Connectivity to All Significant Trip Generators Throughout the Study Area



# Project Goals and Objectives

## Goal #3

- Support the Economic Health of The Study Area

## Objective

- Increase Economic Attractiveness of Commercial- and Tourism-Based Land Uses



# Numerous Studies Reviewed

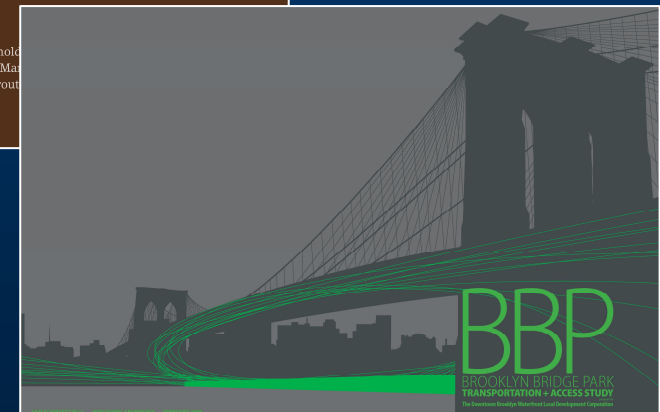
Environmental Impact Statements	Year
363-365 Bond Street DEIS	2008
Atlantic Yards Arena and Redevelopment Project FEIS	2006
Brooklyn Bridge Park Project FEIS	2005
IKEA Red Hook FEIS	2004
Water Street Rezoning FEIS	2004
Downtown Brooklyn Development FEIS	2004
Environmental Assessment Statements	Year
85 Jay Street Rezoning EAS	2004
Brooklyn Renaissance Plaza Expansion EAS	2003
Light Bridges at 100 Jay Street Rezoning EAS	2001

Land Use and Transportation Studies	Year
Brooklyn Bridge Park Transportation and Access Study	2008
A Bumpy Ride	2007
Transportation Outlook 2006	2007
PlaNYC	2007
Interim Coordinated Human Services Public Transit Plan	2006
Downtown Brooklyn Residential Parking Permit Study	2006
Downtown Brooklyn Transportation Blueprint Technical Memo	2005
Downtown Brooklyn Traffic Calming Study	2004
Mobility for the Millennium 1999	1999
Downtown Brooklyn Transit Loop Study	1994

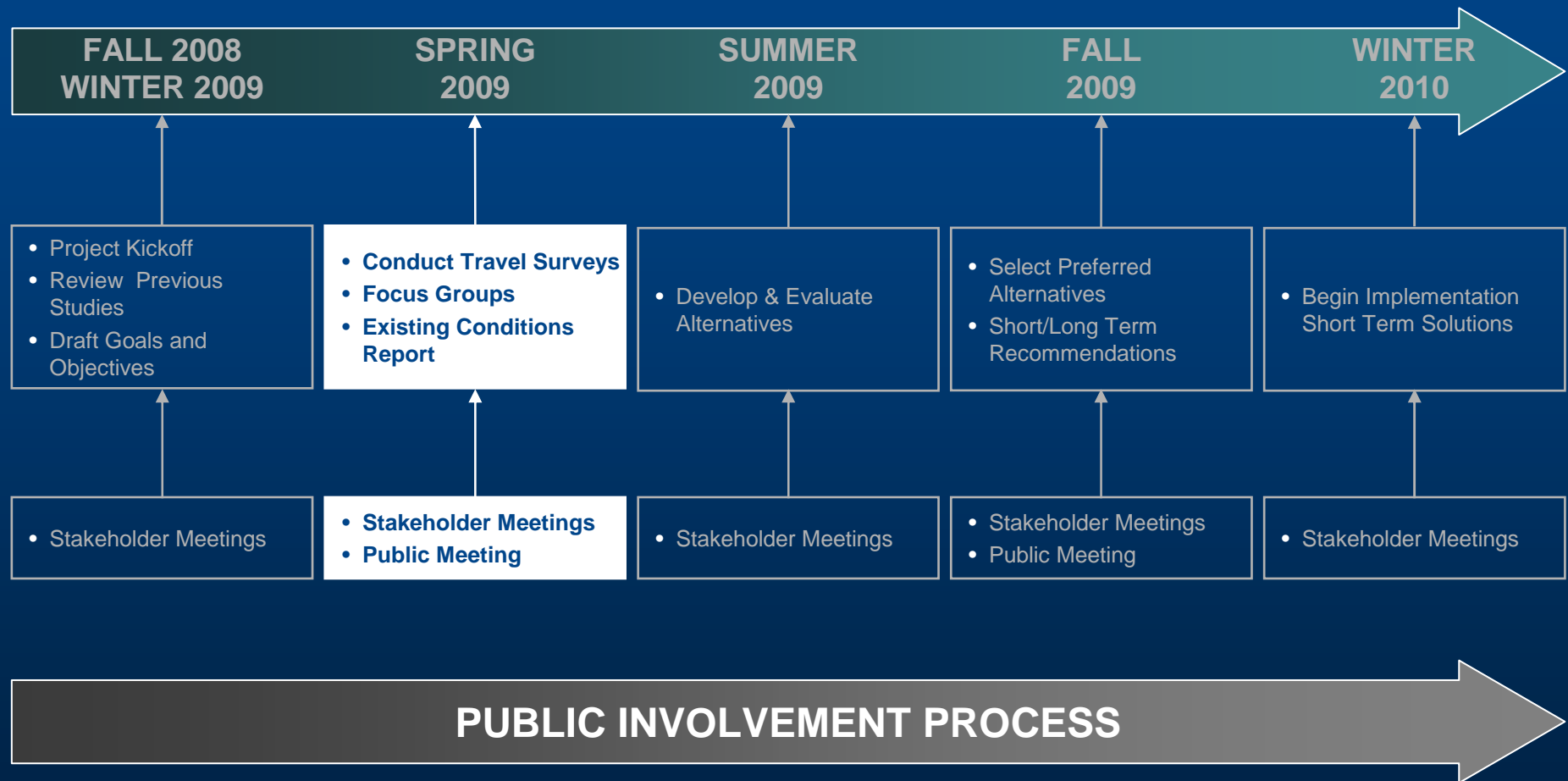


# Key Points of Previous Studies

- Continuous Development
- Enhance Existing Transit Service
- Manage Congestion
- Promote Multi-Modal Travel



# Schedule – Next Steps



# Questions and Discussion

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**First Stakeholder Committee Meeting  
Thursday March 5, 2009**



**URS**

# Downtown Brooklyn Surface Transit Circulation Study (DBSTCS)

Second Stakeholder Committee Meeting  
Wednesday June 17, 2009

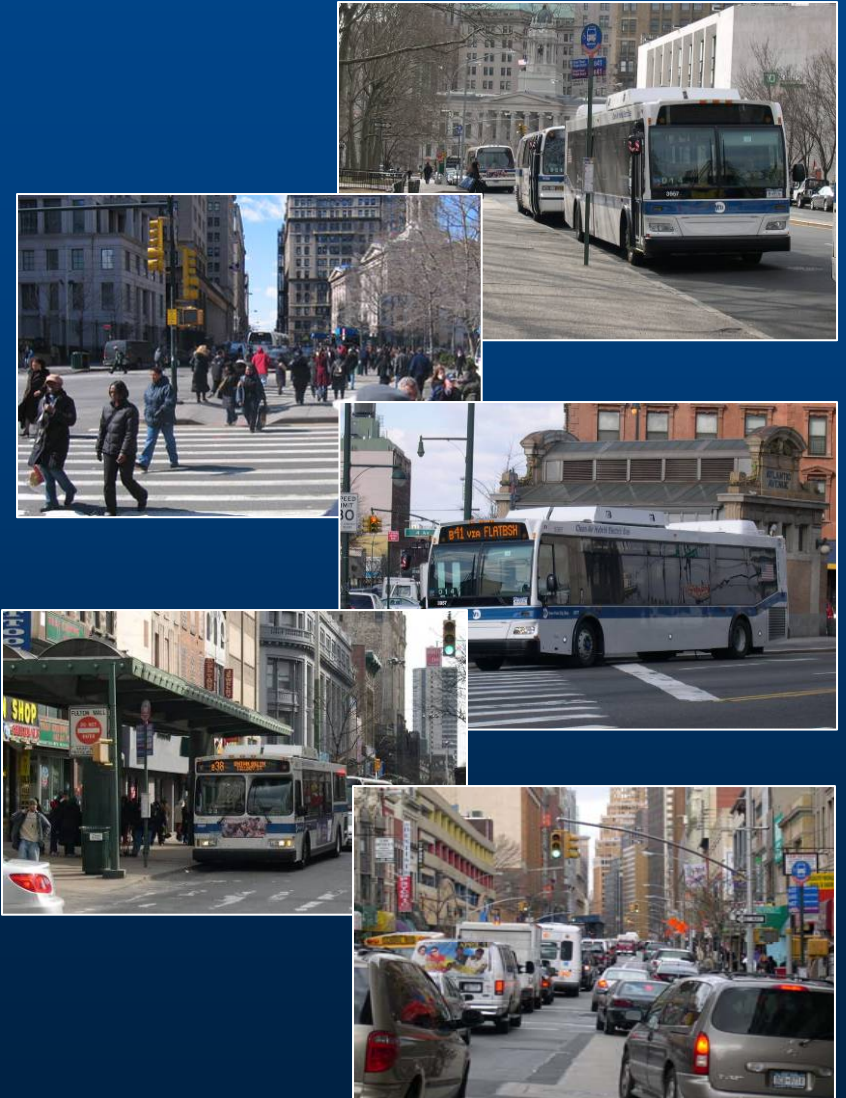


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# Presentation Outline

- Introductions
- Project Goal and Objectives
- Current Status
- Existing Conditions Maps
- Results of Surveys and Focus Group Meetings
- Next Steps
- Questions and Discussion
- Interactive Mapping Exercise



## Project Context

- Current and Future Development: Downtown Brooklyn's Roadways are Congested and Will Get More Congested
- Getting Around Downtown Brooklyn by Transit is Increasingly Difficult

## Study Purpose

- Review Existing Transit Travel Patterns in the Study Area
- Identify Who is and Who is Not Using Transit and Why
- Forecast Future Trip Demand
- Develop Short and Long Term Implementable Solutions

# Project Goals and Objectives

## Goal #1

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## Objective

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# Project Goals and Objectives

## Goal #2

- Provide Transit Connectivity Throughout the Study Area

## Objective

- Increase Transit Connectivity to All Significant Trip Generators Throughout the Study Area





# Project Goals and Objectives

## Goal #3

- Support the Economic Health of The Study Area

## Objective

- Increase Economic Attractiveness of Commercial- and Tourism-Based Land Uses



# Key Tasks

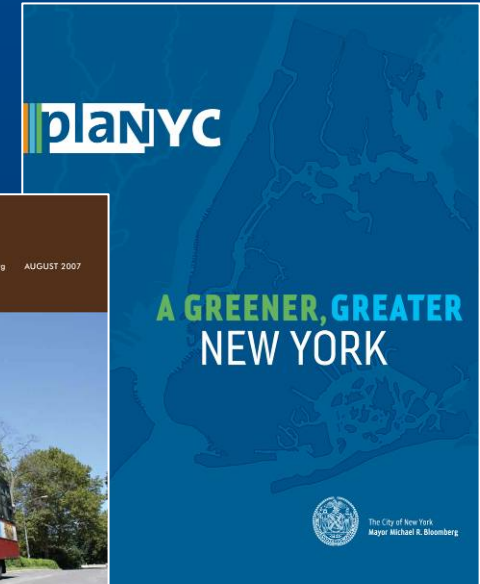
- Review Previous Studies - ✓
- Develop Maps for Analysis - ✓
- Conduct Focus Group and Traveler Surveys - ✓
- Document Existing Conditions –  
*(expected to complete mid-summer 2009)*
- Project Future Land Use and Travel Demands - *(expected to complete mid-summer 2009)*
- Develop and Evaluate Alternatives -  
*(expected to complete end of summer 2009)*
- Recommend Short and Long Term Solutions *(expected to complete early fall 2009)*

✓ = completed



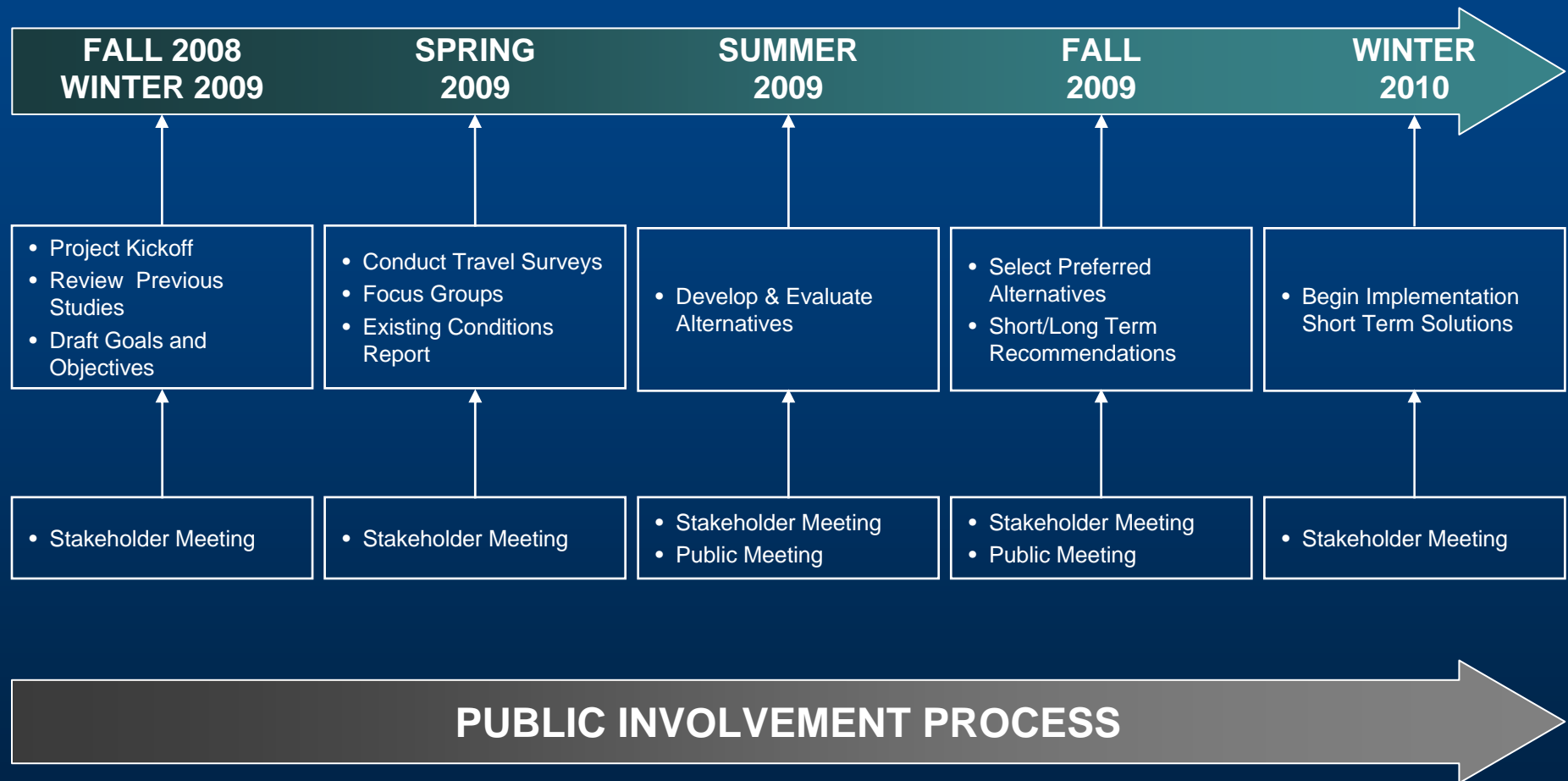
# Key Points of Previous Studies

- Continuous Development
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- Manage Congestion
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# Schedule



# Study Area





# Core Study Area

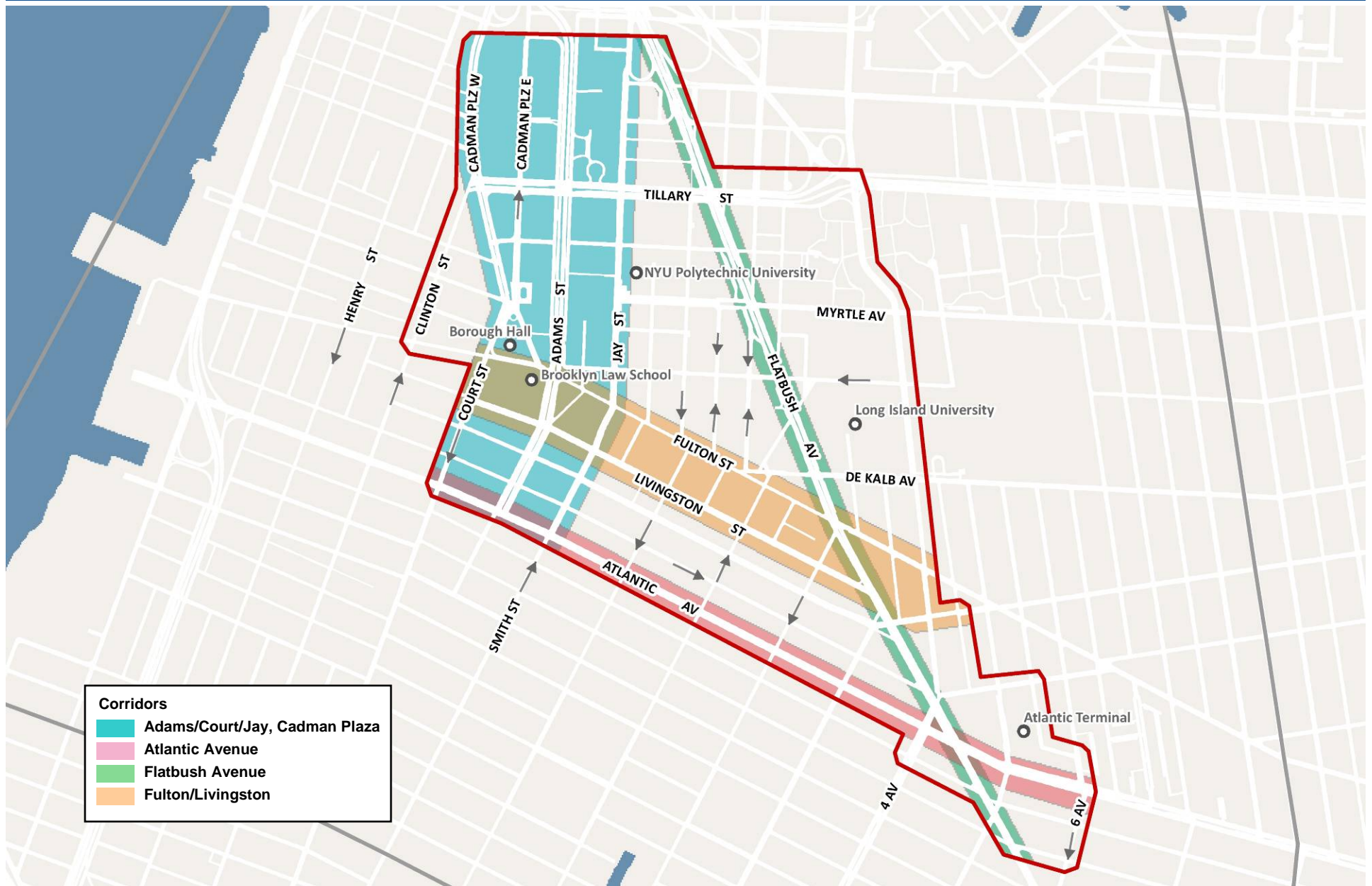




## Downtown Brooklyn



# Study Corridors – Core Area







## Population Density and Bus Routes

### Legend

#### Study Area

- Core Study Area
- Overall Study Area

#### Residents Per Square Mile

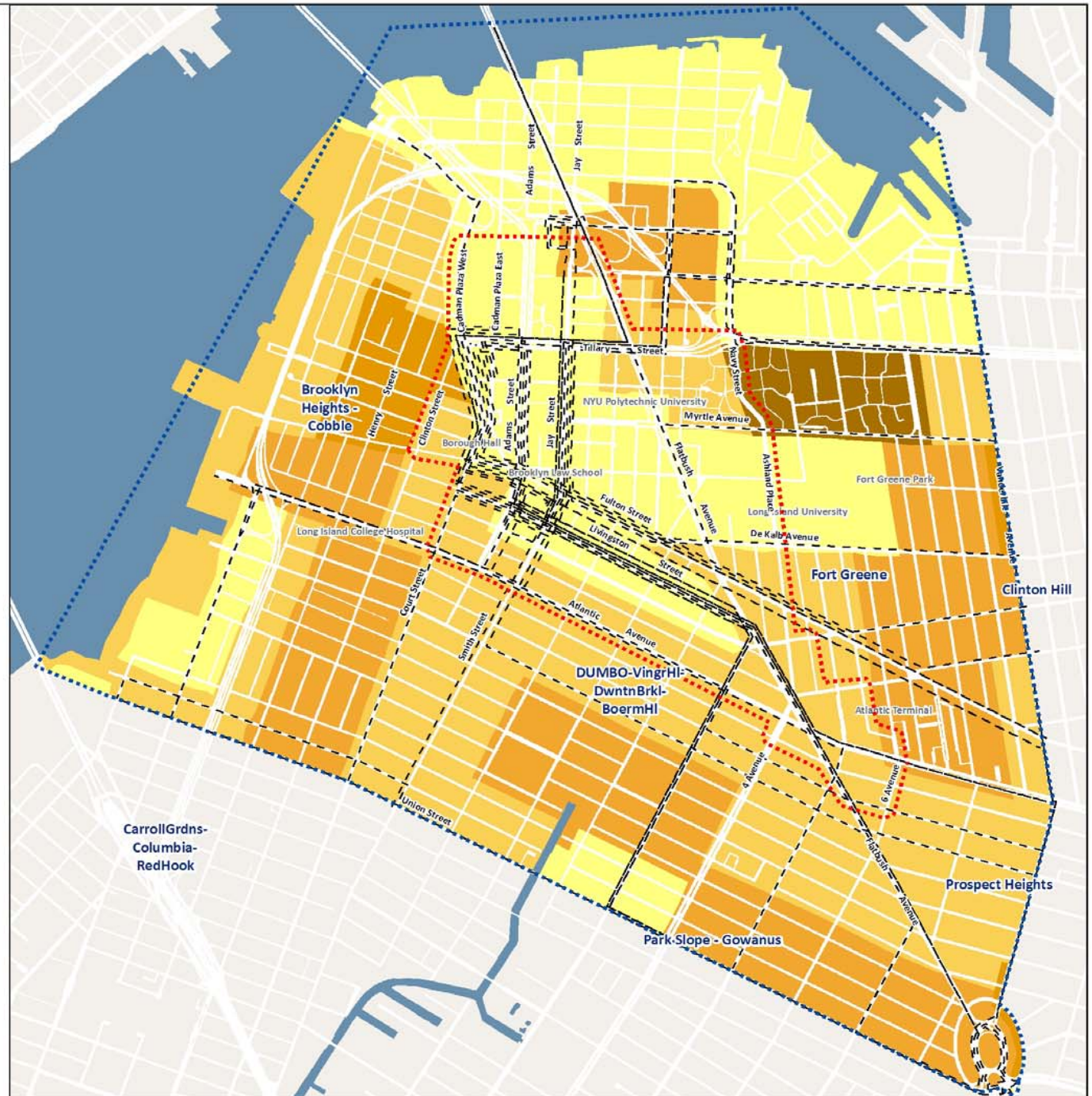
- 0 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- 75,000 - 100,000
- 100,000 - 125,000

#### Bus Routes

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0 750 1,500 3,000  
Feet

Credits: Data provided  
by NYCT, NYMTC, DCP, DOT  
and DoITT.







## Employment Density and Bus Routes

### Legend

#### Study Area

- Core Study Area
- Overall Study Area

#### Employees Per Square Mile

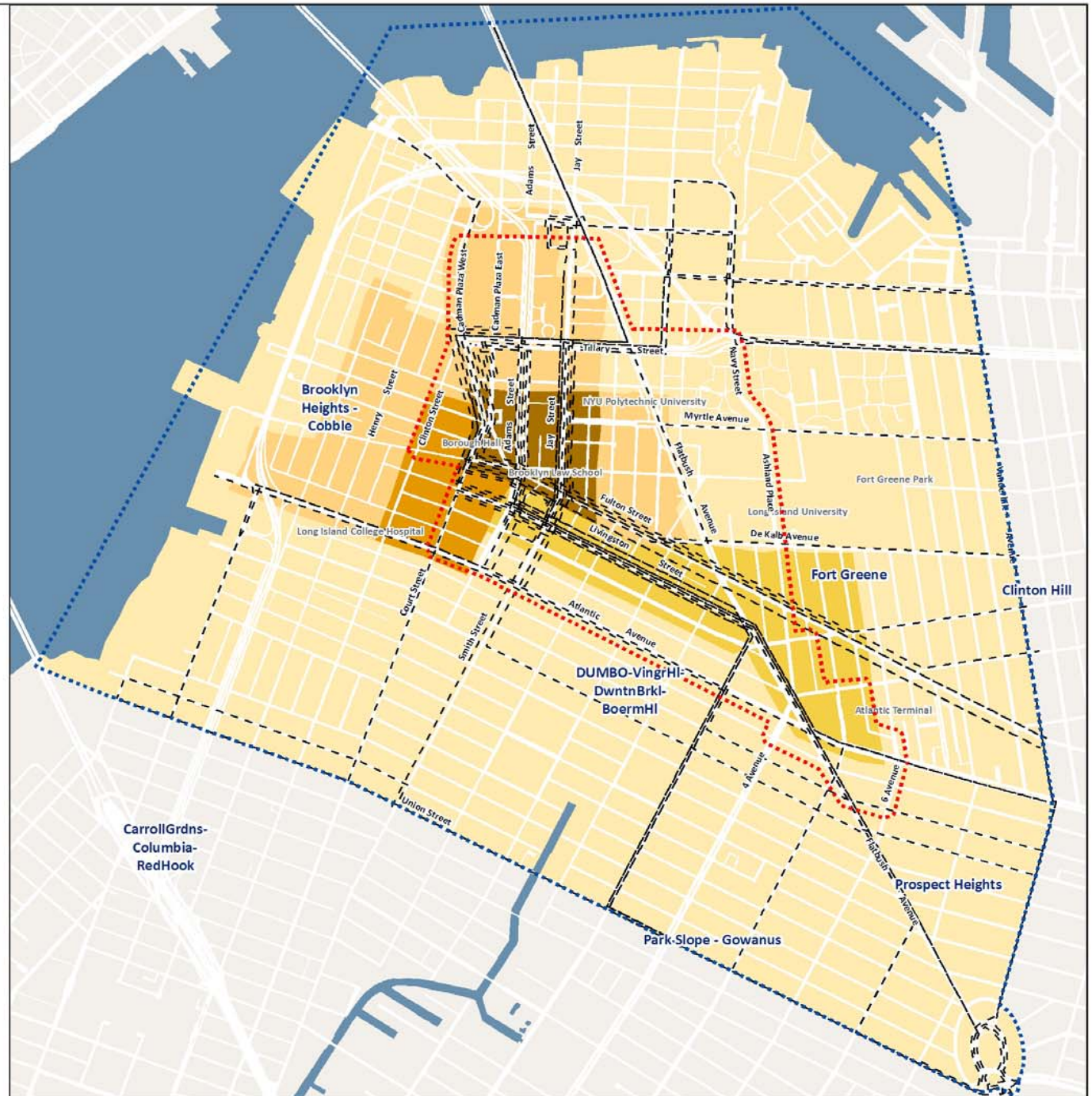
- 0 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- 200,000 - 400,000
- 400,000 - 1,000,000

#### Bus Routes

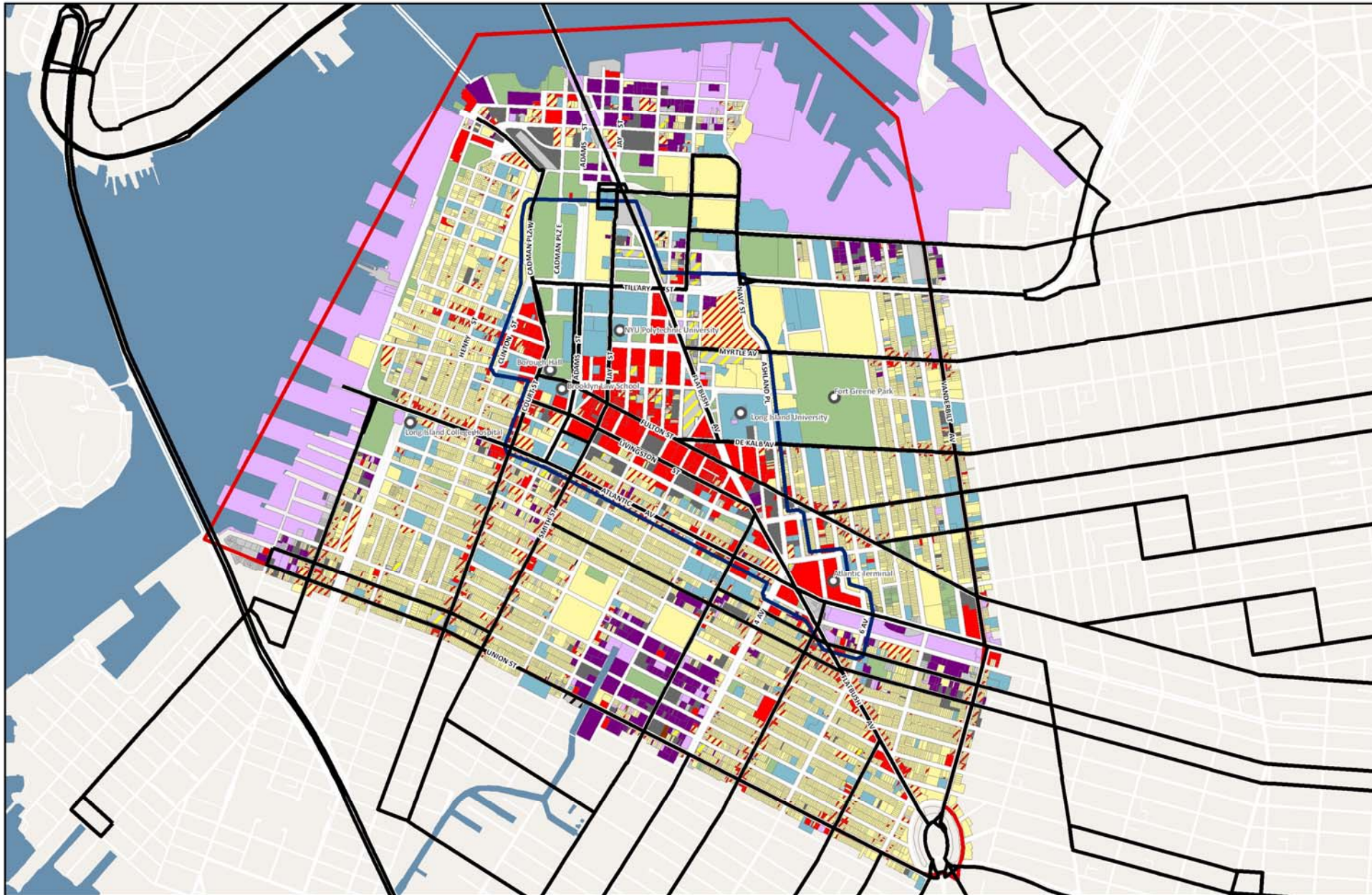
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0 750 1,500 3,000  
Feet

Credits: Data provided  
by NYCT, NYMTC, DCP, DOT  
and DoITT.







#### Land Use Categories

- |                                   |                                    |
|-----------------------------------|------------------------------------|
| No Data                           | Public Facilities and Institutions |
| Residential                       | Open Space and Outdoor Recreation  |
| Residential with Commercial Below | Parking Facilities                 |
| Hotels                            | Vacant Land                        |
| Commercial and Office Buildings   | Vacant Building                    |
| Industrial and Manufacturing      | Under Construction                 |
| Transportation and Utility        | Bus Routes                         |



## Downtown Brooklyn Surface Transit Circulation Study

### Study Area Bus Routes

0 1,000 2,000 4,000 Feet



Date: May 14, 2009

Credits: Data provided by AKRF, DCP, DOT and DoITT.

Notes:



# Traveler Intercept and Bus Rider Surveys

- Survey Purpose: To better understand travel patterns, transit needs, and transportation issues in Downtown Brooklyn

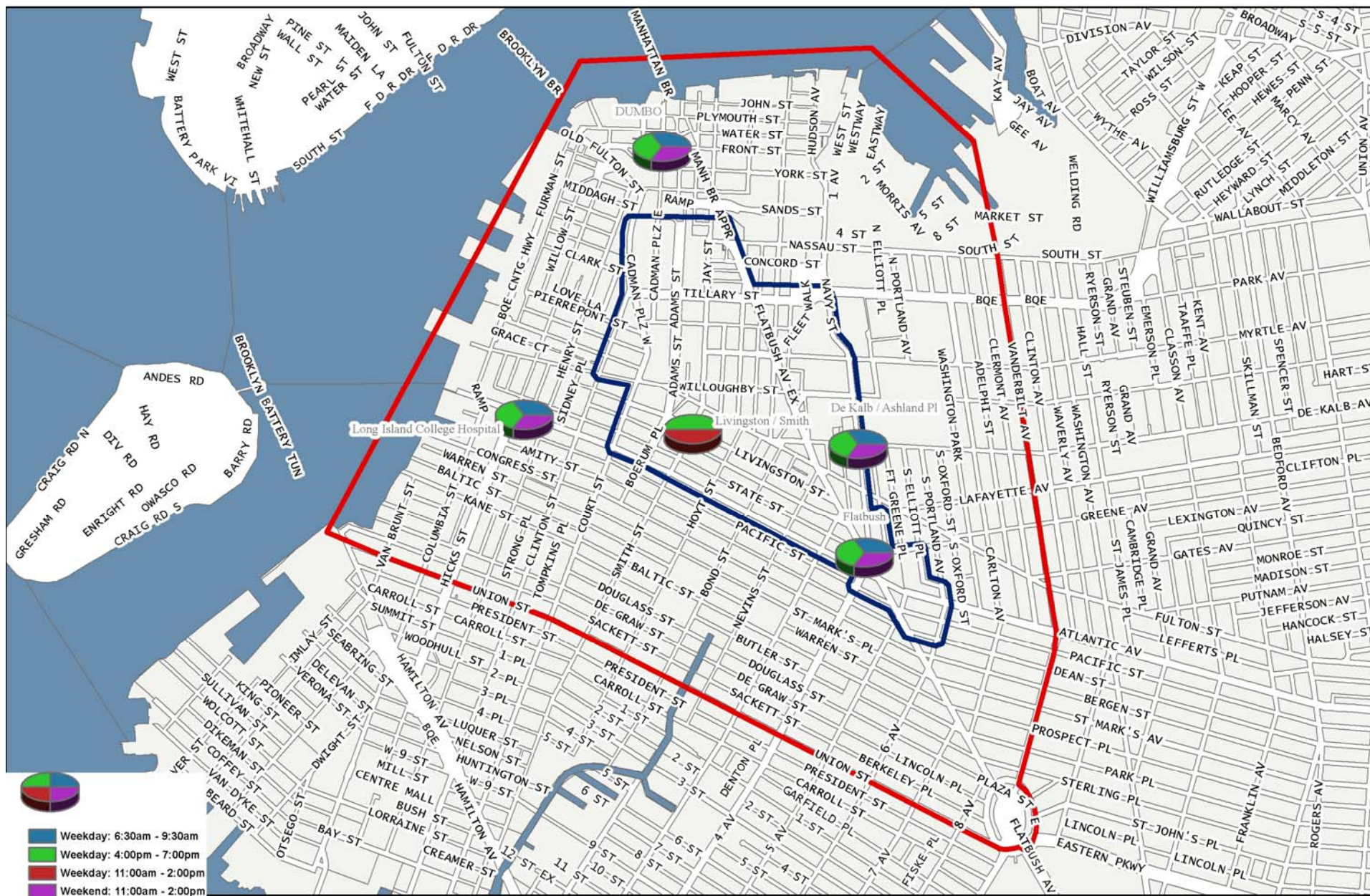


# Results of Traveler Intercept and Bus Rider Surveys

- Survey Dates:
  - Weekday: April 30<sup>th</sup>, May 28<sup>th</sup>
  - Weekend: April 18<sup>th</sup>, May 31<sup>st</sup>
- Survey Times:
  - AM Peak: 6:30 am – 9:30 am
  - Mid-Day: 11:00 am – 2:00 pm
  - PM Peak: 4:00pm – 7:00 pm
- Total Surveys: 825
  - Bus Rider: 260
  - Sidewalk Intercept: 565



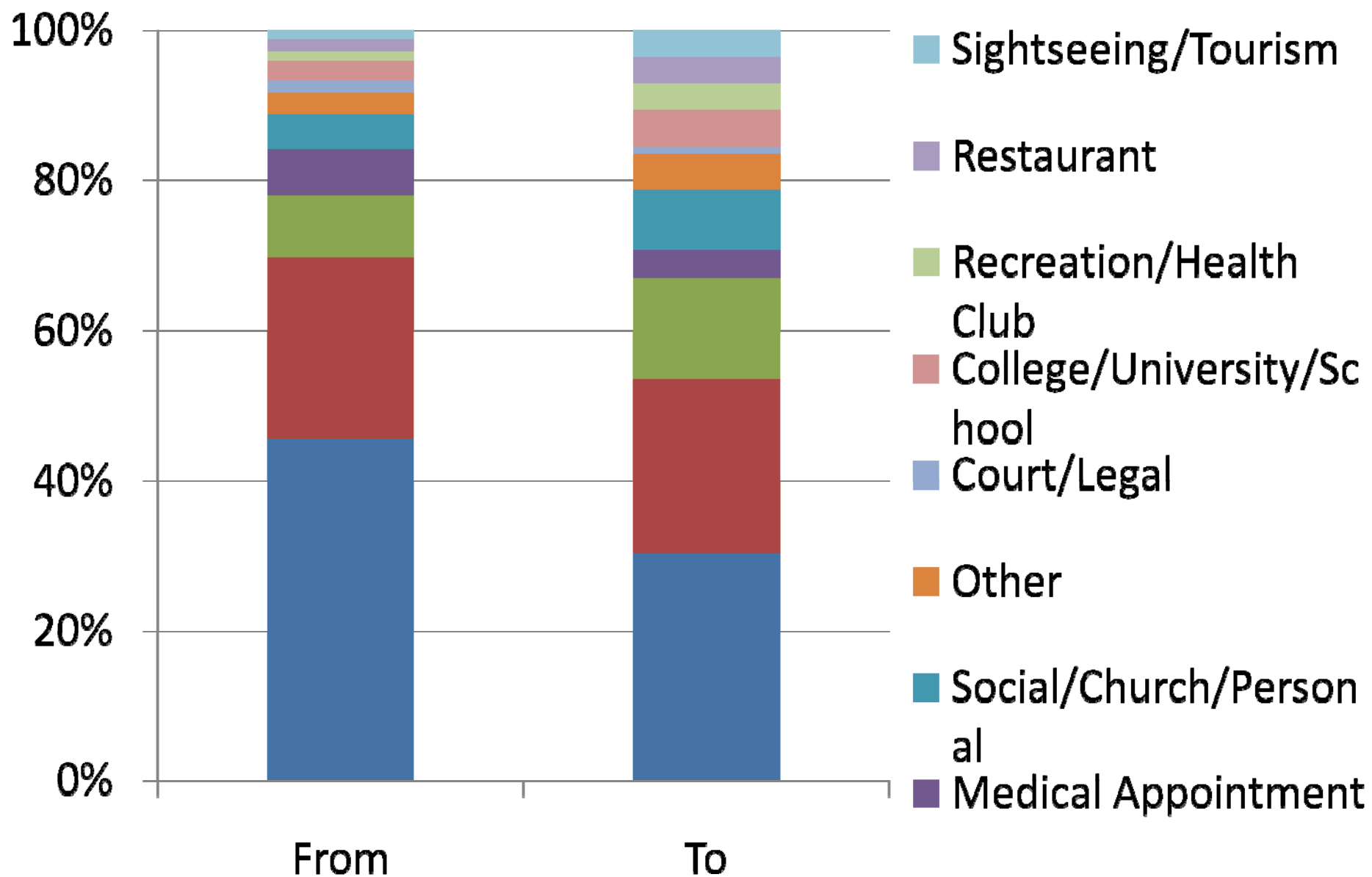
# Survey Locations



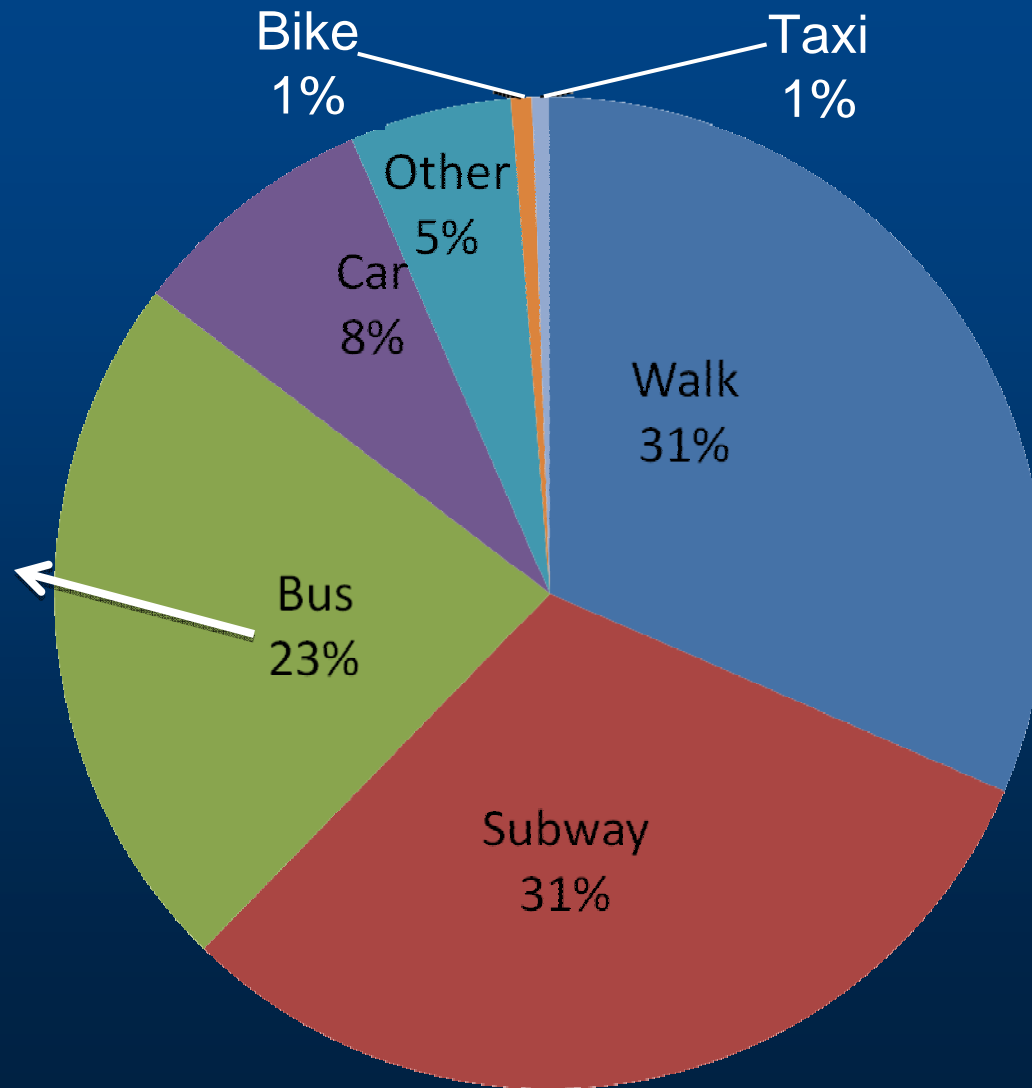
# Survey Results



## Origins/Destinations

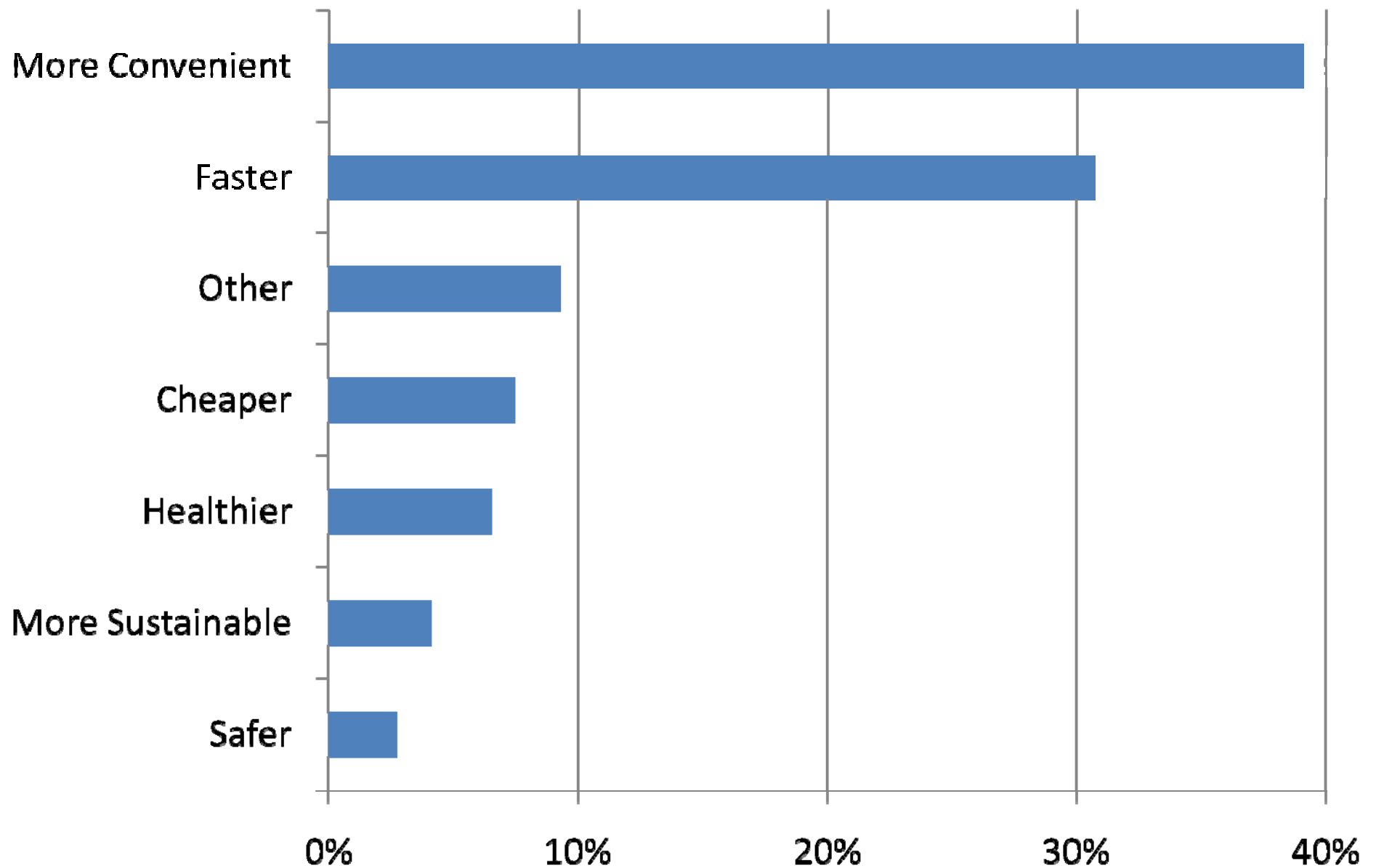


## Primary Mode

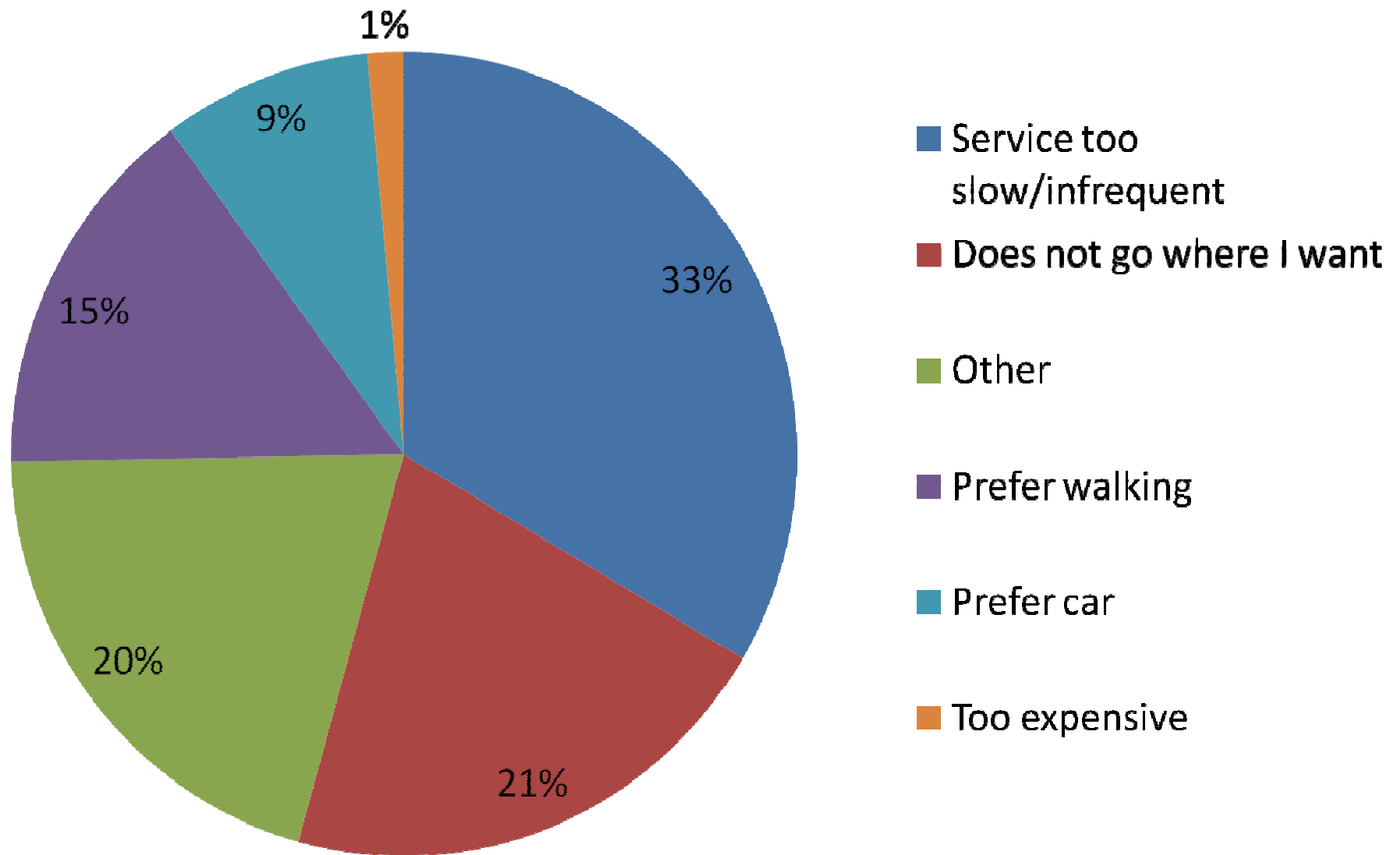


Most Common Bus Routes	
B61	
B41	
B63	
B45	
B67	
B38	
B25	
B75	

## Reason for Mode Choice



## Reason Why People Don't Ride The Bus





## Survey Findings: Requested Operational Improvements

- To increase bus ridership, service must be:
  - more reliable in terms of meeting scheduled times
  - more frequent, especially on the weekend.
  - The B41, B61 and B63 routes are priority candidates for reliability improvements.

## Survey Findings: Requested Operational Improvements

- In terms of bus stops, waiting area comfort was the top request by passengers:
  - The need for seating while waiting for a bus was stated as the highest priority.
  - Providing shelters at all bus stops was also highly rated.
  - Placement of shelters farther back from the curb was also a preference.

# Focus Group Results

# Focus Group Meetings

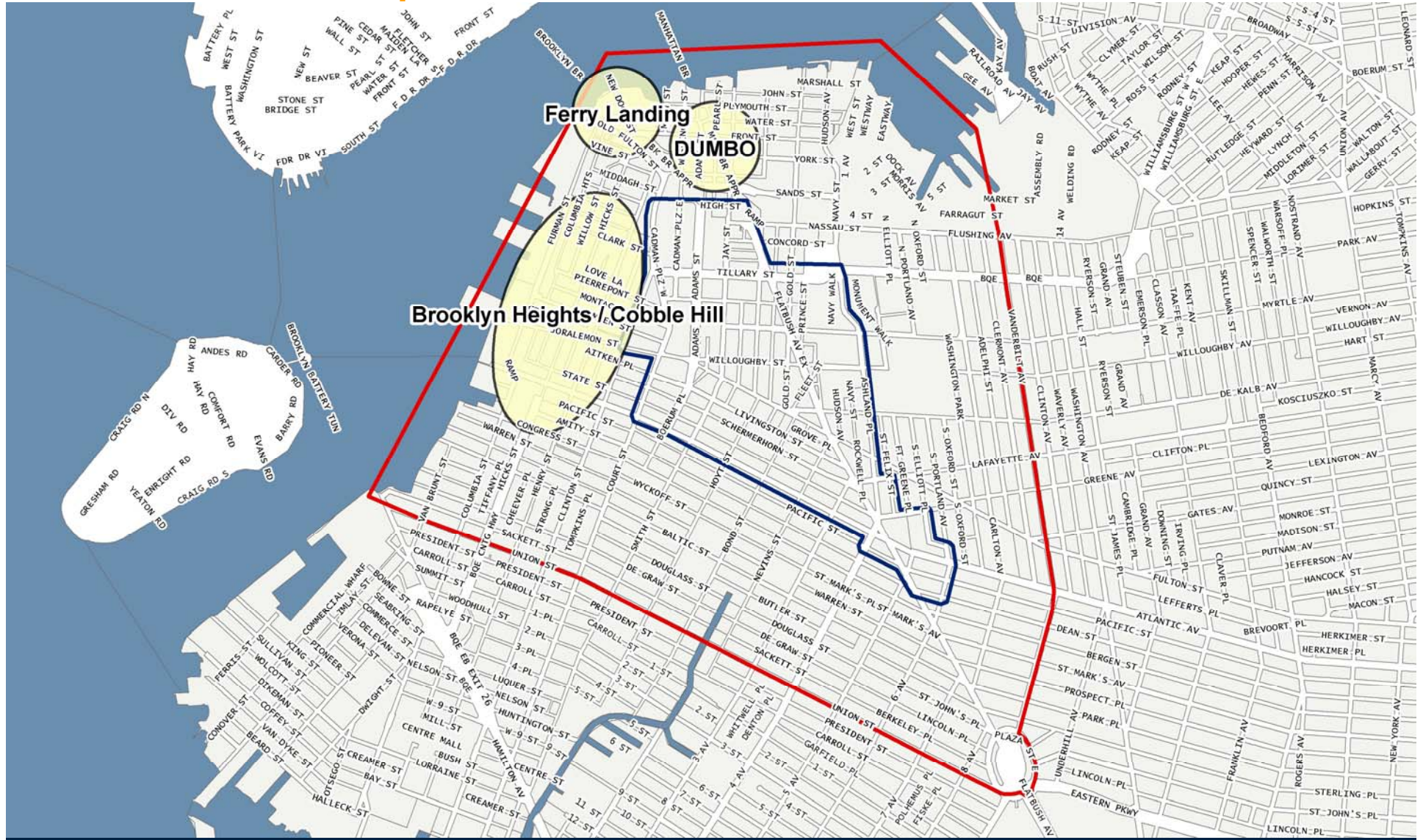
- Purpose: To Identify and Profile:
  - Travel Experiences
  - Perceptions
  - Expectations
  - Preferences
- Meeting Date: May 21<sup>st</sup>
  - Employer / Employee: 9:00 am
  - Resident / Community Groups: 6:00 pm



## Focus Group Findings

- Bus Disadvantage: Lack of Reliability / Speed, Especially East/West and Along Flatbush Avenue
- Additional Connections:
  - DUMBO
  - Brooklyn Bridge Park (when open)
  - MetroTech and Smith Street
- Pedestrian Improvements:
  - Flatbush/Atlantic/Fourth Avenues
  - Flatbush Avenue / Livingston Street
  - Jay / Tillary Streets
  - Adams / Tillary Streets
- Information / Technology Improvements:
  - Next Bus (real time information)
  - Keep Route / Schedule Info Up to Date (hard copy)
  - MetroCard Purchase Locations

# Survey and Focus Group Findings: Areas Requested For New/Additional Bus Service



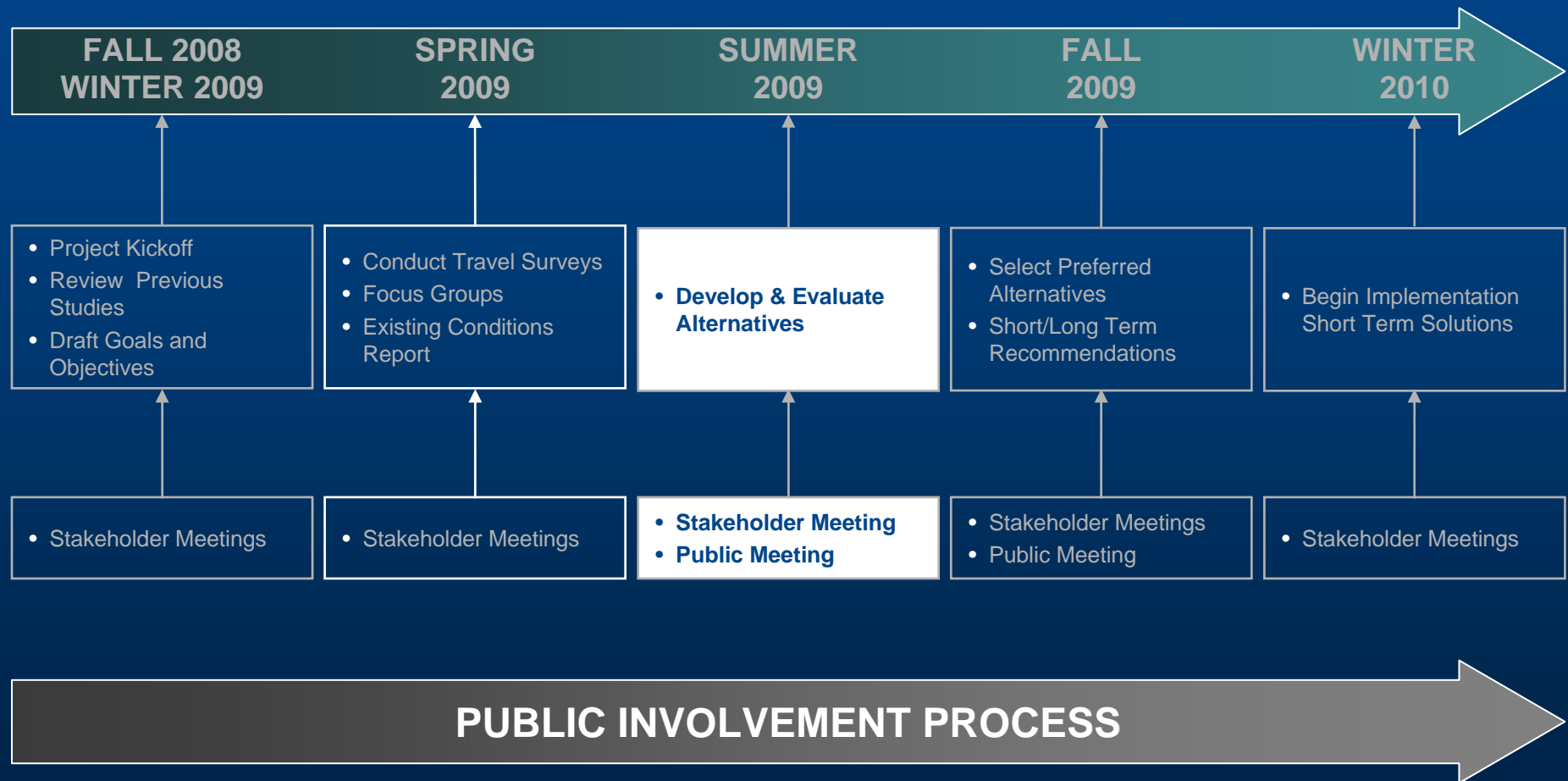


# Focus Group Map





# Schedule – Next Steps



# Questions and Discussion

# Downtown Brooklyn Surface Transit Circulation Study (DBSTCS)

Second Stakeholder Committee Meeting  
Wednesday June 17, 2009



**URS**



# **Downtown Brooklyn Surface Transit Circulation Study (DBSTCS)**

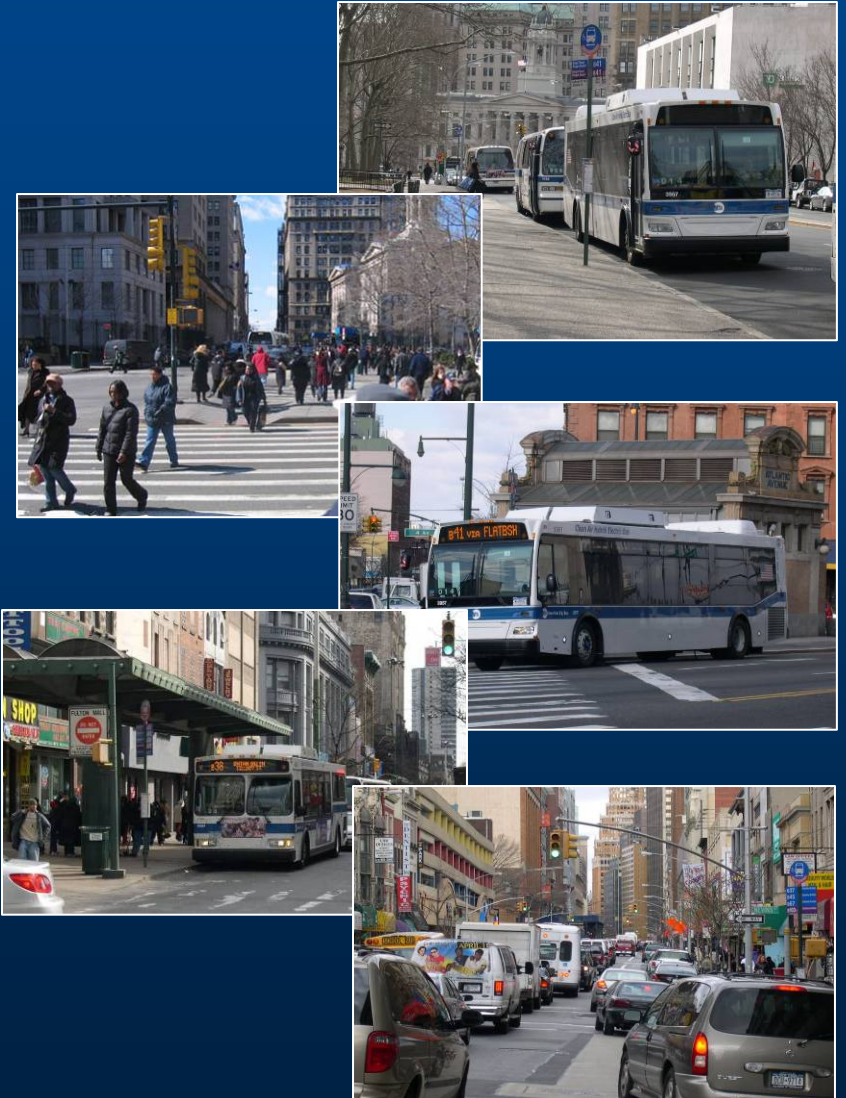
Public Meeting  
November 18, 2009



**URS**

# Agenda

- Introduction
- Project Goals and Objectives
- Review of Existing Conditions
- Future Development
- Improvement Options
- Questions and Discussion



# Project Goals and Objectives

## Goal #1

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## Objective

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# Project Goals and Objectives

## Goal #3

- Support the Economic Health of The Study Area

## Objective

- Increase Economic Attractiveness of Commercial- and Tourism-Based Land Uses



## Current Project Status

- Surveys Completed
- Existing and Future Conditions Report
- Development of Alternatives – In Process
- Public Involvement



## Project Approach

- Over 1,000 Survey, Focus Group and Stakeholder Interviews and/or Meetings
- Team Conducted Analysis of Ridership, Stop Locations, Existing Data on Traffic/Congestion Issues, Bus Service And Operations
- Steering Committee and Stakeholder Committee Reviews and Meetings
- Public Input



## Existing Conditions: Problems Identified

- Parking Enforcement Issues
- Traffic Congestion and Bus Reliability
- Passenger Experience
- Fare Collection
- Pedestrian Issues
- Planning for Growth





## Future Conditions

- Most Growth will Occur in Downtown Core Area
- New Growth in Fulton Ferry/Dumbo/Vinegar Hill
- More Than 13,000 New Residential Units and 2 Million Sq. Feet Additional Retail/Commercial Planned for 2015
- Daily Bus Ridership Expected to Increase by More Than 6,000 Passengers In Five Years

**Future Development: Residential Units**

**Development:**

- 0 - 50
- 51 - 300
- 301 - 650
- 651 - 1250
- 1251 - 2110

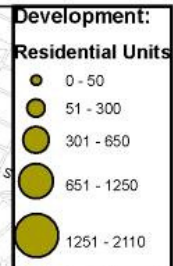
**Neighborhoods:** Fulton Ferry / DUMBO / Vinegar Hill, Navy Yard, Brooklyn Heights, Downtown Brooklyn, Columbia Street Waterfront, Fort Greene, Park Slope, Prospect Heights, Gowanus.

**Streets:** WALL ST, WATER ST, FRONT ST, OLD SLIP, F D R DR, F D R DR, BROOKLYN BR, MANHATTAN BR, PLYMOUTH ST, JOHN ST, WEST ST, EASTWAY, GEE AV, KAY AV, JAY AV, DIVISION AV, CLYMER ST, ROSS ST, BROOKLYN QUEENS EXWY, HOOPER ST, PENN ST, LYNCH ST, UNION AV, GERRY ST, PARK AV, VERNON AV, HART ST, MARCY AV, LAFAYETTE AV, BEDFORD AV, GATES AV, MONROE ST, PUTNAM AV, HANCOCK ST, MAON ST, HERKIMER ST, ST JOHN'S PL, STERLING PL, LINCOLN PL, PARK PL, PROSPECT PL, ST MARK'S AV, ATLANTIC AV, FULTON ST, GRAND AV, QUINCY ST, CLIFTON PL, DE KALB AV, MYRTLE AV, SPENCER ST, WARSOFF PL, WALLABOUT ST, HEYWARD ST, LEE AV, HEMES ST, WYTHE AV, 14 AV, WELDING RD, WAVERLY AV, CLINTON AV, WASHINGTON AV, GREENE AV, ST JAMES PL, DEAN ST, BERGEN ST, PACIFIC ST, BUTLER ST, PARK'S PL, FISCHE PL, 7 AV, CARROLL ST, 1 ST, 2 ST, 3 ST, 4 ST, 5 ST, 6 ST, 7 ST, 8 ST, 9 ST, 10 ST, 11 ST, 12 ST, 13 ST, 14 ST, 15 ST, 16 ST, 17 ST, 18 ST, 19 ST, 20 ST, 21 ST, 22 ST, 23 ST, 24 ST, 25 ST, 26 ST, 27 ST, 28 ST, 29 ST, 30 ST, 31 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NEW YORK CITY  
DOT

# Downtown Brooklyn Surface Transit Circulation Study



STERLING PL NES  
ST JOHN'S PL

Age Group	Total (%)	Male (%)	Female (%)	White (%)
0-14	15.0	14.5	15.5	15.0
15-24	18.0	17.5	18.5	18.0
25-34	22.0	21.5	22.5	22.0
35-44	20.0	19.5	20.5	20.0
45-54	18.0	17.5	18.5	18.0
55-64	15.0	14.5	15.5	15.0
65-74	10.0	9.5	10.5	10.0
75+	5.0	4.5	5.5	5.0



**Future Development: Total Square Feet**

**Development:**

- 0 - 50,000
- 50,001 - 150,000
- 150,001 - 350,000
- 350,001 - 700,000
- 700,001 - 2,677,000

**Neighborhoods:**

- Fulton Ferry / DUMBO / Vinegar Hill
- Navy Yard
- Brooklyn Heights
- Downtown Brooklyn
- Columbia Street Waterfront
- Fort Greene
- Park Slope
- Prospect Heights
- Gowanus

**Scale:** 0 0.25 0.5 1 Miles

**North Arrow:** N

**Map Labels:** WALL ST, WATER ST, FRONT ST, OLD SLIP, F.D.R. DR, BROOKLYN BR, MANHATTAN BR, RAMP, BK BR APPR, PLYMOUTH ST, JOHN ST, WEST ST, EASTWAY, GEE AV, JAY AV, DIVISION AV, CLYMER ST, ROSS ST, WYTHE AV, BROOKLYN QUEENS HWY, HOOPER ST, HENES ST, LEV AV, PENN ST, LYNCH ST, UNION AV, GERRY ST, PARK AV, WARSOFF PL, SPENCER ST, MYRTLE AV, VERNON AV, HART ST, DE KALB AV, LAFAYETTE AV, MARCY AV, BEDFORD AV, LEXINGTON AV, MONROE ST, PUTNAM AV, HANCOCK ST, MACON ST, HERKIMER ST, STERLING PL, ST JOHN'S PL, LINCOLN PL, PARK PL, PROSPECT PL, ST MARK'S AV, ATLANTIC AV, FULTON ST, DEAN ST, BERGEN ST, PACIFIC ST, 6 AV, ST JOHN'S PL, BERKELEY PL, FESKE PL, 7 AV, 5 ST, 4 ST, 3 ST, 2 ST, 1 ST, CARROLL ST, 4 AV, 5 AV, 6 AV, 7 AV, 8 AV, 9 AV, 10 AV, 11 AV, 12 AV, 13 AV, 14 AV, 15 AV, 16 AV, 17 AV, 18 AV, 19 AV, 20 AV, 21 AV, 22 AV, 23 AV, 24 AV, 25 AV, 26 AV, 27 AV, 28 AV, 29 AV, 30 AV, 31 AV, 32 AV, 33 AV, 34 AV, 35 AV, 36 AV, 37 AV, 38 AV, 39 AV, 40 AV, 41 AV, 42 AV, 43 AV, 44 AV, 45 AV, 46 AV, 47 AV, 48 AV, 49 AV, 50 AV, 51 AV, 52 AV, 53 AV, 54 AV, 55 AV, 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## Future Conditions: Trip Generation Results

Additional 2011 Trips							
Use	Study Area	AM Peak Hour		Midday Peak		PM Peak Hour	
		Bus	Total	Bus	Total	Bus	Total
Total	Primary	155	3,068	323	4,974	306	4,914
	Secondary	20	420	27	564	29	604
	<b>Total</b>	<b>175</b>	<b>3,488</b>	<b>350</b>	<b>5,538</b>	<b>335</b>	<b>5,518</b>

Additional 2015 Trips							
Use	Study Area	AM Peak Hour		Midday Peak		PM Peak Hour	
		Bus	Total	Bus	Total	Bus	Total
Total	Primary	677	9,956	1,573	15,771	1,565	15,747
	Secondary	605	9,061	928	13,703	980	13,535
	<b>Total</b>	<b>1,282</b>	<b>18,626</b>	<b>2,501</b>	<b>29,474</b>	<b>2,545</b>	<b>29,282</b>



## Potential Improvement Options

- Street Operations / Bus Reliability
- Bus Stop Access
- Passenger Experience
- Fare Collection
- Growth Areas

# Street Operations / Bus Reliability: Bus Priority

- Bus Priority
  - Queue Jumper / Transit Signal Priority
  - Extend Bus-Only Lane Hours
  - Add Additional Bus-Only Lanes
  - Bus-Only Corridors



Bus Only Lane  
34<sup>th</sup> Street, Manhattan

## Street Operations / Bus Reliability (Continued)

- Parking Enforcement
- Consolidate Bus Stops
- Sawtooth Bus Parking
- Transit One-Way Couplets
- Circulator and/or Shuttle



Sawtooth Bus Stop  
IKEA Plaza, Brooklyn

# Pre-Boarding Experience

- Pedestrian Prioritization
  - Lead Pedestrian Intervals
  - Longer Pedestrian Phases
  - Shorter Pedestrian Crossings
  - Median
  - Closing Travel Lanes
  - Pavement Painting



Curb Extension  
Mulry Square, Manhattan



Median Refuge Island  
Vanderbilt Avenue, Brooklyn



# Pre-Boarding Experience

- Improve Information
  - Signing of Bus Stops
  - Wayfinding Signage
  - Bus Arrival Time Information
  - New Mobility Hubs
- Shelters at Stops
- Shelters Further From Curbs
- Seating at Stops
- Schedule Posting / Managing Date of Schedule



Real-Time Bus Arrival Information  
34<sup>th</sup> Street, Manhattan



Typical NYCT Bus Shelter  
23<sup>th</sup> Street & 8<sup>th</sup> Avenue, Manhattan

# Fare Collection

- MetroCard Purchasing
  - On-Street Ticket Vending Machines
  - Information About Nearby Vendors
- Time of Day Pricing
- Smartcards
- Off-Board Fare Collection



On-Street Fare Collection Machines,  
Pelham Pkwy & White Plains Road, The Bronx

## Growth Areas

- Extend Existing Service
- Splicing Service
- Additional Service



# Questions and Discussion of Improvement Options



# **Downtown Brooklyn Surface Transit Circulation Study (DBSTCS)**

Public Meeting  
November 18, 2009



**URS**