

Liberty State Park Circulator

Cost-Benefit Analysis

FINAL REPORT

Prepared for:

City of Jersey City, New Jersey

in collaboration with



Prepared by:

Sam Schwartz Engineering, D.P.C.

in association with

Stump/Hausman Partnership



May 31, 2013

LIBERTY STATE PARK CIRCULATOR

COST-BENEFIT ANALYSIS

FINAL REPORT

May 31, 2013

This study was funded in part with federal funds from the North Jersey Transportation Planning Authority and a 20% local match provided by the City of Jersey City. Sam Schwartz Engineering was hired by the City of Jersey City to conduct the Liberty State Park Circulator Cost-Benefit Analysis.



This report has been prepared as part of the North Jersey Transportation Planning Authority's Subregional Studies Program with financing by the Federal Transit Administration and the Federal Highway Administration of the U.S. Department of Transportation. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or its use thereof.

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

May 31, 2013

Dear Friends,

Liberty State Park is a treasure to Jersey City, offering vast open space, recreational opportunities, and spectacular views, particularly of its namesake, the Statue of Liberty. Liberty State Park is home to many popular destinations including the Liberty Science Center, the historic Central Railroad of New Jersey Terminal, and the Interpretive Center. Each year, millions of people visit the park - the largest green space in Jersey City, the second most populous city in the state - making the park not just a local destination but one that attracts visitors from around the state, the country, and the world.

The findings of the Liberty State Park Circulator Cost-Benefit Analysis are an important first step in restoring transit service to destinations within Liberty State Park. While the park's vast size is an asset, it poses a challenge to visitors who cannot or choose not to drive to the park. A circulator would build on the City's public transportation network that currently serves the edges of the park and would allow visitors to explore the many destinations in the park without their cars. Not only is transit in the park good for the environment, it is a matter of equity. A circulator would make the park more accessible to the 40% of Jersey City households that do not have access to a vehicle.

The Liberty State Park Circulator Cost-Benefit Analysis explored potential options for transit service in the park. The study identified four feasible options for transit service, which were the result of an extensive effort to understand Liberty State Park's unique characteristics and the technical expertise of the consultant team - Sam Schwartz Engineering and Stump/Hausman. Furthermore, this study brought together various stakeholders who were integral in shaping the final report. The consultant team's innovative approach and the collaborative nature of the study process make the findings of this study a valuable guide for future efforts to bring transit back to Liberty State Park.

A handwritten signature in blue ink, which appears to read "Robert D. Cotter". The signature is fluid and cursive.

Robert D. Cotter, PP, FAICP
Director

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	I
APPENDICES.....	V
1 PROJECT INTRODUCTION.....	1-1
1.1 Context.....	1-1
1.2 Background.....	1-2
1.3 Scope of Work	1-4
2 EXISTING CONDITIONS.....	2-1
2.1 Current Access and Circulation	2-1
2.2 Existing Park Attractions	2-9
2.3 Park Visitation	2-13
2.4 Surrounding Community	2-17
2.5 Environmental Considerations	2-21
2.6 Best Practices: Park Circulators	2-22
2.7 Travel Survey.....	2-28
3 FUTURE CONDITIONS.....	3-1
3.1 Modeling Process	3-2
3.2 Regional Attractions Visitors: Liberty Science Center Visitors.....	3-5
3.3 Regional Attractions Visitors: Statue of Liberty/Ellis Island Ferry Visitors.....	3-7
3.4 Local Recreational Visitors	3-11
3.5 Other Potential Markets	3-22
3.6 Future Year Circulator Ridership	3-23
4 PURPOSE AND NEED STATEMENT.....	4-1
4.1 Purpose of Liberty State Park Circulator.....	4-1
4.2 Need For Liberty State Park Circulator	4-1
4.3 Goals and Objectives.....	4-2
5 OPTIONS FOR CIRCULATOR SERVICE.....	5-1
5.1 Previous Bus Service.....	5-1
5.2 Primary Attractions For Potential Liberty State Park Circulator Ridership	5-4
5.3 Service Corridors	5-12
5.4 Potential Service Vehicles	5-15
5.5 Preliminary Service Guidelines	5-20
5.6 Short List of Service Options	5-22
6 SERVICE OPTION EVALUATION	6-1
6.1 Liberty State Park Service Options	6-1
6.2 Ridership Estimates	6-10
6.3 Potential Impacts and benefits.....	6-15
6.4 Capital and Operating Costs.....	6-19
6.5 Evaluation Matrix	6-26
7 IMPLEMENTATION.....	7-1
7.1 Funding Sources.....	7-1
7.2 Implementation Strategy	7-8

8	PUBLIC INVOLVEMENT	8-1
8.1	Project Website.....	8-1
8.2	Technical Advisory Committee (TAC).....	8-2
8.3	Public Meetings.....	8-3
9	CONCLUSIONS AND RECOMMENDATIONS	9-1
9.1	CONCLUSIONS.....	9-1
9.2	RECOMMENDATIONS.....	9-2

ACKNOWLEDGEMENTS

City of Jersey City

Mayor

The Honorable Jerramiah T. Healy

City Council

Peter Brennan, Council President
Viola Richardson, Councilwoman-At-Large
Rolando R. Lavarro, Jr., Councilman-At-Large
Michael Sottolano, Ward A Councilman
David Donnelly, Ward B Councilman
Nidia Lopez, Ward C Councilwoman
William Gaughan, Ward D Councilman
Steven Fulop, Ward E Councilman
Diane Coleman, Ward F Councilwoman

Department of Housing, Economic Development and Commerce

Carl Czaplicki, Director

Division of City Planning

Robert D. Cotter, FAICP, PP, Director
Naomi Hsu, AICP, PP, Senior Transportation Planner and Project Manager

Technical Advisory Committee

Central Parking

Will Rhodin

City of Jersey City Division of City Planning

Maryann Bucci-Carter, AICP, PP
Jeff Wenger, AICP

City of Jersey City Division of Engineering

Chuck Lee, PE
Lee Klein, PE, PTOE

City of Jersey City Mayor's Office

Doug Greenfeld, AICP, PP

Educational Arts Team (Camp Liberty)

Carlos Ponton
Carmine Tabone

EZ Ride (Meadowlink)

Avnish Gupta, Esq
Krishna Murthy
Nora Shepard, AICP, PP

Friends of Liberty State Park

Sam Pesin
Dorcey Winant
Eliza Wright

Hudson County Division of Engineering

John Lane

Hudson County Division of Planning

Massiel Ferrara, AICP, PP
Francesca Giarratana
David Ginsberg
Megan Massey, AICP, PP

Hudson Transportation Management Association

Jay DiDomenico

Jersey City Economic Development Corporation

Dan Frohwirth

Liberty Historic Railway

Bill McKelvey
Martin Robins

Liberty Landing Marina

Kenneth Keane
Ron TenEyck

Liberty National Golf Club (represented by Connell Foley)

Robert Verdibello

Liberty Science Center

Connie Claman
Jeff Sasson

Liberty State Park

Jonathan Luk, AICP, GISP
Robert Rodriguez

Marine Engineers' Beneficial Association

Chris Guerra

NJ Department of Environmental Protection – Division of Parks and Forestry

Mark Texel
John Trontis, CPRP

NJ Department of Transportation – Bureau of Capital Program Development

Vinay Varadarajan

Tom Wospil

NJ TRANSIT

Jeremy Colangelo

Bill Lawson

North Jersey Transportation Planning Authority

Bob Diogo

Scott Rowe, AICP, PP, CNU-A

Elizabeth Thompson, AICP, LEED GA

Pole Position

Eyal Farage

Port Authority of NY and NJ

Lou Venech

Save Ellis Island

Janis Calella

Statue Cruises

Rafael Abreu

Michael Burke

US National Park Service

John Hnedak

Jason Newman

Other Contributors

APTA

Ed Tennyson

City of Jersey City Division of Communications

Carolyn Hutchins

Jennifer Morrill

Henry Nieves

Christine Wiltanger

Federal Highway Administration

Lewis Grimm

David Payne

Federal Transit Administration

Adam Schildge

Liberty Historic Railway

Bill Vigrass

Liberty Science Center

Laurel Barbot

Yesha Patel

Allison Sillence and all the volunteers who assisted with survey implementation

Liberty State Park

Michael Timpanaro

Seashore Trolley Museum

Jim Schantz

TIG/m, LLC

Brad Read

US National Park Service

Peter Steele

Consultant Team

Sam Schwartz Engineering, DPC

Dan Berkowsky, EIT

Jasie Chiou

Daniel Garwood

Melanie Harris

John McCormack, PE

Al Meyer, AICP

Michael F. Monteleone, AICP, PP

Laura Podolnick

Kate Sargent, AICP

Harris Schechtman

Stump/Hausman Partnership

Joshua D. Curley

Kenneth J. Hausman, PE

APPENDICES

(Under Separate Cover)

Appendix A – Liberty State Park Survey Forms

Appendix B – Technical Advisory Committee (TAC) Meeting Materials

Appendix B1 - TAC Meeting #1

Appendix B2 - TAC Meeting #2

Appendix B3 - TAC Meeting #3

Appendix B4 - TAC Meeting #4

Appendix B5 - TAC Meeting #5

Appendix B6 - TAC Meeting #6

Appendix B7 - TAC Meeting #7

Appendix C – Public Meeting Materials

Appendix C1 - Public Meeting #1

Appendix C2 - Public Meeting #2

1 PROJECT INTRODUCTION

1.1 CONTEXT

Liberty State Park is the most visited park in the state of New Jersey and the second most visited state park in the nation. The park, deemed “New Jersey’s gift to the Nation”, opened in 1976 just in time for the United States bicentennial celebrations. Located in Jersey City, it is adjacent to the New York Harbor offering spectacular views of Ellis Island, the Statue of Liberty, and the skylines of Manhattan and Jersey City. Liberty State Park is by far the largest park in Jersey City covering approximately 1,200 acres with approximately 600 acres consisting of uplands (approximately 250 of these acres in the Interior Park area are closed to the public), open fields, forests, and wetlands with the remaining approximately 600 acres as open water on the Upper New York Bay/Hudson River. The park offers visitors open space and unparalleled ecological and wildlife opportunities located in an urban setting. Within Liberty State Park are several popular destinations including Liberty Science Center, Central Railroad of New Jersey (CRRNJ) Terminal, and the Interpretive Center. Because of these unique characteristics, the park is visited by local residents, as well as tourists from New Jersey, across the country, and around the world.

Jersey City is the second most-populous city in the state and a regional employment center with a growing residential population. Increasing mass transit opportunities within the park would benefit residents and visitors alike. Over five million visitors make trips to Liberty State Park each year. Liberty State Park is a local, regional, national, and international destination with a ferry connection to the Statue of Liberty (designated National Monument and United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site) and Ellis Island. In 2005, approximately 20 percent of visitors to the Statue of Liberty and Ellis Island (roughly 600,000 people) arrived by ferry departing from Liberty State Park. The Liberty Science Center on the park’s western edge is a regional destination with approximately 700,000 annual visitors. The landmark CRRNJ Terminal located on Liberty State Park’s waterfront is another regional draw.

While the park’s waterfront location is an asset, it is also a challenge, since the park is situated on the periphery of Jersey City and not in the heart of the City. The park is surrounded by water on three sides, limiting access mainly to the western edge. The Liberty State Park station of the Hudson-Bergen Light Rail (HBLR) is located on the western edge of the park, along with a bus stop served by NJ TRANSIT bus route #6. On the park’s northern edge is a stop for Liberty Landing ferry service between Downtown Jersey City and Lower Manhattan. However, there is currently no regular public transportation service into or between destinations within Liberty State Park. Furthermore, the park’s large size means that the distance between many destinations within the park is beyond a reasonable walking distance, generally considered to be less than a half mile. A high percentage of Jersey City’s residents do not have access to a private automobile and rely on public transportation. Even for those with a vehicle, parking in the park is limited and not expected to increase.

Beginning in 2001, NJ TRANSIT operated a shuttle that connected the HBLR station and destinations in Liberty State Park. Due to budget constraints, it was discontinued in 2010. In 2010 and 2011, Hudson Transportation Management Association (TMA) operated a peak summer shuttle service. However, without a dedicated funding stream, the Hudson TMA discontinued shuttle service after the summer of 2011. In the summer of 2012, a private operator, Liberty Loops, provided a short-lived peak summer shuttle service in the park.

The purpose of the Liberty State Park Circulator Cost-Benefit Analysis is to understand the existing and future need for a circulator that serves destinations in and near Liberty State Park and develop

concepts for feasible transportation improvements that meet that need. Jersey City's current population is highly transit-dependent and is anticipated to remain transit-dependent as the City's population grows.

1.2 BACKGROUND

Throughout the 19th and early 20th centuries, the land which is now home to Liberty State Park was an industrial area that was the nexus of an expansive transportation network that moved both passengers and freight. The CRRNJ Terminal still stands today and is a major attraction on the northern end of what is now Liberty State Park. Figure 1-1 depicts the historic CRRNJ Terminal and adjacent port facilities and the scores of rail lines that served them. The CRRNJ transported over half of the immigrants who arrived via Ellis Island between 1892 and 1920 to their new homes throughout the United States.

As railroads were replaced by other means of transportation, and as industry moved out of Jersey City, the area declined. The CRRNJ went bankrupt in the early 1960s and ceased to operate passenger service to the terminal. Time took its toll as buildings on the site were left vacant and began to decay and people used the abandoned land as a dump site. Citizen activists led by Morris Pesin, Audrey Zapp, and Theodore Conrad spearheaded a grassroots campaign between 1958 and 1976 to win citizen and political support for establishing a park on the former railroad site. In 1964, President Lyndon Johnson declared Ellis Island a National Monument. He promised \$6 million to beautify not only Ellis Island, but also the area of Jersey City behind it that included the land of what would eventually become Liberty State Park. A year later, in 1965, the City of Jersey City gave the State of New Jersey 156 acres, and this land became the foundation of Liberty State Park. In 1976, New Jersey Governor Brendan Byrne pledged \$1.2 million to have Liberty State Park ready for the nation's bicentennial celebrations. Liberty State Park was officially dedicated on June 14, 1976. In contrast to Figure 1-1, Figure 1-2 illustrates how Liberty State Park in its current setting has been dramatically transformed from an industrial rail yard into open space using millions of cubic yards of clean top soil.

**Figure 1-1
Historic Central Railroad of New Jersey Terminal (August 1941)**



Photo Credit: New York Historical Society (courtesy of Tom Flagg)

**Figure 1-2
Liberty State Park Today**



1.3 SCOPE OF WORK

The existing conditions were assessed to determine current baseline data including the multi-modal transportation network, parking, existing park attractions, and park visitation. The assessment also examined socio-economic data for the surrounding communities in Hudson County, environmental considerations, and best practices for transit circulators serving parks throughout the country. A detailed travel survey was used as input to the travel demand model for projecting future transit ridership potential for the park. The travel demand model was developed for this study to determine the current and future (2020 and 2035) transit markets for Liberty State Park and the surrounding area. The purpose and need for the Liberty State Park circulator was determined, which justified that the remainder of the study would be conducted.

Potential modes and corridors for service were considered based on analyses of activity centers within the park, ridership on the previous park circulator service, and other considerations that pertain to operating the service in a park environment. Initial screening and analysis led to the elimination of modes of transit that were judged to be inappropriate for the park setting and scale of service being considered. Modes of transit retained for further study, in combination with selected corridors for service, were further evaluated. Detailed descriptions were developed for the service options that were retained including service headways, routes/alignments, bus stop/station alignments, and number of vehicles in revenue service. For each service option, projected ridership, qualitative assessment of potential impacts within the park, and related benefits were evaluated. Capital cost estimates were developed for each service option including annual operating and maintenance costs. The estimated

costs associated with each service option were compared to associated benefits and potential impacts. Strategies were evaluated for implementing the transit options that have been developed to serve Liberty State Park. This included a review of potential funding sources, selection of a lead agency, and implementation timeframes based on likely funding sources available to cover capital and operating costs. During the course of the study, seven meetings were held with the Technical Advisory Committee (TAC) and two meetings were held with the public. A study-specific website was created and updated throughout the study to keep the public informed on study progress.

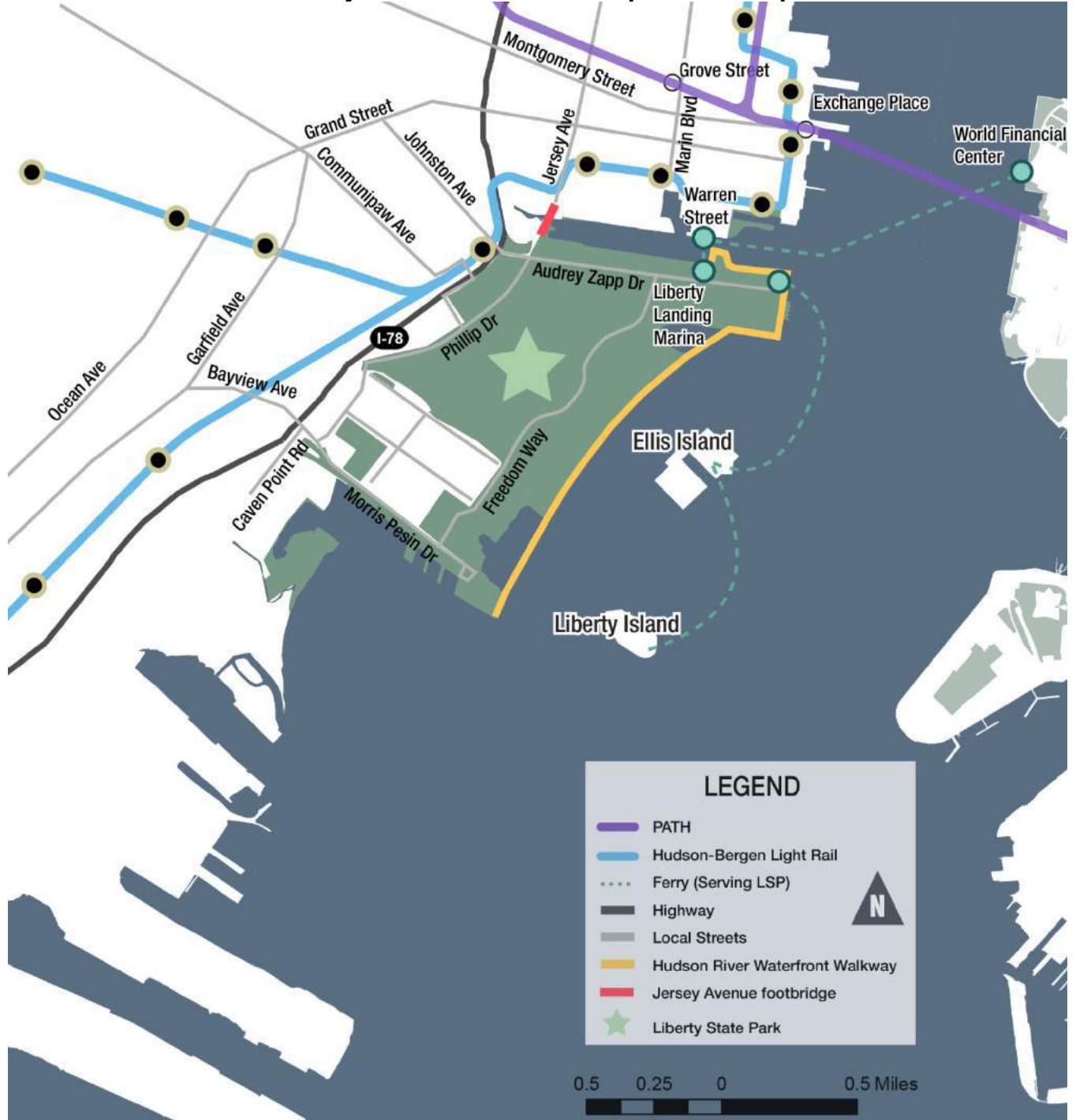
2 EXISTING CONDITIONS

A thorough review of information relevant to performing a cost-benefit analysis of transit options for Liberty State Park was conducted. This included an assessment of current access and circulation, an inventory of parking and fees, existing park attractions, and park visitation. Detailed socio-economic data were collected for the surrounding communities in Hudson County, including data on household income, race, transit use for work trips, and auto ownership. Environmental considerations were identified including remediation of the park and Section 4(F) review. Best practices for transit circulators serving parks throughout the country were identified and described as they would relate to Liberty State Park. A detailed travel survey was undertaken to better understand travel characteristics of visitors to Liberty State Park. The survey data were used as input to the travel demand model for projecting future transit ridership potential for the park.

2.1 CURRENT ACCESS AND CIRCULATION

Several modes of transportation provide access to the edge of Liberty State Park, including roadways, light rail, bus, ferry, and bicycle and pedestrian facilities, as shown in Figure 2-1 and discussed in this section. This section includes a discussion on the location, quantity, and cost of parking within Liberty State Park.

Figure 2-1
Liberty State Park Area Transportation Map



2.1.1 ROADWAY ACCESS

The primary regional vehicular access route to Liberty State Park is the Newark Bay Extension of the New Jersey Turnpike (I-78) at Interchange 14C. Alternately, local vehicular access is available via Johnston Avenue, Bayview Avenue and Linden Avenue East by way of Caven Point Road. The main entrances to the park are along Audrey Zapp Drive and Morris Pesin Drive. Average monthly traffic volumes for January 2011 through December 2012 (Table 2-1) indicate that more traffic enters the park on Audrey Zapp Drive throughout the year and the highest total entering volumes were observed in July 2011. Internal circulation within the park comprises a road network effectively made up of a loop including Freedom Way, Audrey Zapp Drive, Phillip Drive, and Morris Pesin Drive. Each of these roads accommodates two-way traffic with one travel lane in each direction.

Table 2-1
Liberty State Park Daily Average Entering Traffic Volumes by Month
(January 2011 through December 2012)

Month	Morris Pesin Drive	Audrey Zapp Drive
Jan-11	713	1,053
Feb-11	792	1,238
Mar-11	1,224	1,912
Apr-11	1,072	1,674
May-11	1,113	2,206
Jun-11	1,936	1,974
Jul-11	2,056	2,446
Aug-11	1,623	1,493
Sep-11	1,593	1,891
Oct-11	1,435	1,568
Nov-11	1,057	1,111
Dec-11	735	759
Jan-12	585	668
Feb-12	245	185
Mar-12	422	602
Apr-12	1,511	1,440
May-12	1,397	1,359
Jun-12	1,966	2,142
Jul-12	1,995	2,255
Aug-12	1,624	1,655
Sep-12	1,625	1,490
Oct-12	459	493
Nov-12	0*	86
Dec-12	0*	200
Source: Liberty State Park		
** Closed due to Hurricane Sandy		

2.1.2 PUBLIC TRANSPORTATION

2.1.2.1 HUDSON-BERGEN LIGHT RAIL (HBLR)

The Liberty State Park station of the HBLR is located at Communipaw and Johnston Avenues just outside the park. This station opened for service in the year 2000 and is served by both lines of the HBLR, the West Side-Tonnelle Avenue and 8th Street-Hoboken lines. Adjacent to this station is a large park and ride lot that includes approximately 1,300 spaces of which approximately 850 (65 percent) are reserved for permit parking primarily used by commuters. On a typical weekday, approximately 900 (70 percent) of the available spaces are utilized. Prior to the recession in 2008, the daily spaces (i.e., non-permit parking) were fully utilized.

The HBLR system, at just over 20 miles, connects Bayonne, Jersey City, Hoboken, and municipalities in northern Hudson County along the Hudson River waterfront. The system includes 24 stops and connects to regional transit including the PATH system, NJ TRANSIT commuter rail, and numerous bus routes. Average weekday daily ridership on the HBLR system is approximately 22,000 passengers with approximately 2,600 daily passenger boardings at the Liberty State Park HBLR Station in 2011. Service operates daily from approximately 5:00 AM to 2:00 AM, with longer headways over the weekend. A one-way adult ticket costs \$2.10 and is valid for 90 minutes from validation.

2.1.2.2 PATH

The PATH train is a heavy rail rapid transit system that connects Newark, Jersey City, Harrison, Hoboken, and Manhattan. Four stops, including Newport, Exchange Place, Grove Street, and Journal Square, are within the boundaries of Jersey City. None of these stops are close enough to Liberty State Park that visitors could be expected to walk from them. However, there is a connection between the PATH system and the HBLR at Exchange Place, which is an 8-minute ride to the Liberty State Park on the light rail. PATH operates 24-hours per day. A single ride on PATH costs \$2.25. Annual ridership on the PATH system is approximately 76.6 million people.

2.1.2.3 BUS

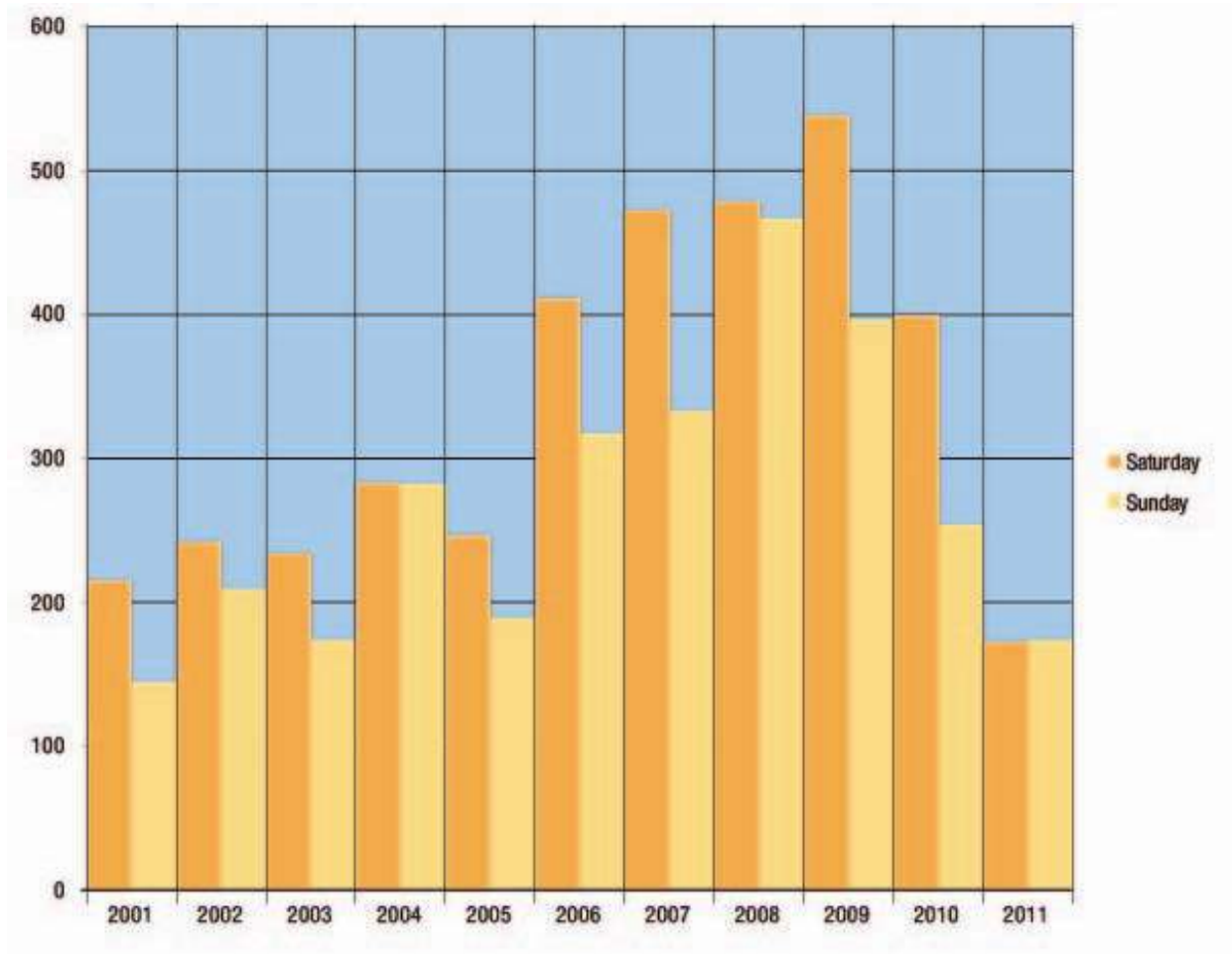
Jersey City has a robust bus network, and several of these buses serve areas close to the perimeter of Liberty State Park. Others connect with the HBLR line and facilitate access to the park via a transfer between systems. NJ TRANSIT #6 serves the HBLR Liberty State Park station on weekdays and connects to Journal Square. The #6 bus does not stop at the Liberty State Park HBLR station on the weekends. Bus fare for travel within one zone is \$1.50.

There have been several attempts at running bus service within Liberty State Park. The NJ TRANSIT #305 served Liberty State Park from January 2001 through May 2010 when it was cancelled because of budget shortfalls and low ridership. The route served the Liberty State Park HBLR station and destinations throughout the park including the Liberty Science Center, Liberty Landing marina, CRRNJ Terminal, and the park office. The #305 bus was branded under the WHEELS program and operated every day for the first two years of service in 2001 and 2002. Starting in 2003, service was reduced to weekends from January through March and was operated every day from April through December. This service was operated on 30 minute headways on all days between 2001 and 2005 and was increased to 40 minutes on weekdays in 2006. The service cost a \$1.00 cash fare per passenger paid to the driver for unlimited daily rides.

In June 2010, the Hudson Transportation Management Association (TMA) took over the service to replace the cancelled #305. It operated free of charge on weekends through Labor Day with a headway of 35 minutes. This service was also operated on weekends in 2011 during the summer months with a

headway of 30 minutes. In 2011, the cost to ride was a \$1.00 cash fare per passenger paid to the driver for unlimited daily rides. The average weekend ridership in August for every year between 2001 and 2011 is provided in Figure 2-2. August was selected for the ridership comparison as it is the only summer month in which data were available for the entire 11-year period between 2001 and 2011 when the park was served by a transit circulator. The data indicates ridership peaked in 2008 for Sunday and 2009 for Saturday.

Figure 2-2
Average August Weekend Ridership
Liberty State Park Shuttle (2001 through 2011)



Sources: NJ TRANSIT and Hudson TMA

Another NJ TRANSIT bus route, the #981, operated between Port Liberte and the Grove Street PATH station. This service was also a casualty of the May 2010 NJ TRANSIT budget cuts. This service provided access to the fringe of the southern side of the park and to the industrial park located adjacent to the southwest quadrant of the park. The routing of the #305 and #981 buses are provided in Figure 2-3.

**Figure 2-3
Former Bus Routes Serving Liberty State Park**



2.1.2.4 FERRY

Statue Cruises operates ferry service between Liberty State Park and Ellis and Liberty Islands throughout the year. This ferry is provided for the National Park Service to serve visitors of the national monuments. All visitors to the Statue of Liberty and Ellis Island must use the ferry service from either Liberty State Park or Battery Park in Manhattan. From Liberty State Park's ferry slips, the service operates daily about every 40 minutes from 8:30 AM to 4:30 PM.

Liberty Landing Ferry operates service between Liberty Landing Marina in the park, Warren Street in Downtown Jersey City, and the World Financial Center Terminal in Manhattan. On weekdays, a ferry departs Liberty Landing Marina every half hour from 6:00 AM to 8:30 PM. On Saturdays and Sundays, a ferry departs Liberty Landing Marina every half hour from 9:00 AM to 7:30 PM. The fare between Warren Street and Liberty Landing Marina is \$2.00 one way.

Statue Cruises and the Liberty Landing Ferry provide service to the 9/11 Memorial in Manhattan from Liberty State Park. Tickets for the Memorial can be purchased as a package on the Statue Cruises website.

2.1.3 BICYCLE AND PEDESTRIAN

In addition to the City street network, pedestrian and bicycle access to the park is provided via the Hudson River Waterfront Walkway on its periphery. The pedestrian bridge at the end of Jersey Avenue crosses over the Mill Creek and connects to Phillip Drive in the park. The Hudson River Waterfront Walkway is being developed piecemeal along the eastern coast of New Jersey with the hope that it will someday stretch an uninterrupted 18.5 miles between the Bayonne and George Washington Bridges.

Within the park, there is a recreational hiking and biking trail parallel to Freedom Way. This trail connects the Hudson River Waterfront Walkway (called Liberty Walk in Liberty State Park), the Green Park, the playground and picnic area, and the Columbus Monument.

The Liberty Walk, designed with decorative lampposts and pavers, spans the eastern and northern edges of the park, terminating at Liberty Landing Marina. At that point, it becomes a narrower paved path that connects with the Jersey Avenue footbridge to the west. It also connects to the Hudson River Waterfront Walkway that provides access along the southern portion of the park and points further south including Liberty National Golf Course and Porte Liberte that are located outside of the park, and Caven Point Beach which is a stand alone section of Liberty State Park.

2.1.4 PARKING

There are a total of approximately 3,100 parking spaces within Liberty State Park. There are nine lots of varying sizes spread throughout the park. The Marina lot, the Liberty Science Center Lot, and the Ferry Lot charge a \$7.00 fee, the Boat Launch Lot requires a permit, and all other lots throughout the park are free of charge. The CRRNJ Terminal Short-term lot has a strict limit of two hours. A summary of the capacity and costs are provided in Table 2-2. The Liberty State Park station park and ride lot just outside the park is sometimes used for overflow parking on weekends and for special events held at the park.

The Ferry Lot and the Liberty Science Center Lot are the only lots operated by an outside vendor, Central Parking. Parking data for one and a half years for the Ferry Lot shows that July has highest average cars per day for both the weekday and weekends/holidays (Table 2-3). This lot was closed in November and December 2012 after Hurricane Sandy. Parking data for the same period for the Liberty Science Center Lot shows that April has the highest average cars per day for a weekday and February has the highest average cars per day for weekends/holidays (Table 2-4).

**Table 2-2
Liberty State Park Parking Facilities**

Lot	Capacity		Cost
	Cars	Buses/ Trailers	
Liberty Science Center	753	59	\$7.00 daily
Boat Launch	0	34	Permit
Sundial Lot	148		Free
Base Lot	253	8	Free
Interpretive Center	93		Free
Green Park Lot	169		Free
Ferry Lot	731	53	\$7.00 daily (cars), \$5.00 after 5:00 pm, and \$10.00 daily (buses)
CRRNJ Terminal Short-term Lot	111		Free
Liberty Landing Marina Lot	683	8	\$7.00 daily
Total	2,941	162	

Source: Google Earth (June 2, 2011)

**Table 2-3
Liberty State Park Ferry Lot Parking Data**

Month	Average Cars per Day	
	Weekday	Weekend/Holidays
June 2011	382	648
July 2011	546	956
August 2011	485	778
September 2011	209	725
October 2011	199	527
November 2011	148	304
December 2011	200	215
January 2012	98	101
February 2012	116	137
March 2012	170	162
April 2012	337	598
May 2012	210	623
June 2012	380	732
July 2012	545	870
August 2012	450	746
September 2012	224	637
October 2012	184	494
November 2012	Closed due to Hurricane Sandy	
December 2012	Closed due to Hurricane Sandy	

Source: Central Parking

**Table 2-4
Liberty Science Center Lot Parking Data**

Month	Average Cars per Day	
	Weekday	Weekend/Holidays
June 2011	200	400
July 2011	276	467
August 2011	310	518
September 2011	149	309
October 2011	107	247
November 2011	202	411
December 2011	310	435
January 2012	170	422
February 2012	256	649
March 2012	156	483
April 2012	380	374
May 2012	166	266
June 2012	229	260
July 2012	350	425
August 2012	355	508
September 2012	141	287
October 2012	116	288
November 2012	82	331
December 2012	296	375

Source: Central Parking

2.2 EXISTING PARK ATTRACTIONS

Liberty State Park is home to many interesting and varied destinations and provides visitors with a unique experience. Visitors go to Liberty State Park for its open space, amenities, and attractions. Many of these activities and attractions are identified in Figure 2-4 and discussed in the text that follows.

**Figure 2-4
Liberty State Park Activities and Attractions Map**



2.2.1 LIBERTY SCIENCE CENTER

Liberty Science Center is an interactive science museum located at the northwestern portion of the park. The museum opened in 1993 and completed a \$100 million expansion project in 2007. The museum boasts the largest IMAX screen in the United States and is housed in a “Green Building” which produces one-quarter of its own energy from solar and wind sources. It remains open to visitors year-round, seven days a week with longer hours during the peak summer months.

2.2.2 CENTRAL RAILROAD OF NEW JERSEY (CRRNJ) TERMINAL

One of the main attractions to Liberty State Park, this historic passenger train and ferry terminal, is located in the northeast portion of the park at the water’s edge. The terminal was opened in 1889, replacing an earlier terminal built by the CRRNJ. The three-story Victorian style terminal building includes a distinctive cupola and clock tower facing the Hudson River. The facility contains a dozen platforms and 20 tracks and several ferry slips. The station is listed on both the New Jersey and National Registers of Historic Places. The train concourse and main waiting room occasionally hold events like train shows, antique shows, concerts, festivals and award ceremonies. There is an area for exhibits and public programming available as well.

2.2.3 LIBERTY ISLAND (STATUE OF LIBERTY)

Liberty Island is a 14.7 acre island on which the Statue of Liberty is located. It is situated just off the eastern shore of Liberty State Park. The Statue of Liberty was a gift of friendship from the people of France to the people of the United States. It was dedicated in 1886 and designated a National

Monument in 1924 and listed on the National Register of Historic Places in 1966. The statue was fully restored in 1986. The island and statue are operated by the National Park Service. While not officially part of Liberty State Park, the only way to access Liberty Island from New Jersey is via ferry from Liberty State Park. Liberty Island is also accessible via ferry from Battery Park on the New York side of the Hudson River. According to the National Park Service, Liberty and Ellis Island (described below) receive over 3.5 million annual visitors.

2.2.4 ELLIS ISLAND

Ellis Island is located just off the east shore of the park. The 27.5 acre island is known as the gateway to the new world. From 1892 to 1954, over twelve million immigrants passed through the island's immigration center and entered the United States. The immigration center was opened in 1892 and destroyed by fire in 1897. A new immigration center was constructed in 1900 and still occupies the island. In 1966, Ellis Island was declared part of the Statue of Liberty National Monument. Today the Ellis Island Immigration Museum receives nearly 2 million visitors annually. The island is operated by the National Park Service. Like Liberty Island, Ellis Island is not officially part of Liberty State Park. However, visitors from New Jersey can only access Ellis Island from the park via ferry service that departs from the slips near the CRRNJ Terminal. It is also accessible from Manhattan via ferry.

2.2.5 9/11 MEMORIAL

Called "Empty Sky", this memorial is dedicated to the New Jersey residents who died at the World Trade Center on September 11, 2001. It consists of two 30-foot steel walls over 200 feet long etched with the names of each of the victims.

2.2.6 GROVE OF REMEMBRANCE

The Grove of Remembrance is a living tribute to New Jersey's victims of the attacks on the World Trade Center on 9/11. It is an approximately 10-acre swath of land just south of Audrey Zapp Drive. Dedicated in 2003, this area of the park will eventually have 691 mature trees to represent each of the New Jersey residents who lost their lives on 9/11. The trees are a variety of species and at the center is a Memorial Circle of weeping cherry trees and benches for reflection by visitors.

2.2.7 LIBERTY LANDING MARINA

Liberty Landing Marina contains 520 berths as well as dockside facilities for dry boat storage. The waterfront marina, sidewalk, and parking lot are open to the public.

2.2.8 RESTAURANTS

Liberty House Restaurant, which opened in 2002, is located on the eastern edge of Liberty Landing Marina. It specializes in seafood and has a banquet area for events.

Maritime Parc Restaurant, which opened in 2009, is also located on the eastern edge of Liberty Landing Marina. It specializes in New American cuisine, and also has an area for patrons to hold events.

2.2.9 PARK WELCOME CENTER

The Park Office/Welcome Center is located at the southern edge of the park on Morris Pesin Drive.

2.2.10 PICNIC AREAS AND LAWNS

Liberty State Park is host to several picnic areas, fields and lawns. The picnic areas are located towards the southern end of the park, near the park office. There are lawns and fields throughout the park: South Lawn and Freedom Field are towards the southern end of the park, while South Field, North Field, Green Park, and Great Lawn are towards the northern end of the park.

2.2.11 INTERPRETIVE CENTER

The Interpretive Center, which includes exhibits, classroom space, and an auditorium, focuses on hosting exhibits that detail the environmental and historical issues relevant to the Hudson River and its environs. Adjacent to the Center is a sixty-acre natural area that consists mostly of salt marsh, with nature trails and observation points throughout.

2.2.12 PLAYGROUNDS

There are playgrounds located near the South Lawn Picnic Area and in Green Park.

2.2.13 INTERIOR PARK AREA

There are plans to create a salt marsh and maritime forest within the interior area of the park that is currently undeveloped. The creation of freshwater wetlands and trails are part of the first stage of development. Environmental mitigation measures are needed before this plan can proceed. Currently, the entire interior park area, deemed a habitat restoration area, is off-limits to visitors.

2.2.14 CAVEN POINT BEACH

The Caven Point Beach section of Liberty State Park is not contiguous with the rest of the park and is only readily accessible via the Hudson River Waterfront Walkway. The beach is approximately 5,000 feet long. The area is open from October through March, and swimming is prohibited.

2.2.15 CAMP LIBERTY

The camp moved to its current location on Morris Pesin Drive, adjacent to several functioning industrial uses, in 1980. The camp serves approximately 200 children on 5 acres, which includes a small pool, a softball field, handball courts, and a covered pavilion area.

2.2.16 LIBERTY INDUSTRIAL PARK

Liberty Industrial Park is a 135-acre industrial area located on the southwestern edge of Liberty State Park. It is bordered on three sides by Liberty State Park and shares the park's main access roads. Even though the Industrial Park is surrounded by Liberty State Park, there is little synergy between the areas. Theodore Conrad Drive and Thomas McGovern Drive provide east-west access to the industrial park from Burma Road and Edward Hart Drive provides internal north-south access. Some major tenants of this space include: Suzette Manufacturing, Palermo Manufacturing, Wilman Paper, Streichler Trucking, and the New York Daily News. Employees in the industrial park are potential users of a park transit circulator.

2.2.17 SPECIAL EVENTS

Over the years, Liberty State Park has hosted special events, including Cirque de Soleil, an Andrea Bocelli concert, and the All Points West Music and Arts Festival. Transportation is a very important part

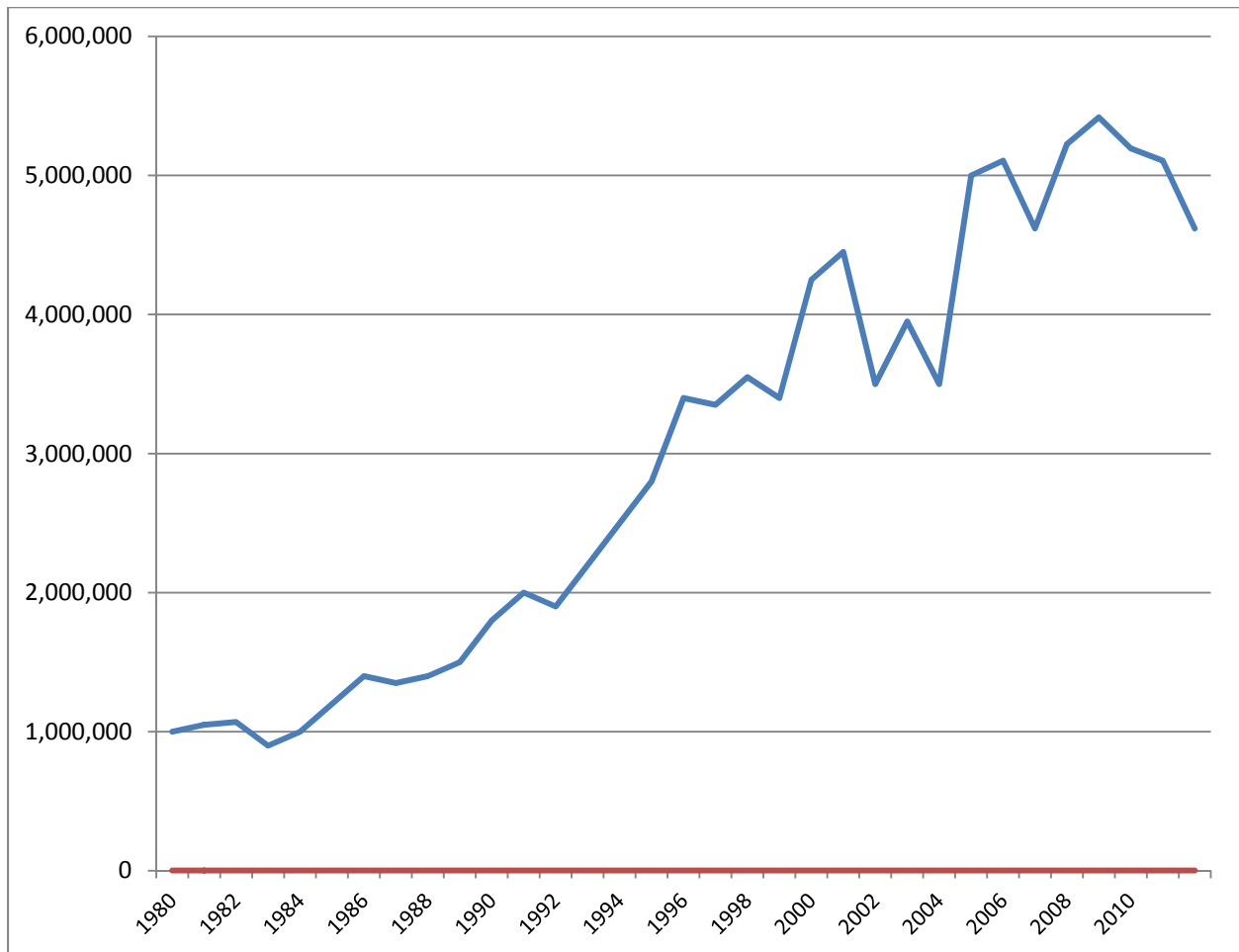
of special event coordination at Liberty State Park. As part of the Special Event Permit Application, each event sponsor must develop an Operation Plan that addresses how people would get to the park and where they would park. The Liberty State Park HBLR park and ride lot is often used for overflow during events. This challenge is lessened when event goers take mass transit rather than drive.

2.3 PARK VISITATION

Liberty State Park estimates daily attendance based on entering visitors in cars using traffic counts on Morris Pesin Drive and Audrey Zapp Drive factored by vehicle occupancy, ferry passengers, estimated bus passengers, Liberty Science Center attendance, estimated walk-ins, and estimated visitors to the Morris Canal Peninsula Park, a portion of the park separated by the Morris Canal Tidewater Basin from the main section of the park. Detailed attendance data is available for the Liberty Science Center and Statue Cruises and is provided later in the chapter.

Attendance at Liberty State Park has been generally increasing since 1980 (Figure 2-5). After a peak of five million visitors in 2001, the early 2000s saw a temporary dip in attendance. However by 2005, park attendance reached five million visitors again. There has been a small decline in attendance since 2009. Park attendance in 2012 dropped drastically due to the closure of large sections of the park and the national monuments as a result of Hurricane Sandy in October 2012.

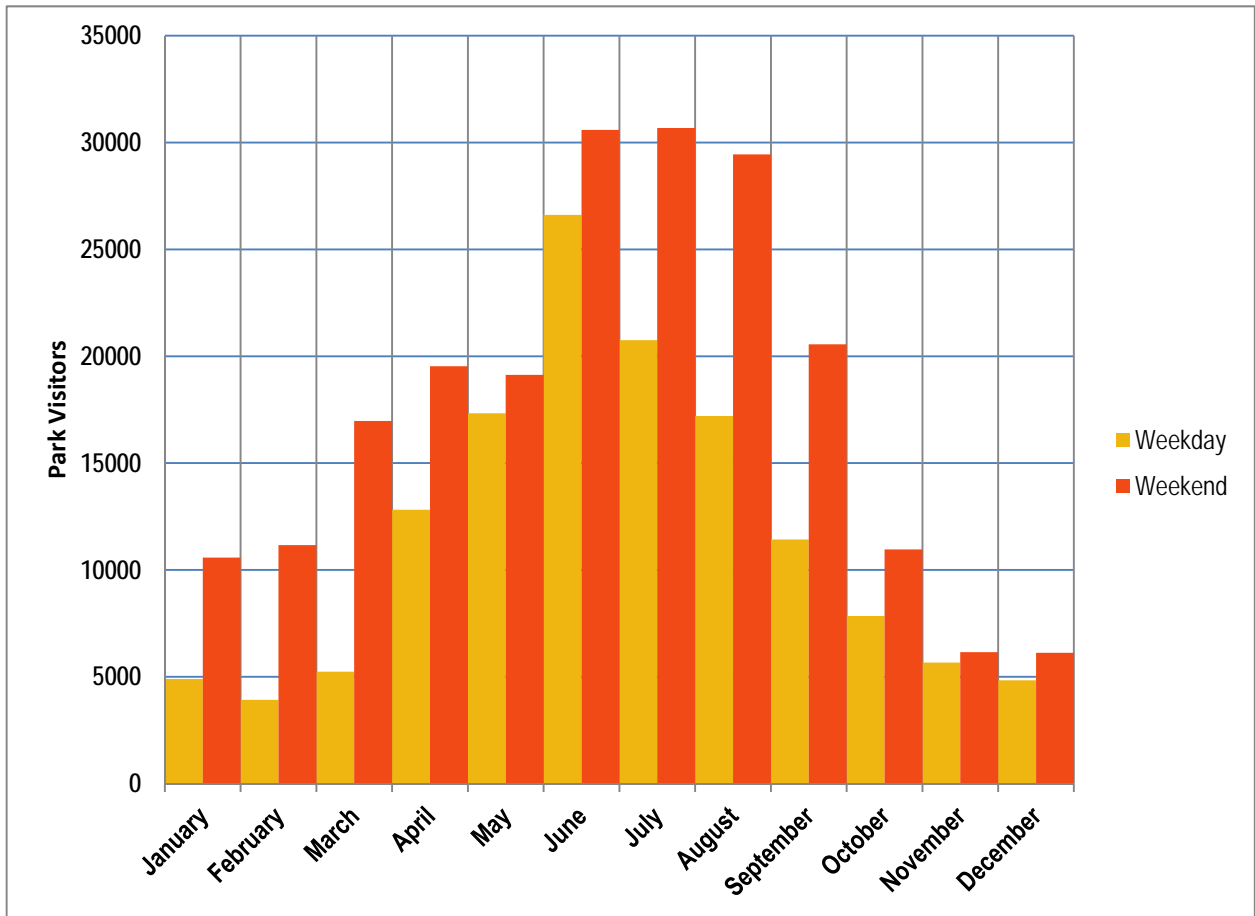
**Figure 2-5
Liberty State Park Attendance
(1980 to 2012)**



Source: Liberty State Park

Figure 2-6 breaks out the average weekday and weekend attendance by month between January 2011 and December 2012. Not surprising, attendance on Saturdays and Sundays is higher in every month of the year than the remaining five weekdays. Based on the data, the highest visitation over this period was observed in June for weekdays and in July for weekends.

Figure 2-6
Liberty State Park Average Weekday and Weekend Attendance
Two-Year Monthly Average (2011 and 2012)

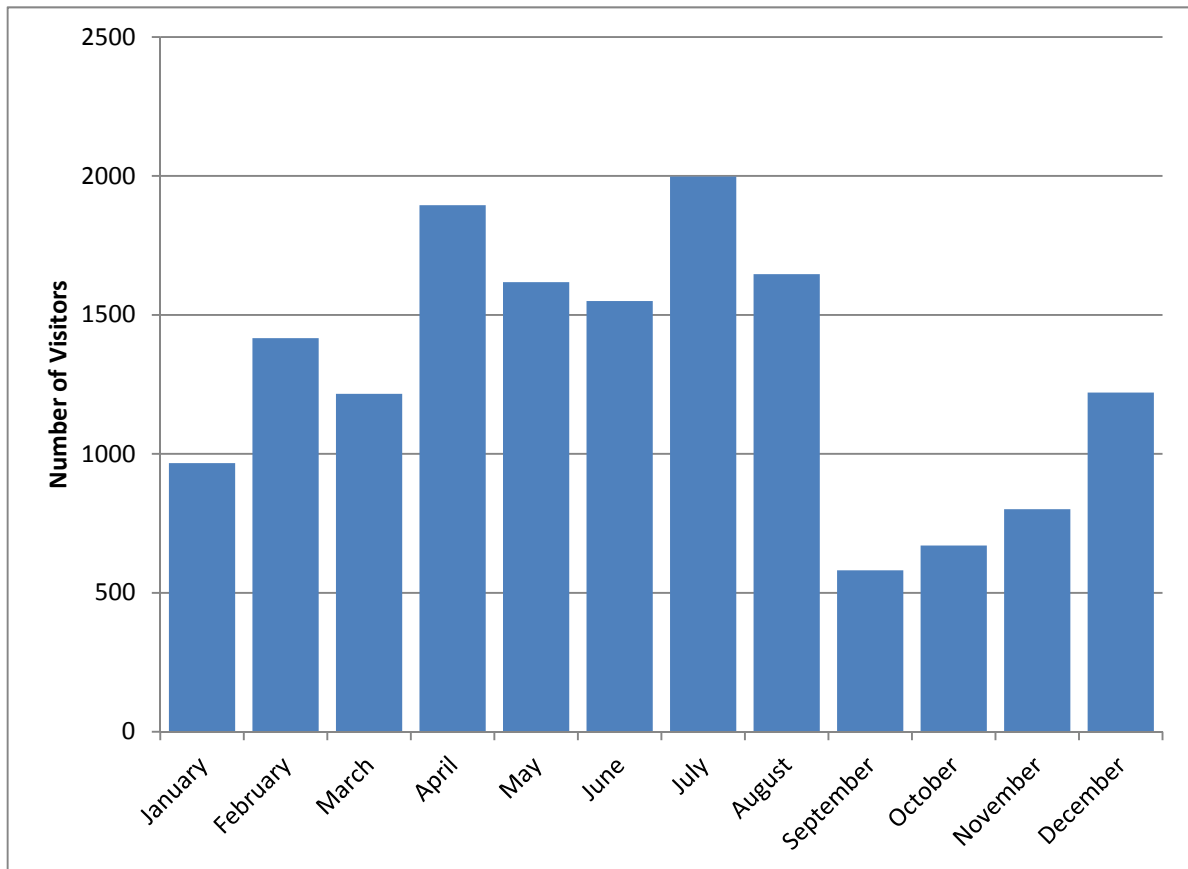


Source: Liberty State Park

2.3.1 LIBERTY SCIENCE CENTER

Figure 2-7 shows the average daily attendance at the Liberty Science Center from January 2011 to December 2012. Based upon the data, July is the month in which the Liberty Science Center receives the highest number of visitors. Average daily visitation is high in the spring and summer and lower through the fall and winter.

**Figure 2-7
Liberty Science Center Average Daily Attendance
Two-Year Monthly Average (2011 and 2012)**



Source: Liberty Science Center

2.3.2 STATUE CRUISES

Table 2-5 shows the number of Liberty State Park ferry passengers by month for the past five years. Based upon the data, July is the month in which the ferry ridership is highest. The peak year for ferry ridership was in 2010. Ferry service to Liberty and Ellis Islands was suspended in November and December 2012 after Hurricane Sandy.

**Table 2-5
Liberty State Park Ferry to Liberty and Ellis Islands Ridership (2008 through 2012)**

Month	Liberty State Park Passengers				
	2008	2009	2010	2011	2012
January	13,861	13,495	13,840	12,269	11,915
February	13,206	13,861	9,091	11,854	12,002
March	48,218	33,673	35,511	38,941	35,271
April	67,068	74,732	76,130	77,234	74,109
May	90,232	82,388	88,145	85,383	85,589
June	97,991	90,309	97,013	100,864	89,959
July	105,858	115,433	114,962	119,518	101,944
August	103,336	99,585	98,671	82,803	81,841
September	43,596	57,959	56,739	51,740	46,230
October	55,035	51,923	57,217	55,517	38,687
November	40,260	41,960	45,761	34,584	0*
December	28,905	25,994	21,318	27,398	0*
TOTAL	707,566	701,312	714,398	698,105	577,547
<i>Source: Statue Cruises</i>					
<i>* The monuments were closed due to Hurricane Sandy</i>					

2.4 SURROUNDING COMMUNITY

Jersey City is the second most-populous City in New Jersey. It is a diverse, densely-populated, urban community with a robust mass transit network. In Hudson County, there is an average of less than one car per occupied housing unit. In particular, a high number of Jersey City residents do not own cars. Many of these transit-dependent residents can get to “the doorstep” of Liberty State Park by transit, using the HBLR, the local bus, or ferry to the edges of the park. However, it can be difficult for these visitors to access many of the park’s attractions due to the large size of the park.

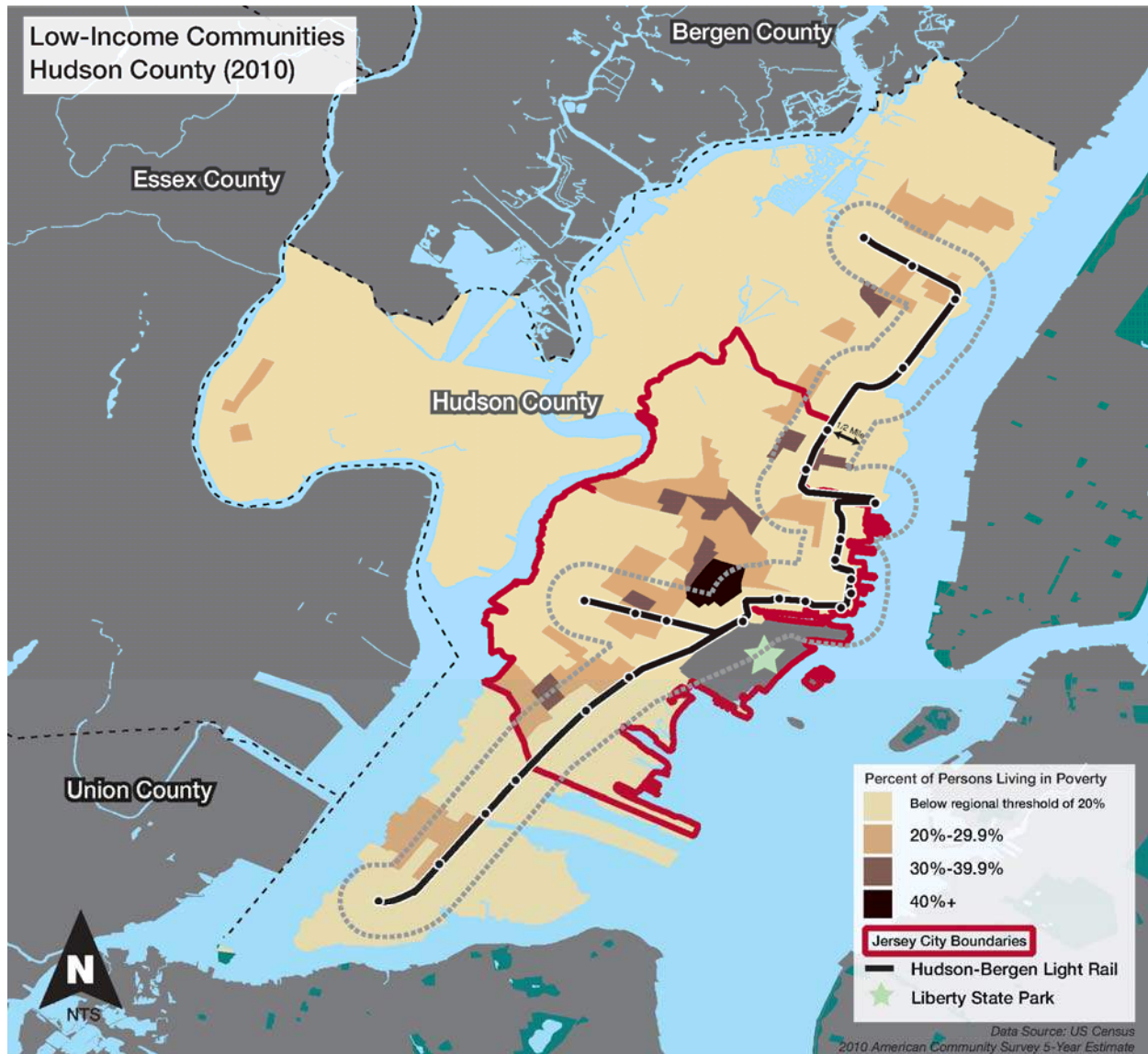
2.4.1 SOCIO-ECONOMIC CHARACTERISTICS

2.4.1.1 LOW INCOME COMMUNITIES

The U.S. Census Bureau’s poverty thresholds, which are dependent on family size, are updated yearly. For 2010, a family of two adults and two children was considered to be in poverty if its annual household income was below \$22,113. A family consisting of one adult and one child was considered to be in poverty if its annual household income was below \$15,030.

Jersey City’s poverty rates by Census tract are shown in Figure 2-8. Only one Census tract in Jersey City has more than 40 percent of its households living in poverty.

Figure 2-8
2010 Households in Poverty in Hudson County



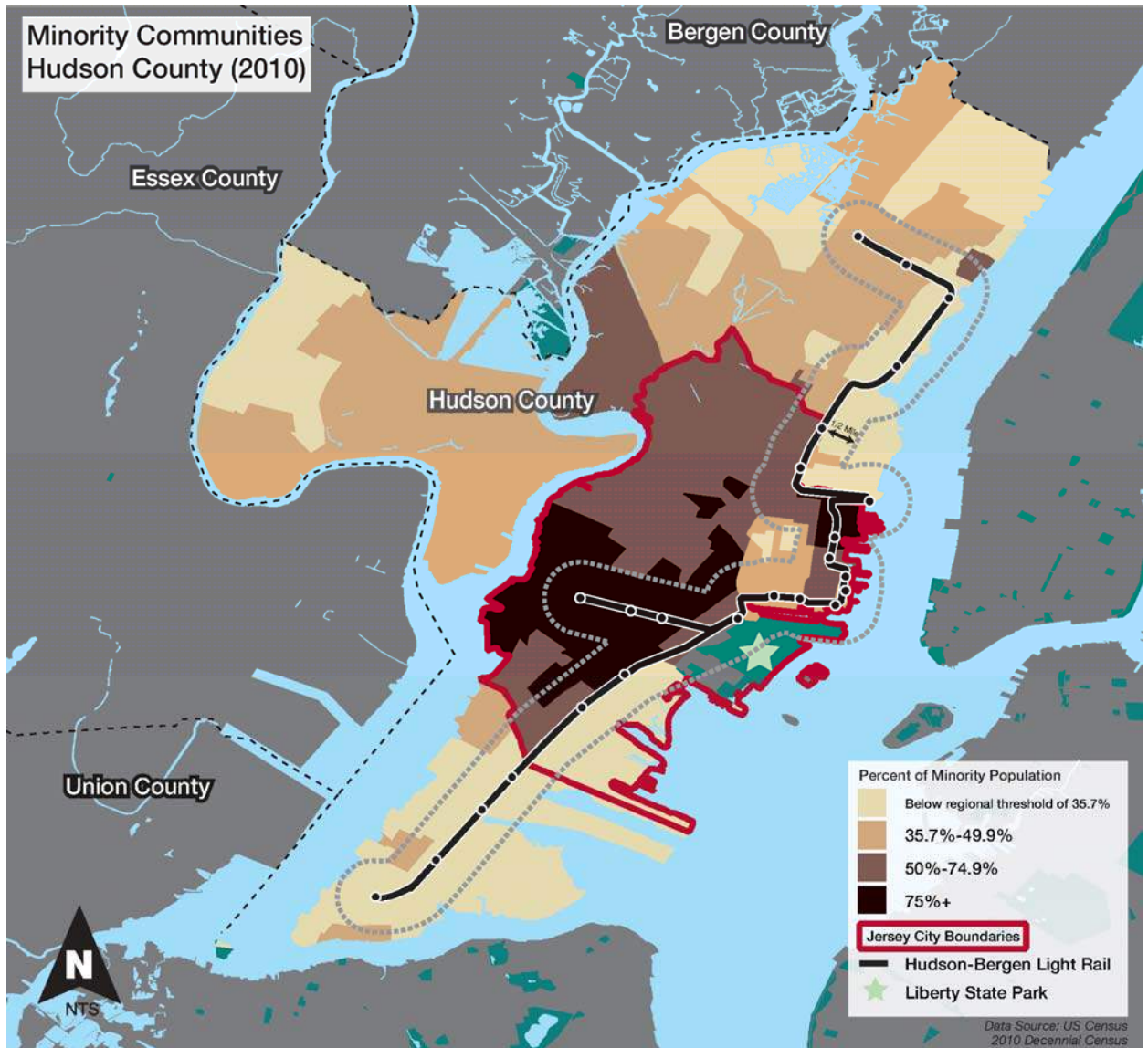
Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis

2.4.1.2 MINORITY COMMUNITIES

Minority communities are defined as having persons of the following ethnic groups: Black, Hispanic, Asian, American Indian and Alaskan Native. If the minority population of a Census tract is greater than the regional threshold of 35.7 percent, it qualifies as a minority community.

Jersey City has a large percentage of minority communities (Figure 2-9). Census data show that most of the City’s Census tracts are at least 50 percent minority. The populations of only a few Census tracts (in Greenville and Downtown) are less than 35.7% minority. Census tract areas of Jersey City with the highest percentage of minority population are mainly located in the Greenville, Bergen-Lafayette, and West Side neighborhoods.

Figure 2-9
2010 Minority Communities in Hudson County



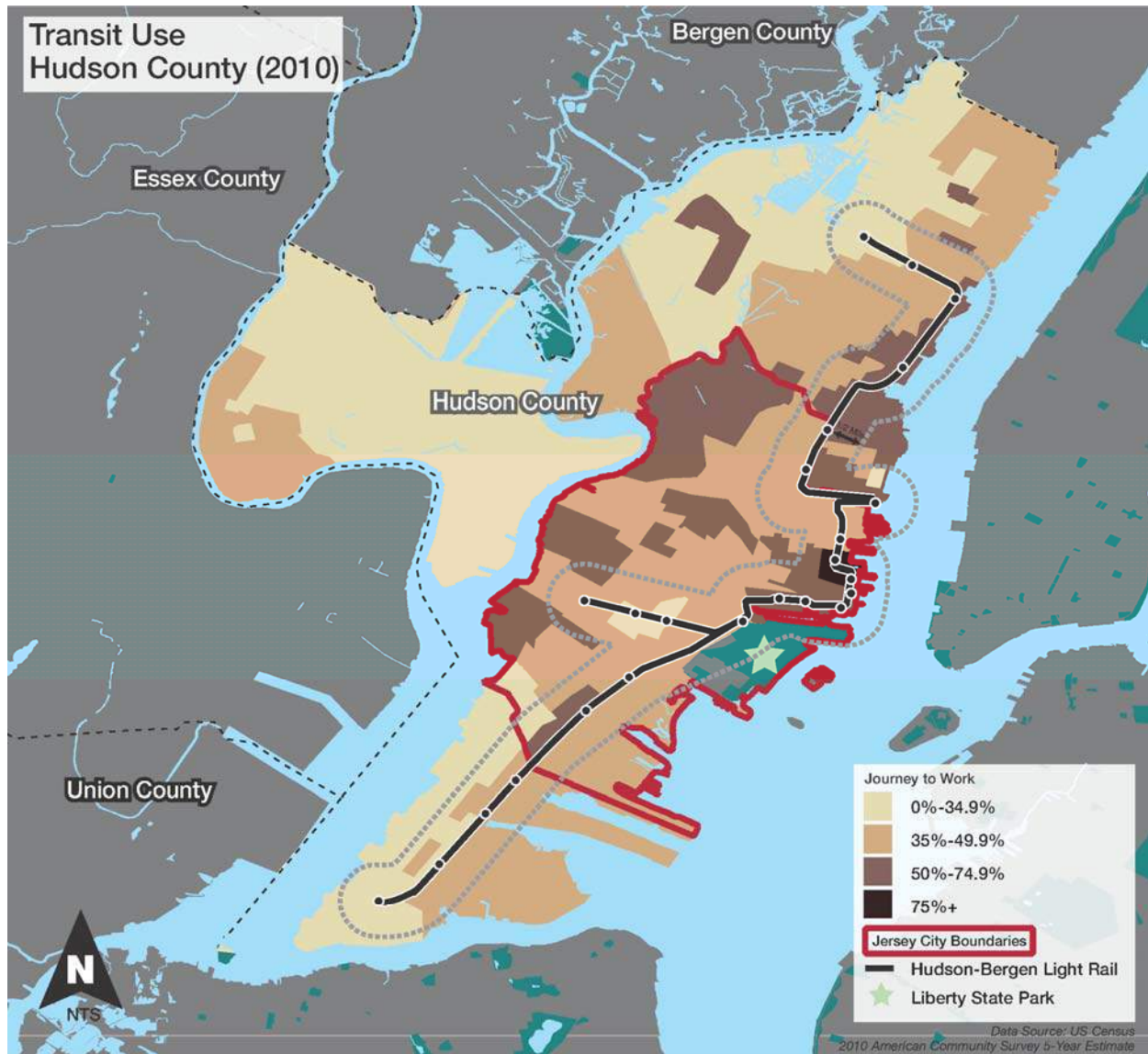
Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis

*Minority includes all ethnicity classes except Non-Hispanic white.

2.4.1.3 TRANSIT USE

At least 35% of the population of most Census tracts in Jersey City (all but four) use transit to travel to work (Figure 2-10). Transit use for journey to work is the highest in the Newport neighborhood, which has access not only to the HBLR system but also to the PATH system. Non-work trips are not included in Census data.

Figure 2-10
2010 Work-Trip Transit Use in Hudson County

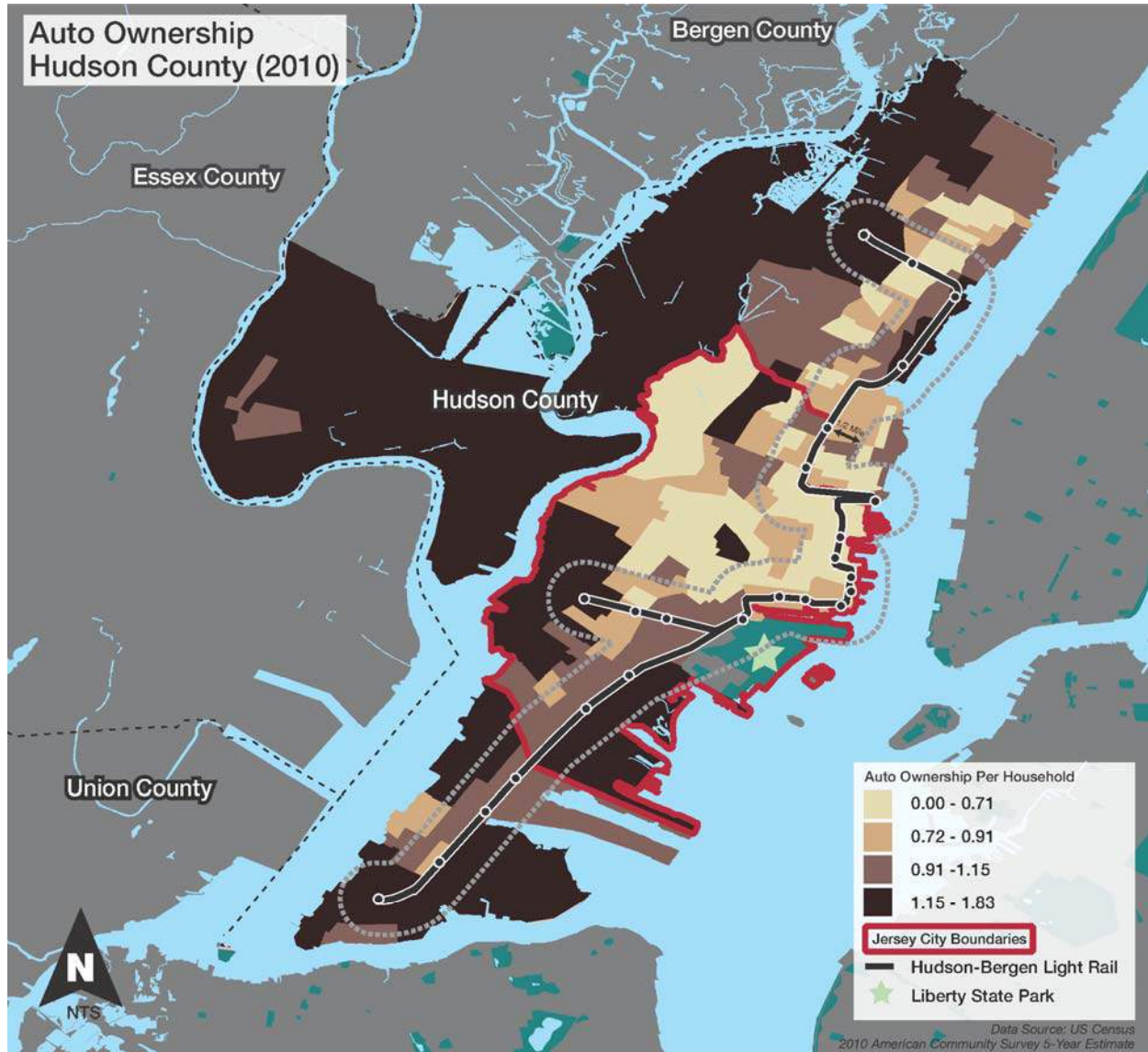


Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis

2.4.2 AUTO OWNERSHIP

Overall, auto ownership rates for Jersey City are fairly low when compared to the rest of New Jersey. The rates are highest in areas that are not directly served by the PATH system and have the lowest rates of poverty. Census tracts with the highest rates of household auto ownership (over 1.15 vehicles per household) are located in Greenville, Journal Square, and the Heights, and along the Western Waterfront (Figure 2-11). For comparison, the United States average for vehicle ownership per household is over 2.2.

**Figure 2-11
2010 Auto Ownership in Hudson County**



Client: City of Jersey City Division of City Planning
Project: Liberty State Park Circulator Cost-Benefit Analysis

2.5 ENVIRONMENTAL CONSIDERATIONS

2.5.1 REMEDIATION

Liberty State Park was originally an intertidal mud flat and salt marsh that was filled by railroad companies between 1860 and 1919 to stabilize the surface. Much of it is non-consolidated material resulting from construction projects in Manhattan, or refuse from throughout New York City and the surrounding area. For more than 100 years, the CRRNJ used the site as a rail yard for both freight and passenger service. In the late 1960s the CRRNJ discontinued operations at the site and the land was subsequently acquired by the State of New Jersey Department of Environmental Protection (NJDEP)

and assigned to the Division of Parks and Forestry (DPF) for management and use as a park. The DPF has spent the past several decades planning and building a park infrastructure that is suitable for public recreation. With more than five million visitors annually, the park's development continues to be an extraordinary success.

Since the soils of the park are classified as "historic fill" and have use restrictions, the portion of Liberty State Park now open to the public was remediated (capped and covered with approximately one-foot of top soil). In the center of the park (interior), approximately 251 acres remain undeveloped. The interior has been re-colonized by various plant communities. These communities represent unique associations of both endemic and non-native species that can be considered the by-product of the way the property had been used during the past several centuries.

A broad-based, goal-driven approach was used to develop the General Management Plan (GMP) for the interior section of the park. Members of an interdisciplinary planning committee, which represented various public and private interest groups, and with several public hearings during a decade of planning, developed a conservation plan that includes the creation of a trail network, tidal marsh, freshwater wetlands, and enhancements to uplands. The interior will be opened to the public as the various stages of the conservation plan are implemented.

2.5.2 SECTION 4(F)

According to the Federal Highway Administration, "Section 4(f) refers to the original section within the U.S. Department of Transportation Act of 1966 which established the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development". Liberty State Park was acquired and developed in phases utilizing multiple funding sources by the NJDEP to be managed as parkland by the Division of Parks and Forestry. The funding sources include but are not limited to the NJ Green Acres Program, federal Land and Water Conservation Funds, and federal Urban Park and Recreation Recovery. Generally, the funding sources have laws and regulations that encumber the use of Liberty State Park for only those purposes that support the outdoor recreation and/or conservation use of the funded property. Any other use that does not support recreation and/or conservation activities of Liberty State Park is expressly prohibited.

2.6 BEST PRACTICES: PARK CIRCULATORS

Best practices of transit circulators serving national or state parks that could be analogous to Liberty State Park were researched to determine operating characteristics. The selected circulators were identified in conjunction with Federal Transit Administration (FTA) staff involved with the Sarbanes Transit in the Parks program and National Park Service representatives.

2.6.1 HEARST CASTLE

Hearst Castle, on the central coast of California, is a State Historic Park that comprises over 90,000 square feet of buildings. The castle itself, with over 50 bedrooms, sits atop a hill at an altitude of 1,600 feet. The park provides shuttle bus service from the Visitor Center to the castle. The trip is about five miles long, and would be arduous for most people to walk. In this way, Hearst Castle is somewhat analogous to Liberty State Park.

The shuttle buses are transit-type buses, branded with Hearst Castle's logo (Figure 2-12). Because the Castle provides scheduled tours, the buses are scheduled only to bring patrons to the Castle in time for these tours. In this way, the service differs from the potential Liberty State Park circulator, which would, ideally, depart on a schedule that is coordinated with nearby public transportation.

Figure 2-12
Hearst Castle State Historic Park Shuttle Bus



(<http://www.hearstcastle.org/tours/the-bus-route>)

2.6.2 LOWELL NATIONAL HISTORIC PARK

Lowell National Historic Park is located just outside Boston, Massachusetts, in Lowell, a town known for its role in the industrial revolution. Within the Park, the town's historic nature has been preserved. This includes its mode of transportation, a functioning heritage trolley system that people ride to get around the park and to take official tours.

The trolleys run on two miles of track and are operated by the National Park Service. The trolleys only run from March until November, and are free for all visitors to the Park (Figure 2-13).

The length of the trolley's route in Lowell National Historic Park is similar to what the potential Liberty State Park circulator would need to be. Therefore, development and operating and maintenance costs may be somewhat analogous, should Liberty State Park choose to study a rail option.

Figure 2-13
Lowell National Historic Park Trolley



(<http://www.nps.gov/lowe/planyourvisit/upload/newtroll.pdf>).

2.6.3 STONE MOUNTAIN

Stone Mountain Park, located outside of Atlanta, Georgia, is the most-visited attraction in Georgia. It is five square miles and surrounds what is considered the world's largest piece of exposed granite.

Stone Mountain Park has a heritage railway system, but it does not function as a park circulator because there is only one place to get on and off the vehicle. However, Stone Mountain Park does have another type of circulator, a high-speed Swiss-built cable car that transports visitors to the top of Stone Mountain (Figure 2-14). The cable car offers unparalleled views of another of the Park's features, the Confederate Monument, carved into the side of Stone Mountain.

While a cable car is not an appropriate application for Liberty State Park (since it does not feature a steep enough grade to deem this type of vehicle necessary), the takeaway is that the cable car transports visitors up the mountain and directly past the Confederate Monument. The cable car has become its own attraction at Stone Mountain Park and carries visitors who not only want to go to the top of the mountain, but those who want to experience the novel mode of transportation.

Figure 2-14
Stone Mountain Park Cable Car



(<http://www.stonemountainpark.com/attractions-shows/attraction-detail.aspx?AttractionID=48>)

2.6.4 CUYAHOGA VALLEY NATIONAL PARK

Cuyahoga Valley National Park, near Cleveland and Akron, Ohio, is Ohio's only national park. It offers hiking, camping, and historic attractions. Cuyahoga Valley National Park also features the Cuyahoga Valley Scenic Railroad, which operates on 51 miles of the former Baltimore & Ohio Railroad right-of-way using refurbished, climate-controlled vintage cars built in the 1940s and 1950s (Figure 2-15). The railroad functions not only as a park circulator but as an attraction. It passes through the park, but also extends almost to Cleveland to the north and to Akron and Canton to the south. The train operates on weekends only from November through May, with a more limited schedule in December. During June through October, the train operates from Wednesday through Sunday. The Cuyahoga Valley's experience shows that using historic infrastructure can be a tremendous asset when planning a park circulator system.

Figure 2-15
Cuyahoga Valley Scenic Railroad



(http://www.cvsr.com/resources/1/footer_images/i14.jpg)

2.6.5 ACADIA NATIONAL PARK

Acadia National Park, in Maine, was the first National Park east of the Mississippi River. It consists of over 47,000 acres and includes an ocean coastline, lakes, mountains, and woodlands. Acadia National Park has not only a circulator, but an entire transit system connecting it with hotels, inns, campgrounds, and neighboring villages. The system is called "Island Explorer" and is operated by Downeast Transportation. It features eight free bus routes (Figure 2-16).

Acadia National Park's system is thorough, but its situation is not analogous with that of Liberty State Park. Liberty State Park is surrounded by densely populated urban areas with an existing, well-utilized public transportation network. While any circulator system in Liberty State Park should be well integrated with the existing systems (mainly, the HBLR), it would be duplicative to install an entirely new transit network in the park and surrounding area. However, the Acadia National Park example illustrates the importance of connecting multiple destinations with transit.

Figure 2-16
Arcadia National Park Shuttle Bus



(<http://www.exploreacadia.com/>)

2.6.6 ZION NATIONAL PARK

Utah's Zion National Park is known for its canyons, hiking, climbing, and spectacular views. Zion National Park established a shuttle system to eliminate traffic and parking problems and to protect vegetation in the Park. There are two shuttle routes: one through the town of Springdale, and one through the Park. Visitors can transfer between shuttles at the Park Visitor Center. Visitors are encouraged to park in Springdale, ride the Springdale Shuttle to the Park Visitor Center, and ride the Park Shuttle into Zion National Park. Spring through fall, Zion Canyon Scenic Drive, a main route through the park, is open only to shuttle bus traffic. The shuttles are free. They have headways as short as seven minutes. Schedules are posted at each shuttle stop. The shuttles themselves are low-floor, low-emission minibus-style vehicles, similar to airport shuttles (Figure 2-17). They are branded with the name of the park.

While Zion National Park is very different from Liberty State Park, there are several lessons to be learned from this example. Despite the fact that Liberty State Park is located in an urban environment with a robust transit system, and Zion National Park is located in a rural environment with no transit system whatsoever except for its own shuttle service, Zion's Springdale Shuttle/Park Shuttle connection is analogous to the potential HBLR/Liberty Park Circulator Connection insofar as it demonstrates that people are willing to transfer to access a park if the service is frequent enough, and timed well enough, to preclude an inconvenient wait.

Figure 2-17
Zion National Park Shuttle Bus



(<http://www.nps.gov/zion/planyourvisit/shuttle-system.htm#>)

2.7 TRAVEL SURVEY

A detailed travel survey was undertaken to better understand why people visit Liberty State Park, how they get there, how often they visit, and where they come from. The main reason for the survey was to collect data that would serve as input to the travel demand model used to project future transit ridership potential for the park. Existing data are typically focused on work trips during the peak weekday travel periods and not on recreational trips and the weekend periods. The results of the survey were used as the main source of data to perform the analysis of recreational trips in the model. It was estimated that a minimum of approximately 1,000 returned surveys were needed for input into the model for a representative sample. In total, over 2,000 surveys were completed.

2.7.1 SURVEY METHODOLOGY

Generally, the surveying was conducted throughout the month of July 2012. Separate survey forms were developed as a tool to gather data from the various populations of people that use or could potentially use Liberty State Park. The surveys were intentionally kept short (one page long taking, on average, about one minute to complete) as a means to garner maximum participation from the public. Another measure used to encourage participation was that all of the survey forms were available in Spanish. All survey forms were developed with input from the Technical Advisory Committee. In addition, the survey was field tested prior to survey deployment to ensure that questions were properly worded and easy to understand. Several different survey forms were developed (see Appendix A) to acquire the necessary data including:

- Liberty State Park Interview Survey
- Liberty Science Center Interview Survey
- On-line User Survey
- Generic Survey (Off-site)

In order to raise awareness of the survey and the study in general, the City of Jersey City issued a press release to announce the study and survey effort in July 2012. The City also distributed flyers to advertise the survey and used social media to announce the survey. Several member agencies of the TAC helped to get the word out by posting announcements for the survey on their agencies' websites.

2.7.2 LIBERTY STATE PARK INTERVIEW SURVEY

The purpose of this survey was to target actual visitors of Liberty State Park to determine their travel characteristics, frequency of visits, and trip purpose. The consultant team conducted the survey on one weekday (Wednesday, July 11, 2012) and on one day over the weekend (Sunday, July 15, 2012) between 10:00 AM and 8:00 PM both days so that data from a representative sample of visitors could be collected. These surveys were performed on good weather days without rain to maximize participation and to represent "normal" summer conditions. The goal was to collect 300 to 400 completed surveys per survey day.

Staff assisted people as needed when completing the survey forms. The staff was positioned at the following five key locations throughout the park as a means to maximize responses and to cover all populations of people visiting the park:

- Ferry/CRRNJ Terminal
- Liberty Landing Marina/North Field/9-11 Memorial
- Park Headquarters/South Lawn/ Boat Launch
- Green Park/Playground/Liberty Walk
- Park Entrance on Audrey Zapp Drive/Marina/Grove of Remembrance

In addition, the Friends of Liberty State Park surveyed park visitors at a concert on July 24, 2012, and Liberty State Park personnel conducted some additional surveys in the park.

2.7.3 LIBERTY SCIENCE CENTER INTERVIEW SURVEY

This survey was developed to target visitors to the Liberty Science Center due to their large numbers and their unique travel characteristics. The Liberty State Park interview survey form was modified for use at the Liberty Science Center. Surveying was conducted by Liberty Science Center volunteers at the facility on eight days (five weekdays and three weekend days) including:

- Friday, July 20
- Saturday, July 21
- Sunday, July 22
- Tuesday, July 24
- Wednesday, July 25
- Thursday, July 26
- Friday, July 27
- Saturday, July 28

The Liberty Science Center offered incentives for participation in the survey. The goal was to collect 600 completed surveys (300 total on weekdays and another 300 total on weekend days).

2.7.4 ON-LINE SURVEY

This survey was developed to target both visitors and non-visitors to Liberty State Park and to identify their unique travel characteristics. The Liberty State Park interview survey was modified for use as an on-line survey for previous visitors to the park. Separate survey questions were developed for non-visitors. The response to the first survey question (Approximately how often do you visit Liberty State Park?) was used to determine whether the respondent would take the visitor or non-visitor survey. Park visitors were asked about their most recent visit to the park. The survey was accessible on-line for about one month from July 17, 2012 to August 15, 2012. Both fully and partially completed surveys were tabulated. The goal was to collect 300 completed surveys.

2.7.5 GENERIC SURVEY (HANDOUT)

This survey was developed in printed form to target both visitors and non-visitors to Liberty State Park at various locations throughout Jersey City to insure that persons without access to a computer could take part in the survey. The questions for this survey followed the on-line survey; the first survey question determined whether the respondent would be directed to answer the user or non-user survey questions. The goal was to collect 100 completed surveys. Paper copies of the survey were made available at:

- Information Desk at CRRNJ Terminal in Liberty State Park
- Liberty State Park Office (200 Morris Pesin Drive)
- City Hall, Mayor's Action Bureau (280 Grove St, Room 105, Jersey City, NJ)
- Jersey City Division of City Planning (30 Montgomery St, Suite 1400, Jersey City, NJ)

2.7.6 SURVEY RESULTS

Overall, 2,046 surveys were returned, exceeding both the number of surveys needed for the modeling and the upper limit goal of 1,800. Returns for three out of four of the survey types exceeded their original goals (the exception being the Generic Survey). Only 26 surveys were completed by people who have never visited Liberty State Park and only four surveys were returned in Spanish. The breakdown of the surveys are shown in Table 2-6.

**Table 2-6
Returned Surveys by Type**

Survey Type	Number of Returned Surveys
Liberty State Park Interview Survey	733
Liberty Science Center Interview Survey	738
On-line Survey	528
Generic Survey (off-site)	47
Total	2,046 surveys

The survey results were tabulated by question and survey type. The Liberty State Park and Liberty Science Center survey questions and answers were almost identical so they were grouped together. Since characteristics are different on weekdays and weekend days, the results were disaggregated

accordingly for these surveys. Since the questions and answers were almost identical for the On-line Survey and Generic Survey, the results for these surveys were grouped together.

The Liberty State Park Interview Survey concluded that recreational trips were mostly from the local areas, visitors to Ellis and Liberty Islands mostly come from great distances (out of state and foreign), average length of stay was approximately three hours, the average group size was just over three people, and approximately two-thirds of respondents visit on a relatively infrequent basis. The Liberty Science Center Interview Survey concluded that a high number of visitors came from New York State, average length of stay was approximately four hours, average group size was close to four people, and most travel by car. The On-line Survey concluded that leisure was the most frequent purpose for visiting the park, more than half of respondents come from Jersey City, average group size was about two and a half people, almost half visit several times a year, and more than half travel by car.

2.7.6.1 HOME ORIGIN

The origins of visitors to the Liberty Science Center differ from those of visitors to the rest of Liberty State Park. The visitors to the park are either from very close (Jersey City and Hudson County) or far away (from other states or other countries). Most of the recreational trips were made by people from the local areas while visitors to Ellis and Liberty Islands come from a much greater distance. For the Liberty Science Center, the highest number of people came from New York State on both weekdays and weekends. The home origins of respondents to the Liberty State Park and Liberty Science Center surveys are provided in Figure 2-18 for the weekday survey and Figure 2-19 for the weekend survey. The home origins of respondents to the On-line and Generic surveys are predominantly Jersey City, as shown in Figure 2-20.

Figure 2-18

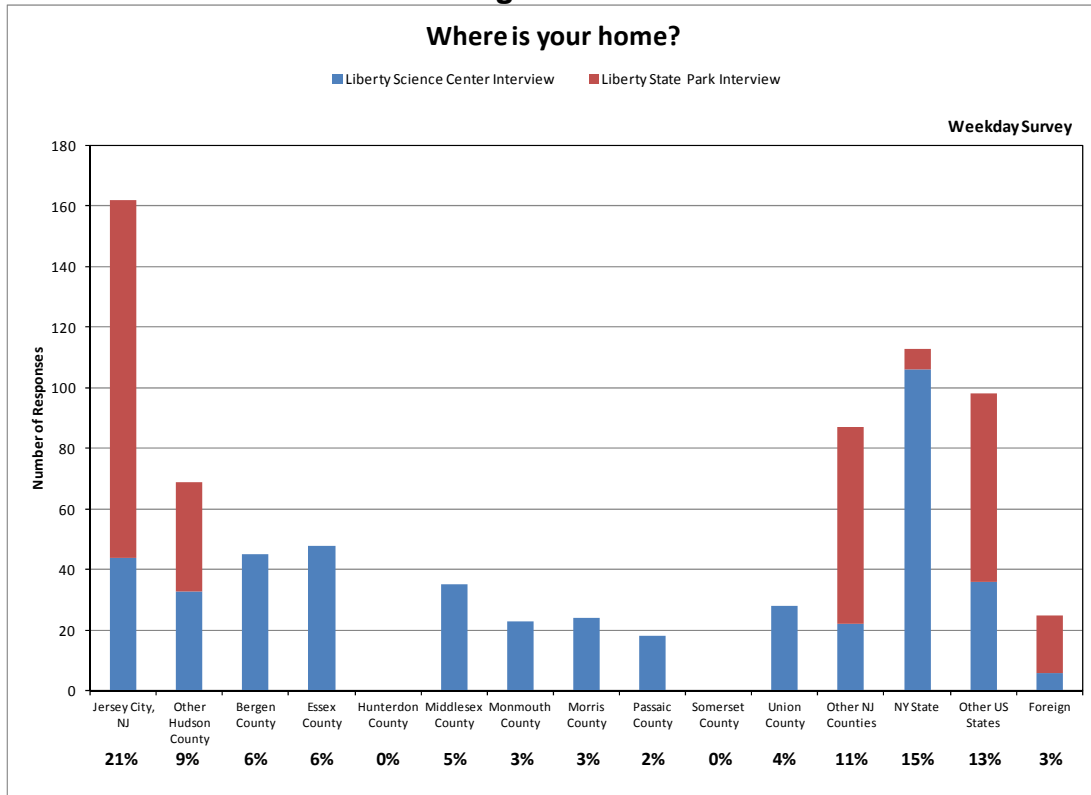


Figure 2-19

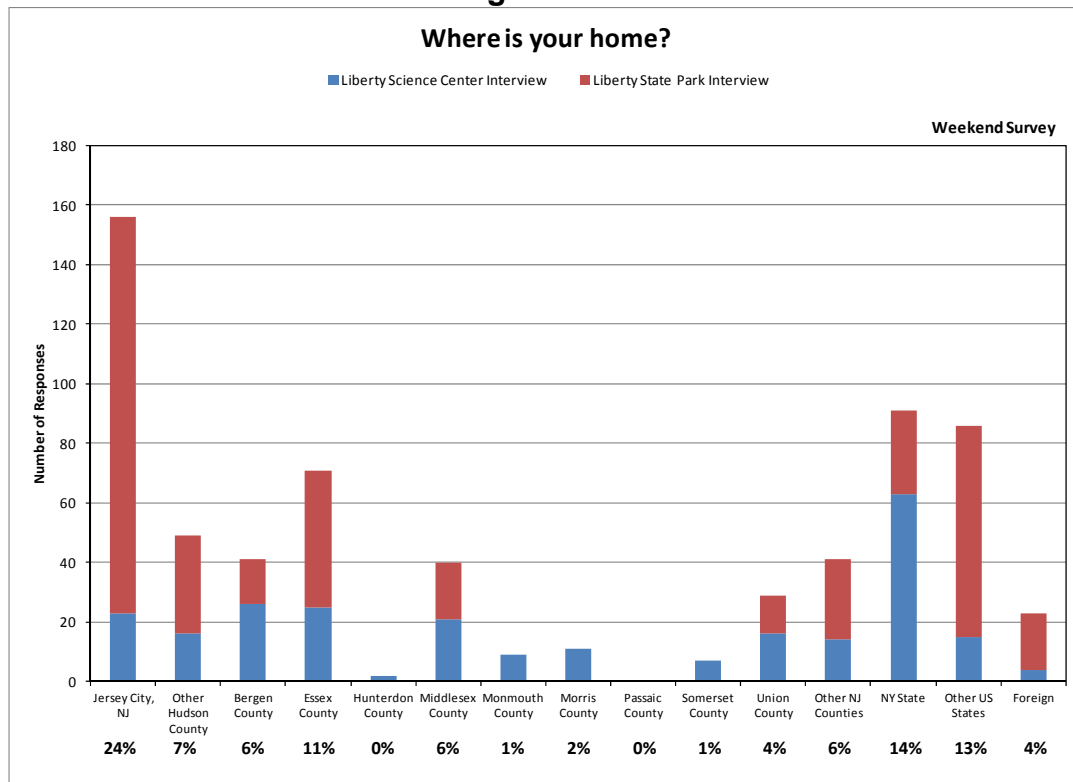
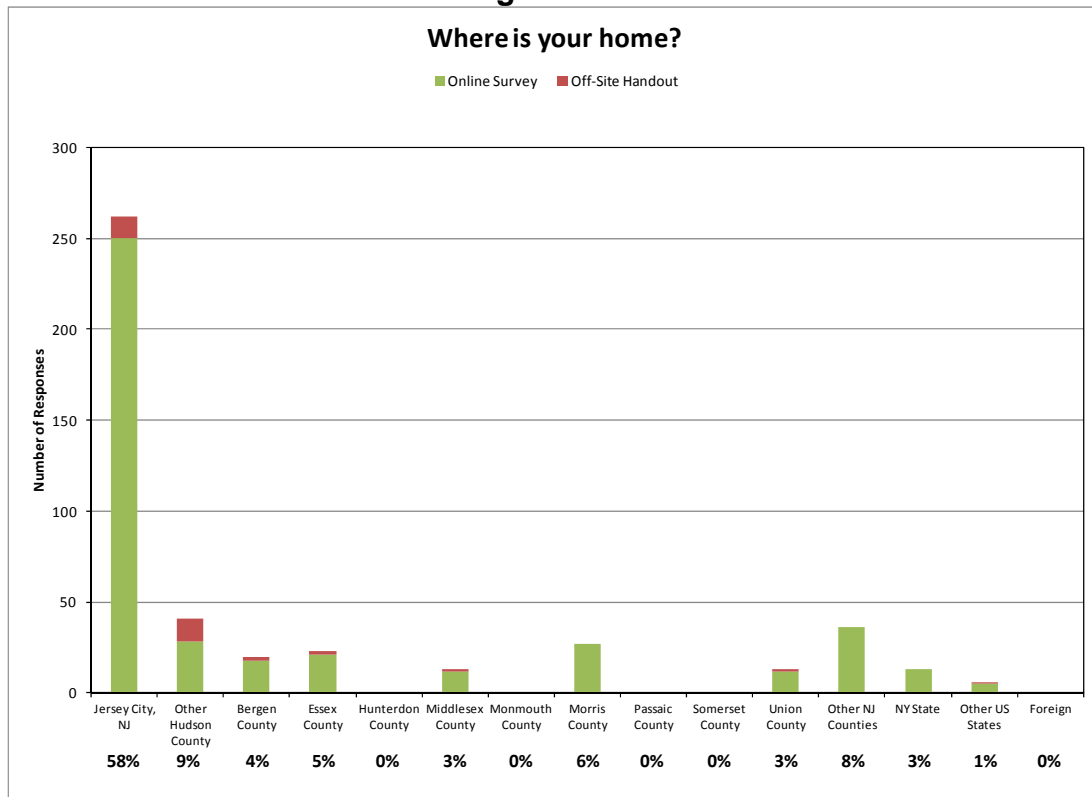


Figure 2-20



2.7.6.2 VISITATION CHARACTERISTICS

Primary Reason

The primary purpose for visitation to Liberty State Park based on the Liberty State Park interview survey is to Ellis/Liberty Islands followed by leisure on a weekday. This trend is reversed on the weekend as the park is used more for leisure during this time. The primary reason for visiting Liberty State Park is depicted in Figure 2-21 for the weekday survey and Figure 2-22 for the weekend survey. The Liberty Science Center is also a major generator of visitors to Liberty State Park as evidenced by the yearly attendance figures. As shown in Figure 2-23, the primary trip purpose for the On-line and Generic Surveys are predominantly leisure, exercise, and Liberty Science Center. It was assumed that the primary trip purpose of visitors surveyed at the Liberty Science Center was a visit to the Liberty Science Center.

Figure 2-21

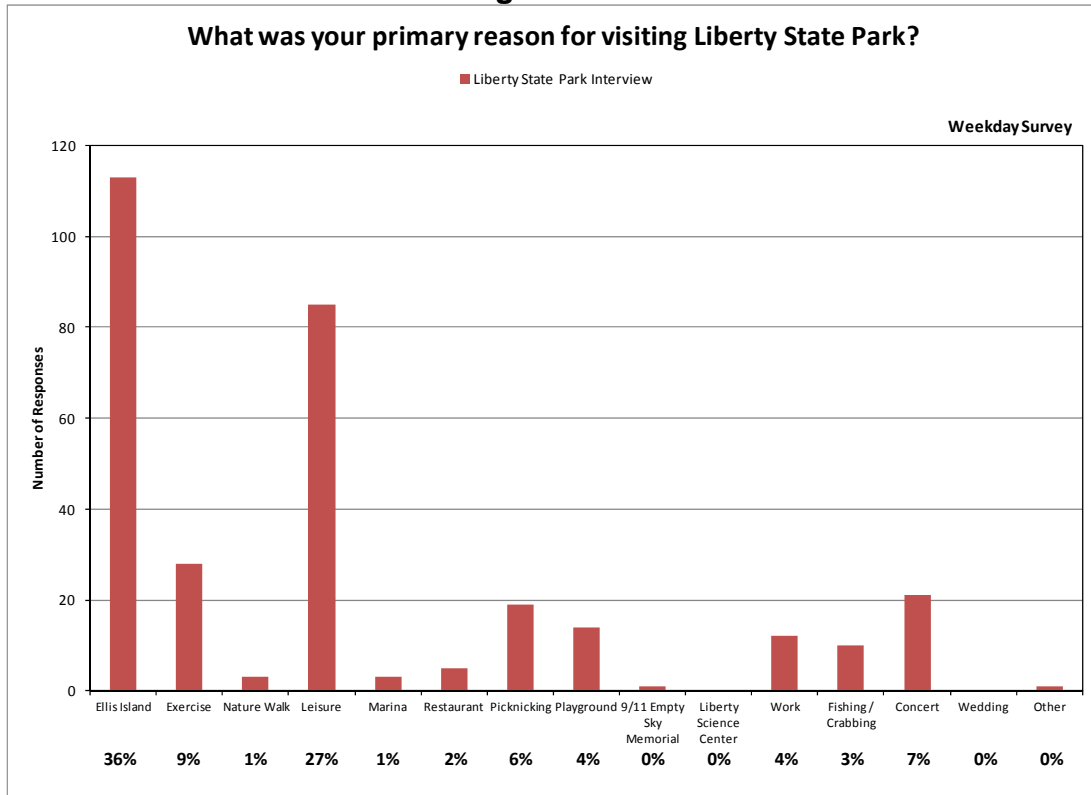


Figure 2-22

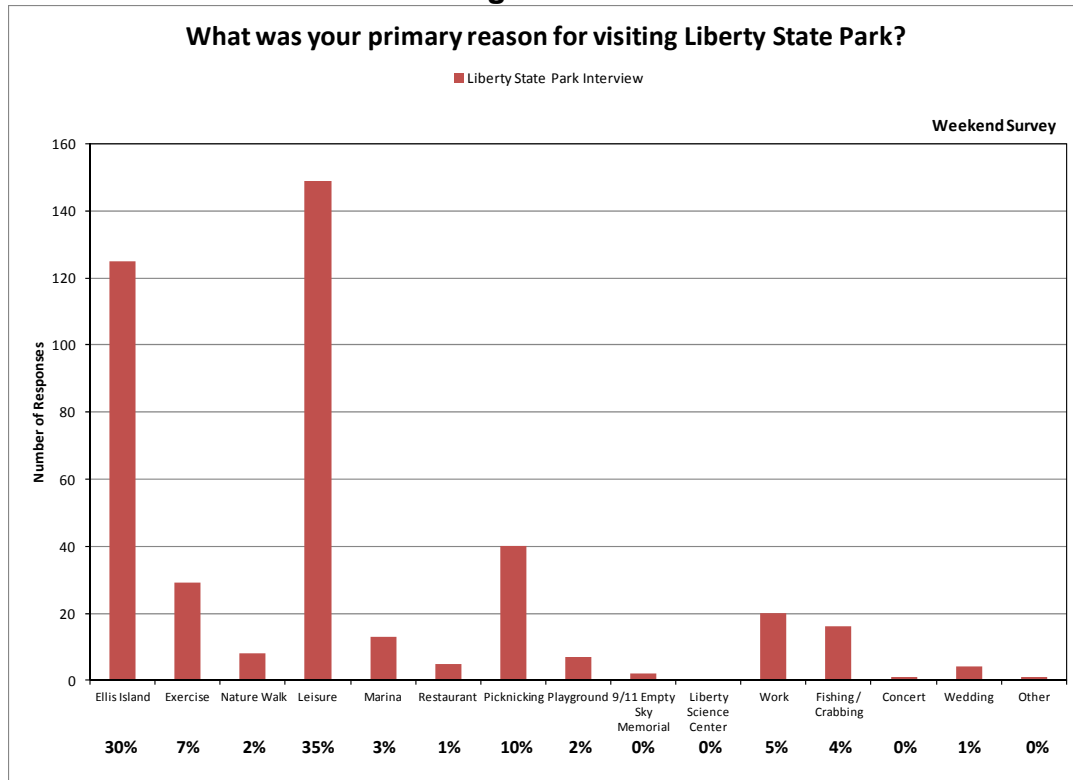
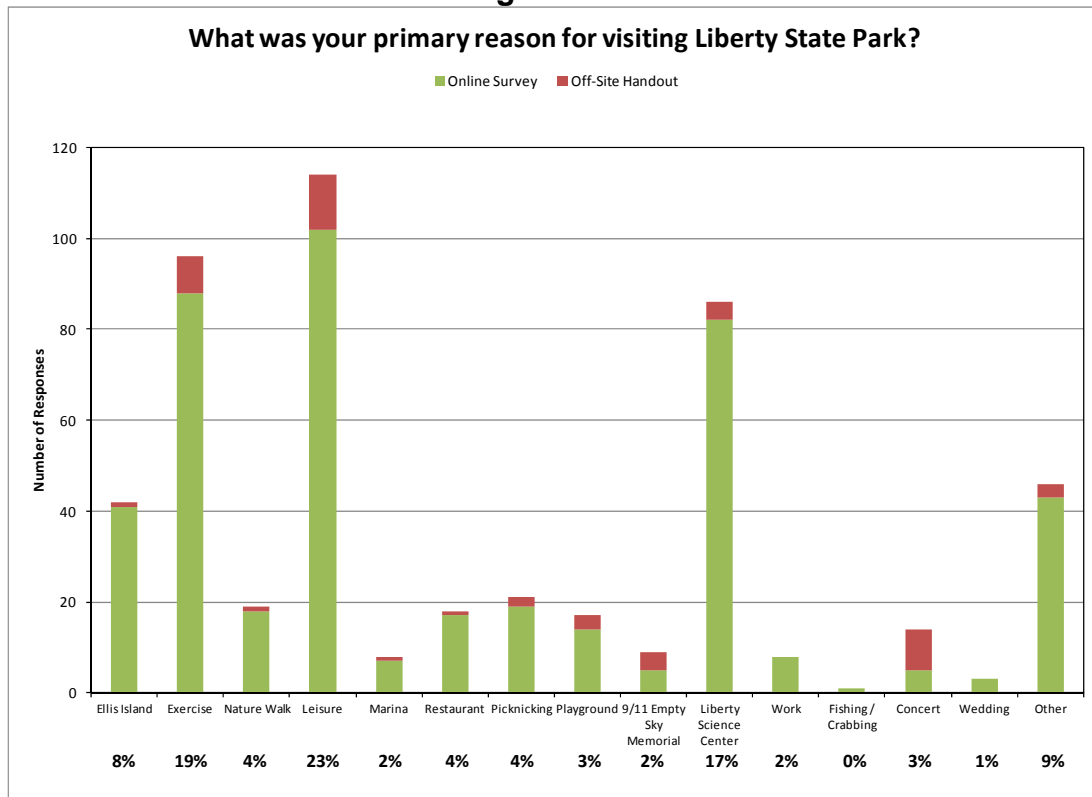


Figure 2-23



Secondary Reason

Most respondents for all of the surveys answered that they did not have a secondary purpose for their visit. For the park and Liberty Science Center visitors, none of the other secondary visitation purposes exceeded seven percent on a weekday or over the weekend. The results of the Liberty State Park and Liberty Science Center surveys on a weekday and weekend are provided in Figures 2-24 and 2-25, respectively. As shown in Figure 2-26, for the On-line and Generic surveys, leisure, exercise, and nature walk were all well-represented as secondary visit purposes.

Figure 2-24

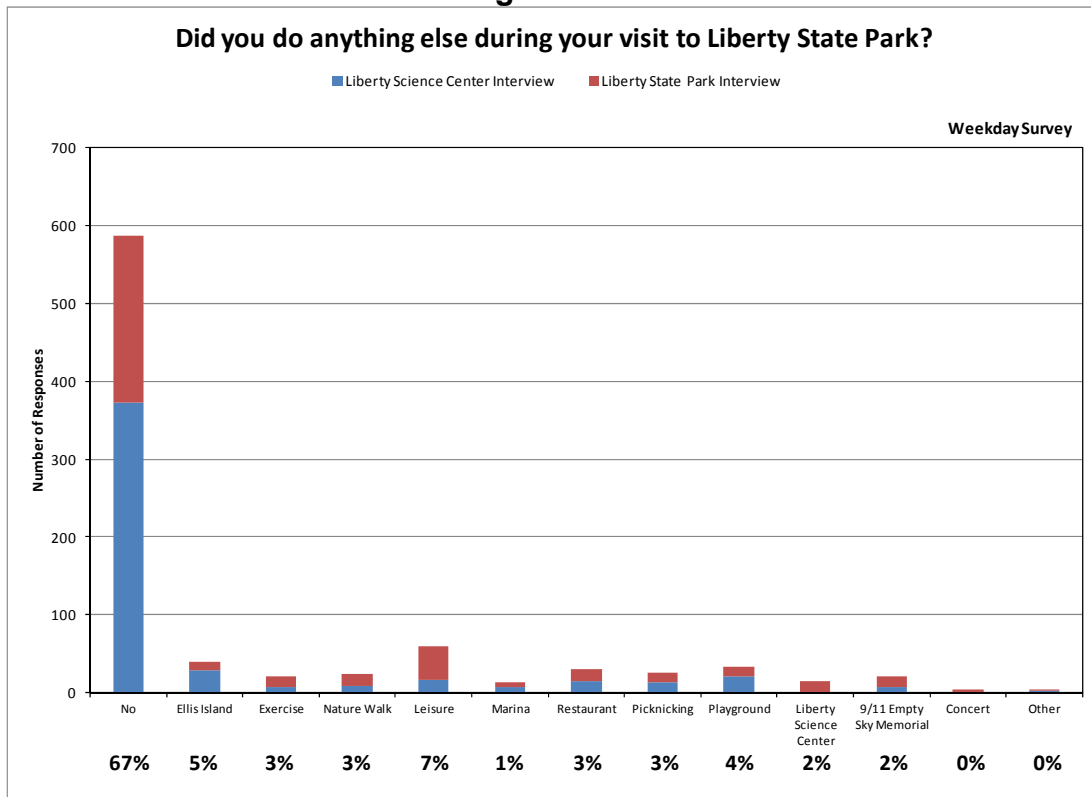


Figure 2-25

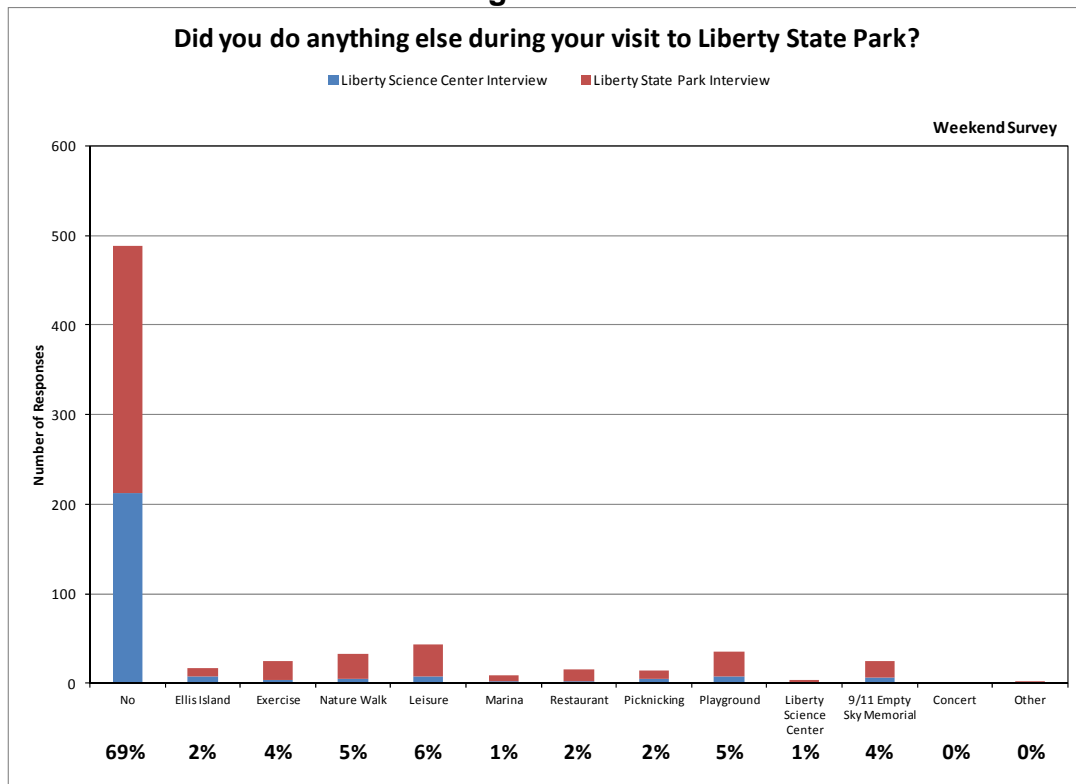
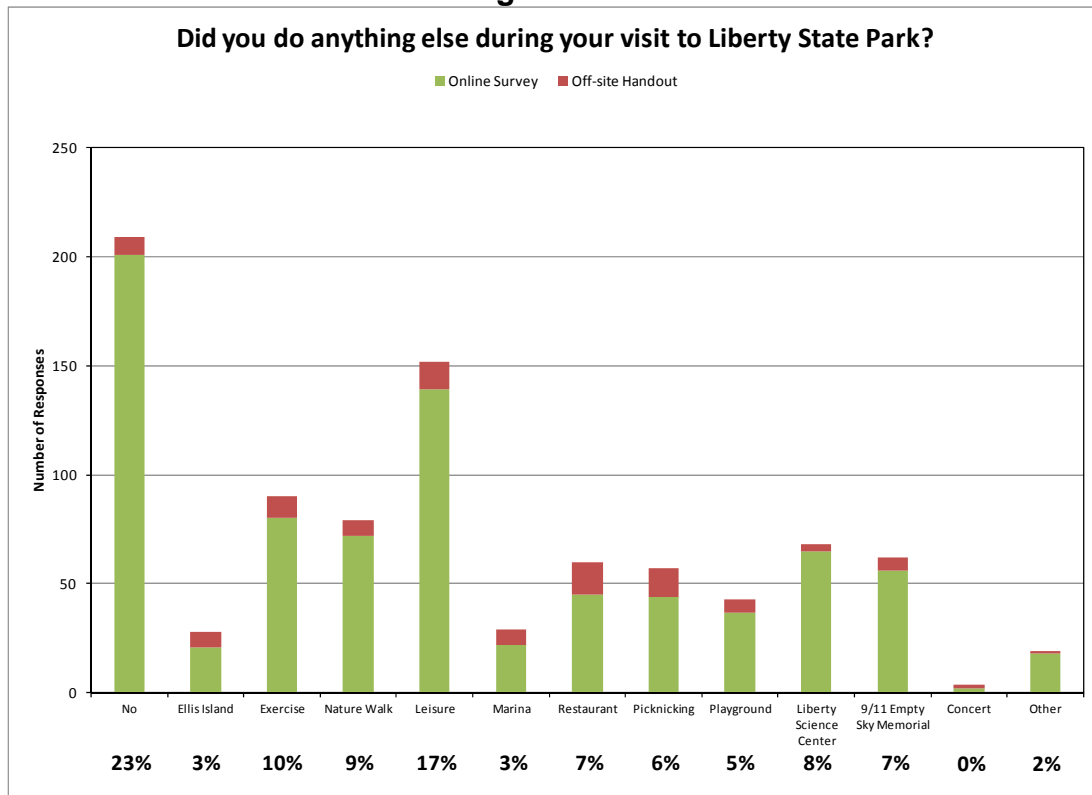


Figure 2-26



Secondary Reason- Travel Mode

Respondents who indicated that they had a secondary trip purpose were asked to select their mode of travel between their primary and secondary destinations. For the park and Liberty Science Center visitors, the most common mode of travel was by car on a weekday (Figure 2-27) and walking on a weekend (Figure 2-28). On both a weekday and a weekend day, park visitors overwhelmingly walked between their primary and secondary destinations while Liberty Science Center visitors continued to use their cars. For respondents of the On-line and Generic surveys, walking was the primary mode between their primary and secondary destinations (Figure 2-29).

Figure 2-27

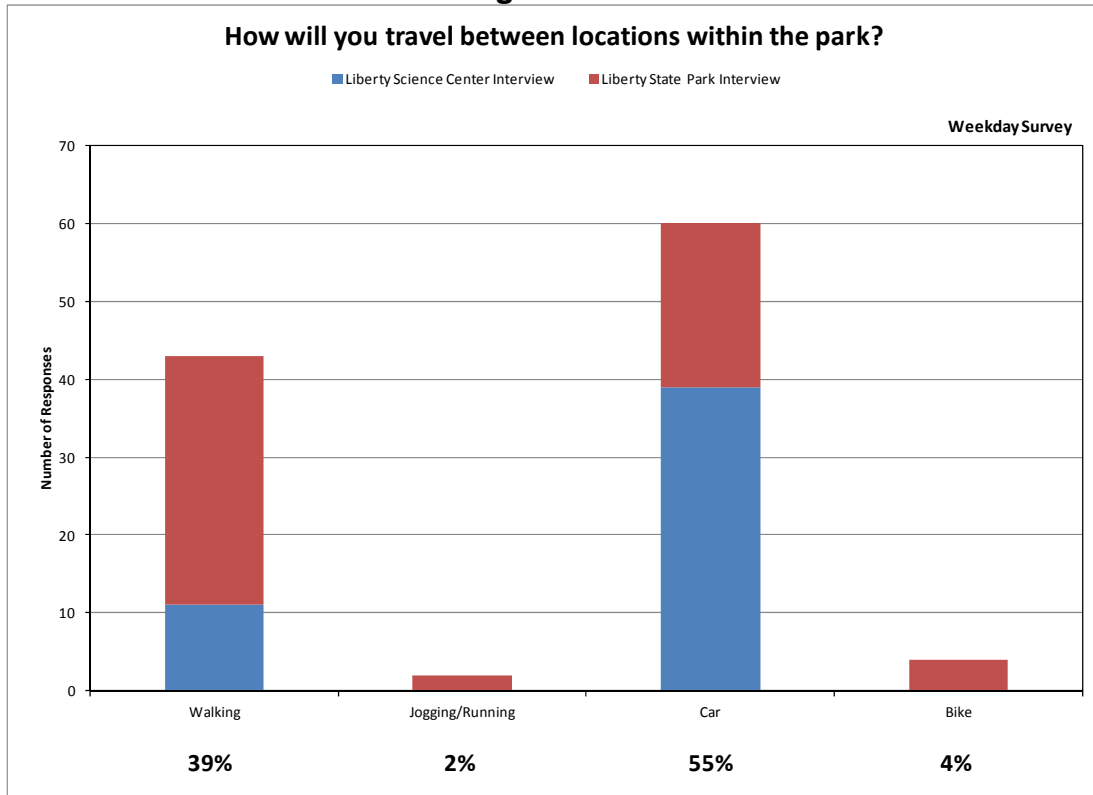


Figure 2-28

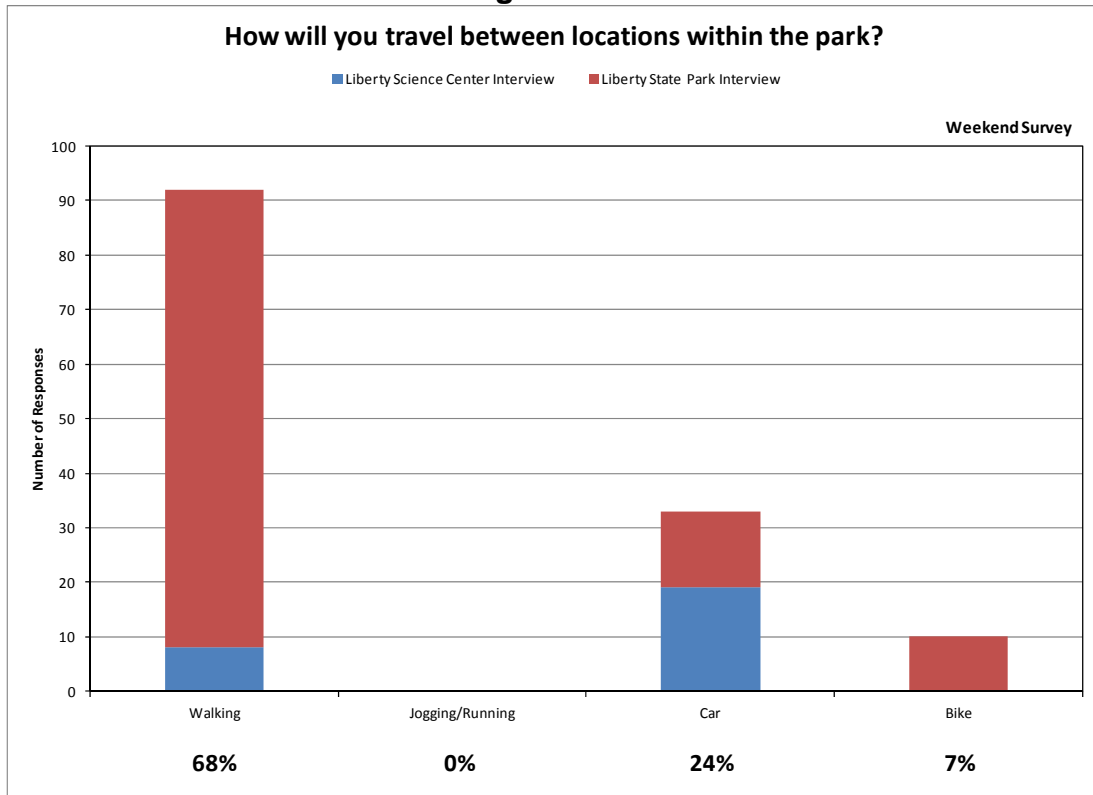
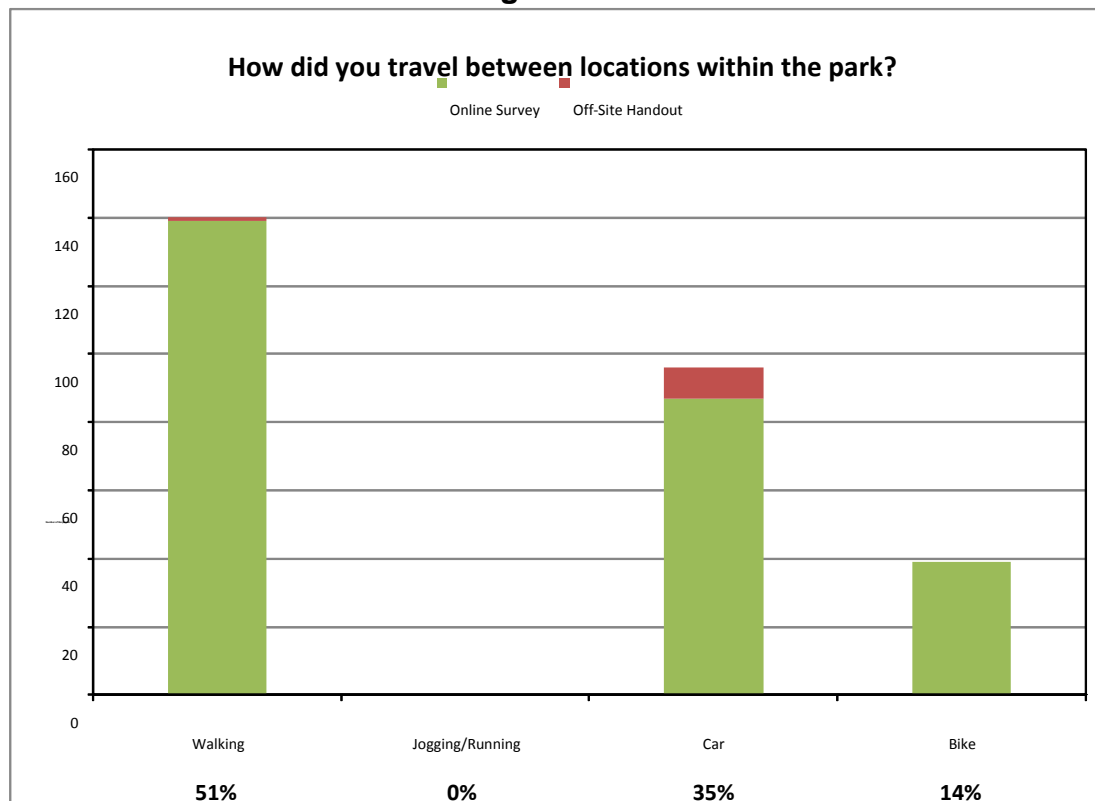


Figure 2-29



Length of Stay

For both Liberty State Park and Liberty Science Center, the highest frequency for length of stay was three hours for both the weekday and weekend (Figures 2-30 and 2-31, respectively). The average length of stay for park visitors is approximately three hours, while the average length of stay for visitors to the Liberty Science Center is approximately four hours. The On-line and Generic surveys did not ask about length of stay.

Frequency of Visits

Based on the survey of park visitors, approximately two-thirds visit the park on a relatively infrequent basis (several times a year or less). This is true for park visitor respondents on both weekdays (Figure 2-32) and weekend days (Figure 2-33). For the On-line and Generic (off-site) survey respondents, a similar pattern of visitation frequency held true. The highest frequency was first time visitors to Liberty State Park, which accounted for more than one-quarter of all visitors on both survey days. Nine percent of respondents indicated that they visited the park on a daily basis during the week but only three percent visit daily on a weekend day. Just under half of the respondents to the On-line and Generic surveys indicated that they visit Liberty State Park several times a year (Figure 2-34). There were no first time visitors for either of the On-line and Generic surveys.

On weekend days, Liberty Science Center visitors were comprised of about 45 percent first time attendees, about 37 percent of infrequent attendees (once a year or longer), and about 18 percent of more frequent attendees (more than once per year). On weekdays, Liberty Science Center visitors were comprised of about 40 percent of first time attendees, about 45 percent of infrequent attendees, and about 15 percent of more frequent attendees.

Figure 2-30

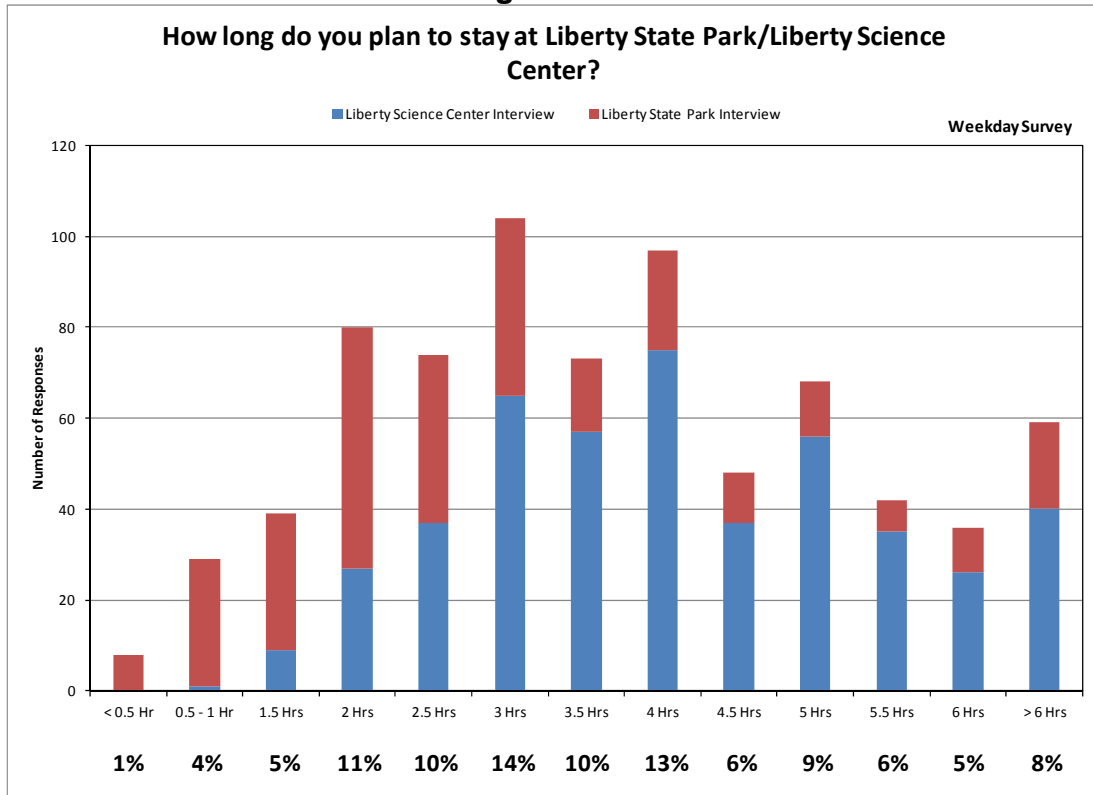


Figure 2-31

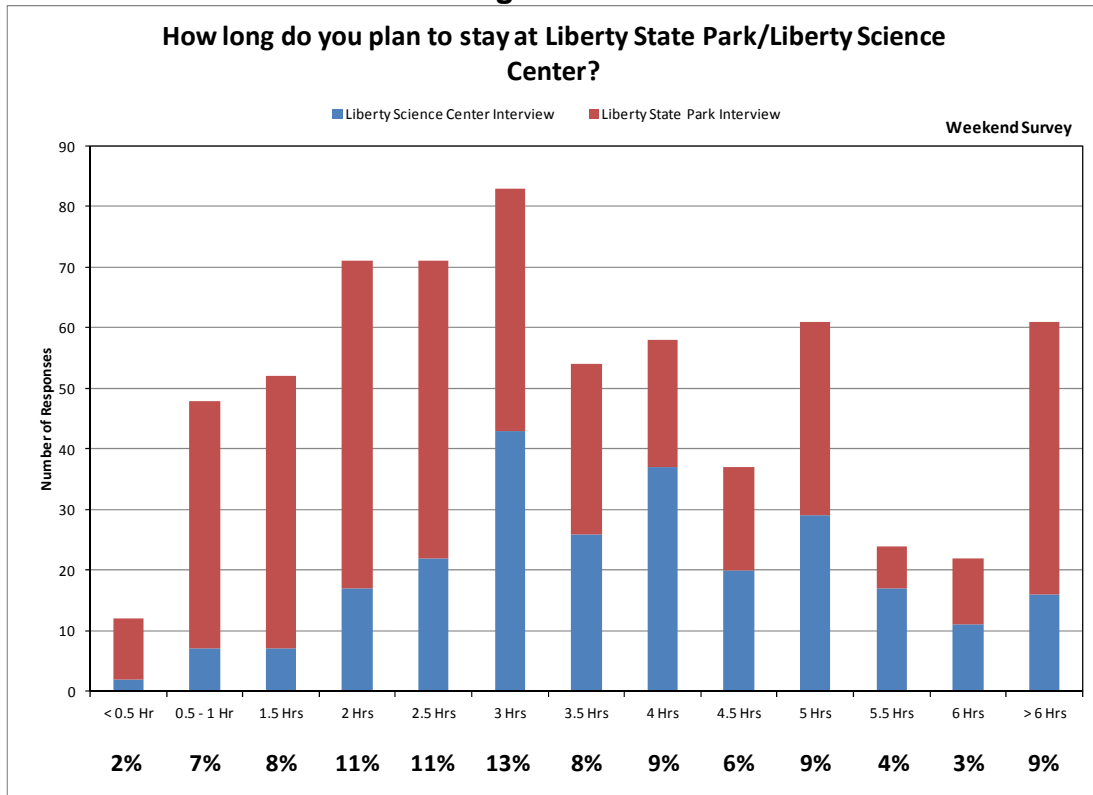


Figure 2-32

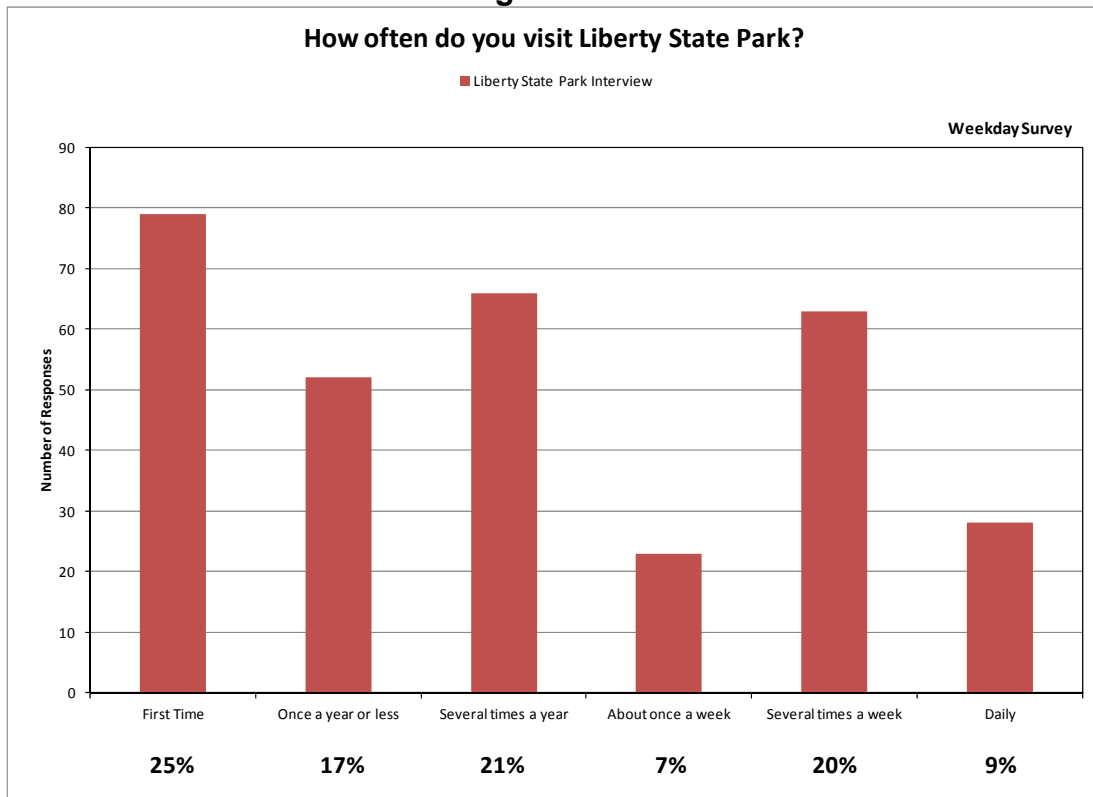


Figure 2-33

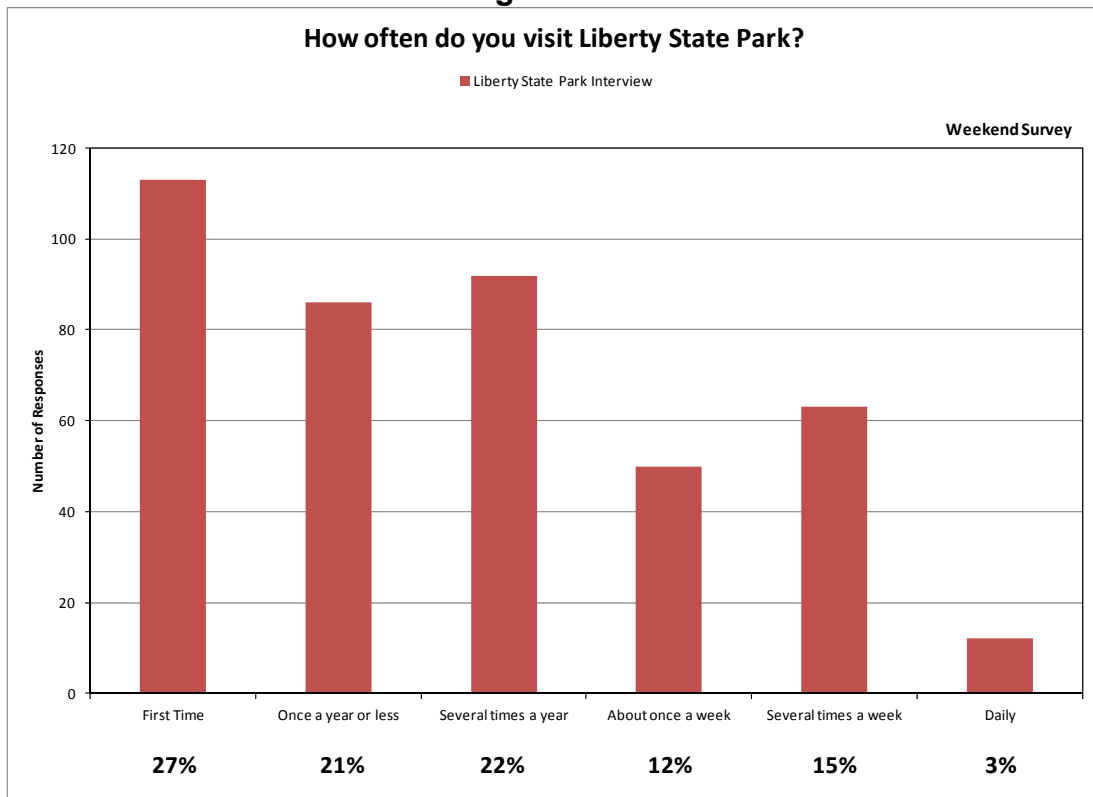
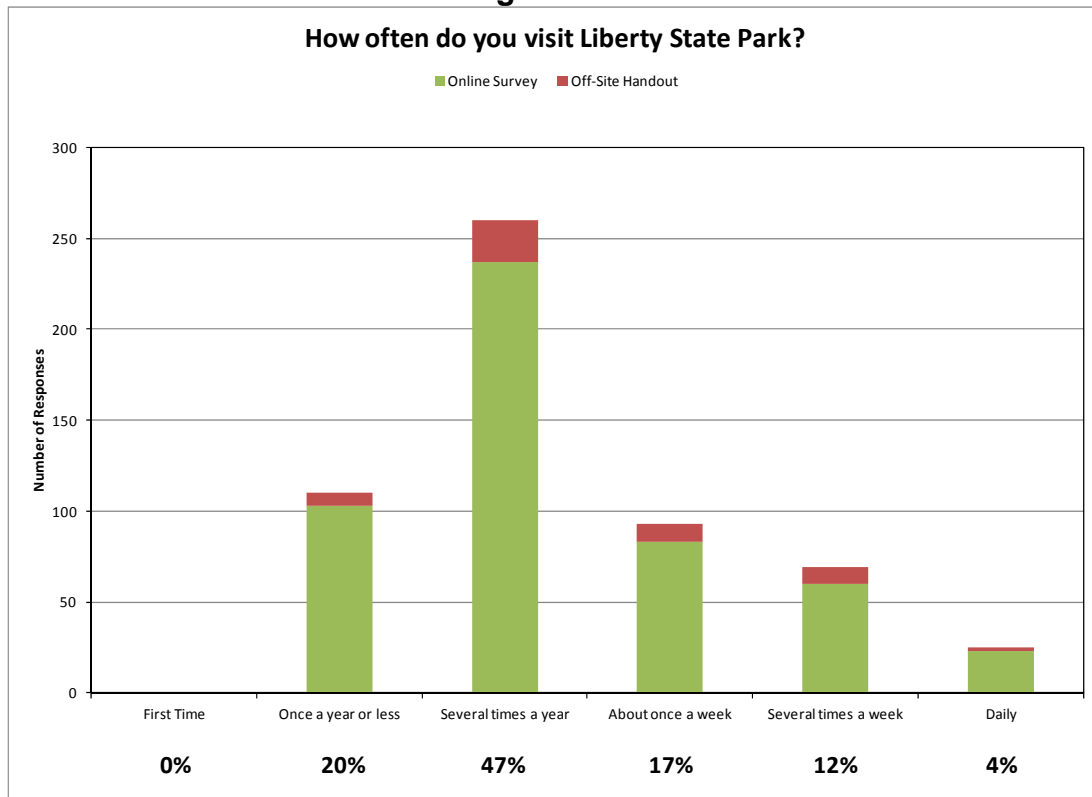


Figure 2-34



2.7.6.3 TRAVEL PATTERNS

Primary Mode of Transportation

Overall, visitors predominantly drove to the park and Liberty Science Center, with 78 percent arriving by car on a weekday (Figure 2-35) and 80 percent on a weekend day (Figure 2-36). Specifically, approximately 80 and 75 percent of Liberty State Park visitors traveled by car on weekdays and weekends, respectively. For the Liberty Science Center visitors, approximately 77 and 89 percent of Liberty State Park visitors traveled by car on weekdays and weekends, respectively. However, only about two-thirds of the respondents to the On-line and Generic surveys traveled by car to the park (Figure 2-37). This difference could be explained by the fact that a much higher proportion of respondents to the On-line and Generic surveys were from the local area (including Jersey City) with better access to other modes of transportation.

Figure 2-35

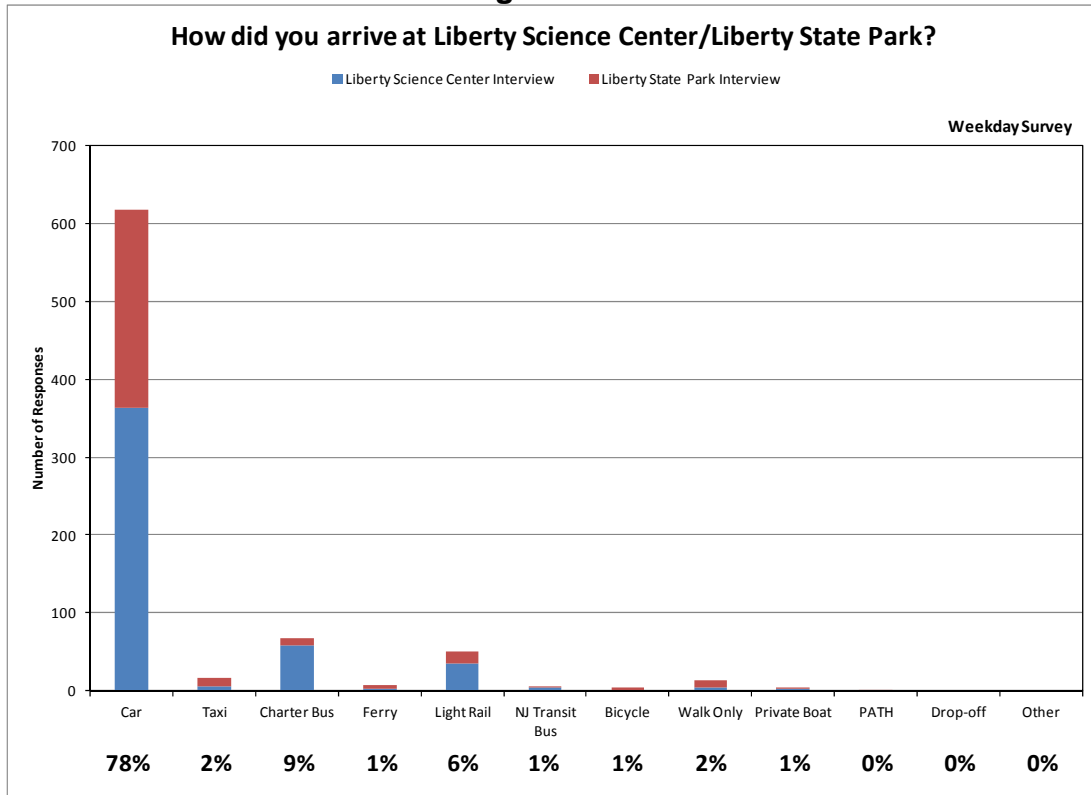


Figure 2-36

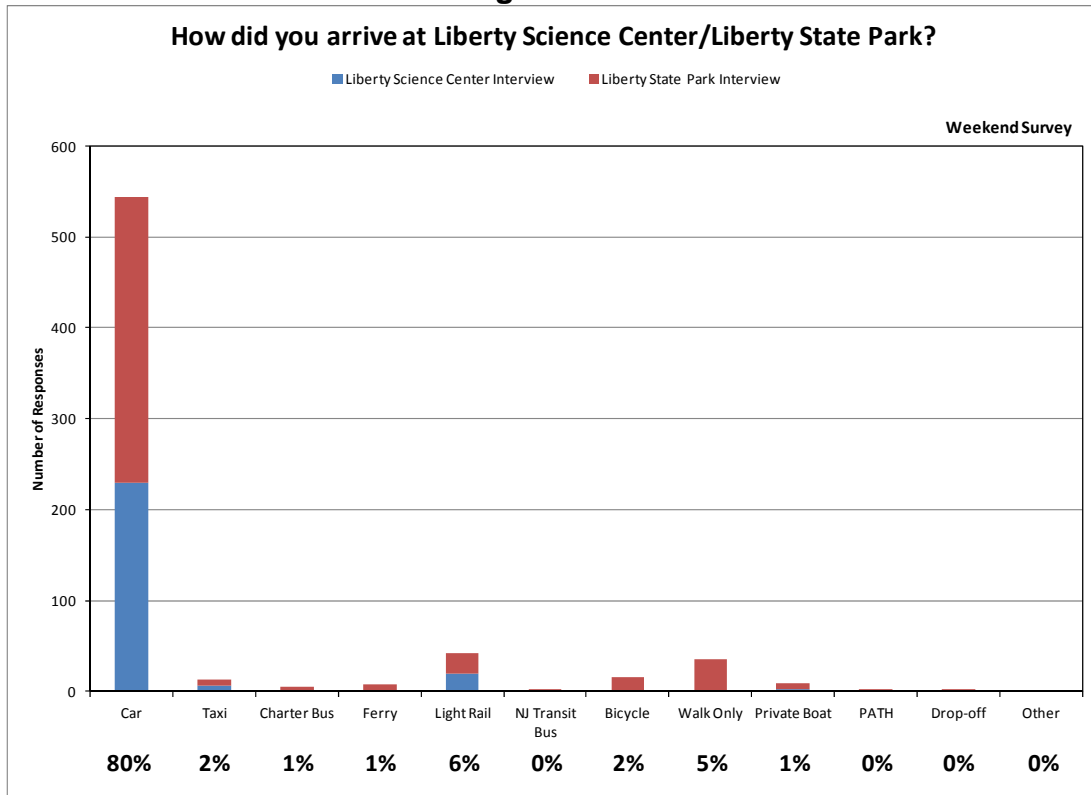
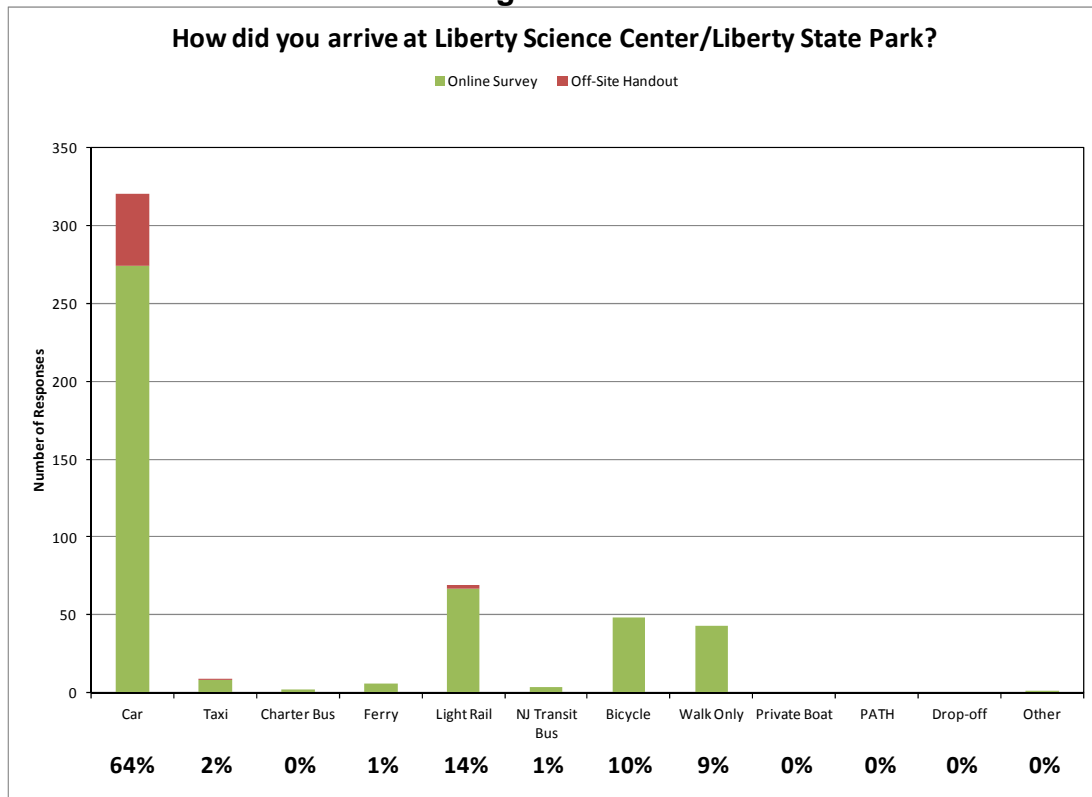


Figure 2-37



Parking

Overall, visitors to the park predominantly parked their cars in two parking lots on a weekday: Base Lot and Ferry Lot (Figure 2-38). On the weekend, visitors to the park parked their vehicles in three lots: Ferry Lot, Green Lot, and the Terminal Short Term Lot (Figure 2-39). It is important to note that all of the visitors to the Liberty Science Center parked their vehicles in the Liberty Science Center Lot. Respondents to the On-line and Generic surveys said they parked their vehicles in several locations during their most-recent visit, including the Terminal Short Term Lot, Base Lot, Liberty Science Center Lot, and Ferry Lot (Figure 2-40).

Figure 2-38

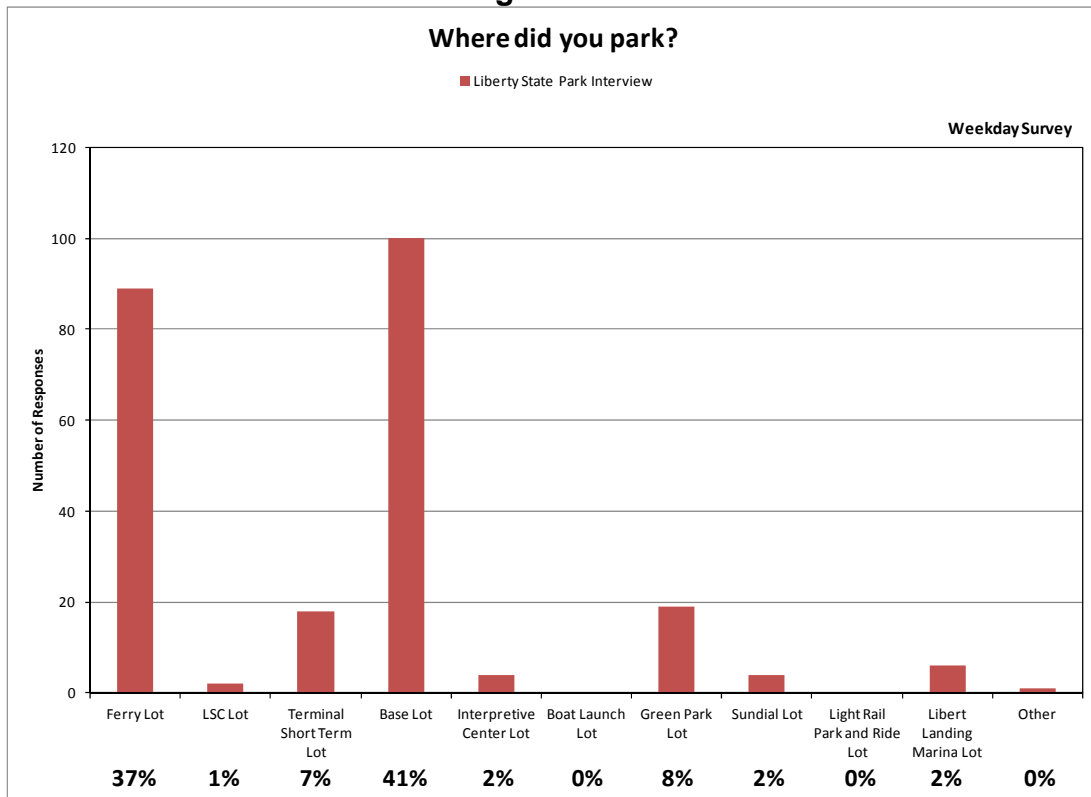


Figure 2-39

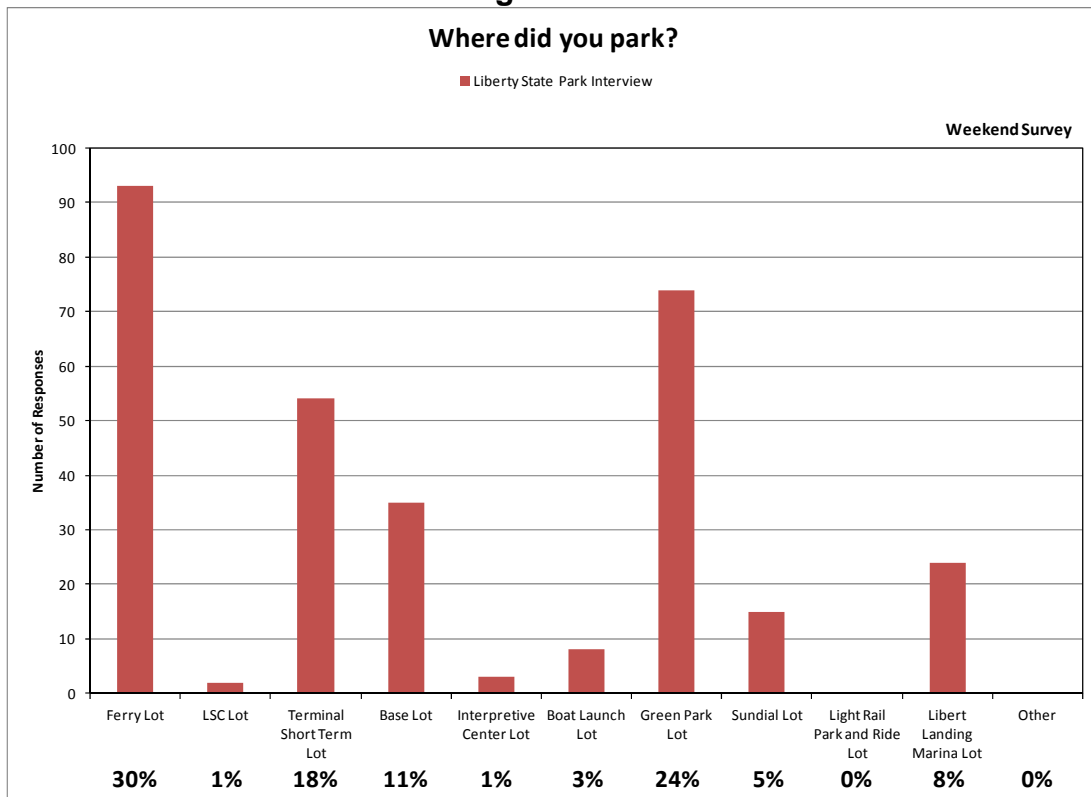
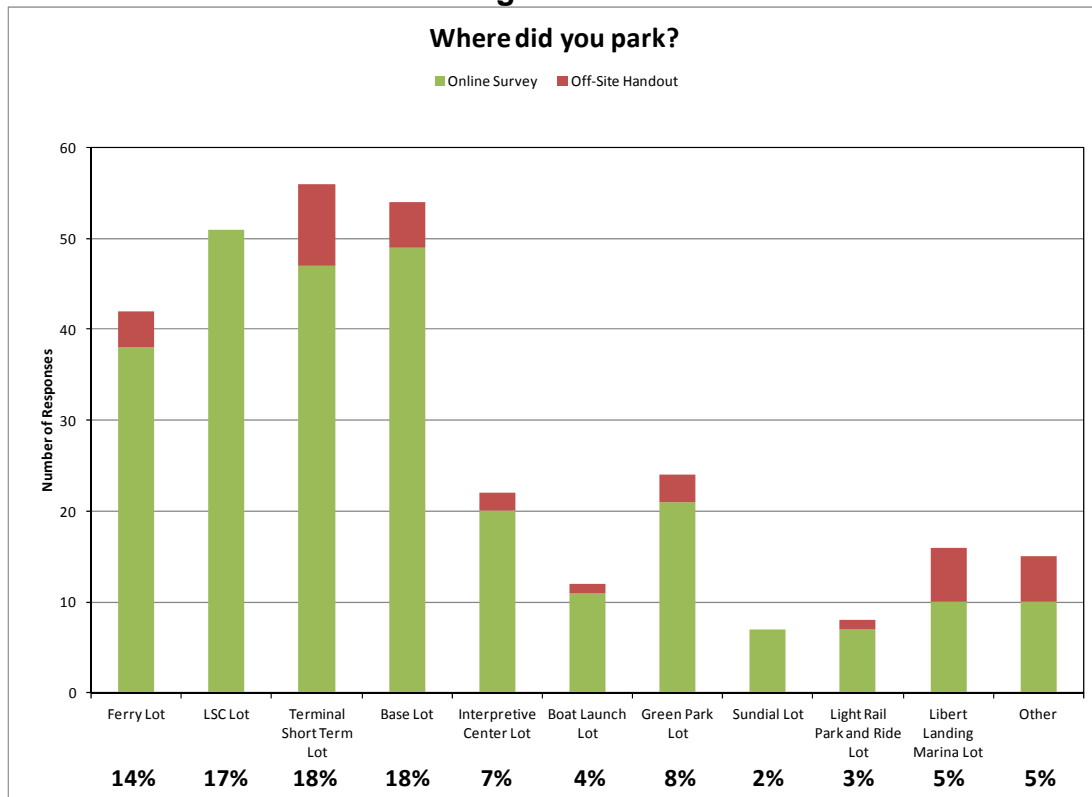


Figure 2-40



Auto Ownership

Overall, the results of all of the surveys indicated that respondents had high auto ownership rates, between 77 and 84 percent. The results for Liberty State Park and Liberty Science Center are shown in Figure 2-41 for the weekday survey and Figure 2-42 for the weekend survey. The results for the Online and Generic surveys are shown in Figure 2-43.

Figure 2-41

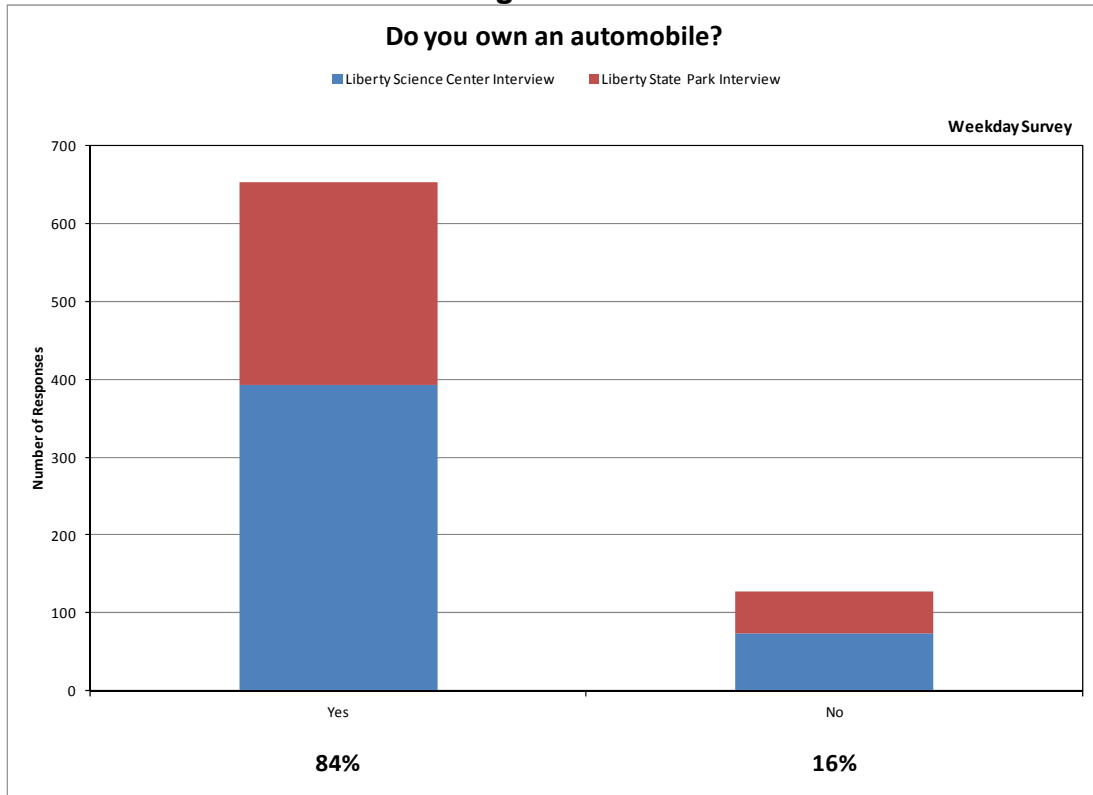


Figure 2-42

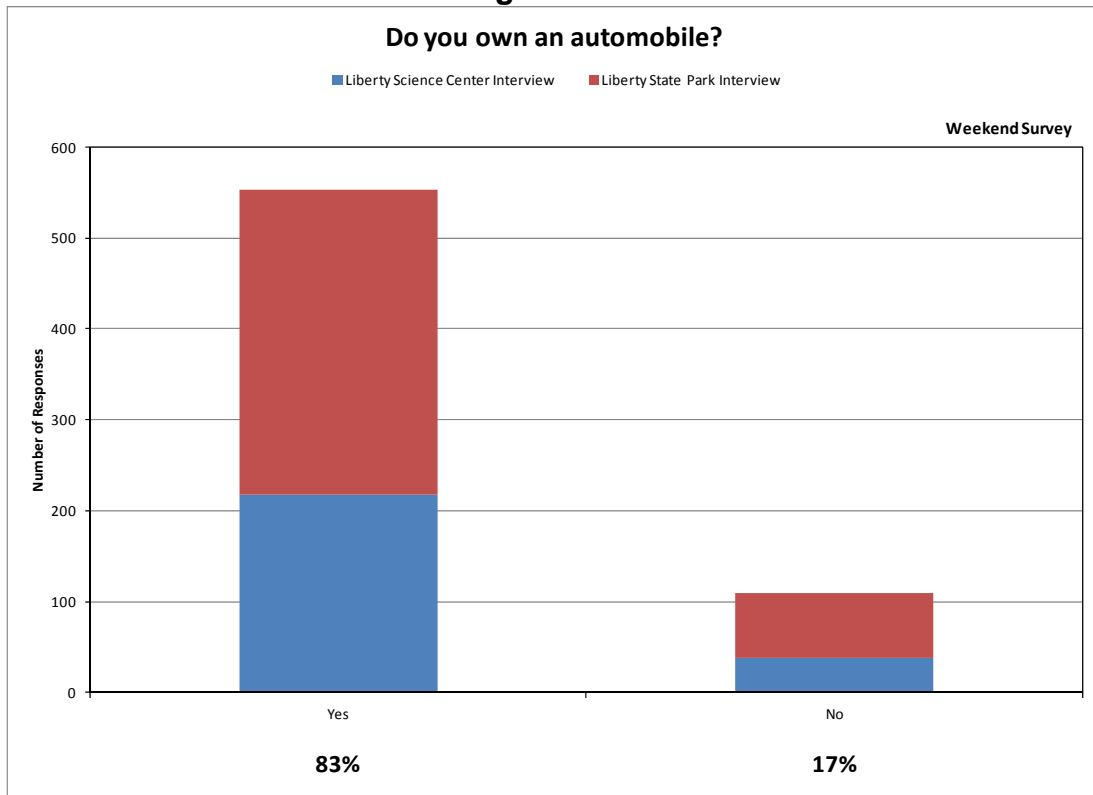
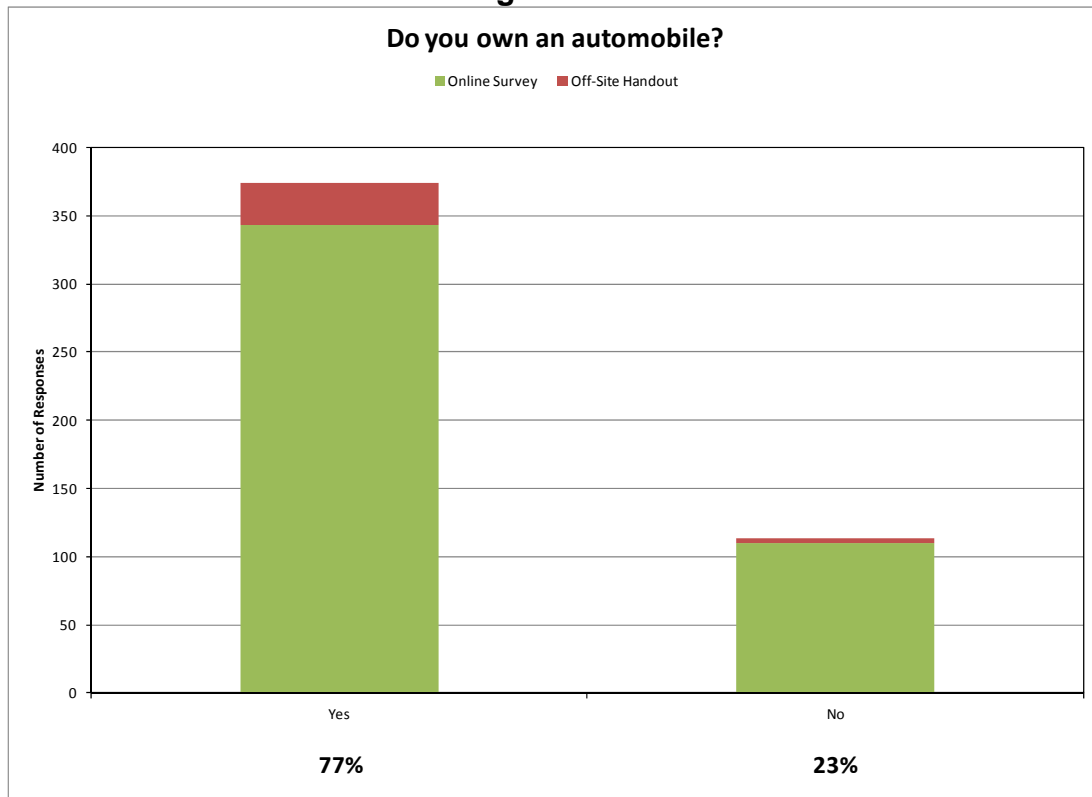


Figure 2-43



2.7.6.4 GROUP CHARACTERISTICS

Size

On a weekday, about one-quarter of respondents said that they traveled to Liberty State Park or Liberty Science Center as part of either a group of two or a group of more than five (Figure 2-44). On a weekend day, one-quarter of visitors traveled to the park in a party of two, but the number of larger groups was smaller than on the weekday for visitors to the park and Liberty Science Center (Figure 2-45). Average group sizes for the Liberty State Park visitors were 3.1 and 3.2 people on a weekday and weekend, respectively. Average group sizes for the Liberty Science Center visitors were a lot larger at 4.1 and 3.8 people on a weekday and weekend, respectively. The results of the On-line and Generic surveys in Figure 2-46 show much smaller group sizes (one and two people per group) than the park and Liberty Science Center surveys.

Figure 2-44

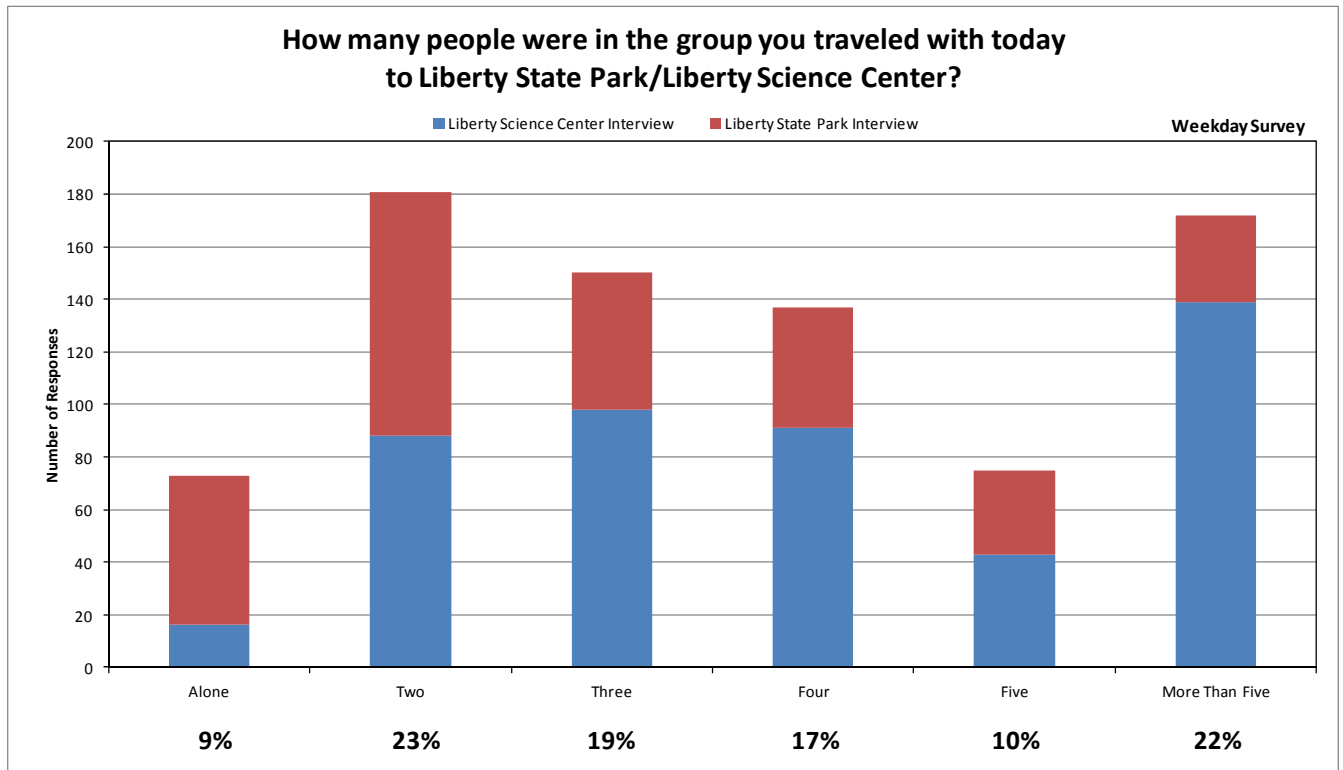


Figure 2-45

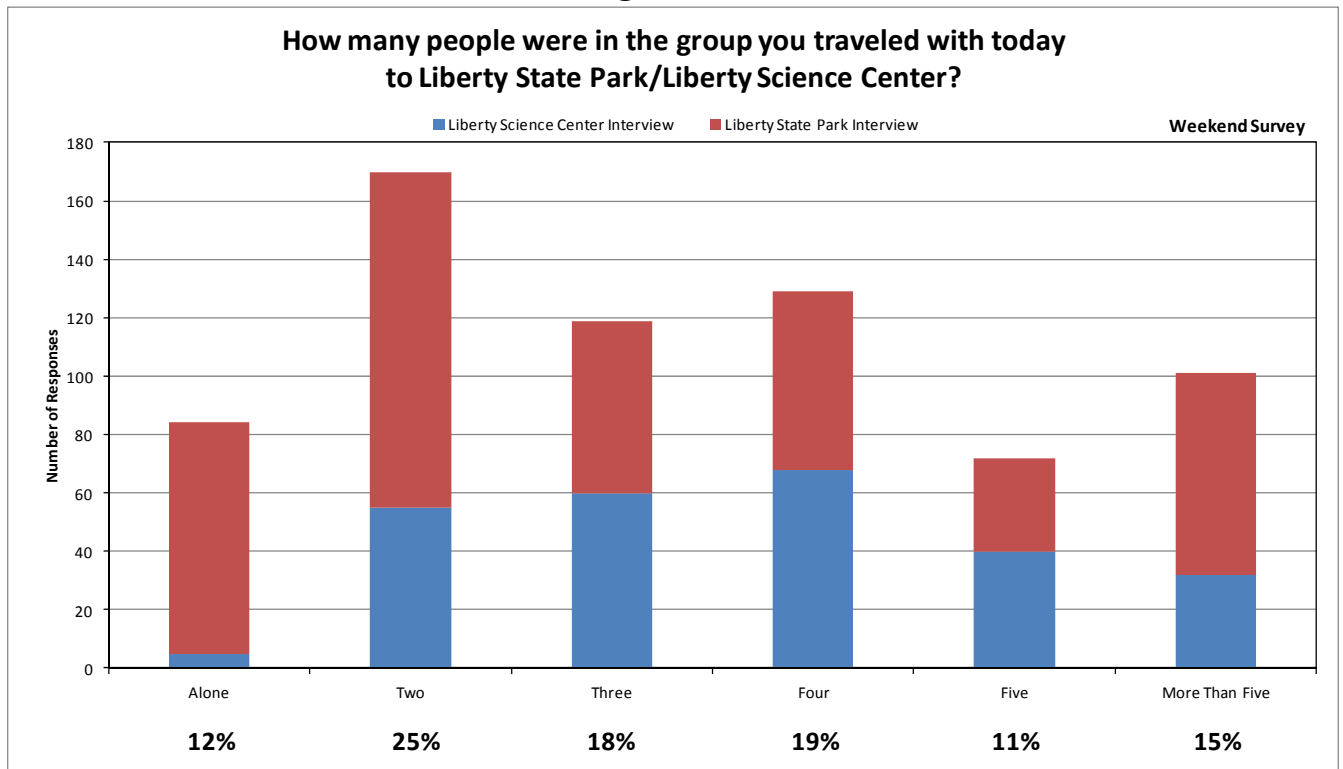
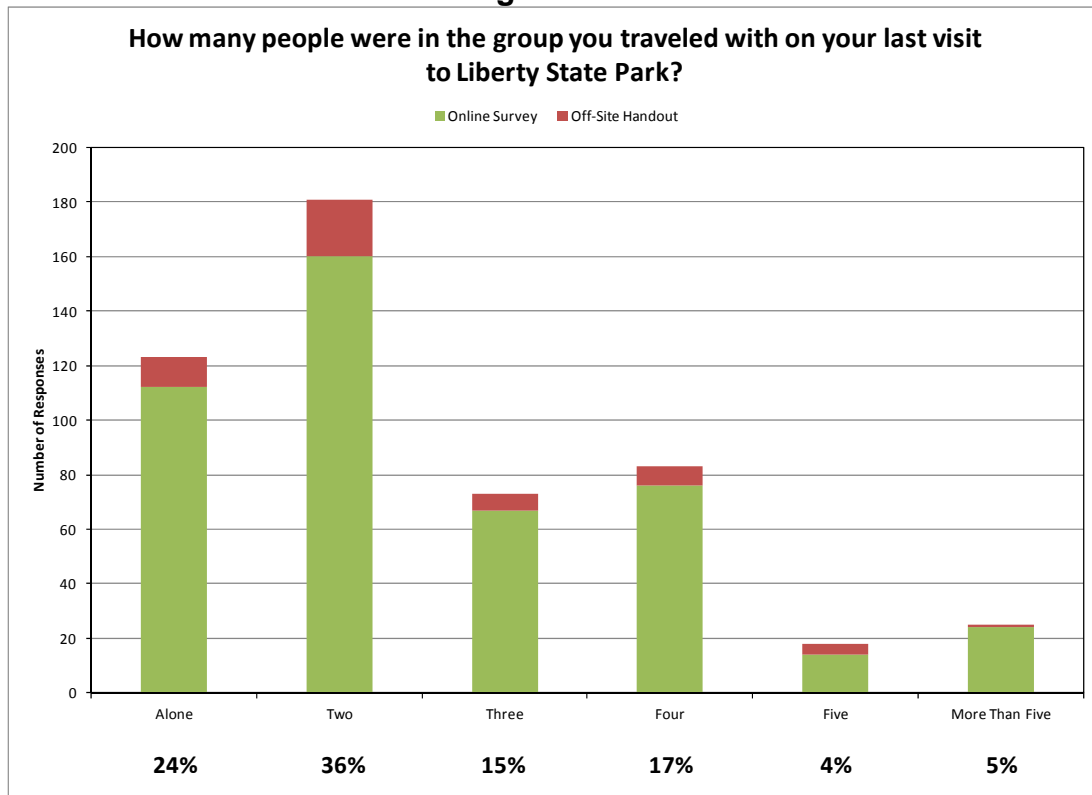


Figure 2-46



Number of Children

Overall, visitors predominantly accompanied children (about two-thirds) to the park and Liberty Science Center on a weekday (Figure 2-47) and just over one-half on a weekend day (Figure 2-48). However, only about 30 percent of the respondents to the On-line and Generic surveys accompanied children to the park (Figure 2-49).

Figure 2-47

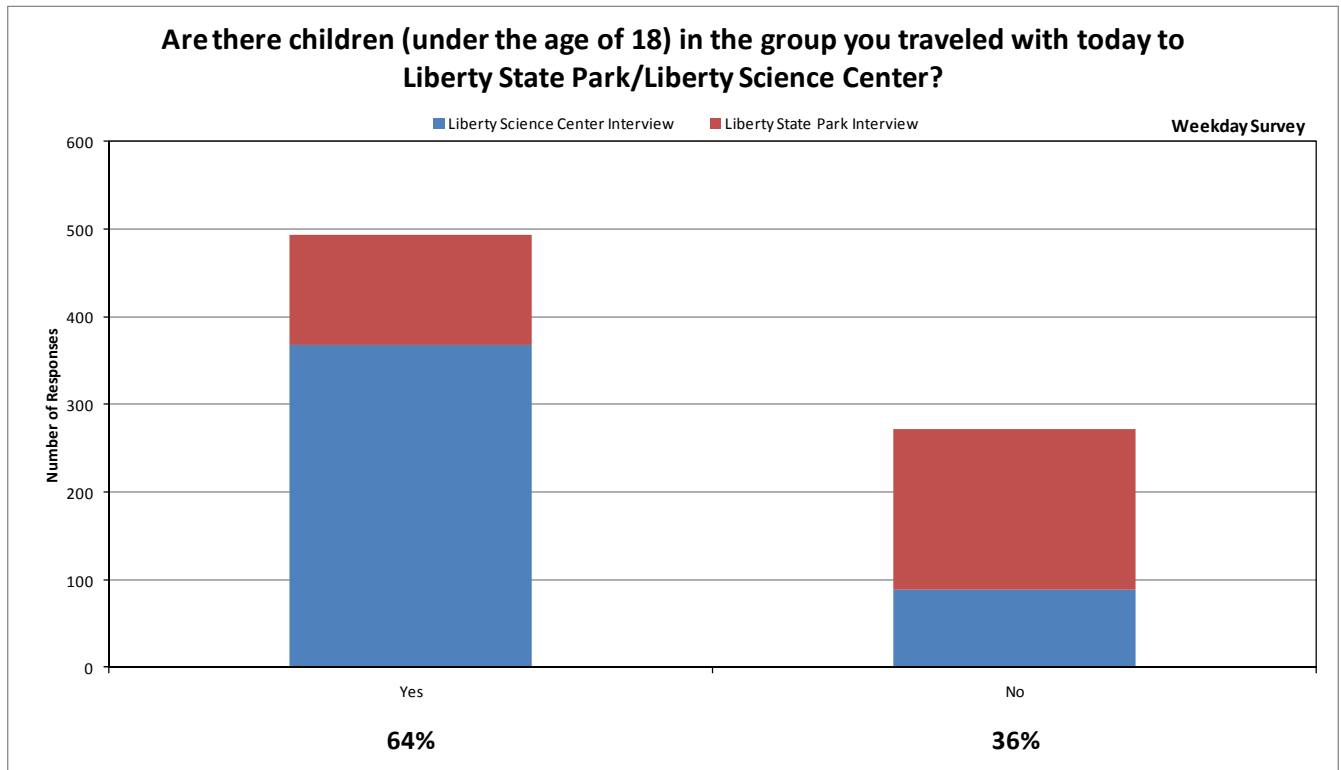


Figure 2-48

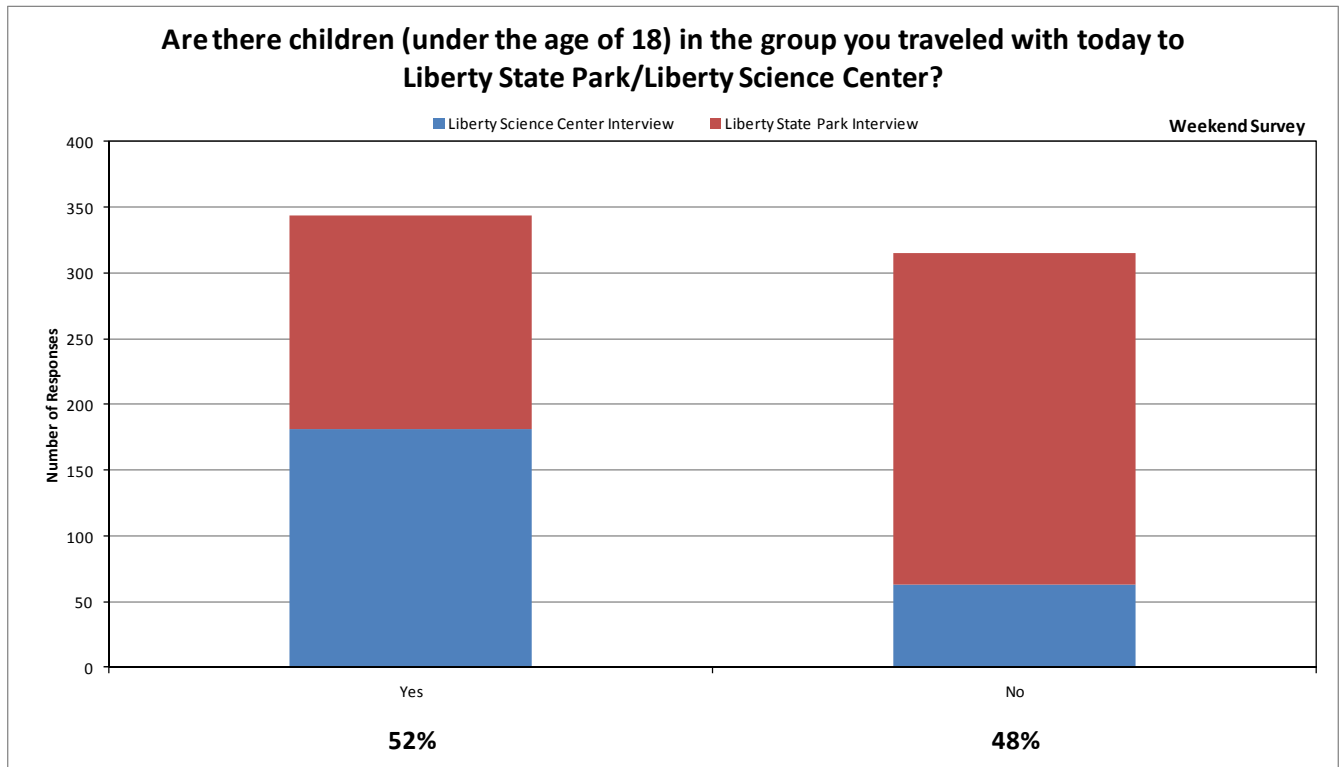
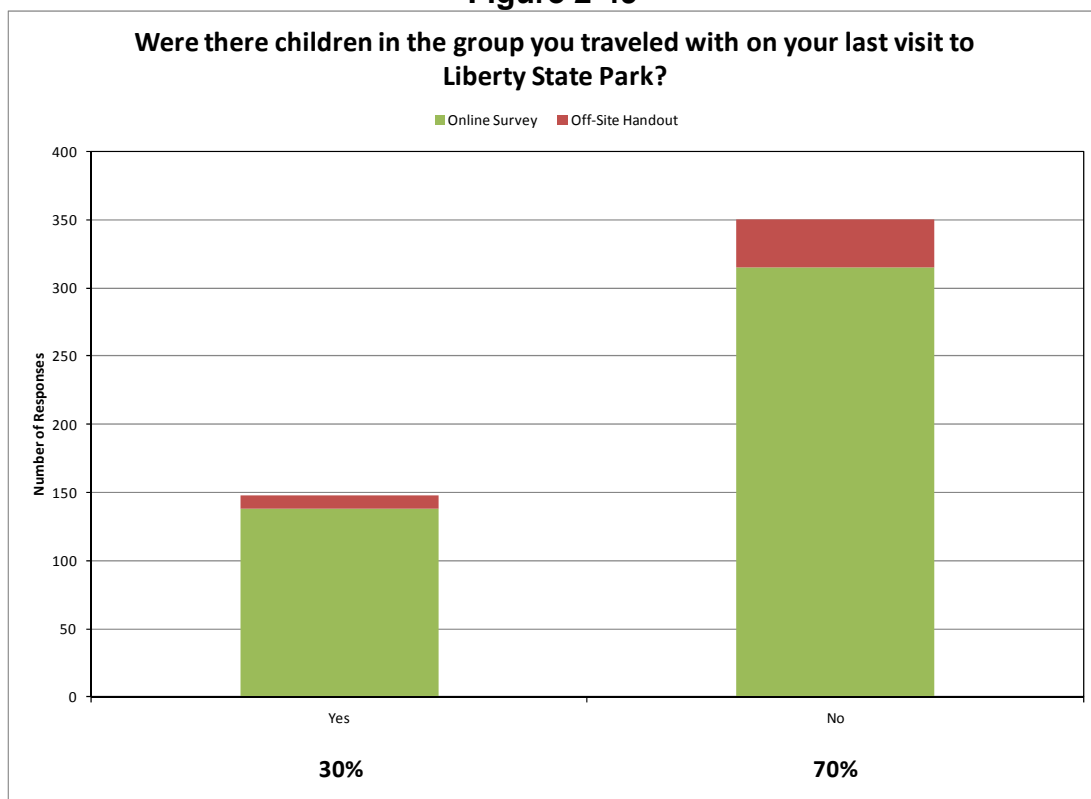


Figure 2-49



2.7.6.5 USE OF PUBLIC TRANSPORTATION

All of the surveys were consistent in that approximately 30 percent of respondents said they would be “very likely” to use public transportation between the Liberty State Park Light Rail Station and destinations within Liberty State Park if it were available, while 30 percent of respondents said would be “very unlikely” to use public transportation. In addition, just under half (between about 46 and 48 percent) of the respondents to the surveys were at least “somewhat likely” to use public transportation if it were available. Alternatively, between about 40 and 43 percent of the respondents to the surveys were at least “somewhat unlikely” to use public transportation if it were available. The results for Liberty State Park and Liberty Science Center are provided in Figure 2-50 for the weekday survey and Figure 2-51 for the weekend survey. The results for the On-line and Generic surveys are provided in Figure 2-52.

Specifically, Liberty State Park respondents were more likely to use transit than Liberty Science Center respondents. For Liberty State Park visitors, a total of 41 percent (weekday) and 36 percent (weekend) were very likely to use transit while 23 percent (weekday) and 29 percent (weekend) were very unlikely to use transit. For Liberty Science Center visitors, a total of 25 percent (weekday) and 35 percent (weekend) were very likely to use transit while 21 percent (weekday) and 36 percent (weekend) were very unlikely to use transit.

Figure 2-50

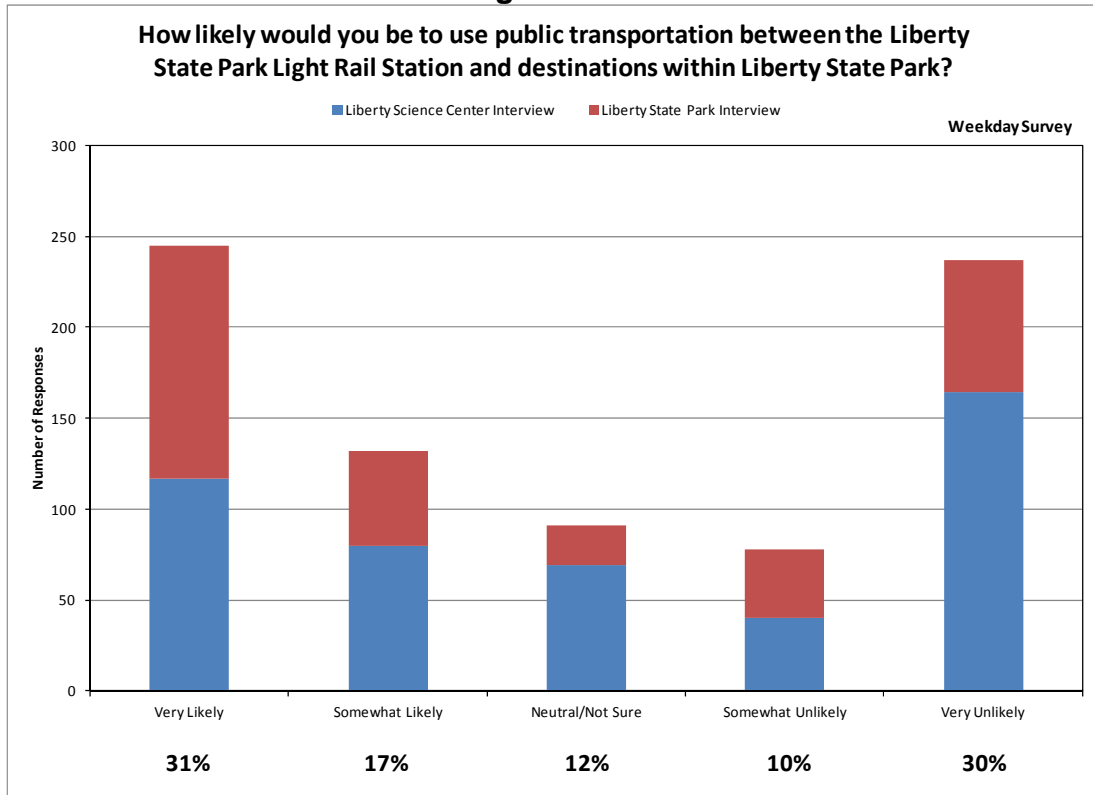


Figure 2-51

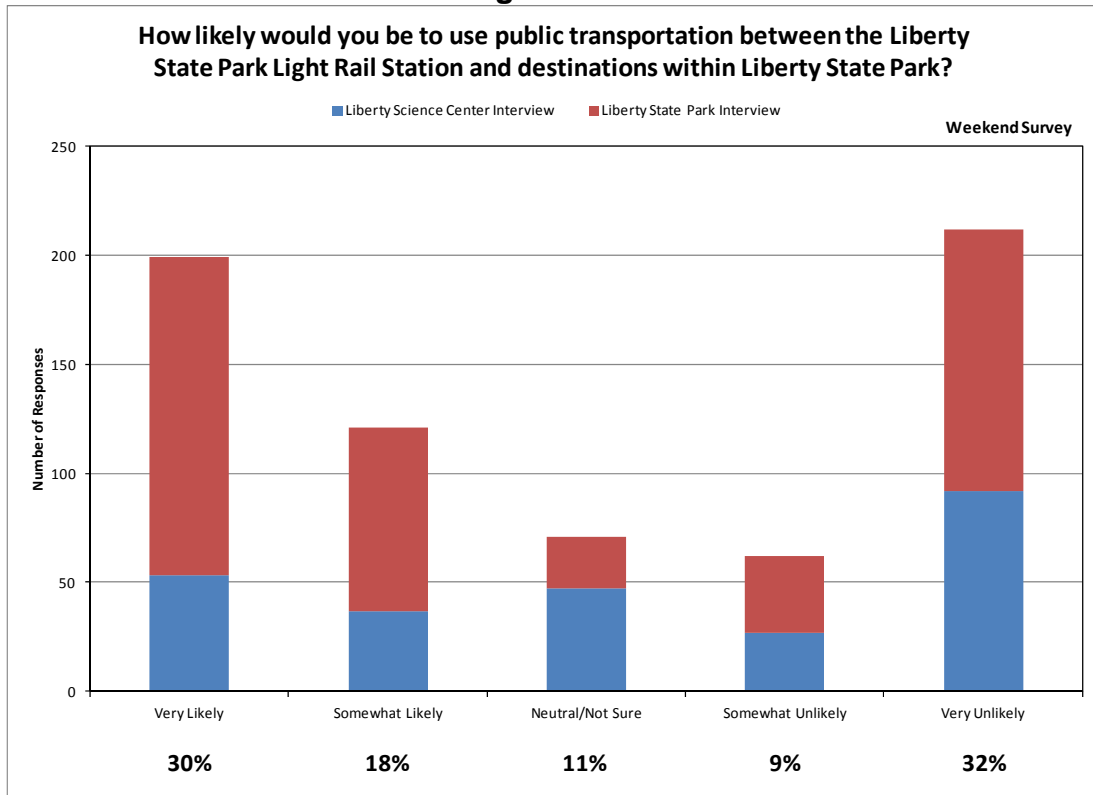
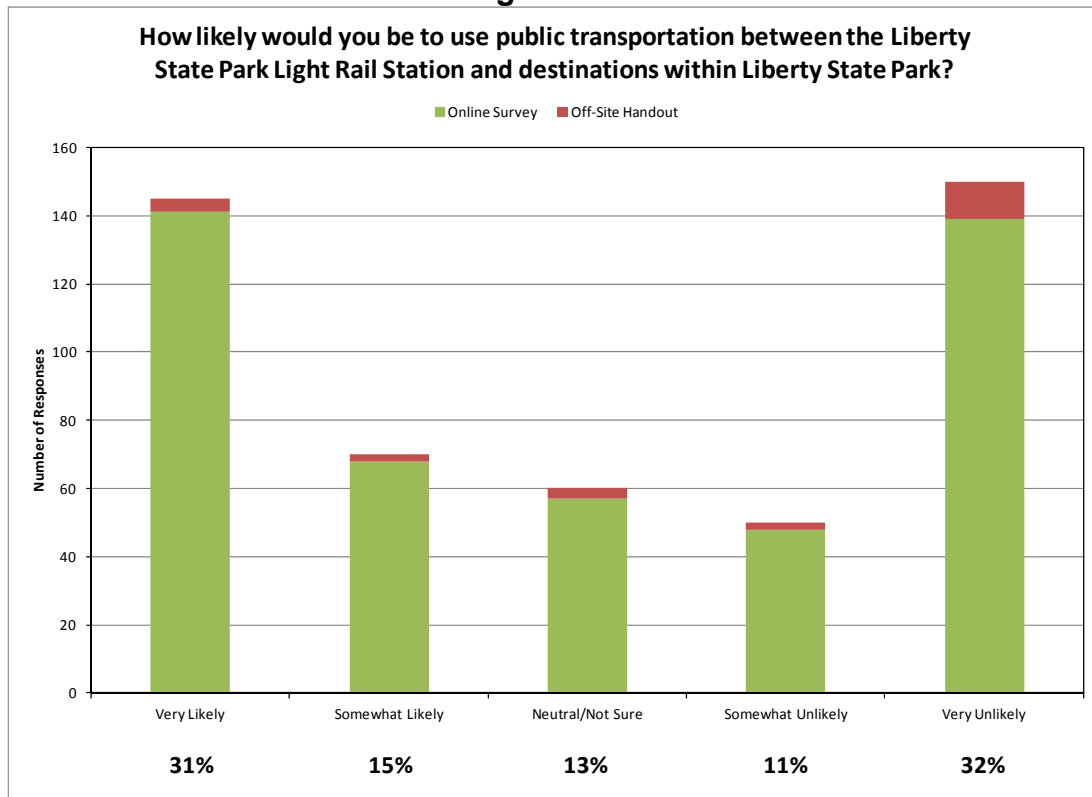


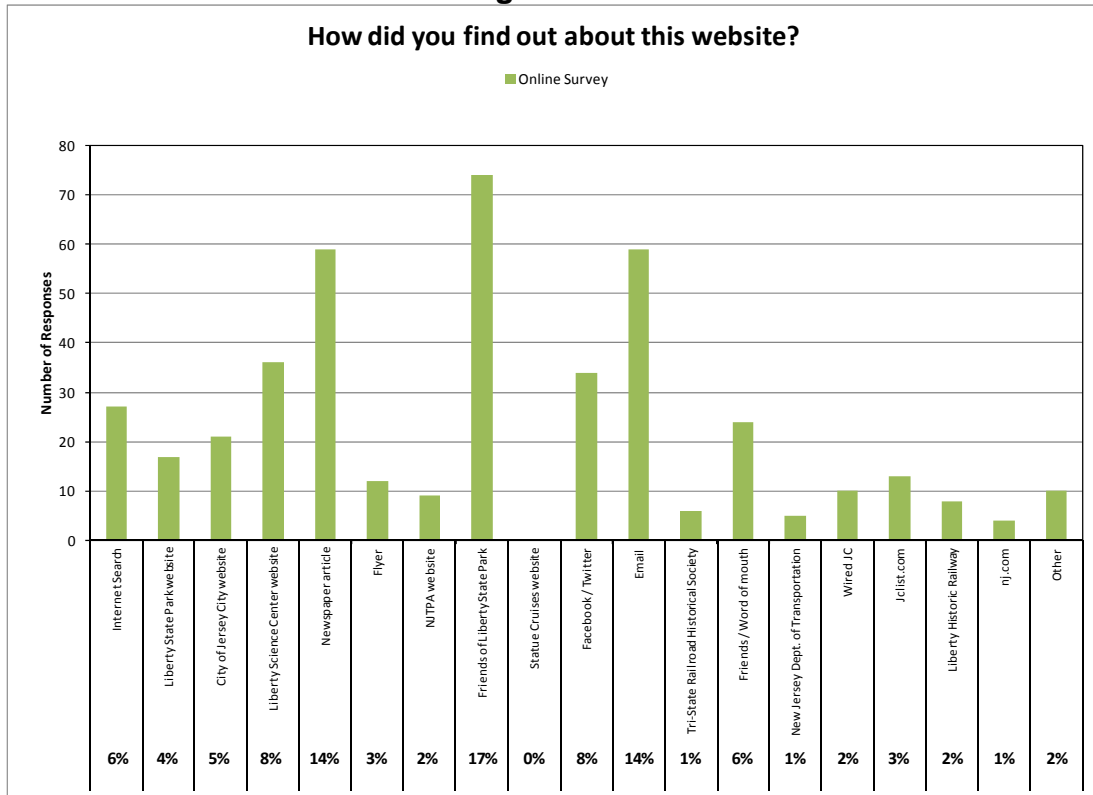
Figure 2-52



2.7.6.6 WEBSITE

The On-Line survey included a question on how respondents found out about the survey (Figure 2-53). The Friends of Liberty State Park (17 percent) was the most frequent answer, followed by both a newspaper article and e-mail from a colleague or friend (14 percent each) and Liberty Science Center website and Facebook/Twitter (8 percent each).

Figure 2-53



3 FUTURE CONDITIONS

The NJ TRANSIT #305 circulator shuttle service connected the HBLR Liberty State Park station with major and minor destinations within Liberty State Park for more than ten years. Service was provided by NJ TRANSIT between 2000 and 2010 before it was discontinued in the spring of 2010 as part of state budget cuts. The Hudson TMA operated shuttle service during parts of 2010 and 2011. This service allowed visitors who walked into the park or arrived at the park via transit to more easily visit distant and multiple destinations throughout the 1,200 acre park.

One of the purposes of this study is to determine the current and future (2020 and 2035) transit markets for Liberty State Park and the surrounding area. Four potential primary markets for a new Liberty State Park circulator shuttle service were identified including: Regional Attractions Visitors, Local Recreational Visitors, Liberty Landing Ferry Commuters and Visitors, and Industrial Park Workers. Each of these markets has very different characteristics; the potential ridership for each of the markets needed to be determined separately.

Regional transportation models are tools that are frequently used to estimate ridership for proposed transit services. However, regional transportation models typically focus on the weekday commuter periods and the work trip. The large majority of Liberty State Park trips are recreational trips. Since work trips for both Jersey City residents and park workers represent only a small percentage of the potential transit market, the North Jersey Regional Transportation Model – Enhanced (NJRTM-E) could not be directly used for ridership forecasts. In addition, the home origin distribution and mode choice characteristics of each of the four markets noted above are unique. Therefore, it was not desirable to develop a single model for the “average” park visitor. Instead, separate models were developed for each of the four markets using available park visitor data as well as the data collected by surveys of park visitors conducted as part of this study.

The Liberty State Park visitor survey was conducted during a typical weekday and weekend during the summer of 2012. Over 700 survey responses were collected from visitors to Liberty State Park. In addition, surveys were conducted at Liberty Science Center during the same period yielding an additional 700 completed visitor surveys. These surveys were used to identify information regarding the home origin of the visitor, the purpose or purposes of the park visit, the frequency of visits by local park visitors, and the mode of travel. The On-line and Generic surveys were not used for the home origin of the visitor since these surveys would be biased toward Jersey City residents compared with the random interview surveys conducted at the Park.

All new models must be calibrated to reflect existing conditions before they can be applied to predict future conditions. The most recent complete year of shuttle ridership was 2009 when approximately 60,000 visitors used the NJ TRANSIT #305 shuttle service. This ridership was used in the modeling process, and ridership characteristics were estimated based on the visitor survey data.

A key finding of the modeling process was that both the local recreational market and passengers of the Statue of Liberty / Ellis Island ferry service would be large components of the projected shuttle ridership. Liberty Science Center visitors comprise a smaller percentage of the ridership. Few ferry commuters and visitors and/or industrial park workers were identified in the survey. Potential ridership is forecast to grow by 40 percent by 2020 and more than double by 2035, largely driven by high growth in the number of transit-dependent, local recreational visitors.

3.1 MODELING PROCESS

The regional transportation model (NJRTM-E) was obtained from the North Jersey Transportation Planning Authority (NJTPA) for use in this study. The model's geographic extent (Figure 3-1) includes all of northern and central New Jersey (as far south as Burlington and Atlantic Counties), all of southern New York (as far north as Sullivan, Orange and Dutchess Counties), and eastern Pennsylvania (including Scranton/Wilkes-Barre, Lehigh Valley and Bucks County). The model zone structure and roadway network for the Hudson County area is shown in Figure 3-2. The regional model includes data on existing and future population and employment as well as the existing and future highway and transit networks. However, the focus of regional models is to forecast travel during the average weekday commuter peak periods and to model the home-to-work trip. Recreational and other non-work trips have much different characteristics than work trips and are typically not well represented in regional transportation models. Although the recreational trip data in the NJRTM-E was not applicable to this study, the population and transportation data from the regional model were used as key inputs to the Liberty State Park model development process.

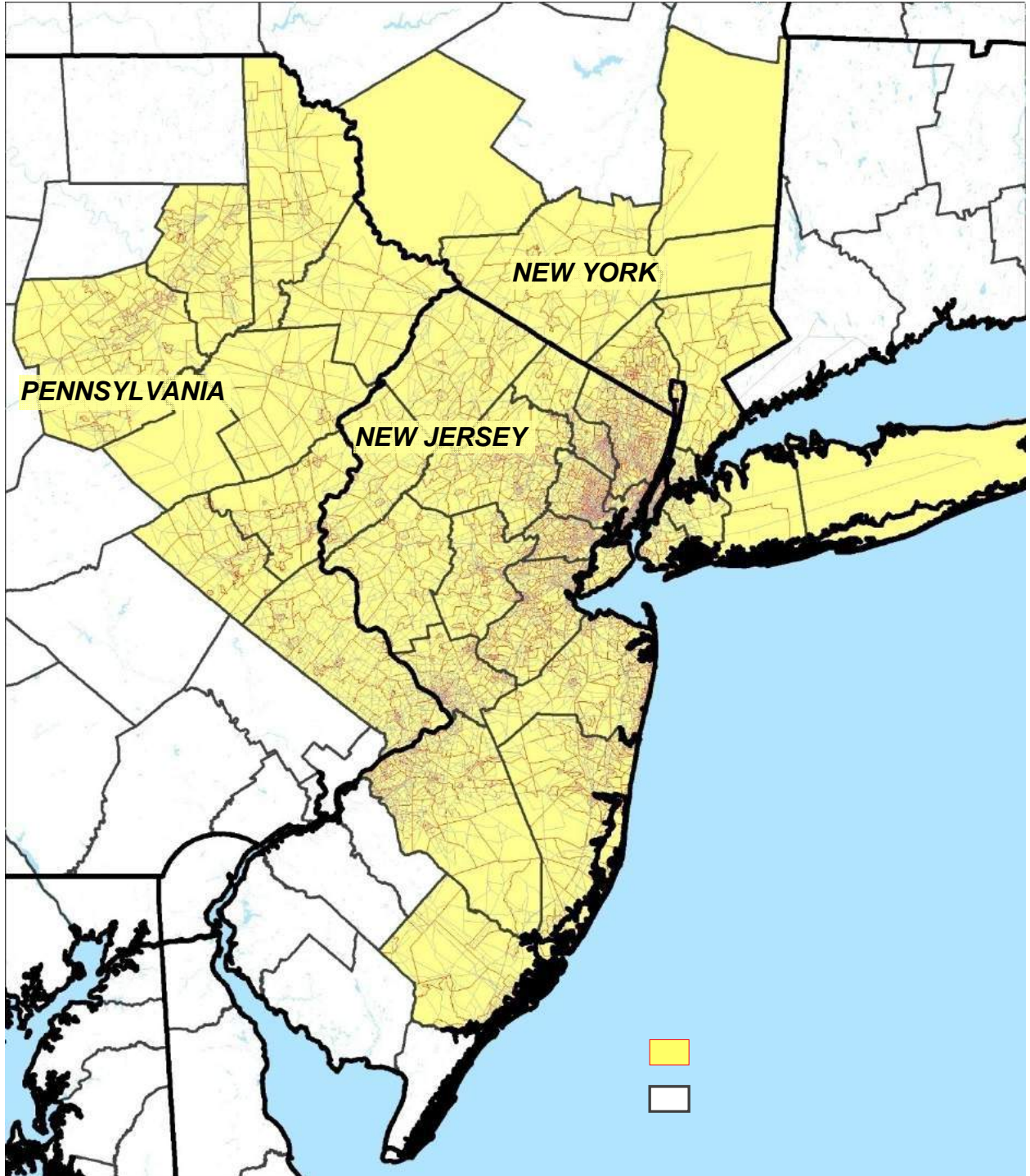
Liberty State Park trips are a function of distance from the park, household size, household income and auto availability. The NJRTM-E does not address the impact of auto availability and household size on recreational trip making. To account for these factors, data from the Census Bureau's five-year American Community Survey (ACS) for 2006 through 2010 were used to estimate the number of households in each zone with and without children, with and without a vehicle available, and median household income.

Future year population forecasts for regional models are typically developed by disaggregating municipal forecasts rather than aggregating individual proposed developments. In order to properly account for the new developments in the vicinity of Liberty State Park, the NJRTM-E population forecasts were not used for Jersey City. Instead, individual residential developments in Jersey City identified by the Division of City Planning were used to forecast future population.

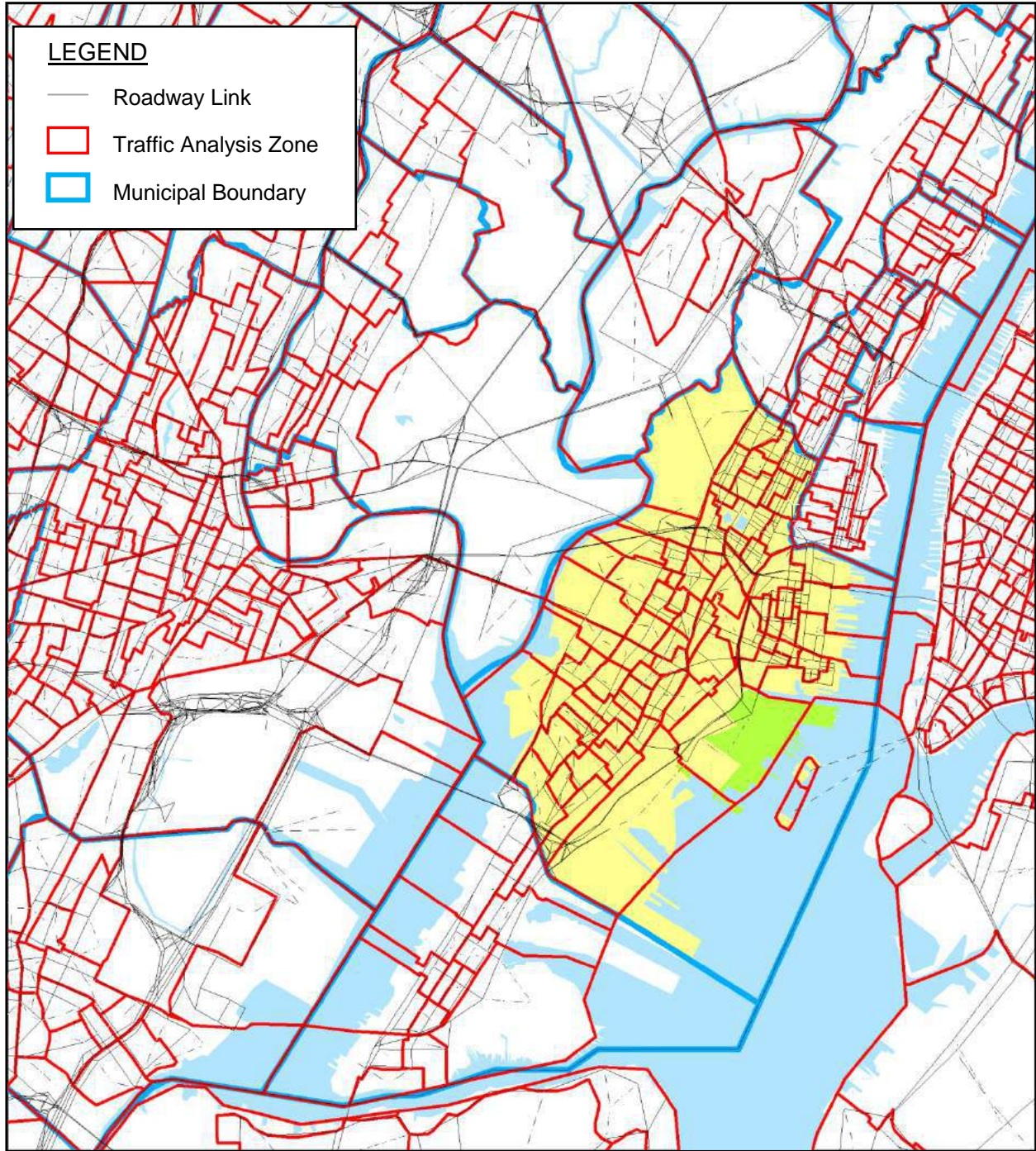
Due to their different characteristics, separate models were developed for each of the four potential primary markets for the Liberty State Park circulator shuttle service.

- Regional Attractions Visitors – These are visitors whose primary trip purpose is visiting the regional attractions at the park: the ferry service to the Statue of Liberty / Ellis Island and the Liberty Science Center. These visitors come from the local community, from throughout the North Jersey region, as well as from other states and other countries.
- Local Recreational Visitors – These are local residents whose primary trip purpose includes exercise, nature walk, leisure, picnic, playground, fishing, crabbing, etc. These visitors primarily come from the local Jersey City community. However, some local visitors also come from other Hudson County communities, Newark, and from the surrounding region.
- Liberty Landing Ferry Commuters and Visitors – These are commuters and visitors that use the Liberty Landing Ferry to travel to Lower Manhattan. The ferry service also makes a second stop in Downtown Jersey City and provides a connection for some park visitors.
- Industrial Park Workers – These are workers in the industrial area adjacent to the south end of the park in the vicinity of Burma Road.

Figure 3-1
NJRTM-E Model Extent



**Figure 3-2
NJRTM-E Model Detail**



3.2 REGIONAL ATTRACTIONS VISITORS: LIBERTY SCIENCE CENTER VISITORS

From available data, it was estimated that there were approximately 500,000 annual Liberty Science Center visitors in 2011. The geographic and modal distribution of Liberty Science Center visitors was estimated using data collected by the visitor survey conducted as part of this study. A total of 738 survey records for Liberty Science Center visitors were identified. These survey records were then divided into three separate categories for analysis:

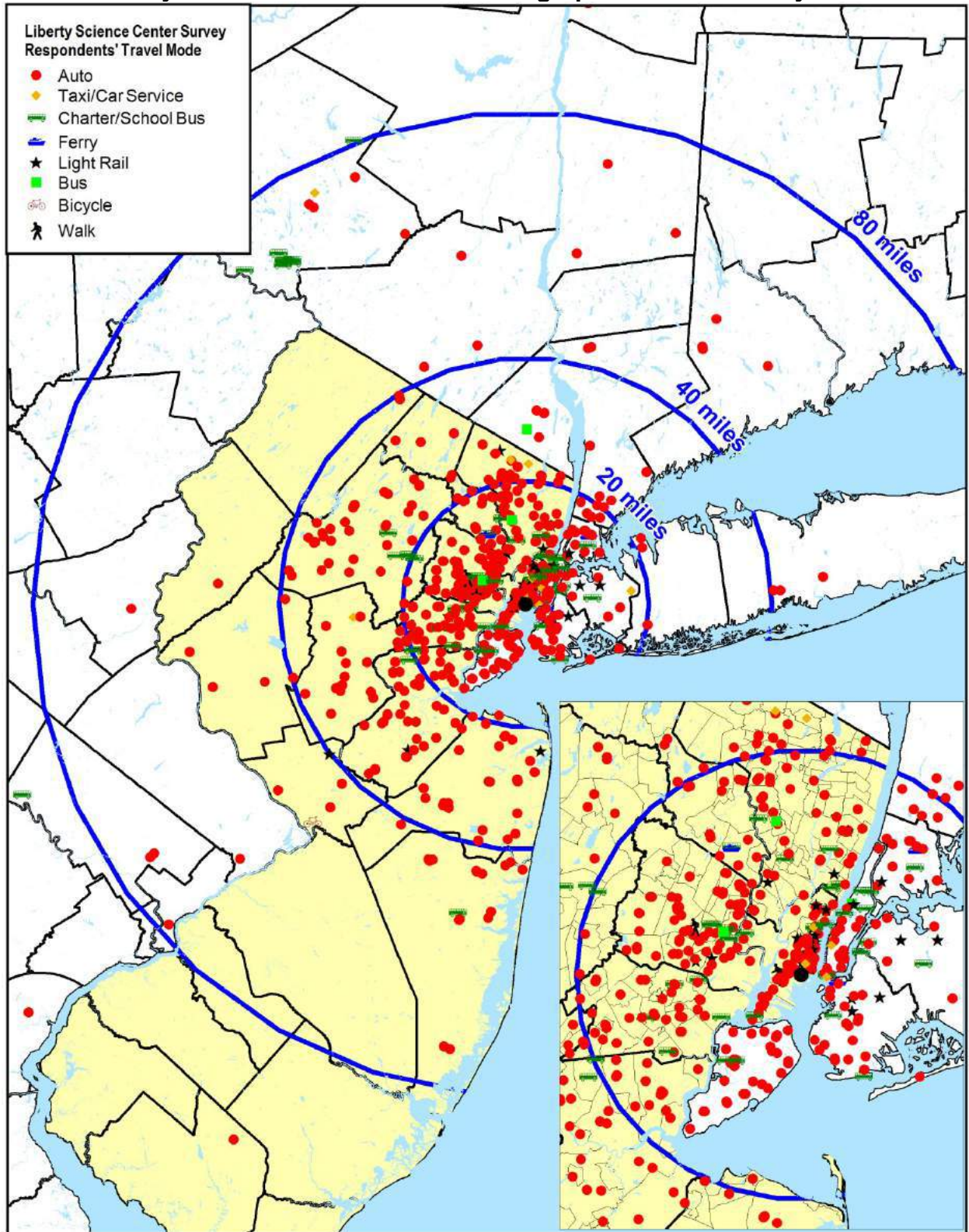
- Auto / Van / Motorcycle (includes taxi / car service) – 606 (82%)
- Non-Auto (includes Ferry, Light Rail, NJ TRANSIT Bus, Bicycle and Walk) – 72 (10%)
- Charter / School bus – 58 (8%)

The Liberty Science Center provided an estimate of the number of student bus visitors for FY 2012. From this data, it was estimated that approximately 40 percent of all Liberty Science Center visitors are student bus groups. As seen above, Liberty Science Center school and charter bus group visitors were likely under-represented in the survey, which was limited to adults only. This group of visitors is unlikely to divert to alternative modes and, therefore, needs to be treated as a separate category for this analysis.

As part of the survey, the home municipality was obtained for each respondent. For Jersey City residents, the closest intersection to the respondent's home and/or neighborhood was obtained as well. The NJRTM-E was used to estimate auto and transit travel times to Liberty State Park. Each survey record was assigned to an NJRTM-E traffic analysis zone (TAZ). The TAZ data was then aggregated based on its auto and transit travel time to Liberty State Park. The Liberty Science Center draws from the immediate local area, as well as the region. From the survey, it was estimated that approximately 16 percent of Liberty Science Center visitors reside in Hudson County, 53 percent come from other locations in Northern New Jersey, 17 percent from New York City, six percent from other locations in New York State, and one percent from Pennsylvania. Of the remaining visitors, six percent are from other states, and one percent is international visitors.

The geographic distribution of Liberty Science Center visitors from the survey data is shown in Figure 3-3 with one map feature plotted for each survey. Approximately 59 percent of all visitors live within 20 miles of Liberty Science Center. An additional 23 percent live within 40 miles of Liberty State Park. Using the data from the NJRTM-E, the average travel time for an auto and transit visitor from the region was approximately 43 and 42 minutes, respectively.

Figure 3-3
Liberty Science Center Visitors – Geographic Distribution by Mode



Separate models were developed to estimate Liberty Science Center auto and transit resident visitor trip rate as a function of travel time based on an exponential curve. The models matched observations to an R² of 0.73 and 0.76 for auto and transit visitors, respectively. R² (the coefficient of determination) is a statistical measure of how well a regression equation correlates with observed values. Presumably, it provides an indication of how well the model would predict future data. An R² can range from 0.00 (no correlation) to 1.00 (perfect correlation). A value of 0.76 indicates that 76 percent of the variation in values can be explained by the explanatory variable(s), in this case - travel time. As seen in the models, visitor trip rate decreases with increasing travel time.

- Annual Trips per Person (Auto Visitor):

$$-0.027 \ln(\text{Auto Travel Time}) + 0.0673 \quad (R^2=0.73)$$

- Annual Trips per Person (Transit Visitor):

$$-0.063 \ln(\text{Transit Travel Time}) + 0.1154 \quad (R^2=0.76)$$

Note: "ln" is natural logarithm

Using the 2020 and 2035 NJRTM-E regional household growth data of 7.8% and 20.9%, respectively, the number of Liberty Science Center auto, transit and charter bus visitors can be estimated as shown in Table 3-1.

**Table 3-1
Liberty Science Center Annual Visitors**

	Existing (2011)	Year 2020	Year 2035
Auto	275,000	297,000	333,000
Transit	25,000	27,000	30,000
Charter Bus	200,000	216,000	242,000
Total Liberty Science Center Visitors	500,000	539,000	605,000

3.3 REGIONAL ATTRACTIONS VISITORS: STATUE OF LIBERTY/ELLIS ISLAND FERRY VISITORS

From available data, it was estimated that there were approximately 700,000 annual Statue of Liberty/Ellis Island Ferry (Ferry) visitors to Liberty State Park in 2011. The geographic and modal distribution of Ferry visitors was estimated using the visitor survey conducted as part of this study in July 2012. A total of 237 survey records completed by Ferry visitors were identified. These survey records were then divided into three separate categories for analysis:

- Auto / Van / Motorcycle (includes taxi / car service) – 192 (81 percent)
- Transit (includes Ferry, Light Rail, NJ TRANSIT Bus, Bicycle and Walk) – 37 (16 percent)
- Charter / School bus – 8 (3 percent)

Liberty State Park staff provided an estimate of 13,000 buses that traveled to the park in 2011. An estimated average bus occupancy rate was used to project that approximately 280,000, or 40 percent, of all Ferry visitors arrived in a bus group. As seen with Liberty Science Center, school and charter bus group visitors for the Ferry were likely under-represented in the survey, which was limited only to

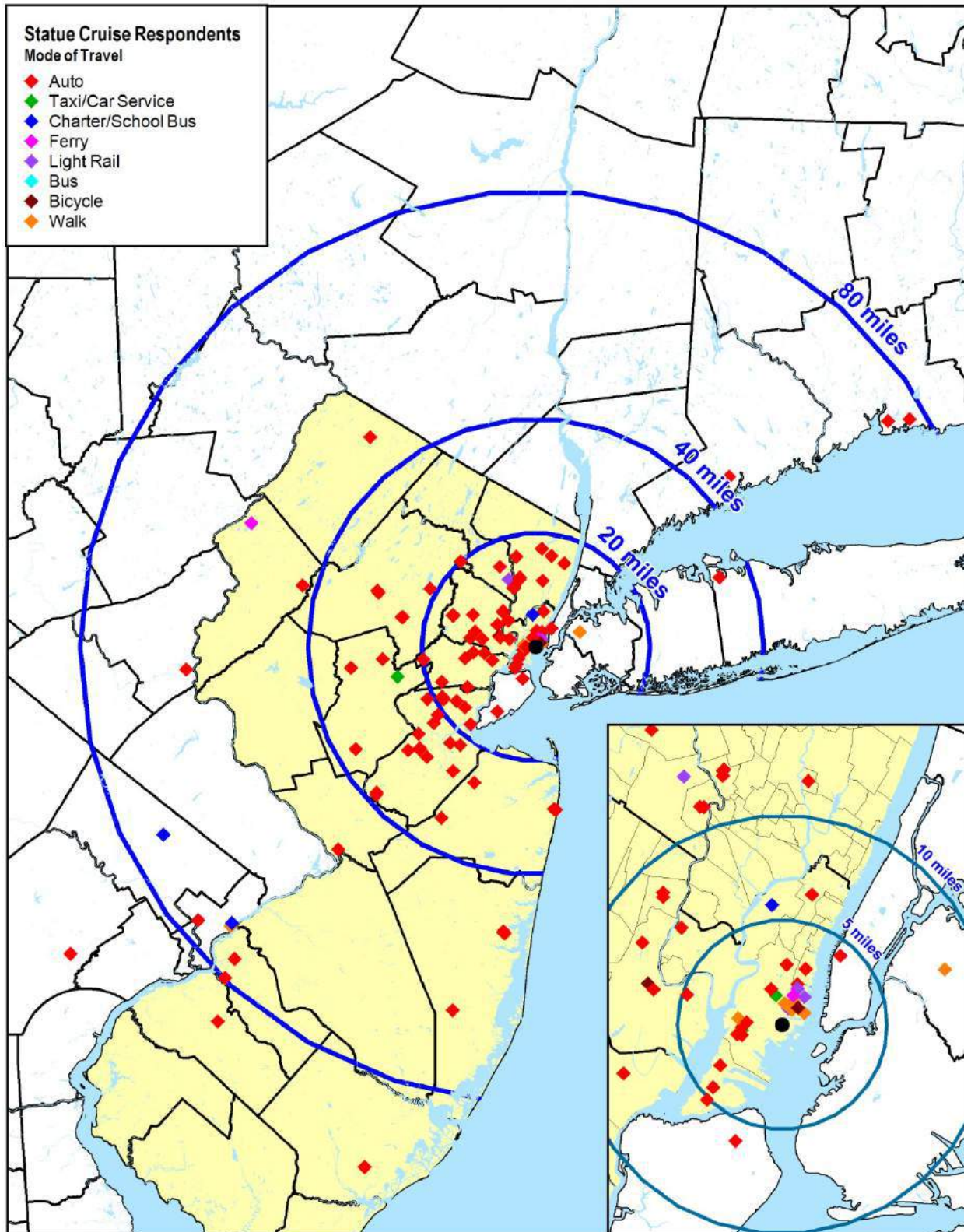
adults. Furthermore, Ferry service begins at 9:00 AM during the summer months, and it was suspected that many of the charter bus visitors may have arrived prior to the 10:00 AM start of the survey. These visitors were unlikely to be surveyed when they returned to the park later in the day, because surveyors stationed at the CRRNJ Terminal building primarily interviewed those buying tickets or waiting to board the ferries. School and charter bus group visitors are unlikely to divert to alternative modes and, therefore, need to be treated as a separate category for this analysis.

Ferry visitors who use transit are likely over-represented in the survey data. In an effort to have robust transit user data, park goers were specifically targeted for interviews as they walked into the park from the Liberty State Park light rail station. This included a number of Ferry visitors. Among Ferry visitors interviewed in and around the CRRNJ Terminal building, only six percent had used transit as their primary travel mode.

As part of the survey, the home municipality was obtained for each respondent. For Jersey City residents, the closest intersection to the respondent's home and/or neighborhood was also obtained. The NJRTM-E was used to estimate auto and transit travel times to Liberty State Park. Each survey record was assigned to an NJRTM-E TAZ. The TAZ data was then used to determine an average auto and transit travel time to Liberty State Park. The Ferry draws visitors from a wide geography, including the immediate local area, throughout the region, out-of-state, and internationally. Using both the survey results and the additional available data regarding Ferry visitors, it was estimated that less than half (40 percent) of all Ferry visitors are residents of the NJRTM-E region. Of the remaining visitors, 50 percent are from out-of-region and 10 percent are international visitors. As expected, given the competing Statue of Liberty/Ellis Island Ferry in Battery Park City in Manhattan, the survey found that less than one percent of Ferry visitors are from New York.

The geographic distribution of Ferry visitors from the survey data is shown in Figure 3-4 with one map feature plotted for each survey. Approximately 29 percent of visitors live within 20 miles of the ferry, and an additional 12 percent live within 40 miles. Using the data from the NJRTM-E, the average travel time for auto and transit visitors from the region was approximately 45 and 27 minutes, respectively.

Figure 3-4
Statue of Liberty / Ellis Island Ferry Visitors - Geographic Distribution by Mode



Separate models were developed to estimate Ferry auto and transit visitor trip rates as a function of travel time on an exponential curve. The models matched observations to an R^2 of 0.72 and 0.81 for auto and transit visitors, respectively. As seen in the models, visitor trip rate decreases with increasing travel time.

- Annual Trips per Person (Auto Visitor):

$$-0.031 \ln(\text{Auto Travel Time}) + 0.0712 \quad (R^2=0.72)$$

- Annual Trips per Person (Transit Visitor):

$$-0.438 \ln(\text{Transit Travel Time}) + 0.6391 \quad (R^2=0.81)$$

Note that these equations can be applied to the NJRTM-E regional area residents only. Out-of-region and international visitors are assumed to continue to maintain their existing travel patterns in the future.

Using the 2020 and 2035 NJRTM-E household growth data, the estimated number of Ferry auto, transit and charter bus visitors are shown in Table 3-2.

Table 3-2
Statue of Liberty / Ellis Island Ferry Annual Visitors

	Existing (2011)	Year 2020	Year 2035
Regional Visitors	280,000	302,000	339,000
Auto	193,000	208,000	233,000
Transit	17,000	18,000	21,000
Charter Bus	70,000	75,000	85,000
Out-of-Region Visitors	343,000	370,000	415,000
Auto	162,000	175,000	196,000
Transit	6,000	6,000	7,000
Charter Bus	175,000	189,000	212,000
International Visitors	71,000	77,000	86,000
Auto	30,000	32,000	36,000
Transit	6,000	6,000	7,000
Charter Bus	35,000	38,000	42,000
All Visitors	700,000	748,000	839,000
Auto	385,000	415,000	466,000
Transit	29,000	31,000	35,000
Charter Bus	280,000	302,000	339,000

3.4 LOCAL RECREATIONAL VISITORS

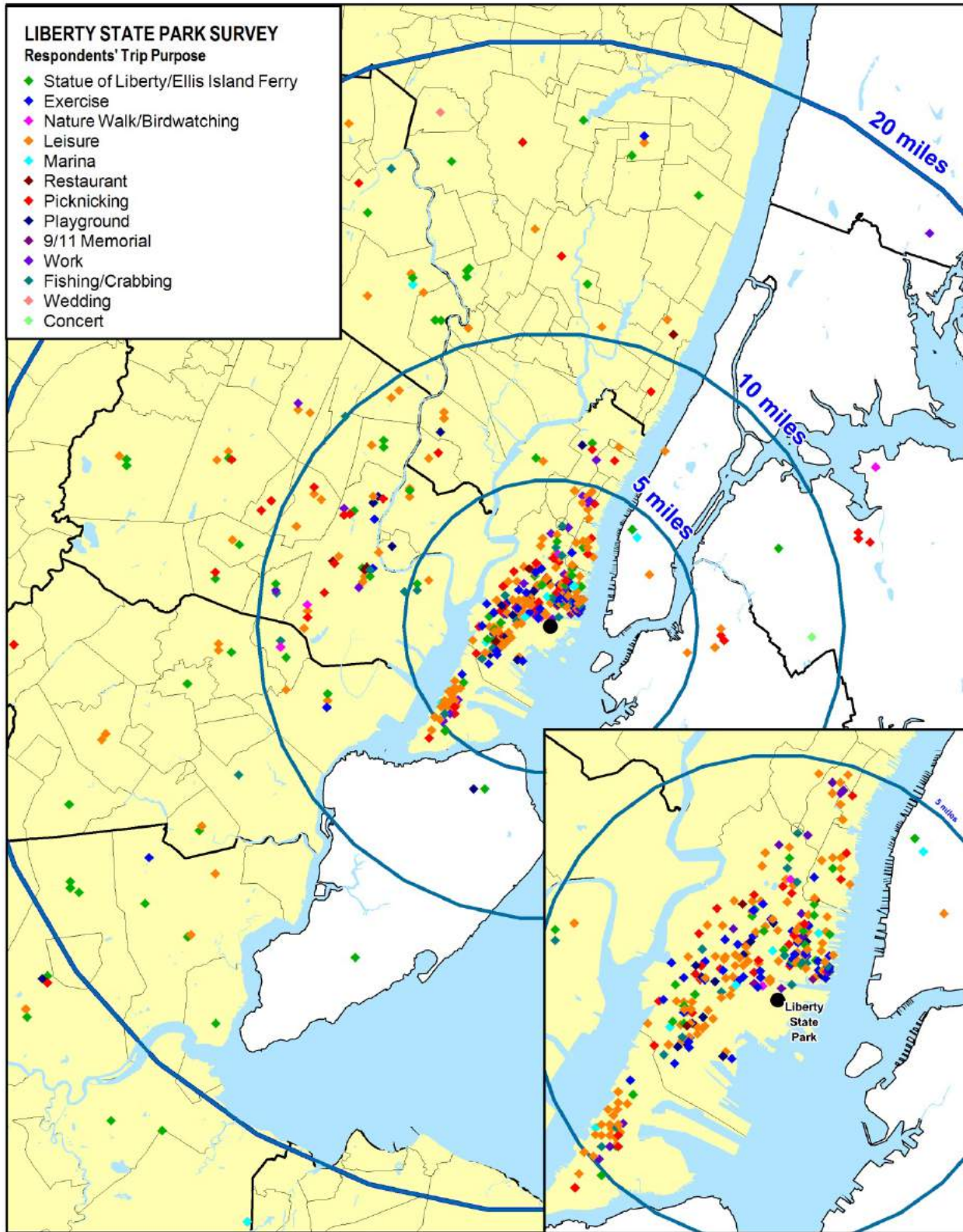
From available data, it was estimated that there were approximately three and a half million recreational visitors to Liberty State Park in 2011¹. Recreation includes exercise, nature walk, leisure, picnic, playground, fishing, crabbing, etc. Visitors to the Liberty Landing Marina or restaurants were also considered recreational trips.

The geographic and modal distribution of recreational visitors was estimated primarily using the visitor survey conducted on Wednesday, July 11, 2012 and Sunday, July 15, 2012. A total of 464 survey records were identified. As part of the survey, the home municipality was obtained for each respondent. For Jersey City residents, the closest intersection to the respondent's home and/or neighborhood was also obtained. The home origin distribution of recreational trips by purpose is shown in Figure 3-5 with one map feature plotted for each survey. The majority of these visitors live within five miles of the park. From the survey data, 89 percent of local recreational visitors were from Hudson County and the City of Newark. This corresponds to approximately 3.1 million annual local recreational visitors. The NJRTM-E was used to estimate auto and transit travel times to Liberty State Park. Each survey record was assigned to an NJRTM-E TAZ. The TAZ data was then aggregated to one of ten neighborhoods within Jersey City or to municipality in the remainder of the local market area. The local area municipalities and the Jersey City neighborhoods are shown in Figures 3-6 and 3-7, respectively.

Visitation to Liberty State Park for local recreation could be classified as either frequent or infrequent. The group size for park visitors was identified by the number of people who traveled together. Surveys were generally limited to one survey per visiting group. To account for both trip frequency and party size, each survey was assigned a weight corresponding to the number of persons in the party multiplied by the respondents' estimate of their average number of visits to Liberty State Park per year. It was estimated that 81 percent of annual local recreational park visitors are Jersey City residents, nine percent Bayonne residents, and seven percent Newark residents. The survey found that only 0.4 percent of local recreational park visitors are Hoboken residents and less than one percent of all recreational visitors come from Manhattan and Brooklyn. The estimated home distribution of local recreational park visitors is shown in Table 3-3.

¹ There were approximately 5 million visitors to Liberty State Park in 2011 including approximately 700,000 to the Liberty Science Center and 700,000 to the Statue of Liberty/Ellis Island Ferry. This leaves approximately 3.5 million to 4.0 million visitors that came to the park primarily for its non-regional attractions. All of these trip purposes were considered recreational for this analysis. The more conservative 3.5 million recreational visitors was used to guard against over-estimating trip making,

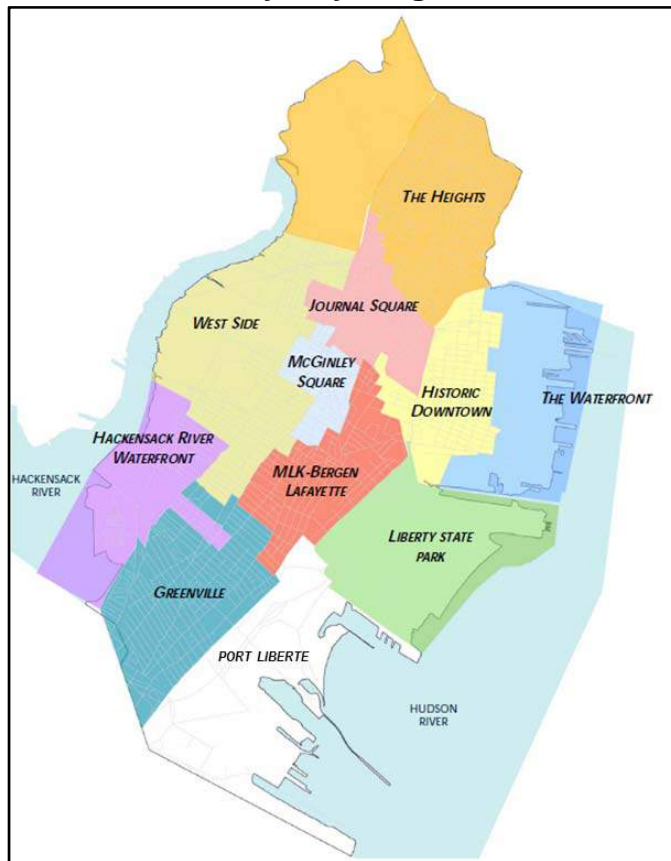
Figure 3-5
Liberty State Park Visitors - Geographic Distribution by Purpose



**Figure 3-6
Local Area Municipalities**



**Figure 3-7
Jersey City Neighborhoods**



Source: Urban Enterprise Zone Five Year Strategic Plan 2005, Jersey City Economic Development Corporation

Table 3-3
Liberty State Park – Annual Estimated Local Recreational Visitors

Municipality / Neighborhood		Number of Local Recreational Visitors	Percent of Local Recreational Visitors
Jersey City	<i>The Heights</i>	113,355	3.7%
	<i>The Waterfront</i>	319,454	10.3%
	<i>MLK – Bergen – Lafayette</i>	656,696	21.2%
	<i>Hackensack River Waterfront</i>	183,521	5.9%
	<i>West Side</i>	191,659	6.2%
	<i>Historic Downtown</i>	338,358	10.9%
	<i>Journal Square</i>	149,258	4.8%
	<i>McGinley Square</i>	133,177	4.3%
	<i>Greenville</i>	418,763	13.5%
	<i>Port Liberté</i>	7,220	0.2%
Jersey City Subtotal		2,511,461	81.0%
Bayonne		271,671	8.8%
Hoboken		13,127	0.4%
Union City		77,189	2.5%
West New York		328	0.0%
Guttenberg		66	0.0%
Secaucus		1,969	0.1%
Kearny		11,027	0.4%
Harrison		1,575	0.1%
East Newark		66	0.0%
North Bergen		7,089	0.2%
Weehawken		3,282	0.1%
Newark		201,768	6.5%
Local Area Total		3,100,617	100.0%

The survey data was coupled with household and income data from the Census to develop the regression-based local visitor model. The local visitor model estimates the average annual number of Liberty State Park trips that an individual household makes as a function of travel time and income. To estimate auto trips, the number of 3+ person households with a vehicle available is used. This household size indicates children are likely to be part of the household. To estimate transit trips, the total number of households without a vehicle available is used. The model is shown below.

Annual Trips Per Household:

$$\exp(a * I + b * TT^{0.5} + c * HH^{1.2} + d)$$

Where (transit variables shown in parentheses):

I = annual household income [dollars]

TT = auto (or transit) travel time [minutes]

HH = number of households with 3+ persons and a vehicle available (or no vehicle available)

a = -8.22E-06 (trip rate decreases at higher income levels)

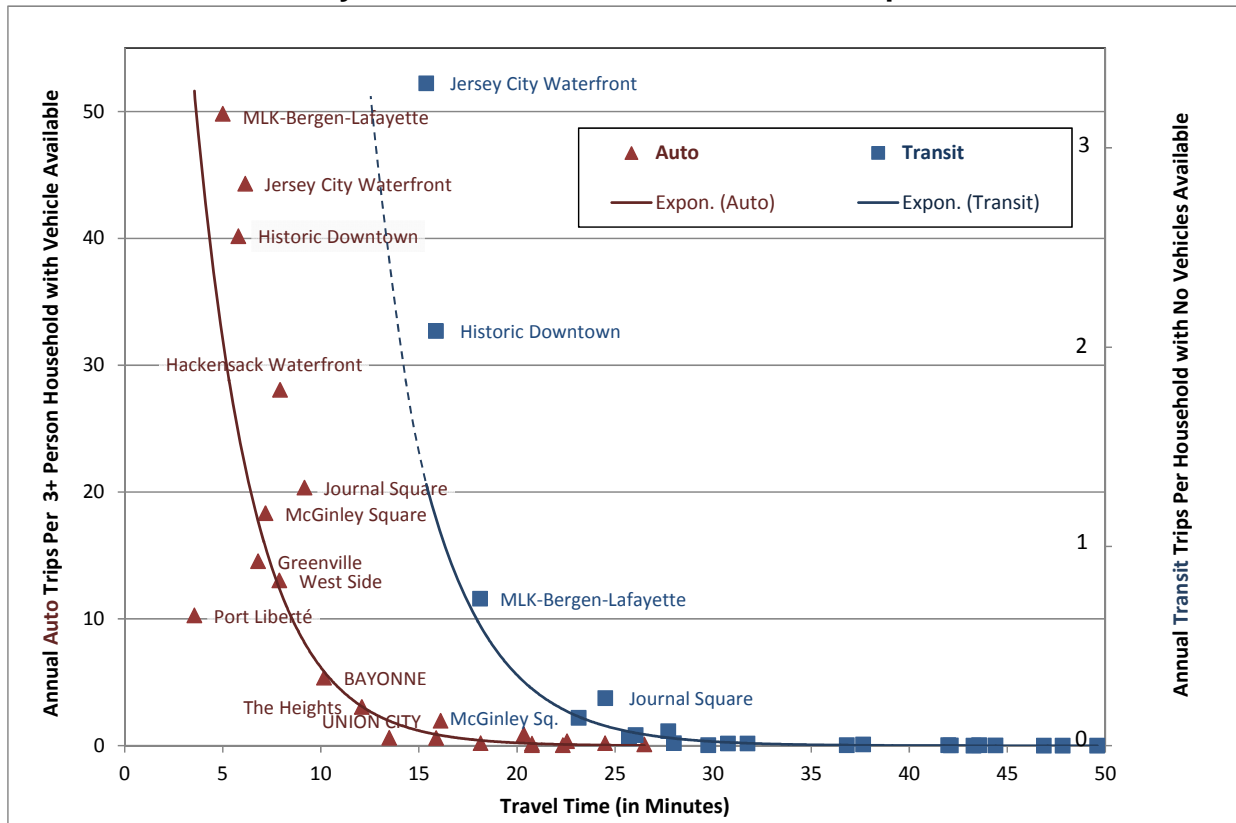
b = -2.96 (trip rate decreases with longer travel times)

c = 7.22E-06 (trip rate increases at higher population)

d = 1.34E+01

The model provided an excellent estimate of the current total number of local visitors as well as the current percentage of local visitors by home location, indicating that the model accurately reflects current conditions and will produce reliable results. Overall, the R² for the model was 0.86. This indicates that 86 percent of the visitation likelihood can be correlated to the variables of household income, travel time, and number of households with 3+ persons and a vehicle available. A display of the relationship between the most correlated variable - travel time - and the park visitation rate by household is shown graphically in Figure 3-8.

**Figure 3-8
Liberty State Park - Local Recreational Trip Model**



Future year growth in population was estimated using NJRTM-E for all areas of the region except Jersey City. For Jersey City, a list of anticipated residential developments was provided by the Division of City Planning and is shown in Table 3-4. The number of new housing units included on the list, 44,930 by 2035, closely matched the total of 47,178 housing units projected for Jersey City by 2035 in the NJRTM-E. To properly locate the anticipated new households, each residential development was assigned to its respective TAZ. The location of the new developments is shown in Figure 3-9. Future residential development is anticipated to be greatest in the Waterfront neighborhood and areas near Liberty State Park. It was assumed that local transit users would be limited to households that did not have a vehicle available. The Census data was the source of current estimates of households with and without vehicle availability.

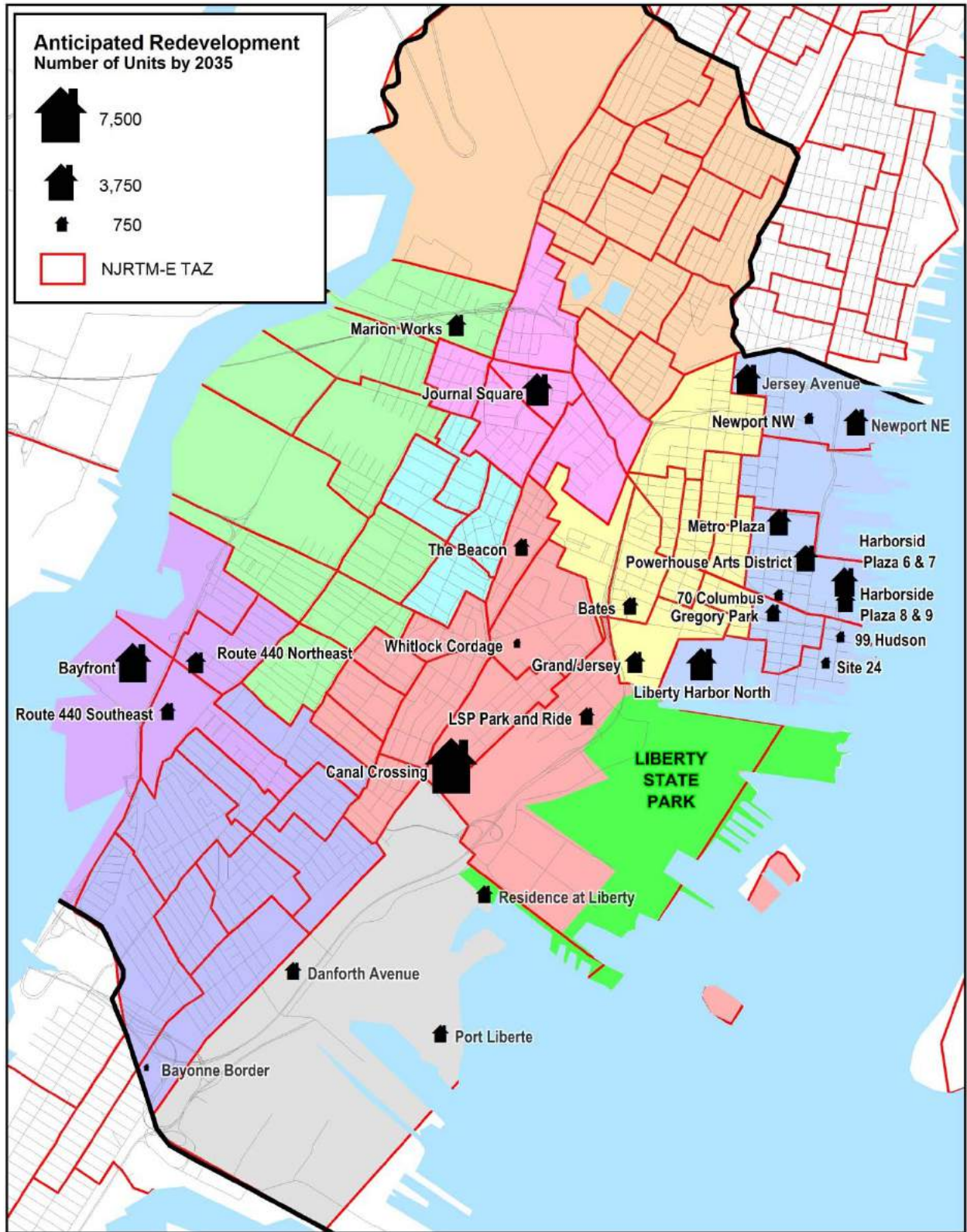
**Table 3-4
Jersey City Developments and Transit Usage Rates**

Project Name	Residential Units by 2020	Residential Units by 2035	Office/ Retail Space KSF by 2035	Transit Usage (see Note 1)
Bayfront	1,000	4,000		Very High (VH)
Route 440 Northeast	0	1,500		Very High (VH)
Route 440 Southeast	0	1,000		High (H)
Port Liberté	0	1,000		Low (L)
Residence at Liberty	500	1,000		Low (L)
Canal Crossing	1,500	7,500	93 Retail, 766.9 Office	High (H)
Liberty State Park Park and Ride	0	1,000		High (H)
Danforth Avenue	0	1,000		Medium (M)
Whitlock Cordage	330	330		High (H)
The Beacon	1,000	1,000		Medium (M)
Grand/Jersey	0	1,500		High (H)
Liberty Harbor North	1,500	3,000		Very High (VH)
Newport NE	2,000	2,000	100 Retail	Very High (VH)
Newport NW (Target, Modell today)	500	500		Very High (VH)
Jersey Avenue	1,000	2,500		Medium (M)
Metro Plaza (Shop Rite today)	1,000	2,000		Very High (VH)
Powerhouse Arts District	2,000	2,000		Very High (VH)
Harborside Plaza 6 and 7	0	2,400		Very High (VH)
Harborside Plaza 8 and 9	0	1,500		Very High (VH)
Journal Square	1,500	3,000	150 Retail	Very High (VH)
Gregory Park	0	1,000		Very High (VH)
Marion Works	0	1,500		Medium (M)
Bates (Pathmark today)	0	1,000		Medium (M)
Bayonne Border (HC zone today)	0	200		Low (L)
Site 24 on Downtown Development map	0	500		Very High (VH)
99 Hudson	500	500		Very High (VH)
70 Columbus	500	500		Very High (VH)
Total Residential Units	14,830	44,930		

Notes:

1. 2020/2035 Future Transit Utilization expressed as Percent Automobile Usage – VH=26%/23%; H=36%/33%; M=46%/43%; L=56%/53%; VL=66%/63% (Route 440 / Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study, May 2011. Tables 5.14 and 5.15).

Figure 3-9
Anticipated Redevelopment Projects in Jersey City



To estimate future households with and without vehicle availability, data from the *Route 440 / Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study* was utilized. This study estimated future transit utilization for 2020 and 2035 for most of the proposed residential developments based on their location in Jersey City. For three developments not included in that study data, Site 24, 99 Hudson, and 70 Columbus, an adjacent development was used. Transit usage varied from developments with very high (VH) transit usage (26% or 23% auto availability) to very low (VL) transit usage (66% or 63% auto availability).

The total number of households and households without auto availability for 2011, 2020 and 2035 are summarized in Table 3-5. As stated above, both the population growth and the auto ownership for each Jersey City neighborhood is determined based on the list of anticipated developments. For other municipalities, the vehicle ownership percentages were left unchanged from 2011 to 2020 and 2035. As shown, households without auto availability are projected to grow substantially by 2035. In particular, households in Jersey City without an auto available are projected to increase by 87 percent as compared to a growth rate of 24 percent for households with a vehicle available.² The impact is that most Jersey City neighborhoods will become increasingly more transit-dependent in the future.

Using the 2020 and 2035 NJRTM-E auto and transit times coupled with the household data shown in Table 3-5, the number of future local auto and transit visitors and circulator shuttle riders can be estimated. The NJRTM-E included the following Hudson-Bergen Light Rail transit improvement for 2020 and 2035: Extension of the Hudson-Bergen Light Rail from the Westside Avenue station across Route 440 to the Bayfront redevelopment plan area in Jersey City. This station would provide greatly improved access from the Hackensack Waterfront area of Jersey City to Liberty State Park.

The proposed HBLR stations at Caven Point and Jersey Avenue / 18th Street are not included in the NJRTM-E. The future year transit travel times from the transportation model were adjusted for the TAZs that would utilize these two new HBLR stations to access Liberty State Park. Jersey Avenue / 18th Street Station was included in the 2020 and 2035 transit travel time calculation and Caven Point was included in the 2035 analysis only.

The estimated visitor and circulator ridership totals are shown in Table 3-6. Total visitation is projected to grow by two-thirds above current level by 2035. Jersey City residents would continue to make up more than three-quarters of local recreational trips to Liberty State Park because of the relatively high household growth rate. The largest portions of that growth would be generated by the MLK-Bergen-Lafayette and Waterfront neighborhoods. The MLK-Bergen-Lafayette area residents currently make up the largest share of visitors at 21 percent of the total. This figure is expected to increase to 32 percent by 2035 due to significant residential building plans in this neighborhood directly to the west of Liberty State Park.

Park visitors interested in using a circulator are projected to grow at a faster rate than total visitation. The demand would increase by 3.6 times the current level by 2035. This is due to high growth in the nearby, transit-accessible neighborhoods and low vehicle-availability rates anticipated with new Jersey City developments. The park is easily reached from the Waterfront by light rail and is the primary neighborhood expected to increase the circulator demand in the future. Improved transit at Caven Point

² Estimated from number of units identified in the *List of Anticipated Developments* (July 2012) and auto availability rates identified in the *Route 440 / Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study* (May 2011)

associated with the Canal Crossing development will make the park more accessible for transit users from the MLK-Bergen-Lafayette neighborhood as shown with a spike in circulator demand in 2035 when the new light rail station could commence service.

**Table 3-5
Hudson County and Jersey City Neighborhood – Population Growth**

Municipality / Jersey City Neighborhood		Total Households			Households without Auto Available		
		2010 ¹	2020 ²	2035 ²	2010 ¹	2020 ³	2035 ³
Jersey City	<i>The Heights</i>	19,301	19,301	19,301	6,820	6,820	6,820
	<i>The Waterfront</i>	10,830	19,830	29,230	4,761	11,221	18,429
	<i>MLK – Bergen – Lafayette</i>	9,313	12,143	19,143	3,892	5,603	10,378
	<i>Hackensack River Waterfront</i>	3,588	4,588	10,088	536	1,276	5,441
	<i>West Side</i>	9,675	9,675	11,175	3,885	3,885	4,740
	<i>Historic Downtown</i>	9,532	9,532	12,032	3,674	3,674	5,249
	<i>Journal Square</i>	9,518	11,018	12,518	5,083	6,193	7,393
	<i>McGinley Square</i>	6,003	6,003	6,003	2,775	2,775	2,775
	<i>Greenville</i>	14,400	14,400	14,600	4,726	4,726	4,820
	<i>Port Liberté</i>	866	1,366	3,866	60	280	1,570
Jersey City Subtotal		93,026	107,856	137,956	36,212	46,453	67,615
Bayonne		25,148	29,919	37,161	6,395	7,608	9,450
East Newark		746	906	983	252	306	332
Guttenberg		4,755	5,526	5,514	1,868	2,171	2,166
Harrison		4,582	5,556	6,231	1,098	1,331	1,493
Hoboken		23,145	28,025	28,660	8,448	10,229	10,461
Kearny		13,518	14,717	15,640	2,181	2,374	2,523
North Bergen		21,347	24,279	26,888	5,068	5,764	6,383
Secaucus		6,015	7,552	10,338	497	624	854
Union City		22,071	24,619	25,367	9,868	11,007	11,342
Weehawken		5,702	6,621	7,495	1,606	1,865	2,111
West New York		17,671	20,204	20,907	6,971	7,970	8,248
Newark		92,618	106,865	118,565	35,613	41,091	45,590
Local Area Total		330,344	382,645	441,705	116,077	138,793	168,568

Notes:

1. Census American Community Survey, 2006-2010

2. Anticipated developments added to 2010 base values for Jersey City neighborhoods; NJRTM-E growth rate applied to Census 2010 base values for other locations

3. Anticipated developments added to 2010 base values for Jersey City neighborhoods; Auto Available rates held at 2010 levels for other locations.

Table 3-6
Liberty State Park Local Recreational Visitors and Circulator Riders

Municipality / Jersey City Neighborhood		Local Recreational Trips			Estimated Circulator Demand		
		2011	2020	2035	2011	2020	2035
Jersey City	<i>The Heights</i>	113,355	113,355	113,355	75	82	82
	<i>The Waterfront</i>	319,454	406,657	562,490	15,824	32,931	53,710
	<i>MLK – Bergen – Lafayette</i>	656,696	860,969	1,643,616	2,872	5,497	22,811
	<i>Hackensack River Waterfront</i>	183,521	191,654	288,699	39	204	1,077
	<i>West Side</i>	191,659	191,659	189,546	204	204	291
	<i>Historic Downtown</i>	338,358	338,358	436,822	7,644	8,694	15,284
	<i>Journal Square</i>	149,258	156,156	161,029	1,212	1,612	2,061
	<i>McGinley Square</i>	133,177	133,177	133,177	388	388	388
	<i>Greenville</i>	418,763	418,763	426,319	174	174	212
	<i>Port Liberté</i>	7,220	10,348	25,675	0	2	14
Jersey City Subtotal		2,511,461	2,821,096	3,980,728	28,432	49,788	95,930
Bayonne		271,671	363,654	537,877	71	98	137
East Newark		66	83	92	1	1	1
Guttenberg		66	79	79	0	0	0
Harrison		1,575	2,019	2,346	2	3	3
Hoboken		13,127	17,184	17,745	100	131	133
Kearny		11,027	12,528	13,750	1	1	1
North Bergen		7,089	8,778	10,472	3	4	4
Secaucus		1,969	2,654	4,063	0	0	0
Union City		77,189	91,527	95,994	62	69	74
Weehawken		3,282	3,957	4,626	4	5	5
West New York		328	399	420	1	1	1
Newark		201,768	325,154	476,307	24	30	36
Local Area Total		3,100,618	3,649,112	5,144,499	28,701	50,131	96,324

A summary of the data sources used in developing the visitor estimation models is shown in Table 3-7.

**Table 3-7
Data Sources for Liberty State Park Visitor Estimation Models**

Data	Source	Circulator Market		
		Liberty Science Center	Ferry	Local Rec.
Liberty Science Center Visitor Survey	2012 Survey	✓		
Liberty State Park Visitor Survey	2012 Survey		✓	✓
Regional Household Growth	NJR TM-E	✓	✓	
Municipal Household Growth	NJR TM-E			✓
Local Household Growth	Jersey City Division of City Planning			✓
Auto Availability Rates	Census American Community Survey			✓
Future Jersey City Auto Availability Rates	Route 440 Study			✓
Household Income	Census American Community Survey			✓
Regional Roadway Improvements	NJR TM-E			✓
Regional Transit Improvements	NJR TM-E			✓
Local Transit Improvements	Jersey City Division of City Planning			✓

3.5 OTHER POTENTIAL MARKETS

3.5.1 NEW YORK VISITORS

As stated earlier, it was not surprising that the surveys found that the Liberty Science Center draws some visitors from Manhattan and Brooklyn but the Statue of Liberty / Ellis Island Ferry, because of the competing Battery Park ferry, does not. However, it was surprising that the Local Recreational Market drew so few visitors from Manhattan and Brooklyn despite the proximity of Liberty State Park. Using the local recreational visitor model developed for the Hudson County area, a separate analysis was performed to determine if there was a substantial population across the Hudson River with latent potential to visit Liberty State Park for recreation.

Manhattan and Downtown Brooklyn were divided into 16 neighborhoods based on the NJR TM-E zone structure. For each zone, the NJR TM-E and Census data were used to determine the number of households with and without a vehicle available, the auto and transit travel time to Liberty State Park, and the average household income. The NJR TM-E does not include the Liberty Landing Ferry. Consequently, transit travel times from Battery Park City and the Financial District were adjusted to

account for the ferry service. The results of this initial analysis indicated that the minimal number of New York residents identified by the survey was consistent with the estimates produced by the Local Recreational Visitor model and was not due to any “New York bias” (increased reluctance by New Yorkers to visit the park due to its location across the river).

As seen in the model results, at travel times greater than 30 minutes, transit travel rates to Liberty State Park approach zero. This leaves only two neighborhoods in New York City that are convenient to Liberty State Park using this criterion – Battery Park City and the Financial District. The very high average incomes in these communities further reduce the Liberty State Park visitor rates, since income is inversely correlated with a park visitor trip. Similar issues were found for Hoboken, where high incomes resulted in low visitor rates, compared to Union City, where lower incomes resulted in more park visitors despite longer travel times.

3.5.2 LIBERTY LANDING FERRY COMMUTERS AND VISITORS

As part of the Liberty State Park survey, 12 respondents indicated that the Liberty Landing Ferry Marina was the primary purpose of their visit to Liberty State Park. Given the small number of Commuter / Visitor responses, it is difficult to draw conclusions about the potential circulator ridership. Since about half of the commuters / visitors indicated a home address in Jersey City, the commuters / visitors were grouped with the local recreational market for estimating future year circulator ridership. Commuters would likely require weekday circulator service from 5:00 AM to 10:00 AM, which does not match a service oriented toward recreational trips. If such a circulator service was provided, additional analysis to determine the size of this market would be needed.

3.5.3 LOCAL INDUSTRIAL WORKERS

As part of the Liberty State Park survey, 23 respondents indicated that the primary purpose of their visit to Liberty State Park was for work. Most of these workers were likely bound for the marina or restaurants although a few of the workers indicated that they worked in other areas of the park. Since almost all of the workers indicated a home address in Bayonne or Jersey City, these workers were grouped with the local recreational market for estimating future year circulator ridership. Given the small number of worker responses, it is again difficult to draw conclusions about the potential circulator ridership. Workers in the industrial area would also likely require weekday circulator service from 5:00 AM to 10:00 AM, which does not match a service oriented toward recreational trips. If such a circulator service was provided, additional analysis to determine the size of this market would be needed.

3.6 FUTURE YEAR CIRCULATOR RIDERSHIP

The elimination of the NJ TRANSIT #305 circulator bus service in mid-year 2010 may have reduced the number of visitors who use transit to access Liberty State Park due to the loss of reliable transportation from the light rail station to attractions located more than one mile away. For the model development, it was necessary to estimate the trip purpose of the #305 shuttle users in the last full year of service in 2009. In 2009, the circulator bus served approximately 60,000 annual riders. This ridership level was used as a benchmark for establishing the existing demand for such a circulator with similar service features.

The Liberty Science Center is located within a short walk of the Liberty State Park HBLR Station so local residents or visitors who arrive by transit would likely walk to their final destination. However, these visitors would potentially use the circulator service to visit other destinations within Liberty State Park. From the Liberty Science Center survey, 28 percent of respondents indicated that they would visit other destinations within the park, and 69 percent of respondents indicated that they would use a

circulator service. Applying these percentages to the 25,000 annual non-auto Liberty Science Center visitors provided an estimate of 4,800 potential circulator riders. Liberty Science Center visitors who take the ferry from New York would also be potential circulator riders. The survey indicated that six percent of Liberty Science Center visitors who arrived by transit live in Manhattan or Brooklyn. However, it is not known from the survey how many of these residents live in neighborhoods where it would be more convenient to use the ferry and circulator service rather than PATH and light rail. Based on this, it was determined that relatively few New York residents live in areas where taking the Liberty Landing Ferry to the park would be most convenient. Therefore, the potential number of such visitors was very small and was not explicitly included in the future ridership calculation.

The remaining circulator shuttle riders were divided primarily between Ferry visitors and local recreational visitors. The responses of the survey administered near the HBLR station just east of the park entrance were specifically reviewed to determine the trip purpose of current non-auto users entering Liberty State Park. A total of 58 persons were surveyed. Of these surveys, six surveys were discounted because the respondent indicated that they were unlikely to use a shuttle service if available. Of the remaining surveys, 25 (48%) indicated that they were bound for the Statue of Liberty / Ellis Island Ferry and 27 (52%) indicated that they were bound for local recreational activities. These survey results were then used to estimate the circulator market distribution.

As discussed earlier, future year ridership for visitors of regional attractions was based on regional population growth. Local recreational ridership growth was based on specific residential developments within Jersey City, as well as municipal population growth for the remainder of Hudson County and Newark. Overall, potential circulator ridership is forecast to increase by approximately 40 percent by 2020 and more than double by 2035 based on the model output. Because the population of Jersey City in the vicinity of Liberty State Park is anticipated to grow at a much faster rate than the region as a whole, the local recreational visitor market is expected to grow much more rapidly than the regional visitor market in the future. Table 3-8 shows the existing demand and forecast shuttle ridership by market assuming a circulator service similar to the NJ TRANSIT #305 bus route with daily service from April to December and weekend and holiday service from January through March. Of course, ridership would vary depending on the specific type, routing, frequency of service, and span of service that would be provided.

Table 3-8
Liberty State Park Circulator Projected Shuttle Ridership

Market	2011		2020		2035	
Local Recreational	28,700	48%	50,900	60%	79,900	68%
Ferry Visitor	26,500	44%	28,300	34%	31,800	27%
Liberty Science Center Visitor	4,800	8%	5,100	6%	5,800	5%
Total	60,000	100%	84,300	100%	117,500	100%

4 PURPOSE AND NEED STATEMENT

4.1 PURPOSE OF LIBERTY STATE PARK CIRCULATOR

The purpose of the Liberty State Park Circulator is to provide a reliable transit service to, from and within the park that:

- Provides an alternative to reliance on the automobile for access to and within the park;
- Serves the current and estimated future transit demand to the park for recreational and tourist markets;
- Provides Jersey City residents who do not have access to a car with a means to visit the park.

4.2 NEED FOR LIBERTY STATE PARK CIRCULATOR

The need for the Liberty State Park Circulator is summarized below. The need supports the assertion made in the purpose statement and provides the factual foundation for the project purpose by describing the problems to be addressed and their causes.

1. Provide an Alternative to Auto Access to/from Liberty State Park and reliance on the automobile for circulation within the park:

Currently, nearly 80 percent of the approximately 6 million annual visitors to Liberty State Park arrive by automobile, (and nearly 85 percent of visitors are car owners). A large portion of the remaining visitors arrive by tour or charter bus. Furthermore, travel within the 1,200 acre park is primarily limited to auto use. Public transportation provides access to the edges of the park but does not serve the attractions and amenities within Liberty State Park. The Liberty State Park station stop on the HBLR is located just northwest of the park's northern entrance. The NJ TRANSIT #6 bus, the only scheduled bus service in the vicinity of the park, stops at the Liberty State Park HBLR station at the edge of the park. The #6 does not operate on weekends and has limited service during the week. The distance from the HBLR station and bus stop to major attractions in the park is further than the average visitor could be expected to walk. The tourist-based Statue Cruises ferry dock at the historic CRRNJ Terminal is over one mile away and the South Lawn picnic area is over three miles away from the HBLR station. Similarly, Liberty Landing Ferry's modest commuter and recreational ferry service is provided to the northern edge of the park with no means of access to the park's attractions. The location of transit at the park's edges and the current lack of circulator service create an accessibility gap between the transit system and park attractions and amenities for anyone who does not own or have access to an automobile.

Liberty State Park visitation is expected to increase in the future due to the growth of the local population, improvements to park attractions, and the opening of more parkland area to the public. Furthermore, the park's policy is to not develop more areas devoted to parking or auto use, and fewer vehicles are desired through the park. Therefore, a viable non-auto transportation option is needed now and in the future to access the park and its attractions and amenities.

2. Serve the Current and Future Park Transit Circulator Demand:

There is an existing and growing demand for transit service to Liberty State Park from the tourist and local recreational markets. The NJ TRANSIT #305 bus provided transit service to/from and within the park from January 2001 until May 2010 when it was cancelled. This route provided "circulator"-type

service as it served the Liberty State Park HBLR station and major attractions within the park including the Liberty Science Center, CRRNJ Terminal and Statue of Liberty/Ellis Island ferry slips, Liberty Landing Marina, and the park office and South Lawn at the southern end of the park. In 2009, ridership on this route exceeded 58,000 passengers per year. Since the service was cancelled, transit access within the park and to its attractions is no longer provided. The Liberty State Park travel demand model estimates that by the year 2020, circulator ridership demand would increase to approximately 83,000 annual passengers and, by 2035, to nearly 134,000 annual passengers.

3. Provide Access for Local Recreational Visitors Without Vehicles:

According to the Liberty State Park travel survey, 81 percent of the park's recreational visitors come from Jersey City, and nearly one-quarter of these visitors are from the Martin Luther-King/Bergen-Lafayette neighborhood located just to the west of the park. Jersey City, as a whole, has a high transit-dependent population, as nearly 40% of its households are without access to a vehicle, compared to less than 12 percent statewide. Forty-two percent of the Martin Luther King/Bergen-Lafayette neighborhood households are without a vehicle, with some Census tracts as high as 55 percent. A transit connection to destinations within Liberty State Park from existing transit facilities at the edge of the park is needed to afford transit-dependent visitors with the same opportunity to visit the park as auto owners. Failure to do so would represent a deficiency in the transportation system serving this community. It is anticipated that auto ownership rates will remain lower than the state average in the foreseeable future, due to the expected continuation of current City policies, such as location of higher density development near mass transit.

4.3 GOALS AND OBJECTIVES

A number of goals were identified at the outset of the study by the project team, and additional goals and objectives were identified by stakeholders. A transit circulator would achieve many of the goals and objectives which are listed below.

4.3.1 STUDY GOALS

These study goals were presented at the first TAC meeting on April 4, 2012:

- Reduce auto travel to the park
- Capitalize on the multi-modal mass transit network to make the park more accessible
- Consider transportation needs of underserved communities
- Develop connectivity within Liberty State Park and consider destinations near the park
- Recognize Liberty State Park as a local and regional destination
- Support tourism
- Improve linkages to national monuments

4.3.2 STAKEHOLDERS GOALS

A questionnaire was submitted to the TAC to solicit input on stakeholder goals and objectives, including the mission statement for each organization.

Purpose and Need Questionnaire for Technical Advisory Committee

The Purpose and Need Statement will establish the basis for the development of the range of options for the circulator service. The Purpose and Need Statement will be informed by socio-economic data of Jersey City; the data collected by the survey; and anticipated redevelopment and the outputs of the travel demand model.

We would also like to collect input from the member agencies of the TAC to help us with the evaluation of the Purpose and Need for a transit circulator serving Liberty State Park. We would like to gain a better understanding of the purpose of your organization, particularly if your organization's purpose mainly concerns Liberty State Park (or facilities in/near the park). Please submit one response per organization based on the following questions:

- 1. What is your organization's mission?*
- 2. What are your organization's plans for the next 20 years? Please include planned investments, changes to operations, long-term goals, etc.*
- 3. Provide any other comments you wish to add related to the need for transit service to and within the park.*

A number of responses were submitted by key stakeholders. The goals provided relevant to the transit circulator study have been underlined as appropriate for each stakeholder. Responses for each stakeholder have been summarized as follows:

- **Liberty State Park (NJDEP Division of Parks and Forestry):** Liberty State Park is a state park operated and maintained by NJDEP's Division of Parks and Forestry. Liberty State Park management stated that their mission is to provide the public with access to the harbor's resources. Liberty State Park will continue to grow over the next 20 years in accessible open space and services and amenities provided to the public. In the near future, 300 acres of previously inaccessible urban forest will be opened to the public with trails and bird blinds. In addition, the historic ferry slips will be restored at the CRRNJ Terminal.
- **Friends of Liberty State Park:** The Friends of Liberty State Park (FOLSP) is an all volunteer, officially-recognized "Friends Organization" of the NJ Division of Parks and Forestry dedicated to Liberty State Park open space. FOLSP stated that their mission is "to preserve, protect, conserve and promote Liberty State Park" and to support the mission, goals and objectives of Liberty State Park and the New Jersey Division of Parks and Forestry.
- **National Park Service:** The National Park Service, which operates, maintains and provides access to the national monuments of Ellis Island and the Statue of Liberty through their concession with Statue Cruises, encourages greater public transportation access to Liberty State Park. One objective of this goal would be to relieve congestion and long lines experienced at the Battery Park Statue Cruises ferry slips in lower Manhattan by shifting more ferry access to Liberty State Park.
- **Liberty Science Center:** Liberty Science Center is an interactive science museum located in the northwest portion of the park. Their mission is to "expose learners of all ages to the excitement, power, and promise of science and technology. Liberty Science Center stated a

goal of increasing attendance by 5% per year. A transit connection from the Statue Cruises and/or Liberty Landing ferry would help with their marketing to the New York City lower Manhattan/Battery Park City area, where ferry service is available to and from the park. In cold or rainy weather, when the Liberty Science Center is most visited, parents with small children cannot easily walk from the ferry to the center. That makes attracting this NYC market more difficult since their only other transit option is to take PATH and transfer to the HBLR, both of which do not run as frequently on weekends, making transfers time consuming.

- **Camp Liberty:** Camp Liberty is a summer arts camp for children located at the southwestern part of the Liberty State Park. It is operated by the Educational Arts Team, a private not-for-profit organization. They noted that Jersey City families do not have transportation options to get to the camp and camp buses have limited bus pick up sites.
- **Liberty Historic Railway:** Liberty Historic Railway was established in 2010 as a non-profit, public benefit corporation to provide rail shuttle connections within Liberty State Park; to allow appropriate historic transportation equipment to be displayed and interpreted; and to jump-start the restoration of the deteriorating CRRNJ Terminal Train Shed. In response to the questionnaire, they stated they believe a goal of Liberty State Park should be to move people, not autos, in, out and around the park as an environmentally friendly solution.
- **North Jersey Transportation Planning Authority (NJTPA):** The NJTPA is the regional transportation planning leader and technical and informational resource for the people of northern New Jersey that:
 - Creates a vision to meet the mobility needs for people and goods;
 - Develops a plan for transportation improvement and management to fulfill the vision;
 - Partners with citizens, counties, cities, state, and federal entities to develop and promote the transportation plan;
 - Prioritizes federal funding assistance to make the plan a reality; and
 - Links transportation planning with safety and security, economic growth, environmental protection, growth management, and quality of life goals for the region.

The Purpose and Need Statement and Study Goals and Objectives defined herein were used to inform subsequent tasks of the Liberty State Park Circulator Cost-Benefit Analysis, including development and evaluation of options and implementation strategy.

5 OPTIONS FOR CIRCULATOR SERVICE

This chapter evaluates options for transit service in Liberty State Park. It builds on previous work completed for this study that detailed existing conditions, ridership projections, and the purpose and need for a potential circulator service through Liberty State Park. Potential modes and corridors for service were considered based on analyses of activity centers within the park, ridership on the previous park circulator service, and other considerations that pertain to operating the service in a park environment.

Initial screening and analysis outlined in this chapter led to the elimination of modes of transit that are inappropriate for the park setting and scale of service being considered. Modes of transit retained for further study, in combination with selected corridors for service, are described in this chapter as four options for further study in the cost-benefit analysis phase of this project.

5.1 PREVIOUS BUS SERVICE

5.1.1 OPERATIONS

As discussed in the Existing Conditions chapter, there have been several attempts at operating bus service within Liberty State Park. The NJ TRANSIT #305 served Liberty State Park from January 2001 through May 2010 when it was cancelled. The route served the Liberty State Park HBLR station and destinations throughout the park including the Liberty Science Center, Ferry Terminal, Liberty Landing marina, historic CRRNJ Terminal, and the park office.

The NJ TRANSIT #305 was branded under the NJ TRANSIT WHEELS program and operated every day for the first two years of service in 2001 and 2002. The WHEELS program is a system of non-traditional transit routes owned by NJ TRANSIT and operated mostly under contract by private companies. Starting in 2003, service was reduced to weekends from January through March and was operated every day from April through December. This service was operated on 30-minute headways on all days between 2001 and 2005 and was increased to 40 minutes on weekdays in 2006. A cash fare of \$1.00 per passenger was paid to the driver for unlimited daily rides.

In June 2010, the Hudson Transportation Management Association (TMA) took over the service to replace the cancelled NJ TRANSIT #305 with the routing shown in Figure 5-1. It operated free of charge on weekends through Labor Day 2010 with a headway of 35 minutes. This service was also operated on weekends in 2011 during the summer months with a headway of 30 minutes. In 2011, the cost to ride was a \$1.00 cash fare per passenger paid to the driver for unlimited daily rides.

Figure 5-1
Hudson TMA Bus Stop Locations



5.1.2 RIDERSHIP

In order to determine which areas of the park could be expected to experience the highest demand for transit service, stop-level ridership for the Hudson TMA operated circulator service was obtained for weekends from May through August of 2011, the period of highest visitation. All bus boarding and alighting (exiting) activity was aggregated for each stop and averaged for this four-month period. The resulting stop-level ridership numbers are shown below in Table 5-1.

Based on this boarding and alighting data, the highest demand for transit service is along the corridor between the HBLR station and the historic CRRNJ Terminal. This represents 265 of the 296 average daily boardings and alightings (89 percent). The Park Office/Visitor's Center bus stop represents most of the activity in the park outside of this corridor with 23 daily boardings and alightings. Also, there are 127 daily boardings and alightings at the HBLR station, which is outside of the park, compared to 169 daily boardings and alightings that occur at bus stop locations within the park. Based on this, it can be inferred that there were 127 daily passenger trips between the HBLR station and another bus stop within the park. As 169 total boardings and alightings occurred within the park, there are 42 remaining boardings and alightings (approximately 25 percent of the total) that cannot be linked to the HBLR station and that represent trips that occurred wholly within the park. Average daily ridership data (boarding and alighting activity) by corridor is shown in Figure 5-2.

**Table 5-1
Hudson TMA Bus
Average Daily Boardings and Alightings
(May through August 2011)**

BUS STOP	AVERAGE DAILY BOARDINGS AND ALIGHTINGS
HBLR	127 (43%)
Liberty Science Center	20 (7%)
Restaurants	9 (3%)
Historic Terminals/Ferry	109 (37%)
Playground/Green Park	5 (2%)
Interpretive Center	1 (<1%)
Park Office Visitor's Center	23 (8%)
Liberty Park Café	2 (<1%)
Total	296 (100%)

**Figure 5-2
Hudson TMA Bus Ridership by Corridor (May through August 2011)**



5.2 PRIMARY ATTRACTIONS FOR POTENTIAL LIBERTY STATE PARK CIRCULATOR RIDERSHIP

The summary of ridership at Hudson TMA bus stops in Table 5-1 provides an indication of which attractions in the park could be expected to draw potential transit riders. Based on the travel surveys conducted for this study, stop-level ridership data, on-site observations, and park programming plans, the primary attractions for potential Liberty State Park circulator riders are shown in Figure 5-3. Further detail on each primary attraction is also provided.

**Figure 5-3
Existing and Future Primary Park Attractions**



5.2.1 LIBERTY SCIENCE CENTER

Liberty Science Center, pictured in Figure 5-4, attracts approximately 700,000 visitors per year. The Liberty Science Center stop on the Hudson TMA bus accounted for seven percent of boardings and alightings. This low percentage may be due to the fact that Liberty Science Center is within walking distance of the HBLR station for most visitors. According to the travel survey conducted for Liberty State Park, 77 percent of visitors arrived by private vehicle on weekdays and 89 percent arrived by private vehicle on weekends. The lower percentage arriving by private vehicle on weekdays may be a reflection of the high number of school groups visiting during the week.

According to the travel survey, 23 and 25 percent of visitors to the Liberty Science Center came from New York State on weekdays and weekends, respectively. The previous circulator service was not actively marketed as a travel mode for New Yorkers to visit Liberty Science Center in conjunction with the ferry to Liberty Landing. However, Liberty Science Center is interested in targeting their advertising to New York visitors to promote this option. In addition, if the potential circulator service is more convenient for intra-park trips, more visitors to Liberty Science Center may use it to visit the remainder of Liberty State Park during their visit. As Liberty Science Center is located along the main spine of activity within the park and is a major area attraction, it should be served with the potential circulator service.

Figure 5-4
Liberty Science Center



5.2.2 CENTRAL RAILROAD OF NEW JERSEY TERMINAL/FERRY LANDING

This area is the main hub of activity within the park and is home to the historic CRRNJ Terminal (Figure 5-5), historic train shed, Statue Cruises ferry to Ellis Island and the Statue of Liberty, and the Liberty State Park 9/11 Memorial. The stop on the Hudson TMA bus serving this area of Liberty State Park accounted for 37 percent of all boardings and alightings. It is located along Zapp Drive, the main axis of activity that stretches from the HBLR station to the CRRNJ Terminal and ferry landing. As such, this location should be a priority for inclusion in the potential transit service.

Figure 5-5
Historic CRRNJ Terminal



5.2.3 PLAYGROUND/GREEN PARK

The playground in the Green Park (Figure 5-6) was the primary purpose for visiting Liberty State Park among two to four percent of those surveyed, and the secondary purpose for visiting the park among four to five percent of those surveyed. Picnicking is another significant activity, some of which takes place in this area. Picnicking was the primary purpose for four to 10 percent of survey responses and the secondary purpose for three to six percent of survey responses. Nonetheless, the Hudson TMA bus stop in this area accounted for only two percent of boardings and alightings. As a result, it is not of primary importance for inclusion in the potential transit service but would be a viable stop on a corridor that otherwise justifies transit service.

**Figure 5-6
Playground in the Green Park**



5.2.4 PARK OFFICE/SOUTH LAWN

This area, located in the southeast corner of the park, experiences a lot of activity in the picnic and playground area (Figure 5-7). The Hudson TMA bus stop at this location accounted for eight percent of boardings and alightings. This area is not located along the main spine of activity on Zapp Drive. However, outside of the heavily used corridor between the HBLR station and the historic CRRNJ Terminal, this is the area of the park with the greatest historic transit ridership. Ridership and visitation activity dictate that this area should be served by a future circulator service if possible.

Figure 5-7
South Lawn Picnic and Playground Area



5.2.5 HABITAT RESTORATION AREA

Currently, a large interior section of Liberty State Park is undergoing habitat restoration and is inaccessible to the general public. However, public trails are being constructed as part of the restoration effort and will allow the public to hike throughout the interior of the park, among the restored/newly created wetlands and uplands. As currently devised, the trails will be accessible via entry points adjacent to the Liberty Science Center, the industrial park, and along Audrey Zapp Drive and Freedom Way, as shown in Figure 5-8.

As this area is not yet open to the public, its ridership potential cannot be precisely determined. However, as a new park attraction that has been many years in the making, it is expected to be a major draw for hikers, birders, nature enthusiasts, and other interested visitors. For this reason, at least some access points to the habitat restoration area trail system should be easily accessible from the circulator stops.

Figure 5-8
Habitat Restoration Area



Source: Friends of Liberty State Park – Park Interior presentation

5.2.6 LIBERTY INDUSTRIAL PARK

Liberty Industrial Park is a 135-acre industrial area located on the southwestern edge of Liberty State Park. It is bordered on three sides by Liberty State Park and shares some of the park's main access roads. Even though the industrial park is surrounded by Liberty State Park, there is little synergy between the areas. Some major tenants within this area include Suzette Manufacturing, Palermo Manufacturing, Wilman Paper, Streichler Trucking, Diversified Global Graphics Group, and the New York Daily News. A typical business in Liberty Industrial Park is shown in Figure 5-9. The industrial park employed more than 2,000 workers as of October 2012. Many of the large tenants conduct business 24 hours per day, seven days per week.

Employees of the industrial park are potential users of a park transit circulator. However, while the hours and days of operation for the potential circulator service have not been determined, the schedule for a service that primarily serves recreational users will not likely serve the needs of industrial park workers. Ridership activity at the Liberty Café stop for the Hudson TMA bus, adjacent to the industrial park, accounted for less than one percent of total bus boardings and alightings (an average of two per day). This service was only in operation on weekends from 9:00 AM until 10:00 PM on Saturdays and 9:00 PM on Sundays, the prime recreational hours/days, but did not serve the needs of full-time employees working at the industrial park.

Nonetheless, according to the 2009 Jersey City Bus Study, demand for transit at the industrial park was underserved. In response, the NJ TRANSIT #981 bus was extended by NJ TRANSIT to serve the industrial park. However, the route was subsequently eliminated in the 2010 service cuts. Since the northwest corner of the industrial park is located approximately one mile from the nearest transit (the combined HBLR Liberty State Park station and the NJ TRANSIT #6 bus stop), the industrial park is not adequately served by transit to meet the current demand. Transit that would directly serve the industrial park is needed. This would include a route or route extension with hours/days that accommodates worker schedules and connects with areas outside of Liberty State Park to generate commuters to the industrial park. The Liberty State Park circulator service should be optimized to serve the travel patterns and peak demand of recreational park users, which does not match the industrial park workers that require service early in the morning and year round. Therefore, the proposed Liberty State Park circulator service would be insufficient to meet the needs of full-time industrial park workers, especially at facilities that operate 24 hours per day, seven days per week.

Figure 5-9
Typical Business in Liberty Industrial Park



5.3 SERVICE CORRIDORS

5.3.1 PRIORITY OF ACTIVITY CENTERS

The activity centers within the park were analyzed and subsequently categorized into three tiers of priority for inclusion in the circulator routing. Tier 1 considered the highest-priority destinations to be served by a potential circulator service and Tier 3 considered the lowest-priority destinations. On this basis, the stops with the highest number of boardings and alightings on the Hudson TMA bus service would be the most obvious candidates to be served in the future by transit. Although the process of tiering activity centers was primarily based on the Hudson TMA bus service transit demand, it also considered clusters of activity along the same corridor and potential future ridership. Based upon the criteria, many of the activity centers along the Audrey Zapp Drive corridor would be classified in the Tier 1 category.

As stated previously, Hudson TMA bus ridership for the Liberty Science Center was low in comparison to the more than 700,000 visitors per year it receives. However, the Liberty Science Center plans to market any potential circulator to its visitors from New York as a means to transport them to their facility from the Liberty Landing Ferry. This coupled with the fact that it is located along the corridor of heaviest ridership justifies classification as a Tier 1 activity center. As a new and high-profile feature of the park, the entrances to planned trails within the Habitat Restoration Area are also included in the Tier 1 category.

Tier 2 activity centers were identified based upon mid-level ridership numbers on the previous Hudson TMA bus service and were not primary origins/destinations within the park. If resources allow, serving these locations with a future circulator service would be desirable. The Park Office/South Lawn area is the most notable location in this category. Based upon the criteria, many of the activity centers along the Freedom Way corridor would be classified in the Tier 2 category.

Tier 3 consists of activity centers with historically low Hudson TMA bus service ridership and no anticipation of growth projections in the future. At this time, it is not recommended that Tier 3 locations be served initially by a future circulator service. However, if new entertainment attractions are developed within the industrial park area or if conditions at an existing activity center change significantly, circulator service to these areas should be re-evaluated. While service to attractions outside of Liberty State Park is not proposed at this time due to resource limitations, outside attractions such as Pole Position Recreational Raceway could be added to the routing in the future as resources allow.

The activity centers were categorized into the following three tiers.

- Tier 1 – must be served:
 - HBLR Liberty State Park Station
 - Liberty Science Center
 - CRRNJ Terminal/Ferry Landing
 - Future Habitat Restoration Area Trails
- Tier 2 – should be served:
 - Liberty Landing/Restaurants
 - Park Office/South Lawn
 - Green Park/Playground
- Tier 3 – service not justified at this time:
 - Industrial Park/Camp Liberty
 - Interpretive Center

5.3.2 POTENTIAL SERVICE CORRIDORS

Based on the identified tiers of service priority for individual activity centers, two service corridors were identified as shown in Figure 5-10. The “primary corridor” between the HBLR station and the historic CRRNJ Terminal includes the activity centers with the highest transit demand based upon previous Hudson TMA bus service and some intermediate destinations along Audrey Zapp Drive including at least one of the Habitat Restoration Area trail entrances. The “secondary corridor” connects the historic CRRNJ Terminal with the Park Office/South Lawn area including activity centers along Freedom Way such as the Green Park/playground area, Interpretive Center, and two Habitat Restoration Area trail entrances.

Figure 5-10
Transit Service Corridors within Liberty State Park



The “Primary” corridor is the highest priority and should be the priority transit service route. However, the “Secondary” corridor along Freedom Way between the CRRNJ Terminal and the Park Office/South Lawn area should be served with the potential transit circulator as funding allows.

A full loop of the entire park, as was previously operated, was not considered to be a viable option. In order to provide a service with convenient access to all destinations, the loop would have to run bi-directionally. The previous Hudson TMA bus service operated only clockwise through the park. This meant that a person traveling from the South Lawn to the CRRNJ Terminal would need to ride the bus to the terminus at the HBLR station, wait during the bus layover period, and continue on the next scheduled run of the bus to the CRRNJ Terminal. This type of service design is not capable of attracting a significant number of passengers. To operate the loop bi-directionally, the additional mileage would require another vehicle to achieve the same headways as service on the primary and secondary corridors identified above. This results in a considerable additional annual cost. This considerable additional cost is not considered to be prudent in light of the fact that there was an average of two passengers per day on the previous Hudson TMA bus service outside of the primary and secondary corridors. While increasing headways and improving service characteristics may increase transit demand on the route, it is not expected that the distribution of passengers throughout the park would change significantly.

5.4 POTENTIAL SERVICE VEHICLES

5.4.1 LONG LIST OF VEHICLES/MODES

A long list of transit modes/vehicles was compiled for consideration for the Liberty State Park circulator service. This list includes all vehicles that could potentially be used for a circulator service, including both bus and rail vehicles. The long list for bus vehicles (Figure 5-11) is as follows:

- **Replica trolley (bus)** – Replica trolley bus is a rubber-tired bus designed to resemble a historic streetcar. They are generally shorter than typical buses and are mostly used for historic district and tourist-oriented circulator or shuttle services.
- **Bus guideway** – Bus guideways may be physical or remote guidance systems that steer buses along part or all of a route by external means on dedicated right-of-way. Guideways often parallel existing roads and allow buses to travel freely without obstruction.
- **Bus** – A bus is a transit vehicle with front and center doors, a rear-mounted engine, and low-back seating. Buses are powered by gasoline, battery, or alternative fuel engines contained within the vehicle.
- **Minibus/jitney** – Minibus/jitney is a smaller bus or van that may carry passenger loads between eight and 24 persons.

Figure 5-11
Long List of Bus Vehicles/Modes for Screening



Bus Guideway



Bus(Standard or Electric)



Replica Trolley (Bus)



Mini Bus/Jitney

The long list for rail (Figure 5-12) is as follows:

- **Light rail** – Light rail operates on right-of-way that may be largely grade-separated but also may have portions on which the vehicles share right-of-way with general traffic. A light rail system typically can accommodate passenger loads that are smaller than those of a heavy rail system. Light rail vehicles can operate as single units or as short multi-unit trains.
- **Automated Guideway Transit (AGT)** – AGT systems are fully grade-separated and fully automated. They do not require drivers. They are generally capable of accommodating smaller passenger loads than those of a light rail system. However, there are examples of larger AGT systems in operation throughout the world. AGT systems are common forms of transportation in airports.
- **Battery/ground level power supply modern streetcar** – Modern streetcars operate at low speeds and can share the road with vehicular traffic as they travel on rails embedded in streets. They are typically larger than buses with modern features such as low floors and multiple doors for convenient passenger loading/unloading. Modern streetcars are designed for local transportation and may be powered by battery or ground level power, a modern method of third-rail electrification that does not pose a danger to pedestrians.
- **Battery-powered historic streetcar** – Historic streetcars are refurbished vintage streetcars that were originally manufactured in the early 1900s. They are typically not air-conditioned and lack modern amenities such as low floors. However, they may serve as a historic attraction within the park that may draw additional visitors to ride the streetcar as an experience and not solely for transportation.
- **Battery-powered historic replica streetcar** – Historic replica streetcars are designed to resemble historic streetcars, but are built new, are likely air-conditioned, and have modern amenities such as low-floors.

Heavy rail was briefly considered but eliminated early on. Heavy rail's extreme high cost and intensity of associated infrastructure would not be justified by the projected ridership.

Figure 5-12
Long List of Rail Vehicles/Modes for Screening



Light Rail

Automated Guideway Transit

Battery/Ground Level Power
Supply Modern Streetcar

Battery-Powered Historic Streetcar

New Battery-Powered
Historic Replica Streetcar

5.4.2 VEHICLE/MODE FATAL FLAW SCREENING




In order to reduce the long list of mode options to those most appropriate for further study for the circulator service within Liberty State Park, fatal flaw screening criteria was developed as follows:

- **Must not require grade separation or barrier** – A physical barrier, such as a separated guideway or elevated monorail, would inhibit park circulation and be visually inappropriate in the natural park setting.
- **Must not require excessive infrastructure that does not benefit ridership or running time** – Modes of transportation that are primarily designed for longer distance travel often include infrastructure meant to help speed service through congestion or gain efficiency over a significant distance. Given the relatively smaller scale of a potential service within Liberty State Park and lack of significant traffic congestion, this type of infrastructure is not necessary. It would unnecessarily add to the capital and operational cost of the potential circulator service.
- **Must not be prohibitively expensive** – There is an order of magnitude difference among those modes included on the long list. The most expensive modes of transportation included on the list include AGT and the least expensive are the various bus alternatives. Given the small scale of service and modest potential ridership at this time, the most expensive modes of transportation are inappropriate for further consideration in this study.
- **Must have sufficient capacity** – Minibus or jitney vehicles may not have sufficient capacity to accommodate projected ridership for the “primary corridor”. However, these vehicles may be better suited for lower potential ridership corridors. This will need to be definitively determined

in further detail in a subsequent phase of the study. Due to the projected ridership on the potential circulator service, capacity is not thought to be an issue with any other mode under consideration.

All of the modes under consideration were evaluated based upon the identified fatal flaw criteria. Modes with one or more of the identified fatal flaws were eliminated from further study. As a result of the evaluation process, light rail, AGT, and bus guideway were each eliminated from further consideration for circulator service within Liberty State Park. The detailed results of the screening analysis for the modes eliminated from further consideration can be found in Figure 5-13.

**Figure 5-13
Vehicle/Mode Fatal Flaw Screening Results**

		Requires barrier or grade separation	Requires excessive Infrastructure	Prohibitively expensive	Insufficient capacity
Light Rail			X		
Automated Guideway Transit		X	X	X	
Bus Guideway			X		

In addition, a golf cart or electric tram vehicle, as shown in Figure 5-14, was considered as an inexpensive option. However, this type of vehicle presents safety issues in the event of a crash due to the open sides of the vehicles. These vehicles are not meant to operate on streets with significant numbers of other standard automobiles and trucks. In addition, these vehicles may not be considered legal to operate on Jersey City streets, there would be issues with exposure to the elements, and they would present challenges with fare collection. Therefore, these vehicles were eliminated from further consideration.

Figure 5-14
Golf Cart/Electric Tram









5.4.3 POTENTIAL SERVICE VEHICLES

Modes retained for further study after the fatal flaw screening include: minibus/jitney, bus, replica trolley (bus)—all potentially powered by battery, hybrid-electric, or compressed natural gas—as well as battery/ground level power supply modern streetcar, battery-powered historic streetcar, and battery-powered historic replica streetcar. For these retained modes, a preliminary review (shown in Figure 5-15,) has been compiled of vehicle specifications, positives, and negatives of each as they relate to a potential Liberty State Park circulator service. The ballpark costs provided are for the cost of the vehicle only and do not include the costs for operations and maintenance or additional infrastructure (i.e. track) that may be necessary to operate the service.

As expected, the bus alternatives are the least expensive of the retained options and modern streetcar would likely be the most expensive. Buses also make use of existing infrastructure, do not require any additional right-of-way, and have the flexibility to adjust routing as necessary. They can be ultra-low or zero emissions for an additional cost. The streetcar alternatives range in price but also carry the additional cost of track, charging mechanisms or power supply, carbarn, and other required infrastructure. However, electric streetcars inherently have no local emissions. Historic or replica streetcars may have the added benefit of being an attraction to draw additional visitors to the park to ride the service beyond those purely interested in transportation from one point to another.

**Figure 5-15
Potential Service Vehicles**

	SPECS	POSITIVES	NEGATIVES
Mini Bus 	<ul style="list-style-type: none"> • CAPACITY: up to 30 seats • SIZE: less than 40 feet • AVG COST: \$90,000 	<ul style="list-style-type: none"> • Least expensive vehicle • Uses existing infrastructure and right of way • Routing flexibility • May be low or zero emission (at additional cost) 	<ul style="list-style-type: none"> • Some local emissions unless all electric vehicles are used • Serves purely as transportation, not attraction in and of itself • Shorter life than standard bus (for least expensive types)
Bus 	<ul style="list-style-type: none"> • CAPACITY: 80 • SIZE: 40 feet • AVG COST: \$480,000 	<ul style="list-style-type: none"> • Less expensive than streetcars • Uses existing infrastructure and right-of-way • Routing flexibility • May be low or zero emission (at additional cost) 	<ul style="list-style-type: none"> • Some local emissions unless all electric vehicles are used • Serves purely as transportation, not attraction in and of itself
Replica Trolley (Bus) 	<ul style="list-style-type: none"> • CAPACITY: approx 80 • SIZE: approx 40 feet (varies) • AVG COST: \$280,500 	<ul style="list-style-type: none"> • Less expensive than streetcars • Uses existing infrastructure and right-of-way • Routing flexibility • Creates historic ambiance 	<ul style="list-style-type: none"> • Some local emissions unless all electric vehicles are used • Not likely to be its own attraction
Battery/Ground Level Power Supply Modern Streetcar 	<ul style="list-style-type: none"> • CAPACITY: avg 157 passengers • SIZE: 66 feet (or up to 148 feet) • AVG COST: \$3.5 - \$4.5 M 	<ul style="list-style-type: none"> • New vehicles may be easier to maintain (compared to historic streetcars) • New vehicles may be more comfortable for passengers (compared to historic streetcars) • No local emissions • No charging mechanism needed at route termini for ground level power supply 	<ul style="list-style-type: none"> • More expensive than bus service • Serves purely as transportation, not attraction in and of itself • Need charging mechanism at one or both route termini for battery powered vehicles
Battery-Powered Historic Streetcar 	<ul style="list-style-type: none"> • CAPACITY: approx 70 • SIZE: 46 - 50 feet • AVG COST: est \$900 ,000 for renovation 	<ul style="list-style-type: none"> • Historic cars can be attraction in and of themselves – boosting ridership • No local emissions 	<ul style="list-style-type: none"> • More expensive than bus service • Need charging mechanism at one or both route termini • Historic cars may be difficult to maintain and less reliable than new cars
New Battery-Powered Historic Replica Streetcar 	<ul style="list-style-type: none"> • CAPACITY: 88 passengers • SIZE: ~50 feet • AVG COST: \$1.4 M 	<ul style="list-style-type: none"> • Historically accurate cars can be attraction in and of themselves – boosting ridership • New cars may be easier to maintain and more reliable than historic cars • No local emissions 	<ul style="list-style-type: none"> • More expensive than bus service • Need charging mechanism at one or both route termini

5.5 PRELIMINARY SERVICE GUIDELINES

In order to help define the characteristics of options for further study in the cost-benefit analysis, preliminary service guidelines were developed to minimize the effect on the surrounding park environment and to maximize the passenger experience.

- **Grass track beds and no overhead wires could be standard for streetcar options:** In order to respect the park environment and minimize the noise and visual impact of transit operations, overhead wires should not be used. Battery-powered streetcars should be used for propulsion with a charging mechanism to be located at one or both terminals along a potential route. Grass track beds (Figure 5-16) could be used for all rail options so that rail facilities are contextual with the park environment to the extent possible.

Figure 5-16
Grass Track Bed in New Orleans



- **No or ultra-low emissions could be standard for all bus options:** Technology to reduce or eliminate bus emissions has advanced rapidly in recent years, and there are many propulsion options. Hybrid, compressed natural gas, or even battery-powered buses are all commercially available (Figure 5-17). The vehicle selection should minimize local emissions to the extent possible to reduce the impact to air quality.

Figure 5-17
Zero Emissions Bus in Scotland



- **Service design and vehicle selection could promote a scenic tour of the park:** For some, an ideal trip to the park would involve a scenic vehicular tour to the areas of interest in the park without significant exposure to the elements or the need for a personal car. This audience could include those who are mobility-impaired, those who do not have a whole day to spend in the park, or simply those who prefer to access everything in a short amount of time. This is a common way for many to tour larger national parks (Figure 5-18). To this end, service design should focus on a scenic routing with items of visual interest, as well as selection of vehicles

that maximize views of the park with large windows or sun roofs. To further add exposure, the service, vehicles, and all related materials should be branded as a scenic tour of the park.

Figure 5-18
Park Shuttle in Zion National Park



- **Historic streetcar may be an attraction on its own:** The main purpose of the circulator service whether operated using a bus, streetcar, or other vehicle is to allow visitors to take in the scenery and get from one place to another. Historic or replica streetcars could serve as an additional attraction in Liberty State Park. Due to the history of the park site as a rail terminal and the presence of the historic CRRNJ Terminal and train shed, a historic or replica streetcar operation could draw additional riders who come just for the experience of riding the historic vehicles. This would especially be true if historic vehicles were used as opposed to replica vehicles. Research of parks shows that the use of unique vehicles increases park visitation.³

5.6 SHORT LIST OF SERVICE OPTIONS

5.6.1 REFINEMENT OF MODES

The modes that emerged from the fatal flaw screening and corridors for potential service were refined into discrete options for further study by applying additional considerations. Bus service (standard, replica trolley or minibus) for one or both corridors has the lowest cost and does not require significant additional infrastructure. It should, therefore, be retained as a viable circulator service option.

Rail service was only considered for the Audrey Zapp Drive corridor serving the corridor between the HBLR Station and the CRRNJ Terminal, since it has the highest ridership potential. Conversely, projected ridership for the remainder of the park does not justify rail infrastructure and associated requirements at this time. In addition, modern streetcar was not included in the short list of options for further study, as it would not likely act as an attraction to draw additional riders and visitors to the park, as compared with historic or replica streetcar in conjunction with historical park programming. More

³ As referenced in the Existing Conditions chapter, Stone Mountain in Georgia and the historic trolley in Lowell, Massachusetts serve as distinct attractions for park visitors.

detailed study beyond the scope of this project should determine whether rehabilitated historic streetcars or new replica streetcars should be used.

5.6.2 POTENTIAL OPTIONS

Based on the refinement process, the following four transit circulator options were proposed for further cost-benefit analysis in a subsequent task of this project. More details are provided in the Service Option Evaluation chapter.

- 1. Single bus service corridor:** Service would operate in the Audrey Zapp Drive corridor between the HBLR station and the historic CRRNJ Terminal (Primary Corridor) only. Bus, replica trolley (bus), or mini-bus/jitney may be used and should be determined during service planning.
- 2. Double corridor bus service:** Service would operate along the Primary and Secondary Corridors (Audrey Zapp Drive and Freedom Way). Bus, replica trolley (bus), or mini-bus/jitney may be used, and the specific vehicle should be determined during service planning.
- 3. Single historic/replica streetcar corridor:** This would operate in the Audrey Zapp Drive corridor between the HBLR station and the historic CRRNJ Terminal (Primary Corridor) only. Use of historic or replica streetcar should be determined following a more detailed analysis.
- 4. Combination historic/replica streetcar and bus service:** This option entails historic/replica streetcar in the Audrey Zapp Drive corridor between the HBLR station and the historic CRRNJ Terminal (Primary Corridor) and bus service in the Freedom Way corridor between the historic CRRNJ Terminal and the Park Office/South Lawn area (Secondary Corridor).

6 SERVICE OPTION EVALUATION

This chapter evaluates the four options for a Liberty State Park Circulator advanced for further study. It builds on the previous analysis conducted for this study that described potential modes and corridors for service based on analyses of activity centers within the park, ridership on the previous park circulator service, and additional considerations that pertain to operating the service in a park environment.

Initial screening and analysis outlined in the Options for Circulator Service chapter led to the elimination of modes of transit that are inappropriate for the park setting and scale of service being considered. Modes of transit retained for further study, in combination with selected corridors for service, are described in this chapter as the four options selected for cost-benefit analysis.

More detailed information for the four service options is provided including proposed service headways, routes/alignments, bus stop/station locations, and number of vehicles in revenue service. For each service option, projected ridership from the travel demand model was adjusted based on proposed service changes and service features that would affect ridership. All four options were qualitatively assessed for their potential to cause impacts within the park environment in which they would operate and for the related benefits that would be derived from their operation. Capital cost estimates were developed for each service option with a 30 percent contingency for design and construction. Annual operating and maintenance costs are represented in 2013 dollars. The estimated costs associated with each service option were compared to associated benefits and potential impacts.

6.1 LIBERTY STATE PARK SERVICE OPTIONS

The New Jersey TRANSIT #305 route served Liberty State Park from January 2001 until May 2010, when it was cancelled. In June 2010, the Hudson TMA took over the service. It operated free of charge on weekends through Labor Day with a headway of 35 minutes. This service was also operated on weekends in 2011 during the summer months with a headway of 30 minutes. In 2011, the cost to ride was a \$1.00 cash fare per passenger paid to the driver for unlimited daily rides. The route served the Liberty State Park HBLR station and destinations throughout the park including the Liberty Science Center, Liberty Landing marina, the historic CRRNJ Terminal and ferry to the national monuments, and the park office.

As discussed in the Options for Circulator Service chapter, two distinct service corridors were identified for the purposes of planning for a potential new circulator service. The “Primary Corridor” extends between the HBLR station and the historic CRRNJ Terminal via Audrey Zapp Drive. It is projected to be the corridor that would experience the highest ridership once a transit service is implemented. The “Secondary Corridor” extends from the CRRNJ Terminal to the Park Office/South Lawn area via Freedom Way and would provide connections to several of Liberty State Park’s additional attractions.

The four service options developed during this study are described below. All service options are assumed to operate every day of the week between April 1 and October 31 and on weekends only November 1 through March 31. During the summer months from June through August, the hours of operation would be from 9:00 AM to 9:00 PM Sunday through Friday and from 9:00 AM to 10:00 PM on Saturdays. During the remainder of the year from September through May, the hours of operation would be 9:00 AM to 7:00 PM. All service options would be designed to meet ADA requirements.

6.1.1 OPTION 1: BUS ON PRIMARY CORRIDOR ONLY

For this option, bus service would be implemented along the Primary Corridor only. Service would operate primarily along Audrey Zapp Drive and serve the Liberty State Park HBLR Station, Liberty Landing Marina, and the CRRNJ Terminal. A future/optional bus stop could be located at the intersection of Phillip Drive/Jersey Avenue and Audrey Zapp Drive, if or when demand from adjacent neighborhoods north of the Jersey Avenue footbridge warrants a stop. Eastbound bus service would begin at the existing NJ TRANSIT #6 bus stop adjacent to the HBLR Station. From there, service would continue along Communipaw Avenue and turn east on Johnston Avenue, which becomes Audrey Zapp Drive in the park. Service would continue east with a stop on Audrey Zapp Drive serving the Liberty Landing Marina, the adjacent restaurants, and Liberty Landing ferry service. Service would terminate at the historic CRRNJ Terminal in the existing bus bay adjacent to the display tracks. Westbound service would begin at the same bus bay at the CRRNJ Terminal and follow the same alignment with the same stops to Jersey Avenue/Phillip Drive where it would make a southbound left turn and continue to a bus stop at the bus turnaround on the east side of the Liberty Science Center on Phillip Drive. Service would then continue southbound on Phillip Drive, westbound on Jersey City Boulevard on the south side of the Liberty Science Center parking lot, northbound on Communipaw Avenue and under the New Jersey Turnpike to terminate at the same northbound NJ TRANSIT #6 bus stop. This option would have a service frequency of 15 minutes during all hours of operation, achievable with one vehicle, and serve the 1.3 mile corridor shown in Figure 6-1. The expected operational speed would be approximately 15 MPH. This operational speed is consistent with observed operating speeds in the park including the stretch of the Audrey Zapp Drive roadway paved with cobblestones. Signs and shelters would be installed at all bus stops. Because of the irregular arrival patterns of northbound and southbound HBLR vehicles, it is not recommended to attempt timed transfers between buses and the HBLR vehicles at the Liberty State Park HBLR Station.

For the purposes of this study, it was assumed that bus service would be contracted to a private company. Vehicles would be owned, operated and maintained by the company, according to terms negotiated as part of the contract and in the event of a breakdown, the contracted service provider would provide a back-up vehicle at no additional cost. Vehicle type may be specified and branded with a vehicle wrap, a plastic coating of the vehicle that would display service branding or a logo. More common vehicle types that could be easily re-used by the company or that may already be part of their fleet would be less expensive than more obscure or custom vehicles. Low or no-emission vehicles are recommended for service in the park.

6.1.2 OPTION 2: BUS ON PRIMARY AND SECONDARY CORRIDORS

Option 2 would expand on Option 1 by extending the bus service approximately 1.9 miles between the CRRNJ Terminal and the Park Office/South Lawn to include the Secondary Corridor (largely along Freedom Way). Bus stops along the Primary Corridor would remain the same with the addition of bus stops at the Playground, Interpretive Center, and the Park Office/South Lawn on the Secondary Corridor. Buses would use the existing vehicle turnaround at the Park Office. This option would provide a service frequency of 15 minutes during all hours of operation along both corridors. This headway is achievable with two vehicles in operation to serve the combined 3.2 mile route along both corridors and an expected operational speed of approximately 15 MPH. This operational speed is consistent with observed operating speeds in the park including the stretch of the Audrey Zapp Drive roadway paved with cobblestones. Both of these vehicles would cover the entire 3.2 mile route in both directions on all runs thus eliminating the need to transfer between buses at the CRRNJ Terminal. The service alignment for Option 2 is shown in Figure 6-2.

Figure 6-1
Service Alignment – Option 1



As with Option 1, it was assumed that bus service would be contracted to a private company. Vehicles would be owned, operated and maintained by the company, according to terms negotiated as part of the contract and in the event of a vehicle breakdown, the contracted operator would provide a back-up at no additional cost. Vehicle type may be specified and branded with a vehicle wrap, a plastic coating of the vehicle that would display service branding or a logo. More common vehicle types that could be easily re-used by the company or that may already be part of their fleet would be less expensive than more obscure or custom vehicles. Low or no-emission vehicles are recommended for service in the park.

Figure 6-2
Service Alignment – Option 2



6.1.3 OPTION 3: STREETCAR ON PRIMARY CORRIDOR ONLY

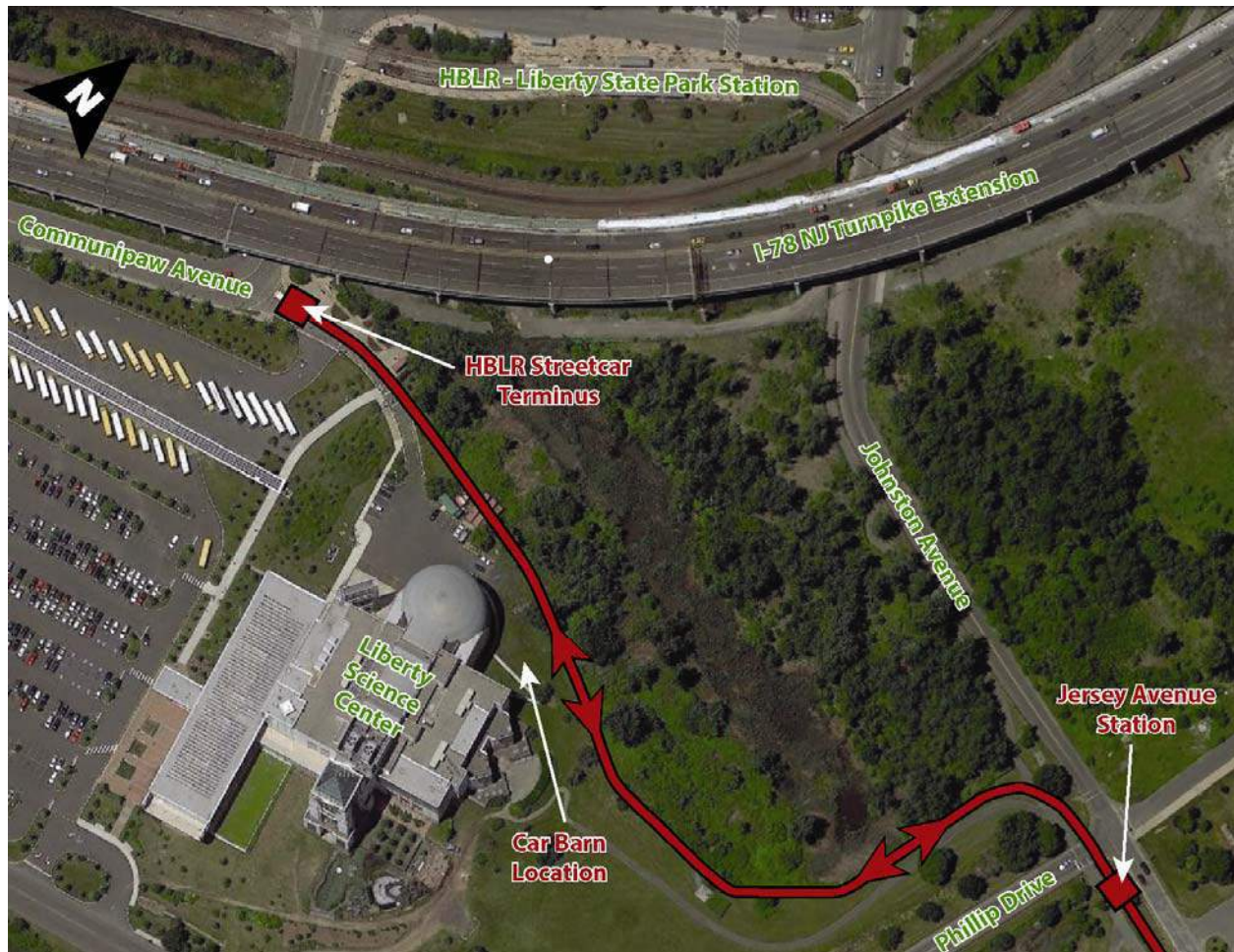
For Option 3, historic or historic replica streetcar service would operate along the Primary Corridor. The western terminus of the alignment would be located adjacent to the New Jersey Turnpike across from the Liberty Science Center (Figure 6-3). In this scheme, the ultimate footprint of this terminus station would not be located on New Jersey Turnpike Authority (NJTA) property or within the easement for the Spectra natural gas pipeline. This terminus location would be a relatively short walk to or from either the Liberty Science Center entrance or the Liberty State Park HBLR station. The portion of the walk between the western terminus station and the HBLR station under the New Jersey Turnpike superstructure along the northern sidewalk of Communipaw Avenue could be beautified to improve the pedestrian experience. However, the cost of implementing these improvements was not included in the overall cost estimate of the streetcar options, since this would be a discretionary expense.

Alternatively, the tracks could be extended further to the west so that the western terminus station could be located under the New Jersey Turnpike superstructure. This location for the western terminus station would provide shelter from the elements for streetcar passengers without the need to construct a separate canopy. It would also be closer to the HBLR station to better serve transfers between the two modes of transportation. However, the NJTA would need to give authorization for the station to be located under their roadway.

Heading east of the western terminus station, the streetcar alignment would be located adjacent to the northern section of the Habitat Restoration Area and behind the Liberty Science Center, as shown in Figure 6-3. There is currently at least 20 feet of horizontal clearance between the Liberty Science Center back-up generator and the boundary of the Habitat Restoration Area. Further to the east, there

is also at least 20 feet of clear space between the radio tower behind the Liberty Science Center and the Habitat Restoration Area, which could accommodate the necessary 12-foot-wide track. A car barn of approximately 100 feet by 40 feet, including a maintenance pit, would be necessary to store the streetcar when not in operation and to conduct necessary repairs and maintenance. It would be located behind the Liberty Science Center above the visible flood line associated with Hurricane Sandy in late 2012. Streetcar access to the car barn would be provided with a separate track branching off from the mainline.

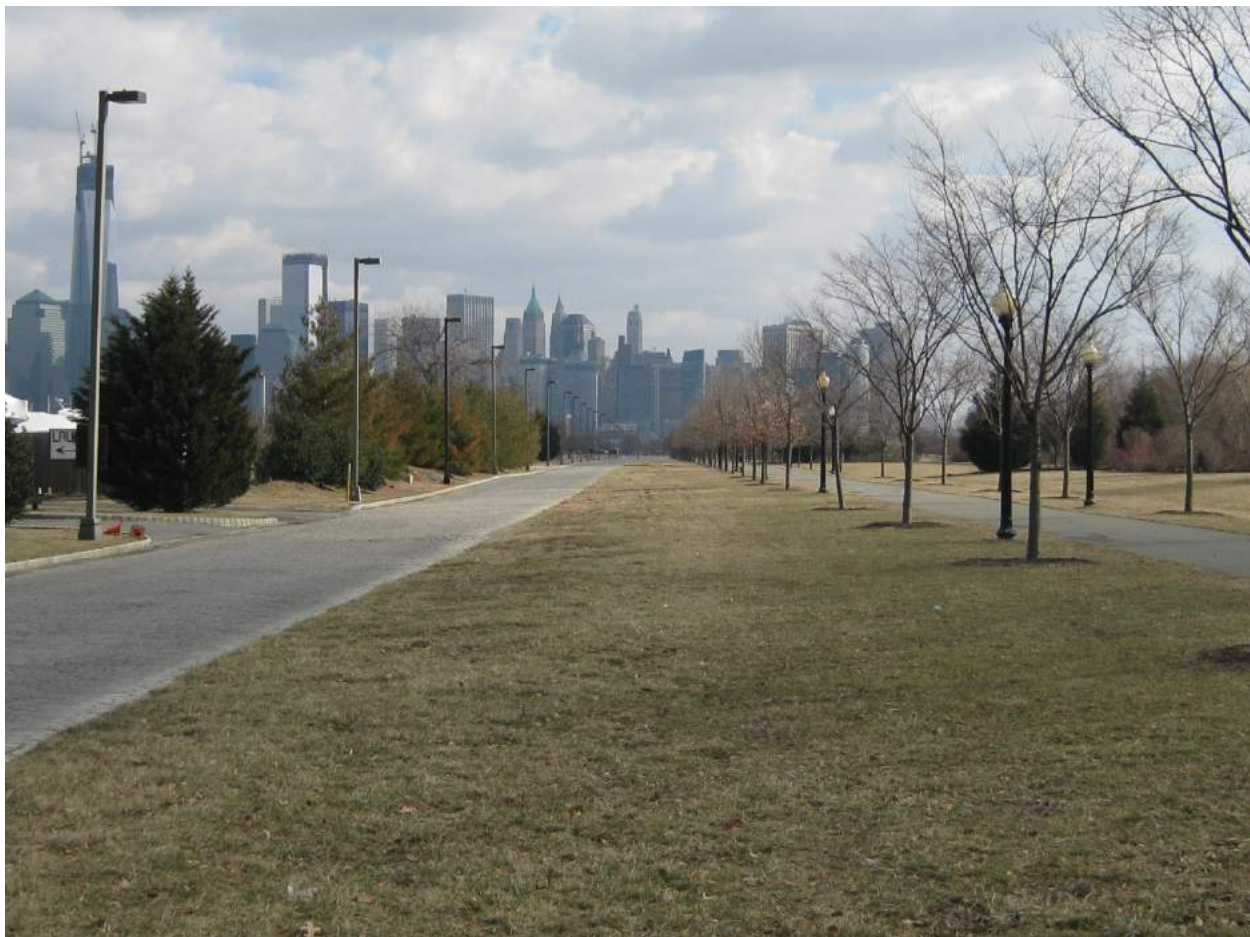
Figure 6-3
Western Terminus of Alignment – Option 3



The streetcar alignment would continue between the Habitat Restoration Area and the existing walking path toward the intersection of Phillip Drive/Jersey Avenue and Audrey Zapp Drive. The alignment would then cross this intersection and continue on the south side of Audrey Zapp Drive between the south curblineline of the roadway and the adjacent trees. A new signal and other grade crossing treatments are assumed at this location for cost-estimating purposes and the walking path on the west side of this intersection would need to be slightly relocated. On the east side of this intersection, up to four trees may be affected by the streetcar alignment and may need to be relocated. A “Jersey Avenue Station” could be located on the east side of this intersection in the future if warranted due to projected demand from adjacent neighborhoods to the north.

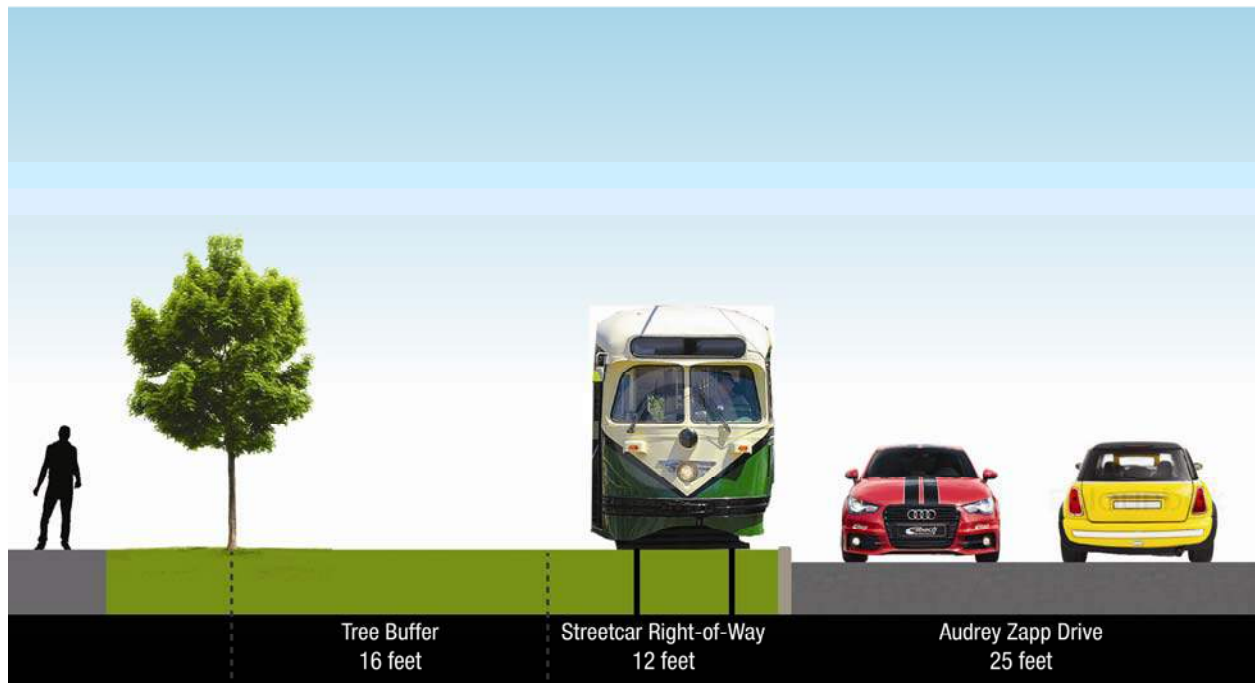
The streetcar alignment to the east of Phillip Drive/Jersey Avenue would be located directly adjacent to south side of Audrey Zapp Drive between Phillip Drive/Jersey Avenue and Freedom Way (Figure 6-4). The measured distance between the south curblane of Audrey Zapp Drive and the walking path to the south is generally a consistent 37 feet. Also, the measured distance between the center of the tree line and the southern curblane of Audrey Zapp Drive is generally a consistent 28 feet. One notable exception is the small cobblestone turnout from Audrey Zapp Drive for people visiting the Grove of Remembrance. This cobblestone may also be of the same historic quality as the remainder of Audrey Zapp Drive. In addition, if the streetcar tracks traversed the turnout, it would make it unusable for general traffic. Therefore, it is proposed that the streetcar alignment be located just south of this turnout. This could affect approximately four trees at this location that may be able to be relocated.

Figure 6-4
Photo of Option 3 Alignment
Audrey Zapp Drive Corridor (Looking East)



The 28-foot-wide swath along Audrey Zapp Drive just south of the travel lanes is expected to be of a sufficient width to allow for a single streetcar track and tree growth over time. Twelve feet would be allotted for the streetcar alignment, including buffer, and the remainder for tree growth clearance. However, if Option 3 is to be implemented, a detailed analysis should take into account the specific tree species and expected canopy development over time. Some tree trimming may be necessary over time to maintain a clear path for the streetcar. A cross section of the Audrey Zapp Drive corridor streetcar alignment is shown in Figure 6-5.

Figure 6-5
Cross Section of Option 3 Alignment
Audrey Zapp Drive Corridor (Looking West)



Further to the east along the alignment, a station would be located in the vicinity of Freedom Way to serve the Liberty Landing Marina and the adjacent restaurants and Liberty Landing Ferry service. The alignment could operate just to the south to avoid the asphalt southbound right turn bay at this location. The streetcar would cross Freedom Way where a new signal and other grade crossing treatments would be needed. Further east, the streetcar would avoid affecting any trees and would cross the main entrance/exit to the ferry parking lot and the secondary exit of the ferry lot just west of the historic train shed behind the CRRNJ Terminal. These crossings could be stop-controlled for vehicles and not require the streetcar to stop. The exact treatment used at these crossings would need to be further evaluated through a signal warrant study if a detailed streetcar alignment study is performed.

The alignment would continue to the east on the existing display tracks adjacent to the historic train shed. An eastern terminus station would be located along the display track to serve the CRRNJ Terminal, 9/11 Memorial, and the Statue Cruises ferry terminal. The train cars currently occupying the display tracks would need to be relocated or the alignment would need to stop short of their location at the east end of the track.

At a minimum, stations would involve a platform for level boarding and ADA accessibility, likely made of poured concrete or similar construction, as well as a shelter and passenger information. Station design could be similar to HBLR stations or could be more basic. Stations would likely be at least 50 feet long and at least 10 feet wide.

Service would be provided with a frequency of 15 minutes during all hours of operation, achievable with a single double-ended vehicle and an operating speed of approximately 15 MPH. The vehicle would be either a historic or historic-replica streetcar with hybrid-electric, hydrogen fuel cell power or would be battery operated with an electric charging station. As a result, no overhead wires or catenary poles would be necessary. For the purpose of this study, it was assumed that vehicles and associated infrastructure would be owned by the operating entity. However, service would be operated and maintained by a private company according to a negotiated contract. A second streetcar vehicle was not assumed to be necessary as a spare. Due to the high cost of buying/refurbishing and maintaining a second vehicle, it was assumed that an on-call relationship could be established with a private bus operator that could dispatch a bus to provide service on the corridor when the streetcar is out of service. An approximate cost for this has been included in the cost estimates for the streetcar options, detailed later in this report. Because of the irregular arrival patterns of northbound and southbound HBLR vehicles, it is not recommended to attempt time transfers between streetcars and the HBLR vehicles at the western terminus station. The alignment for Option 3 is shown in Figure 6-6. Grass tracks could be used along the length of the alignment.

Figure 6-6
Service Alignment – Option 3

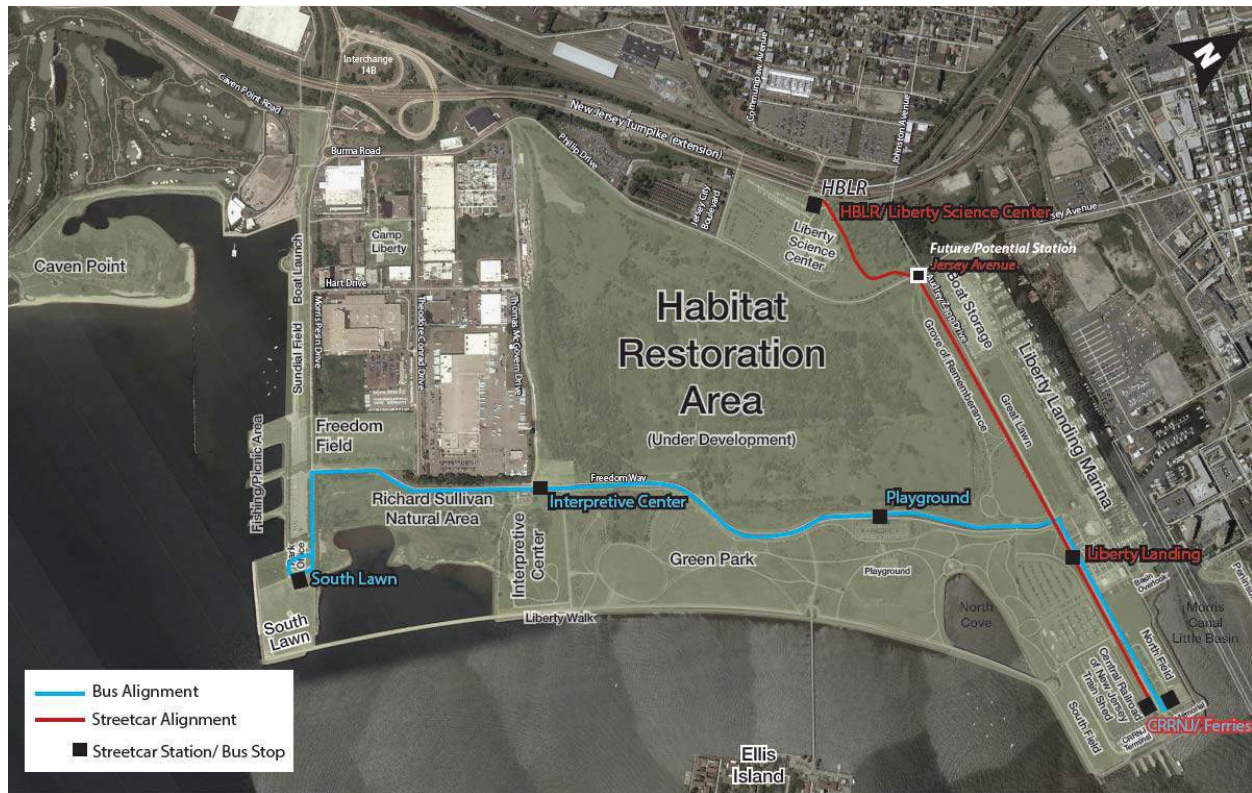


6.1.4 OPTION 4: STREETCAR ON PRIMARY AND BUS ON SECONDARY CORRIDOR

The final service option would combine the historic or replica streetcar service on the Primary Corridor described in Option 3 with bus service on the Secondary Corridor described in Option 2. To travel the entire length of the route, a timed transfer would be required at the CRRNJ Terminal between the streetcar and the bus, meaning that the connecting bus service would be held waiting for passengers disembarking from the streetcar service. As the display tracks where the streetcar service would terminate are located parallel to the existing bus bays, approximately 80 feet north, the transfer would be easy and straightforward for passengers. Service would be provided along the Primary Corridor with a frequency of 15 minutes and a frequency of 30 minutes along the Secondary Corridor during all hours of operation. This would be achievable with one streetcar vehicle and one bus vehicle. This means that every other streetcar would be met by a timed transfer for passengers traveling on the Secondary Corridor. All passengers traveling northbound on the Secondary Corridor would always have a streetcar connection while passengers in half of the streetcars wishing to travel southbound on the Secondary Corridor would need to wait 15 minutes for connecting service. Achieving a frequency of 15 minutes on the Secondary Corridor with no wait for any connecting streetcar passengers would require a second vehicle that would essentially double the cost of bus service for this option. If warranted due to high ridership, a second vehicle could be added. Approximate operational speed for both corridors is assumed to be 15 MPH. The alignment for Option 4 is shown in Figure 6-7.

As with the above options, streetcar vehicles and associated infrastructure would be owned by the operating entity but operated and maintained by a private company according to a negotiated contract. For bus service, vehicles would be owned, operated and maintained by the contracted company, according to terms negotiated as part of a contract. It is possible that the same company could operate both the streetcar and bus services. Streetcar vehicles could be double-ended, hybrid-electric, hydrogen fuel cell-powered historic or replica cars. As such, no overhead wires or catenary poles would be needed and grass tracks could be used along the length of the alignment. Buses should be low or no-emission vehicles.

**Figure 6-7
Service Alignment – Option 4**



6.2 RIDERSHIP ESTIMATES

Ridership projections were developed for each of the four service options using the results of the travel demand modeling conducted for this study, quantitative methods outlined in various Transit Cooperative Research Program (TCRP) reports, and professional engineering judgment. The travel demand model output for the years 2011, 2020, and 2035 were used as baseline ridership. The travel demand model assumed a circulator service similar to the discontinued NJ TRANSIT #305 route and the subsequent Hudson TMA bus service. The transit service that was modeled included daily service from April through December and weekend and holiday service from January through March. Frequency on this service was every 40 minutes with a fare of \$1.00. While the Hudson TMA bus route included a service segment between the South Lawn, west through the industrial park, and returning to the HBLR Station, that was not included in any of the four service options advanced for detailed analysis of costs and benefits. Ridership along this segment was extremely low and can therefore be considered negligible. The full methodology of how baseline ridership projections were calculated is detailed in the Future Conditions chapter.

Baseline ridership projections calculated for the 2011, 2020, and 2035 model years are shown in Table 6-1.

Table 6-1
Liberty State Park Circulator Baseline Projected Circulator Ridership

Market	2011		2020		2035	
Local	28,700	48%	50,900	60%	79,900	68%
Ferry Visitor	26,500	44%	28,300	34%	31,800	27%
Liberty Science Center Visitor	4,800	8%	5,100	6%	5,800	5%
Total	60,000	100%	84,300	100%	117,500	100%

Based on historical data provided by the Hudson TMA, 90 percent of the service's projected ridership would occur on the Primary Corridor with the remaining 10 percent occurring on the Secondary Corridor. As such, ridership estimates for service options that only include service along the Primary Corridor began with a baseline of 90 percent of the total ridership in Table 6-1. The additional 10 percent was added back into the total for options that provide service on the Secondary Corridor as well. All of the four options would serve at least the Primary Corridor but with higher service frequency, coordinated schedules, and other premium features and passenger amenities. It was assumed that these improved amenities and service features would attract riders beyond the baseline ridership projections in Table 6-1.

The first and most substantial contributor to projected ridership increases above the baseline projections is the improved service frequency of the circulator options over the previous bus service and resulting reduced average wait times. The discontinued NJ TRANSIT #305 route had a service frequency of 40 minutes, resulting in an average wait time of 20 minutes. Service frequencies of 15 minutes would be provided for Options 1 and 3 on the Primary Corridor and for both corridors with Option 2, resulting in an average wait time of 7.5 minutes. A service frequency of 15 minutes would be provided for Option 4 on the Primary Corridor and 30 minutes on the Secondary Corridor. This would result in average wait times of 7.5 minutes and 15 minutes, respectively.

TCRP Synthesis 66 – Fixed-Route Transit Ridership and Service Planning Methods proposes that a direct relationship exists between average passenger wait times and average service ridership. As detailed in the report, for every minute reduction in average waiting time, ridership is anticipated to increase by 2.5 percent. Following this logic, where average wait times have been reduced from 20 minutes to seven and a half minutes, a 31.3 percent ridership increase could be expected. For the Secondary Corridor in Option 4 where average wait times are reduced from 20 minutes to 15 minutes, a ridership increase of 12.5 percent could be expected.

TCRP Report 118 – Bus Rapid Transit Practitioner's Guide contains a methodology for projecting ridership increases on a route that is upgraded from a standard bus route to a premium bus route. The report posits that the maximum ridership increase that can be obtained by adding priority features to an existing transit route to upgrade it to a premium service is 25 percent. Each premium service element is responsible for a percentage of that maximum 25 percent ridership gain. As an example, implementation of grade-separated busways would provide 20 percent of the maximum ridership gain (20 percent of the maximum 25 percent), which is equal to a 5 percent ridership gain over existing service.

The case can be made that the upgrades, features, and improvements to the service being proposed over what existed previously is comparable to upgrading an existing standard transit route to a premium service. As such, Table 6-2 provides the premium features proposed in each of the four service options, the ridership gain that can be expected from each feature, and the total ridership percentage gained from all proposed features in each service option.

Table 6-2
Estimated Ridership Increases Resulting From Premium Service Features

Premium Service Feature	Option 1	Option 2	Option 3	Option 4	
				Primary Corridor	Secondary Corridor
<i>Separated Right-of-Way</i>	--	--	3.75%	3.75%	--
<i>Level Boarding</i>	--	--	1.25%	1.25%	--
<i>Uniquely Designed Vehicles</i>	1.25%	1.25%	1.25%	1.25%	1.25%
<i>Clear Simple Service Plan</i>	1.00%	1.00%	1.00%	1.00%	1.00%
<i>Uniquely Designed Shelters</i>	0.50%	0.50%	0.50%	0.50%	0.50%
<i>Service Branding (Vehicles, Brochures)</i>	2.50%	2.50%	2.50%	2.50%	2.50%
Total Ridership Percentage Gained from Premium Service Features	5.25%	5.25%	10.25%	10.25%	5.25%

Source: TCRP Report 118

The final factor contributing to projected ridership increases is a novelty factor associated with the streetcar service options. This factor is projected to provide an additional 10 percent increase in service ridership to the streetcar-based service options and is applied on top of the gains from service improvements and added premium features. This factor is applied to account for additional visitors that would either come to the park with the specific intention of riding the historic streetcar service or that would ride the streetcar as an attraction, as part of a visit that would not have otherwise involved transit. Applying a 10 percent increase would equate to approximately 32 riders per day (7,700 riders over 242 service days).

Supporting literature on ridership increases associated with unique transit experiences is limited. This is especially true for finding a comparable scenario in a park setting. Conversations with Ed Tennyson, streetcar expert from the American Public Transit Association, and reports on the conversion of the F Line in San Francisco from a bus route to a historic streetcar line suggest that an increase of 40 percent over bus service has been observed due to the draw of a historic streetcar. In addition, the historic streetcar in Lowell, Massachusetts, which provides access to the Lowell National Historical Park and Streetcar Museum, is a comparable example of visitors attracted to the experience of riding a historic streetcar.

Given this information, a conservative estimate was made regarding the number of people that would be drawn to Liberty State Park solely for the experience of riding a historic streetcar. If the historic train shed is rehabilitated at some point in the future, this number may increase due to the synergy of historic attractions.

Applying all of these factors provides an estimation of increased ridership over the baseline demand as a result of significantly improved service and premium features proposed as part of the four options. Tables 6-3 through 6-6 provide a summary for each of the four service options identifying the base ridership from the travel demand model and the projected total ridership taking into account the improved ridership factors for each of the model years.

**Table 6-3
Ridership Projections - Option 1**

Option 1: Bus on Primary Corridor Only			
	2011	2020	2035
Base Ridership	54,000	75,870	105,750
Ridership Increase from Decreased Waiting Times	31.25%	31.25%	31.25%
Ridership from Service Features	5.25%	5.25%	5.25%
<i>Uniquely Designed Vehicles</i>	<i>1.25%</i>	<i>1.25%</i>	<i>1.25%</i>
<i>Clear Simple Service Plan</i>	<i>1.00%</i>	<i>1.00%</i>	<i>1.00%</i>
<i>Uniquely Designed Shelters</i>	<i>0.50%</i>	<i>0.50%</i>	<i>0.50%</i>
<i>Service Branding (Vehicles, Brochures)</i>	<i>2.50%</i>	<i>2.50%</i>	<i>2.50%</i>
Projected Ridership	73,710	103,563	144,349

**Table 6-4
Ridership Projections - Option 2**

Option 2: Bus Primary and Secondary Corridors			
	2011	2020	2035
Base Ridership	60,000	84,300	117,500
Ridership Increase from Decreased Waiting Times	31.25%	31.25%	31.25%
Ridership from Service Features	5.25%	5.25%	5.25%
<i>Uniquely Designed Vehicles</i>	<i>1.25%</i>	<i>1.25%</i>	<i>1.25%</i>
<i>Clear Simple Service Plan</i>	<i>1.00%</i>	<i>1.00%</i>	<i>1.00%</i>
<i>Uniquely Designed Shelters</i>	<i>0.50%</i>	<i>0.50%</i>	<i>0.50%</i>
<i>Service Branding (Vehicles, Brochures)</i>	<i>2.50%</i>	<i>2.50%</i>	<i>2.50%</i>
Projected Ridership	81,900	115,070	160,388

**Table 6-5
Ridership Projections - Option 3**

Option 3: Streetcar on Primary Corridor Only			
	2011	2020	2035
Base Ridership	54,000	75,870	105,750
Ridership Increase from Decreased Waiting Times	31.25%	31.25%	31.25%
Ridership from Service Features	10.25%	10.25%	10.25%
<i>Separated Right-of-Way</i>	3.75%	3.75%	3.75%
<i>Level Boarding</i>	1.25%	1.25%	1.25%
<i>Uniquely Designed Vehicles</i>	1.25%	1.25%	1.25%
<i>Clear Simple Service Plan</i>	1.00%	1.00%	1.00%
<i>Uniquely Designed Shelters</i>	0.50%	0.50%	0.50%
<i>Service Branding (Vehicles, Brochures)</i>	2.50%	2.50%	2.50%
Streetcar Novelty Factor	10.00%	10.00%	10.00%
Projected Ridership	84,051	118,092	164,600

NOTE: The 10% streetcar novelty factor was applied to estimated ridership on top of the increase from premium service features.

**Table 6-6
Ridership Projections - Option 4**

Option 4: Streetcar on Primary Corridor, Bus on Secondary Corridor						
	2011		2020		2035	
Base Ridership	60,000		84,300		117,500	
<i>Corridor Portion</i>	<i>Primary</i>	<i>Secondary</i>	<i>Primary</i>	<i>Secondary</i>	<i>Primary</i>	<i>Secondary</i>
Ridership Increase from Decreased Waiting Times	31.25%	12.50%	31.25%	12.50%	31.25%	12.50%
Ridership from Service Features	10.25%	5.30%	10.25%	5.30%	10.25%	5.30%
<i>Separated Right-of-Way</i>	3.75%	--	3.75%	--	3.75%	--
<i>Level Boarding</i>	1.25%	--	1.25%	--	1.25%	--
<i>Uniquely Designed Vehicles</i>	1.25%	1.30%	1.25%	1.30%	1.25%	1.30%
<i>Clear Simple Service Plan</i>	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
<i>Uniquely Designed Shelters</i>	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
<i>Service Branding (Vehicles, Brochures)</i>	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Streetcar Novelty Factor	10.00%	--	10.00%	--	10.00%	--
Projected Ridership	90,991		127,842		178,191	

6.3 POTENTIAL IMPACTS AND BENEFITS

All four options were qualitatively assessed to determine if there was potential for causing impacts to the park environment in which they would operate and the related benefits that would be derived from their implementation. The areas considered for potential impacts include air/emissions, noise, wetlands, visual, historic resources, contaminated soil, vegetation/open space, and pedestrians/vehicles. The impact assessment was conducted separately for streetcars and buses as they would affect the park differently. The implementation of transit service in Liberty State Park would provide benefits that uniquely apply to each option.

6.3.1 POTENTIAL IMPACTS

6.3.1.1 AIR/EMISSIONS

Streetcar

Historic or historic-replica streetcars could be hybrid electric hydrogen fuel cell-powered vehicles or battery-operated vehicles with an electric charging station. Therefore, it is not anticipated that the use of this technology for streetcars would produce local emissions in the park or surrounding areas.

Bus

For options that would use bus service, local emissions would largely depend on the vehicle selected. At this point, the vehicle type selected could vary greatly considering the many vehicle types available on the market. An alternative-fuel or electric vehicle is recommended as it would produce little to no emissions compared with a traditional gasoline- or diesel-powered bus.

The streetcar options would produce no local emissions and the bus options would produce little to no emissions, depending on the selected vehicle. However, due to the low number of trips per day compared to existing background vehicle volumes in the vicinity of the park, local air quality is not expected to be appreciably adversely affected by any option.

6.3.1.2 NOISE

Streetcar

Because of the lighter vehicle used (as compared to heavy rail), the lower travel speeds (likely 15 MPH maximum), and a minimal number of grade crossings, the streetcar options would generally produce low levels of track noise and bell chiming. In addition, a battery-powered streetcar would produce very little associated engine noise.

Bus

An alternative-fuel or electric-powered vehicle would result in very low levels of noise. One other source of noise for buses would be travel on the cobblestones along Audrey Zapp Drive. The amount of noise produced would vary depending on the size of the bus used.

On the Primary Corridor, low levels of noise are anticipated for streetcars and buses because of the slow travel speeds proposed during service operation. In addition, the amount of noise emanating from buses would be further minimized if an alternative-fuel or electric vehicle is used.

6.3.1.3 WETLANDS

Streetcar

The streetcar option is not expected to have an impact on the park's wetlands. The potential streetcar alignment is proposed to operate adjacent to but outside the established boundary of the Habitat Restoration Area at the western end of the alignment to the north of the Liberty Science Center.

Bus

Since the bus is proposed to operate along existing streets in the park in all options, there should be no impact on the park's wetlands. Bus shelters may be placed in grassy areas adjacent to the roadway. However, none of the grassy areas adjacent to the roadway are thought to be classified as wetlands.

6.3.1.4 VISUAL

Streetcar

The streetcars would be battery-powered and would not require the use of poles or overhead wires. In addition, grass tracks could be used to minimize the presence of the associated guideway infrastructure including rails, ties, and ballast. The only visual changes would be the vehicles and the stations (potentially with signs and shelters). Stations and vehicles could be branded to be consistent with the overall look and feel of the park setting to minimize visual impacts.

Bus

As was the case with streetcars, the bus stops and vehicles could be branded to be consistent with the overall look and feel of the park setting to minimize visual impacts.

6.3.1.5 HISTORIC RESOURCES

Liberty State Park is built over a historic rail yard, and the CRRNJ Terminal building and associated elements are on the National Register of Historic Places. In addition, the cobblestone lined Audrey Zapp Drive is a contributing element to the historic terminal building. Therefore, any circulator option should be evaluated for potential impacts to historic resources. While not a definitive determination of whether any historic resources could be impacted by a bus or streetcar service, the following evaluation summarizes any known potential impacts identified by Michael Timpanaro (Liberty State Park Historian) in an interview on February 25, 2013.

Streetcar

The streetcar alignment along Zapp Drive would be located largely on existing parkland and would cross two park roadways and two parking lot entrances/exits. The potential station location at the HBLR station would be on park property adjacent to the New Jersey Turnpike Extension. As the streetcar options would not operate within the roadway of Audrey Zapp Drive, no impact to the historic cobblestone is expected and none of the planned crossings would traverse historic cobblestone. The streetcar tracks would largely be located on remediated parkland that is topped with one to two feet of clean fill. If ballast and track installation does not penetrate below the clean fill, no impact to historic resources below or hazardous materials would be expected. One area for further investigation, however, is the cobblestone turnout located on the south side of Audrey Zapp Drive. This may also be historic cobblestone, and the alignment proposed in Option 3 would avoid the cobblestone.

Use of the display tracks adjacent to the historic train shed for the terminus of the streetcar alignment is not expected to be a cause of concern, as these tracks were added later and are not historic. However, display cars are currently stored there and would either need to be moved to the historic train shed or elsewhere, or the streetcar service would need to stop short of their location.

Bus

All bus options under consideration would use existing roadways without modification and bus shelters would be placed in the public right-of-way (as would be the case at the HBLR station) or at bus stops for the previous Hudson TMA bus service with the likely addition of bus shelters on the parkland adjacent to the roadway. Therefore, no impact to historic resources is expected for any of the potential options involving bus service.

6.3.1.6 CONTAMINATED SOIL

Streetcar

A soil cover of one to two feet of clean fill was added to contain contamination caused by the earlier rail yard use as a means to transform the property into parkland. While existing ballast is thought to still be in place beneath the fill, this ballast is likely inadequate for potential streetcar service due to its age and resulting compacted condition. In addition, disturbing any soil below the existing fill may raise potential contamination issues of unknown cost and complexity. As such, it is advisable to add new ballast to the alignment without penetrating below the one to two feet of clean fill. This should avoid any potential issues with contaminated soil.

Bus

As every bus option features an alignment that operates only on existing streets in the park, there is no expected impact to any areas with contaminated soil. The installation of bus stops/shelters would not penetrate below clean fill.

6.3.1.7 VEGETATION/OPEN SPACE

Streetcar

The potential streetcar alignment would operate mostly on grass-covered parkland. The western end of the alignment would traverse the area between the Liberty Science Center and the fence line of the Habitat Restoration Area. Since this area is slightly uneven, some earthwork would be needed to level the track bed. Further east, the alignment would be located on grass parallel to and south of Audrey Zapp Drive between the roadway and a row of widely-spaced trees. Up to eight trees could be affected by the alignment at two locations including the area in the vicinity of the Phillip Drive/Jersey Avenue and Audrey Zapp Drive intersection and adjacent to the cobblestone turnout on Audrey Zapp Drive. These trees are young and may be able to be relocated to accommodate the streetcar alignment. As the alignment could make use of grass tracks, vegetative cover would be largely maintained. While the streetcar alignment would make use of what is currently parkland, no programmed open space would be affected.

Bus

The bus alignment for all relevant options would operate on existing streets in the park. As such, there is no expected effect to the park's vegetation or open space, except for the potential placement of bus stops or shelters on grassy areas adjacent to the roadway.

6.3.1.8 PEDESTRIANS/VEHICLES

Streetcar

Streetcars would not affect other vehicles within the park for the majority of the alignment since it would predominantly operate on an exclusive right-of-way parallel to the Habitat Restoration Area and Audrey Zapp Drive. However, two grade-crossings would be required at Phillip Drive/Jersey Avenue and Freedom Way and another two may be needed at the entrances/exits to the ferry parking lot just west

of the train shed. With a maximum expected frequency of four streetcars per direction per hour, the effect on general traffic is not expected to be significant. Actuated signals could be used at the two street crossings so that cross automobile traffic would not be disrupted when a streetcar is not crossing the roadway. Traffic signal warrant studies would be needed to determine the exact design of the signals at the two intersections with roadways and the need for signals at the two entrances/exits of the ferry lot.

The streetcar options are not expected to have a significant effect on pedestrian facilities in the park. Small portions of the adjacent pedestrian path may need to be relocated or reconfigured. Intersection crossing times at relevant intersections are not expected to be significantly affected. Due to the slow anticipated operating speeds of the streetcars (likely a maximum of 15 MPH), and in accordance with common practice, pedestrians' crossing of the streetcar tracks would not need to be restricted. Since the right-of way is essentially straight in the sections of the park where a streetcar would most likely encounter pedestrians, there should be adequate sight distance to stop in advance of any encroaching pedestrian.

Bus

Traffic congestion is not a typical occurrence on the park's roads. All bus options would add a maximum of only four buses per direction per hour and would not affect the flow of traffic in the park. If bus stops are proposed without a pull-off area and in a travel lane, there could be some temporary delays in traffic flow as buses stop to pick up and drop off passengers. The bus options are not expected to significantly affect the overall pedestrian experience. No pedestrian walkways or paths would need to be relocated as a result of the bus options.

6.3.2 SERVICE BENEFITS

All options offer improved access to destinations in Liberty State Park. Serving both the Primary and Secondary Corridors would provide greater access to park visitors than the options that only service on the Primary Corridor but would cost more money to implement.

6.3.2.1 OPTION 1 (BUS SERVICE ON THE PRIMARY CORRIDOR ONLY)

This option offers the lowest initial start-up cost, because no significant infrastructure is needed as only new bus shelters and wayfinding signage would be installed. As a result, Option 1 could be implemented more quickly than the other three options. All bus options offer flexibility and growth potential, since it would be relatively easy to change the vehicle size based on actual demand. Through coordination with the private operator, bus vehicles could be substituted from their general fleet through negotiation of the contract. Option 1 is expected to capture a large portion of the previous transit ridership since it would serve the Primary Corridor. Additional riders are projected as a result of other service enhancements proposed.

6.3.2.2 OPTION 2 (BUS SERVICE ON BOTH THE PRIMARY CORRIDOR AND SECONDARY CORRIDOR)

While twice as costly as Option 1, this option offers the second lowest cost, because it does not require significant infrastructure. As with Option 1, only new bus shelters and wayfinding signage would be required. It also offers flexibility and room for growth in that vehicle size of the bus would be relatively easy to change depending on the actual demand. Option 2 would serve both the Primary and Secondary Corridors and would be expected to capture most or all of the previous transit ridership. Additional riders are also projected as a result of other service enhancements proposed.

6.3.2.3 OPTION 3 (STREETCAR SERVICE ON THE PRIMARY CORRIDOR)

Since track infrastructure and stations would have to be installed, streetcar service achieves a sense of permanence that is thought to benefit ridership as riders have more confidence (justified or not) that service would be operating as planned when they travel to the park. This option could additionally capture ridership from people interested in the experience of riding a historic streetcar. Infrastructure installation would take more time than simply placing bus shelters within the park. As a result, any streetcar option would take longer to be operational as compared with options that only use buses. However, this option could begin as a bus service while the streetcar infrastructure is constructed. Because the streetcar could be powered by hydrogen fuel cell (hydrogen derived from water would be produced on-site) to supplement its battery charge, this presents an additional opportunity for collaboration with Liberty Science Center on the science of hydrogen fuel cell technology and could potentially be the topic of a Liberty Science Center exhibit. This opportunity can be further explored as plans are developed. Hydrogen fuel cells are in use throughout the United States in cars, buses and light duty vehicles, and a hydrogen fuel cell streetcar is currently operating in Oranjestad, Aruba. Additional study and engineering would be required before implementation of streetcar or any rail service.

6.3.2.4 OPTION 4 (STREETCAR ON THE PRIMARY CORRIDOR AND BUS SERVICE ON THE SECONDARY CORRIDOR)

This option has the benefit of serving both park corridors and the benefit of capturing the additional ridership interested in a historic streetcar. It would achieve the aforementioned sense of permanence on the Primary Corridor, while maintaining vehicle size flexibility to match demand on the Secondary Corridor. This option features 15-minute headways on the Primary Corridor and 30-minute headways on the Secondary Corridor, which would be a small but significant reduction in headways for passengers along the Secondary Corridor and a very substantial reduction in headways for passengers on the Primary Corridor. As with Option 3, Option 4 could begin operating as a bus service while the streetcar infrastructure is implemented. Additional study and engineering would be required before implementation of streetcar or any rail service. Similarly to Option 3, Option 4 presents an opportunity for collaboration with Liberty Science Center on an exhibit featuring hydrogen fuel cell technology.

6.4 CAPITAL AND OPERATING COSTS

The estimated costs associated with each service option were determined based on research of best practices and current services operated throughout the country and the world. Each cost estimate details initial capital costs and annual operating and maintenance costs represented in 2013 dollars. A contingency of 30 percent for design and construction was applied to the initial capital costs for all options.

6.4.1 **BUS**

Since it is recommended that bus service would be contracted to a private company, vehicles would not need to be purchased. An annual contract for a private entity to operate the service and provide and maintain the vehicle could range from between \$425,000 and \$475,000 per vehicle in revenue service, including the driver, fuel, insurance, maintenance and back-up vehicles in the event of a breakdown. This price would be negotiated based on a number of factors including daily operating hours, days of operation per year, and length of the route. An average of \$450,000 was used for estimating purposes. All costs associated with the operation and maintenance of the buses would be included in the contract cost. Options 1 and 4 would require one bus, while Option 2 would require two buses.

Another capital cost for the bus would be the fabrication and installation of shelters at each bus stop. The unit cost for each shelter is estimated at \$15,000. Options 1, 2, and 4 would require three, six, and five shelters, respectively (with one optional additional/future bus stop not included in the cost estimates).

6.4.2 STREETCAR

There are two options for a streetcar vehicle. The vehicle could be newly built as a replica of a historic streetcar or a historic streetcar could be retrofitted. Both vehicle choices would make use of hydrogen fuel-cell and battery-powered propulsion technology. Without a hydrogen fuel cell, the battery-powered streetcar would not be able to operate continuously for up to 13 hours as proposed. A brand new replica historic streetcar would cost approximately \$1.4 million. Full restoration and retrofit of a donated historic streetcar would cost approximately \$875,000. Options 3 and 4 would each require one vehicle.

According to Liberty Historic Railway, the group is in possession of a number of streetcar items that would be donated to the service, including an original historic streetcar that has not been rehabilitated, sufficient track for the length of the alignment (including heavier rail for grade crossings), and all necessary maintenance equipment. Liberty Historic Railway performed a cursory visual inspection of their used rail inventory and found that nearly all pieces had less than 1/16-inch battered ends and was deemed appropriate for use for trolley service. As a result, the amount of usable rail in their inventory far exceeds what is needed for trolley use within Liberty State Park. However, the rail will need to undergo more sophisticated testing prior to implementation for identifying internal and external flaws. Nondestructive testing methods would be administered as a preventative measure against potential track failure. Liberty Historic Railway would also donate the necessary joint bars, track bolts, tie plates and spikes for track installation. The estimates for the streetcar capital costs assumed that these items would be donated and there would be no additional costs. However, the high estimate for the streetcar capital cost assumed that a replica streetcar would need to be purchased.

Other capital costs associated with the rail mode include the following: track installation, site preparation, a vehicle storage/maintenance facility (carbarn), hydrogen fuel production plant installation, fueling equipment, grade crossings (hardware and pavement markings), and stations. The use of donated track involves an installation fee of approximately \$52 per foot, as well as an estimated \$122,400 for welding of track pieces. Site preparation would consist of earthwork, ballast/sub-ballast work, relocation of trees, and relocation of the pedestrian path to the west of the Phillip Drive/Jersey Avenue and Audrey Zapp Drive intersection. Construction of a carbarn and maintenance pit could cost an estimated \$200,000.

The streetcar would be propelled primarily by electric battery and charged overnight in the carbarn. A fully charged battery would allow streetcar operation for six to eight hours. To allow for a span of service of up to 13 hours, the streetcar could additionally be equipped with a hydrogen fuel-cell generator, which would generate power on-board the vehicle to keep the battery charged as necessary. The on-board fuel-cell generator would need to be refueled each day with hydrogen. As commercial-grade hydrogen fuel is not available locally, a small production plant could be installed for \$200,000, which would produce hydrogen from water using electricity. The cost of fueling equipment ranges from \$100,000 to \$500,000.

Alternatively, an opportunity charger could be located at the HBLR terminus of the streetcar alignment, which would allow for a few minutes of charging during layovers there at the end of each run. However, this has the comparative disadvantage of leaving the battery neither fully charged nor fully drained for most of the day, which has a detrimental effect on battery life.

An additional method of vehicle procurement is to lease a double-ended streetcar from a trolley museum. However, as the leased streetcars may need to be propelled by an off-board diesel generator, which may generate opposition due to air quality and noise concerns. In addition, it is unclear if the service could comply with ADA regulations. Therefore, this option was not considered in any depth.

Grade crossings would additionally be required for the streetcar. A stop-controlled grade crossing is estimated to cost \$5,500 and a signal-controlled grade crossing with a new signal could cost approximately \$250,000. Two signal-controlled and two stop-controlled grade crossings were assumed for Options 3 and 4.

A simple streetcar station, including fabrication and installation could cost approximately \$30,000, while a more complex station could cost approximately \$250,000. The lower cost has been assumed for the low-cost estimate and the higher-cost has been assumed for the high-cost estimate. Options 3 and 4 would require the installation of three stations. (A fourth station is optional or may be implemented at some point in the future.)

An operating and maintenance cost of approximately \$112 per service hour was determined after researching comparable streetcar systems, including the operator and insurance. Right-of-way maintenance for the streetcar has also been included and would cost an estimated \$46 per foot per year. An additional cost for hydrogen fuel production was included in the annual operating and maintenance cost estimate for the options that include the streetcar.

6.4.3 PASSENGER INFORMATION/WAYFINDING

Capital costs for passenger information/wayfinding signage would be incurred for all options. Each sign was estimated to cost \$650, including fabrication and installation. A total of 15 signs could be distributed throughout the park regardless of the service option and would cost nearly \$10,000.

6.4.4 COST ESTIMATES

Capital and operating cost estimates are provided in Tables 6-7 through 6-10. High and low estimates are provided for streetcar capital cost estimates as it is not known whether some items will be necessary or, in some cases, to account for a range in costs of a particular item. Where applicable, the items included in the high- and low-cost estimates are identified.

Table 6-7
Option 1 (Bus on Primary Corridor) Cost Estimate

Capital Costs	Unit Cost	Units	Total Cost
Bus Shelters ⁴	\$15,000	3	\$45,000
Passenger Information/Wayfinding ⁵	\$650	15	\$9,750
Estimate			\$54,750
Contingency - Design and Construction (30 percent)			\$16,425
Total			\$71,175
Annual Operating & Maintenance Costs	Unit Cost	Units	Total Cost
Operations & Maintenance per Vehicle ⁶	\$450,000	1	\$450,000
Total			\$450,000

Table 6-8
Option 2 (Bus on Primary and Secondary Corridors) Cost Estimate

Capital Costs	Unit Cost	Units	Total Cost
Bus Shelters ⁵	\$15,000	6	\$90,000
Passenger Information/Wayfinding ⁶	\$650	15	\$9,750
Estimate			\$99,750
Contingency - Design and Construction (30 percent)			\$29,925
Total			\$129,675
Annual Operating & Maintenance Costs	Unit Cost	Units	Total Cost
Operations & Maintenance per Vehicle ⁷	\$450,000	2	\$900,000
Total			\$900,000

⁴ Based on advertised prices and correspondence with New Jersey Transit.

⁵ Based on average for various streetscape bids over the past year in New Jersey, plus allowances for installation, lack of economies of scale, and potential design enhancements.

⁶ Based on recent bids for shuttle bus service in the New York Metropolitan area.

Table 6-9
Option 3 (Streetcar on Primary Corridor) Cost Estimate

Capital Costs	Unit Cost	Units	Total Cost
Replica Streetcar ⁷ - <i>High</i>	\$1,400,000	1	\$1,400,000
Historic Streetcar (donated) - <i>Low</i>	\$0	---	\$0
Retrofit of Historic Car for Battery/Hydrogen Power ⁸ - <i>Low</i>	\$875,000	1	\$875,000
Carbarn, Pit ⁸	\$200,000	1	\$200,000
Maintenance Equipment (donated)	\$0	---	\$0
Track (donated)	\$0	---	\$0
Track Installation (per foot, for donated track) ⁹	\$52	5,340	\$277,680
Track Welding (for donated track) ¹⁰ , per weld point	\$450	300	\$135,000
Earth Work ¹⁰	\$25,000	---	\$25,000
Ballast Work ⁵ , per cubic yard	\$36	490	\$17,655
Sub-ballast Work ⁵ , per cubic yard	\$40	100	\$4,044
Tree Relocation ¹¹	\$2,000	8	\$16,000
Path Relocation ¹¹	\$50,000	---	\$50,000
Grade Crossing (with new signal) ⁶	\$250,000	2	\$500,000
Grade Crossing (stop-controlled) ⁶	\$5,500	2	\$11,000
Quick Connect/Disconnect Charging Station ⁸ - <i>Low</i>	\$250,000	1	\$250,000
Hydrogen Fuel Production Plant ⁸ - <i>High</i>	\$200,000	1	\$200,000
Fueling Equipment/Dispenser (high-end estimate) ⁸ - <i>High</i>	\$500,000	1	\$500,000
Rail Stations ¹¹ - <i>High</i>	\$250,000	3	\$750,000
Rail Stations ¹² - <i>Low</i>	\$50,400	3	\$151,200
Passenger Information/Wayfinding ⁶	\$650	15	\$9,750
Estimate (High)			\$4,096,129
Contingency - Design and Construction (30 percent)			\$1,228,839
Total (High)			\$5,324,967
Estimate (Low)			\$2,522,329
Contingency - Design and Construction (30 percent)			\$756,699
Total (Low)			\$3,279,027

⁷ Estimate provided through correspondence with TIG/m, LLC.

⁸ Based on 2013 advertised prices of pre-fabricated buildings and associated infrastructure.

⁹ Estimate provided through quote from Liberty Historic Railway from Track Builders of Mechanicsburg, PA.

¹⁰ Based on 2011 streetscape bids in Newark, NJ.

¹¹ Based on Newark streetscape bid prices (2010 – 2013) for concrete pads, shelters, ramps, railings, benches and lighting.

Annual Operating & Maintenance Costs	Unit Cost	Units	Total Cost
Operations & Maintenance per Service Hour (Streetcar) ¹²	\$112	2,880	\$322,560
Maintenance of ROW (Streetcar, 10% replacement per year), per track foot	\$46.437	5,340	\$247,974
Hydrogen Fuel Production ⁸ , per gallon of gasoline equivalent	\$12.50	750	\$9,375
Replacement Bus Service for Streetcar Breakdowns ⁷	\$60,000	1	\$60,000
Total			\$639,909

Table 6-10
Option 4 (Streetcar on Primary Corridor and Bus on Secondary Corridor)
Cost Estimate

Capital Costs	Unit Cost	Units	Total Cost
Replica Streetcar ⁸ – High	\$1,400,000	1	\$1,400,000
Historic Streetcar (donated) – Low	\$0	---	\$0
Retrofit of Historic Car for Battery/Hydrogen Power ⁸ – Low	\$875,000	1	\$875,000
Carbarn, Pit ⁹	\$200,000	1	\$200,000
Maintenance Equipment (donated)	\$0	---	\$0
Track (donated)	\$0	---	\$0
Track Installation (per foot, for donated track) ¹⁰	\$52	5,340	\$277,680
Track Welding (for donated track) ¹⁰ , per weld point	\$450	300	\$135,000
Earth Work ¹¹	\$25,000	---	\$25,000
Ballast Work ⁵ , per cubic yard	\$36	490	\$17,655
Sub-ballast Work ⁵ , per cubic yard	\$40	100	\$4,044
Tree Relocation ¹¹	\$2,000	8	\$16,000
Path Relocation ¹¹	\$50,000	---	\$50,000
Grade Crossing (with new signal) ⁶	\$250,000	2	\$500,000
Grade Crossing (stop-controlled) ⁶	\$5,500	2	\$11,000
Quick Connect/Disconnect Charging Station ⁸ – Low	\$250,000	1	\$250,000
Hydrogen Fuel Production Plant ⁸ – High	\$200,000	1	\$200,000
Fueling Equipment/Dispenser (high-end estimate) ⁸ – High	\$500,000	1	\$500,000
Bus Shelters ⁵	\$15,000	5	\$75,000
Rail Stations ¹² – High	\$250,000	3	\$750,000
Rail Stations ¹² – Low	\$50,400	3	\$151,200
Passenger Information/Wayfinding ⁶	\$650	15	\$9,750
Estimate (High)			\$4,171,129
Contingency - Design and Construction (30 percent)			\$1,251,339
Total (High)			\$5,422,467
Estimate (Low)			\$2,597,329
Contingency - Design and Construction (30 percent)			\$779,199
Total (Low)			\$3,376,527

¹² Based on Lowell historic trolley O&M costs.

Annual Operating & Maintenance Costs	Unit Cost	Units	Total Cost
Operations & Maintenance per Vehicle (Bus)	\$450,000	1	\$450,000
Operations & Maintenance per Service Hour (Streetcar) ¹³	\$112	2,880	\$322,560
Maintenance of ROW (Streetcar, 10% replacement per year), per track foot	\$46.437	5,340	\$247,974
Hydrogen Fuel Production ⁸ , per gallon of gasoline equivalent	\$12.50	750	\$9,375
Replacement Bus Service for Streetcar Breakdowns ⁷	\$60,000	1	\$60,000
Total			\$1,089,909

6.4.5 COST COMPARISON

Cost estimates for each service option are summarized and compared in Table 6-11.

**Table 6-11
Summary of Cost Estimates (Options 1 through 4)**

Service Options	Capital Costs		Annual Operating & Maintenance Costs
	Low	High	
Option 1 – Bus, Primary Corridor	\$71,175		\$450,000
Option 2 – Bus, Primary and Secondary Corridors	\$129,675		\$900,000
Option 3 – Streetcar, Primary Corridor	\$3,279,027	\$5,324,967	\$639,909
Option 4 – Streetcar on Primary Corridor, Bus on Secondary Corridor	\$3,376,527	\$5,422,467	\$1,089,909

6.5 EVALUATION MATRIX

The following matrix (Table 6-12) summarizes capital costs, operations and maintenance costs, ridership, and potential impacts and benefits of the four retained options.

**Table 6-12
Evaluation Matrix**

	Option 1: Bus on Primary Corridor	Option 2: Bus on Primary and Secondary Corridors	Option 3: Streetcar on Primary Corridor	Option 4: Streetcar/Bus Combination
Benefits	<ul style="list-style-type: none"> • Small initial capital investment • Short implementation timeline • Relatively easy service expansion 	<ul style="list-style-type: none"> • Small initial capital investment • Short implementation timeline • Relatively easy service expansion • Serves both park corridors 	<ul style="list-style-type: none"> • No local emissions • Achieves sense of "permanence" • Additional ridership from streetcar novelty • Hydrogen fuel cell may be basis for Liberty Science Center collaboration 	<ul style="list-style-type: none"> • Serves both park corridors • Achieves sense of "permanence" • Additional ridership from streetcar novelty • Hydrogen fuel cell may be the basis for Liberty Science Center collaboration
Impacts	<ul style="list-style-type: none"> • Possible local emissions • Possible engine noise 	<ul style="list-style-type: none"> • Possible local emissions • Possible engine noise 	<ul style="list-style-type: none"> • May impact up to 8 trees • May involve avoiding contaminated soil • 2 grade crossings, 2 parking lot crossings 	<ul style="list-style-type: none"> • Possible local emissions • Possible engine noise • May impact up to 8 trees • May involve avoiding contaminated soil • 2 grade crossings, 2 parking lot crossings
Initial Capital Costs	\$71,175	\$129,675	\$3,279,027 - \$5,324,967	\$3,376,527- \$5,422,467
Annual Operation and Maintenance Costs	\$450,000	\$900,000	\$639,909	\$1,089,909
First-Year Ridership Estimate	73,710	81,900	84,051	90,991

7 IMPLEMENTATION

This chapter outlines a strategy for implementing the transit options that have been developed to serve Liberty State Park based on conventional available funding sources as well as creative financing tools. Funding sources that have been used in the past to support previous transit service in the park and potential future funding sources were identified, including federal, state and local agencies, private contributions, and user fees/fares. Due to the current economic climate, traditional transportation funding has become less available and uncertain. As a result, all reasonable potential sources and strategies were investigated.

Since one funding source may not cover all capital and operating costs, funding from different sources could be bundled to meet the financial obligation for implementing transit service for Liberty State Park. In addition, the required funding may not be available to initially implement a full transit option. This would require the phased implementation of a transit option over time as the requisite funding becomes available to cover capital and operating costs.

7.1 FUNDING SOURCES

7.1.1 PAST OPERATING FUNDING

The NJ TRANSIT #305 route served Liberty State Park from January 2001 through May 2010 branded under the WHEELS program. The service was funded by NJ TRANSIT and operated by a private carrier on weekends from January through March and every day from April through December. A \$1.00 cash fare per passenger was paid to the driver for unlimited daily rides. Since the farebox recovery for the service was low, the service was heavily subsidized by NJ TRANSIT. In May 2010, the service was cancelled as a cost cutting measure because of operating budget shortfalls at NJ TRANSIT.

In June 2010, the Hudson TMA took over the cancelled #305 service. It operated free of charge using a private carrier on a limited schedule on weekends only between June and Labor Day. This limited service was funded jointly by the Hudson TMA and NJ TRANSIT. The service was also operated by the Hudson TMA using a private carrier on weekends in 2011 during the summer months. In 2011, the cost to ride was a \$1.00 cash fare per passenger paid to the driver for unlimited daily rides. The seasonal service was funded by the Hudson TMA, NJ TRANSIT, the Friends of Liberty State Park, and the Liberty Landing Marina.

7.1.2 POTENTIAL FUTURE FUNDING SOURCES

7.1.2.1 FEDERAL

Sarbanes Transit in Parks Program

At the outset of the Liberty State Park Circulator Cost-Benefit Analysis, the Federal Transit Administration's (FTA's) Paul S. Sarbanes Transit in Parks Program (Sarbanes) was a viable funding source for transit options serving Liberty State Park. The program was geared towards National Parks and federal lands and eligible projects included those that served communities and land surrounding these federal lands. The program provided discretionary funding for alternative transportation systems such as shuttle buses and rail connections as a means of improving visitor accessibility and mobility, and enhancing the visitor experience. Conversations with program administrators in the early stages of this study indicated that Liberty State Park circulator options that connect to the National Park Service Monuments at Ellis Island and the Statue of Liberty would be eligible for funding. On July 6, 2012,

President Obama signed into law P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21). Unfortunately, the Sarbanes program was not continued under the new federal transportation initiative and cannot be used as a funding source for the Liberty State Park transit options either for further study or capital expenses.

Result: The program was repealed under MAP-21 and can no longer be used as a potential funding source.

Federal Emergency Management Agency (FEMA)

President Barack Obama has directed FEMA to lead the federal government's effort to provide assistance and support to states affected by Hurricane Sandy, which caused significant damage to Liberty State Park in October 2012. Funding and resources have been made available to support state, local, and tribal communities in affected areas. These funds are provided to agencies and individuals demonstrating a loss due to the storm for recovery and the rebuilding effort.

Result: Since the Liberty State Park circulator was not in operation and subsequently damaged due to the hurricane, this source of funding would not apply.

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The CMAQ program, jointly administered by Federal Highway Administration (FHWA) and the FTA, was reauthorized under MAP-21 and provides funding to the North Jersey Transportation Planning Authority region of northern and central New Jersey, since the region is in non-attainment or maintenance for ozone, carbon monoxide, and/or particulate matter. According to the FHWA, over \$2.2 billion in CMAQ funding will be provided for each year of the MAP-21 authorization in FY 2013 and FY 2014. The new legislation places considerable emphasis on diesel engine retrofits and other efforts that underscore the priority on reducing fine particle pollution (PM 2.5). The general guideline for determining eligibility is whether the project increases capacity and would likely result in an increase in transit ridership and a potential reduction in congestion. This would need to translate into a project's emissions benefits based on the result of a quantified estimate. The amount of air quality benefit will be judged against the total cost of the improvement. The FHWA also stipulates that to be eligible for CMAQ funds, a project must be included in the Metropolitan Planning Organization's (MPO) current Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP) and needs to complete National Environmental Policy Act (NEPA) requirements.

Result: It is estimated that the Liberty State Park circulator options would have a low relative air quality benefit ranking due to the cost of the project and relatively low volume of use on a regional basis when compared to improvement to air quality resulting from commuter services, which have higher ridership. Therefore, it is unlikely that the Liberty State Park circulator would meet the emissions reduction requirements needed to qualify for CMAQ funds.

Federal Transit Administration (FTA) Grant Program

The FTA administers the Section 5309 Capital Investment Grant program, which provides capital funds for major transit investment projects nationwide. Grants are for capital costs associated with new fixed guideway systems, extensions, and bus corridor improvements. Requests must be for under \$75 million in New Starts funds and total project costs must be under \$250 million. Also known as "New Starts / Small Starts," this program awards grants on a competitive basis for major investments in new and expanded rail, bus rapid transit (BRT), and ferry systems. The program is funded at \$1.9 billion dollars for FY 2013 and FY 2014 subject to appropriations by Congress.

The Section 5309 Capital Investment Grants program also includes a project category called “Very Small Starts.” According to the program, “These projects are simple, low-risk projects that qualify for a highly simplified project evaluation and rating process by FTA.” In order to qualify for the streamlined Very Small Starts evaluation and rating process, a project must be a bus, rail or ferry project and contain certain features outlined in the Very Small Starts Fact Sheet (http://www.fta.dot.gov/documents/Very_Small_Starts_Fact_Sheet.doc). The Liberty State Park transit options were evaluated with these features:

- Transit Stations – **Yes**, all proposed service options would have transit stations.
- Signal Priority/Pre-emption (for Bus/LRT) – **No/Yes**, the proposed bus service options would not have signal priority but streetcar options would have signal priority (at roadway intersections).
- Low Floor / Level Boarding Vehicles – **Yes**, the bus could be equipped as a low-floor vehicle. The stations could be designed to allow level boarding for the streetcar.
- Special Branding of Service – **Yes**, the proposed service options would have specially-developed branding as a marketing tool.
- Frequent Service (10 min peak/15 min off peak) – **No**, the proposed service options would not achieve a headway of less than 15 minutes during any portion of the day.
- Service offered at least 14 hours per day – **No**, the proposed service options would not provide a minimum of 14 hours of service per day.
- Existing corridor ridership exceeding 3,000/day – **No**, the proposed service options are not projected to attain this number of riders per day.
- Less than \$50 million total cost – **Yes**, the proposed service options would cost less than this total.
- Less than \$3 million per mile (excluding vehicles) – **Yes/No**, the proposed bus service options would cost less than \$3 million per mile, while it is estimated that rail options would cost more than \$3 million per mile.

Based upon the criteria, the Very Small Starts program is geared towards weekday commuter service that carries high volumes of people at a relatively modest cost. As a result, the criteria do not apply favorably towards a recreationally based transit service like the Liberty State Park circulator.

Result: Based on the prescribed service features, the Liberty State Park circulator would not meet more than half of the criteria needed to qualify for the Very Small Starts program. However, although not a perfect fit, it is advisable to contact the FTA to explore if some monies could be obtained through this funding source due to the potential significance of improving transit access in Liberty State Park and to the national monuments.

National Park Service (NPS)

According to the NPS Transportation Mission, “The National Park Service will preserve and protect resources while providing safe and enjoyable access within the national park system units by using sustainable, appropriate, integrated transportation systems and services.” Based on this mission statement, the NPS has identified the following transportation goals to ensure consistency with improvements to transportation systems in the national park system:

- To provide high-quality transportation infrastructure and services;
- To deliver efficient and effective transportation infrastructure projects and services; and

- To serve as a leader and innovator in transportation, as well as in cooperating with local, regional, state, federal, and industry partners.

Funding for transportation projects (including alternative transportation and transit projects) at NPS facilities are allocated annually to the Federal Lands Highway Program using the federal motor vehicle gas tax and certain excise taxes that support the federal Highway Trust Fund. Use of these funds is limited to roads and transportation facilities open to the public and may not be used for routine maintenance activities (i.e. snow plowing, patching, and re-striping). Based on this, the NPS does not fund transportation on its own and is dependent upon allocations from the Federal Lands Highway Program.

Result: There is no funding available directly through the NPS for the Liberty State Park circulator. The NPS could support funding through the Federal Lands Highway Program, since the proposed Liberty State Park circulator would improve connectivity to the national monuments. Also, the NPS staff could be a resource for ideas about how funds might be assembled for the Liberty State Park circulator.

US Department of Energy

Through the Office of Energy Efficiency and Renewable Energy, the US Department of Energy has an alternative-fuel vehicle development program and funding process that allows U.S. companies to produce electric vehicles that are affordable for the average American family. Some programs are tied to private companies, while others are tied to research arms of a university and other entities.

Result: Although the funding is for research and development of alternative-fuel vehicles, transit vehicle technology could be used as a test case for the Liberty State Park circulator that would reduce the cost to operate the service. More information can be found here:
http://www1.eere.energy.gov/vehiclesandfuels/financial/solicitations_detail.asp?sol_id=586.

Federal Lands Access Program (FLAP)

The Sarbanes Transit in Parks Program, operating under the auspices of the FTA, was repealed with the adoption of MAP-21. A new program was developed as part of MAP-21 called the Federal Lands Access Program (FLAP). The goal of the FLAP is to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. According to the Implementation Guidance found on the FHWA web site, the FLAP “supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators.” Also according to the Implementation Guidance, “a Programming Decisions Committee (PDC) within each State will make programming decisions and should develop a multi-year program of projects.”

The eligibility requirements for funds that will be made available under FLAP are varied including both implementation and study and cover a wide range of uses identified in the Implementation Guidance:

- The eligible uses include transportation planning, research, engineering, preventive maintenance, rehabilitation, restoration, and construction. They also cover the reconstruction of Federal Lands access transportation facilities located on or adjacent to, or that provide access to, Federal land. The Federal Lands access also includes adjacent vehicular parking areas; acquisition of necessary scenic easements and scenic or historic sites; provisions for pedestrians and bicycles; environmental mitigation in or adjacent to Federal land to improve public safety and reduce vehicle-caused wildlife mortality while maintaining habitat connectivity;

construction and reconstruction of roadside rest areas, including sanitary and water facilities; and other appropriate public road facilities, as determined by the Secretary;

- The operation and maintenance of transit facilities (including vehicles); and
- Any transportation project eligible for assistance under title 23 that is within or adjacent to, or that provides access to, Federal land.

The program is designed to provide flexibility for a wide range of transportation projects in the 50 States, the District of Columbia, and Puerto Rico. The eligible funds under this program will be available for the current year plus three additional years. However, FLAP funding is authorized at \$250,000,000 annually for each year of MAP-21 and it is distributed to each State, District of Columbia, and Puerto Rico according to a prescribed formula: The majority of FLAP funding totaling 80 percent will be distributed to States that contain at least 1.5 percent of the total public land in the United States. The 12 "preference States," that meet this definition are: Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The remaining 20 percent of the FLAP funds will be distributed to the other 38 States, District of Columbia, and Puerto Rico. For eastern states like New Jersey that have significantly less public land than most states, their share of the FLAP funding will be relatively small. New Jersey's annual share of FLAP funding will be approximately \$200,000. This money would be further subdivided between eligible projects within New Jersey. All FLAP money received in New Jersey would require a 19.86 percent local match.

Within each State, a three-party Programming Decisions Committee (PDC) will be responsible for the rating, ranking, and prioritization of the projects potentially eligible for the receipt of FLAP funds. The PDC must be comprised of the following representatives:

- The Federal Highway Administration (FHWA);
- The State Department of Transportation; and
- An appropriate political subdivision of the State that will be jointly selected by the State DOT and the FHWA

An Eastern Federal Lands website for the program has been established at <http://www.efl.fhwa.dot.gov/programs/federal-lands-access.aspx>. Specific information provided on the website for each state will be updated as it becomes available. In New Jersey, the PDC is comprised of a State Representative (David Kuhn, Assistant Commissioner, Capital Investments New Jersey Department of Transportation), Local Representative (Frank Scarantino, President, New Jersey County Engineer's Association), and FHWA Representative (David Payne, Access Program Manager). All project proposal applications for FLAP funding in New Jersey will be screened and rated by this PDC. As of spring 2013, all necessary internal and external processes and procedures were in development so that a call for applications in New Jersey could be issued by the fall of 2013. It is anticipated that the application process will be similar to that of the Sarbanes Transit in Parks Program.

Result: Based on the adoption of MAP -21, the FLAP program appears to be the best option to acquire federal funds for further study and implementation of the proposed Liberty State Park circulator.

Unified Planning Work Program (UPWP)

The UPWP is used to schedule the planning and project development to be undertaken for particular initiatives identified in the Regional Transportation Plan (RTP) of the North Jersey Transportation Planning Authority (NJTPA). Projects are selected for inclusion in the Study and Development Program based on a combination of technical evaluations using the Project Prioritization Criteria and consultations with interested parties. Based on the results, a list of prioritized (ranked) projects is

developed by NJTPA and submitted to NJDOT and NJ TRANSIT. This is a step needed so that an initiative could ultimately be ready for implementation as part of the TIP.

Result: Based on the NJTPA project prioritization criteria for transit, it is not likely the Liberty State Park circulator would qualify for the UPWP. However, the UPWP may be a potential funding source for any further federally-required analysis of the rail options.

7.1.2.2 STATE

New Jersey Department of Environmental Protection (NJDEP) Division of Parks and Forestry

In recent years, New Jersey has been cutting the operating budget of the NJDEP Division of Parks and Forestry. As a result, it is more difficult for the agency to maintain the programs and services that are already in place. In terms of the capital budget, the agency uses the corporate business tax to fund its program. However, these funds have been diverted to offset expenses incurred by the agency to fix resources damaged by Hurricane Sandy. Since the agency does not know if they will be reimbursed by FEMA for any of these expenses, new capital expenditures would have a very low priority.

Result: Based on the current economic climate, there does not appear to be an opportunity for the agency to fund new initiatives like the Liberty State Park circulator, either operating or capital expenditures.

7.1.2.3 OTHER

User Fees

Currently, there is no fee collected from visitors when they enter Liberty State Park. However, three of the nine parking lots (Marina lot, Liberty Science Center Lot, and Ferry Lot) are operated by an outside concessionaire that charges a \$7.00 daily fee to users. The concessionaire pays a fee to NJDEP to operate in the Park. Visitors are required to pay user fees for certain activities conducted while at Liberty State Park. Group picnicking in the areas at Pavilions A and B require a fee of \$175 for New Jersey residents and \$225 for non-residents and \$125 for New Jersey residents and \$175 for non-residents, respectively. Seasonal permits (\$170 for New Jersey residents and \$220 for non-residents) are required to use the boat launch facilities within the park. The Liberty Landing Marina charges a fee for docking boats for the season. Bicycles can be rented on an hourly and daily basis at the CRRNJ Terminal Building.

Any organized special event for indoor and/or outdoor facilities must be reserved through a Special Use Permit Application that must be completed at least 30 days in advance of the event date. The application also requires a transportation plan and a fee. The cost to travel by ferry between the national monuments (Liberty and Ellis Islands) and Liberty State Park is \$24 for adults, \$17 for seniors, and \$12 for children. For the Liberty Science Center, the cost for daily general admission is \$16.75 for adults, \$12.50 for seniors, and \$12.50 for children.

Result: Currently, park user fees and concession fees go to general revenue and are not dedicated for park use. If permitted by the NJDEP Division of Parks and Forestry, a small transportation fee could be added to the cost of some or all of these user fees or a portion of the concession fees could be used to help pay for the proposed Liberty State Park circulator.

Donation of Materials

The Liberty Historic Railway has pledged to donate a number of streetcar items for the proposed service. These items include an original historic streetcar that has not been rehabilitated, sufficient track for the length of the alignment, and all necessary maintenance equipment.

Result: For the streetcar options, the donation of these items would represent a significant cost savings.

Private Sponsorship/Advertising

Private contributions could be a fruitful means of funding for transportation within Liberty State Park. It could be in the interest of a profitable corporation to donate to a not-for-profit organization to fund transportation initiatives to receive tax benefits. In addition, the sponsoring corporation could be woven into the branding of the transportation service to gain recognition and positive marketing of their organization to Liberty State Park visitors. JeffCo Express buses in Jefferson County, Missouri charges corporate sponsors a term fee to provide their advertisement on the outside of a JeffCo transit vehicle (Figure 7-1). In addition, corporate sponsors can provide their logo and information within the interior of a bus, route maps, newsletters, and website depending on the package that is purchased.

Figure 7-1
JeffCo Express Corporate Sponsorship



Source: <http://www.jeffcoexpress.org/sponsorship>

On a grander scale, Massachusetts Bay Transportation Authority (MBTA) and Chicago Transit Authority (CTA) are developing plans to sell the naming rights to their rail stations to corporate sponsors.

Result: Corporate sponsorship could be used to raise money needed to support part or all of the proposed Liberty State Park circulator. However, since neither NJDEP nor NPS are allowed to accept corporate sponsorships or donations, a not-for-profit organization would have to spearhead this effort.

Not-For-Profit

Volunteer not-for-profit, 501(c) (3) organizations have the ability to raise money to fund initiatives for the benefit of the general public. An organization of this type could raise some or all of the money needed to implement transit at Liberty State Park. Private money contributed to the Liberty State Park circulator (former NJ TRANSIT #305 route) in the summer of 2011.

Result: Several organizations in the area could participate in a fundraising campaign or donate money to help bring transit service back to Liberty State Park.

7.2 IMPLEMENTATION STRATEGY

It is a reality that traditional transportation funding has become less available and uncertain in today's economic climate. The competition for these limited resources has become extremely competitive. NJ TRANSIT's operating budget has been reduced and the agency faces the challenge of maintaining the services they already operate and are not in a position to add new service. The Sarbanes program would have been a natural avenue to pursue as a potential funding source for the Liberty State Park circulator but was repealed under MAP-21. The Federal Lands Access Program (FLAP) program created under MAP-21 appears to be the best option to acquire federal funds for further study and implementation of the proposed Liberty State Park circulator. Based on the available information, the following steps should be used for developing and implementing a Liberty State Park circulator:

7.2.1.1 LEAD AGENCY

In order to move forward, an agency must take the initiative for overseeing the Liberty State Park circulator. This role is pivotal as the driver for ultimately establishing the service. The lead agency would be responsible for preparing grant applications to secure long-term federal funding and other funding sources (corporate sponsorship, fundraising, etc.) needed for studying, planning, procuring, and implementing the service.

7.2.1.2 TIMEFRAME

Very Short Term - Summer 2013

The rail options have a much higher start-up cost and would require a very robust funding steam. It would also take time and money to further study and design the rail option before it could be built. Conversely, the bus option is "shovel-ready" and much less expensive to implement. Bus service between the HBLR station and the historic CRRNJ Terminal could be implemented without much advanced planning. It is not imperative that shelters be constructed initially to operate the bus service. However, marketing the service through the web sites of the Technical Advisory Committee members, especially NJ TRANSIT and Statue Cruises, would be critical for promoting ridership. A more elaborate marketing campaign with a budget of about \$5,000 to \$10,000 could include local newspaper ads, flyer distribution to park attendees, ads within the HBLR system, inserts in mailings sent out by Liberty State Park, etc. If a lead agency cannot be immediately identified, perhaps the Hudson TMA could assist with the planning, marketing, and procurement process to hire a private operator, since they have experience with operation of shuttles.

It is recommended that a modest service operate on only nine weekends and two holidays in July, August, and September of 2013. The launch of the service could be synchronized with the reopening of the Statue of Liberty on July 4, 2013. Therefore, the service would operate for 20 days starting on July 4 and ending on September 2 (Labor Day). This service would cost approximately \$40,000 for a contractor to operate (based on recent bids for shuttle bus service in the New York Metropolitan area) and some start-up costs. Since there is not enough time to procure federal funding for FY 2013, alternative funding could be pursued. There would also not be enough time to change NJDEP Division of Parks and Forestry policy to use a portion of park user fees to cover all or most of this service. The most likely candidates for procuring funds would be the use of corporate sponsorship to raise the money needed to support the proposed Liberty State Park circulator. Also, a fundraising campaign

targeting private donations could be initiated by local non-profit groups to help bring transit service back to the park.

Short Term – 2014 and 2015

Once a schedule has been established for soliciting eligible projects, the lead agency can submit a formal application for FLAP funding for the operation of bus service or the study of rail options. It is likely that the call for applications will occur by the fall of 2013. However, it is unclear at this point when the call for projects will be made, how long the process will take, and if the Liberty State Park circulator would be selected. Since New Jersey has significantly less public land than most states, their share of the FLAP funding will be relatively small at approximately \$200,000 annually for two years. Competition for this funding will most likely be very stiff. It is unlikely that FLAP could by itself fund the capital costs for a rail option that is estimated to be in excess of \$3 million. FLAP funding could be a source for further study of Liberty State Park Circulator options. In addition, stakeholders could work with their Congressional delegation on a federal legislative initiative in the federal FY 2015 re-authorization of MAP-21 to add a small discretionary pot for “non-preference” states like New Jersey.

The lead agency could retain the services of a grant consultant to cobble funding from a variety of sources to operate the full bus service option, to study the rail options, and/or to fund start-up and operating funds for the rail option. If a longer-term funding source is available, part of that money should be used to advance the marketing to include branding of the service.

If no FLAP funds can be procured in the short term, the lead agency could re-launch the modest two-month summer bus service to be operated on only weekends and holidays along with the marketing campaign proposed in the Very Short Term plan. Funding for this service could come from the use of corporate sponsorship and a fundraising campaign targeting private donations to continue the bus service. The lead agency could work with NJDOT or NJ TRANSIT to include [any further federally-required analysis of the rail options](#) as part of the RTP so that ultimately it could be funded as part of the UPWP.

Long Term – 2016 and Beyond

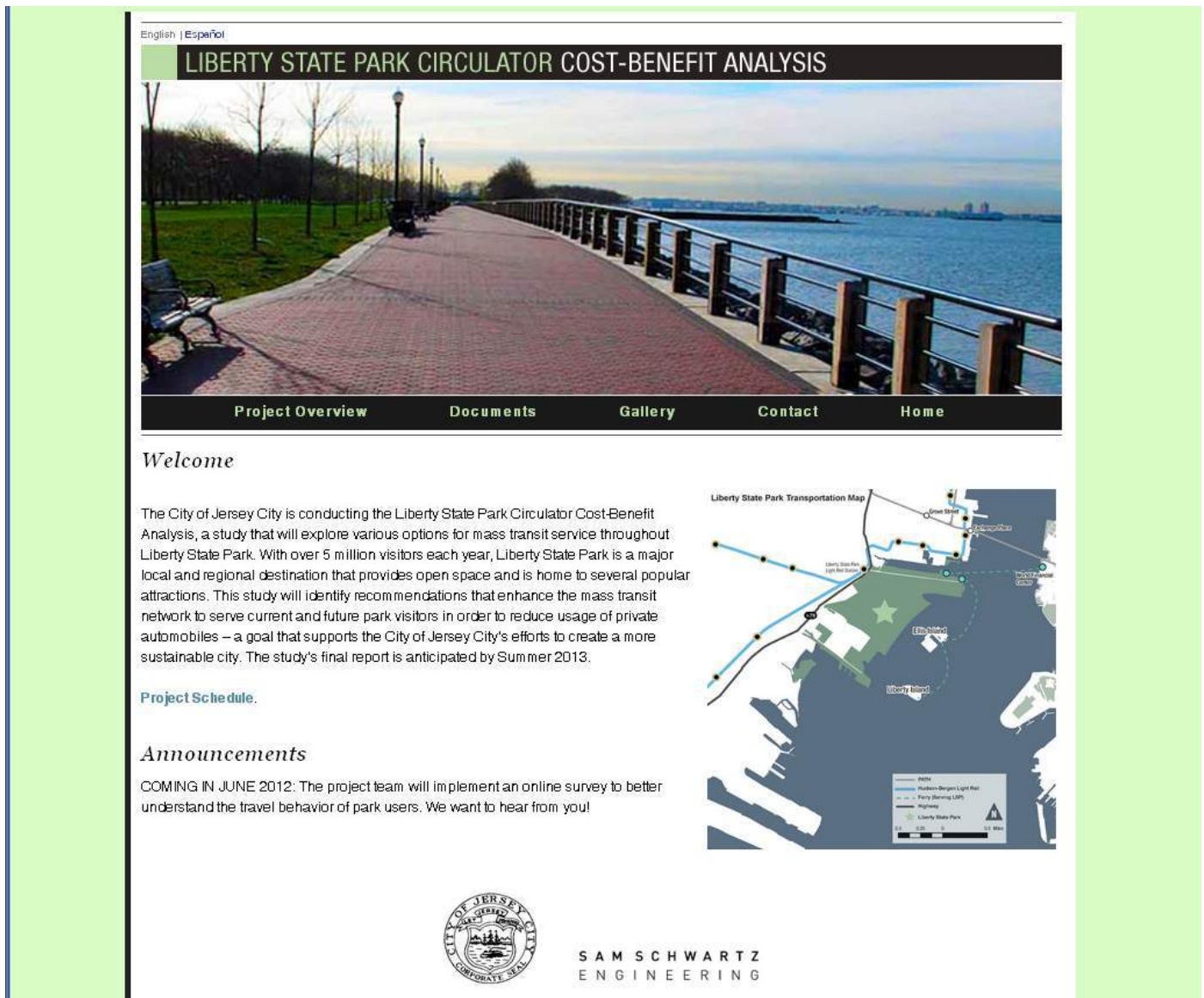
FLAP funding or other relevant funding sources should be pursued by the lead agency to continue to support limited bus service, operate the full bus service option, study the rail options, and/or fund start-up and operating funds for the rail option. If a rail service option is warranted and funding is secured, the operation of the bus service option should continue in order to meet the purpose and need until implementation of a rail service. If rail funding is never secured, the bus option would serve the purpose and need.

8 PUBLIC INVOLVEMENT

8.1 PROJECT WEBSITE

A project website was developed in both English and Spanish to inform the public of the study. The website (<http://www.lsprtransitstudy.com>) went live in June 2012 and was updated throughout the study. The study-specific website included an overview of the study, key work products, and contact information. The homepage included a section for announcements (Figure 8-1).

**Figure 8-1
Project Website Homepage**



8.2 TECHNICAL ADVISORY COMMITTEE (TAC)

A TAC comprised of key stakeholders was formed at the outset of the study to guide the study process. The members of the TAC included:

- Central Parking
- Educational Arts Team
- EZ Ride (Meadowlink)
- Friends of Liberty State Park
- Hudson County Division of Engineering
- Hudson County Division of Planning
- Hudson Transportation Management Association (TMA)
- Jersey City Division of City Planning
- Jersey City Division of Engineering
- Jersey City Economic Development Corporation
- Jersey City Mayor's Office
- Liberty Historic Railway
- Liberty National Golf Club
- Liberty Landing Marina
- Liberty Science Center
- Liberty State Park
- NJDEP Division of Parks and Forestry
- NJDOT Bureau of Capital Program Development
- New Jersey Transit
- North Jersey Transportation Planning Authority (NJTPA)
- Pole Position
- Port Authority of New York and New Jersey
- Save Ellis Island
- Statue Cruises
- US National Park Service

The TAC played a pivotal role throughout the course of the study in the following capacities:

- Provided critical data
- Identified previous studies
- Provided input on park operations and specific knowledge on function of park
- Contributed feedback on survey instrument and assisted with survey implementation
- Provided input on options for potential circulator
- Assisted in the development of evaluation criteria
- Reviewed consultant reports and work products
- Assisted with public outreach, including the preparation of public meetings

A total of seven meetings were held with the TAC throughout the study:

- April 4, 2012
- June 19, 2012
- October 16, 2012
- December 13, 2012
- March 12, 2013
- April 11, 2013

- May 22, 2013

The agenda, presentations, and minutes for all seven TAC meetings can be found in Appendix B.

8.3 PUBLIC MEETINGS

Two public meetings were held throughout the course of the study as a means to solicit public input. The meetings were held at Jersey City City Hall - Anna Cucci Memorial Council Chambers, 280 Grove Street, Jersey City, NJ 07302 on:

- January 24, 2013 – The purpose of the first public meeting was to introduce the public to the study and to solicit input of work completed to-date, including the identification of potential corridors and modes for a circulator service.
- May 9, 2013 – The purpose of the second public meeting was to present findings of the study to the public, including the costs and benefits of four, short-listed options for the circulator, potential funding sources, and an implementation strategy.

The meetings were advertised in *The Jersey Journal*. Meeting announcements were posted on the study website, the City of Jersey City website, and websites of TAC agencies and distributed through e-mail blasts to interested parties (mainly respondents of the travel survey who indicated that they would like to receive meeting notices) and the City of Jersey City's social media outlets. Public comment periods followed both public meetings during which written comments could be submitted via e-mail or US mail. The agendas, presentations, public comments, and meeting summaries for both public meetings can be found in Appendix C.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

As part of the Liberty State Park Circulator Cost-Benefit Analysis, a Purpose and Need Statement was established that states that the Liberty State Park Circulator would provide a reliable transit service to, from and within the park that provides an alternative to the automobile, adequately serves the current and estimated future transit demand, and provides Jersey City residents without access to a car with a means to visit the park. The travel demand model created for the study determined an increase in park visitation and circulator ridership potential in the coming years. A number of potential modes/vehicles and corridors for service were considered based on an analysis of activity centers within the park, ridership on the previous park circulator service, and other considerations that pertain to operating the service in a park environment. It was important to identify options for a successful circulator service in order to re-establish service in Liberty State Park, which could be expanded if and when necessary. The modes that emerged from the fatal flaw screening and corridors for proposed service were refined into discreet options. The initial screening and analysis led to the selection of four options for further study in the cost-benefit analysis phase of this study:

1. Bus service between the HBLR station and the historic CRRNJ Terminal (Primary Corridor) only
2. Bus service along both the Primary Corridor and Secondary Corridor (Freedom Way)
3. Historic/replica streetcar service between the HBLR station and historic CRRNJ Terminal (Primary Corridor) only
4. Combination historic/replica streetcar and bus: historic/replica streetcar service between the HBLR station and historic CRRNJ Terminal (Primary Corridor) and bus service along Freedom Way (Secondary Corridor).

All four options were qualitatively assessed for potential impacts to the park environment in which they would operate and the related benefits that would be derived from their implementation. All options offer improved access to destinations in Liberty State Park. Serving both the Primary and Secondary Corridors would provide greater access to park visitors than the options that only service on the Primary Corridor but would cost more money to implement. Any of the four feasible options would meet the established Purpose and Need.

Bus service (standard, replica trolley or minibus) for one or both segments has the lowest cost and does not require significant additional infrastructure. This service has a small initial capital investment (approximately \$71,000) with a short implementation timeline. This service is scalable and provides relatively easy service expansion as needed. Depending upon the vehicle selected, the emissions and engine noise could vary. Service on the Primary Corridor would initially generate approximately 73,700 annual riders and would cost approximately \$450,000 annually to operate.

Rail service should only be considered for the Audrey Zapp Drive corridor serving the segment between the HBLR Station and the CRRNJ Terminal, since it has the highest ridership potential. Conversely, projected ridership for the remainder of the park does not justify rail infrastructure and associated requirements at this time. The rail service would not produce local emissions, it would achieve a sense of "permanence", and the hydrogen fuel-cell technology could be the basis for Liberty Science Center collaboration. Rail service would require two grade crossings and two parking lot crossings, may impact up to eight trees, and may require avoiding contaminated soil when the tracks are installed. Additional study and engineering would be needed before implementation of any of the rail options.

Unlike the bus service, rail service has a very large initial capital investment (ranging from approximately \$3 million to over \$5 million depending upon the amount of donated equipment that could be used) with a longer implementation timeline. Because of the infrastructure costs, this service would not be easy to expand to other parts of the park. Rail service on the Primary Corridor would initially generate approximately 84,000 annual riders. This would be higher than bus service since additional ridership would be captured from people interested in the experience of riding a historic streetcar. The cost to operate the streetcar on an annual basis would be approximately \$640,000.

In the current economic climate, funding for implementation and/or additional study of any of the four options is scarce. The implementation of a circulator will most likely require the efforts of many agencies and funding from multiple sources.

9.2 RECOMMENDATIONS

Based on the conclusions derived from the study, the following action items are recommended:

1. Selection of a Lead Agency – A single agency (or group of agencies) must take ownership of the Liberty State Park circulator to maintain the momentum of the study. The lead agency would be responsible for preparing grant applications to secure long-term federal funding and other funding sources (corporate sponsorship, fundraising, etc.) needed for studying, planning, procuring, and implementing the service. Without the leadership of a lead agency, the effort to establish a transit circulator for Liberty State Park would be fractured and uncoordinated.
2. Very Short Term Implementation (2013) - A modest service could be operated on only nine weekends and two holidays in July, August, and September of 2013 for 20 days starting on July 4 and ending on September 2 (Labor Day). The launch of the service could be synchronized with the reopening of the Statue of Liberty on July 4, 2013. This service would cost approximately \$40,000 for a contractor to operate (based on recent bids for shuttle bus service in the New York Metropolitan area) and some start-up costs. Depending on the negotiated operating cost, there could be money within the \$40,000 budget for an elaborate marketing campaign (an estimated \$5,000 to \$10,000) that could include local newspaper ads, flyer distribution to park attendees, ads within the HBLR system, inserts in mailings sent out by Liberty State Park, etc. Short-term funding could come from corporate sponsorship or a fundraising campaign targeting private donations that could be initiated by local non-profit groups to help bring transit service back to the park.
3. Apply for Federal Lands Access Program (FLAP) Funding - This appears to be the best option to acquire federal funds for further study and/or implementation of the proposed Liberty State Park circulator. The lead agency could submit a formal application for FLAP funding once there is a call for applications (most likely by the fall of 2013).
4. Apply for FTA Very Small Starts Funding - Although not a perfect fit, it is advisable for the lead agency to contact the FTA to explore if some monies could be obtained through this funding source.
5. Retain Grant Consultant - The lead agency could retain the services of a grant consultant to cobble funding from a variety of sources to operate the full bus service option, study the rail options, and/or fund start-up and operating funds for the rail option. If a longer term funding source is available, part of that money should be used to advance the marketing to include branding of the service.

6. Short Term Implementation (2014 - 2015) - In terms of FLAP funding, it is unclear at this point exactly how long the process will take and if the Liberty State Park circulator would be selected. New Jersey's share of the FLAP funding at approximately \$200,000 per year is relatively small due to allocation formula. Competition within the state to receive this money will most likely be very stiff. It is unlikely that FLAP could by itself fund the capital costs for a rail option that is estimated to be in excess of \$3 million. However, FLAP could fund bus service or a study of rail options. If no FLAP funds can be procured in the short term, the lead agency could re-launch the modest two-month summer bus service to be operated on only weekends and holidays along with the marketing campaign proposed in the Very Short Term plan. Funding for this service could come from the use of corporate sponsorship and a fundraising campaign targeting private donations to continue the bus service. The lead agency could work with NJDOT or NJ TRANSIT to include [any further federally-required analysis of the rail options](#) as part of the RTP so that ultimately it could be funded as part of the UPWP.
7. Re-authorization of MAP-21 - Stakeholders could work with their Congressional delegation on a federal legislative initiative in the federal FY 2015 re-authorization of MAP-21 to add a small discretionary pot of funding for "non-preference" states like New Jersey.
8. Long Term Implementation (2016 and Beyond) - FLAP funding or other relevant funding sources should be pursued by the lead agency to continue support of limited bus service, operate the full bus service option, study the rail options, and/or fund start-up and operating funds for the rail option. Bus service could operate while rail options are studied and, if warranted, implemented/constructed. If rail funding is never secured, the bus option would serve the purpose and need for a circulator determined by this study.



NEW YORK

*611 Broadway, Suite 415
New York, NY 10012
(212) 598-9010*

NEW JERSEY

*744 Broad Street, Suite 2090
Newark, NJ 07102
(973) 639-9629*

Liberty State Park Visitor Interview Survey

The City of Jersey City is conducting a study of potential public transportation service in and near Liberty State Park. Could we please have one minute of your time to ask you a few questions?

Date: _____

Time: _____

Location: _____

1. What is your primary reason for visiting Liberty State Park today? (Please check only one)

- | | | |
|--------------------------------------------------------------|-------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground | |

2. Will you be doing anything else today while visiting Liberty State Park? (Please check all that apply)

- | | | |
|--------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground |
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |

3. If yes, how will you get between locations? _____

4. What time did you arrive at Liberty State Park today? _____ AM/PM

5. What time do you plan to leave Liberty State Park today? _____ AM/PM

6. Approximately how often do you visit Liberty State Park? (Please check only one)

- | | | |
|----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> First time | <input type="checkbox"/> Several times a year | <input type="checkbox"/> Several times a week |
| <input type="checkbox"/> Once a year or less | <input type="checkbox"/> About once a week | <input type="checkbox"/> Daily |

7. How did you arrive at Liberty State Park today? (Please check only one)

- | | | |
|----------------------------------------------------|----------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Automobile/Van/Motorcycle | <input type="checkbox"/> Light Rail/Walk | <input type="checkbox"/> Private Boat |
| <input type="checkbox"/> Taxi/Car Service | <input type="checkbox"/> NJ Transit Bus/Walk | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Charter/School Bus | <input type="checkbox"/> Bicycle | |
| <input type="checkbox"/> Ferry | <input type="checkbox"/> Walk only | |

8. If you drove to Liberty State Park today, where did you park? (Please refer to map on back of survey and check only one)

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Terminal Short Term Lot | <input type="checkbox"/> Green Park Lot | |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | |

9. How likely would you be to use public transportation (e.g. bus, train, etc.) between the Liberty State Park Light Rail Station and destinations within Liberty State Park? (Please check only one)

- | | | |
|------------------------------------------|--------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Very Likely | <input type="checkbox"/> Neutral/Not sure | <input type="checkbox"/> Very Unlikely |
| <input type="checkbox"/> Somewhat Likely | <input type="checkbox"/> Somewhat Unlikely | |

10. How many people were in the group you traveled with today to Liberty State Park? (Please check only one)

- | | | |
|----------------------------------|------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Alone | <input type="checkbox"/> Three (3) | <input type="checkbox"/> Five (5) |
| <input type="checkbox"/> Two (2) | <input type="checkbox"/> Four (4) | <input type="checkbox"/> More than Five (5) |

11. Are there children (under the age of 18) in the group you traveled with today to Liberty State Park? (Please check only one)

- Yes No

12. Do you own an automobile? (Please check only one)

- Yes No

13. Where is your home?

City & State (Country if outside USA) _____ Zip Code _____

14. If you live in Jersey City, NJ, what is the closest intersection to where you live? _____

15. If you would like to receive further information and updates on the study, please provide your e-mail address _____

Liberty Science Center Visitor Interview Survey

The City of Jersey City is conducting a study of potential public transportation service in and near Liberty State Park. Could we please have one minute of your time to ask you a few questions?

Date: _____

Time: _____

Location: _____

1. Approximately how often do you visit Liberty Science Center? (Please check only one)

- | | |
|--------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> First time | <input type="checkbox"/> Once every few years |
| <input type="checkbox"/> Once a year | <input type="checkbox"/> Several times a year |

2. What time did you arrive at Liberty Science Center today? _____ AM/PM

3. What time do you plan to leave Liberty Science Center today? _____ AM/PM

4. By what means was your primary mode of transportation traveling to Liberty Science Center today? (Please check only one)

- | | | |
|----------------------------------------------------|----------------------------------------------|------------------------------------------|
| <input type="checkbox"/> Automobile/Van/Motorcycle | <input type="checkbox"/> Light Rail/Walk | <input type="checkbox"/> Private Boat |
| <input type="checkbox"/> Taxi/Car Service | <input type="checkbox"/> NJ Transit Bus/Walk | <input type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Charter/School Bus | <input type="checkbox"/> Bicycle | _____ |
| <input type="checkbox"/> Ferry | <input type="checkbox"/> Walk only | _____ |

5. If you drove to Liberty Science Center today, where did you park? (Please refer to map on back of survey and check only one)

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Liberty Landing Marina Lot |
| <input type="checkbox"/> Short term Lot | <input type="checkbox"/> Green Park Lot | <input type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | _____ |

6. How many people were in the group you traveled with today to Liberty Science Center? (Please check only one)

- | | | |
|----------------------------------|------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Alone | <input type="checkbox"/> Three (3) | <input type="checkbox"/> Five (5) |
| <input type="checkbox"/> Two (2) | <input type="checkbox"/> Four (4) | <input type="checkbox"/> More than Five (5) |

7. Are there children (under the age of 18) in the group you traveled with today to Liberty Science Center?

- Yes No

8. Will you be visiting other destinations in Liberty State Park today? If so, please indicate what you will be doing at the Park. (Please check all that apply)

- | | | |
|--------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> No (skip to Question #10) | <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground |
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | |

9. If visiting the Park today, how will you get between locations? _____

10. Not including Liberty Science Center, approximately how often do you go to Liberty State Park? (Please check only one)

- | | | |
|----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> Never | <input type="checkbox"/> Several times a year | <input type="checkbox"/> Several times a week |
| <input type="checkbox"/> Once a year or less | <input type="checkbox"/> About once a week | <input type="checkbox"/> Daily |

11. How likely would you be to use public transportation (e.g. bus, train, etc.) between the Liberty State Park Light Rail Station and destinations within Liberty State Park (including the Liberty Science Center)? (Please check only one)

- | | | |
|------------------------------------------|--------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Very Likely | <input type="checkbox"/> Neutral/Not sure | <input type="checkbox"/> Very Unlikely |
| <input type="checkbox"/> Somewhat Likely | <input type="checkbox"/> Somewhat Unlikely | |

12. Do you own an automobile? (Please check only one)

- Yes No

13. Where is your home?

City & State (Country if outside USA) _____ Zip Code _____

14. If you live in Jersey City, NJ, what is the closest intersection to where you live? _____

15. If you would like to receive further information and updates on the study, please provide your e-mail address _____

Liberty State Park Survey

The City of Jersey City is conducting a study of potential public transportation service in and near Liberty State Park. Could we please have a couple of minutes of your time to ask you a few questions?

1. Approximately how often do you visit Liberty State Park? (Please check only one)

- | | | |
|----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> Never | <input type="checkbox"/> Several times a year | <input type="checkbox"/> Several times a week |
| <input type="checkbox"/> Once a year or less | <input type="checkbox"/> About once a week | <input type="checkbox"/> Daily |

2. When was your last visit to Liberty State Park? (Please check only one)

- | | | |
|------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| <input type="checkbox"/> Within the past week | <input type="checkbox"/> Within the past year | <input type="checkbox"/> Longer than two years ago |
| <input type="checkbox"/> Within the past month | <input type="checkbox"/> Within the past two years | <input type="checkbox"/> Never |

If you have been to Liberty State Park, please answer Questions 3 through 10. Otherwise, please skip to Question 11 if you have not visited.

3. What was the primary reason for your last visit to Liberty State Park? (Please check only one)

- | | | |
|---------------------------------------------------------------|-------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking.) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground | |

4. Did you do anything else during your last visit to Liberty State Park? (Please check all that apply)

- | | | |
|--------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground |
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |

5. If you visited multiple locations on your last visit to Liberty State Park, how did you get between these locations?

6. By what means was your primary mode of transportation on your last visit to Liberty State Park? (Please check only one)

- | | | |
|----------------------------------------------------|----------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Automobile/Van/Motorcycle | <input type="checkbox"/> Light Rail/Walk | <input type="checkbox"/> Private Boat |
| <input type="checkbox"/> Taxi/Car Service | <input type="checkbox"/> NJ Transit Bus/Walk | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Charter/School Bus | <input type="checkbox"/> Bicycle | |
| <input type="checkbox"/> Ferry | <input type="checkbox"/> Walk only | |

7. If you drove to Liberty State Park on your last visit, where did you park? (Please see attached map and check only one)

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Liberty Landing Marina Lot |
| <input type="checkbox"/> Short term Lot | <input type="checkbox"/> Green Park Lot | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | |

8. How many people were in the group you traveled with on your last visit to Liberty State Park? (Please check only one)

- | | | |
|----------------------------------|------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Alone | <input type="checkbox"/> Three (3) | <input type="checkbox"/> Five (5) |
| <input type="checkbox"/> Two (2) | <input type="checkbox"/> Four (4) | <input type="checkbox"/> More than Five (5) |

9. Were there children (under the age of 18) in the group you traveled with on your last visit to Liberty State Park? (Please check only one)

- Yes No

10. On any of your previous visits, did you use a shuttle bus to get to or within Liberty State Park? (Please check only one)

- Yes No

If you have NEVER been to Liberty State Park, please answer Questions 11 through 14. Otherwise, please skip to Question 15 if you have visited.

11. What activity would you be most interested in doing at Liberty State Park? (Please check only one)

- | | | |
|---------------------------------------------------------------|-------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking.) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Leisure Walking/Biking | <input type="checkbox"/> Playground | |

12. If you were to visit Liberty State Park, how would you most likely travel there? (Please check only one)

- | | | |
|----------------------------------------------------|----------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Automobile/Van/Motorcycle | <input type="checkbox"/> Light Rail/Walk | <input type="checkbox"/> Private Boat |
| <input type="checkbox"/> Taxi/Car Service | <input type="checkbox"/> NJ Transit Bus/Walk | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Charter/School Bus | <input type="checkbox"/> Bicycle | |
| <input type="checkbox"/> Ferry | <input type="checkbox"/> Walk only | |

13. Would you be likely to bring children under the age of 18 to Liberty State Park if you visited? (Please check only one)

Yes

No

14. To date, why have you not visited Liberty State Park? (Please check all that apply)

I don't own a car

Can't find the time

The opportunity has not presented itself

Didn't know about the Park's attractions

Lack of public transit

Lack of parking

Cost of public transit

Other (Specify) _____

15. On your first/next visit to the Park, how likely would you be to use public transportation (e.g. bus, train, etc.) between the Liberty State Park Light Rail Station and destinations within Liberty State Park? (Please check only one)

Very Likely

Neutral/Not sure

Very Unlikely

Somewhat Likely

Somewhat Unlikely

16. Do you own an automobile? (Please check only one)

Yes

No

17. Where is your home?

City & State (Country if outside USA) _____

Zip Code _____

18. If you live in Jersey City, NJ, what is the closest intersection to where you live? _____

19. If you would like to receive further information and updates on the study, please provide your e-mail address _____

20. Comments _____

Liberty State Park On-Line Survey – Never Visited

The City of Jersey City is conducting a study of potential public transportation service in and near Liberty State Park. Can you please answer a few questions about a possible visit to Liberty State Park?

1. What activity would you be most interested in doing at Liberty State Park? (Please check only one)

- | | | |
|---------------------------------------------------------------|-------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking.) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Leisure Walking/Biking | <input type="checkbox"/> Playground | |

2. If you visited Liberty State Park, how would you most likely travel there? (Please check only one)

- | | | |
|----------------------------------------------------|----------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Automobile/Van/Motorcycle | <input type="checkbox"/> Light Rail/Walk | <input type="checkbox"/> Private Boat |
| <input type="checkbox"/> Taxi/Car Service | <input type="checkbox"/> NJ Transit Bus/Walk | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Charter/School Bus | <input type="checkbox"/> Bicycle | |
| <input type="checkbox"/> Ferry | <input type="checkbox"/> Walk only | |

3. To date, why have you not visited Liberty State Park? (Please check all that apply)

- | | |
|-------------------------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> I don't own a car | <input type="checkbox"/> Lack of public transit |
| <input type="checkbox"/> Can't find the time | <input type="checkbox"/> Lack of parking |
| <input type="checkbox"/> The opportunity has not presented itself | <input type="checkbox"/> Cost of public transit |
| <input type="checkbox"/> Didn't know about the Park's attractions | <input type="checkbox"/> Other (Specify) _____ |

4. If public transportation (e.g. bus, train, etc.) between the Liberty State Park Light Rail Station and destinations within Liberty State Park were available, how likely would you be to visit Liberty State Park? (Please check only one)

- | | | |
|------------------------------------------|--------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Very Likely | <input type="checkbox"/> Neutral/Not sure | <input type="checkbox"/> Very Unlikely |
| <input type="checkbox"/> Somewhat Likely | <input type="checkbox"/> Somewhat Unlikely | |

5. Would you be likely to bring children under the age of 18 to Liberty State Park if you visited? (Please check only one)

- Yes No

6. Do you own an automobile? (Please check only one)

- Yes No

7. Where is your home?

City & State (Country if outside USA) _____ Zip Code _____

8. If you live in Jersey City, NJ, what is the closest intersection to where you live? _____

9. How did you find out about this website? (Please check only one)

- | | |
|---------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Internet search | <input type="checkbox"/> NJTPA website |
| <input type="checkbox"/> Liberty State Park website | <input type="checkbox"/> Friends of Liberty State Park website |
| <input type="checkbox"/> Jersey City website | <input type="checkbox"/> Statue Cruises website |
| <input type="checkbox"/> Liberty Science Center website | <input type="checkbox"/> Other (Specify) _____ |

10. If you would like to receive further information and updates on the study, please provide your e-mail address _____

11. Comments _____

Liberty State Park On-Line Survey – Previous Visit

The City of Jersey City is conducting a study of potential public transportation service in and near Liberty State Park. Can you please answer a few questions about your last visit to Liberty State Park?

1. Approximately how often do you visit Liberty State Park? (Please check only one)

- | | | |
|----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> Never | <input type="checkbox"/> Several times a year | <input type="checkbox"/> Several times a week |
| <input type="checkbox"/> Once a year or less | <input type="checkbox"/> About once a week | <input type="checkbox"/> Daily |

2. When was your last visit to Liberty State Park? (Please check only one)

- | | | |
|------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| <input type="checkbox"/> Within the past week | <input type="checkbox"/> Within the past year | <input type="checkbox"/> Longer than two years ago |
| <input type="checkbox"/> Within the past month | <input type="checkbox"/> Within the past two years | <input type="checkbox"/> Never |

3. What was the primary reason for your last visit to Liberty State Park? (Please check only one)

- | | | |
|---------------------------------------------------------------|-------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking.) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground | |

4. Did you do anything else during your last visit to Liberty State Park? (Please check all that apply)

- | | | |
|--------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Leisure (Walking/Biking) | <input type="checkbox"/> Playground |
| <input type="checkbox"/> Ellis Island/Statue of Liberty | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Science Center |
| <input type="checkbox"/> Exercise (Biking, Jogging, Walking) | <input type="checkbox"/> Restaurant | <input type="checkbox"/> 9/11 Empty Sky Memorial |
| <input type="checkbox"/> Nature Walk/Birdwatching | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Other (Specify) _____ |

5. If yes, how did you get between locations? _____

6. By what means was your primary mode of transportation on your last visit to Liberty State Park? (Please check only one)

- | | | |
|----------------------------------------------------|----------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Automobile/Van/Motorcycle | <input type="checkbox"/> Light Rail/Walk | <input type="checkbox"/> Private Boat |
| <input type="checkbox"/> Taxi/Car Service | <input type="checkbox"/> NJ Transit Bus/Walk | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Charter/School Bus | <input type="checkbox"/> Bicycle | |
| <input type="checkbox"/> Ferry | <input type="checkbox"/> Walk only | |

7. If you drove to Liberty State Park on your last visit, where did you park? (Please see attached map and check only one)

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Short term Lot | <input type="checkbox"/> Green Park Lot | |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | |

8. On your next visit to the Park, how likely would you be to use public transportation (e.g. bus, train, etc.) between the Liberty State Park Light Rail Station and destinations within Liberty State Park? (Please check only one)

- | | | |
|------------------------------------------|--------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Very Likely | <input type="checkbox"/> Neutral/Not sure | <input type="checkbox"/> Very Unlikely |
| <input type="checkbox"/> Somewhat Likely | <input type="checkbox"/> Somewhat Unlikely | |

9. How many people were in the group you traveled with on your last visit to Liberty State Park? (Please check only one)

- | | | |
|----------------------------------|------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Alone | <input type="checkbox"/> Three (3) | <input type="checkbox"/> Five (5) |
| <input type="checkbox"/> Two (2) | <input type="checkbox"/> Four (4) | <input type="checkbox"/> More than Five (5) |

10. Were there children (under the age of 18) in the group you traveled with on your last visit to Liberty State Park? (Please check only one)

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

11. Do you own an automobile? (Please check only one)

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

12. On any of your previous visits, did you use a shuttle bus to get to or within Liberty State Park? (Please check only one)

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

13. Where is your home?

City & State (Country if outside USA) _____ Zip Code _____

14. If you live in Jersey City, NJ, what is the closest intersection to where you live? _____

15. How did you find out about this website? (Please check only one)

- Internet search
- Liberty State Park website
- City of Jersey City website
- Liberty Science Center website
- Newspaper article

- Flyer
- NJTPA website
- Friends of Liberty State Park
- Statue Cruises website
- Other (Specify) _____

16. If you would like to receive further information and updates on the study, please provide your e-mail address _____

17. Comments _____

Encuesta De Visitante De Liberty State Park

La ciudad de Jersey City está realizando un estudio de posibles servicio de transporte público en y cerca de Liberty State Park. Podríamos tener un minuto de su tiempo para hacerle algunas preguntas por favor?

Fecha: _____

Hora: _____

Localidad: _____

1. Cuál es su razón principal para visitar Liberty State Park hoy? (Por favor marque sólo uno)

- | | | |
|-----------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Estatua De La Libertad | <input type="checkbox"/> Marina | <input type="checkbox"/> Monumento Conmemorativo del 9/11 Cielo Vacío |
| <input type="checkbox"/> Ejercicio (Ciclismo, Correr, Caminar.) | <input type="checkbox"/> Restaurante | <input type="checkbox"/> Liberty Centro De Ciencia |
| <input type="checkbox"/> Paseo Por La Naturaleza/
Observación De Pájaros | <input type="checkbox"/> El Picnic | <input type="checkbox"/> Otro (Especifiqué) _____ |
| <input type="checkbox"/> Ociosidad (Caminando/Ciclismo) | <input type="checkbox"/> Patio de recreo | |

2. Va usted hacer algo más hoy en su visita a Liberty State Park? (Por favor marque todos que aplican)

- | | | |
|--------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Ociosidad (Caminando/Ciclismo) | <input type="checkbox"/> Monumento Conmemorativo del 9/11 Cielo Vacío |
| <input type="checkbox"/> Ellis Island/Estatua De La Libertad | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Centro De Ciencia |
| <input type="checkbox"/> Ejercicio (Ciclismo, Correr, Caminar.) | <input type="checkbox"/> Restaurante | <input type="checkbox"/> Otro (Especifiqué) _____ |
| <input type="checkbox"/> Paseo Por La Naturaleza/ Observación De Pájaros | <input type="checkbox"/> El Picnic | |
| | <input type="checkbox"/> Patio de recreo | |

3. En caso afirmativo, cómo usted viajará entre locales? _____

4. A qué hora llegó a Liberty State Park hoy? _____ AM/PM

5. A qué hora se planean ir de Liberty State Park hoy? _____ AM/PM

6. Aproximadamente con qué frecuencia viene usted a Liberty State Park? (Por favor marque sólo uno)

- | | |
|-------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Primera vez | <input type="checkbox"/> Una vez a la semana |
| <input type="checkbox"/> Una vez al año o menos | <input type="checkbox"/> Varias veces a la semana |
| <input type="checkbox"/> Varias veces al año | <input type="checkbox"/> Diario |

7. Cómo llegaron a Liberty State Park hoy? (Por favor marque sólo uno)

- | | | |
|----------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Automóvil/Camioneta/Motocicleta | <input type="checkbox"/> Tren ligero/Caminar | <input type="checkbox"/> Bote privado |
| <input type="checkbox"/> Taxi/Servicio de Coche | <input type="checkbox"/> Autobus de NJ Transit/Caminar | <input type="checkbox"/> Otro (Especifiqué) _____ |
| <input type="checkbox"/> Chárter / Autobús escolar | <input type="checkbox"/> Bicicleta | |
| <input type="checkbox"/> Transbordador | <input type="checkbox"/> Caminar Solamente | |

8. Si hoy condujo a Liberty State Park, donde aparco?

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Terminal Short Term Lot | <input type="checkbox"/> Green Park Lot | |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | |

9. Si el transporte público (p.ej autobús, tren, etc.) entre la Estación de Liberty State Park Light Rail y destinos dentro de Liberty State Park estuviera disponible, como probable la usaria? (Por favor marque sólo uno)

- | | | |
|----------------------------------------|--------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Muy Probable | <input type="checkbox"/> Neutral/No Seguro | <input type="checkbox"/> Muy Poco Probable |
| <input type="checkbox"/> Algo Probable | <input type="checkbox"/> Algo Improbable | |

10. Cuántas personas estaban en el grupo con cual viajó hoy a Liberty State Park? (Por favor marque sólo uno)

- | | | |
|----------------------------------|-------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Solo | <input type="checkbox"/> Tres (3) | <input type="checkbox"/> Cinco (5) |
| <input type="checkbox"/> Dos (2) | <input type="checkbox"/> Cuatro (4) | <input type="checkbox"/> Mas Que Cinco (5) |

11. Hay niños (menores de 18) en el grupo con cual viaje hoy a Liberty State Park? (Por favor marque sólo uno)

- | | |
|-----------------------------|-----------------------------|
| <input type="checkbox"/> Si | <input type="checkbox"/> No |
|-----------------------------|-----------------------------|

12. Es dueño de un automóvil? (Por favor marque sólo uno)

- | | |
|-----------------------------|-----------------------------|
| <input type="checkbox"/> Si | <input type="checkbox"/> No |
|-----------------------------|-----------------------------|

13. Dónde está tu casa?

Ciudad y Estado (Pais si no en los Estados Unidos) _____

Codigo Postal _____

14. Si vives en Jersey City, NJ, cual es la intersección más cercana a donde vives? _____

15. Si desea recibir más información y actualizaciones sobre el estudio, indique su dirección de correo electronic _____

Encuesta De Visitante De Liberty Centro De Ciencia

La ciudad de Jersey City está realizando un estudio de posibles servicio de transporte público en y cerca de Liberty State Park. Podríamos tener un minuto de su tiempo para hacerle algunas preguntas por favor?

Fecha: _____

Hora: _____

Localidad: _____

1. Aproximadamente con qué frecuencia viene usted a De Liberty Centro De Ciencia? (Por favor marque sólo uno)

- Primera vez
 Una vez al año
 Varias veces al año
 Una vez cada pocos años

2. A qué hora llegó a De Liberty Centro De Ciencia hoy? _____ AM/PM

3. A qué hora se planean ir De Liberty State Park hoy? _____ AM/PM

4. Cómo llegaron a De Liberty Centro De Ciencia hoy? (Por favor marque sólo uno)

- | | | |
|----------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Automóvil/Camioneta/Motocicleta | <input type="checkbox"/> Tren ligero/Caminar | <input type="checkbox"/> Bote privado |
| <input type="checkbox"/> Taxi/Servicio de Coche | <input type="checkbox"/> Autobus de NJ Transit/Caminar | <input type="checkbox"/> Otro (Especifiqué) _____ |
| <input type="checkbox"/> Chárter / Autobús escolar | <input type="checkbox"/> Bicicleta | |
| <input type="checkbox"/> Transbordador | <input type="checkbox"/> Caminar Solamente | |

5. Si hoy condujo a De Liberty Centro De Ciencia, donde aparco?

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Liberty Landing Marina Lot |
| <input type="checkbox"/> Terminal Short Term Lot | <input type="checkbox"/> Green Park Lot | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | |

6. Cuántas personas estaban en el grupo con cual viajó hoy a De Liberty Centro De Ciencia? (Por favor marque sólo uno)

- | | | |
|----------------------------------|-------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Solo | <input type="checkbox"/> Tres (3) | <input type="checkbox"/> Cinco (5) |
| <input type="checkbox"/> Dos (2) | <input type="checkbox"/> Cuatro (4) | <input type="checkbox"/> Mas Que Cinco (5) |

7. Hay niños (menores de 18) en el grupo con cual viaje hoy a De Liberty Centro De Ciencia? (Por favor marque sólo uno)

- Si No

8. Usted visitará otros destinos el parque de Libertad hoy? En caso afirmativo, indicaques lo que vas hacer en el parque.

- | | | |
|--------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|
| <input type="checkbox"/> No (seguesa a repuesta #10) | <input type="checkbox"/> Ociosidad (Caminando/Ciclismo) | <input type="checkbox"/> Monumento Conmemorativo del 9/11 |
| <input type="checkbox"/> Ellis Island/Estatua De La Libertad | <input type="checkbox"/> Marina | <input type="checkbox"/> Cielo Vacío |
| <input type="checkbox"/> Ejercicio (Ciclismo, Correr, Caminar.) | <input type="checkbox"/> Restaurante | <input type="checkbox"/> Liberty Centro De Ciencia |
| <input type="checkbox"/> Paseo Por La Naturaleza/ Observación De Pájaros | <input type="checkbox"/> El Picnic | <input type="checkbox"/> Otro (Especifiqué) _____ |
| | <input type="checkbox"/> Patio de recreo | |

9. Si visita el Parque hoy, ¿cómo obtendrá entre ubicaciones? _____

10. No incluyendo Liberty Science Center, aproximadamente cuánto vas al Parque de Libertad?

- | | | |
|-------------------------------------------------|----------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Nunca | <input type="checkbox"/> Varias veces al año | <input type="checkbox"/> Varias veces a la semana |
| <input type="checkbox"/> Una vez al año o menos | <input type="checkbox"/> Una vez a la semana | <input type="checkbox"/> Diario |

11. Aproximadamente con qué frecuencia viene usted a Liberty State Park (incluyo De Liberty Centro De Ciencia)? (Por favor marque sólo uno)

- | | | |
|-------------------------------------------------|----------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Primera vez | <input type="checkbox"/> Varias veces al año | <input type="checkbox"/> Varias veces a la semana |
| <input type="checkbox"/> Una vez al año o menos | <input type="checkbox"/> Una vez a la semana | <input type="checkbox"/> Diario |

12. Es dueño de un automóvil? (Por favor marque sólo uno)

- Si No

13. Dónde está tu casa?

Ciudad y Estado (Pais si no en los Estados Unidos) _____ Código Postal _____

14. Si vives en Jersey City, NJ, cual es la intersección más cercana a donde vives? _____

15. Si desea recibir más información y actualizaciones sobre el estudio, indique su dirección de correo electronic _____

Encuesta De Liberty State Park

La ciudad de Jersey está realizando un estudio del servicio de transporte público potencial en y cerca de Liberty State Park. ¿Podríamos por favor un par de minutos de su tiempo a hacerle unas preguntas?

1. Aproximadamente con qué frecuencia visita Liberty State Park ? (Por favor, marque solamente una)

- | | | |
|-------------------------------------------------|----------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Nunca | <input type="checkbox"/> Varias veces al año | <input type="checkbox"/> Varias veces a la semana |
| <input type="checkbox"/> Una vez al año o menos | <input type="checkbox"/> Una vez a la semana | <input type="checkbox"/> Diariamente |

2. Cuando fue su última visita a Liberty State Park? (Por favor, marque solamente una)

- | | | |
|--------------------------------------------------|-----------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Dentro la semana pasada | <input type="checkbox"/> Dentro el año pasado | <input type="checkbox"/> Mas que dos años |
| <input type="checkbox"/> Dentro el mes pasado | <input type="checkbox"/> Dentro los dos años pasado | <input type="checkbox"/> Nunca |

Si usted ha visitado a Liberty State Park, por favor conteste preguntas 3 a 10. De lo contrario, vaya a pregunta 11 Si no ha visitado.

3. Cual fue su razon por visitar a Liberty State Park? (Por favor, marque solamente una)

- | | | |
|-------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Estatua De La Libertad | <input type="checkbox"/> Ociosidad (Caminando/Ciclismo) | <input type="checkbox"/> Monumento Conmemorativo del 9/11 Cielo Vacío |
| <input type="checkbox"/> Ejercicio (Ciclismo, Correr, Caminar.) | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Centro De Ciencia |
| <input type="checkbox"/> Paseo Por La Naturaleza/Observación De Pájaros | <input type="checkbox"/> Restaurante | <input type="checkbox"/> Otro (Especifiqué) _____ |
| | <input type="checkbox"/> El Picnic | |
| | <input type="checkbox"/> Patio de recreo | |

4. Hiciste nada durante su última visita a Liberty State Park? (Por favor, marque todas las que aplican)

- | | | |
|-------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> No | <input type="checkbox"/> Ociosidad (Caminando/Ciclismo) | <input type="checkbox"/> Monumento Conmemorativo del 9/11 Cielo Vacío |
| <input type="checkbox"/> Ellis Island/Estatua De La Libertad | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Centro De Ciencia |
| <input type="checkbox"/> Ejercicio (Ciclismo, Correr, Caminar) | <input type="checkbox"/> Restaurante | <input type="checkbox"/> Otro (Especifiqué) _____ |
| <input type="checkbox"/> Paseo Por La Naturaleza/Observación De Pájaros | <input type="checkbox"/> El Picnic | |
| | <input type="checkbox"/> Patio de recreo | |

5. En caso afirmativo, cómo usted viajará entre locales?

6. Cual fue su modo primero de transportacion en su última visita a Liberty State Park? (Por favor, marque solamente una)

- | | | |
|----------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Automóvil/Camioneta/Motocicleta | <input type="checkbox"/> Tren ligero/Caminar | <input type="checkbox"/> Bote privado |
| <input type="checkbox"/> Taxi/Servicio de Coche | <input type="checkbox"/> Autobus de NJ Transit/Caminar | <input type="checkbox"/> Otro (Especifiqué) _____ |
| <input type="checkbox"/> Chárter / Autobús escolar | <input type="checkbox"/> Bicicleta | |
| <input type="checkbox"/> Transbordador | <input type="checkbox"/> Caminar Solamente | |

7 Si conducía a Liberty State Park en su última visita, donde estacionaste? (Por favor ver mapa adjunto y marque sólo una)

- | | | |
|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Ferry Lot (Pay Lot) | <input type="checkbox"/> Interpretive Center Lot | <input type="checkbox"/> Light Rail Park and Ride Lot |
| <input type="checkbox"/> Liberty Science Center Lot (Pay Lot) | <input type="checkbox"/> Boat Launch Lot | <input type="checkbox"/> Liberty Landing Marina Lot |
| <input type="checkbox"/> Terminal Short Term Lot | <input type="checkbox"/> Green Park Lot | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Base Lot | <input type="checkbox"/> Sundial Lot | |

8. Cuántas personas estaban en el grupo que viajó con su última visita a Liberty State Park? (Por favor, marque solamente una)

- | | | |
|----------------------------------|-------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Solo | <input type="checkbox"/> Tres (3) | <input type="checkbox"/> Cinco (5) |
| <input type="checkbox"/> Dos (2) | <input type="checkbox"/> Cuatro (4) | <input type="checkbox"/> Mas Que Cinco (5) |

9. Hubieron niños (menos de 18 años de edad) en su grupo en su última visita a Liberty State Park? (Por favor, marque solamente una)

- Sí No

10. En cualquiera de sus anteriores visitas, usaste un autobús para llegar a o dentro de Liberty State Park? (Por favor, marque solamente una)

- Sí No

Si usted nunca ha visitado a Liberty State Park, por favor de conteste preguntas 11 a 14. De lo contrario, vaya a la pregunta 15 Si ha visitado.

11. Qué actividad estaría más interesado en hacer en Liberty State Park?

- | | | |
|-------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Ellis Island/Estatua De La Libertad | <input type="checkbox"/> Ociosidad (Caminando/Ciclismo) | <input type="checkbox"/> Monumento Conmemorativo del 9/11 Cielo Vacío |
| <input type="checkbox"/> Ejercicio (Ciclismo, Correr, Caminar.) | <input type="checkbox"/> Marina | <input type="checkbox"/> Liberty Centro De Ciencia |
| <input type="checkbox"/> Paseo Por La Naturaleza/Observación De Pájaros | <input type="checkbox"/> Restaurante | <input type="checkbox"/> Otro (Especifiqué) _____ |
| | <input type="checkbox"/> El Picnic | |
| | <input type="checkbox"/> Patio de recreo | |

12. Si usted a visitado Liberty State Park, ¿cómo sería lo más probable modo de viajar hasta allí? (Por favor, marque solamente una)

- | | | |
|----------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Automóvil/Camioneta/Motocicleta | <input type="checkbox"/> Tren ligero/Caminar | <input type="checkbox"/> Bote privado |
| <input type="checkbox"/> Taxi/Servicio de Coche | <input type="checkbox"/> Autobus de NJ Transit/Caminar | <input type="checkbox"/> Otro (Especifique) _____ |
| <input type="checkbox"/> Chárter / Autobús escolar | <input type="checkbox"/> Bicicleta | |
| <input type="checkbox"/> Transbordador | <input type="checkbox"/> Caminar Solamente | |

13. Estaría probablemente a traer a niños menores de 18 años a Liberty State Park si has visitado? (Por favor, marque solamente una)

- Sí No

14. Hasta la fecha, ¿por qué no has visitado a Liberty State Park? (Por favor, marque todas las que aplican)

- | | |
|--------------------------------------------------------------|-----------------------------------------------------------|
| <input type="checkbox"/> No tengo carro | <input type="checkbox"/> Falta transportacio publico |
| <input type="checkbox"/> No tengo el tiempo | <input type="checkbox"/> Falta estacionamiento |
| <input type="checkbox"/> La oportunidad no se aparecido | <input type="checkbox"/> Costo de transportatcion publico |
| <input type="checkbox"/> No conosco las atraciones el parque | <input type="checkbox"/> Otra Razon (Especificar) _____ |

15. En su primera/próxima visita al parque, cómo probablemente sería usted a usar el transporte público (autobús, tren, etc.) entre la estación de ferrocarril de luz de Liberty State Park y destinos dentro de Liberty State Park? (Por favor marque sólo uno)

- | | | |
|----------------------------------------|-------------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> Muy Probable | <input type="checkbox"/> Neutro/No estoy Seguro | <input type="checkbox"/> Muy improbable |
| <input type="checkbox"/> Algo Probable | <input type="checkbox"/> Algo improbable | |

16. . Es dueño de un automóvil? (Por favor marque sólo uno)

- Sí No

17. Dónde está tu casa?

Ciudad y Estado (Pais si no en los Estados Unidos) _____ Código Postal _____

18. Si vives en Jersey City, NJ, cual es la intersección más cercana a donde vives? _____

19. Si desea recibir más información y actualizaciones sobre el estudio, indique su dirección de correo electronic: _____

20. Comentarios: _____

**City of Jersey City
Division of City Planning**

**Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 7
Wednesday, May 22, 2013, 3 PM**

Meeting location: Liberty Science Center, 222 Jersey City Boulevard, Jersey City, NJ 07305, Observation Tower

Agenda

1. Welcome and Introductions
2. Study Background
3. Overview of Options
4. Potential Funding Sources
5. Implementation Strategy
6. Discussion of Potential Roles and Responsibilities to Advance Circulator
7. Next Steps:
 - a. The Public Comment Period for Draft Final Report concludes on Thursday, May 23, 2013 at 5 PM. Written comments may be submitted to lsprtransitstudy@gmail.com
 - b. The Final Report (on CD) will be distributed to the TAC and posted on the study website in early June.

LIBERTY STATE PARK CIRCULATOR

Cost-Benefit Analysis



**SAM SCHWARTZ
ENGINEERING**

City of Jersey City
Technical Advisory Committee
Meeting VII

May 22, 2013

WELCOME



- Introductions
- Background
- Overview of options
- Funding sources
- Implementation strategy
- Development of roles
- Identification of responsibilities
- Next steps



PROJECT SCHEDULE

		15 Month Project Duration														
		Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Task 1A	Existing Conditions	▲														
Task 1B	Website															
Task 2	Future Conditions			▲												
Task 3	Purpose & Need							▲								
Task 4A	Options for Circulator Service									▲						
Task 4B	Public Meeting #1										★					
Task 5	Evaluation															
Task 6	Implementation Strategy													▲		
Task 7A	Draft Final Report														▲	
Task 7B	Public Meeting #2															★
Task 8	Final Report															▲

Legend

-  Technical Advisory Committee (TAC) Meeting
-  Public Meeting

Friday, May 03, 2013

Note: The exact dates of the TAC and Public Meetings are to be determined.

STUDY PURPOSE



Source: <http://www.destinationnexus.com/Liberty-State-Park-in-Jersey-City-New-Jersey.html>

- **Establish purpose and need**
- **Evaluate concepts for a mass transit circulator service**
 - Various routes and modes will be considered
 - Range of options will be evaluated
- **Identification of feasible concepts**
 - Eliminate cost-infeasible alternatives
 - Results will be consistent with NEPA and FTA requirements
 - Will prioritize concepts but will not identify a “preferred” alternative

PURPOSE & NEED

Draft Purpose Statement: Liberty State Park Transit Circulator

The purpose of the Liberty State Park Transit Circulator is to provide a reliable transit service to and from the park that:

1. Provides an alternative to predominantly automobile access to the park;
2. Serves the current and projected future transit demand to the park for recreational and tourist markets;
3. Provides the means to visit the park for Jersey City residents who do not have access to a car.



PUBLIC OUTREACH

- Seven TAC meetings
- Two public meetings
- Website (Lsptransitstudy.com)
- Survey of park visitors

- **Public Meeting #2**
 - Held on May 9th at Jersey City Council Chambers
 - Comments are due tomorrow (May 23, 2013)

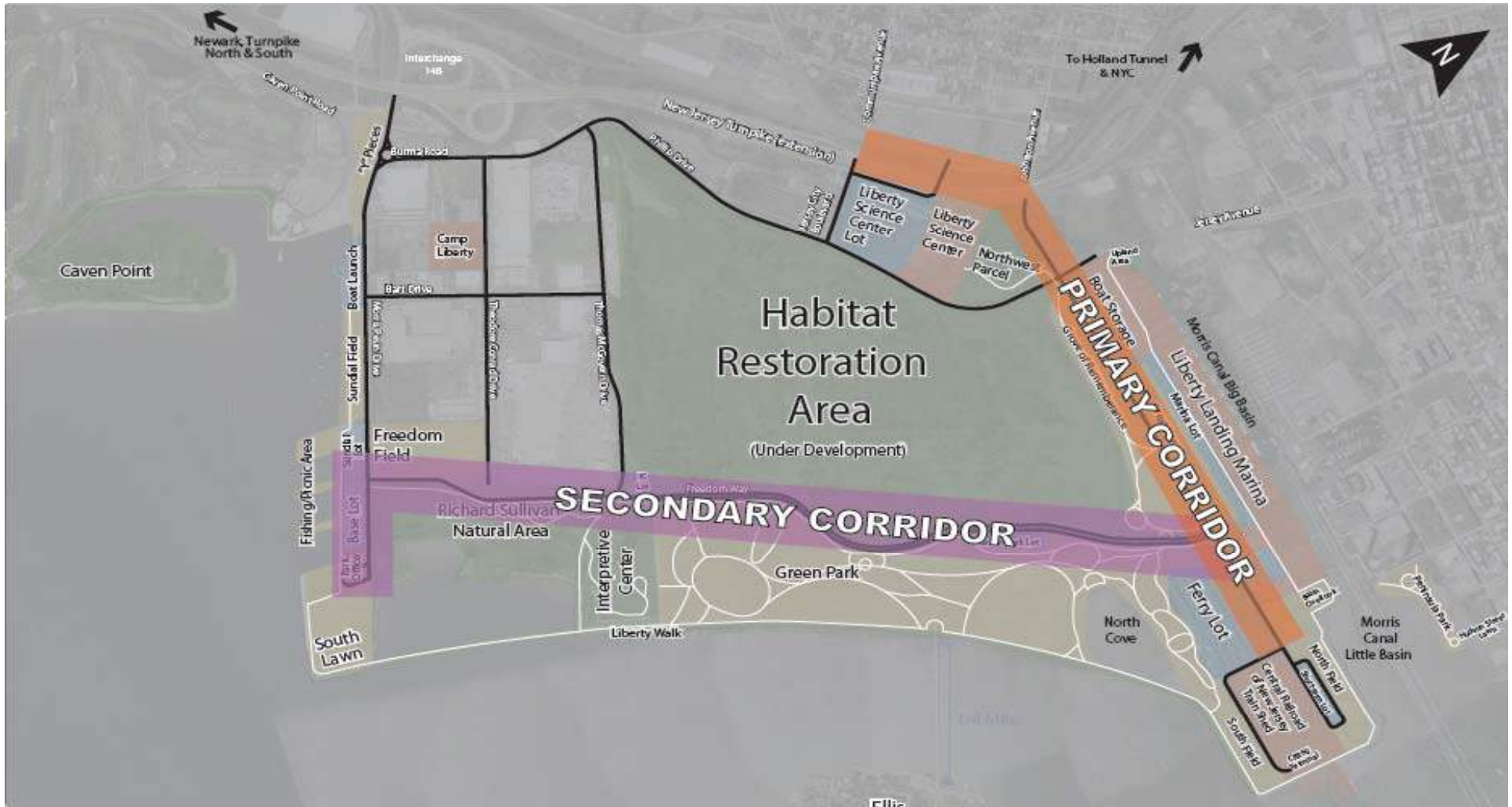


Source: http://www.huntingtonbeachca.gov/images/users/public_works/Watertownhallmeeting.jpg

PRIMARY ACTIVITY CENTERS



PROPOSED SERVICE CORRIDORS



- Destinations outside the park should be served as resources allow
- Service through industrial park area should be re-evaluated as new destinations come online over time

PRELIMINARY SERVICE GUIDELINES

- **Grass tracks and no overhead wires could be standard for streetcar options**
- **No or ultra-low emissions could be standard for all bus options**
- **Service design and vehicle selection could facilitate transit excursion through the park as attraction**
- **Historic streetcar may be an attraction on its own**



Grass Trackbed in New Orleans



Zero Emissions Bus in Scotland



Park Shuttle in Zion National Park

PROPOSED OPTIONS FOR COST/BENEFIT EVALUATION

1. Bus service between HBLR and CRRNJ terminal only
2. Bus service for both proposed segments
3. Historic/replica streetcar between HBLR and CRRNJ terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ terminal and bus for other segment



OPTION 1: BUS ON PRIMARY CORRIDOR



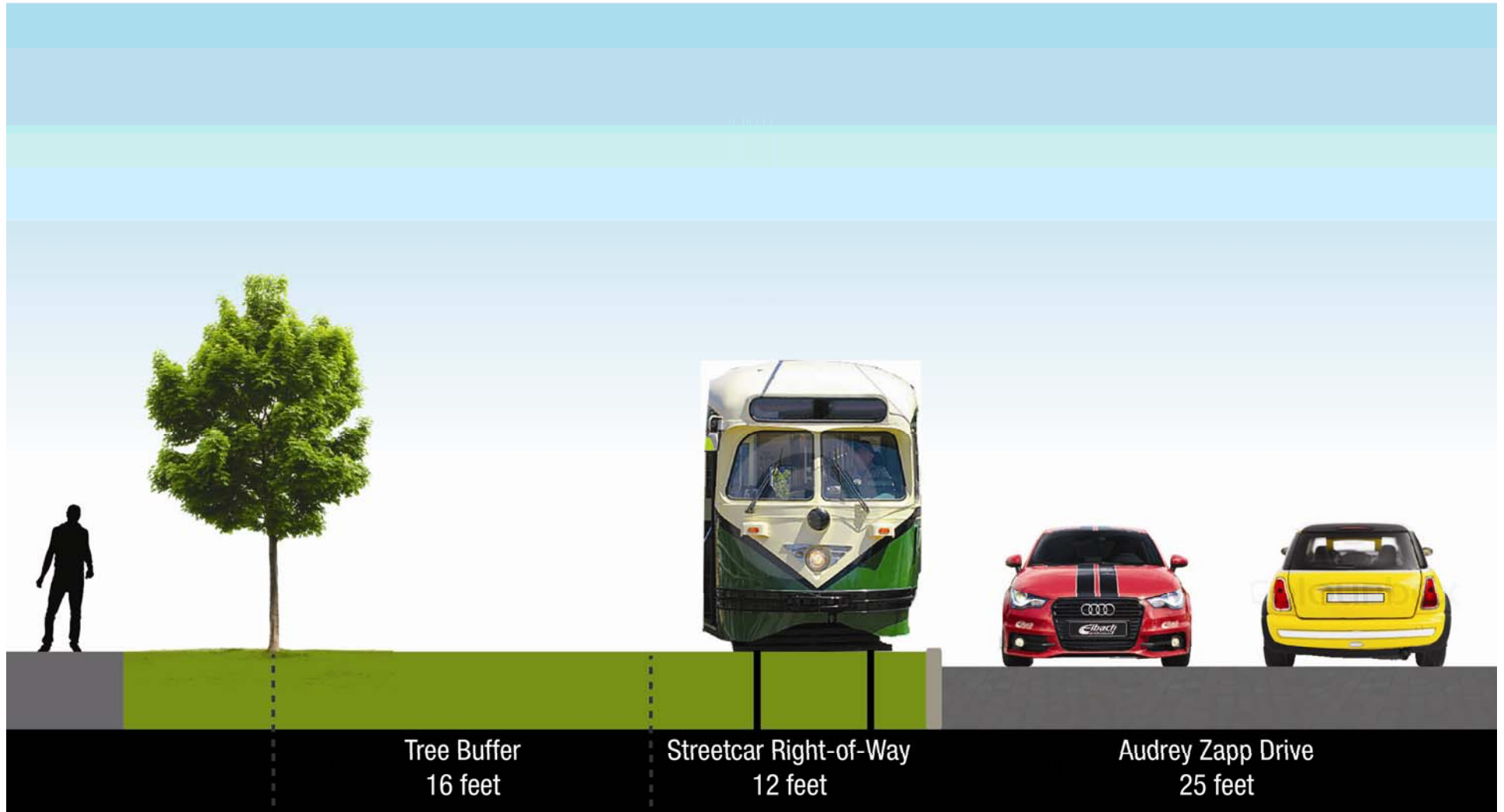
OPTION 2: BUS ON PRIMARY AND SECONDARY CORRIDORS



OPTION 3: STREETCAR ON PRIMARY CORRIDOR



OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



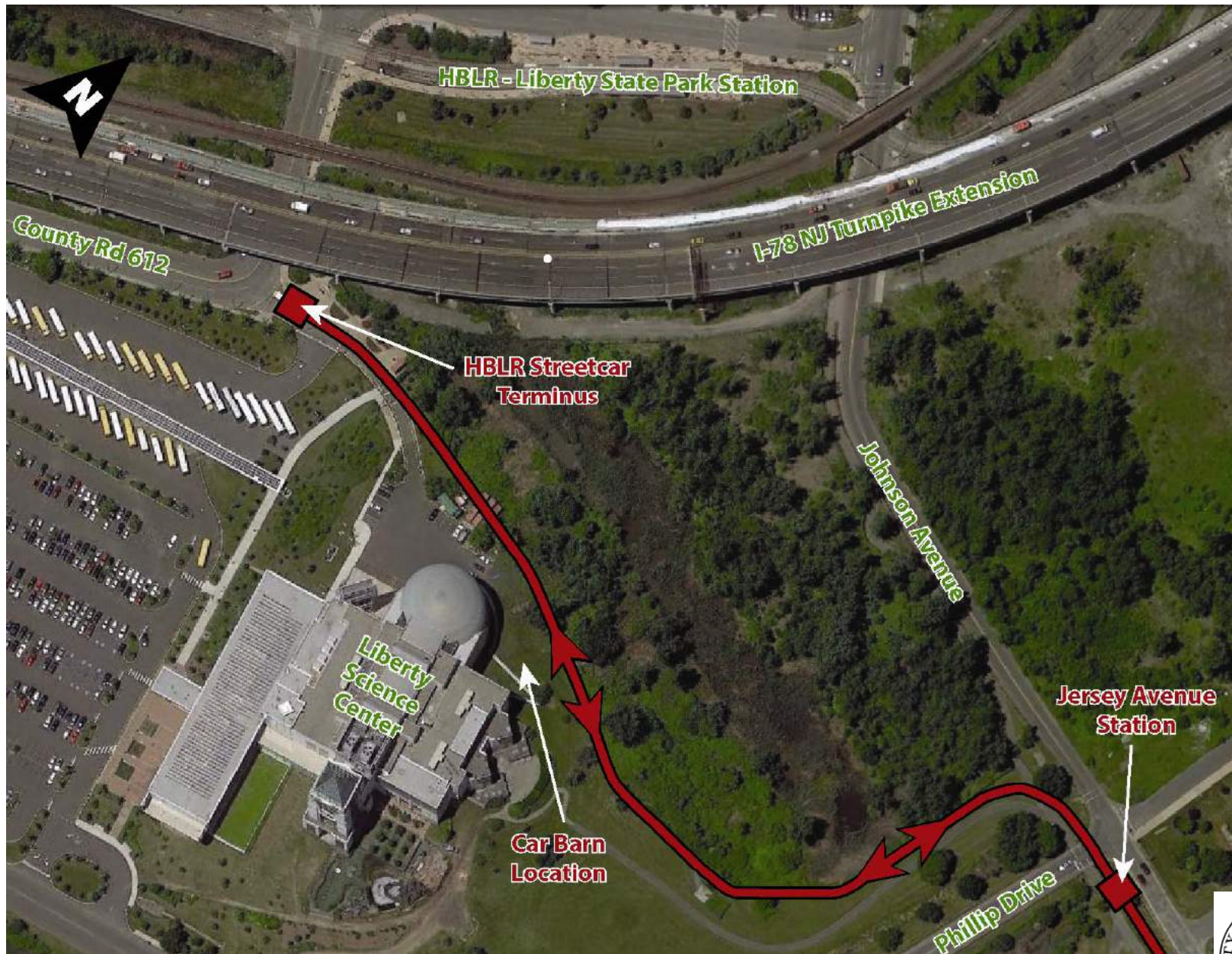
OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



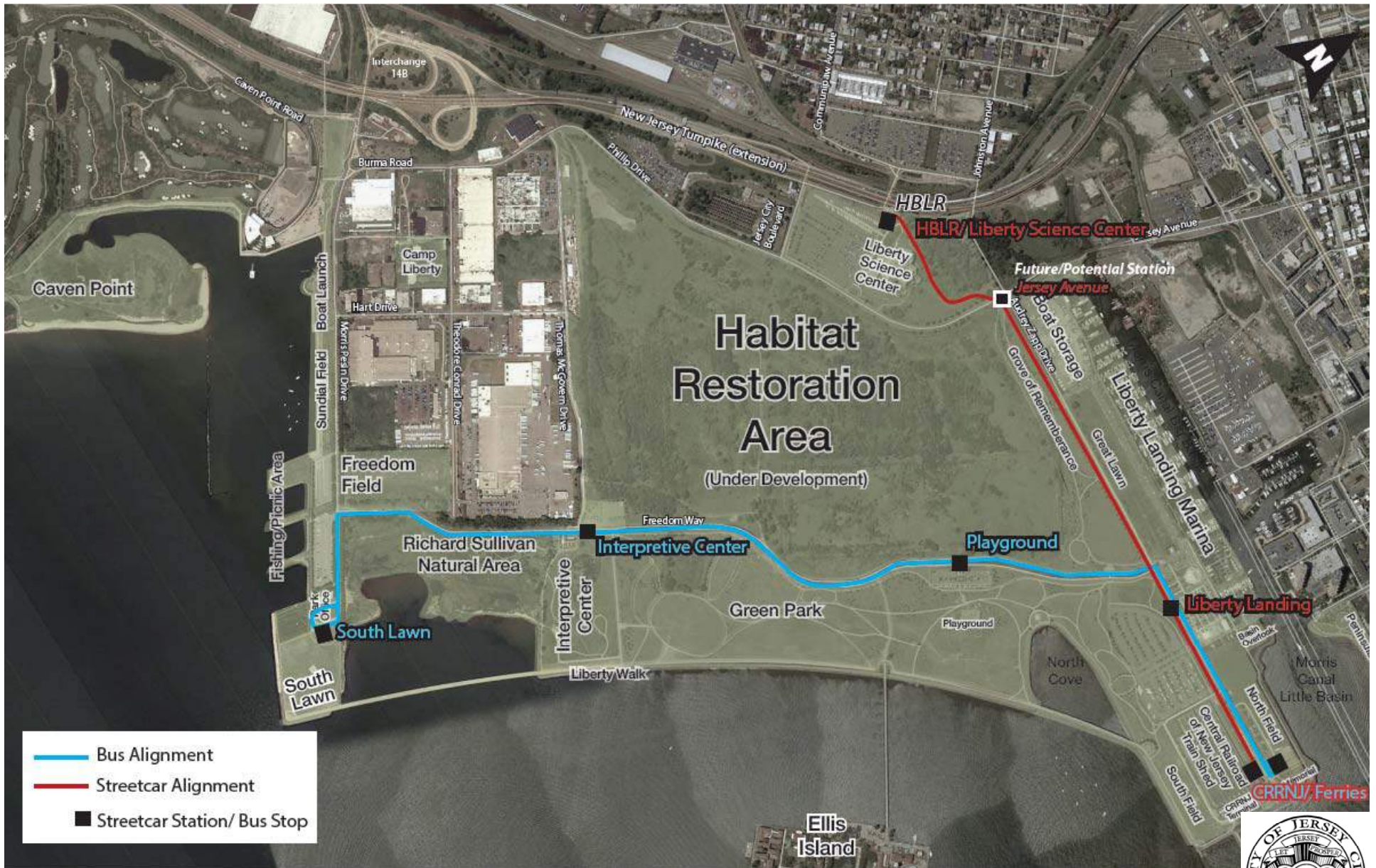
SAM SCHWARTZ
ENGINEERING



OPTION 3: WESTERN TERMINUS



OPTION 4: STREETCAR/BUS COMBINATION



- Bus Alignment
- Streetcar Alignment
- Streetcar Station/ Bus Stop

FEDERAL FUNDING SOURCES

- Sarbanes Transit in Parks Program
- Hurricane Sandy
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program
- National Park Service (NPS)
- Federal Transit Administration (FTA) Grant Program
 - Small Starts
 - Very Small Starts
- **Federal Lands Access Program (FLAP)**



Source: <http://consequenceofsound.net/2009/08/where-we-live-liberty-state-park-jersey-city-nj/>

FEDERAL LANDS ACCESS PROGRAM



- Developed as part of MAP-21
- FLAP is to “improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands”
- \$250M available annually
- Distributed to states/districts based on % of Federal land
 - 80% to states with most Federal Land
 - 20% to remaining 38 states/DC/PR
- **Programming Decisions Committee**
 - Rating, ranking, and prioritization of potentially eligible projects
 - 3 members per state (FHWA, DOT, and designee)

FEDERAL LANDS ACCESS PROGRAM

- **Program still under development**
 - Details and mechanics of the evaluation process
 - Selection of the PDC for New Jersey
 - Creation of an Eastern Federal Lands website
- **Process**
 - Call for eligible projects
 - Projects apply to program in each state
 - Projects are screened and rated by PDC
 - Projects are selected for funding
- **Bottom Line:**
 - FLAP is the best opportunity for Federal funding
 - Competition for funding will be stiff
 - New Jersey's total share will be relatively small (likely <1M annually)
 - Could be used for study or implementation of service



Source: <http://www.used-buses.net/bustypes/img/shuttle-bus-1.jpg>

OTHER POTENTIAL FUNDING SOURCES



- NJDEP
- User fees
- Donation of materials
- Private sponsorship/
advertising
- Not-for-profit

Source: <http://www.jeffcoexpress.org/sponsorship>

IMPLEMENTATION STRATEGY



- Identified funding sources
- Prioritized options based on potential funding
- Determined feasible short- and long-term options
- Did not identify a “preferred” option

IMPLEMENTATION STRATEGY

- **Selection of a lead agency**
 - Preparing grant applications
 - Leading other funding initiatives
 - Studying/planning options
 - Procuring services (operator, design, etc.)
 - Service implementation
- **Timeframes**
 - Very short term
 - Short term
 - Long term



Source: <http://www.gazellesystems.com/blog/bid/117540/Establishing-the-Weekly-Meeting-Habit-at-the-Group-Level>

VERY SHORT TERM STRATEGY (SUMMER 2013)



- Bus option is “shovel-ready”
- Little planning needed
- Operate bus service on Primary Corridor
- Summer weekends and holidays (July 4 to Labor Day)
- Funding: corporate sponsorship, not-for-profit, private donations, etc.

SHORT TERM STRATEGY (2014 AND 2015)

- Apply for FLAP funding
- If no FLAP funds are available:
 - Operate bus service on Primary Corridor
 - Summer weekends and holidays (July 4 to Labor Day)
 - Retain grant coordinator?
 - Funding: corporate sponsorship, not-for-profit, private donations, park user fees, etc.
- If FLAP funds are available (by priority):
 - Expand service to weekdays between April and October and weekends for remainder of year
 - Market/brand service
 - Expand bus service to Secondary Corridor
 - Study rail option



LONG TERM STRATEGY (BEYOND 2016)



- Continue to pursue FLAP funding
- Operate bus service as funding allows
- If funding is available, study rail option
- If significant funding is available, rail option could be implemented

Source: <http://www.smcars.net/forums/attachments/trains/125256d1312904377-trolley-some-kind-hand-propelled-rail-vehicle-trolley.jpg>

DEVELOPMENT OF ROLES

- Oversight/lead agency
- Funding - federal sources/applications
- Funding - state sources/applications
- Funding - donations/fund raising
- Funding - corporate sponsorship
- Implementation/logistics
- Operations/marketing/branding
- Studies

IDENTIFICATION OF RESPONSIBILITIES

- **Select lead agency for oversight**
- **Assign a role to a specific agency(ies)**
 - Requisite skills/resources
 - Willingness to participate
- **Develop regular meeting schedule (quarterly?)**
 - Discuss issues
 - Report progress

NEXT STEPS

- Develop final report
- Continue momentum of study
- Identify a lead agency
- Match roles with responsible parties
- Identify short and longer term funding sources
- Implement bus service in the very short term



Public Comment Period through May 23, 2013

**Please submit written comments to
lsprtransitstudy@gmail.com**

or

**Division of City Planning
30 Montgomery Street, Suite 1400
Jersey City, NJ 07302
Attn: Naomi Hsu**

**Draft Final Report is available for review at:
lsprtransitstudy.com**

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #7 Wednesday, May 22, 2013, 3 PM MINUTES

ATTENDEES:

1. Elizabeth Thompson, North Jersey Transportation Planning Authority
2. Scott Rowe, North Jersey Transportation Planning Authority
3. Jonathan Luk, Liberty State Park
4. Rob Rodriguez, Liberty State Park
5. John Trontis, NJDEP, Division of Parks and Forestry
6. Sam Pesin, Friends of Liberty State Park
7. Bill McKelvey, Liberty Historic Railway
8. Martin Robins, Liberty Historic Railway
9. William Lawson, NJ TRANSIT
10. Lee Klein, Jersey City Engineering
11. Connie Claman, Liberty Science Center
12. Eliza Wright, Friends of Liberty State Park
13. John Hnedak, National Park Service
14. Francesca Giarratana, Hudson County Planning
15. Avnish Gupta, Meadowlink

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Michael Monteleone, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering

MATERIALS DISTRIBUTED TO TAC:

Meeting Agenda

DISCUSSION:

The seventh (and final) meeting of the Technical Advisory Committee (TAC) for the Liberty State Park Circulator Cost-Benefit Analysis was held on Wednesday, May 22, 2013 at 3:00 PM at the Liberty Science Center Tower Conference Room, 222 Jersey City Boulevard, Jersey City, NJ.

Following introductions by all in attendance, Mike Monteleone, the consultant team Project Manager for the study, provided a brief overview of the entire study and stated that the primary purpose of the final TAC meeting was to identify roles of the stakeholders, including a lead agency, to advance the recommendations of the study.

The questions and topics of discussion that came after the presentation were as follows:

John Hnedak stated that, in order to seek funding for implementation, a clear preferred alternative should be selected. Naomi Hsu replied that the proposed strategy is to advance the bus option on the Primary Corridor (between the Liberty State Park Hudson-Bergen Light Rail (HBLR) station and the Central Railroad of NJ (CRRNJ) Terminal) in the short term and potentially proceed with the rail option later.

Martin Robins asked why the language of the draft final report was so negative regarding the use of the NJTPA's Unified Planning Work Program (UPWP) for further funding, when the current study was funded by the UPWP. Scott Rowe replied that a lead agency would need to be identified and noted that, if the City of Jersey City were the lead agency, it would need the full support of NJDEP. He pointed out that only the rail option would need further study and that NJDOT or NJ TRANSIT could potentially serve as the lead agency for such a study because of their experience and expertise with environmental studies. Martin Robins asked that the language in the report be modified to reflect Scott Rowe's comments.

Sam Pesin said that the Friends of Liberty State Park would be against spending any money to study the rail option, as the park is a pastoral setting. He noted that the cost of a rail study could fund a shuttle bus in the park.

John Trontis replied to Mr. Pesin's statement by saying that all identified circulator options should remain on the table. Mr. Trontis noted that rail has a historic connection to the park and said that he thought a trolley could be an attraction in and of itself. He noted that NJDEP's priority is to increase attendance at the park. Mr. Trontis said he does not think a trolley would be detrimental to the park.

Connie Claman agreed with Mr. Trontis that all circulator options should remain on the table. She stated that bus service has its shortcomings in that it is less reliable than a trolley when the park is busy and there is congestion on park roads. One cannot rely on the schedule when the bus is stuck in traffic, which poses a challenge to the Liberty Science Center when marketing its accessibility via transit.

Sam Pesin stated that Kate Sargent (from Sam Schwartz Engineering) said at the second public meeting that the trolley would most likely have the right-of-way when it crosses streets and parking lot entrances. Mike Monteleone said that detail would be worked out in the design phase.

Eliza Wright asked where the storage and maintenance facility for the trolley would be located. Mike Monteleone pointed out the proposed location of the car barn on a map of the park (behind the Liberty Science Center).

Rob Rodriguez stated that Mr. Pesin's concerns about rail are valid and that they could be addressed in a further detailed study of the rail option.

Martin Robins said he was hopeful about the prospects for funding. He feels Liberty State Park is in a good position given its connection to our national heritage and national monuments as well as the number of visitors it receives. He suggested that the City's Congressional representatives be asked to help modify the Federal Lands Access Program (FLAP) to allow flexibility in funding for non-preference states like New Jersey.

Scott Rowe stated that the Federal Highway Administration (FHWA) discourages the submission of applications for design studies until funding for construction is secured.

Martin Robins said that the Federal Transit Authority (FTA) may be a source of funding through its Very Small Starts program and encouraged discussion between the lead agency and the local office of the FTA.

Sam Pesin said that any study must include public outreach and that a preferred option/alternative must have broad public support. Scott Rowe stated that the bus option would not require a formal process as it would be a restoration of a previous service. However, Mr. Rowe said a study of the rail option would require a robust public outreach process. John Hnedak asked if the public was asked to favor one of the four options during this study. In response, Mike Monteleone said that the public was not formally asked to indicate preference for one option over the others.

Avnish Gupta mentioned that Meadowlink operated the Liberty State Park summer bus shuttle service for the Hudson TMA. He said that the request to operate the service would always come last minute and that the service would have been more successful with better marketing. He said that the Meadowlink shuttle bus drivers reported positive feedback from the passengers when they operated the service. Meadowlink has its own drivers and vehicles but would need one to two months of advanced notice to operate a new bus service at the park if requested.

Sam Pesin asked the meeting attendees for their perspectives on who the lead agency should be and where the money could come from. Scott Rowe reiterated that the agencies with the expertise and experience to study the rail option are NJDOT and NJ TRANSIT. Jonathan Luk noted that NJDEP does not have experience in managing or operating a shuttle bus service. John Trontis said that, although NJDEP views a circulator as a priority, they have no staff or resources to dedicate to this effort; their focus is on Hurricane Sandy recovery. John Hnedak indicated that National Park Service would not be able to secure funding. It was noted that the NJDEP concessions law would allow a private operator to operate bus service, but the service would have to be entirely self-funded. Rob Rodriguez said that, when the contract with Statue Cruises comes up for renewal (in approximately 5 years), it may be possible to require the concessionaire to operate a bus service between the HBLR station and the CRRNJ Terminal as a condition of the contract.

John Hnedak noted that NPS would like to shift departures to the Statue of Liberty and Ellis Island from New York to New Jersey.

Scott Rowe stated that, if federal funding were pursued for the rail option, a successful first phase bus operation would make a stronger case than ridership projections alone.

Martin Robins stated that a lot of items discussed would not be resolved at the TAC meeting and suggested that the TAC members reconvene when an entity is prepared to assume the lead role. He said both the bus and trolley options need nurturing, which should begin soon after the conclusion of the current study. He suggested that the City of Jersey City act as the coordinator for this effort. Naomi Hsu said the City could not be the operator of the bus service but could potentially help secure funding and would need to partner with other stakeholders/agencies.

Sam Pesin asked if the State has any plans to improve transit to parks; John Trontis said that NJDEP did not. Mr. Pesin said that he hopes that the new mayor of Jersey City

would take an interest in the park circulator effort. He suggested that the City's economic development agency mobilize the private sector, including hotels and other tourism-related businesses, to fund a circulator.

Mike Monteleone asked if anyone had access to private sponsorships. It was noted that neither NJDEP nor National Park Service can accept corporate sponsorships/donations from businesses that the State regulates. However, the Hudson TMA may be able to solicit corporate sponsorships.

Martin Robins asked if anyone had spoken to Senator Menendez about the study and said that Senator Menendez might have ideas about funding and corporate sponsorships. Nobody was aware of any communication with the Senator about the study.

Sam Pesin suggested that, when the bids are finally released by the NJ Department of Treasury for the park's wetland restoration project, which will open the protected area of the park to visitors, an ecotourism component be marketed that could generate proceeds which could be used to leverage the bus circulator.

There was discussion of convening the Liberty State Park "marketing" group to share the findings of the study. [The membership of the marketing group was invited to attend TAC meeting 7.] It was suggested that the agenda for such a meeting could include both an update of the on-going Hurricane Sandy recovery efforts in the park and presentation of the study's recommendations.

John Trontis commended the project team for "doing a great job on the study and final report and for coordinating the various agencies and balancing the interests of all the stakeholders with passionate but often conflicting views on what is best for the park."

NEXT STEPS:

It was announced that the public comment period for the draft final report would end at 5 PM on May 23, 2013. The final report will be distributed to the TAC on CD in early June.

City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 6
Thursday, April 11, 2013, 1 PM

Agenda

1. Welcome and Introductions
2. Funding Sources
3. Implementation Strategy
4. Technical Memoranda Review
5. Public Meeting
6. Next Steps

LIBERTY STATE PARK CIRCULATOR

Cost-Benefit Analysis



**SAM SCHWARTZ
ENGINEERING**

City of Jersey City
Technical Advisory Committee
Meeting VI

April 11, 2013

WELCOME

- **Introductions**
- **Funding sources**
- **Implementation strategy**
- **Technical memoranda review**
- **Public Meeting**
- **Next Steps**



PAST OPERATING FUNDING



Source: <http://www.destinationnexus.com/Liberty-State-Park-in-Jersey-City-New-Jersey.html>

- **Original #305 Route (2001 – 2010)**
 - NJ TRANSIT
- **Liberty State Park Circulator (Summer 2010)**
 - Hudson TMA and NJ TRANSIT
- **Liberty State Park Circulator (Summer 2011)**
 - Hudson TMA, Friends of LSP, Liberty Landing Marina, and NJ TRANSIT

FEDERAL FUNDING SOURCES

- Sarbanes Transit in Parks Program
- Hurricane Sandy
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program
- National Park Service (NPS)
- Federal Transit Administration (FTA) Grant Program
 - Small Starts
 - Very Small Starts
- **Federal Lands Access Program (FLAP)**



Source: <http://consequenceofsound.net/2009/08/where-we-live-liberty-state-park-jersey-city-nj/>

FEDERAL LANDS ACCESS PROGRAM



- Developed as part of MAP-21
- FLAP is to “improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands”
- \$250M available annually
- Distributed to states/districts based on % of Federal land
 - 80% to states with most Federal Land
 - 20% to remaining 38 states/DC/PR
- **Programming Decisions Committee**
 - Rating, ranking, and prioritization of potentially eligible projects
 - 3 members per state (FHWA, DOT, and designee)

FEDERAL LANDS ACCESS PROGRAM

- **Program still under development**
 - Details and mechanics of the evaluation process
 - Selection of the PDC for New Jersey
 - Creation of an Eastern Federal Lands website
- **Process**
 - Call for eligible projects
 - Projects apply to program in each state
 - Projects are screened and rated by PDC
 - Projects are selected for funding
- **Bottom Line:**
 - FLAP is the best opportunity for Federal funding
 - Competition for funding will be stiff
 - New Jersey's total share will be relatively small (likely <1M annually)



Source: <http://www.used-buses.net/bustypes/img/shuttle-bus-1.jpg>

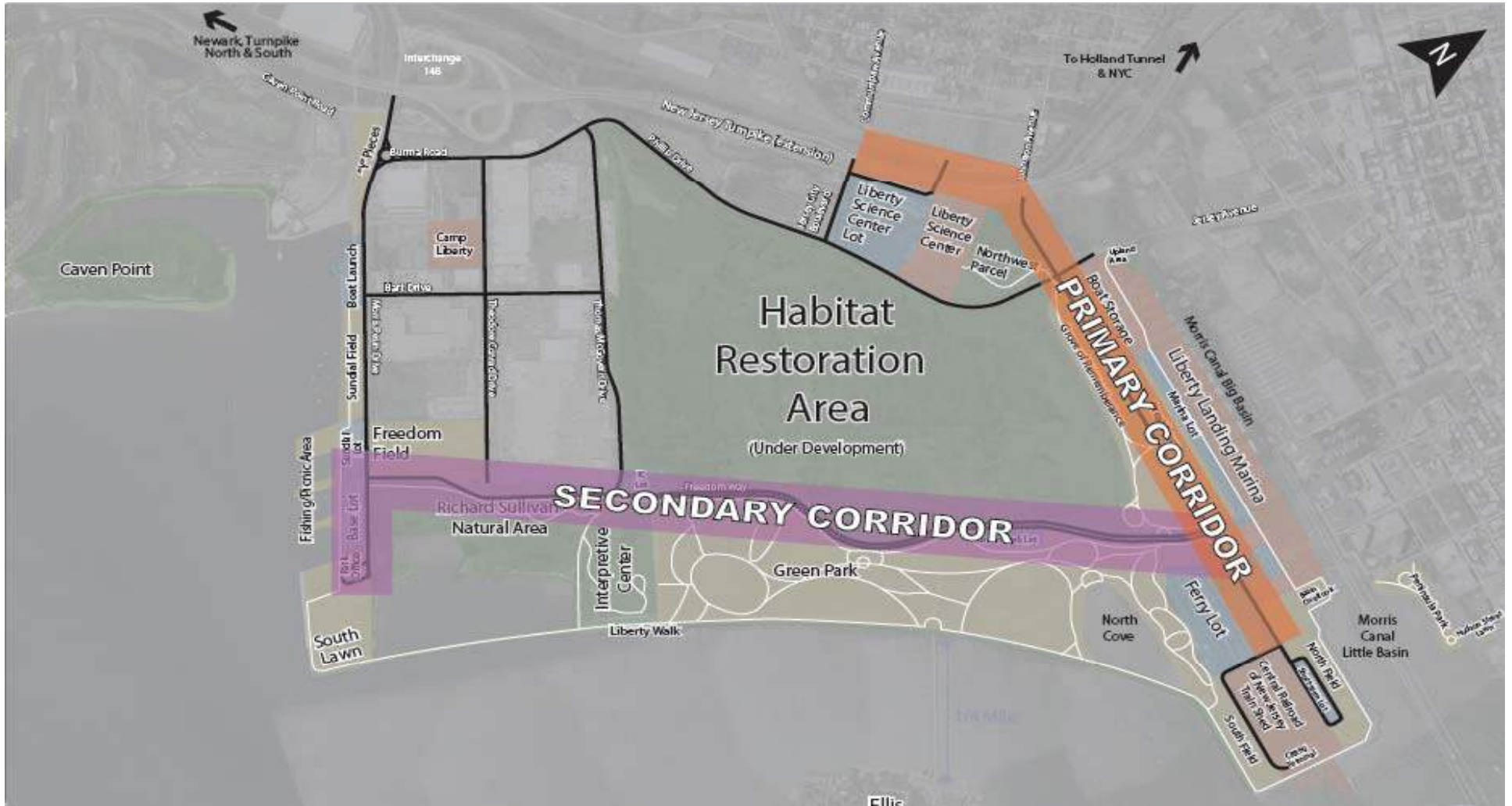
OTHER POTENTIAL FUNDING SOURCES



- NJDEP
- User fees
- Donation of materials
- Private sponsorship/
advertising
- Not-for-profit

Source: <http://www.jeffcoexpress.org/sponsorship>

PROPOSED SERVICE CORRIDORS

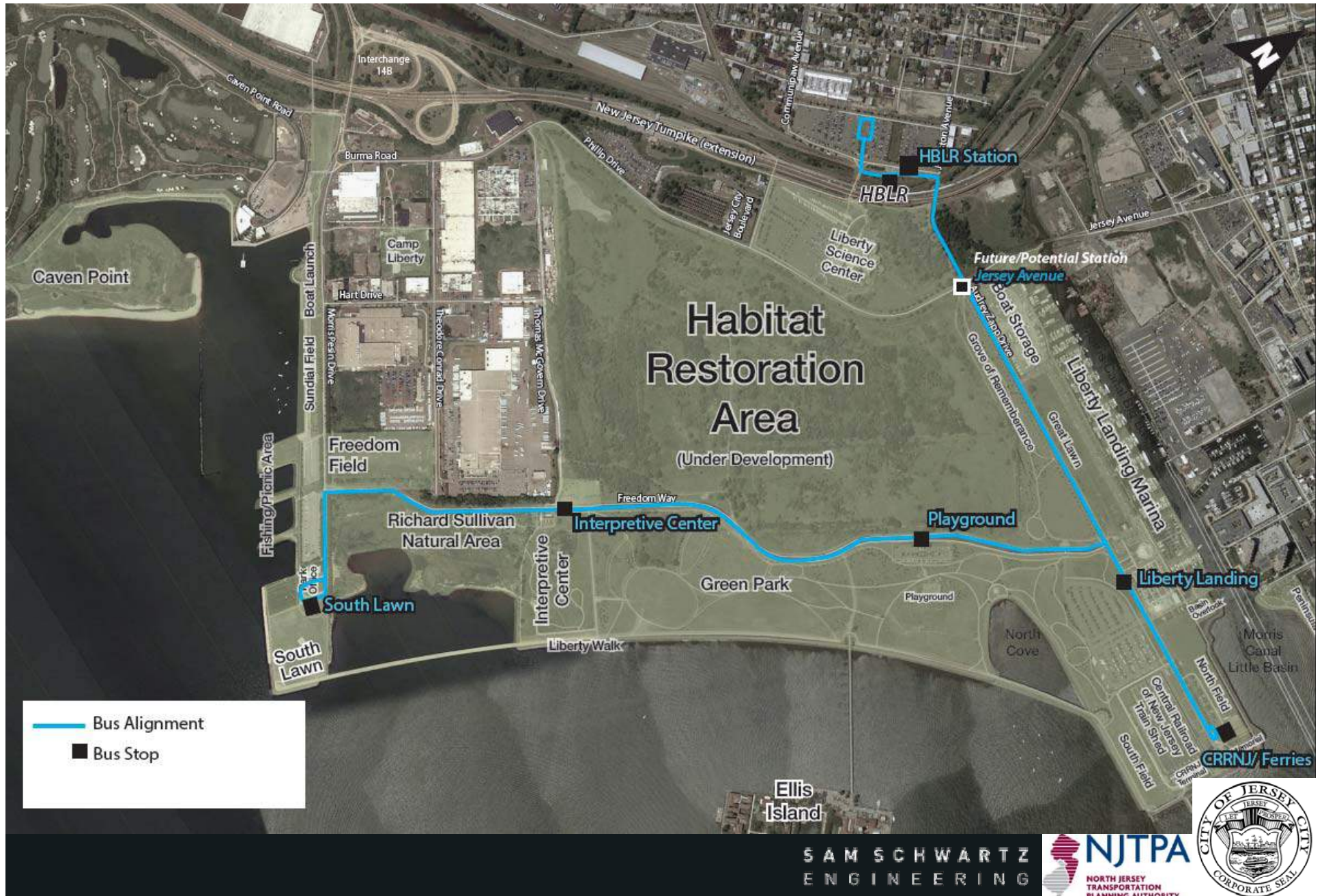


OPTION 1: BUS ON PRIMARY CORRIDOR



— Bus Alignment
 Bus Stop

OPTION 2: BUS ON PRIMARY AND SECONDARY CORRIDORS

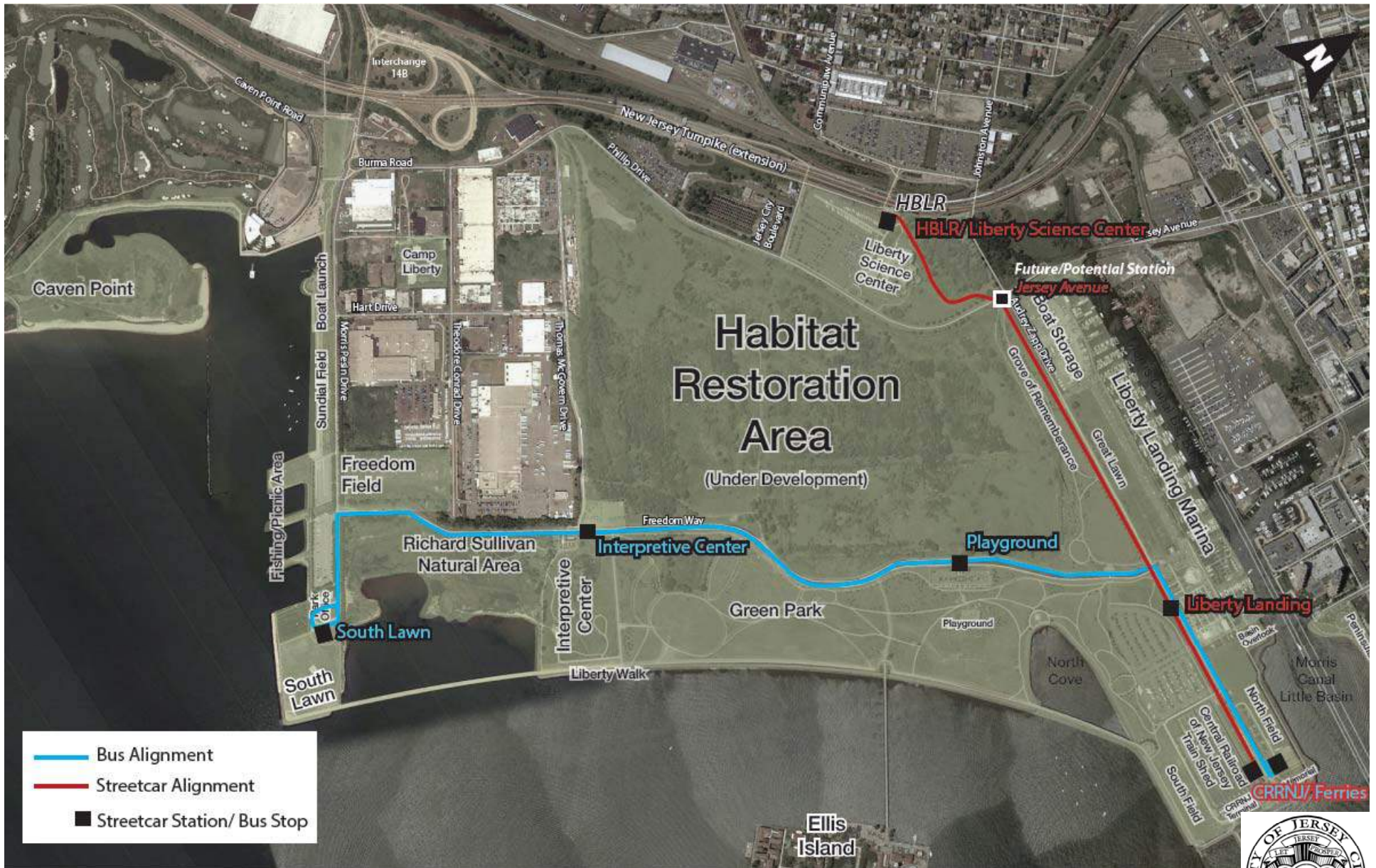


OPTION 3: STREETCAR ON PRIMARY CORRIDOR



— Streetcar Alignment
 Streetcar Station

OPTION 4: STREETCAR/BUS COMBINATION



- Bus Alignment
- Streetcar Alignment
- Streetcar Station/ Bus Stop

IMPLEMENTATION STRATEGY



- Identified funding sources
- Prioritized options based on potential funding
- Determined feasible short- and long-term options
- Did not identify a “preferred” option

IMPLEMENTATION STRATEGY

- **Selection of a lead agency**
 - Preparing grant applications
 - Leading other funding initiatives
 - Studying/planning options
 - Procuring services (operator, design, etc.)
 - Service implementation
- **Timeframes**
 - Very short term
 - Short term
 - Long term



Source: <http://www.gazellesystems.com/blog/bid/117540/Establishing-the-Weekly-Meeting-Habit-at-the-Group-Level>

VERY SHORT TERM STRATEGY (SUMMER 2013)



- Bus option is “shovel-ready”
- Little planning needed
- Operate bus service on Primary Corridor
- Summer weekends and holidays (July 4 to Labor Day)
- Funding: corporate sponsorship, not-for-profit, private donations, etc.

SHORT TERM STRATEGY (2014 AND 2015)

- **Apply for FLAP funding**
- **If no FLAP funds are available:**
 - Operate bus service on Primary Corridor
 - Summer weekends and holidays (July 4 to Labor Day)
 - Retain grant coordinator?
 - Funding: corporate sponsorship, not-for-profit, private donations, park user fees, etc.
- **If FLAP funds are available:**
 - Expand bus service to Secondary Corridor
 - Expand service to weekdays between April and October and weekends for remainder of year
 - Market/brand service



LONG TERM STRATEGY (BEYOND 2016)



- Continue to pursue FLAP funding
- Operate bus service as funding allows
- If funding is available, study rail option
- If significant funding is available, rail option could be implemented

Source: <http://www.smcars.net/forums/attachments/trains/125256d1312904377-trolley-some-kind-hand-propelled-rail-vehicle-trolley.jpg>

TECHNICAL MEMORANDA



Source: <http://massbike.org/blog/2012/03/08/and-the-survey-says/>

- Options for Circulator Service (TM #4)
- Service Option Evaluation (TM #5)
- Implementation (TM #6)

PUBLIC MEETING #2

- To be held on May 9th at Jersey City Council Chambers
- Meeting would cover:
 - Service Option Evaluation
 - Implementation



Source: http://www.huntingtonbeachca.gov/images/users/public_works/Watertownhallmeeting.jpg

NEXT STEPS

- Finalize technical memoranda
- Conduct Public Meeting #2
- Develop Final Report



QUESTIONS AND ANSWERS

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #6 Thursday, April 11, 2013, 1 PM MINUTES

ATTENDEES:

1. Elizabeth Thompson, North Jersey Transportation Planning Authority
3. Jonathan Luk, Liberty State Park
4. Bill McKelvey, Liberty Historic Railway
5. John Trontis, NJDEP, Division of Parks and Forestry
6. Sam Pesin, Friends of Liberty State Park
7. Vinay Varadarajan, NJDOT Capital Investment Planning and Development
8. Martin Robins, Liberty Historic Railway
9. William Lawson, NJ TRANSIT
10. Lee Klein, Jersey City Engineering
11. Connie Claman, Liberty Science Center
12. Eliza Wright, Friends of Liberty State Park
13. Dan Frohwirth, Jersey City Economic Development Corporation
14. Jeff Sasson, Liberty Science Center
15. Dorcey Winant, Friends of Liberty State Park

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering

MATERIALS DISTRIBUTED TO TAC:

Meeting Agenda

DISCUSSION:

The sixth meeting of the Technical Advisory Committee (TAC) for the Liberty State Park Circulator Cost-Benefit Analysis was held on Thursday, April 11, 2013 at 1 PM at the

offices of the Division of City Planning at 30 Montgomery Street in the 14th floor conference room.

Following introductions by all in attendance, the project team made a presentation that focused on potential funding sources and an implementation strategy.

Mike Monteleone described several funding sources, including the discontinued Sarbanes Transit in Parks program, Federal Transit Administration (FTA) Small Starts and Very Small Starts programs, and user fees. However, due to the current economic climate, many of the programs are not well-funded. In some cases, the characteristics of the circulator (e.g., relatively low ridership compared to other transit services in the area, service would be geared to park visitors and not commuters) would make it ineligible or less competitive for funding.

However, Mr. Monteleone noted that perhaps the best potential funding source is the Federal Lands Access Program (FLAP). The goal of FLAP is to “improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands.” The circulator would qualify, since it would provide service to Ellis Island and Liberty Island, which are both under the purview of the National Park Service. As FLAP is a new program, its requirements/guidelines and procedures are still under development. It is anticipated that funding will be allocated to states based on the amount of federal land in each state. Since New Jersey has relatively little federal land (compared to other states in the US), the pot of FLAP money available to projects in NJ is expected to be relatively small and competition will be stiff. Activities eligible for FLAP funding include planning/engineering studies, construction, and operations and maintenance.

In order to implement a circulator service, Mr. Monteleone noted the importance of identifying a lead agency to be a champion of the service, coordinate funding, and procure services. Mr. Monteleone said that, in the very short term, a bus could be operated along the Primary Corridor (Zapp Drive), since it is essentially “shovel-ready” and the lowest-cost option. In the short term, FLAP funding could be sought to implement one of the bus options. If a trolley is to be advanced, funding for engineering/additional study would need to be secured.

The questions and topics of discussion that came after the presentation were as follows:

Sam Pesin asked if park user fees and event fees could be identified as a potential funding source to help pay for weekend circulator bus service. John Trontis responded that park user fees go to general revenue and are not dedicated to park use. He stated that NJDEP has no new capital monies for Liberty State Park (LSP) and their

programmed capital projects have been delayed 5-10 years in the future. All current capital monies are being utilized for Hurricane Sandy recovery efforts. Mr. Trontis also noted that NJDEP is fully behind the concept of getting people to and around the park on transit.

Martin Robins agreed with Mr. Monteleone's statement during the presentation that selection of a lead agency is a critical element of the circulator implementation strategy and that some entity must take ownership of the effort. He suggested the National Park Service (NPS) could be one option for a lead agency as they have a vested interest in utilizing a circulator service to increase visitation to Ellis Island and the Statue of Liberty from New Jersey. He stated that the NPS was greatly affected, and their staff dispersed, by Hurricane Sandy, which was one reason they have not attended recent TAC meetings. However, Mr. Robins thought that it might be a good time to re-start discussions with them now. He recommended that, before the study is completed and momentum is lost, the NPS be given an opportunity to step in as the lead agency.

Mr. Pesin said that NPS could potentially contribute funding for a circulator, especially a bus along the Primary Corridor. Mr. Trontis noted that the recent sequester has also impacted NPS funding.

Mr. Robins commented on the long term implementation strategy presented by Mr. Monteleone. He suggested that, even though on paper the circulator options do not meet many of the criteria of the FTA Small Starts and Very Small Starts funding programs, it could be worthwhile to discuss the circulator with the FTA (and other federal funders) in light of the important purpose and need the circulator would serve. Mr. Robins said that FLAP should include discretionary funds for special projects like the circulator and suggested that the City of Jersey City work with Congressional representatives for revisions to FLAP for incorporation into the next federal transportation bill (due for authorization in 2014). FLAP requires that each state form a selection committee consisting of representatives of the Federal Highway Administration, State DOT, and an appropriate political subdivision of the state. Mr. Robins said that he would like the City of Jersey City to be the third jurisdiction on New Jersey's FLAP committee. Mr. Robins noted that the NJTPA may be a potential funding source for future study, including an alternatives analysis. Mr. Robins said that the most important thing is to maintain the momentum of the study and to advance the study's concepts and recommendations. He noted that the Liberty Historic Railway supports a bus option in the short term but wants to identify resources for further study and engineering work of the rail option.

Mr. Trontis agreed with Mr. Robins' point about maintaining the study's momentum and suggested presenting the findings of the current study to a committee that was organized a few years ago by Josh Osowski, the former Superintendent of LSP, which included representatives from Liberty Landing Water Taxi, Liberty Science Center, and the restaurants and marina. Connie Claman agreed with Mr. Trontis' suggestion, noting that the committee was formed to coordinate the marketing efforts of the various commercial entities in LSP. Ms. Claman also suggested reaching out to Save Ellis Island. Naomi Hsu noted that many of these entities, such as Save Ellis Island and Liberty Landing Marina, were invited to serve on the TAC. While many of them have been unable to attend meetings, they continue to be on the TAC listserve and receive all correspondence to the TAC. However, it was agreed that another TAC meeting could be scheduled; invitations should be extended to all members of the LSP marketing group and an effort should be made to re-engage some TAC organizations, in particular, NPS.

Mr. Pesin said that another group to reach out to is the LSP Public Advisory Committee.

Mr. Monteleone for comments on draft Technical Memoranda 4, 5 and 6.

Bill McKelvey said that the final report should document that the Liberty Science Center is interested in marketing to New York City. Ms. Claman noted that, while this is still true, this effort is now less of a priority.

Mr. Pesin requested clarification on the number of locations where at-grade trolley crossings would require traffic signals. Mr. Monteleone stated that the study cost estimates include two signal locations, one at the intersection of Audrey Zapp Drive and Phillips Street and the other at the intersection of Audrey Zapp Drive and Freedom Way. Mr. Pesin suggested that a third signal would be needed at the entrance/exit to the ferry parking lot on Zapp Drive. Mr. Monteleone said that a third signal would most likely be unnecessary, since the trolley would be travelling at very slow speeds and would operate on a stop-and-proceed basis. Eliza Wright expressed concern about conflicts between the trolley and cars. Dorsey Winant said that the trolley would pose a safety issue because of potential human error by the operator and that the crossings should have gates. Mr. Pesin said that he is concerned that the queue of cars exiting the ferry parking lot would impact the trolley schedule. Mr. Monteleone stated that a warrant study, which is outside the scope of the current study, would determine the need for traffic signals.

Mr. Robins commented on the cost estimates for the trolley options documented by draft Tech Memo 5. He said that the cost estimates should reflect the availability of track to be donated by Liberty Historic Railway at no cost and the potential to rent, instead of purchase, a trolley vehicle.

Bill Lawson requested that the project team identify an alternative to the proposed bus turnaround in the park-and-ride lot across the street from the Liberty Park State HBLR station. Mr. Lawson also suggested that Chattanooga Energy grants could be a potential funding source.

It was announced that the second public meeting would be held on Thursday, May 9, 2013 at City Hall with the same format as the first public meeting - an open house 4:30 PM to 6:30 PM and a formal presentation at 6:30 PM followed by one hour of Q&A. A two-week public comment period will follow the public meeting during which the draft final report will be available for public inspection.

TAC meeting 7 will be held after the second public meeting, perhaps in the evening to facilitate participation by members of the LSP marketing group and current TAC members agencies that have been unable to attend meeting during work hours.

TAC comments on draft Tech Memos 4-6 are due by the end of the day Tuesday, April 23.

NEXT STEPS:

Action Item #	Actionee	Description	Due Date
1	TAC	Review Draft Technical Memoranda 4, 5, and 6.	April 23, 2013
2	SSE	Edit Draft Technical Memoranda 4, 5, and 6 based on TAC comments.	April 30, 2013

City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 5
Tuesday, March 12, 2013, 10 AM

Agenda

1. Welcome and Introductions
2. Overview of Options
3. Ridership Projections
4. Cost Estimation
5. Impacts and Benefits
6. Analysis Summary
7. Next Steps

LIBERTY STATE PARK CIRCULATOR

Cost-Benefit Analysis



SAM SCHWARTZ
ENGINEERING

City of Jersey City
Technical Advisory Committee
Meeting V

March 12, 2013

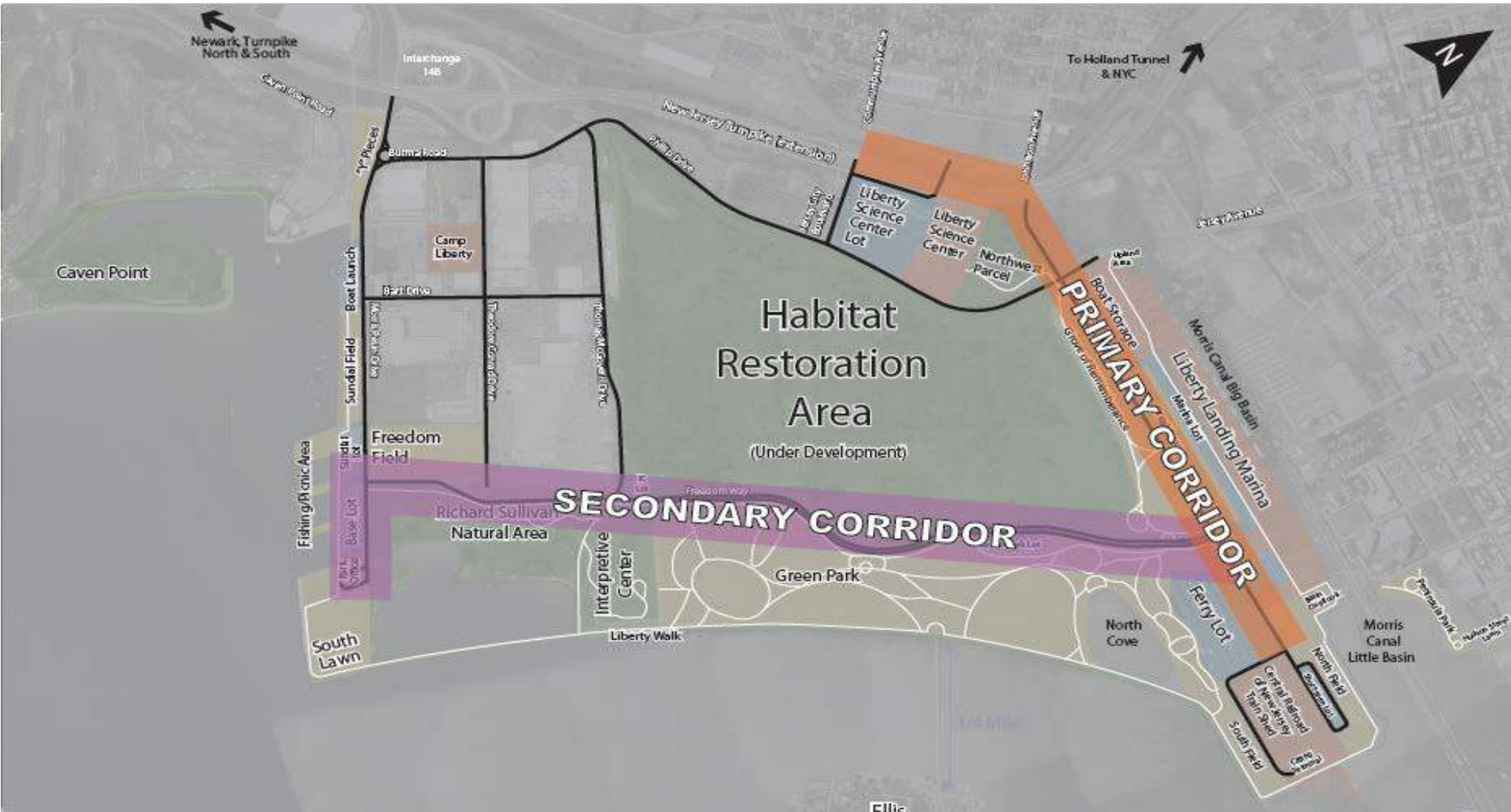
WELCOME

- Introductions
- Overview of options
- Ridership projections
- Cost estimation
- Impacts and benefits
- Analysis summary
- Next steps



Source: <http://www.planetware.com/picture/jersey-city-liberty-state-park-us-nj139.htm>

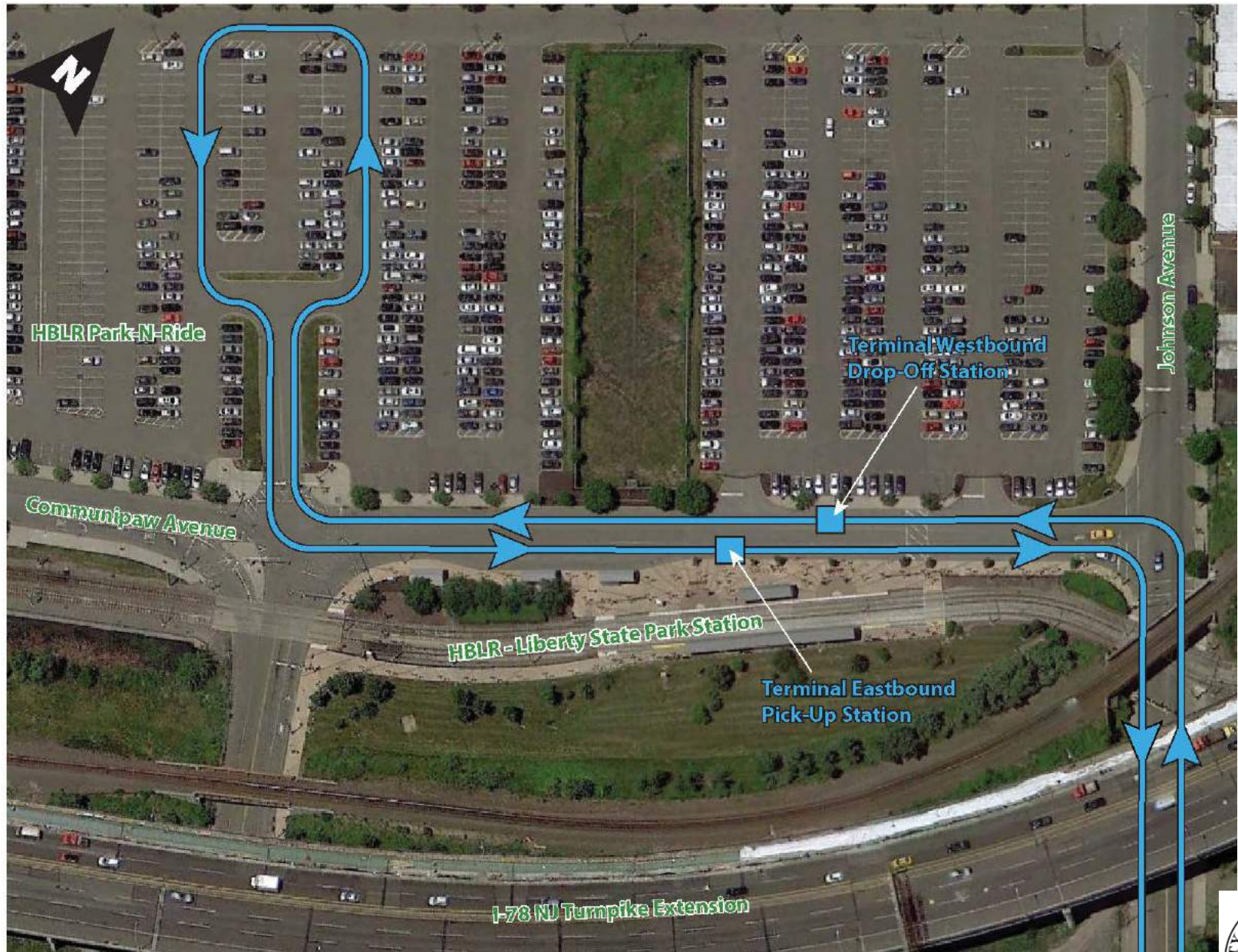
PROPOSED SERVICE CORRIDORS



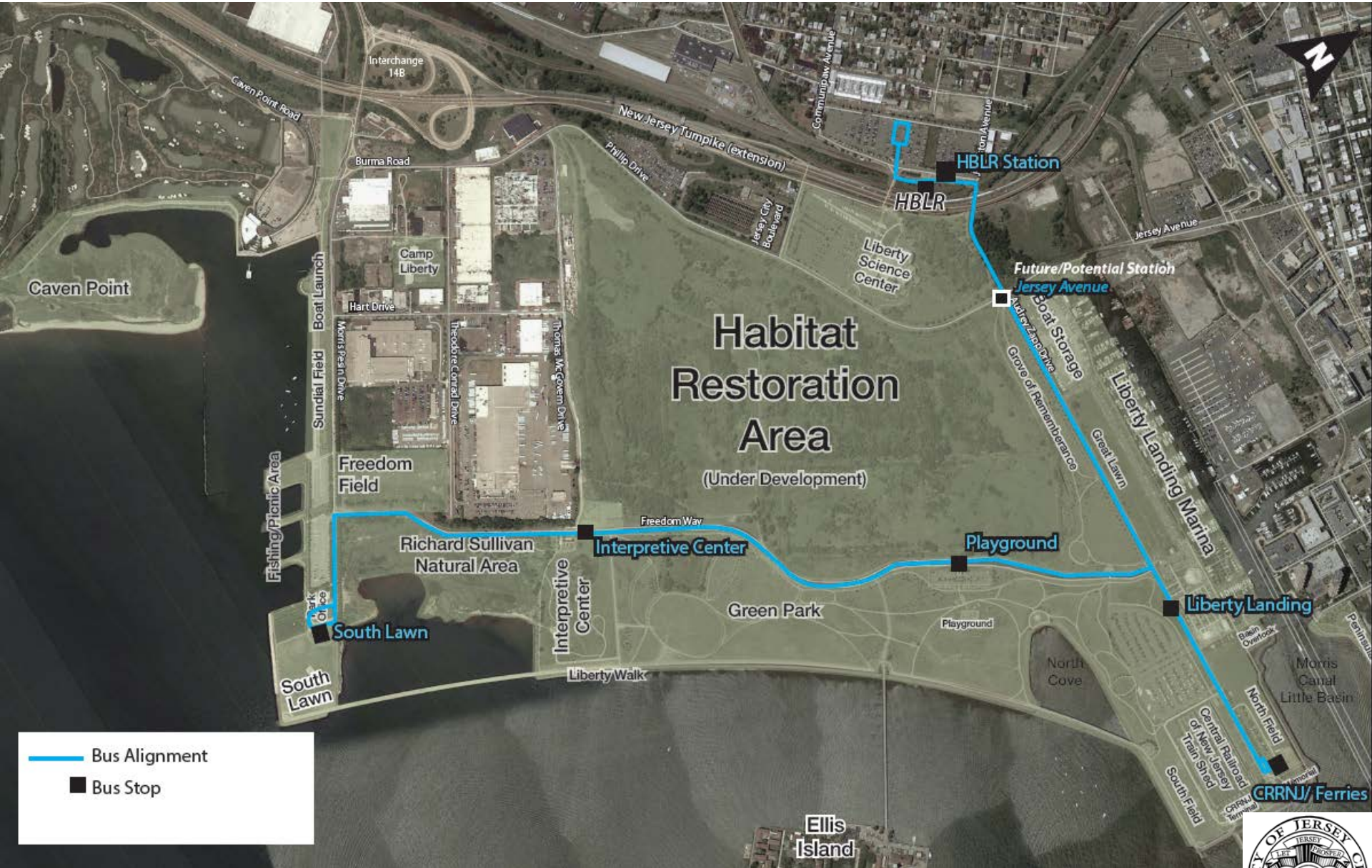
OPTION 1: BUS ON PRIMARY CORRIDOR



OPTION 1: WESTERN TERMINUS



OPTION 2: BUS ON PRIMARY AND SECONDARY CORRIDORS

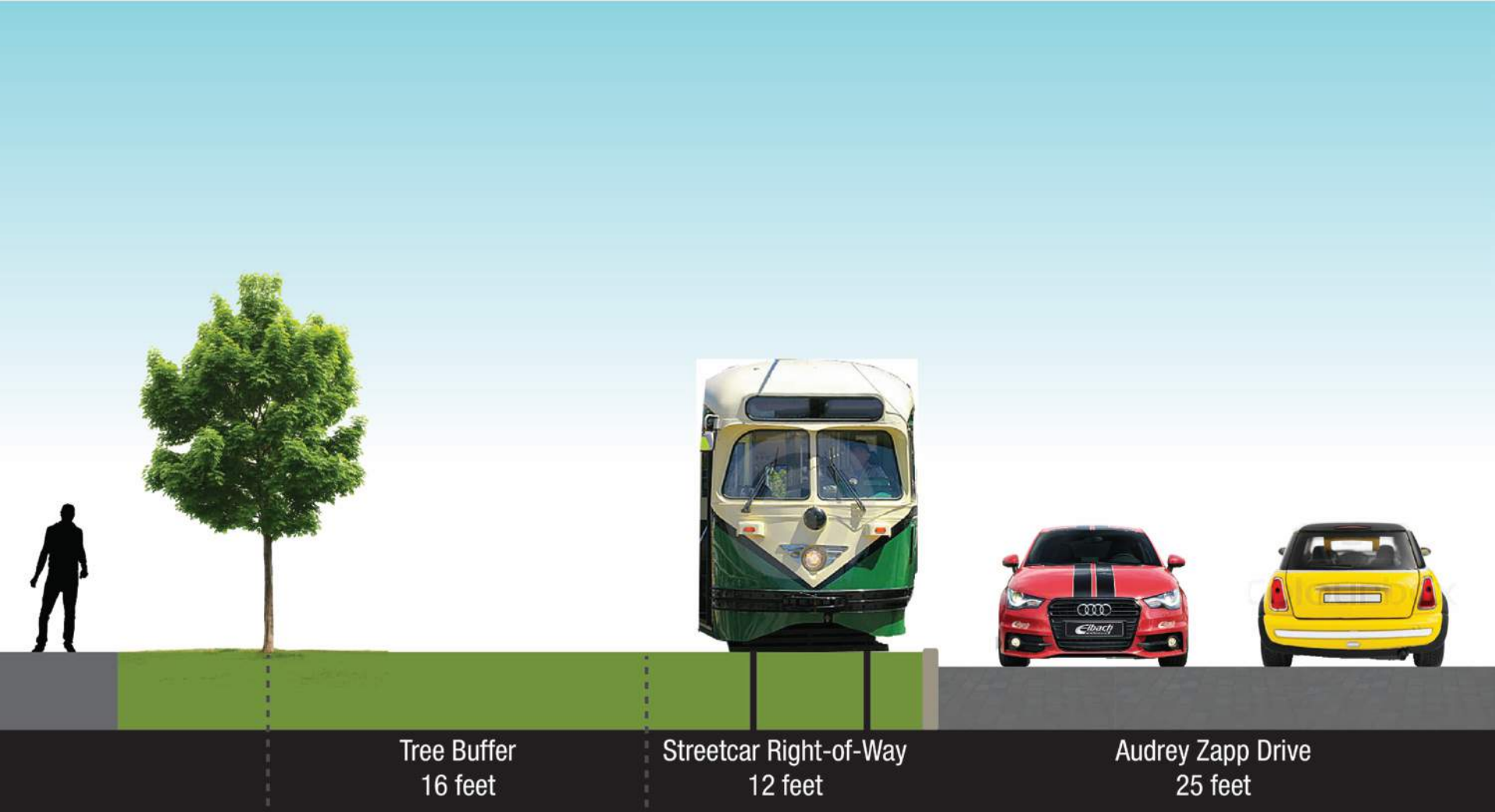


OPTION 3: STREETCAR ON PRIMARY CORRIDOR



— Streetcar Alignment
 Streetcar Station

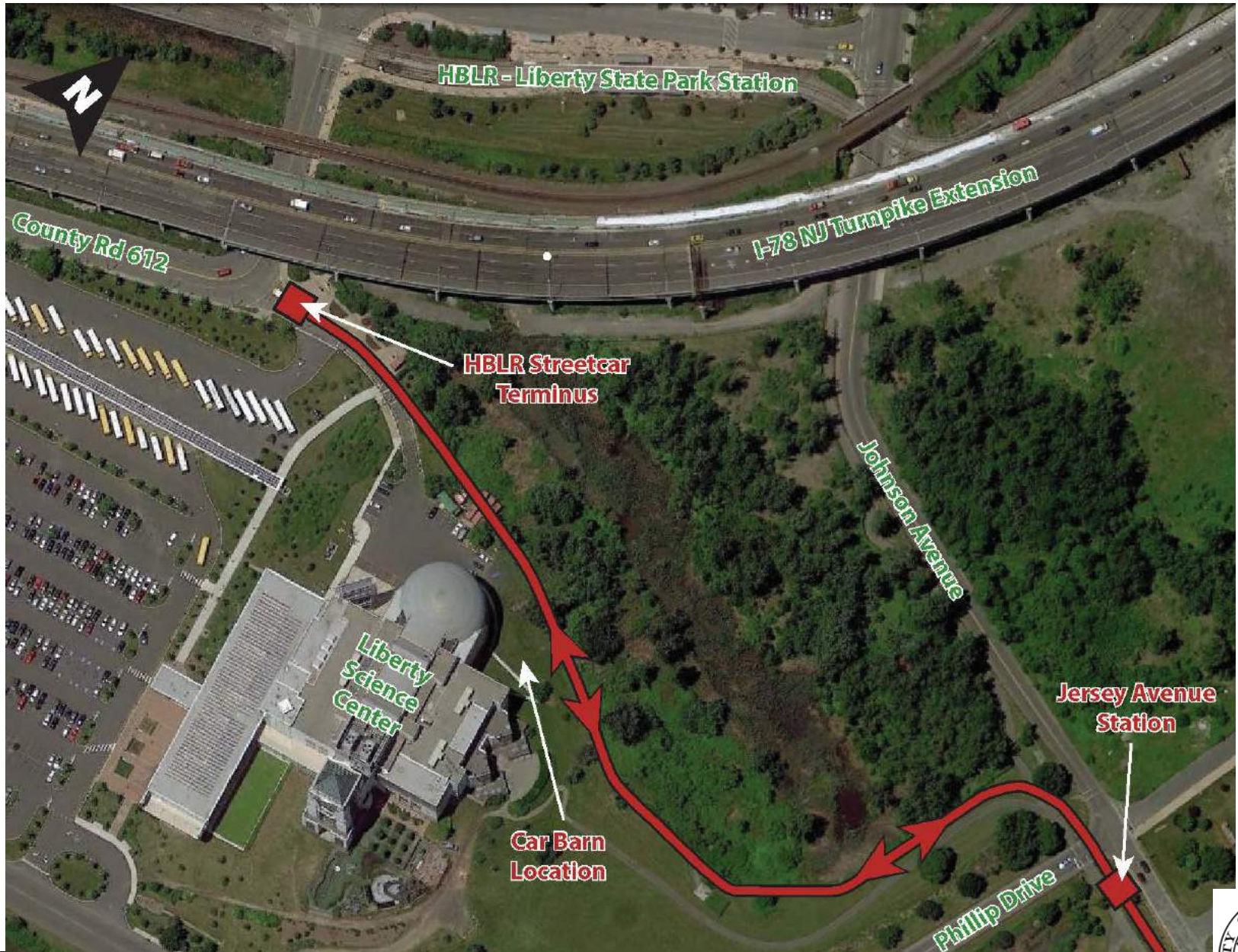
OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



OPTION 3: WESTERN TERMINUS



OPTION 4: STREETCAR/BUS COMBINATION



- Bus Alignment
- Streetcar Alignment
- Streetcar Station/ Bus Stop

ANNUAL RIDERSHIP ESTIMATE: OPTION 1 (BUS ON PRIMARY CORRIDOR)

	2011	2020	2035
Base Ridership (Model Projections)	54,000	75,870	105,750
Ridership Increase from Reduced Waiting Times	31.3%	31.3%	31.3%
Ridership Increase from Improved Service Features	5.3%	5.3%	5.3%
<i>Uniquely Designed Vehicles</i>	<i>1.3%</i>	<i>1.3%</i>	<i>1.3%</i>
<i>Clear Simple Service Plan</i>	<i>1.0%</i>	<i>1.0%</i>	<i>1.0%</i>
<i>Uniquely Designed Shelters</i>	<i>0.5%</i>	<i>0.5%</i>	<i>0.5%</i>
<i>Service Branding (Vehicles. Brochures)</i>	<i>2.5%</i>	<i>2.5%</i>	<i>2.5%</i>
Projected Ridership	73,710	103,563	144,349

ANNUAL RIDERSHIP ESTIMATE: OPTION 2 (BUS ON PRIMARY AND SECONDARY CORRIDORS)

	2011	2020	2035
Base Ridership (Model Projections)	60,000	84,300	117,500
Ridership Increase from Reduced Waiting Times	31.3%	31.3%	31.3%
Ridership Increase from Improved Service Features	5.3%	5.3%	5.3%
<i>Uniquely Designed Vehicles</i>	<i>1.3%</i>	<i>1.3%</i>	<i>1.3%</i>
<i>Clear Simple Service Plan</i>	<i>1.0%</i>	<i>1.0%</i>	<i>1.0%</i>
<i>Uniquely Designed Shelters</i>	<i>0.5%</i>	<i>0.5%</i>	<i>0.5%</i>
<i>Service Branding (Vehicles. Brochures)</i>	<i>2.5%</i>	<i>2.5%</i>	<i>2.5%</i>
Projected Ridership	81,900	115,070	160,388

ANNUAL RIDERSHIP ESTIMATE: OPTION 3 (STREETCAR ON PRIMARY CORRIDOR)

	2011	2020	2035
Base Ridership (Model Projections)	54,000	75,870	105,750
Ridership Increase from Reduced Waiting Times	31.3%	31.3%	31.3%
Ridership Increase from Improved Service Features	10.3%	10.3%	10.3%
<i>Dedicated Right-of-Way</i>	3.8%	3.8%	3.8%
<i>Level Boarding</i>	1.3%	1.3%	1.3%
<i>Uniquely Designed Vehicles</i>	1.3%	1.3%	1.3%
<i>Clear Simple Service Plan</i>	1.0%	1.0%	1.0%
<i>Uniquely Designed Shelters</i>	0.5%	0.5%	0.5%
<i>Service Branding (Vehicles. Brochures)</i>	2.5%	2.5%	2.5%
Streetcar Novelty Factor	10.0%	10.0%	10.0%
Projected Ridership	84,051	118,092	164,600

ANNUAL RIDERSHIP ESTIMATE: OPTION 4 (STREETCAR/BUS COMBINATION)

	2011		2020		2035	
Base Ridership (Model Projections)	60,000		84,300		117,500	
<i>Corridor Portion</i>	<i>Primary</i>	<i>Secondary</i>	<i>Primary</i>	<i>Secondary</i>	<i>Primary</i>	<i>Secondary</i>
Ridership Increase from reduced Waiting Times	31.3%	12.5%	31.3%	12.5%	31.3%	12.5%
Ridership Increase from Improved Service Features	10.3%	5.3%	10.3%	5.3%	10.3%	5.3%
<i>Dedicated Right-of-Way</i>	3.8%	--	3.8%	--	3.8%	--
<i>Level Boarding</i>	1.3%	--	1.3%	--	1.3%	--
<i>Uniquely Designed Vehicles</i>	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
<i>Clear Simple Service Plan</i>	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
<i>Uniquely Designed Shelters</i>	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
<i>Service Branding (Vehicles, Brochures)</i>	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Streetcar Novelty Factor	10.0%	--	10.0%	--	10.0%	--
Projected Ridership	90,991		127,842		178,191	

COST ESTIMATE: OPTION 1 (BUS ON PRIMARY CORRIDOR)

Capital Costs	Total Cost
Bus Shelters	\$45,000
Passenger Information/Wayfinding	\$9,750
Estimate	\$54,750
Contingency - Design and Construction (30%)	\$16,425
Total	\$71,175

Annual Operating & Maintenance Costs	Total Cost
Operations & Maintenance per Vehicle	\$450,000
Total	\$450,000

COST ESTIMATE:

OPTION 2 (BUS ON PRIMARY AND SECONDARY CORRIDORS)

Capital Costs	Total Cost
Bus Shelters	\$90,000
Passenger Information/Wayfinding	\$9,750
Estimate	\$90,000
Contingency - Design and Construction (30%)	\$27,000
Total	\$117,000

Annual Operating & Maintenance Costs	Total Cost
Operations & Maintenance per Vehicle	\$900,000
Total	\$900,000

COST ESTIMATE: OPTION 3 (STREETCAR ON PRIMARY CORRIDOR)

Capital Costs	Total Cost (Low)	Total Cost (High)
Replica Streetcar	---	\$1,400,000
Historic Streetcar (donated)	\$0	---
Retrofit of Historic Car for Battery/Hydrogen Power	\$875,000	---
Car Barn, Pit	\$200,000	\$200,000
Maintenance Equipment (donated)	\$0	\$0
Track (donated)	\$0	\$0
Embedded Track (incl. installation)	---	\$2,479,736
Track Installation (for donated track)	\$277,680	---
Earth Work	\$25,000	\$25,000
Ballast Work	\$17,655	\$17,655
Sub-ballast Work	\$4,044	\$4,044
Tree Relocation	\$16,000	\$16,000
Path Relocation	\$50,000	\$50,000
Grade Crossing (with new signal)	\$500,000	\$500,000
Grade Crossing (stop-controlled)	\$5,500	\$5,500
Hydrogen Fuel Production Plant	\$200,000	\$200,000
Fueling Equipment/Dispenser (High)	---	\$500,000
Fueling Equipment/Dispenser (Low)	\$100,000	---
Rail Stations (High)	---	\$750,000
Rail Stations (Low)	\$151,200	---
Passenger Information/Wayfinding	\$9,750	\$9,750
Estimate	\$2,431,829	\$6,157,685
Contingency - Design and Construction (30%)	\$729,549	\$1,847,305
Total	\$3,161,377	\$8,004,990

Annual Operating & Maintenance Costs	Total Cost
Operations & Maintenance (Streetcar)	\$322,560
Maintenance of ROW (Streetcar)	\$247,974
Hydrogen Fuel Production	\$9,375
Replacement Bus Service for Streetcar Breakdowns	\$60,000
Total	\$639,909

COST ESTIMATE: OPTION 4 (STREETCAR/BUS COMBINATION)

Capital Costs	Total Cost (Low)	Total Cost (High)
Replica Streetcar	---	\$1,400,000
Historic Streetcar (donated)	---	---
Retrofit of Historic Car for Battery/Hydrogen Power	\$875,000	---
Car Barn, Pit	\$200,000	\$200,000
Maintenance Equipment (donated)	\$0	\$0
Track (donated)	\$0	\$0
Embedded Track (incl. installation)	---	\$2,479,736
Track Installation (for donated track)	\$277,680	---
Earth Work	\$25,000	\$25,000
Ballast Work	\$17,655	\$17,655
Sub-ballast Work	\$4,044	\$4,044
Tree Relocation	\$16,000	\$16,000
Path Relocation	\$50,000	\$50,000
Grade Crossing (with new signal)	\$500,000	\$500,000
Grade Crossing (stop-controlled)	\$5,500	\$5,500
Hydrogen Fuel Production Plant	\$200,000	\$200,000
Fueling Equipment/Dispenser (High)	---	\$500,000
Fueling Equipment/Dispenser (Low)	\$100,000	---
Bus Shelters	\$75,000	\$75,000
Rail Stations (High)	---	\$750,000
Rail Stations (Low)	\$151,200	---
Passenger Information/Wayfinding	\$9,750	\$9,750
Estimate	\$2,506,829	\$6,232,685
Contingency - Design and Construction (30%)	\$752,049	\$1,869,805
Total	\$3,258,877	\$8,102,490

Annual Operating & Maintenance Costs	Total Cost
Operations & Maintenance per Vehicle (Bus)	\$450,000
Operations & Maintenance (Streetcar)	\$322,560
Maintenance of ROW (Streetcar)	\$247,974
Hydrogen Fuel Production	\$9,375
Replacement Bus Service for Streetcar Breakdowns	\$60,000
Total	\$1,089,909

QUALITATIVE ANALYSIS OF IMPACTS

- **Air/Emissions**
- **Noise**
- **Wetlands**
- **Visual**
- **Historic Resources**
- **Contaminated Soil**
- **Vegetation/Open Space**
- **Pedestrians/Vehicles**

BENEFITS AND POTENTIAL IMPACTS: OPTION 1 (BUS ON PRIMARY CORRIDOR)

- **Benefits:**

- Lowest cost, no significant infrastructure needed
- Quick start-up
- Captures 90% of previous transit trips
- Can easily change vehicle sizes over time based on demand

- **Impacts:**

- May be some local emissions, depending on vehicle used
- May be some engine noise, depending on vehicle used
- Only impact to vegetation/open space may be for placement of some bus shelters
- No issues with wetlands, visual, contaminated soil, historic resources or pedestrians/vehicles

BENEFITS AND POTENTIAL IMPACTS: OPTION 2 (BUS ON PRIMARY AND SECONDARY CORRIDORS)

- **Benefits:**

- Second lowest cost, no significant infrastructure needed
- Quick start-up
- Serves both park corridors
- Can easily change vehicle sizes over time based on demand

- **Impacts:**

- May be some local emissions, depending on vehicle used
- May be some engine noise, depending on vehicle used
- Only impact to vegetation/open space may be for placement of some bus shelters
- No issues with wetlands, visual, contaminated soil, historic resources or pedestrians/vehicles

BENEFITS AND POTENTIAL IMPACTS: OPTION 3 (STREETCAR ON PRIMARY CORRIDOR)

- **Benefits:**

- Captures 90% of previous transit ridership
- Captures additional ridership interested in historic streetcar
- Achieves a sense of “permanence”
- Could begin with bus service during construction of streetcar
- Hydrogen fuel cell technology could be basis for LSC collaboration

- **Impacts:**

- Minimal noise from engine and bell chiming
- Would not traverse historic cobblestone street
- Alignment may need to be slightly built up to avoid contaminated soil with ballast work
- Would affect up to eight trees and station placement but no programmed open space
- Two grade crossings, one parking lot crossing
- No issues with wetlands or visual

BENEFITS AND POTENTIAL IMPACTS: OPTION 4 (STREETCAR/BUS COMBINATION)

- **Benefits:**

- Serves both park corridors
- Captures additional ridership interested in historic streetcar
- Achieves a sense of “permanence” on primary corridor
- Can easily change vehicle size on secondary corridor
- Could begin with bus service on full corridor during construction of streetcar segment
- Hydrogen fuel cell technology could be basis for LSC collaboration

- **Impacts:**

- May be some local emissions from bus segment
- Minimal noise from engines and bell chiming
- Would not traverse historic cobblestone street
- Streetcar alignment may need to be slightly built up to avoid contaminated soil with ballast work
- Would affect up to eight trees on streetcar alignment and station/stop placement but no programmed open space
- Two streetcar grade crossings, one parking lot crossing
- No issues with wetlands or visual

ANALYSIS SUMMARY

	Option 1: Bus on Primary Corridor	Option 2: Bus on Primary and Secondary Corridors	Option 3: Streetcar on Primary Corridor	Option 4: Streetcar/Bus Combination
Capital Costs	\$71,175	\$117,000	\$3,161,377 - \$8,004,990	\$3,258,877 - \$8,102,490
Annual Operations/ Maintenance Cost	\$450,000	\$900,000	\$639,909	\$1,089,909
First-Year Ridership	73,710	81,900	84,051	90,991

- **Bus service has quick start-up and vehicle size flexibility**
- **Streetcar achieves sense of “permanence”**
- **Minimal park impacts for all options based on initial review**
- **Streetcar presents additional opportunities for LSC collaboration**

NEXT STEPS

- **Incorporate Feedback**
- **Implementation Plan and Funding Assessment**
- **Public Meeting**
- **Final Report**

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #5 Tuesday, March 12, 2013, 10 AM MINUTES

ATTENDEES:

1. Scott Rowe, North Jersey Transportation Planning Authority
2. Elizabeth Thompson, North Jersey Transportation Planning Authority
3. Jonathan Luk, Liberty State Park
4. Bill McKelvey, Liberty Historic Railway
5. John Trontis, NJDEP, Division of Parks and Forestry
6. Sam Pesin, Friends of Liberty State Park
7. Vinay Varadarajan, NJDOT, Capital Investment Planning and Development
8. Martin Robins, Liberty Historic Railway
9. Jeremy Colangelo, NJ TRANSIT
10. Chuck Lee, Jersey City Division of Engineering
11. Maryann Bucci-Carter, Jersey City Division of City Planning

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering
Kate Sargent, Sam Schwartz Engineering

MATERIALS DISTRIBUTED TO TAC:

Meeting Agenda

DISCUSSION:

The fifth meeting of the Technical Advisory Committee (TAC) for the Liberty State Park Circulator Cost-Benefit Analysis was held on Tuesday, March 12, 2013 at 10 AM at the offices of the Division of City Planning at 30 Montgomery Street in the 14th floor conference room.

Following introductions by all in attendance, the project team made a presentation that focused on the costs and benefits of the four options for a potential circulator to serve destinations in Liberty State Park. Mike Monteleone asked that TAC members hold comments and questions until the end of the presentation as a lot of information would be provided and some questions may be answered by the presentation.

Mr. Monteleone described the service assumptions (including routing, stations) for the four retained options for circulator service:

1. Bus service between Hudson-Bergen Light Rail (HBLR) station and CRRNJ Terminal only
2. Bus service for both proposed segments (Zapp corridor and Freedom Way corridor)
3. Historic/replica streetcar between HBLR and CRRNJ Terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ Terminal and bus for other segment along Freedom Way

The project team assumed that all options would operate on a 15-minute headway. From April through October, it was assumed that service would operate seven days a week from 7 AM to 9 PM April and, from November through March, service would operate during weekends only from 7 AM to 7 PM. The project team assumed that bus service would be contracted to an independent bus operator; \$450,000 per year should cover the cost for an electric vehicle. Also, it was assumed that, should a bus break down, the contracted service provider could swap out the disabled vehicle with an operational bus with minimal interruption in service. Streetcar options were assumed to be double-ended, hybrid electric vehicles with a hydrogen fuel cell to allow for operations for 14 hours continuously and overnight recharging.

Mr. Monteleone walked the TAC through projected ridership for each option. He explained that the output from the travel demand model was used as a baseline. The baseline ridership for each option was adjusted upwards to account for various service improvements. For example, it was assumed that reduced waiting times would increase ridership along the primary corridor (Zapp Drive) by 31.3%. It was noted that Technical Memorandum 5 will include sources for all assumptions used in the ridership refinement.

Kate Sargent presented the cost estimates for the four options, including capital costs and operating and maintenance costs. For the two options that include streetcars, the project team developed low and high cost estimates. All cost estimates include a 30%

contingency. Ms. Sargent also described the benefits and potential impacts of each option, including:

- Air/Emissions
- Noise
- Wetlands
- Visual
- Historic Resources
- Contaminated Soil
- Vegetation/Open Space
- Pedestrians/Vehicles

During the presentation, TAC members asked for clarification on the streetcar alignment and cross-section dimensions, locations of bus stops, and description of hydrogen fuel cell technology. Jonathan Luk suggested that open space should be described as “programmed” rather than “active”.

The questions and topics of discussion that came after the presentation were as follows:

Martin Robins asked if it was possible to determine if Liberty Historic Railway’s rail is suitable for use, as the difference between the low and high streetcar estimates is approximately \$5 million. (The low cost estimates for streetcar options assumed that some of the materials would be donated by Liberty Historic Railway.) It was agreed that an outside expert would have to make that determination, which is outside the scope of the study. Mr. Robins suggested that someone from Liberty Historic Railway may be able to coordinate that evaluation.

Martin Robins asked if the project team had taken into consideration that the cobblestones on Zapp Drive may detract from the passenger comfort of bus riders. Mr. Monteleone replied that the projected ridership was based on the ridership of the Hudson TMA shuttle, which operated along Zapp Drive. Therefore, the impact of riding on the cobblestone roadway was factored into the baseline ridership.

Martin Robins suggested that the project team’s assumption that a 10% increase in ridership could be expected for the streetcar options over the bus options due to the novelty of historic streetcars might be conservative considering the San Francisco experience of a 40% increase in ridership following conversion of the F line from a bus

route to historic streetcar. The project team acknowledged that 10% could be conservative but was not comfortable with a more aggressive assumption due to the lack of examples that are specifically comparable to the potential Liberty State Park service. Mr. Robins requested that Technical Memorandum 5 indicate that the 10% assumption could be very conservative considering the San Francisco example.

Jeremy Colangelo requested that Technical Memorandum 5 include citations for the factors assumed for the ridership projections. Mr. Colangelo also asked for clarification on the routing at both ends of the streetcar option along the Zapp Drive corridor.

John Trontis asked for clarification on the location of the carbarn, where the potential streetcar would be maintained and stored. The carbarn would be located behind the Liberty Science Center.

Scott Rowe asked if any costs were included for streetscape/pedestrian improvements between the Liberty State Park HBLR station and the nearby potential streetcar station. The project team replied that no costs were included for these types of improvements.

Vinay Varadarajan asked where the streetcars would be maintained. The project team responded that the maintenance would be performed at the on-site carbarn, and it would not be necessary to move the cars to off-site maintenance locations.

Chuck Lee asked if there was any conflict between the potential streetcar alignment and the proposed re-alignment of the S-curve of the HBLR tracks under the Turnpike Extension. The project team replied that there would not be a conflict. Mr. Colangelo noted that NJ TRANSIT has no immediate plans to re-align this segment of the HBLR due to its high cost.

Also, Mr. Lee stated that the City will be moving ahead with the Jersey Avenue Extension project which could include a new signalized intersection at Audrey Zapp Drive and Phillip Drive. This intersection would be raised above the new FEMA floodplain level. It is not known at the moment if a signal is warranted.

Sam Pesin said that a streetcar on the Zapp Drive corridor would disturb those walking in and near the Grove of Remembrance just south of Zapp Drive. Also, he stated that the proximity of the streetcar to Millennium Park (a six-acre, grassy area between the Grove of Remembrance and Freedom Way) would interfere with the passive and active recreational uses there.

Sam Pesin voiced his concern over the streetcar crossing of Freedom Way, the entrance to the Ferry Parking Lot, and the driveway to the display track on the north side of the CRRNJ Terminal. He said that the streetcar operation along the Zapp corridor would create a safety hazard for pedestrians crossing Zapp Drive between the parking lot and the new Liberty House snack bar. In response, John Trontis and the project team said that the streetcar would not create major safety concerns, because the streetcar would operate at low speeds (15 MPH), would have plenty of site distance, and would be able to stop/yield to traffic or pedestrians as necessary.

Sam Pesin stated that the Friends of Liberty State Park (FOLSP) oppose sacrificing any open space to the streetcar options. He said it is wrong to justify the streetcar for the sake of tourism, because the additional visitors projected to be generated by the streetcar options would not have a significant impact on the local economy. FOLSP also opposes any noise impacts.

John Trontis commented that all four options under consideration meet DEP's goal of providing maximum accessibility for park visitors with minimal impact on the park.

Bill McKelvey said he thought the overall transit ridership projections were conservatively low considering that they represent only 1-2% of total park visitation and that gas prices are only going to increase in the future. Conversely, Elizabeth Thompson noted that the underlying ridership projections showed aggressive growth in the future years. The project team replied that the projected growth in ridership was predominantly due to the anticipated increase in redevelopment in the park's vicinity.

Martin Robins asked if the project team will contact FTA to discuss the project's eligibility for the Small Starts program. The project team answered affirmatively. Mr. Robins also suggested the possibility of synergy with the new Federal Lands program and further suggested to Jersey City that the City or Hudson County explore ways to be included on the state's committee for that program, which is currently being formed.

NEXT STEPS:

<i>Action Item #</i>	<i>Actionee</i>	<i>Description</i>	<i>Due Date</i>
1	SSE	Edit language in PowerPoint to refer to “programmable” open space rather than “active” open space.	March 12, 2013
2	SSE	Incorporate TAC feedback into technical memorandum, as appropriate.	March 2013

It was announced that the next TAC meeting will be held mid April 2013 and that the second Public Meeting will be held late April.

City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 4
Thursday, December 13, 2012, 10 AM

Agenda

1. Welcome and Introductions
2. Future Conditions/ Forecast Model Output Report
3. Purpose and Need Report
4. Concept Development - Options for Circulator Service
5. Q+A
6. Public Meeting
7. Project Schedule and Next Meeting

LIBERTY STATE PARK CIRCULATOR

Cost Benefit Analysis



**SAM SCHWARTZ
ENGINEERING**

City of Jersey City
Technical Advisory Committee
Meeting IV

December 13, 2012

CONCEPT DEVELOPMENT AND SCREENING

1. **“No build” option**
2. **Previous shuttle bus service**
3. **Primary attractions for LSP circulator riders, proposed service corridors**
4. **Potential service vehicles**
5. **Preliminary service guidelines**
6. **Proposed options for evaluation**

“NO BUILD” OPTION

- **Does not meet purpose and need of project:**
 - **Social-based need for transit**
 - **Demand for transit service within the park**
 - **Reduce auto travel within the park**
 - **Support tourism and transit connectivity with the ferry to monuments**

PREVIOUS LSP SHUTTLE ROUTES

- **Operated for 11 years:**
 - Jan, 2001 – May, 2010 (NJT)
 - June – Sept, 2010, May – Sept, 2011 (Hudson TMA)
- **Connected HBLR and:**
 - Liberty Science Center
 - Ferry Terminal
 - Liberty Landing Marina
 - CRRNJ Terminal
 - Liberty State Park Office/ Welcome Center
- **In 2003, service converted to weekends only January through March; daily at all other times.**
- **30 – 40 minute headways**
- **\$1.00 cash fare for unlimited daily rides (most of its existence)**



Source: http://www.nj.com/hudson/index.ssf/2010/05/liberty_state_park_shuttle_a_v.html

PREVIOUS LSP SHUTTLE RIDERSHIP BY STOP



SHUTTLE STOP	AVERAGE DAILY RIDERSHIP
HBLR	127 (43%)
Liberty Science Center	20 (7%)
Restaurants	9 (3%)
Historic Terminals/Ferry	109 (37%)
Playground/Green Park	5 (2%)
Interpretive Center	1 (<1%)
Park Office Visitor's Center	23 (8%)
Liberty Park Café	2 (<1%)

75% of trips linked to HBLR,
25% intra-park

NOTE: Ridership numbers are for the May through August, 2011 TMA weekend service and include all stop-level boarding and alighting activity.

PERCENTAGE RIDERSHIP BY CORRIDOR



PRIMARY ACTIVITY CENTERS



© 2012 Google

©2010 GO

SAM SCHWARTZ
ENGINEERING

LIBERTY SCIENCE CENTER



- More than 1 million annual visitors, including many school groups
- 7% of ridership on previous shuttle
- 77% arrived by car on weekdays (89% on weekends)
- 23% of visitors come from New York State on weekdays (25% on weekends)
- Previous LSP shuttle not marketed as a way for New Yorkers to visit LSC via Liberty Landing ferry
- LSC proposes targeted shuttle/ferry advertising for New York visitors

CRRNJ TERMINAL/FERRY LANDING



- **37% of ridership on previous shuttle service**
- **Historic building and train shed, LSP 9/11 Memorial, ferry to monuments**
- **Hub of activity within the park, on corridor of heaviest ridership for previous shuttle**

PLAYGROUND/GREEN PARK



- **Playground is primary purpose of LSP visitation for 2 - 4% of survey responses**
- **Playground is secondary purpose of LSP visitation for 4 – 5% of survey responses**
- **Picnicking primary purpose for 4-10% of survey responses, secondary purpose for 3-6%— takes place here and throughout the park**

PARK OFFICE / SOUTH LAWN



- Only 8% of previous shuttle ridership
- Heavily used area of the park for picnicking
- Good potential for circulator service but is not on corridor of heaviest use

FUTURE HABITAT RESTORATION AREA



- **Restoration/creation of habitat area with trail system**
- **Attraction for hikers, birders, nature enthusiasts and others**
- **Proposed access from LSC, Audrey Zapp Dr, Freedom Way and industrial park**

LIBERTY INDUSTRIAL PARK



Source: <http://metrony.sysco.com/images/items/IMAGE8.JPG>

- **135-acre industrial area located near Burma Road/ Morris Pesin Drive west of LSP**
- **Major tenants include:**
 - New York Daily News
 - Sysco Food
 - Diversified Global Graphics Group (DG3)
 - Yama Seafood
- **2,000+ employees as of October 2012**
- **Largest employers operate 24 hours per day/7 days per week**
- **Current demand under-served based on 2009 NJ Transit Bus Study. Route 981 eliminated in 2010 service cuts.**
- **Hours of recreational service not a good fit with industrial park shift hours.**

PRIORITY OF ACTIVITY CENTERS

Priority based on previous shuttle ridership and proximity to other ridership generators.

- **Tier 1 – must be served:**
 - **HBLR Station**
 - **Liberty Science Center**
 - **CRRNJ Terminal/Ferry Landing**
 - **Future Habitat Restoration Area Trails**
- **Tier 2 – should be served**
 - **Liberty Landing/Restaurants**
 - **Park Office/South Lawn**
 - **Green Park/Playground**
- **Tier 3 – service not justifiable at this time**
 - **Industrial Park/Camp Liberty**
 - **Interpretive Center**

PROPOSED SERVICE CORRIDORS



- Destinations outside the park should be served as resources allow
- Service through industrial park area should be re-evaluated as new destinations come online over time

LONG LIST OF VEHICLES/MODES (RAIL) FOR SCREENING



Heavy Rail



Light Rail



Automated Guideway Transit



**Battery/Ground Level Power
Supply Modern Streetcar**



**Battery-Powered Historic
Streetcar**



**New Battery-Powered
Historic Replica Streetcar**

LONG LIST OF VEHICLES/MODES (BUS) FOR SCREENING



Bus Guideway



Bus (Standard or Electric)



Replica Trolley (Bus)



Mini Bus/Jitney

VEHICLE/MODE FATAL FLAW SCREENING





CRITERIA:

- **Must not require grade separation or barrier**
- **Must not require excessive infrastructure that does not benefit ridership or running time**
- **Must not be prohibitively expensive**
- **Must have sufficient capacity**




VEHICLE/MODE SCREENING:

- **All were screened**
- **Those without a fatal flaw were retained for further study**

ELIMINATED VEHICLES/MODES

		Requires barrier or grade separation	Requires excessive infrastructure	Prohibitively expensive	Insufficient capacity
Heavy Rail		X	X	X	
Light Rail			X		
Automated Guideway Transit		X	X	X	
Bus Guideway			X		

POTENTIAL SERVICE VEHICLES (BUS)

	SPECS	POSITIVES	NEGATIVES
<p>Mini Bus/Jitney</p> 	<ul style="list-style-type: none"> • CAPACITY: up to 30 seats • SIZE: less than 40 feet • AVG COST: \$90,000: 	<ul style="list-style-type: none"> • Least expensive vehicle • Uses existing infrastructure and right of way • Routing flexibility • May be low or zero emission (at additional cost) 	<ul style="list-style-type: none"> • Some local emissions unless more expensive vehicles are used • Serves purely as transportation, not attraction in and of itself • Shorter life than standard bus (for least expensive types)
<p>Bus</p> 	<ul style="list-style-type: none"> • CAPACITY: 80 • SIZE: 40 feet • AVG COST: \$480,000 	<ul style="list-style-type: none"> • Less expensive than streetcars • Uses existing infrastructure and right of way • Routing flexibility • May be low or zero emission (at additional cost) 	<ul style="list-style-type: none"> • Some local emissions or more expensive vehicles are used • Serves purely as transportation, not attraction in and of itself
<p>Replica Trolley (Bus)</p> 	<ul style="list-style-type: none"> • CAPACITY: approx 80 • SIZE: approx 40 feet (varies) • AVG COST: \$280,500 	<ul style="list-style-type: none"> • Less expensive than streetcars • Uses existing infrastructure and right of way • Routing flexibility • Creates historic ambiance 	<ul style="list-style-type: none"> • Some local emissions • Not likely to be its own attraction

POTENTIAL SERVICE VEHICLES (RAIL)

Battery/Ground Level Power Supply Modern Streetcar



SPECS

- CAPACITY: avg 157 passengers
- SIZE: 66 feet (or up to 148 feet)
- AVG COST: \$3.5 - \$4.5 M

POSITIVES

- New vehicles may be easier to maintain (compared to historic streetcars)
- New vehicles may be more comfortable for passengers (compared to historic streetcars)
- No local emissions
- No charging mechanism needed at route termini for ground level power supply

NEGATIVES

- More expensive than bus service
- Serves purely as transportation, not attraction in and of itself
- Need charging mechanism at one or both route termini for battery powered vehicles

Battery-Powered Historic Streetcar



- CAPACITY: approx 70
- SIZE: 46 – 50 feet
- AVG COST: est \$1.5 M for renovation

- Historic cars can be attraction in and of themselves – boosting ridership
- No local emissions

- More expensive than bus service
- Need charging mechanism at one or both route termini
- Historic cars may be difficult to maintain and less reliable than new cars

New Battery-Powered Historic Replica Streetcar



- CAPACITY: 88 passengers
- SIZE: ~50 feet
- AVG COST: \$900,000

- Historically accurate cars can be attraction in and of themselves – boosting ridership
- New cars may be easier to maintain and more reliable than historic cars
- No local emissions

- More expensive than bus service
- Need charging mechanism at one or both route termini

REFINEMENT OF MODES

BUS

- Bus service (standard or minibus) for one or both segments has lowest cost and does not require significant additional infrastructure.
- Replica trolley (bus) not considered an historic attraction to draw additional riders, but may add ambiance.

RAIL

- Rail service only considered for segment between HBLR/LSC and the CRRNJ Terminal, as the projected ridership for rest of park does not justify rail infrastructure and associated requirements at this time.
- Elimination of modern streetcar:
 - Expensive and requires additional infrastructure
 - Will not likely improve travel times compared with bus service
 - Does not serve as an attraction in and of itself
- Inclusion of historic/replica rail:
 - More expensive than bus service and requires additional infrastructure, but may draw additional riders as park attraction for historical context
- More detailed study should determine whether rehabilitated historic rail cars or new replica cars should be used for alternatives that include rail.

PRELIMINARY SERVICE GUIDELINES

- Grass tracks and no overhead wires should be standard for rail options
- No or ultra-low emissions should be standard for all bus options
- Service design and vehicle selection should facilitate transit excursion through the park as attraction
- Historic streetcar may be an attraction on its own



Grass Trackbed in New Orleans



Zero Emissions Bus in Scotland



Park Shuttle in Zion National Park

PROPOSED OPTIONS FOR COST/BENEFIT EVALUATION

1. Bus service between HBLR and CRRNJ terminal only
2. Bus service for both proposed segments
3. Historic/replica streetcar between HBLR and CRRNJ terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ terminal and bus for other segment



NEXT STEPS

- **Public meeting: January, 2013**
- **Develop alignment and service plans for four short-listed options, including connectivity to HBLR**
- **Service evaluation of four short-listed options**
 - **Develop costs (i.e., capital, operating)**
 - **Identify benefits (i.e., ridership, social-based need, meets study goals)**
 - **Determine impacts (i.e., environmental, cultural, recreational)**
- **Determine final service options to be studied further**
- **Identify funding and timeframe for final service options**

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #4 Thursday, December 13, 2012, 10 AM MINUTES

ATTENDEES:

1. Jay DiDomenico, Hudson TMA
2. Elizabeth Thompson, North Jersey Transportation Planning Authority
3. Jonathan Luk, Liberty State Park
4. Bill McKelvey, Liberty Historic Rail
5. Eliza Wright, Friends of Liberty State Park
6. Sam Pesin, Friends of Liberty State Park
7. Vinay Varadarajan, NJDOT Capital Investment Planning and Development
8. Dorcey Winant, Friends of Liberty State Park
9. Jeremy Colangelo, NJ TRANSIT
10. Dan Frohwirth, Jersey City Economic Development Corporation
11. Jeff Sasson, Liberty Science Center
12. Maryann Bucci-Carter, Jersey City Division of City Planning
13. Eyal Farage, Pole Position
14. Jeff Wenger, Jersey City Division of City Planning

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering
Harris Schechtman, Sam Schwartz Engineering
Kate Sargent, Sam Schwartz Engineering

MATERIALS DISTRIBUTED TO TAC:

Meeting Agenda

DISCUSSION:

The fourth meeting of the Technical Advisory Committee (TAC) for the Liberty State Park Circulator Cost-Benefit Analysis was held on Thursday, December 13, 2012 at 10 AM at the offices of the Division of City Planning at 30 Montgomery Street in the 14th floor conference room.

Following introductions by all in attendance, the project team made a presentation that focused on the corridor and mode options for a potential circulator service to destinations within Liberty State Park (LSP). Mike Monteleone presented ridership numbers for the previous LSP circulator service and a summary of activity centers within LSP. Kate Sargent presented the priority ranking for the various activity centers within the park, the resulting proposed corridors for service, the long list of vehicles/modes considered for service, the refinement of vehicles/modes, and the resulting four circulator options that will be retained for further study.

Mike Monteleone explained that the project team reviewed 2011 ridership data for the shuttle operated by the Hudson TMA. He noted that 75% of all trips were linked to the HBLR station. The remaining 25% of trips were between destinations within LSP. Furthermore, many visitors to the Liberty Science Center (LSC) are from New York state; those from New York City could potentially take the ferry to LSP then a shuttle from the ferry terminal to LSC if it existed. This data suggests that the Zapp corridor is a strong candidate for a circulator service. (The HBLR station was considered to be a destination on the Zapp corridor.) Kate Sargent said that a secondary service corridor would be along Freedom Way between the CRRNJ Terminal and the Park office. However, the activities at the Industrial Park area are not compatible with a circulator service that supports recreational uses; service along Morris Pesin Drive is not recommended at this time. The proposed service corridors are more linear (than circular or a loop) for efficiency and passenger convenience.

Kate Sargent presented the long list of vehicle options for both bus and rail modes. A fatal flaw screening was applied to all mode options. Modes that violated any of the following screening criteria were eliminated from further consideration:

- Must not require grade separation or barrier.
- Must not require excessive infrastructure that does not benefit ridership or running time.
- Must not be prohibitively expensive.
- Must have sufficient capacity.

The following mode options survived the fatal flaw screening:

- Mini bus/jitney
- Bus
- Replica trolley (bus)
- Battery/ground level power supply modern streetcar
- Battery-powered historic streetcar
- New battery-powered historic replica streetcar

Sam Schwartz Engineering identified preliminary service guidelines for consideration as the circulator options are fleshed out and the cost-benefit analysis is performed, including that grass tracks and no overhead wires could be standard for rail options, no or ultra-low emissions could be standard for bus options, and service design and vehicle selection could facilitate transit excursion through the park as an attraction. The SSE team also noted that use of a historic streetcar may be an attraction on its own.

Based on the analysis by Sam Schwartz Engineering, the four options for circulator service that will undergo a more detailed cost-benefit analysis during the next phase of work are:

1. Bus service between Hudson-Bergen Light Rail (HBLR) station and CRRNJ Terminal only
2. Bus service for both proposed segments (Zapp corridor and Freedom Way corridor)
3. Historic/replica streetcar between HBLR and CRRNJ Terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ Terminal and bus for other segment along Freedom Way

The questions and topics of discussion that came up during or after the presentation were as follows:

Jonathan Luk noted that the playground at LSP was the largest in the state when it was built.

Sam Pesin said that one entrance to the planned Habitat Restoration Area in LSP will be near the Interpretive Center and asked if the circulator could serve that entrance. The project team responded that stops could be added on a corridor, even if that stop had low ridership during previous shuttle service.

Dan Frohwirth said that, while a monorail in LSP was proposed 12 years ago and rejected, there is a new proposal for a monorail that can be wind/solar powered and depart on demand. However, Sam Pesin countered that his organization, the Friends of Liberty State Park, objects to anything elevated in the park.

Vinay Varadarajan stated that all vehicles should be ADA accessible.

Sam Pesin and Eyal Farage added that they are in favor of low-emissions vehicles.

It was requested that a copy of the PowerPoint presentation be distributed to the TAC.

Sam Pesin added that he felt a replica trolley (bus) had the same historic appeal as an historic streetcar. Mr. Pesin said that he did not feel that a historic replica bus would add ambiance to the park.

Eyal Farage offered that his company opened Pole Position, a recreational raceway just outside LSP a couple of years ago and that they see 150,000 – 250,000 visitors per year. He felt that his facility should be included on the proposed circulator route. He also offered that his company may open batting cages or other recreational facilities in the Industrial Park area at some point in the future and that he would like the circulator to make full loop around the park.

Maryann Bucci-Carter said that the entire park should be served by the shuttle and noted that, as proposed, the circulator would not serve Residences at Liberty and other park destinations.

Harris Schechtman explained that loop routings tend not to be successful. They tend to have low ridership as they are inconvenient for passengers wishing to travel in the opposite direction of the service.

Bill McKelvey stated that the final report for the 2008 Rutgers-Bloustein studio (*Feasibility of Rail Access to Liberty State Park*) came to the same conclusion about the priority of corridors for transit service within the park - that the segment between the HBLR station and the historic terminal is, by far, the segment with the highest demand. He added that the National Park Service is interested in shifting some visitors of the Statue of Liberty/Ellis Island who currently depart from Lower Manhattan to the ferry

terminal at Liberty State Park. Also, he said that the Liberty Science Center may be interested in joint ticketing with the NPS.

Jeremy Colangelo said that the study is “operator neutral”, as the state has made no commitment to fund or run any proposed service.

Jonathan Luk said that SSE’s findings mirror what his organization has observed in the park - that there are two different visitor populations. There are tourists who primarily travel along the corridor between the HBLR station and the CRRNJ Terminal and there are locals who use the rest of the park and participate more in active recreation. He raised the possibility that the Statue Cruises ferry terminal could be relocated at some point to the south end of the park, as was done in the past.

Sam Pesin offered that potential streetcar tracks could not be located on the south side of Audrey Zapp Drive, because it would disturb the Grove of Remembrance. Mr. Pesin said that there are issues with locating it on the north side of Zapp Drive, including interference with a new snack stand and crossing Zapp Drive at Phillip Drive. He requested that such issues be discussed at the upcoming public meeting. Kate Sargent stated that this level of detail was beyond the scope of the current phase of this project.

Maryann Bucci-Carter asked whether tracks could be located in the roadway of Audrey Zapp Drive, in conjunction with rehabilitation of the cobblestone. Kate Sargent answered that it was her understanding that the historic nature of the cobblestone precluded this, but that the question would be further explored.

Elizabeth Thompson reminded the project team that, since the current study is a federally-funded planning study, it cannot make design or engineering recommendations.

Next steps include the first public meeting to be held in January 2013. The purpose of the first public meeting will be to present work completed to-date and to solicit feedback from the public, in particular on the identification of the four options for further study.

City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 3
Tuesday, October 16, 2012, 10 AM

Agenda

1. Welcome and Introductions
2. Survey Results
3. Future Conditions / Forecast Model Output
4. Purpose and Need
5. Technical Memoranda 1 & 2
6. Q+A
7. Project Schedule and Next Meeting

LIBERTY STATE PARK CIRCULATOR

Cost-Benefit Analysis



**SAM SCHWARTZ
ENGINEERING**
City of Jersey City
Technical Advisory Committee
Meeting III

October 16, 2012

WELCOME

- Introductions
- Survey Results
- Future Conditions/
Modeling
- Purpose and Need
- Report
- Project Schedule



SAM SCHWARTZ
ENGINEERING

TRAVEL SURVEY



Source: <http://massbike.org/blog/2012/03/08/and-the-survey-says/>

- **Types of surveys conducted:**
 - Liberty State Park Interview Survey
 - Liberty Science Center Interview Survey
 - Online user Survey
 - Generic Survey (handout)

SAM SCHWARTZ
ENGINEERING

TRAVEL SURVEY

- Results were used for demand model
- Used Survey Monkey for on-line survey
- All surveys were provided in Spanish
- Surveys were kept intentionally brief to increase participation
- Jersey City issued a press release and flyer to promote survey
- TAC members linked their websites to survey



Source: http://www.huntingtonbeachca.gov/images/users/public_world/Watermain/mattmurray.jpg

SAM SCHWARTZ
ENGINEERING

TRAVEL SURVEY

<u>Survey Type</u>	<u>Responses</u>
• Liberty State Park Interview Survey	733
• Liberty Science Center Interview Survey	738
• On-line Survey	528
• Generic Survey (handout)	47
<hr/>	
• Total	2,046

SAM SCHWARTZ
ENGINEERING

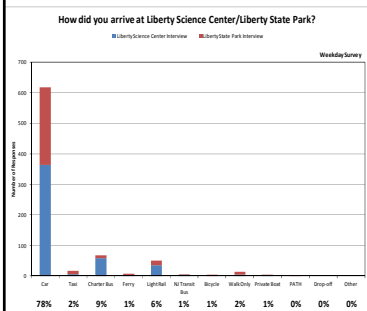
LSP INTERVIEW SURVEY



- Surveyed on one weekday and a Sunday
- Tested questions in field at LSP prior to survey
- Survey conducted between 10 AM and 8 PM
- Positioned five staff throughout park:
 - Ferry/CRRNJ Terminal
 - Liberty Landing Marina/North Field/9-11 Memorial
 - Park Headquarters/South Lawn/ Boat Launch
 - Green Park/Playground/Liberty Walk
 - Park Entrance on Audrey Zapp Drive/Marina/Grove of Remembrance
- Targeted actual visitors to the park
- Goal: 600 to 800 completed surveys

SAM SCHWARTZ
ENGINEERING

LSC INTERVIEW SURVEY



Main Takeaways:

- The highest number of visitors came from New York State
- Most visitors did not have a secondary destination
- Average length of stay is approximately 4 hours
- Average group size:
 - 4.1 people - weekday
 - 3.8 people – weekend
- Most travel by car
 - 77% (weekday) and 89% (weekend)
- Likelihood they would use shuttle service if available:
 - 25% (weekday) and 35% (weekend) - very likely
 - 21% (weekday) and 36% (weekend) - very unlikely

SAM SCHWARTZ
ENGINEERING

ONLINE SURVEY

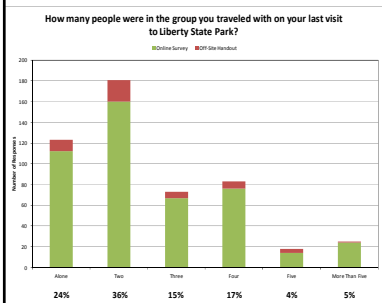


- TAC provided link to project website (and survey) from their websites
- First question prompted either user or non-user survey
- Was accessible online for about one month
- Press release and flyer promoted survey
- Goal: 300 completed surveys for each survey type

Source: <http://www.ams.usc.edu/forums/attachments/125556112564577/inline-image-40ed-hand-propelled-walk-wheels-001y.jpg>

SAM SCHWARTZ
ENGINEERING

ONLINE SURVEY



Main Takeaways:

- Leisure was the most frequent purpose for visiting LSP
- 58% of respondents come from Jersey City
- Most visitors had a secondary destination
- Average group size:
 - 2.6 people
- Almost half visit several times a year
- Most travel by car (61%)
- Likelihood they would use shuttle service if available:
 - 31% - very likely
 - 31% - very unlikely

MODELING

Potential Markets for LSP Circulator

1. Regional Attractions Visitors
2. Local Recreational Visitors
3. Liberty Landing Ferry Commuters & Visitors
4. Industrial Park Workers

SAM SCHWARTZ
ENGINEERING

1. Regional Attractions Visitors

- Includes Visitors to Liberty Science Center, Statue of Liberty/Ellis Island Ferry, and Central Railroad of New Jersey Terminal.
- Current and Future Demand Not Well Estimated by the NJRTM-E.
 - “Non Work Trips” Include a Wide Variety of Trip Characteristics.
 - Calibration is Done on a Regional Basis.
 - Includes Average Weekday Condition (No Weekend, No Seasonality).
- Current Demand Estimated Using Available Data and 2012 LSC Visitor Interview Survey.
- Future Demand (2020 and 2035) Estimated Using Historic Data, Trend Analysis, and Regional Growth.

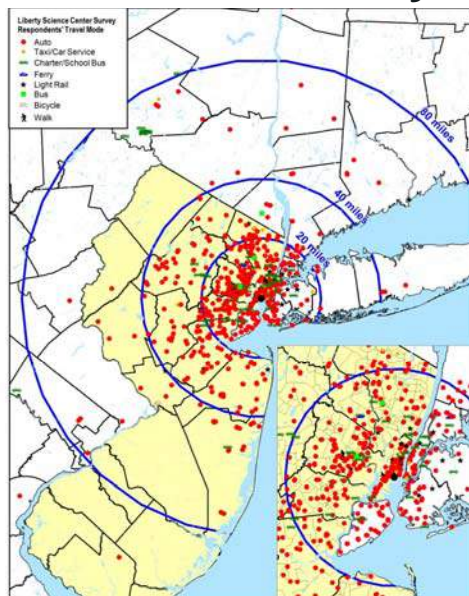
SAM SCHWARTZ
ENGINEERING

Current Demand for LSC Estimated Using 2012 LSC Survey

- From available data, we estimate approximately **500,000 annual Liberty Science Center visitors in 2011.**
- From the LSC Surveys, we identified **738 LSC visitors.**
- **Estimated trip frequency data aggregated by region.**
 - 90% from New Jersey, New York, Pennsylvania
 - 16% from Hudson County
 - 6% from Manhattan/Brooklyn
 - 9% from rest of USA
 - 1% from International locations

SAM SCHWARTZ
ENGINEERING

Home Location of Liberty Science Center Survey Interviewees



- 59% within 20 miles
- 23% btw 20 and 40 miles
- 9% btw 40 and 80 miles
- 8% more than 80 miles
- 1% international

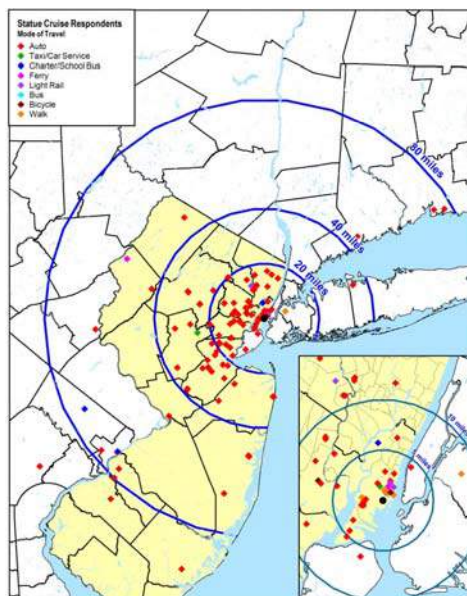
SAM SCHWARTZ
ENGINEERING

Current Demand For Ferry Estimated Using 2012 LSP Visitor Interview Survey

- From available data, we estimate approximately **700,000** annual Statue of Liberty/Ellis Island visitors to LSP in 2011.
- From the Visitor Interview Surveys, we identified **237** Statue of Liberty/Ellis Island visitors.
- Estimated trip frequency data aggregated by region.
 - 49% from New Jersey, New York, Pennsylvania
 - 11% from Hudson County
 - 5% from Essex County
 - 0.4% from Manhattan
 - 0.0% from Brooklyn
 - 38% from rest of USA
 - 13% from International locations

SAM SCHWARTZ
ENGINEERING

Home Location of Statue of Liberty/ Ellis Island Survey Interviewees



- 29% within 20 miles
- 12% btw 20 and 40 miles
- 8% btw 40 and 80 miles
- 38% more than 80 miles
- 13% international

SAM SCHWARTZ
ENGINEERING

2. Local Recreational Visitors

- **Includes Visitors Using LSP for “Passive” Activities.**
- **Current and Future Demand Not Well Estimated by the NJRTM-E.**
 - Same Limitations as for Regional Attraction Visitors.
 - Trips That Use Local Streets Only are Not Specifically Addressed.
- **Current Demand Estimated Using Available Data and 2012 LSP Visitor Interview Survey.**
- **Future Demand (2020 and 2035) Estimated Using *LSP Local Visitor Model*.**

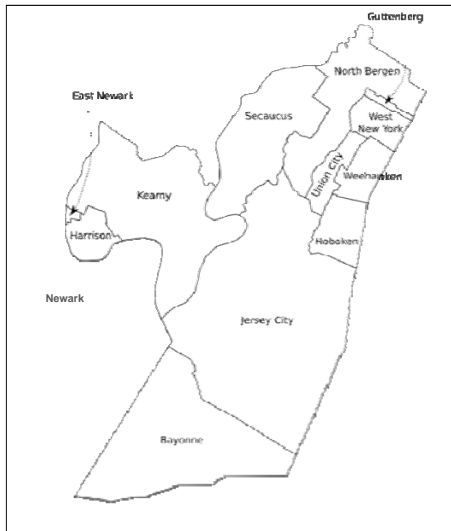
SAM SCHWARTZ
ENGINEERING

Current Demand For Local Recreation Estimated Using 2012 LSP Visitor Interview Survey

- From available data, we estimate approximately 3 million annual local recreational visitors to LSP in 2011.
- From the Visitor Interview Surveys, we identified 323 Local Visitors (Hudson County and Newark).
- Using reported visit frequency, these surveys were factored to equal 3 million annual visitors.
- Estimated trip frequency data aggregated to neighborhood in Jersey City and municipality within the rest of Hudson County and Newark.
 - 81.0% from Jersey City
 - 21.2% MLK-Bergen-Lafayette
 - 13.5% Greenville
 - 10.9% Historic Downtown
 - 10.3% Waterfront
 - 8.8% from Bayonne
 - 6.5% from Newark
 - 0.4% from Hoboken
 - 3.3% from rest of Hudson County

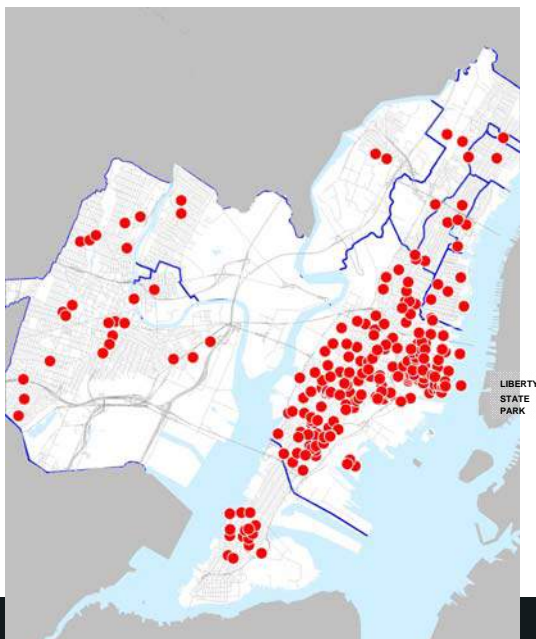
SAM SCHWARTZ
ENGINEERING

Hudson County MCDs and Jersey City Neighborhoods



SAM SCHWARTZ
ENGINEERING

Home Location of Survey Interviewees



SAM SCHWARTZ
ENGINEERING

LSP Local Visitor Estimation

- **The Plan: Estimate Future Local Visitors as a Function of Changes in Demographics and Improvements to the Transportation Network.**
- **Key Variables:**
 - Number of Households and their Characteristics, i.e. Auto Availability, Children
 - Function of Travel Time & Distance to/from LSP
 - Competing Opportunities, i.e. Other Parks
 - Circulator Service (Route(s), Headway, Service Period)
 - Fare Sensitivity to be Addressed Separately
- **Proposed Model Based on Gravity Model and Intervening / Competing Opportunities Model**

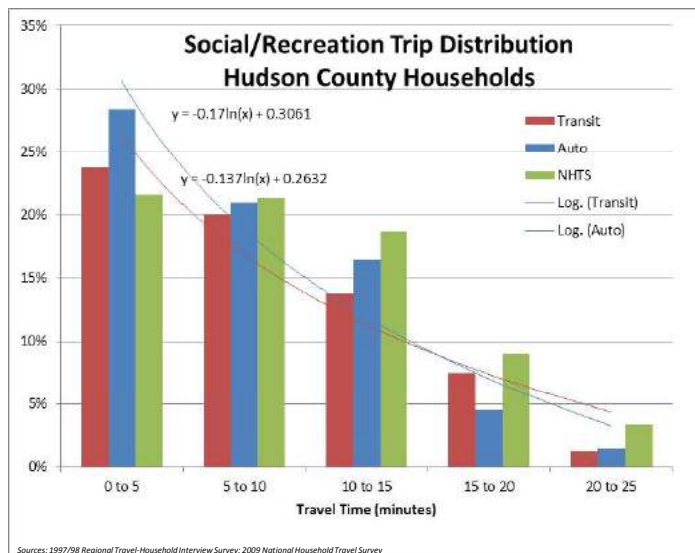
SAM SCHWARTZ
ENGINEERING

LSP Local Visitor Model

- **Variables:**
 - **H**, Households with Vehicle available and 3+ persons (Census)
 - **TT**, Auto Travel Time (NJRTM-E)
 - **I**, Median Household Income (Census)
- **Form:**
 - Annual Trips Per Household = $\text{EXP}(a \cdot I + b \cdot \text{TT}^{0.5} + c \cdot H^{1.2} + d)$
 - $a = -8.22\text{E-}06$ (trip rate decreases at higher income levels)
 - $b = -2.96$ (trip rate decreases with longer travel times)
 - $c = 7.22\text{E-}06$ (trip rate increases at higher population)
 - $d = 1.34\text{E+}01$
- **Result: $R^2 = 0.86$**
 - R^2 is an indication of how well a regression equation correlates with observed values; and how well it will predict future values. R^2 of 0.86 means 86% of variation in values can be explained by the explanatory variables.

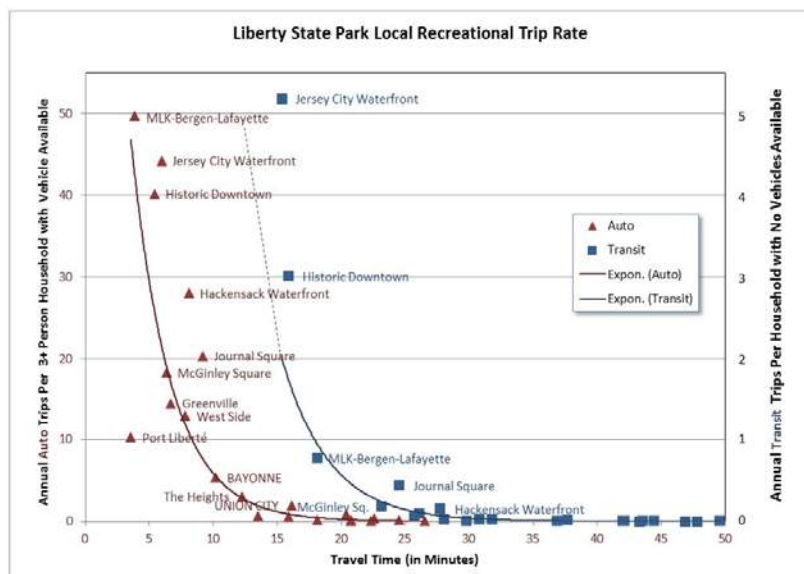
SAM SCHWARTZ
ENGINEERING

Social/Recreational Trip Length



SAM SCHWARTZ
ENGINEERING

Liberty State Park Local Recreational Trip Rate



SAM SCHWARTZ
ENGINEERING

3. Liberty Landing Ferry Commuters & Visitors

- **Includes Users of Liberty Landing Marina and Liberty House and Maritime Parc Restaurants.**
- **Current Demand Underserved Based on 2009 NJ Transit Bus Study.**
- **Current Demand Levels Estimated from Available 2010 Census Data.**
- **Future (2020 and 2035) Residential Commuter Demand Estimated Using NJRTM-E and Jersey City Anticipated Growth.**
- **Market May Not Be Served by Proposed Circulator Service.**

SAM SCHWARTZ
ENGINEERING

4. Industrial Park Workers

- **Includes Workers in the Burma Road/Morris Pesin Drive Area South of LSP**
- **Current Demand Underserved Based on 2009 NJ Transit Bus Study.**
- **Current Demand Levels Estimated from Available 2010 Census Data.**
- **Future Employee Demand Estimated Using NJRTM-E (2020 and 2035).**
- **Market May Not Be Served by Proposed Circulator Service.**

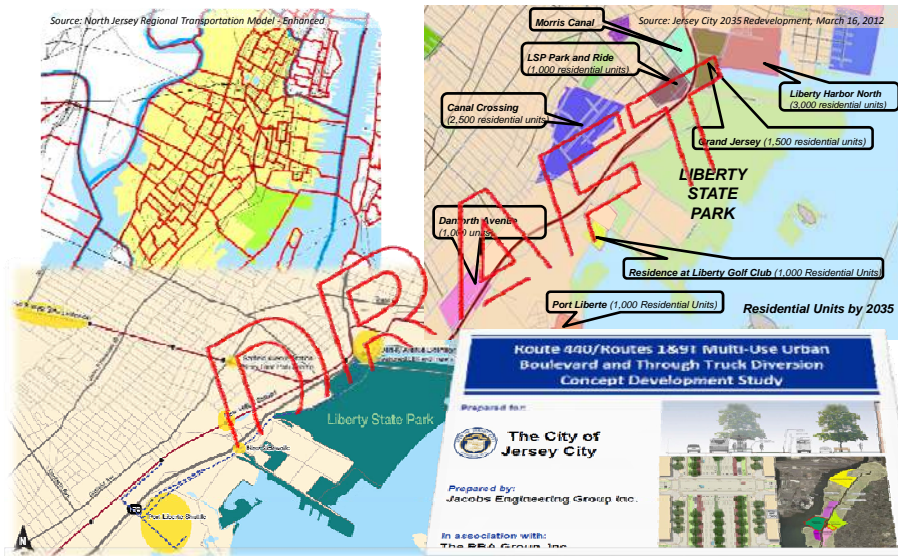
SAM SCHWARTZ
ENGINEERING

Future LSP Circulator Trips

Data	Source	Circulator Market		
		LSC	Ferry	Local Rec.
LSC Visitor Survey	2012 Survey	✓		
LSP Visitor Survey	2012 Survey		✓	✓
Regional Household Growth	NJRTM-E	✓	✓	✓
Municipal Household Growth	NJRTM-E			✓
Local Household Growth	Jersey City Division of Planning			✓
Municipal Vehicle Availability Rates	Census ACS			✓
Jersey City Vehicle Availability Rates	Route 440 Study			✓
Household Income	Census ACS			✓
Regional Roadway Improvements	NJRTM-E			✓
Regional Transit Improvements	NJRTM-E			✓
Local Transit Improvements	Jersey City Division of Planning			✓

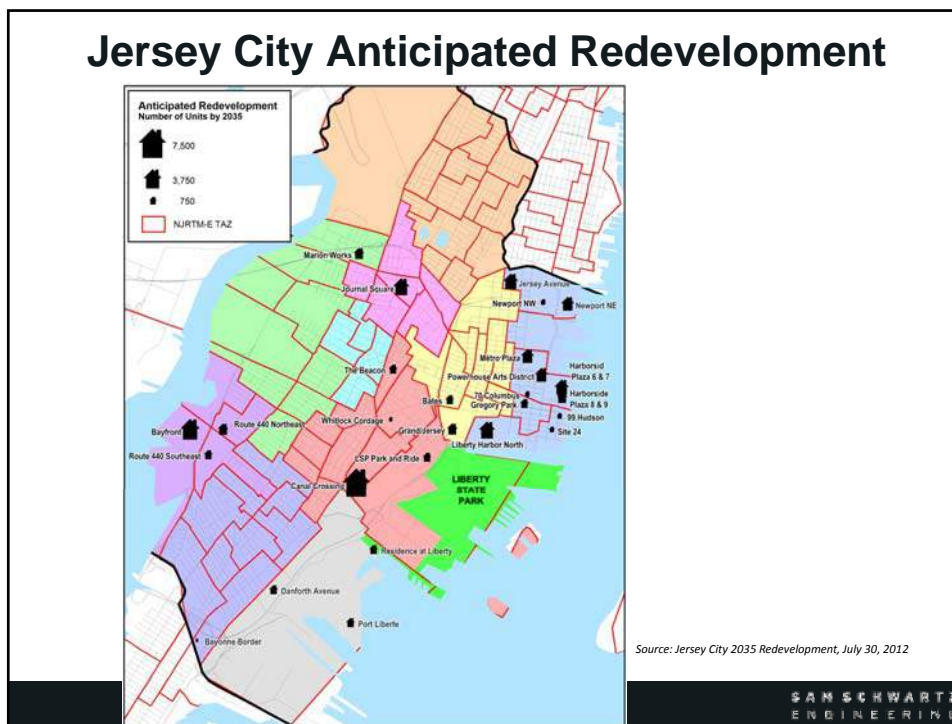
S A M S C H W A R T Z
E N G I N E E R I N G

Future Forecast Data Sources



Source: Liberty State Park Circulator Cost-Benefit Analysis, City of Jersey City Division of City Planning

S A M S C H W A R T Z
E N G I N E E R I N G



Existing and Future Transit Trips

- **Total Transit Usage Based on Ridership of Liberty State Park #305 WHEELS route in 2009.**
 - 2009: 58,000 annual riders; daily service April-December, Weekend and holiday only January-March.
 - 2010: Service discontinued in June.
- **“Existing” Circulator Trip Distribution Estimated From**
 - LSC survey for multiple park destination trips
 - Ferry survey for visitors using transit
 - LSP survey for recreational trips (LSP Local Visitor Model)
- **Future Circulator Trip Distribution Estimated From**
 - Regional Population Growth for LSC and Ferry
 - Jersey City Anticipated Development and Municipal Population Growth (rest of Hudson County and Newark)
 - Proposed HBLR Improvements

Estimating New York City Demand



SAM SCHWARTZ
ENGINEERING

Liberty State Park Circulator Projected Shuttle Ridership

Market	2011	2020	2035
LSC Visitor	4,800 (8%)	5,100 (6%)	5,800 (5%)
Ferry Visitor	26,500 (44%)	28,300 (34%)	31,800 (27%)
Local Recreational	28,700 (48%)	50,900 (60%)	79,900 (68%)
Total	60,000 (100%)	84,300 (100%)	117,500 (100%)

SAM SCHWARTZ
ENGINEERING

PURPOSE AND NEED

- **Why is a transit circulator needed?**
- **Consistency with NEPA guidelines**
“explains to the public and decision makers that the expenditure of funds is necessary and worthwhile”
- **Purpose and Need Statement**
 - Purpose Statement: “States why the transportation project is being proposed”
 - Need Statement: “...describes the key problems to be addressed by the project and ...provides factual foundation for the statement of the project purpose.”



SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED



- **Transit Demand**
- **Social Based Need**
- **Goals and Objectives**
 - Study Goals
 - Stakeholder Input

SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED

Transit Demand

Current Ridership

- 2009 - 60,000

Projected Ridership

- 2020 - 84,000
- 2035 - 117,000



Source: <http://www.smcars.net/forum/attachments/train/12/0256/1312904377-trolley-some-kind-hand-projected-gill-vehicle-trolley.jpg>

SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED

Social Based Need

Local Recreational Visitors

- 81% visitors from Jersey City
- 21% of Jersey City visitors from MLK-Bergen Lafayette neighborhoods



<http://www.destinationnexus.com/berny-State-Park-in-Jersey-City-New-Jersey.html>

SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED

Social Based Need



SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED

Study Goals

- Reduce auto travel to park
- Capitalize on the multi-modal mass transit network to make park more accessible
- Consider transportation needs of underserved communities
- Develop connectivity within Liberty State Park and consider destinations near the park
- Recognize park as local and regional destination
- Support tourism
- Improve linkages with National Monuments



Source: <http://consequencephoto.com/2009/08/white-eye-birds-at-liberty-state-park-jersey-city-ny/>

SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED

Stakeholder Input

- What is your organization's mission?
- What are your organization's plans for the next 20 years?
- Provide any other relevant comments related to the need for transit service to and within the park.



SAM SCHWARTZ
ENGINEERING

PURPOSE & NEED

"The purpose and need statement should be concise and understandable as possible....is typically only one or two paragraphs long...that focuses on the primary transportation challenges" (FTA/FHA Guidance on Purpose and Need)

Draft Purpose Statement: Liberty State Park Transit Circulator

The purpose of the Liberty State Park Transit Circulator is to provide a reliable transit service to and from the park and its environs that:

1. Provides an alternative to predominantly automobile access to the park;
2. Serves the current and projected future transit demand to the park for recreational and tourist markets;
3. Provides the means to visit the park for Jersey City residents who do not have access to a car.

SAM SCHWARTZ
ENGINEERING

REPORT

- Existing Conditions
- Survey Results
- Future Conditions (including modeling)
- Purpose and Need

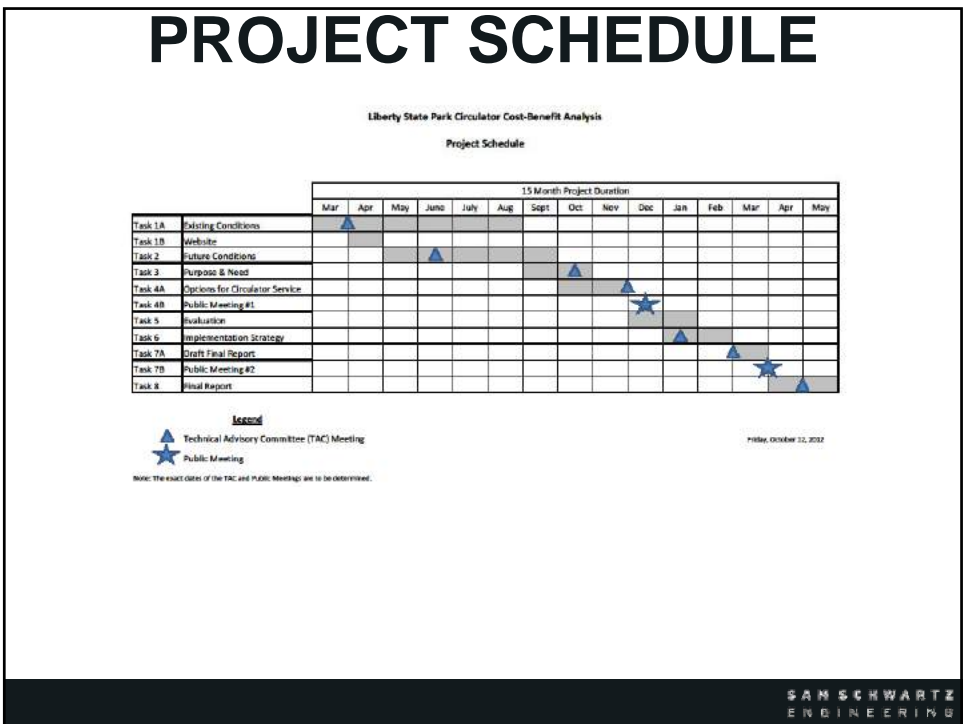


Source <http://www.paperwritingservice.info/wp-content/uploads/2011/09/Paper-Writing-Service-knows-how-to-produce-a-quality-report.jpg>

SAM SCHWARTZ
ENGINEERING

QUESTIONS AND ANSWERS

SAM SCHWARTZ
ENGINEERING



NEXT STEPS

- Mid October – Begin Options for Circulator Service
- End of October - Finalize Purpose & Need
- End of October – Finalize Future Conditions Report
- End of November – Next TAC Meeting
- Beginning of December – Start Evaluation of Alternatives
- Mid December – 1st Public Meeting

SAM SCHWARTZ
ENGINEERING

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #3 Tuesday, October 16, 2012, 10 AM MINUTES

ATTENDEES:

1. Jay DiDomenico, Hudson TMA
2. Elizabeth Thompson, North Jersey Transportation Planning Authority
3. Rob Rodriguez, Liberty State Park
4. Mark Texel, NJDEP, Division of Parks and Forestry
5. Jonathan Luk, Liberty State Park
6. Bill McKelvey, Liberty Historic Rail
7. John Lane, Hudson County Engineering
8. Francesca Giarratana, Hudson County Planning
9. Martin Robins, Liberty Historic Rail
10. Lee Klein, Jersey City Division of Engineering
11. Connie Claman, Liberty Science Center
12. Eliza Wright, Friends of Liberty State Park
13. Megan Massey, Hudson County Planning
14. Sam Pesin, Friends of Liberty State Park
15. Vinay Varadarajan, NJDOT Capital Investment Planning and Development
16. Dorcey Winant, Friends of Liberty State Park
17. Jeremy Colangelo, NJ TRANSIT
18. Carlos Ponton, Educational Arts Team
19. Chuck Lee, Jersey City Division of Engineering

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering
Ken Hausman, Stump/Hausman
Josh Curley, Stump/Hausman

MATERIALS DISTRIBUTED TO TAC:

Meeting Agenda

DISCUSSION:

The third meeting of the Technical Advisory Committee (TAC) for the Liberty State Park Circulator Cost-Benefit Analysis was held on Tuesday, October 16, 2012 at 10 AM at the offices of the Division of City Planning at 30 Montgomery Street in the 14th floor conference room.

Following introductions by all in attendance, the project team made a presentation that focused on three topics: the results of the survey conducted over the summer, the output of the forecast model, and the draft purpose and need.

Mike Monteleone presented the findings of the survey that was implemented over the summer in order to collect data for the travel demand model. The primary purpose of the survey was to gain an understanding of the travel behaviors and visitation patterns of visitors to Liberty State Park (LSP). Four versions of the survey were implemented: an interview survey administered at various locations in LSP, an interview survey administered at Liberty Science Center (LSC), an on-line survey for park visitors and non-visitors, and a paper survey that was available at locations in LSP, City Hall, and the Division of City Planning office. The interview surveys were conducted during the week and over the weekend at LSP and LSC in July 2012, while the on-line and paper surveys were accessible to the general public for about one month. In order to advertise the survey effort, the City issued a press release to announce the study and survey, the City used social media to get the word out, and several TAC agencies posted links to the study website from their agencies' websites. Mr. Monteleone announced that the survey effort resulted in 2,046 responses, exceeding the goals of the project team. Mr. Monteleone noted some of the highlights of the survey findings for each survey type. [See attached PowerPoint slides for details.]

Ken Hausman presented the methodology and results of the forecast model developed for this study. Stump/Hausman developed separate models for the four markets (categories) of park visitors: regional attractions visitors, local recreational visitors, Liberty Landing ferry commuters and visitors, and Liberty Industrial Park workers. The regional attractions visitors market includes visitors from the region who visit major destinations (e.g., Ellis Island, Statue of Liberty, Central Railroad of NJ Terminal, Liberty Science Center). The local recreational visitors market includes visitors who live in Hudson County or Newark and use the park for "passive" recreational activities.

Mr. Hausman said that the modeling forecasts that, by the year 2035, ridership for a circulator service will be double the 2009 ridership. This increase is largely due to anticipated growth in the number of local recreational visitors. The number of regional attractions visitors who may take a circulator is also anticipated to increase by 2035. Due to the relatively lower numbers of ferry commuters and visitors and park workers, those markets may not be served by a circulator service. Mr. Hausman noted that visitors who travel to the park in order to take the ferry to Liberty Island or Ellis Island are a potential market for a circulator service, because those visitors travel greater distances (than local recreational visitors) and because the ferry terminal is about a mile from the Hudson-Bergen Light Rail station, further than what an average person would consider walking distance.

In order to forecast future conditions, a model that reflects current conditions was developed. While the NJTPA's North Jersey Regional Transportation Model – Enhanced (NJRTM-E) was used as a framework, the NJRTM-E covers the entire NJTPA region, necessitating refinements to the model to better reflect local conditions. Mr. Hausman adjusted the NJRTM-E using data collected by the survey and 2010 Census data. For the model of local recreational visitors, projected to be the largest of the four markets, variables that were fed into the model included number of households, availability of an automobile, household size and presence of children, trip time and distance, and household income. In order to forecast ridership, the model considered the location and magnitude of anticipated redevelopment in Jersey City, planned improvements to the mass transit network, and anticipated transit usage by future Jersey City residents.

Since there was discussion at the previous TAC meeting about the potential for visitation by residents of New York City for recreational purposes, Stump/Hausman analyzed this market. The model showed few recreational visitors from New York City, because the neighborhoods with the most convenient access to LSP – Tribeca and Battery Park City – are also higher income, which affords residents of those neighborhoods greater options for recreation.

Al Meyer presented the draft Purpose and Need Statement. Mr. Meyer noted that, per guidance from the Federal Transit Administration and Federal Highway Administration, the Purpose and Need Statement should be concise and focus on the primary transportation challenges in order to justify the proposed project. The Purpose and Need Statement must be established before options for a potential circulator service can be identified. Mr. Meyer explained that several factors inform the purpose and need, including demand for mass transit service, socio-economic data (Jersey City is an

Environmental Justice community.), and the study goals established by the TAC. The draft Purpose and Need Statement presented at the meeting was the following:

“The purpose of the Liberty State Park Transit Circulator is to provide a reliable transit service to and from the park and its environs that:

1. Provides an alternative to predominantly automobile access to the park;
2. Serves the current and projected future transit demand to the park for recreational and tourist markets;
3. Provides the means to visit the park for Jersey City residents who do not have access to a car.”

The questions and topics of discussion that came up during or after the presentation were as follows:

Mr. Robins asked how the model accounted for auto ownership. Mr. Hausman explained that, while the survey data were split by transit/auto usage, too few respondents who use transit to access the park were completed, making it infeasible to develop a robust model of transit users. (Fifty-three surveys were completed by park visitors who use mass transit.) Instead, the model was developed based on survey responses of visitors who arrive by auto. However, Mr. Hausman noted that the trip patterns for recreational travel are similar between those who use transit and those who drive.

Sam Pesin suggested that the Purpose and Need Statement should emphasize that the purpose of the circulator would be to move visitors between destinations within Liberty State Park.

Mr. Pesin asked what the impact is of Jersey City’s designation as an Environmental Justice community. Mr. Meyer answered that it depends on the nature of the project. With lower incomes and lower rates of auto ownership, there is a greater need to provide transit to increase mobility. Elizabeth Thompson said that, depending on the program, Environmental Justice designation may benefit an application for federal funding.

Mr. Robins asked if the mass transit system would be able to accommodate the higher rates of transit usage anticipated with future residential redevelopment. Members of the project team said that much of the anticipated redevelopment will be located within

walking distance of existing or planned stations of the HBLR and that, consistent with current practices, parking ratios associated with anticipated redevelopment will likely result in fewer parking spaces than units in recognition of the fact that many Jersey City residents do not own vehicles and rely on mass transit.

Mr. Robins asked what new transit stations were assumed in model. Mr. Hausman answered that the model assumed new light rail stations in Canal Crossing at Caven Point Road and at Jersey Avenue/18th Street. No improved bus service was assumed in the model. Mr. Colangelo-Byran said that a new station at Canal Crossing is unlikely to be built in the foreseeable future and should be removed from the model.

Mr. Pesin said that the study should recommend increased bus service to Liberty State Park from neighborhoods without access to the HBLR.

Mr. Robins noted that park visitation is highly seasonal and that there could be potential cost savings if a circulator service were adjusted by season. Mr. Hausman responded that ridership projections pivot off of the 2009 shuttle service operated by NJ Transit that was a seasonal service. Seasonal service may maximize vehicle loadings by recreational visitors to the park but would not serve Liberty Landing ferry commuters or workers in the Liberty Industrial Park area. Mr. Monteleone added that ridership projections are conservative, because the base service assumed in the model was seasonal. That is, projected ridership could be larger when commuters and workers in the industrial area are included. However, a reliable, year-round service would then be necessary to serve all markets.

Elizabeth Thompson noted that there was a drop in park attendance (based on traffic volumes) for the months January through March from 2011 to 2012 as shown in Table 1 of Tech Memo #1. Mr. Rodriguez said that updated attendance data could be added to Table 1.

In response to a question about park attendance figure assumed by the model, Mr. Hausman said that the model assumed 5 million visitors per year to all park destinations.

Bill McKelvey said that the Rutgers study completed in 2008 noted that the Liberty Science Center was interested in providing a connection between LSC and the ferry terminals at the Central Railroad of NJ Terminal in order to attract visitors from New York City, a sentiment echoed by Connie Claman. While the model showed a low

number of recreational trips to the park with origins in New York City (i.e., potential Liberty Landing ferry users), the model did show the potential for visitation to the LSC by people whose trips originate from NYC. It was suggested that joint ticketing for LSC and the ferries to Liberty Island and/or Ellis Island may increase visitation. Ms. Claman noted the challenges of providing a shuttle service between the Liberty Science Center and the ferry terminal, including the need for a frequent service, which is expensive and beyond the resources of LSC.

John Lane noted that the trip chaining indicated by local visitor survey respondents may be due to greater familiarity with destinations and attractions within Liberty State Park.

Vinay Varanarajan asked why visitors to LSC used mass transit to access the park less frequently than visitors to other destinations in LSP. Mr. Monteleone said that visitors to LSC travel a greater distance than other park visitors.

Ms. Winant expressed displeasure with the frequency of mass transit service in Jersey City, especially during the weekend.

Mr. Pesin suggested that the public meeting be held at Liberty State Park in the CRRNJ Terminal, which would necessitate the provision of a shuttle between the light rail station and the meeting venue. He also suggested that holding the meeting on a Saturday would attract greater attendance than holding the meeting during the week in the evening. However, other TAC members felt that an evening meeting during the week would be appropriate if it were advertised well in advance and if its format were an open house format held over several hours.

NEXT STEPS:

Action Item #	Actionee	Description	Due Date
1	Jersey City	Provide presentation and minutes to attendees	October 29
2	SSE	Provide Future Conditions Report to TAC	October 29
3	LSP	Provided latest attendance figures	October 19
4	NPS	Provide Purpose and Need input	October 19
5	Jersey City/SSE	Provide dates to TAC for next TAC meeting and public meeting	November 2

At the time of the October TAC meeting, it was anticipated that the next TAC meeting would be held at the end of November and the first Public Meeting in mid December. However, due to Superstorm Sandy, these meetings were postponed.

City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 2
Tuesday, June 19, 2012, 10 AM

Agenda

1. Welcome and Introductions
2. Website
3. Survey Instruments and Implementation
4. Technical Memorandum Outline
5. Forecast Model Development Methodology
6. Q+A
7. Revised Project Schedule and Next Meeting

LIBERTY STATE PARK CIRCULATOR

Cost-Benefit Analysis



Stump/Hausman
Partnership



SAM SCHWARTZ
ENGINEERING

City of Jersey City
Technical Advisory Committee
Meeting II

June 19, 2012

WELCOME

- **Introductions**
- **Website**
- **Survey**
- **Report**
- **Modeling**
- **Project schedule**



Source: <http://consequenceofsound.net/2009/08/where-we-live-liberty-state-park-jersey-city-nj/>

WEBSITE



Welcome

The City of Jersey City is conducting the Liberty State Park Circulator Cost-Benefit Analysis, a study that will explore various options for mass transit service throughout Liberty State Park. With over 5 million visitors each year, Liberty State Park is a major local and regional destination that provides open space and is home to several popular attractions. This study will identify recommendations that enhance the mass transit network to serve current and future park visitors in order to reduce usage of private automobiles – a goal that supports the City of Jersey City's efforts to create a more sustainable city. The study's final report is anticipated by Summer 2013.

Project Schedule.

Announcements

COMING IN JUNE 2012: The project team will implement an online survey to better understand the travel behavior of park users. We want to hear from you!



SAM SCHWARTZ
ENGINEERING

- Isprtransitstudy.com
- Developed to generate interest in study
- Content:
 - Link to on-line surveys
 - Links to study team
 - Announcements
 - Project Overview
 - Photo gallery
 - Documents

WEBSITE

- Is currently live for TAC review
- Once finalized, Jersey City will send out press release
- Will also be provided in Spanish
- Team is looking for TAC to provide link on their websites



TRAVEL SURVEY



Source: <http://massbike.org/blog/2012/03/08/and-the-survey-says/>

- **Forms developed for:**
 - LSP interview
 - LSC interview
 - Online user
 - Online non-user
 - Other?

TRAVEL SURVEY

- Results will be used for demand model
- TAC has provided comments
- Will use Survey Monkey for on-line survey
- Results will be available in early August
- Will be provided in Spanish
- Map of parking lots will be provided
- Will be conducted the week after July 4th



Source: http://www.huntingtonbeachca.gov/images/users/public_works/Watertownhallmeeting.jpg

LSP INTERVIEW SURVEY



- **Survey on one weekday and a Sunday**
- **Test questions in field at LSP prior to survey**
- **Conducted between 10 AM and 8 PM**
- **Position five staff throughout park:**
 - Terminal/Ferry
 - Base/South Lawn
 - Green Park/Playground/Liberty Walk
 - Park entrance on Zapp Drive/Marina
 - IC/Freedom Field/Boat Launch
- **Conducted on great weather days**
- **Goal: 300 to 400 completed surveys per day**

LSC INTERVIEW SURVEY

- Survey on weekday and weekend day
- LSC will provide volunteers to administer survey
- Will be administered using laptops
- LSC may offer incentive to participants
- Goal: 300 to 400 completed surveys per day



Source: <http://consequenceofsound.net/2009/08/where-we-live-liberty-state-park-jersey-city-nj/>

ONLINE SURVEY



- TAC to provide link to project website (and survey) from their websites
- First question will prompt either user or non-user survey
- Will be accessible online for about one month
- Goal: 300 completed surveys for each survey type

Source: http://static.wix.com/media/6658ab486eba0249ea9c5d1d9770a01b.wix_mp

Source: <http://www.smcars.net/forums/attachments/trains/125256d1312904377-trolley-some-kind-hand-propelled-rail-vehicle-trolley.jpg>

REPORT

- Existing Conditions
- Survey Results
- Future Conditions
(including modeling)
- Purpose and Need



Source <http://www.paperwritingservice.info/wp-content/uploads/2011/09/Paper-Writing-Service-knows-how-to-produce-a-quality-report.jpg>

MODELING

Potential Markets for LSP Circulator

1. Regional Attractions Visitors
2. Local Recreational Visitors
3. Liberty Landing Ferry Commuters & Visitors
4. Industrial Park Workers

1. Regional Attractions Visitors

- **Includes Visitors to Liberty Science Center, Statue of Liberty/Ellis Island Ferry, and Central Railroad of New Jersey Terminal.**
- **Current and Future Demand Not Well Estimated by the NJRTM-E.**
 - “Non Work Trips” Include a Wide Variety of Trip Characteristics.
 - Calibration is Done on a Regional Basis.
 - Includes Average Weekday Condition (No Weekend, No Seasonality).
- **Current Demand Estimated Using Available Data and 2012 LSC Visitor Interview Survey.**
- **Future Demand (2020 and 2035) Estimated Using Historic Data, Trend Analysis, and Regional Growth.**

2. Local Recreational Visitors

- **Includes Visitors Using LSP for “Passive” Activities.**
- **Current and Future Demand Not Well Estimated by the NJRTM-E.**
 - Same Limitations as for Regional Attraction Visitors.
 - Trips That Use Local Streets Only are Not Specifically Addressed.
- **Current Demand Estimated Using Available Data and 2012 LSP Visitor Interview Survey.**
- **Future Demand (2020 and 2035) Estimated Using *LSP Local Visitor Model*.**

LSP Local Visitor Estimation

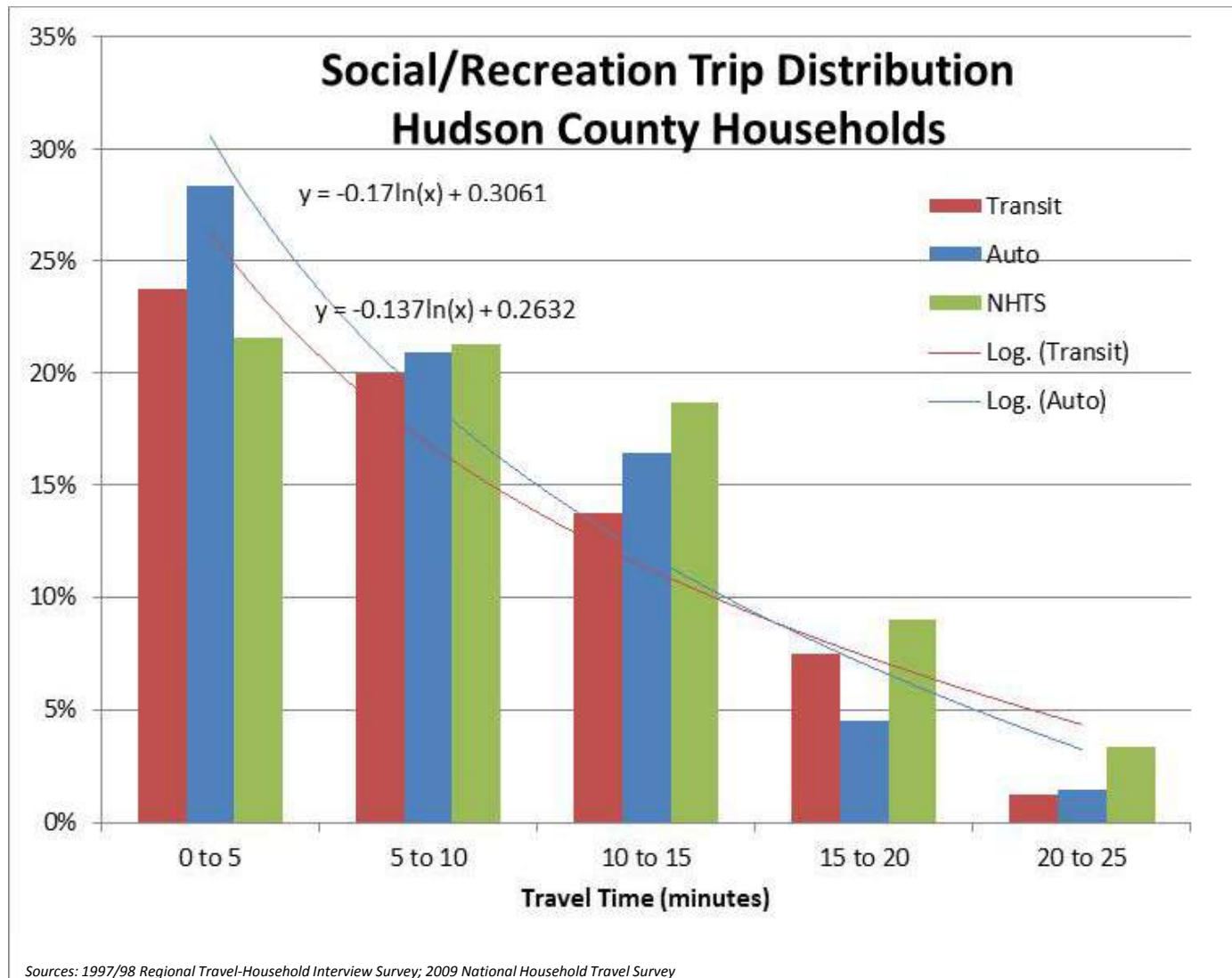
- **The Plan: Estimate Future Local Visitors as a Function of Changes in Demographics and Improvements to the Transportation Network.**
- **Key Variables:**
 - Number of Households and their Characteristics, i.e. Auto Availability, Children
 - Function of Travel Time & Distance to/from LSP
 - Competing Opportunities, i.e. Other Parks
 - Circulator Service (Route(s), Headway, Service Period)
 - Fare Sensitivity to be Addressed Separately
- **Proposed Model Based on Gravity Model and Intervening / Competing Opportunities Model**

Future Transportation Initiatives

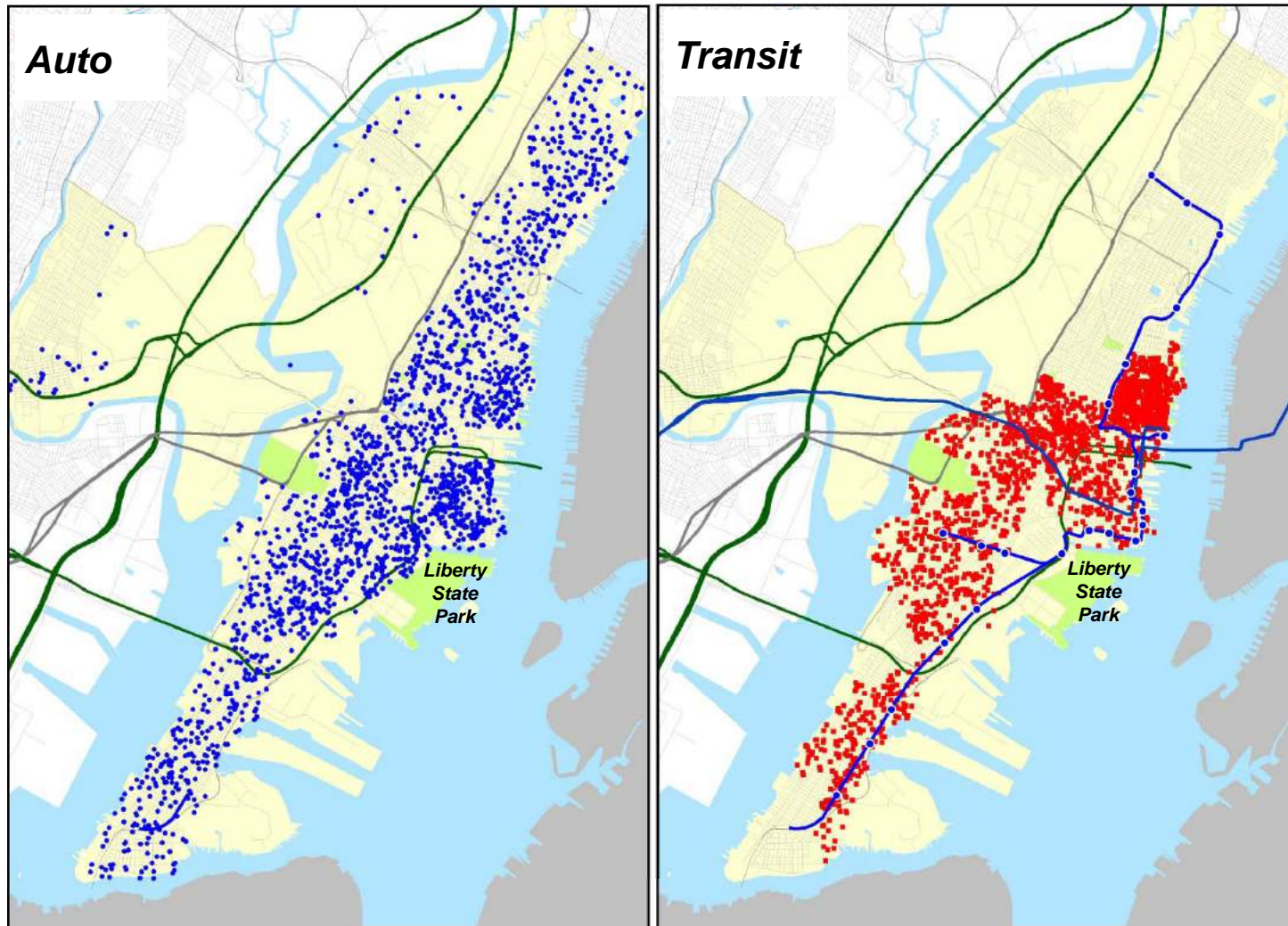


Source: Liberty State Park Circulator Cost-Benefit Analysis, City of Jersey City Division of City Planning

Social/Recreational Trip Length



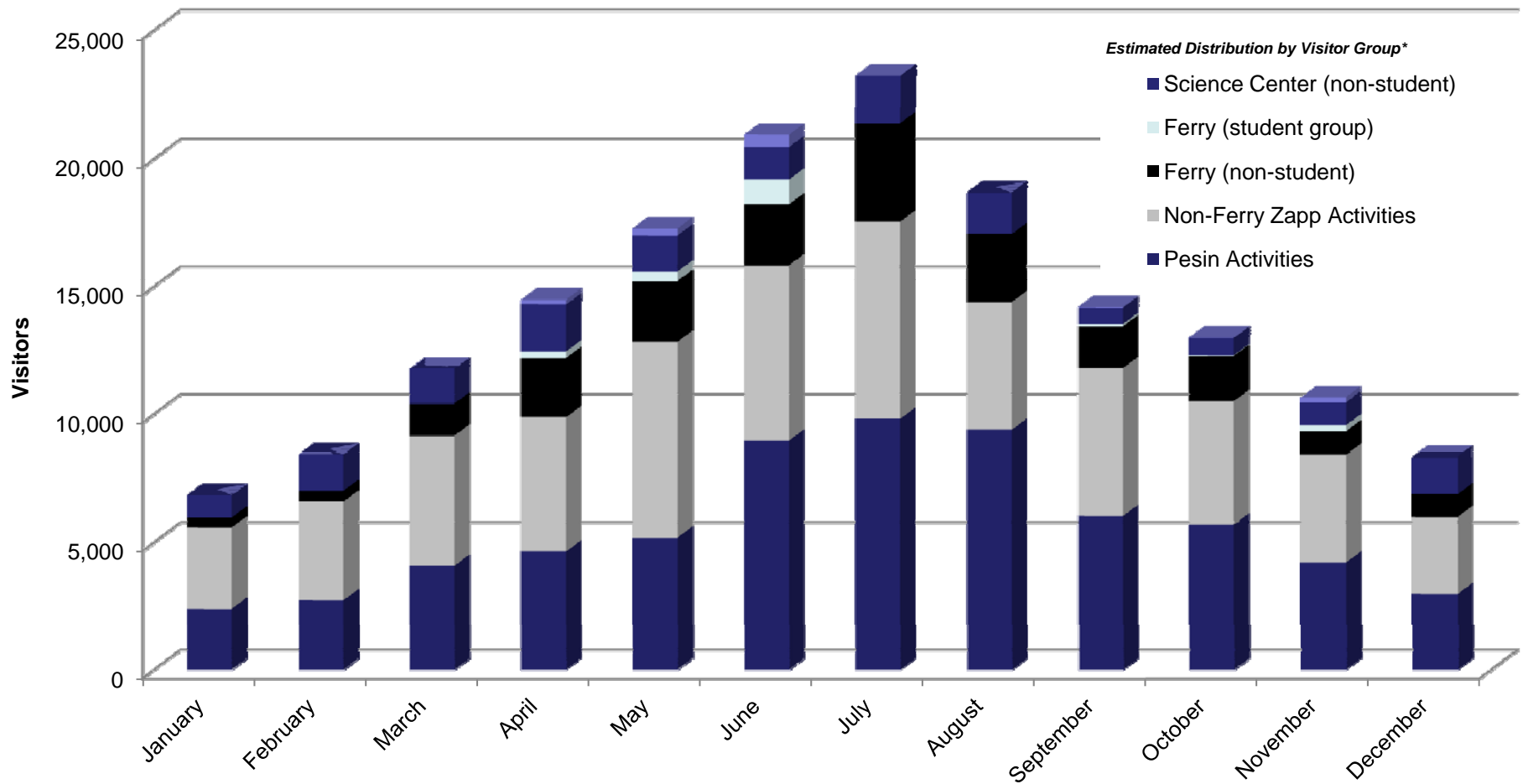
Estimated LSP Local Trip Distribution (Hudson County Only)



LSP Attendance

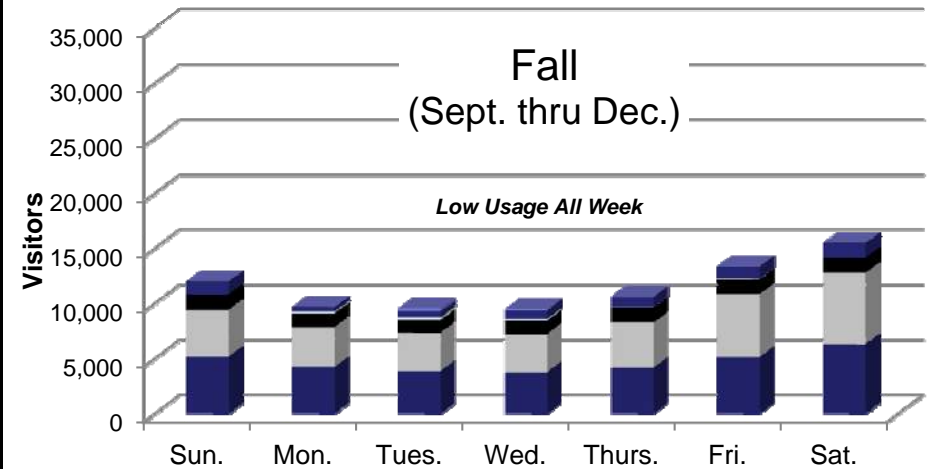
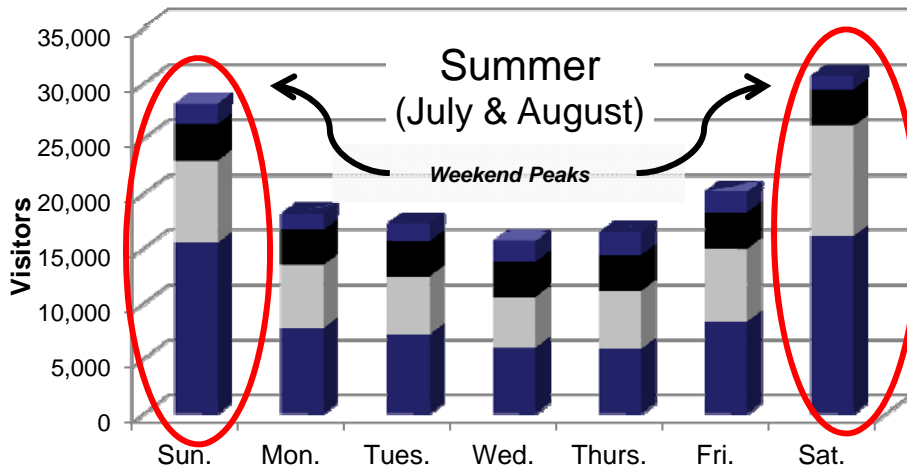
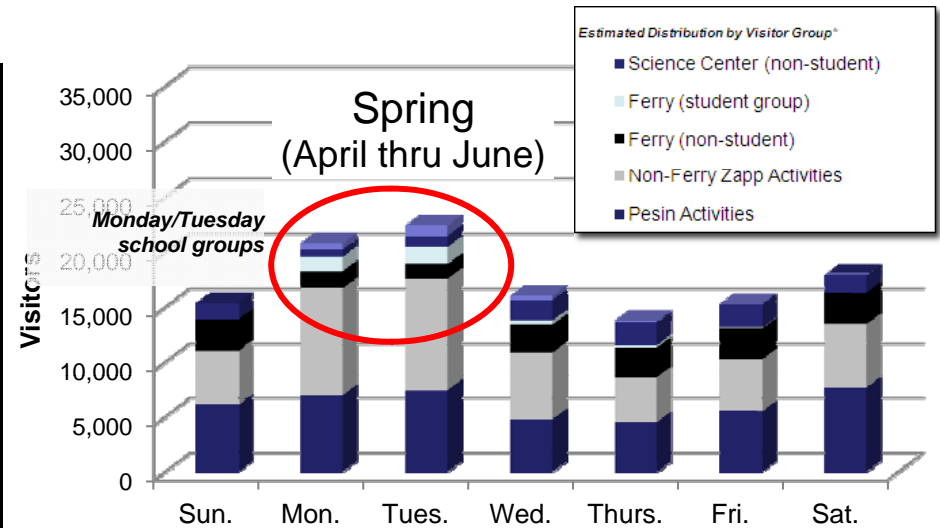
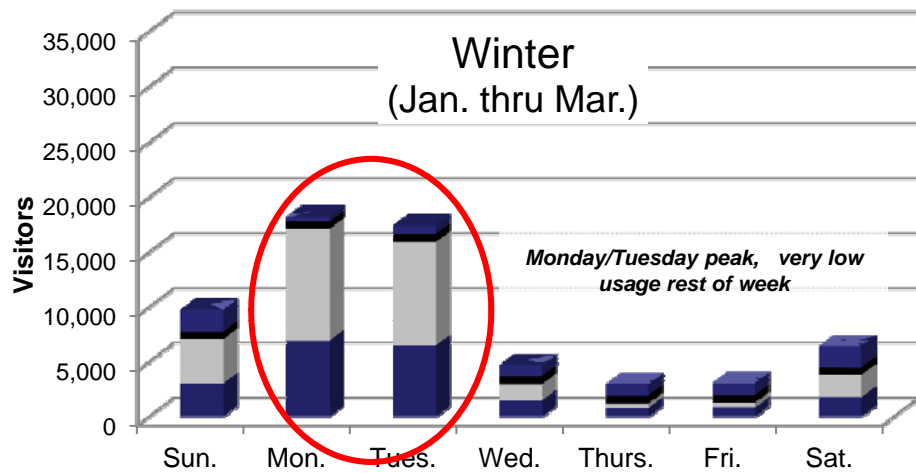
- **Liberty Science Center**
 - Student Groups
 - Non-Students
- **Statue of Liberty/Ellis Island Ferry**
 - Student Groups
 - Non-Students
- **Audrey Zapp Drive Corridor Destinations**
- **Morris Pesin Drive Corridor Destinations**

Liberty State Park Daily Visitors Monthly Distribution 2011



*Based on Data Provided and Bus & Auto Occupancy Rate Estimates

Liberty State Park Daily Visitors Seasonal Weekly Distribution 2011



*Based on Data Provided and Bus & Auto Occupancy Rate Estimates

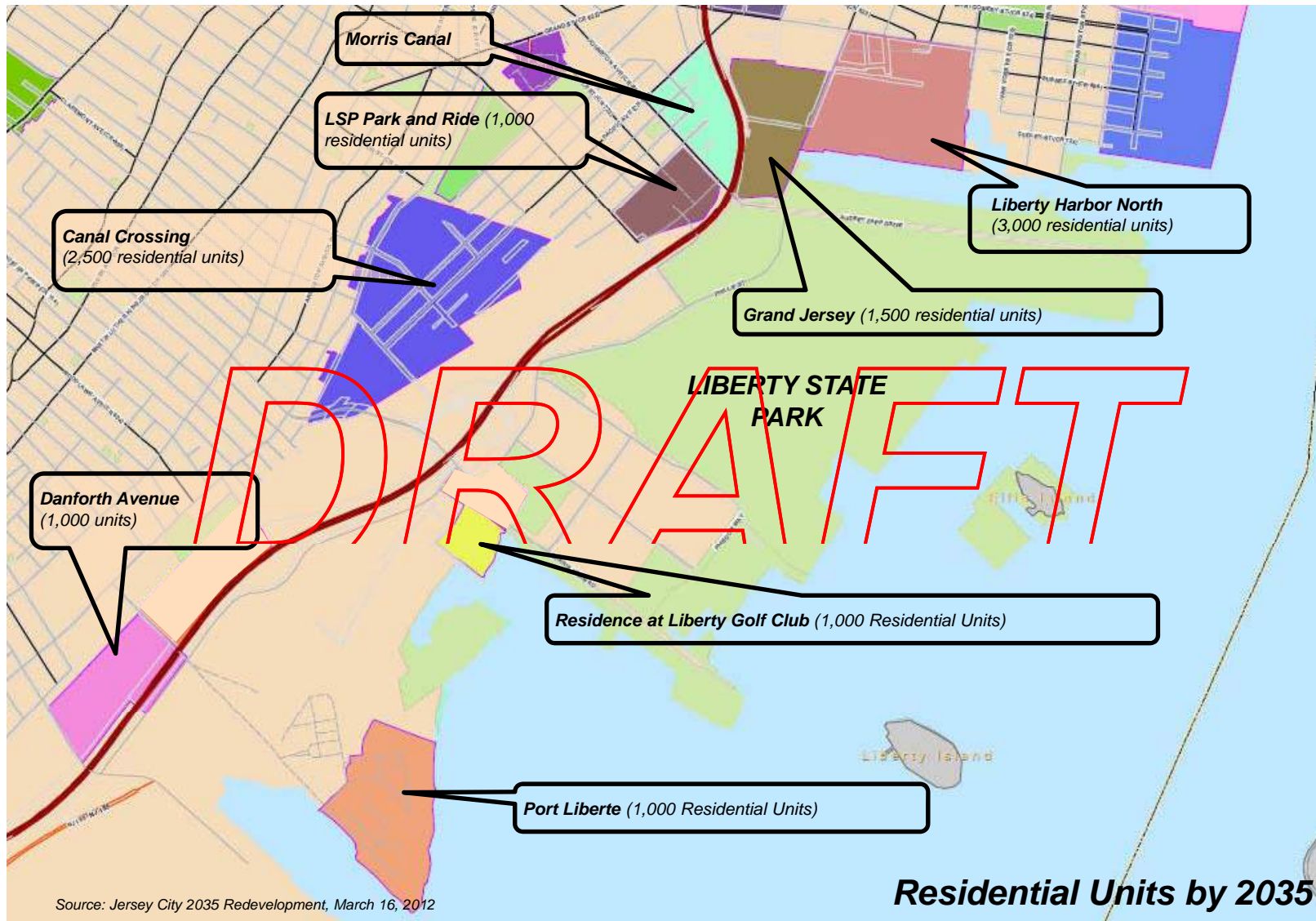
Other Factors Affecting Demand Estimation

- **Seasonality**
 - July/August is the Peak Usage Period
- **Weekday vs. Weekend**
 - Saturday/Sunday is the Peak Usage in Summer
 - Monday/Tuesday is the Peak Usage in Winter and Spring
- **Special Events**

3. Liberty Landing Ferry Commuters & Visitors

- Includes Users of Liberty Landing Marina and Liberty House and Maritime Parc Restaurants.
- Current Demand Underserved Based on 2009 NJ Transit Bus Study.
- Current Demand Levels Estimated from Available 2010 Census Data.
- Future (2020 and 2035) Residential Commuter Demand Estimated Using NJRTM-E and Jersey City Anticipated Growth.
- Market May Not Be Served by Proposed Circulator Service.

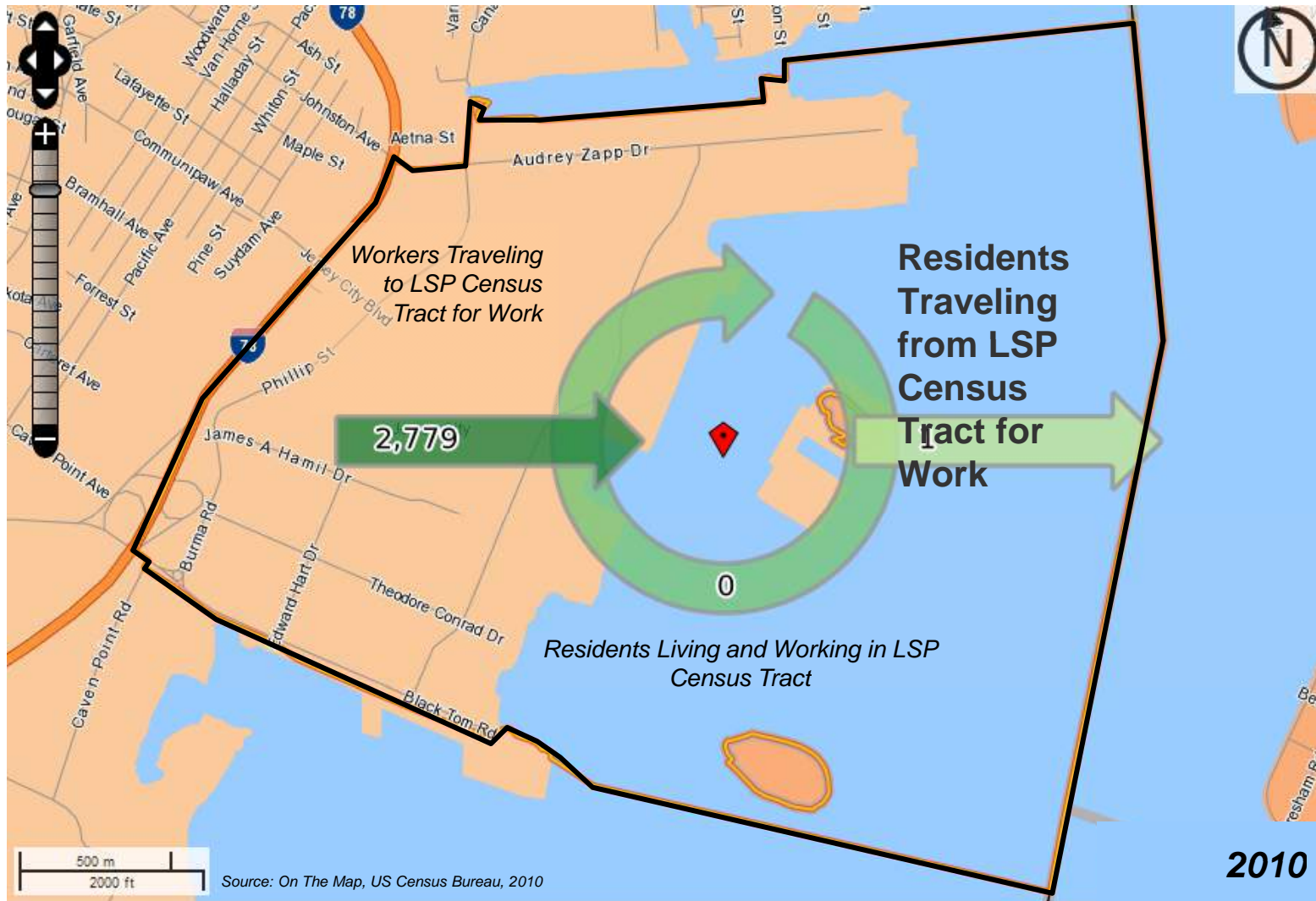
Potential Future Resident Commuters



4. Industrial Park Workers

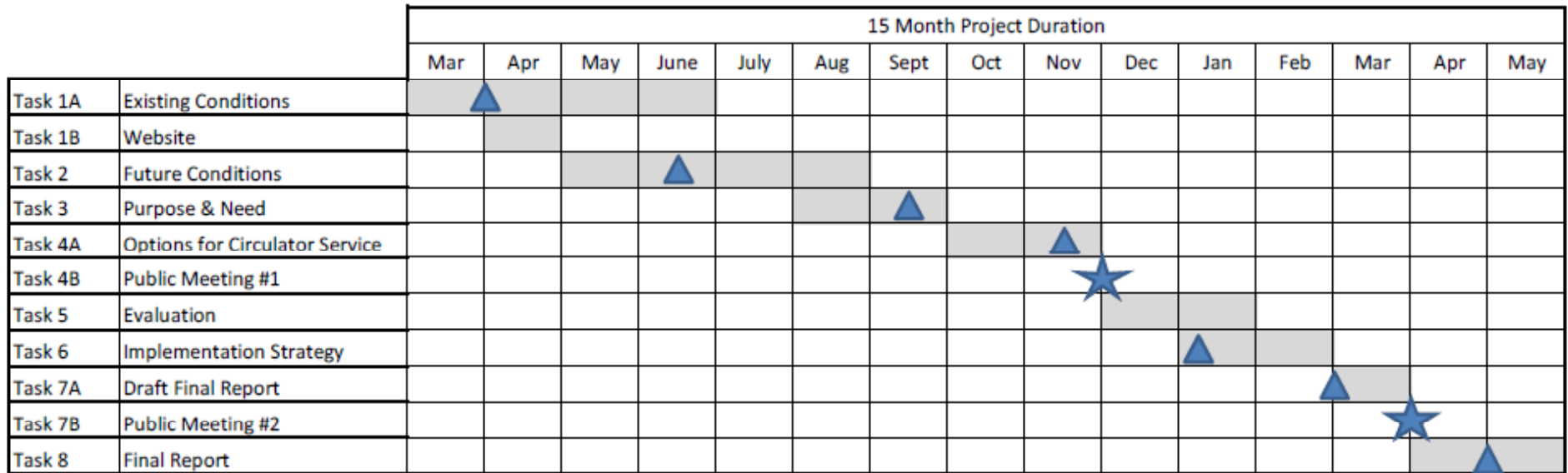
- **Includes Workers in the Burma Road/Morris Pesin Drive Area South of LSP**
- **Current Demand Underserved Based on 2009 NJ Transit Bus Study.**
- **Current Demand Levels Estimated from Available 2010 Census Data.**
- **Future Employee Demand Estimated Using NJRTM-E (2020 and 2035).**
- **Market May Not Be Served by Proposed Circulator Service.**

Current Local Employment





Q and A

PROJECT SCHEDULE



Legend

-  Technical Advisory Committee (TAC) Meeting
-  Public Meeting

Thursday, June 14, 2012

Note: The exact dates of the TAC and Public Meetings are to be determined.

NEXT STEPS

- End of June - Finalize survey
- End of June - Website to go live – start online survey
- After July 4 – start field surveys
- Early August – Survey results
- Early September – Modeling results
- Mid September – Next TAC Meeting



JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #2 Tuesday, June 19, 2012, 10 AM

MINUTES

ATTENDEES:

1. Jay DiDomenico, Hudson TMA
2. Elizabeth Thompson, North Jersey Transportation Planning Authority
3. Rob Rodriguez, Liberty State Park
4. Jason Newman, National Park Service
5. John Hnedak, National Park Service
6. John Trontis, NJDEP, Division of Parks and Forestry
7. Jonathan Luk, Liberty State Park
8. Bill McKelvey, Liberty Historic Rail
9. Dan Frohwirth, Jersey City Economic Development Corporation
10. John Lane, Hudson County Engineering
11. Francesca Giarratana, Hudson County Planning
12. Martin Robins, Liberty Historic Rail
13. Lee Klein, Jersey City Division of Engineering
14. Connie Claman, Liberty Science Center
15. Jeff Sasson, Liberty Science Center
16. Maryann Bucci-Carter, Jersey City Division of City Planning
17. Eliza Wright, Friends of Liberty State Park
18. Megan Massey, Hudson County Planning
19. Sam Pesin, Friends of Liberty State Park
20. Eyal Farage, Pole Position
21. Vinay Varadarajan, NJDOT Capital Investment Planning and Development
22. Dorcey Winant, Friends of Liberty State Park
23. Jeff Wenger, Jersey City Division of City Planning

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Laura Podolnick, Sam Schwartz Engineering
Ken Hausman, Stump/Hausman
Josh Curley, Stump/Hausman

MATERIALS DISTRIBUTED TO TAC:

Meeting Agenda
Draft Outline for Existing Conditions Report
Revised Project Schedule
Draft Liberty State Park Interview Survey
Draft Online Survey for Non-Park Visitors

DISCUSSION:

The second meeting of the Technical Advisory Committee (TAC) for the Liberty State Park Circulator Cost-Benefit Analysis was held on Tuesday, June 19, 2012 at 10 AM at the offices of the Division of City Planning at 30 Montgomery Street in the 14th floor conference room.

Following introductions by all in attendance, Mike Monteleone, Project Manager of the consultant team, made a presentation on major study deliverables in development.

Mr. Monteleone announced that a draft of a study-specific website has been created. The site's web address is www.lsptransitstudy.com, and it is anticipated to go live shortly after the TAC meeting. Mr. Monteleone said that the project team will request that TAC member agencies provide links to the study website from their agencies' websites. The website will facilitate communication with the general public and include study background information, public meeting announcements, and work products as they become available.

Mr. Monteleone noted that the City of Jersey City will issue a press release to announce the study and the planned survey effort.

In order to collect data for the travel demand model, a survey will be implemented. The primary purpose of the survey is to gain an understanding of the travel behaviors and visitation patterns of visitors to Liberty State Park (LSP). Mr. Monteleone explained the survey methodology. Four versions of the survey will be developed: an interview survey to be administered at various locations in LSP, an interview survey to be administered

at Liberty Science Center, an online version for those who have visited LSP, and an online version for those who have never visited LSP. Project team staff or Liberty Science Center staff will walk respondents through the questions of the interview surveys. Survey Monkey will be used to administer the online survey, which will be accessible via the study website. All surveys will be available in English and Spanish and are designed to be brief. Drafts of the LSP interview survey and the online survey for those who have never visited LSP were distributed to the TAC prior to the meeting, and the survey questions were revised based on TAC input.

In order to supplement the administration of the interview and online surveys, several TAC members suggested that paper copies be available. TAC members noted that paper copies would enable participation in the survey by those who do not have access to the internet. Vinay Varadarajan suggested making paper copies of the survey available at a public location such as Jersey City public libraries. Other potential locations include City offices and senior centers. Rob Rodriguez said that paper copies could be made available at locations in Liberty State Park and that park staff could collect paper copies. It was noted that the survey form will include a map of parking locations in order to facilitate the answering of question #8, which asks where survey respondents parked if they drove to LSP.

Mr. Monteleone noted that the LSP interview survey would be implemented at several locations throughout LSP on two days— one weekday and one weekend day – from 10 AM to 8 PM. The LSP interview survey will be implemented after July 4 to take advantage of the summer crowds on days with good weather. The project team will field test the draft survey in LSP prior to implementation.

Sam Pesin and others expressed concern that those who use the Park early in the morning, such as joggers who run before work, would not be counted, thereby excluding some local users of the Park from the model. It was requested that the survey hours be as long as the Park's hours of operation. In response, Mr. Monteleone explained that extending the hours of the survey would result in two shifts of survey implementers, which was not in the budget. It was noted that local joggers also use the Park after work in the evening when survey implementers would be in the Park, and their information could be captured then. Ken Hausman of Stump/Hausman, the firm developing the model, explained that two distinct models that generalize visitor behavior will be developed: one for regional visitors (who visit higher-profile attractions such as Ellis Island/Statue of Liberty) and one for local visitors (who use the Park for exercise, dog walking etc.). While this may not capture 100% of Park users – for example, some regional visitors jog, cycle in the Park and some local visitors go to Ellis Island/Statue of

Liberty – it is unlikely that the survey will yield enough data to inform additional distinct models.

Another concern was effective advertisement of the survey in order to get wide participation. One suggestion was to incentivize participation in the survey. Several TAC members did not feel that people would complete the survey unless there was a reward at the end. While the Liberty Science Center may incentivize participation in their survey, due to budget limitations, it is not possible to offer a prize or reward for participating in the survey.

John Trontis voiced concern about getting survey responses from those who have never visited LSP who may be *potential* Park visitors. He said that the NJDEP may be able to issue a press release concurrently with the City in order to get the word out statewide.

Dan Frohwirth said that Jersey City Economic Development Corporation could announce the survey on the Destination Jersey City website.

John Hnedak suggested reaching out to residents of New York City, as they are a large, potential visitor market. Jeff Sasson noted that, based on his experience, many residents of nearby Battery Park City may not be aware that LSP is accessible by public transportation. Martin Robins pointed out that if the study can tap into the NYC market and gain a better understanding of its travel patterns and interest in LSP, it may support the study's Purpose and Need Statement.

Mr. Trontis and Mr. Pesin suggested ways to draw attention to the survey effort in Liberty State Park, including hanging banners and asking survey implementers to wear customized T-shirts. While those suggestions are not feasible, survey implementers will dress to look "official," and the survey and the project website will be advertised at bulletin boards in LSP.

Sam Pesin suggested surveying visitors of Lincoln Park on the west side of Jersey City to ask if those visitors ever visit LSP or if they would visit LSP. Mr. Monteleone explained that limited resources make this infeasible.

Mr. Monteleone said that survey implementation must be complete by the end of July. The results of the survey will inform the travel demand model, which will be developed in August. The survey results and model outputs will inform the Purpose and Need Statement, which will be established in September.

Ken Hausman of the consultant team made a presentation on the travel demand model that will be developed for the study. Park visitors will be grouped into four markets:

regional attraction visitors, local visitors, commuters to Manhattan, and workers in LSP. Since the circulator has yet to be fleshed out, it is unknown if the circulator would serve each market, and the size of each potential market will be estimated in order to help with the evaluation of the circulator options. The regional attractions market includes visitors from the region who visit major destinations (e.g., Ellis Island, Statue of Liberty, Central Railroad of NJ Terminal). The local visitor market includes visitors who use the Park for “passive” recreational activities. The markets may be refined, and additional markets may be identified, based on the results of the survey. The NJTPA’s regional transportation model already includes good data on the Manhattan commuter market and LSP worker market.

Mr. Hausman explained that he will have to adjust the NJTPA’s regional transportation model, because it contains trip averages and does not include details of Park trips. Also, the NJTPA model is focused on the average weekday condition. Variables that will impact the model output include number of households, availability of an automobile, household size and presence of children, and trip time and distance. The model will forecast to the year 2035 in order to analyze impacts of anticipated population growth, particularly near the Park, and planned improvements to the transportation network (e.g., expansion of light rail service), which have the potential to affect Park visitation. Mr. Hausman noted that the NJTPA’s regional transportation model includes data on New York City.

Maryann Bucci-Carter said that car ownership in Jersey City has been declining in recent year and is expected to continue to decrease in the coming decades. Mr. Hausman said that the survey will provide information on the relationship between auto ownership and Park trips, which will be fed into the model. Variables in the model can be adjusted to reflect different assumptions on future conditions and trends (e.g., increase in price of gas, decrease in auto ownership).

Mr. Hausman explained that one key model output is the relationship between Park accessibility and the probability of a Park visit. (For illustrative purposes, Mr. Hausman noted that, based on 1997 data, the likelihood of a visitor making a trip to the Park on the Hudson-Bergen Light Rail decreased significantly when the trip time exceeded 25 minutes.)

The model identified one corridor in LSP as the “Morris Pesin Drive corridor”. Mr. Pesin suggested renaming this corridor as the “Morris Pesin Drive/Freedom Way corridor” in the model.

Mr. Robins asked where charter buses fit in the model. Mr. Hausman said that charter buses are tracked separately and would be incorporated in the analysis. Mr. Robins

said that charter buses and the visitation they support may support the Purpose and Need Statement.

Mr. Robins asked how special events would be accounted for. It was noted that special events provide their own shuttle plan. Ms. Bucci-Carter suggested looking at the transportation plans for special events, since they might inform a proposed circulator service. Mr. Hausman said he would like to obtain a list of special events in 2011 in order to parse out attendees from annual visitors.

Mr. Hnedak noted that there was a spike in visitations to Ellis Island/Statue of Liberty over Easter weekend and President's Day weekend this year.

Eyal Farage of Pole Position said that his company recently partnered with Liberty Science Center, which has boosted visitation to Pole Position. Mr. Farage said that, in 2011, 150,000 people visited Pole Position. Due to the lack of public transportation to Pole Position, his company reimburses taxi fare from the PATH station at Grove Street for visitors. He said that he is interested in shuttle service to Pole Position from the ferry. He noted that 35 – 40 people work at Pole Position, some of whom would take public transportation/circulator to work if it existed.

Mr. Sasson said that Liberty Science Center's advertisements on PATH and Hudson-Bergen Light Rail include travel time to Liberty Science Center, which was a recommendation from NYC and Company, because visitors' time is so valuable. Also, he mentioned that, when the shuttle bus service with LSP was canceled, the welcome desk at Liberty Science Center got many complaints.

Mr. Robins suggested that the project team meet with Liberty Historic Rail, Liberty Science Center, and National Parks Service to discuss the strategic needs of those groups.

Mr. Monteleone walked the TAC through the revised study schedule. The next TAC meeting will be held in mid September.

NEXT STEPS:

Action Item #	Actionee	Description
1	Jersey City	Provide presentation and minutes to attendees
2	TAC	Provide comments on website and surveys
3	SSE	Finalize surveys (including Spanish)
4	SSE	Finalize website (including Spanish)
5	SSE	Set up Survey Monkey account
6	SSE	Prepare map for surveys
7	SSE	Prepare map matrix for park survey
8	SSE	Develop flyer with web address
9	Jersey City	Press release
10	SSE	Webpage goes live
11	SSE	Survey goes live
12	SSE	Field test survey at park and LSC
13	SSE	Provide paper surveys to Friends of Liberty Park and LSP
14	Jersey City	Provide paper surveys at City Hall, libraries, and community centers
15	SSE	Perform interview surveys at LSP and LSC

City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis
Technical Advisory Committee
Meeting 1
Wednesday, April 4, 2012, 10 AM

Agenda

1. Welcome and Introductions
2. Study Purpose and Goals
3. Project Schedule
4. Study Methodology and Approach
5. Role of TAC
6. Q+A
7. Next Steps

LIBERTY STATE PARK CIRCULATOR

Cost-Benefit Analysis



**SAM SCHWARTZ
ENGINEERING**

City of Jersey City
Technical Advisory Committee
Meeting I

April 4, 2012

WELCOME

- Introductions
- Project background
- Study team



Source: <http://www.planetware.com/picture/jersey-city-liberty-state-park-us-nj139.htm>

STUDY PURPOSE



- **Establish purpose and need**
- **Evaluate concepts for a mass transit circulator service**
 - Various routes and modes will be considered
 - Range of options will be evaluated
- **Identification of feasible concepts**
 - Eliminate cost-infeasible alternatives
 - Results will be consistent with NEPA and FTA requirements

STUDY GOALS

- Reduce auto travel to park
- Capitalize on the multi-modal mass transit network to make park more accessible
- Consider transportation needs of underserved communities
- Develop connectivity within Liberty State Park and consider destinations near the park
- Recognize park as local and regional destination
- Support tourism
- Improve linkages with National Monuments

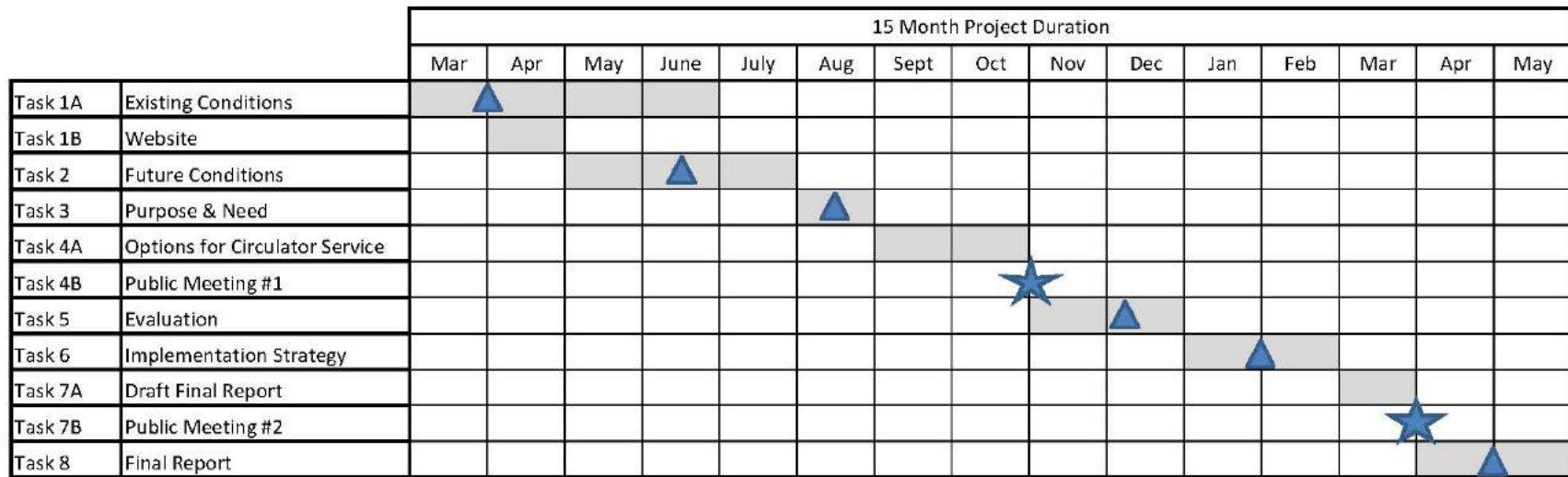


Source: <http://consequenceofsound.net/2009/08/where-we-live-liberty-state-park-jersey-city-nj/>



SCHEDULE

Liberty State Park Circulator Cost-Benefit Analysis

Project Schedule



Legend

-  Technical Advisory Committee (TAC) Meeting
-  Public Meeting

Thursday, March 29, 2012

Note: The exact dates of the TAC and Public Meetings are to be determined.

DATA COLLECTION



Source: <http://massbike.org/blog/2012/03/08/and-the-survey-says/>

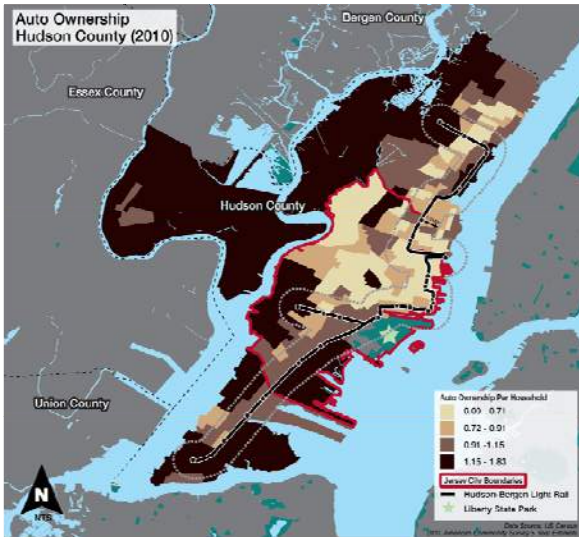
- **Data sources**

- Field reconnaissance
- Intercept surveys
- Census
- Previous transit initiatives
- Completed studies

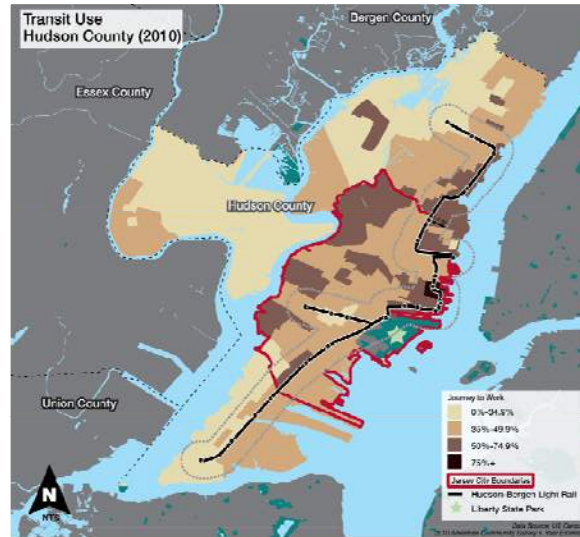
- **Types of data**

- Park visitation
- Transit ridership
- Park operations
- Existing and planned transportation initiatives

CENSUS DATA ANALYSIS



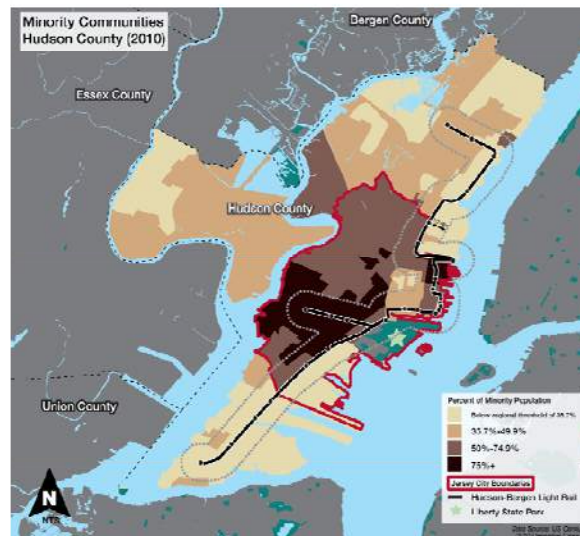
Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis



Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis



Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis



Client: City of Jersey City Division of City Planning
 Project: Liberty State Park Circulator Cost-Benefit Analysis

PUBLIC OUTREACH

- **Website (Ispransitstudy.com)**
- **Two public meetings**
 - Initial data and project approach
 - Evaluation of findings
- **Survey of park visitors**
- **TAC would assist in inviting appropriate constituents**
- **Provide a forum for underserved communities**



FUTURE CONDITIONS



- Projections using regional transportation models
- Target markets to include the following:
 - Liberty Science Center visitors
 - Central Railroad of New Jersey Terminal visitors
 - Statue of Liberty/Ellis Island visitors
 - Liberty Landing ferry
 - Industrial park workers
 - Local recreational visitors

PURPOSE AND NEED

- Why is a transit circulator needed?
- Consistency with NEPA and FTA guidelines
- Will address:
 - Current and future challenges
 - Capacity and constraints of existing and future conditions
 - How service could connect with existing and future transportation system
 - How service could connect to existing and future park features



Source: <http://www.used-buses.net/bustypes/img/shuttle-bus-1.jpg>

OPTIONS FOR CIRCULATOR SERVICE



- Options to be explored include:
 - Rubber-tire-based routings
 - Rail-based routings
 - Combined rail and bus options

Source: <http://www.smcars.net/forums/attachments/trains/125256d1312904377-trolley-some-kind-hand-propelled-rail-vehicle-trolley.jpg>

EVALUATION

- **Cost-benefit model (simplified FTA FY 2012 evaluation and rating process)**
- **Eliminate alternatives with a fatal flaw**
- **Detailed analysis for other alternatives**
 - Develop weights with TAC
 - Calculate relative scores for alternatives



Source: <http://www.232designs.com/wp-content/uploads/2011/12/Costs-Construction-Calculation01.jpg/>

IMPLEMENTATION STRATEGY



- Determine feasible short and long term options
- Identify funding sources
- Will prioritize options but will not identify a “preferred” alternative

ROLE OF TAC

- Provide critical data
- Identify previous studies
- Solicit input on park operations
- Contribute ideas for survey instrument
- Provide input on alternatives
- Assist in the development of evaluation criteria
- Review consultant reports
- Provide specific knowledge on function of park
- Assist in the preparation of public meetings



Source: <http://www.gazellesystems.com/blog/bid/117540/Establishing-the-Weekly-Meeting-Habit-at-the-Group-Level>

QUESTIONS AND ANSWERS

NEXT STEPS

- Provide requested data
- Review interim existing conditions technical memorandum
- Next meeting – middle of June



JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Technical Advisory Committee Meeting #1 Wednesday, April 4, 2012, 10 AM

MINUTES

ATTENDEES:

1. Jay DiDomenico, Hudson TMA
2. Carmine Tabone, Educational Arts Team
3. Kenneth Keane, Liberty Landing Marina
4. Scott Rowe, North Jersey Transportation Planning Authority
5. Nora Shepard, Meadowlink
6. Rob Rodriguez, Liberty State Park
7. Jason Newman, National Park Service
8. John Hnedak, National Park Service
9. Jeremy Colangelo, NJ TRANSIT
10. John Trontis, NJDEP, Division of Parks and Forestry
11. Jonathan Luk, Liberty State Park
12. Bill McKelvey, Liberty Historic Rail
13. Dan Frohwirth, Jersey City Economic Development Corporation
14. John Lane, Hudson County Engineering
15. Robert Verdibello, Connell Foley (on behalf of Liberty National Golf Course)
16. Francesca Giarratana, Hudson County Planning
17. Martin Robins, Liberty Historic Rail
18. Chuck Lee, Jersey City Engineering
19. Connie Claman, Liberty Science Center
20. Jeff Sasson, Liberty Science Center
21. Maryann Bucci-Carter, Jersey City Planning
22. Eliza Wright, Friends of Liberty State Park
23. Rafael Abreu, Statue Cruises
24. David Ginsberg, Hudson County Planning
25. Sam Pesin, Friends of Liberty State Park

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering
Laura Podolnick, Sam Schwartz Engineering
Ken Hausman, Stump/Hausman

DISCUSSION:

The meeting was held on Wednesday, April 4, 2012 at 10 AM at the offices of the Division of City Planning at 30 Montgomery Street in the 14th floor conference room. The following items were discussed:

1. Naomi Hsu opened the meeting and introduced herself as the Project Manager for the City of Jersey City Division of City Planning. She described the purpose and goals of the study and then asked all present to introduce themselves.
2. Mike Monteleone, the consultant team Project Manager for the study, presented a PowerPoint prepared for the meeting. Ken Hausman of the consultant team provided comments on the proposed modeling effort. Please see attached PowerPoint.
3. The questions and topics of discussion that came up during or after the presentation included the following:
 - John Trontis stated that this study is consistent with one of the five goals of NJDEP Division of Parks and Forestry – to provide transportation links to state parks from urban communities such as Jersey City. He said this is the first project that would address this goal. He also wanted to ensure that the project team kept in mind the overall mission of the NJDEP park system, as a state and regional amenity that attracts visitors from a wide area.
 - Sam Pesin requested that the two public meetings planned for this study be held in the evening or on the weekend to ensure a good turnout.
 - Martin Robins asked for clarification of the circulator's potential market segments and suggested that special events (e.g., concerts, Liberty National Golf Course tournaments, and July 4th fireworks) be added as well.

-
- Sam Pesin wanted to make sure the consultant team reviewed the old studies of park circulation, in particular a transit study prepared in the 1970s by a commission that included Morris Pesin and Audrey Zapp.
 - Several TAC members had questions relating to the study being consistent with NEPA and FTA requirements. The consultant team explained that the study is not an FTA alternatives analysis, will not result in the selection of a “preferred alternative” but rather a range of feasible options, and is not subject to NEPA review. However, the study methodology will be compatible with FTA/NEPA so that the next phase of the project can feed directly into the FTA and NEPA process. John Hnedak asked for clarification between “options” and “alternatives”. In response, Mike Monteleone said that options are essentially concepts and that alternatives would be fleshed out by a future study. Jason Newman asked if FTA or FHWA were invited to participate on the TAC, especially for their guidance on potential funding. The FTA/FHWA were not invited to the TAC, but the project team will consult with reps from FTA informally throughout the study.
 - Jonathan Luk suggested that the study take into consideration that the park itself is a natural resource and people visit for that reason. A discussion ensued about the importance of the survey of park users to be developed as part of the study and how the information collected by the survey will be useful for visitor projections. John Trontis noted that the survey may not capture the needs of potential park visitors if it is only administered to current park users. Sam Pesin recommended that the survey ask respondents about their sensitivity to transit fare pricing, especially when multiple transfers are required. Connie Claman noted that the Liberty Science Center surveys visitors at their box office and would be willing to assist with survey implementation. John Hnedak suggested using social media to generate buzz for the study/survey. Martin Robins said he could provide a copy of a proposal prepared by the Bloustein Survey Center that may be useful to the development of the survey. John Trontis stated that the DEP recently launched a new, free smartphone application that helps users plan visits to State parks, which could be used to direct people to the project website and raise awareness of the survey.
 - Martin Robins stated that he provided Al Meyer with a flash drive containing information related to rail trolleys including an application for Sarbanes Transit in the Park funding that was never submitted. He said that he found the exercise of

completing the Sarbanes grant application useful to developing an argument for mass transit in the park. He said that unpublished reports by Liberty Historic Rail and Rutgers University may be useful to this study.

- John Trontis said that, while the state's rail network is great for commuters, service during weekends that would serve park visitors is less convenient. Martin Robins said that the park and ride lot at the Liberty State Park HBLR station is empty during the weekend and should be considered as an off-site resource for LSP visitors in conjunction with a new Park circulator system. Sam Pesin noted that commuter parking is prohibited in Liberty State Park.
- Jay DiDomenico provided a brief description of the Liberty State Park weekend shuttle operated by Hudson TMA during the 2010 and 2011 summer seasons after NJ TRANSIT eliminated service on the 305 park shuttle. He said the service was free in 2010 and carried 350 passengers per day. In 2011, the shuttle fare was \$1.00 and ran every 30 minutes and carried 100 passengers per day. Sam Pesin responded that the service wasn't well advertised and not all potential riders read the newspaper to learn of the service. Sam Pesin stated that there are no plans for a summer shuttle this year and asked the TAC if it could be helpful in obtaining the \$21,000 needed to operate the service.
- John Lane cautioned that there are restrictions to certain uses in the park which must be considered with the introduction of transit to and through the park. Martin Robins added that there are also 4f issues that would have to be addressed in the NEPA process as well as state historic preservation issues. (Section 4(f) is triggered by projects funded or approved by a federal agency that propose the use of historic property or land from a publicly owned park, recreation area, or refuge.) Rob Rodriguez noted that, due to Green Acres restrictions, projects implemented in the park must be in support of the park's mission. John Trontis said that the project team should also consider DEP and SHPO guidelines.
- Martin Robins suggested that the FTA Small Starts exempt program for projects under \$25 million should be investigated as a potential source of funding. Eligible projects are typically subject to fewer FTA requirements.
- Bill McKelvey mentioned that the location and status of the high pressure natural gas pipeline proposed by Spectra Energy should be investigated. Rob Rodriguez noted that he was the point of contact with Spectra when we worked in the

State’s Green Acres office and offered to set up a meeting between the project team and Spectra if necessary. A public meeting on the proposed pipeline in Liberty State Park is scheduled for April 16.

- Chuck Lee stated that the City received a \$1.2 million grant to improve Phillips Street between the Burma Circle and Johnston Avenue, the longest segment of the Jersey Avenue Extension concept design by Sam Schwartz Engineering, which calls for a series of roundabouts. Mr. Lee said that the grant amount was not enough for the construction of the roundabouts and that any improvements must be consistent with the grant program requirements. He also said that the City submitted a TIGER grant application for construction of the entire Jersey Avenue Extension project.
- Nora Shepard said that the project team should keep in mind that bicycles are part of the multi-modal transportation network. Jay DiDomenico said that the Hudson TMA plans on advertising an RFP for a countywide bike share program over the next few months that would potentially include a location in Liberty State Park.
- Rafael Abreu said that he will provide Ellis Island and Liberty Island ferry ridership figures that include a breakdown between the Liberty State Park and Battery Park embarkation sites.

NEXT STEPS:

Action Item #	Actionee	Description	Due Date
1	Jersey City	Provide presentation and minutes to TAC	April 12
2	SSE	Review old studies of park circulation	Ongoing
3	Martin Robins	Provide a copy of a proposal prepared by the Bloustein Survey Center	April 9
4	Jersey City/SSE	Meet with NJ Transit and Hudson County TMA	Late April
5	NJDEP	Provide park restrictions in terms of uses	April 20
6	SSE	Attend Spectra Energy meeting on gas pipeline	April 16
7	Statue Cruises	Provide Ellis/Liberty Island ferry ridership figures	April 13

The project team will contact TAC members with data requests as needed. The next TAC meeting will be held in mid June.



City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis

Public Meeting 2

Thursday, May 9, 2013
City Hall - Anna Cucci Memorial Council Chambers
280 Grove Street
Jersey City, NJ 07302

Agenda

- 4:30 PM – 6:30 PM: Open House
Review display boards and talk to members of the project team
- 6:30 PM: Presentation by Mike Monteleone, AICP, PP, Senior Project Manager, Sam Schwartz Engineering
- 7:00 PM – 8:00 PM: Questions and Answers
Ask questions or provide feedback on the presentation

Public Comment Period

Written comments may be submitted through 5:00 PM, Thursday, May 23, 2013.

E-mail: lsprtransitstudy@gmail.com

Mail: Division of City Planning, 30 Montgomery Street, Suite 1400, Jersey City, NJ 07302, Attn: Naomi Hsu, AICP, PP, Senior Transportation Planner

For more information, [including the draft final report](#), please visit the project website: www.lsprtransitstudy.com

This study is funded by the City of Jersey City and the North Jersey Transportation Planning Authority.



PRIMARY ACTIVITY CENTERS

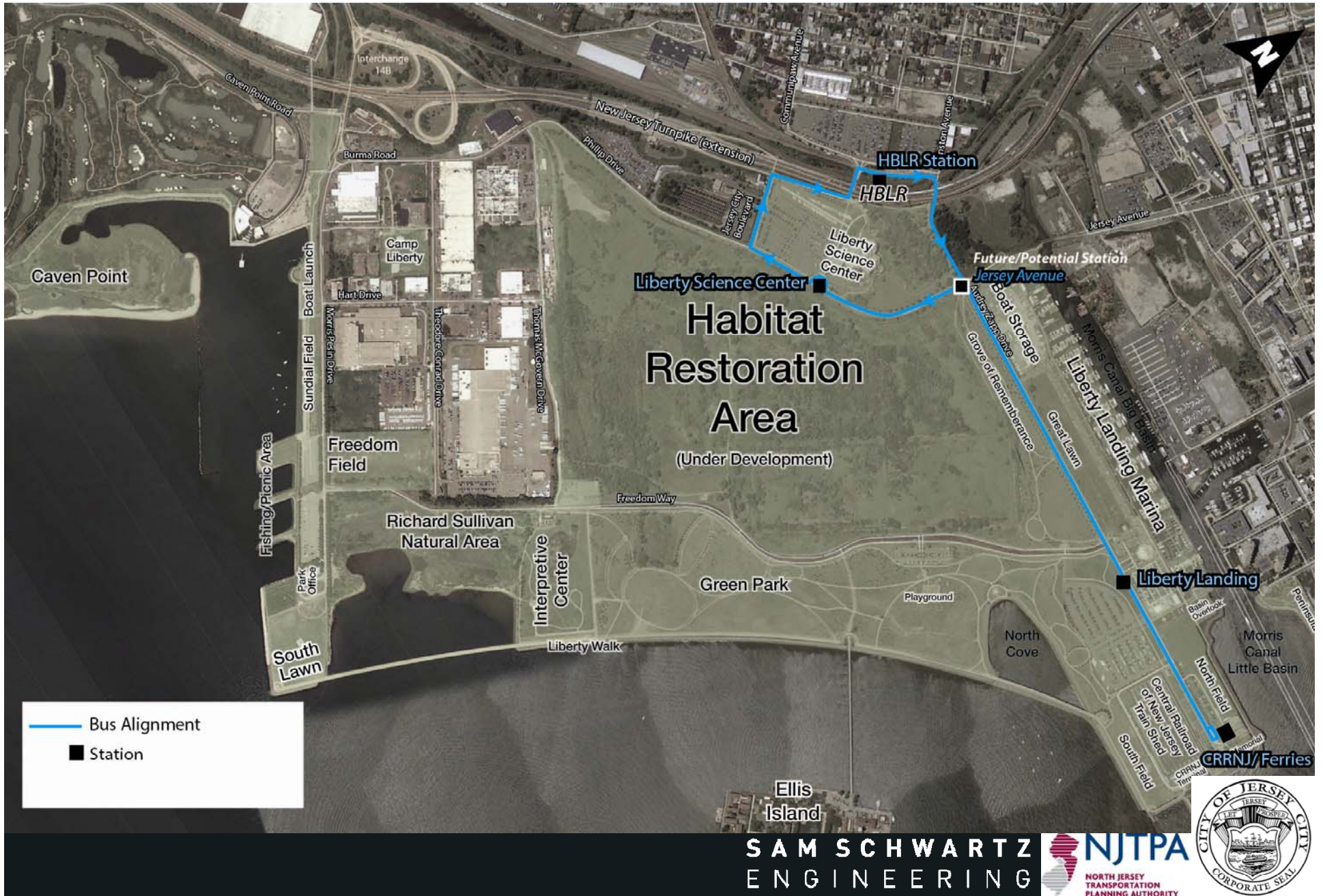


PROPOSED SERVICE CORRIDORS



- Destinations outside the park should be served as resources allow
- Service through industrial park area should be re-evaluated as new destinations come online over time

OPTION 1: BUS ON PRIMARY CORRIDOR



OPTION 2: BUS ON PRIMARY AND SECONDARY CORRIDORS



OPTION 3: STREETCAR ON PRIMARY CORRIDOR



— Streetcar Alignment
 Streetcar Station

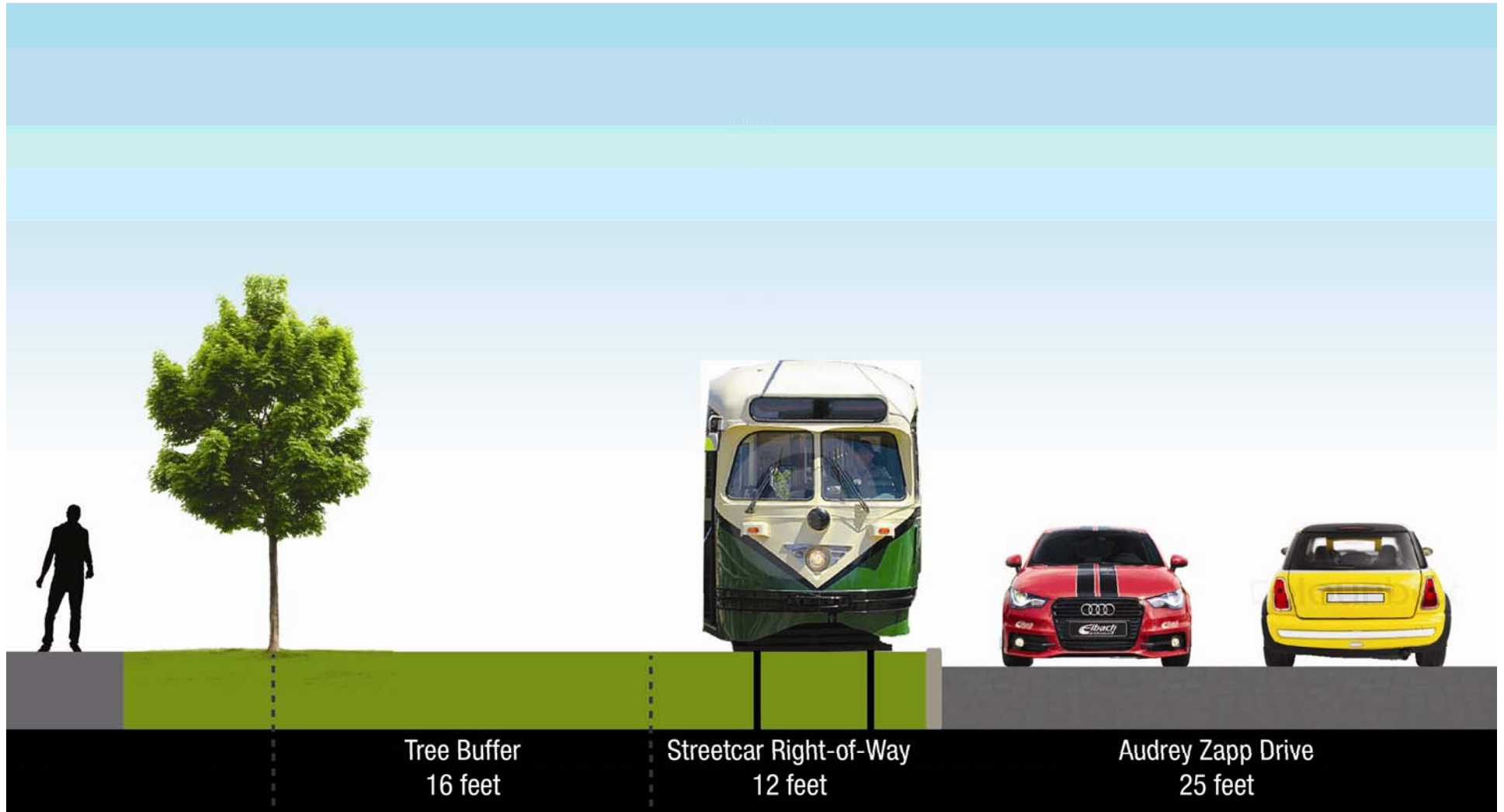
OPTION 3: WESTERN TERMINUS



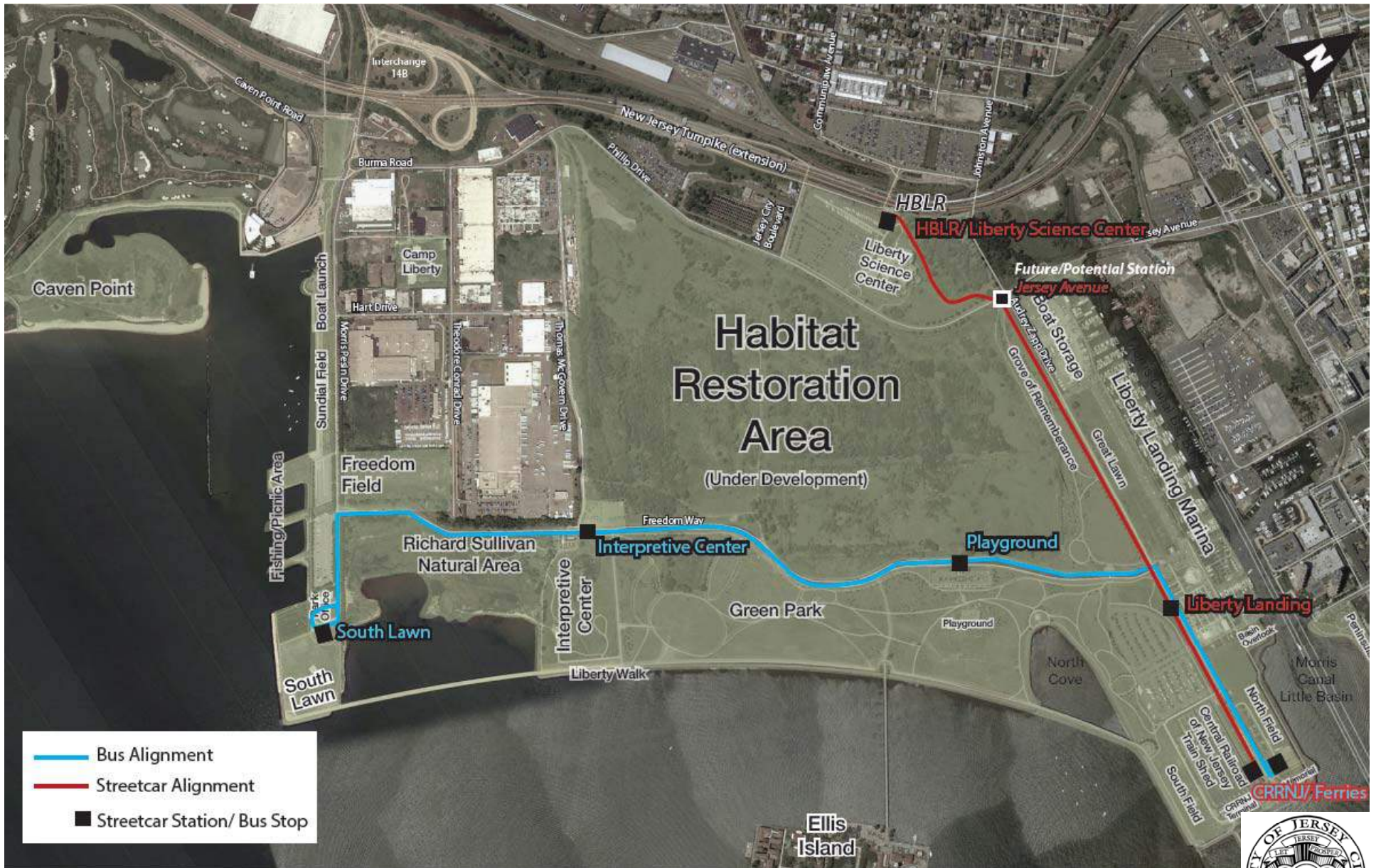
SAM SCHWARTZ
ENGINEERING



OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



OPTION 4: STREETCAR/BUS COMBINATION



- Bus Alignment
- Streetcar Alignment
- Streetcar Station/ Bus Stop

ANALYSIS SUMMARY

	Option 1: Bus on Primary Corridor	Option 2: Bus on Primary and Secondary Corridors	Option 3: Streetcar on Primary Corridor	Option 4: Streetcar/Bus Combination
Capital Costs	\$71,200	\$132,368	\$3,280,000 - \$5,325,000	\$3,376,500 - \$5,422,500
Annual Operations/ Maintenance Cost	\$450,000	\$900,000	\$640,000	\$1,090,000
First-Year Ridership	73,700	81,900	84,100	91,000

- **Bus service has quick start-up and vehicle size flexibility**
- **Streetcar achieves sense of “permanence”**
- **Minimal park impacts for all options based on initial review**
- **Streetcar presents additional opportunities for LSC collaboration**

VERY SHORT-TERM STRATEGY (SUMMER 2013)



- Bus option is “shovel-ready”
- Little planning needed
- Operate bus service on Primary Corridor
- Summer weekends and holidays (July 4 to Labor Day)
- Funding: corporate sponsorship, not-for-profit, private donations, etc.

SHORT-TERM STRATEGY (2014 AND 2015)

- **Apply for Federal Lands Access Program (FLAP) funding**
- **If no FLAP funds are available:**
 - Operate bus service on Primary Corridor
 - Summer weekends and holidays (July 4 to Labor Day)
 - Retain grant coordinator?
 - Funding: corporate sponsorship, not-for-profit, private donations, park user fees, etc.
- **If FLAP funds are available:**
 - Expand bus service to Secondary Corridor
 - Expand service to weekdays between April and October and weekends for remainder of year
 - Market/brand service



LONG-TERM STRATEGY (BEYOND 2016)



- Continue to pursue FLAP funding
- Operate bus service as funding allows
- If funding is available, study rail option
- If significant funding is available, rail option could be implemented

Source: <http://www.smcars.net/forums/attachments/trains/125256d1312904377-trolley-some-kind-hand-propelled-rail-vehicle-trolley.jpg>

SAM SCHWARTZ
ENGINEERING



LIBERTY STATE PARK CIRCULATOR

Cost Benefit Analysis



SAM SCHWARTZ
ENGINEERING

Stump/Hausman
Partnership

City of Jersey City
Public Meeting II

May 9, 2013



WELCOME

- Introductions
- Background
- Overview of options
- Impacts and benefits
- Cost estimation and ridership projections
- Funding sources
- Implementation strategy
- Next steps



Source: <http://www.planetware.com/picture/jersey-city-liberty-state-park-us-nj139.htm>



TAC MEMBER ORGANIZATIONS

Central Parking
Educational Arts Team
EZ Ride (Meadowlink)
Friends of Liberty State Park
Hudson County Division of Engineering
Hudson County Division of Planning
Hudson Transportation Management Association (TMA)
Jersey City Division of City Planning
Jersey City Division of Engineering
Jersey City Economic Development Corporation
Jersey City Mayor's Office
Liberty Historic Railway
Liberty National Golf Club
Liberty Landing Marina
Liberty Science Center
Liberty State Park
NJDEP Division of Parks and Forestry
NJDOT Bureau of Capital Program Development
New Jersey Transit
North Jersey Transportation Planning Authority (NJTPA)
Pole Position
Port Authority of New York and New Jersey
Save Ellis Island
Statue Cruises
US National Park Service

PROJECT SCHEDULE

		15 Month Project Duration														
		Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Task 1A	Existing Conditions	▲														
Task 1B	Website															
Task 2	Future Conditions			▲												
Task 3	Purpose & Need							▲								
Task 4A	Options for Circulator Service								▲							
Task 4B	Public Meeting #1										★					
Task 5	Evaluation															
Task 6	Implementation Strategy													▲		
Task 7A	Draft Final Report														▲	
Task 7B	Public Meeting #2															★
Task 8	Final Report															▲

Legend

-  Technical Advisory Committee (TAC) Meeting
-  Public Meeting

Friday, May 03, 2013

Note: The exact dates of the TAC and Public Meetings are to be determined.

STUDY PURPOSE



Source: <http://www.destinationnexus.com/Liberty-State-Park-in-Jersey-City-New-Jersey.html>

- **Establish purpose and need**
- **Evaluate concepts for a mass transit circulator service**
 - Various routes and modes will be considered
 - Range of options will be evaluated
- **Identification of feasible concepts**
 - Eliminate cost-infeasible alternatives
 - Results will be consistent with NEPA and FTA requirements
 - Will prioritize concepts but will not identify a “preferred” alternative

PURPOSE & NEED

Draft Purpose Statement: Liberty State Park Transit Circulator

The purpose of the Liberty State Park Transit Circulator is to provide a reliable transit service to and from the park that:

1. Provides an alternative to predominantly automobile access to the park;
2. Serves the current and projected future transit demand to the park for recreational and tourist markets;
3. Provides the means to visit the park for Jersey City residents who do not have access to a car.



PUBLIC OUTREACH

- **Two public meetings**
 - Initial data and project approach
 - Evaluation of findings
- **Website (Lsptransitstudy.com)**
- **Survey of park visitors**

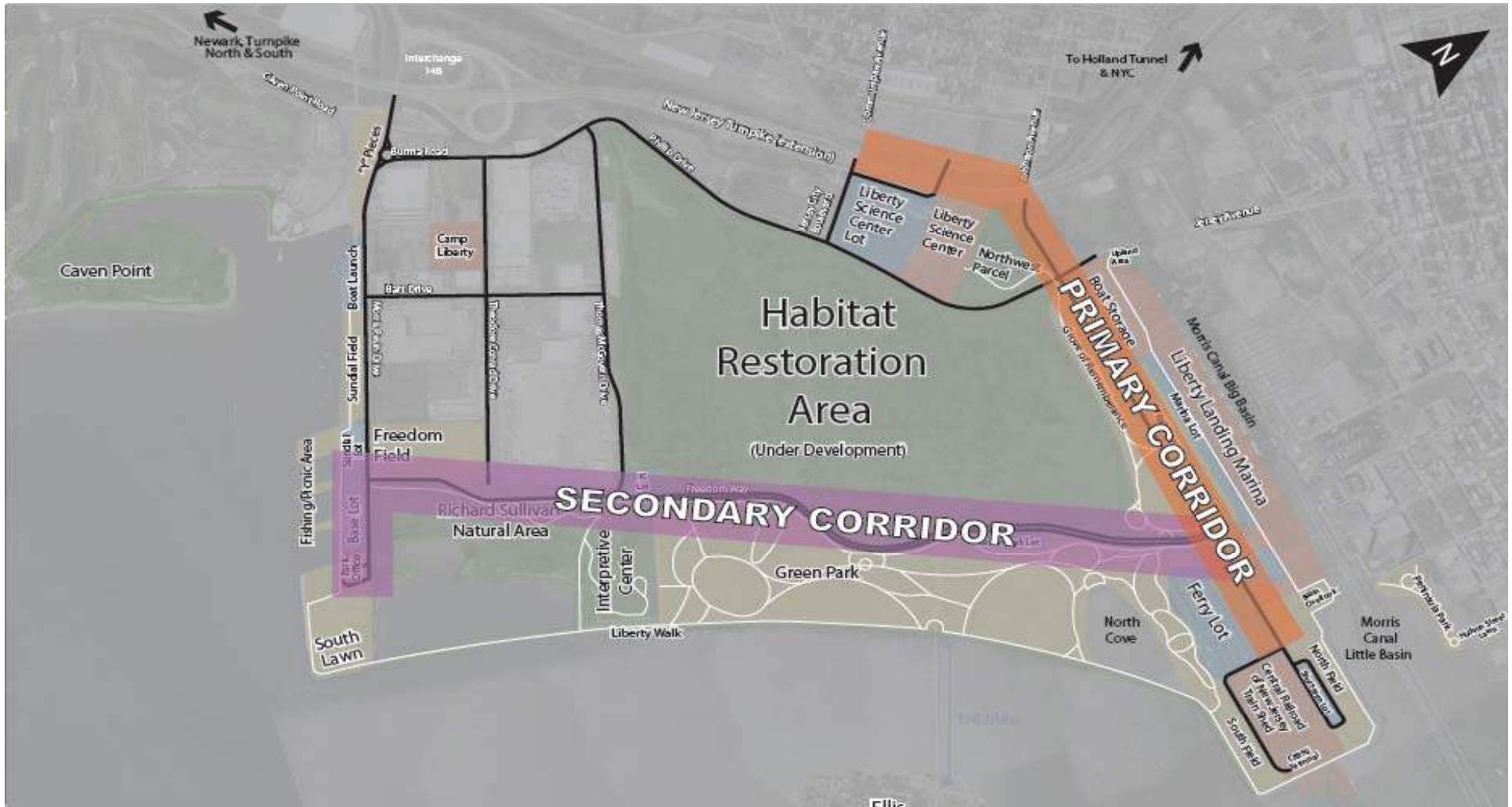


Source: http://www.huntingtonbeachca.gov/images/users/public_works/Watertownhallmeeting.jpg

PRIMARY ACTIVITY CENTERS



PROPOSED SERVICE CORRIDORS



- Destinations outside the park should be served as resources allow
- Service through industrial park area should be re-evaluated as new destinations come online over time

PRELIMINARY SERVICE GUIDELINES

- **Grass tracks and no overhead wires could be standard for streetcar options**
- **No or ultra-low emissions could be standard for all bus options**
- **Service design and vehicle selection could facilitate transit excursion through the park as attraction**
- **Historic streetcar may be an attraction on its own**



Grass Trackbed in New Orleans



Zero Emissions Bus in Scotland



Park Shuttle in Zion National Park

PROPOSED OPTIONS FOR COST/BENEFIT EVALUATION

1. Bus service between HBLR and CRRNJ terminal only
2. Bus service for both proposed segments
3. Historic/replica streetcar between HBLR and CRRNJ terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ terminal and bus for other segment



OPTION 1: BUS ON PRIMARY CORRIDOR



OPTION 2: BUS ON PRIMARY AND SECONDARY CORRIDORS

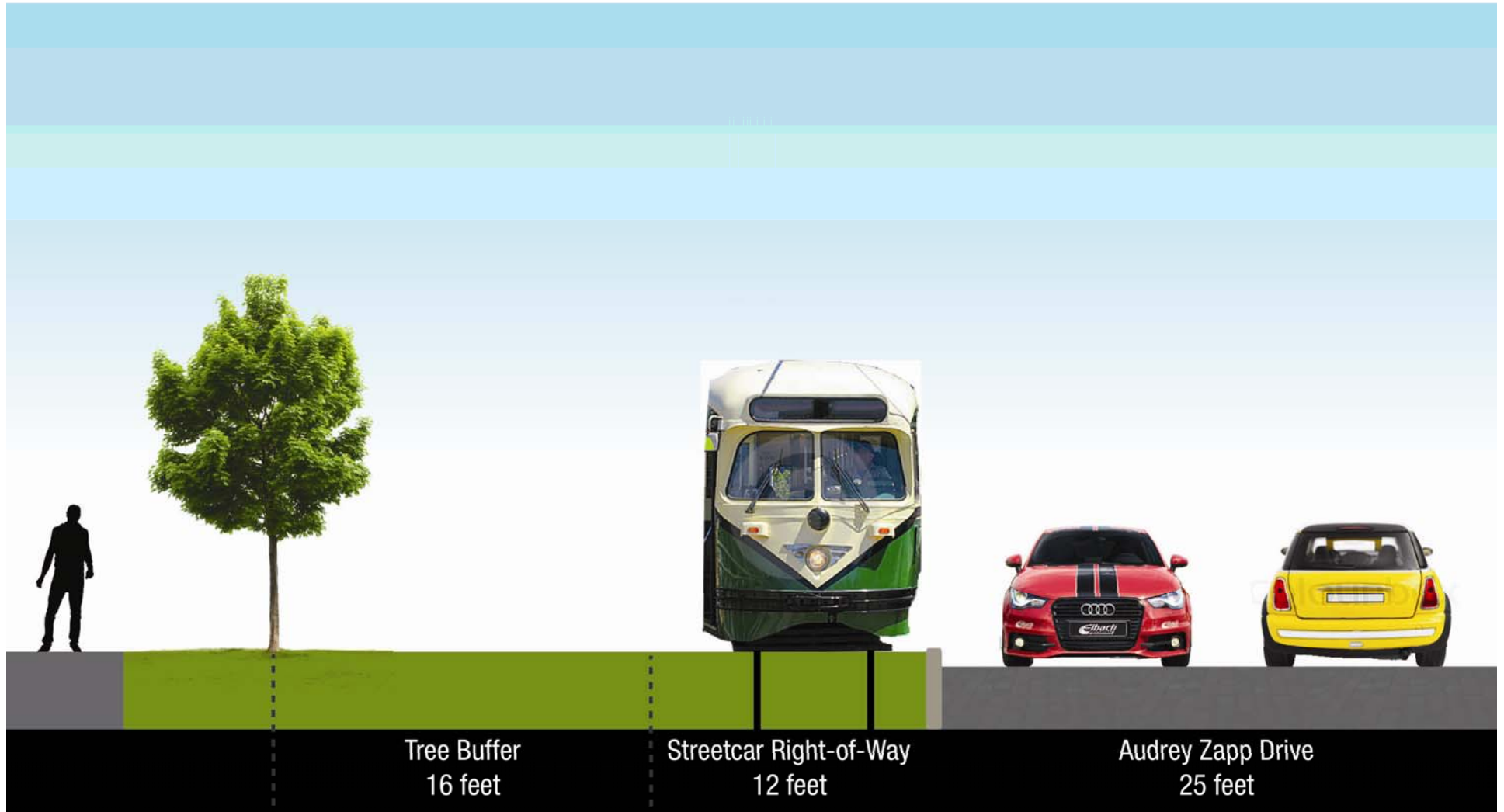


OPTION 3: STREETCAR ON PRIMARY CORRIDOR



— Streetcar Alignment
 ■ Streetcar Station

OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



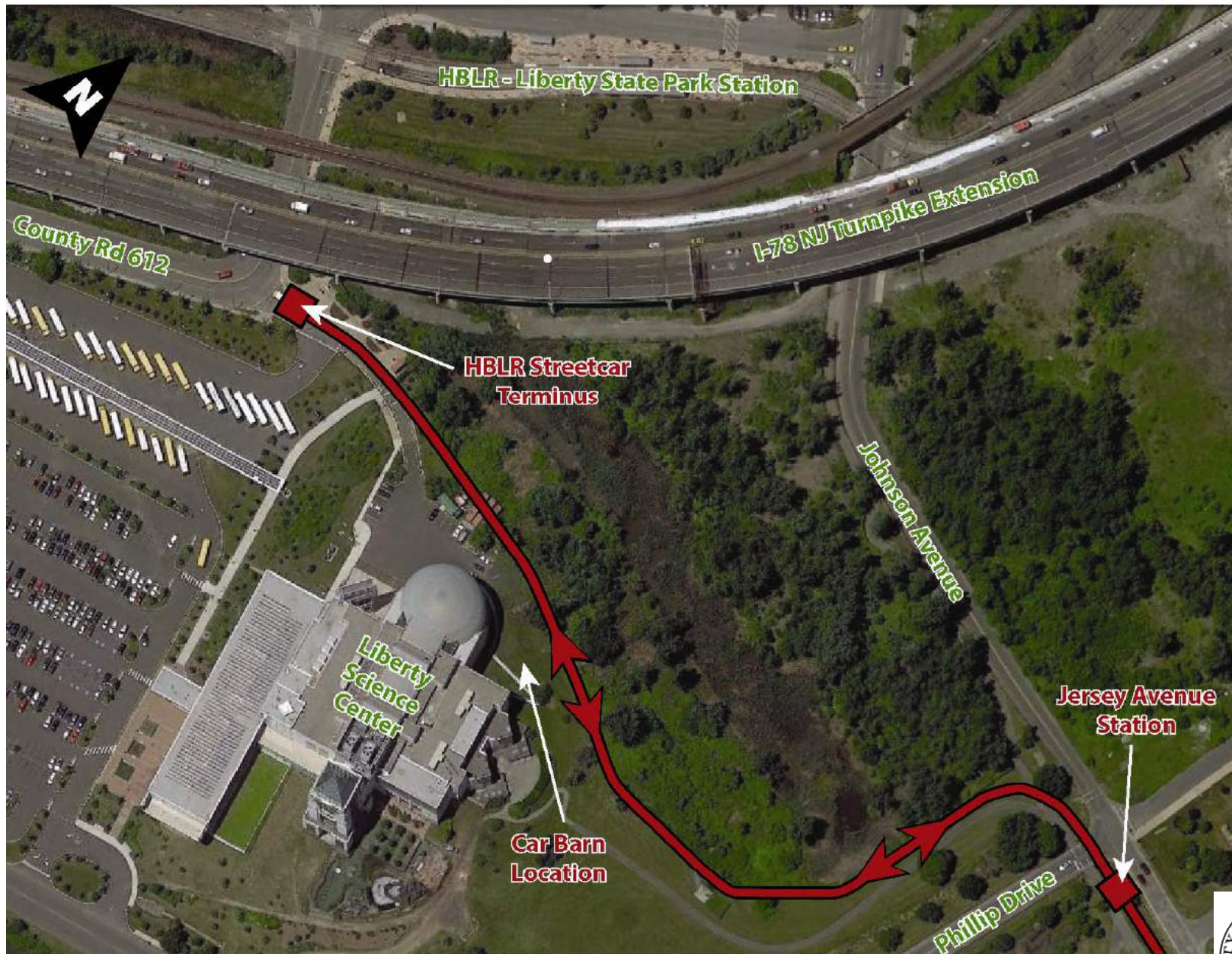
OPTION 3: ZAPP DRIVE STREETCAR ALIGNMENT



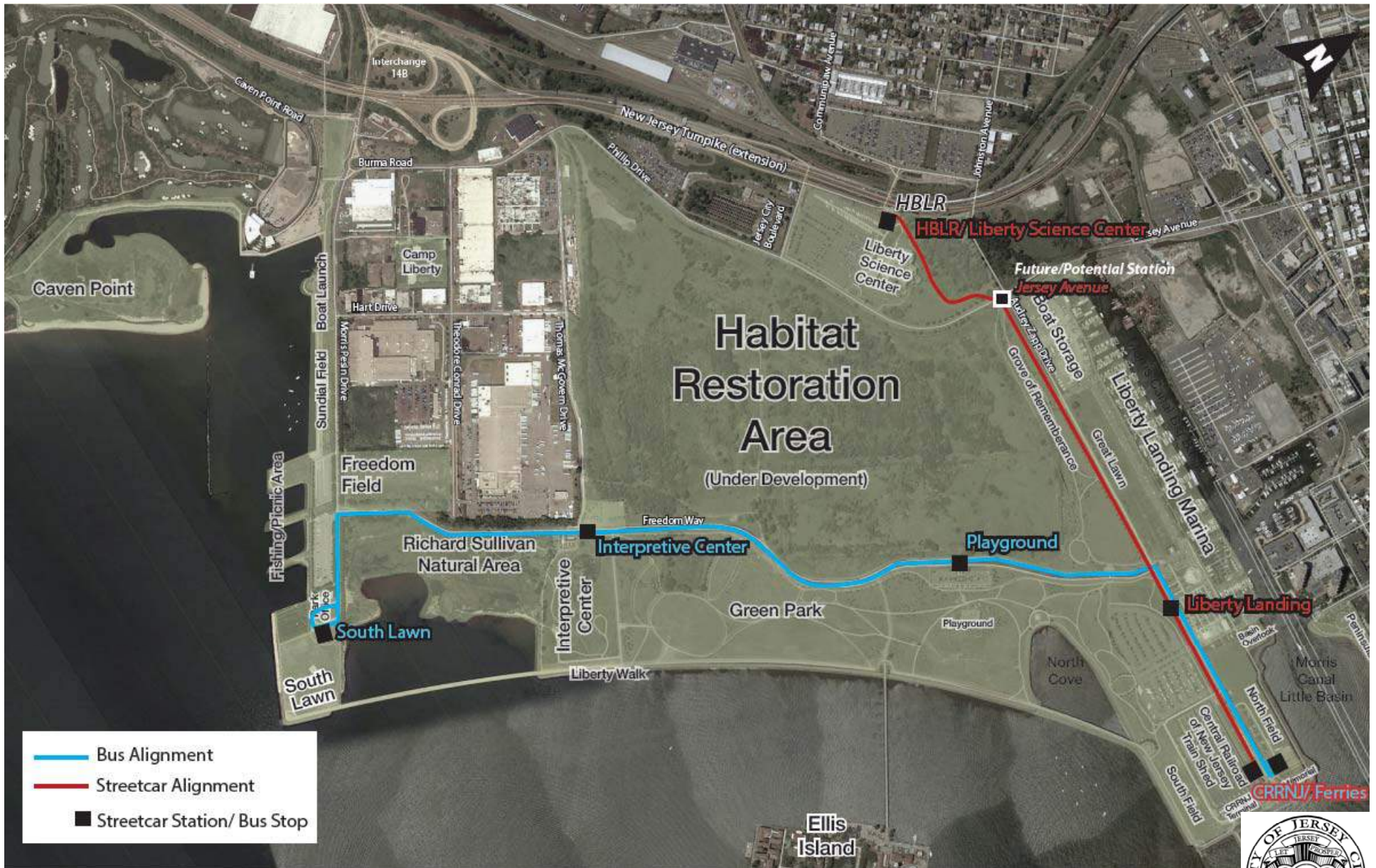
SAM SCHWARTZ
ENGINEERING



OPTION 3: WESTERN TERMINUS



OPTION 4: STREETCAR/BUS COMBINATION



QUALITATIVE ANALYSIS OF IMPACTS

- **Air/Emissions**
- **Noise**
- **Wetlands**
- **Visual**
- **Historic Resources**
- **Contaminated Soil**
- **Vegetation/Open Space**
- **Pedestrians/Vehicles**

BENEFITS AND POTENTIAL IMPACTS: OPTION 1 (BUS ON PRIMARY CORRIDOR)

- **Benefits:**

- Lowest cost, no significant infrastructure needed
- Quick start-up
- Captures 90% of previous transit trips
- Can easily change vehicle sizes over time based on demand

- **Impacts:**

- May be some local emissions, depending on vehicle used
- May be some engine noise, depending on vehicle used
- Only impact to vegetation/open space may be for placement of some bus shelters
- No issues with wetlands, visual, contaminated soil, historic resources or pedestrians/vehicles

BENEFITS AND POTENTIAL IMPACTS: OPTION 2 (BUS ON PRIMARY AND SECONDARY CORRIDORS)

- **Benefits:**

- Second lowest cost, no significant infrastructure needed
- Quick start-up
- Serves both park corridors
- Can easily change vehicle sizes over time based on demand

- **Impacts:**

- May be some local emissions, depending on vehicle used
- May be some engine noise, depending on vehicle used
- Only impact to vegetation/open space may be for placement of some bus shelters
- No issues with wetlands, visual, contaminated soil, historic resources or pedestrians/vehicles

BENEFITS AND POTENTIAL IMPACTS: OPTION 3 (STREETCAR ON PRIMARY CORRIDOR)

- **Benefits:**

- Captures 90% of previous transit ridership
- Captures additional ridership interested in historic streetcar
- Achieves a sense of “permanence”
- Could begin with bus service during construction of streetcar
- Hydrogen fuel cell technology could be basis for LSC collaboration

- **Impacts:**

- Minimal noise from engine and bell chiming
- Would not traverse historic cobblestone street
- Alignment may need to be slightly built up to avoid contaminated soil with ballast work
- Would affect up to eight trees and station placement but no programmed open space
- Two grade crossings, two parking lot crossings – signal warrant study
- No issues with wetlands or visual

BENEFITS AND POTENTIAL IMPACTS: OPTION 4 (STREETCAR/BUS COMBINATION)

- **Benefits:**

- Serves both park corridors
- Captures additional ridership interested in historic streetcar
- Achieves a sense of “permanence” on primary corridor
- Can easily change vehicle size on secondary corridor
- Could begin with bus service on full corridor during construction of streetcar segment
- Hydrogen fuel cell technology could be basis for LSC collaboration

- **Impacts:**

- May be some local emissions from bus segment
- Minimal noise from engines and bell chiming
- Would not traverse historic cobblestone street
- Streetcar alignment may need to be slightly built up to avoid contaminated soil with ballast work
- Would affect up to eight trees on streetcar alignment and station/stop placement but no programmed open space
- Two streetcar grade crossings, two parking lot crossings – signal warrant study
- No issues with wetlands or visual

ANNUAL RIDERSHIP ESTIMATE: OPTION 1 (BUS ON PRIMARY CORRIDOR)

	2011	2020	2035
Base Ridership (Model Projections)	54,000	75,870	105,750
Ridership Increase from Reduced Waiting Times	31.3%	31.3%	31.3%
Ridership Increase from Improved Service Features	5.3%	5.3%	5.3%
<i>Uniquely Designed Vehicles</i>	<i>1.3%</i>	<i>1.3%</i>	<i>1.3%</i>
<i>Clear Simple Service Plan</i>	<i>1.0%</i>	<i>1.0%</i>	<i>1.0%</i>
<i>Uniquely Designed Shelters</i>	<i>0.5%</i>	<i>0.5%</i>	<i>0.5%</i>
<i>Service Branding (Vehicles. Brochures)</i>	<i>2.5%</i>	<i>2.5%</i>	<i>2.5%</i>
Projected Ridership	73,710	103,563	144,349

ANNUAL RIDERSHIP ESTIMATE: OPTION 2 (BUS ON PRIMARY AND SECONDARY CORRIDORS)

	2011	2020	2035
Base Ridership (Model Projections)	60,000	84,300	117,500
Ridership Increase from Reduced Waiting Times	31.3%	31.3%	31.3%
Ridership Increase from Improved Service Features	5.3%	5.3%	5.3%
<i>Uniquely Designed Vehicles</i>	1.3%	1.3%	1.3%
<i>Clear Simple Service Plan</i>	1.0%	1.0%	1.0%
<i>Uniquely Designed Shelters</i>	0.5%	0.5%	0.5%
<i>Service Branding (Vehicles. Brochures)</i>	2.5%	2.5%	2.5%
Projected Ridership	81,900	115,070	160,388

ANNUAL RIDERSHIP ESTIMATE: OPTION 3 (STREETCAR ON PRIMARY CORRIDOR)

	2011	2020	2035
Base Ridership (Model Projections)	54,000	75,870	105,750
Ridership Increase from Reduced Waiting Times	31.3%	31.3%	31.3%
Ridership Increase from Improved Service Features	10.3%	10.3%	10.3%
<i>Dedicated Right-of-Way</i>	3.8%	3.8%	3.8%
<i>Level Boarding</i>	1.3%	1.3%	1.3%
<i>Uniquely Designed Vehicles</i>	1.3%	1.3%	1.3%
<i>Clear Simple Service Plan</i>	1.0%	1.0%	1.0%
<i>Uniquely Designed Shelters</i>	0.5%	0.5%	0.5%
<i>Service Branding (Vehicles, Brochures)</i>	2.5%	2.5%	2.5%
Streetcar Novelty Factor	10.0%	10.0%	10.0%
Projected Ridership	84,051	118,092	164,600

ANNUAL RIDERSHIP ESTIMATE: OPTION 4 (STREETCAR/BUS COMBINATION)

	2011		2020		2035	
Base Ridership (Model Projections)	60,000		84,300		117,500	
<i>Corridor Portion</i>	<i>Primary</i>	<i>Secondary</i>	<i>Primary</i>	<i>Secondary</i>	<i>Primary</i>	<i>Secondary</i>
Ridership Increase from reduced Waiting Times	31.3%	12.5%	31.3%	12.5%	31.3%	12.5%
Ridership Increase from Improved Service Features	10.3%	5.3%	10.3%	5.3%	10.3%	5.3%
<i>Dedicated Right-of-Way</i>	3.8%	--	3.8%	--	3.8%	--
<i>Level Boarding</i>	1.3%	--	1.3%	--	1.3%	--
<i>Uniquely Designed Vehicles</i>	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
<i>Clear Simple Service Plan</i>	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
<i>Uniquely Designed Shelters</i>	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
<i>Service Branding (Vehicles, Brochures)</i>	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Streetcar Novelty Factor	10.0%	--	10.0%	--	10.0%	--
Projected Ridership	90,991		127,842		178,191	

ANALYSIS SUMMARY

	Option 1: Bus on Primary Corridor	Option 2: Bus on Primary and Secondary Corridors	Option 3: Streetcar on Primary Corridor	Option 4: Streetcar/Bus Combination
Capital Costs	\$71,200	\$132,368	\$3,280,000 - \$5,325,000	\$3,376,500 - \$5,422,500
Annual Operations/ Maintenance Cost	\$450,000	\$900,000	\$640,000	\$1,090,000
First-Year Ridership	73,700	81,900	84,100	91,000

- **Bus service has quick start-up and vehicle size flexibility**
- **Streetcar achieves sense of “permanence”**
- **Minimal park impacts for all options based on initial review**
- **Streetcar presents additional opportunities for LSC collaboration**

PAST OPERATING FUNDING



Source: <http://www.destinationnexus.com/Liberty-State-Park-in-Jersey-City-New-Jersey.html>

- **Original #305 Route (2001 – 2010)**
 - NJ TRANSIT
- **Liberty State Park Circulator (Summer 2010)**
 - Hudson TMA and NJ TRANSIT
- **Liberty State Park Circulator (Summer 2011)**
 - Hudson TMA, Friends of LSP, Liberty Landing Marina, and NJ TRANSIT

FEDERAL FUNDING SOURCES

- Sarbanes Transit in Parks Program
- Hurricane Sandy
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program
- National Park Service (NPS)
- Federal Transit Administration (FTA) Grant Program
 - Small Starts
 - Very Small Starts
- **Federal Lands Access Program (FLAP)**



Source: <http://consequenceofsound.net/2009/08/where-we-live-liberty-state-park-jersey-city-nj/>

FEDERAL LANDS ACCESS PROGRAM



- Developed as part of MAP-21
- FLAP is to “improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands”
- \$250M available annually
- Distributed to states/districts based on % of Federal land
 - 80% to states with most Federal Land
 - 20% to remaining 38 states/DC/PR
- **Programming Decisions Committee**
 - Rating, ranking, and prioritization of potentially eligible projects
 - 3 members per state (FHWA, DOT, and designee)

FEDERAL LANDS ACCESS PROGRAM

- **Program still under development**
 - Details and mechanics of the evaluation process
 - Selection of the PDC for New Jersey
 - Creation of an Eastern Federal Lands website
- **Process**
 - Call for eligible projects
 - Projects apply to program in each state
 - Projects are screened and rated by PDC
 - Projects are selected for funding
- **Bottom Line:**
 - FLAP is the best opportunity for Federal funding
 - Competition for funding will be stiff
 - New Jersey's total share will be relatively small (likely <1M annually)



OTHER POTENTIAL FUNDING SOURCES



- NJDEP
- User fees
- Donation of materials
- Private sponsorship/
advertising
- Not-for-profit

Source: <http://www.jeffcoexpress.org/sponsorship>

IMPLEMENTATION STRATEGY



- Identified funding sources
- Prioritized options based on potential funding
- Determined feasible short- and long-term options
- Did not identify a “preferred” option

IMPLEMENTATION STRATEGY

- **Selection of a lead agency**
 - Preparing grant applications
 - Leading other funding initiatives
 - Studying/planning options
 - Procuring services (operator, design, etc.)
 - Service implementation
- **Timeframes**
 - Very short-term
 - Short-term
 - Long-term



Source: <http://www.gazellesystems.com/blog/bid/117540/Establishing-the-Weekly-Meeting-Habit-at-the-Group-Level>

VERY SHORT-TERM STRATEGY (SUMMER 2013)



- Bus option is “shovel-ready”
- Little planning needed
- Operate bus service on Primary Corridor
- Summer weekends and holidays (July 4 to Labor Day)
- Funding: corporate sponsorship, not-for-profit, private donations, etc.

SHORT-TERM STRATEGY (2014 AND 2015)

- **Apply for FLAP funding**
- **If no FLAP funds are available:**
 - Operate bus service on Primary Corridor
 - Summer weekends and holidays (July 4 to Labor Day)
 - Retain grant coordinator?
 - Funding: corporate sponsorship, not-for-profit, private donations, park user fees, etc.
- **If FLAP funds are available:**
 - Expand bus service to Secondary Corridor
 - Expand service to weekdays between April and October and weekends for remainder of year
 - Market/brand service



LONG-TERM STRATEGY (BEYOND 2016)



- Continue to pursue FLAP funding
- Operate bus service as funding allows
- If funding is available, study rail option
- If significant funding is available, rail option could be implemented

Source: <http://www.smcars.net/forums/attachments/trains/125256d1312904377-trolley-some-kind-hand-propelled-rail-vehicle-trolley.jpg>

NEXT STEPS

- Consider comments received from public meeting (Deadline: May 23, 2013)
- Incorporate Feedback
- Prepare Final Report
- Final TAC Meeting
 - Develop a plan to maintain momentum
 - Discuss funding strategies



Public Comment Period through May 23, 2013

**Please submit written comments to
lsprtransitstudy@gmail.com**

or

**Division of City Planning
30 Montgomery Street, Suite 1400
Jersey City, NJ 07302
Attn: Naomi Hsu**

**Draft Final Report is available for review at:
lsprtransitstudy.com**

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Public Meeting #2 Thursday, May 9, 2013, 4:30 PM – 8:00 PM FINAL SUMMARY

The second public meeting for the Liberty State Park (LSP) Circulator Cost-Benefit Analysis was held on Thursday, May 9, 2013 at City Hall, 280 Grove Street, in the Anna Cucci Memorial Council Chambers.

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Kate Sargent, Sam Schwartz Engineering
Al Meyer, Sam Schwartz Engineering

MATERIALS DISTRIBUTED:

Meeting Agenda
Comment Form

An open house was held from 4:30 p.m. to 6:30 p.m. during which members of the public were able to view displays and talk one-on-one with members of the project team. At 6:30 p.m., the project team made a formal presentation. Following a brief welcome by Naomi Hsu, Mike Monteleone presented the agenda for the meeting, an overview of the study to date, the study schedule, and the study purpose. Kate Sargent presented the four options for a circulator and their associated costs and benefits. Mike Monteleone then presented the proposed implementation strategy, which included a discussion of potential funding sources, and next steps for the study.

During the question and answer session, the following questions and topics were raised. Responses by Mike Monteleone and the project team appear in italics.

-
- Liberty Historic Railway (LHR) expressed support for the findings of the study. They have a few “quibbles,” which they will note in their formal written comments. LHR agrees with the study’s focus on the Primary Corridor given the high intra-park ridership on Zapp Drive. LHR feels that future use of Liberty State Park should be guided by the goals of NJ DEP – Division of Parks and Forestry and Governor Christie, which include expansion of park offerings to increase visitation. Deficiencies in transit increase demand for car parking, which takes up a lot of valuable green space. The Primary Corridor (between Hudson-Bergen Light Rail station and the CRRNJ Terminal) was historically a passenger rail corridor, and a heritage trolley would restore rail service in the park. Also, a heritage trolley would be faster than a bus, which would have to stop at three traffic signals and two light rail crossings. The idea of a trolley in Liberty State Park is not new; in 1959, Morris Pesin supported a tram or trolley to provide access from the park to the Statue of Liberty. *Comment noted.*
 - In response to the statement by Liberty Historic Railway, Friends of Liberty State Park said that Morris Pesin would be opposed to a trolley in the park, because it takes away precious usable open green space from the park. *Comment noted.*
 - Would the trolley have the right-of-way/priority when crossing the entrance/exit to the ferry parking lot? If cars have to wait for the trolley to pass, this will create back-ups and safety issues. What is the usual procedure? *Trolley crossings could be stop-controlled or signalized. Additional study (signal warrant study) would be needed to make that determination. For costing purposes, the study assumed signalized crossings at Phillip Drive and Freedom Way and stop-controlled crossings at the two crossings of the ferry parking lot. The protocol for trolley/roadway crossing is determined on a case-by-case basis, depending on traffic volume.*
 - It is not valid to assume a 10% increase in ridership due to the “trolley factor.” That assumption was based on San Francisco’s experience with converting a bus route to trolley. However, that line is part of the transit network of San Francisco, which is a major city. A trolley in Liberty State Park would be separate from the rest of the transit system and, therefore, not comparable to San Francisco. Nobody will come to Liberty State Park just for the trolley attraction. *The “trolley factor” phenomenon does exist. The increase in ridership from converting a bus route to a trolley in San Francisco was 40%. This study was conservative and used a factor of 10%, which is a reasonable adjustment to account for the park’s unique situation.*

-
- Liberty State Park is not intended for tourists. While tourists are welcome, the park's primary purpose is to serve the people of Jersey City, county and state. The impact of a trolley would be much greater than a 12-foot-wide swath. A trolley would be an industrial intrusion of our park oasis. A shuttle bus would be cheaper than a trolley and serve the public just as well as a trolley with virtually no negative impact to the park. *Comment noted.*
 - Liberty State Park is open to everyone, not just residents of New Jersey. It is the second most-visited state park in the country, mostly due to tourists. In the coming years, park visitation will certainly increase. We need to figure out how to move people around. Previous attempts to operate a shuttle bus in the park have failed; it is time to try something different like the trolley. The loss of green space would be minimal, 0.0004% of the park. *Comment noted.*
 - The presentation implied that it won't be until 2016 before rail is studied. Could it be studied sooner? *Yes, if funding were available.*
 - Liberty State Park should be used for passive recreation such as nature walks and birding. The gas pipeline already encroaches on the park; every year, there seems to be another encroachment. Eventually, the encroachments add up to a significant impact. I oppose any encroachment on the park. Precious green space is at a premium in Jersey City and Hudson County. Any encroachment would be a serious detriment to the park. *Comment noted.*
 - With 15-minute headways, what will be the trip time? Will there be intermediate stops? How many vehicles will be used? How will the contract work with buses? If the bus option is selected, use a bus replica streetcar. *From one end of the Primary Corridor to the other end, the running time will be 5 minutes for trolley and a little over 5 minutes for bus. For all options, there would be intermediate stops along the routes. The location of the stop that serves Liberty Science Center would differ between the bus and trolley options. For service along the Primary Corridor, one bus or one trolley car would be used for the respective options. Service along the Secondary Corridor would add an additional bus vehicle. For the trolley options, the study assumed a small budget for back-up bus service; in the event the trolley goes out of service, a bus could provide service until the trolley is back in service, which is more cost-effective than maintaining a second trolley vehicle. For bus service, a contractor would provide the vehicle, driver, insurance, etc., and have a fleet of back-up vehicles. The closer the bus service operates full time, the greater the ability*

to customize the vehicle. The study assumed that the circulator sponsor would not own any bus vehicles, since the service would be contracted to a service provider, while the circulator sponsor would own the trolley vehicle. Comment noted.

- Not only is Liberty State Park a state park, it is a national and international attraction. We feel 1-2% of the 6 million annual visitors would ride a trolley, if they saw it in operation. The trolley would not destroy green space; grass tracks could be installed. The new picnic pavilions created 45,000 square feet of paved impervious area for a parking lot. *Comment noted.*
- Even if grass tracks are installed, the trolley would still have an impact on usable open space in Liberty State Park. Nobody would put a picnic blanket on grass tracks. The primary purpose of the park is a green, open space refuge for urban people of Hudson County and nearby counties. We don't need the machinery of a trolley to be introduced to the park. *Comment noted.*
- How confident are you that there would be any funding for any of the proposed transit services, in particular, trolley, which would require a large investment? *It is hard to say how much funding will be available and how successfully it might be obtained. The first step is to identify a lead agency to champion the project after this study is completed. It is also necessary to gain a better understanding of the parameters and requirements of the Federal Lands Access Program (FLAP), which are in development. It is difficult to secure funding in the current economic climate.*
- How much competition will there be from other parks and eligible parties in New Jersey for FLAP funds? Is there much interest from other parks? *It is expected that there will be a lot of competition in New Jersey for the Federal Lands Access Program funding, because many types of transportation-related activities/projects will be eligible. The study did not identify other interested parks/parties, and, because FLAP is so new, the study could not determine the chances of a transit project in Liberty State Park being awarded funding.*
- Would a transit service operate primarily between the parking lot at the light rail station and the railroad terminal? *The Primary Corridor is between the HBLR station at Liberty State Park and the historic CRRNJ Terminal. The study recommends implementing service along the Primary Corridor first, because most of the ridership would be along this corridor. When service is established and funding available, the service could be expanded.*

-
- What is the travel time along the Primary Corridor? *Depending on the vehicle type, the running time is 5 or 6 minutes, end to end, plus some layover time, making the entire trip in one direction 15 minutes, which includes intermediary stops and time for boarding/alighting.*
 - How likely is bus service to Liberty Science Center (LSC)? *The proposed bus would stop at the Liberty Science Center. It is important to provide transit service between LSC and the Liberty Landing ferry terminal, because LSC is interested in growing the number of visitors from New York City.*
 - How long is the walk between the Liberty Science Center and the Liberty State Park light rail station parking lot? *The distance is a few hundred feet at most, which would only take a few minutes for an able-bodied person to cover.*
 - Were diesel fumes taken into account for the bus option? What about horns? *The study recommends the use of low-emission or no-emission bus vehicles. Buses are not expected to use horns more often than any other vehicle. The study determined that, at 4 buses per direction per hour, this is not a significant number of additional vehicles on park roads to have major environmental impacts.*
 - Will there be a fare? A fare could offset operating costs. *The study did not make a recommendation on the appropriate fare to charge. Ridership could be affected somewhat by a fare. Fare box recovery would not be enough to cover all operating expenses but could help defray costs.*
 - The major encroachment on the usable, open, green space in Liberty State Park has been the automobile and parking lots. The bus would add to the park vehicular traffic and reinforce the automobile-oriented character of the park. While it is true that nobody will picnic on grass tracks, nobody will picnic in a parking lot either. Parking lots should be converted to green space and a light rail system should be implemented. There are many places, including Lowell, MA and New Orleans, LA, where trolleys are attractions. *Comment noted.*
 - When do the parking lots at the park reach capacity? On occasions when the parking lots are full, wouldn't a right-of-way separate from the roadway effectively move people in and out of the park? *The parking lots fill up on peak summer weekends and during special events, and it is reasonable to expect that this will*

occur more frequently as the number of park visitors increases in the future. Yes, a dedicated right-of-way would help move people in and out of the park on busy days.

- A historic trolley is in operation on the Kingston, NY waterfront and is an additional area attraction, especially for families with kids. It does not detract from the setting. For its potential as an additional thing to do, I am in favor of a trolley at LSP. *Comment noted.*
- LSP needs more “venue” if it is going to attract more people. The higher volume of users would enable it to compete for more money and repair the damage sustained during Hurricane Sandy. The Hudson-Bergen Light Rail had its naysayers, and it has proven to be a success and has brought “venue” to LSC and LSP. The park needs more than just access by foot; it needs a transport system to bring people to areas that are now inaccessible as a pedestrian. It is important to attract as many visitors as possible to the park to be competitive for federal funding for Hurricane Sandy recovery/flood mitigation. *Comment noted.*
- There are two views of open space. Some people want to fill open space; others want to preserve open space. A trolley would require the installation of infrastructure and would be more costly and less environmentally sound than a bus. Governor Christie supports initiatives that are environmentally sound and that do not adversely impact the historic significance of the park. Audrey Zapp Drive is the longest cobblestone road in the US. An Environmental Impact Statement would be required if a new trolley is proposed to operate next to this historic roadway. A trolley is unreasonable; we need to preserve open space as much as possible. *Comment noted.*
- While there are parking lots in LSP, there are no plans to build additional parking lots. We need greenery. We don’t need a trolley in the park. It’s not an amusement park; it’s a place to relax. *Comment noted.*
- We don’t need a trolley in LSP. A trolley or bus would bring more drug dealers into the park. *Comment noted.*
- It is disheartening to see a proposal for a trolley to serve the Statue of Liberty and Ellis Island. I’m in favor of a bus that serves the entire park, and the bus should be extended to the Grove Street PATH station. *Comment noted.*

-
- Would it be possible to use proceeds from ticket sales at the Liberty Science Center to cover some costs of a circulator? Has the Liberty Science Center shown any preference for a vehicle type? *Currently, all funding options are on the table. When a lead agency has been identified, details like the proposed funding scheme could be explored. The Liberty Science Center has not favored or endorsed a vehicle type.*
 - The park is not an amusement park. The attraction is the open space, not a mechanical attraction. Historically, trolleys never operated in the park. *Comment noted.*
 - The automobiles in the park are the mechanical intrusion. Let's get rid of the cars and parking lots. A trolley is the obvious answer. It is nonsense to say it would be an amusement park ride; it is a transportation system. *Comment noted.*
 - Five hundred people per day used the NJ TRANSIT #305 shuttle bus during the weekends in July and August in its last year of operation, without promotion by NJ TRANSIT. A shuttle bus needs to be operating this summer. Any help to fund the service this summer would be appreciated. *Comment noted.*

It was announced that the deadline for public comments was May 23, 2013. Written comments could be submitted using the comment forms available at the meeting or via e-mail to lsprtransitstudy@gmail.com. The presentation was posted on the project website, www.lsprtransitstudy.com.

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING

ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR



JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Public Comments

*Submitted after Public Meeting #2 on
Thursday, May 9, 2013, 4:30 PM – 8:00 PM*

The second public meeting for the Liberty State Park (LSP) Circulator Cost-Benefit Analysis was held on Thursday, May 9, 2013 at City Hall, 280 Grove Street, in the Anna Cucci Memorial Council Chambers. An open house was held from 4:30 p.m. to 6:30 p.m. during which members of the public were able to view displays and talk one-on-one with members of the project team. At 6:30 p.m., the project team made a formal presentation, which has been posted to the project website, www.lsprtransitstudy.com.

A **public comment period** was held through Thursday, May 23, 2013 during which written comments could be submitted via e-mail to Lsprtransitstudy@gmail.com or US mail to Division of City Planning, 30 Montgomery Street, Suite 1400, Jersey City, NJ 07302, Attn: Naomi Hsu.

Below are the comments submitted during the public comment period following the second public meeting, without personal information. The purpose of the second public meeting was to solicit feedback on findings of the study including the costs and benefits of potential options for a circulator service to serve destinations in Liberty State Park, potential funding sources, and a proposed implementation strategy.

1. I am writing to let you know that I am strongly in favor of installing tracks to operate a trolley from the light rail station into the park and up to the Central Railroad of NJ Terminal building. There is a rich railroad heritage that needs to be preserved for all residents of New Jersey and the United States. It was the railroad that took our new immigrants west to their new homes after arriving from Ellis Island. What would better represent the accomplishments of those who came before us, than a rail link into the park to the historic rail terminal and other sites in the park. Tracks take up very little space and can be worked into the environment of the park.

2. I am writing to support the "green" bus option for Liberty State Park transit. The trolley option would take more open space out of the park, a most undesirable outcome that should be rejected.
3. I, Norman Elliott, support FOLSP's stand opposing, Trolleys on Tracks in Liberty State Park.

The Friends of Liberty State Park

P.O. Box 3407 Jersey City, NJ 07302 [201-792-1993](tel:201-792-1993) www.folsp.org
pesinliberty@earthlink.net

FOLSP Position Statement Supporting "Green" LSP Shuttle Bus and
Opposition to Trolleys on Tracks (TOT) in LSP

Friends of LSP strongly support a "green" shuttle bus - either an electric bus or another type of alternative non-polluting fuel – showcasing a clean energy vehicle in LSP, one of our greatest urban parks. We also support bus connections from Jersey City neighborhoods and Hudson County to the Light Rail station to connect with the "green" shuttle bus.

We strongly oppose Trolleys on Tracks in LSP (TOT) which would take away precious and priceless urban open space grass from unstructured recreation use for Hudson County residents, LSP's primary purpose. Hudson County is the nation's 6th most densely populated county, a concrete county with a tremendous deficit of open space for its residents. The trolley's 12 feet wide, Right of Way, would destroy open space grass and be a new unnecessary transportation corridor. People can't put a picnic blanket on the proposed "grass between the trolley tracks".

Buses have least impact & least cost.

- Loss of open space-Trolley "right of way" to take away 12 feet wide of grass.
- Visual pollution of any TOT electrical overhead power lines (catenary wires)
- Trolley by Zapp Dr. - On south side of cobblestone Zapp Drive, is the "Grove of Remembrance", the peaceful 743 tree sanctuary planted in memory of NJ's 9/11 victims; the Grove and the paths in and by it must not have adjacent trolley tracks.
- The Study's estimates include trolley costs of traffic lights at beginning of Zapp Dr. at Phillips St. and also at Zapp and Freedom Way. The trolley would also cross in front of the entry/exit to the ferry parking lot. There would be safety issues & also inevitable consequence of traffic backing up at trolley crossings.
- The safety issues, especially in this family park with playing and running children will give unavoidable stress to parents, who come to LSP as everyone else, to get away from the stress of urban living.
- Inevitable blowing of horns/bells by driver for safety or to impress riders, will harm this treasured park's peacefulness, serenity and integrity.

- The trolley would cross N. side of “Millennium Park” field before Freedom Way. Many unstructured games of soccer, cricket, etc. are played in this field.
- Regarding park history, there were never trolleys running in LSP. The railroads did have buses running from local communities to the train and ferry terminal.
- High costs of constructing tracks and maintaining the tracks. Estimates are far higher for establishing trolleys on tracks in LSP, than for shuttle buses.
- TOT Helping Tourism is invalid and irrelevant argument

LSP’s core purpose is to provide free and green open space to serve the unstructured recreation needs of the urban people. LSP’s core purpose is not to be exploited and diminished to supposedly benefit commercial interests of JC hotels -but they won’t be benefited because if people stay in JC hotels, it will be because they are cheaper than NYC hotels. Hardly anyone is going to come to LSP – who wasn’t going to come anyway – just because there’s a 7 minute trolley ride each way between the Light Rail Station and the CRRNJ Terminal.

- There is no need at all to create any further supposed tourist “attractions” for the public at LSP, because an incredible attraction already exists – the views of the Statue of Liberty, Ellis Island, the Manhattan skyline and views of the river and harbor. LSP’s open space land is the greatest tribute to those iconic monuments and views. There are already two great tourist attractions at LSP - Liberty Science Center and the Statue Cruises ferries to Lady Liberty/Ellis Island.
- Building tracks for a bell-ringing trolley on tracks where grass was, next to the Grove of Remembrance, for a few more annual tourists can never justify destroying grass and violating LSP’s true purpose as an open space haven.

The Friends support the “green shuttle bus” option and hope government will step up to fund it in the future. For now, it is shameful that there is no shuttle bus service into and around LSP, though it would only cost around \$25,000 for a shuttle bus on weekends from Memorial Day to Labor Day

4. Together with my family of 6 adults and 3 children, all frequent users of Liberty State Park, I support the Shuttle Bus option, provided the bus uses fuel efficient, renewable power sources. This "Eco-Bus" would be a fine example, for our community and its children and visitors, of what should be done to make ourselves more economically sustainable and planet-friendly. Existing roads can be used; maintenance costs would be minimal; no encroachment on our public park land is needed.

We do not support the Trolley on Tracks option, which will encroach on public park land and incrementally reduce the size of our very precious park land. The toxic and dangerous gas pipeline has already encroached into Liberty State Park; we must resist ALL Attempts to further encroach - no matter how "small" - on any of Liberty

State Park lands. The Trolley on Tracks option also necessitates increased infrastructure expenses, maintenance costs, and safety hazards, which are all capital and ongoing maintenance costs we do not need.

All monies budgeted for the Trolley on Tracks option should be spent on the Shuttle Bus and any excess should be spent on the ongoing Liberty State Park maintenance and Sandy Recovery operations.

5. Thank you so much for the transportation initiative within Liberty State Park.

Please consider how much better and environmentally friendly a shuttle bus would be instead of a trolley that would require laying down permanent tracks and take away from some of the green space in the park.

6. Although I am a member of Friends of Liberty State Park, I am in favor of a trolley to shuttle folks in and out of the park.

7. I received notice of your meeting and couldn't attend. I have looked at the options on your website and I would like you to consider the following:

As a civic activist, I love Liberty State Park and Jersey City. People treasure the park as a free and green open space which serves the quality of life and needs of the urban people.

People remark how calm and peaceful it is to enjoy its beauty while sitting or walking through the park. There is a certain peace that people enjoy after a busy day or a weekend retreat from the noise around us.

The SAFETY ISSUES are many. This is a FAMILY park where people can relax, knowing their children are safe. We would face trolley crossings with HORNS, BELLS and WHISTLES and not experience the peacefulness and serenity.

We would face fear of children that are playing and getting exercise having to worry about the trolley and traffic.

We will face problems on Audrey Zapp Drive as we have the ferry parking lot, and the trolley would cross the entrance and exit and there would be heavy traffic on the weekends.

On the South side we have the GROVE of REMEMBRANCE, a SANCTUARY planted in memory of the victims lost in 9/11. We would face problems, once again, as we cannot take 12 FEET AWAY from Audrey Zapp Drive. A tree has been planted for every one that died that day.

Peolpe going to the Statue of Liberty and Ellis Island come on tour busses or drive. WE SUPPORT bus connections from neighboring towns to the Light Rail Station to connect with the "GREEN" SHUTTLE BUS to take them around the park. BUSES have the least IMPACT and COST. WE WOULD LIKE BUSES.

WE STRONGLY OPPOSE TROLLEY'S ON TRACKS IN LIBERTY STATE PARK as it would take away PRECIOUS and URBAN OPEN SPACE GRASS THAT IS PRICELESS from all who spend quiet time in this beautifil park.

8. I attended the public meeting on May 9 and expressed some comments then, largely focusing on the prospects for available funding under FLAP.

Having studied the options more closely, my first choice is Option 2, followed by Option 1. I favor Option 2 because it would extend service to other areas of the park, especially the south lawn and picnic areas there. Buses could also stop at the picnic area and the Science Center.

While I see some benefits from the streetcar options, principally that attractive streetcars might attract some additional visitors to the park, I think the increase would be at most 10%, hardly enough to outweigh the significant disadvantages. These are:

1. FUNDING SOURCES: The streetcar options are heavily contingent on the availability of FLAP funds. Given the fierce competition for these funds, I'm very skeptical about the prospects for obtaining sufficient FLAP funds to make a significant contribution to the operating costs, let alone the capital construction costs. Moreover, given the austere budget conditions in Washington, I have my doubts about whether FLAP will survive at all. If it does survive, it's likely to see a reduction in funding, making the competition all the more fierce. I'm also doubtful about state funding because of the state's severe fiscal pressures.
2. ECONOMIC VIABILITY: The streetcar options would apparently require daily operation to be economically viable. I question whether there would be sufficient ridership to warrant daily service, especially after Labor Day and before July 4, or even before Memorial Day. Therefore, I expect the operator would sustain significant

losses. Consequently, it's possible that the operator would have to terminate service entirely.

3. ENVIRONMENTAL IMPACT: Based on my review of Zapp Drive Streetcar Alignment, I am particularly concerned about the impact if the tracks are built but the service is terminated because it is not economically viable. If that happens, we would be left with a mile-long eyesore of abandoned track – and with a fairly significant loss of open space.

4. OPERATING COSTS: I believe the circulator service should be free. Any fee will have a negative impact on ridership, especially for families, and would defeat the purpose of improving transit access to the park. I think it's more likely that the operating costs of the streetcar option, combined with insufficient funding from public sources, would require a passenger fee.

5. FLEXIBILITY: The streetcars could not be put to any other use during the periods when the number of park visitors, and consequently streetcar users, falls off dramatically. Also, visitors who come at other times are not likely to stay nearly as long as those who come during the summer. There is far less incentive to use slower public transit service if you're only going to be staying at the park for an hour or so. Depending on the type of bus, buses can be put to numerous other uses when they are not being used in the park.

Regardless of whichever option is chosen for internal service, I hope that there could be bus service from outside the park, such as from Journal Square, Grove Street and areas closer to the park with less affluent residents who are less likely to have cars.

9. Liberty State Park should not have a trolley or other rail-based transportation solution. There are already perfectly adequate roadways to carry people to any destination. Imposing more infrastructure on this rare open space would cause more harm than good. A rail system hogs space, is inflexible, would cost more and would interfere with the natural uses of the park. I believe it would create unsafe conditions. I realize there are some dedicated train buffs who advocate for rail, but this would create an artificial overlay that smacks of a theme park. Liberty State Park does not need this. The fact that it was once the site of a massive freight and passenger rail terminal does not render it suitable for some quaint, bogus historical "attraction". Less is more in this case. Let the existing roadways serve.

10. NO TO TROLLEY TRACKS!

11. Please no trolley tracks in the park! Years ago the park had plenty of trains but never any trolleys and we don't need shuttle buses in the park. If you can't bike in or walk in or don't have a car or can't catch a ride your out of luck. It is not up to the park to provide transportation and or lunch. I don't think any other state parks offer transportation for visitors, and just because "our park" LSP is in an urban location, people should be treated no different.

Our park provides the backdrop for the Statue of Liberty along the Hudson River. What more could we ask for....Free Open and Green!

12. I am writing to offer some brief comments on the LSP Circulator ideas. (I am sorry but could not attend the meeting last week.)

I favor the low- or zero-emission vehicle over a trolley on new tracks. Here are my thoughts for this conclusion:

1. The vehicle doesn't require the significant capital expense of building tracks.
2. The vehicle is more flexible. Once the circulator is in operation, if a decision is made to change the route because of changing needs, it is very easy to re-route a vehicle. If you have to build new tracks, it's not so easy.
3. Tracks would take up additional park land. The vehicle can use existing streets.
4. If we have another storm surge flooding event, it will be cheaper and easier to move the vehicles to higher ground. There might not be higher ground available on a trolley-track system, so the rolling stock could be at risk. Additionally, if there is storm damage to the rails, I suspect it will be more expensive to repair than if there is storm damage to the asphalt roads.
5. More about flexibility: Suppose there's a special event such as the Go West music festival or something similar. If a track system is used, and it goes through the festival area, the logistics could get really complicated. But if it's a vehicle on the road, you could just re-route the vehicle. And you could run special routes specifically to the festival.
6. I don't think a trolley on tracks is going to draw incrementally more people to the park. I think people come to the park for the reasons they already come to the park (open space, views, picnicking, NJCRR terminal, etc.), and they will look at the

circulator as an additional convenience that enhances the park. I don't think we need a trolley on tracks in order to make the park a more attractive place to go.

If you have questions about any of my comments, please feel free to let me know. Thank you for undertaking this project and for soliciting comments from the public.

13. I support a "Green" LSP Shuttle Bus and oppose Trolleys on Tracks (TOT) in LSP. either an electric bus or another type of alternative non-polluting fuel – showcasing a clean energy vehicle in LSP, one of our greatest urban parks. I also support bus connections from Jersey City neighborhoods and Hudson County to the Light Rail station to connect with the "green" shuttle bus.

Lite rail is much too expensive and the ridership can't support it.... Let's use common sense.

14. *An environmentally friendly shuttle bus

The trolley as an "attraction" to Liberty State Park?....Liberty State Park IS its own attraction!

I definitely CANNOT support this proposed intrusion on the fragile, limited open space that makes ALL of this park such a special haven for local urban visitors as well as for those who come many miles to enjoy the beauty and tranquil peace they experience at Liberty State Park.

What other "attractions" are being contemplated?....a water slide?....a video arcade?....bumper cars? Liberty State Park, with its marvelous location across the Hudson from NYC, with ferry access to The Statue of Liberty, and its incredible open space (constantly being improved by Park workers and loving volunteers with the planting of trees, shrubs and beautiful flowers) is attraction enough.

The precious space we know and love as LIBERTY STATE PARK does NOT need to give up space to a trolley!

15. I strongly oppose Trollys on Tracks which would take away precious and priceless urban open space in Liberty State Park. A shuttle bus would be a much more flexible and greener option.

16. I live near Journal Square and I go to Liberty State Park most weekends for a good jaunt and birding. I take the PATH to Grove Street or Exchange Place and walk to

the southern end of Warren Street and then take the Liberty Landing Ferry across the canal. I frequently walk from the Marina to Port Liberte or the entire length of the park. The open spaces and setting are magnificent.

I attended the public hearing on May 8th and was disheartened. The discussion seemed to focus on developing a transportation link between the Light Rail station and the ferry terminals. What has all this to do with making all the beautiful, open spaces of all Liberty State Park more accessible to more people?

Discussion included the option of a streetcar running from the Light Rail to the historic train terminal adjacent to the ferry terminals. This option is absurd and a waste of taxpayer money. An eco-friendly shuttle bus circling the park at regular intervals is all that is needed and at significantly less cost. I would propose that the route include Grove Street Path Station in a later phase. Many apartment buildings in Jersey City provide their tenants with shuttle service to Grove Street. A shuttle to Grove Street would also be a good way to promote the park.

Thank you and the team members for conducting the study and public hearings which were most informative.

17. I am writing to support a green bus shuttle in Liberty State Park. I live five minutes from LSP and am in the park almost every day. It would be great for people to access the park without a car (I ride a bike), and be able to enjoy the walkways, beautiful bay, and reclaimed nature.

I do not support a trolley or other transportation that requires rails, electric lines, etc. There are already plenty of roads in the park and this is an opportunity for LSP to take the lead with a zero-emissions bus and protect our open spaces.

18. I have a one word public comment to Trolleys on Tracts idea -stupid.

It would be a tremendous waste of time, effort, & money. A fast, easy & cost-effective solution is funding shuttle bus service in LSP.

It would be a shame if not done immediately for all to enjoy Liberty State Park this summer.

19. I am writing in support of a shuttle bus for use in Liberty State Park and in opposition to the use of a Trolley.

I have several reasons for my position.

A primary reason would be cost. There are roads in place now for a bus to use throughout the Park. The Trolley tracks and overhead wires would have to be built and maintained separately at an additional cost.

A second reason would be flexibility. A bus could be used throughout the Park wherever there is a road. The Trolley would be limited to its right of way (ROW) unless there were additional funds to build more tracks and wires.

A third reason would be historical accuracy. There never was a trolley running in the LSP area. But there was regular bus service.

I happen to be a rail fan and native of Jersey City and very much interested in the well being of LSP. I do not know where the money to build the Trolley ROW would come from but a better use for that money would be start to refurbish the Terminal train shed. If that was done, historically accurate railroad locomotives and cars could be displayed for the tourists who come to LSP. There are volunteer non-profit organizations in NJ who could furnish and maintain that equipment. The static display of such equipment would not disrupt other parts of LSP like the Trolley.

If I can assist you in any way in the future, please feel free to contact me.

20. I was born and bred in Jersey City.... and I am a frequent user of Liberty State Park. Please say no to the trolley proposal. There is no reason for a trolley to be in LSP. There is no reason to spend the money for such a useless means of transportation. It is inflexible, the tracks take up valuable land that is used for open recreation, and it will cause hazardous conditions as families navigate through the park.

There is no historic reason for a trolley and it adds no value. A green shuttle bus is much more useful, cheaper, and flexible, traversing the entire park... and not just down Zapp Drive.

The supporters of the trolley are most likely not residents of Jersey City/Hudson County, and don't appreciate how important every inch of open space is to local residents. Please don't give up away a part of the park.

I trust you will make the right decision and say no to the trolley.

21. I am a resident of Downtown Jersey City -- and I feel a very strong connection with Liberty State Park -- this wonderful, truly unique urban oasis.

I understand that there is a proposal being considered to build a trolley line to help people access the park. I am a devoted advocate of public transportation and want to voice my concern about this idea.

I feel that a trolley line is “overkill” for the purpose of transporting people into and through the park. Compared with a clean/green bus (or minibus) service, a trolley is less flexible, more costly, more noisy, and more dangerous for pedestrians in the park. In addition, a trolley would require laying track that would cut into valuable green space in the park, including space very close to the Grove of Remembrance.

As the park continues to develop over time, there will be new locations that people will want to access (particularly with the opening of the large interior restoration area). A “green” shuttle bus will provide the ongoing flexibility of route adjustments to service any new key spots that are created within the park.

A trolley within the park will detract from the beauty and serenity of the park environment. And I believe it is foolish to view a trolley as an “attraction” of some kind. The park itself is enough of an attraction all by itself.

Thank you very much for your consideration of these points.

22. STOP THE CRAZINESS, AND INSANITY OF EVEN THINKING TO BRING LOUD, NOISE, AND TRACKS AND TROLLEYS THAT WILL DESTROY FOR EVER ONE OF-STOP WIRED WORLD. LIFESTYLE

SURELY HIGH-TECH GADGETS CAN COME UP WITH NOISLESS ELECTRICALLY OPERATED SHUTTLE BUSES. POSSIBLY CREATIVELY ADVERTISING SPONSORS THAT ARTISTICALLY SHOW PHOTOS OF LIBERTY STATE PARK. WITH SPONSORED MONIES. MAYBE WE CAN AVOID TAXPAYERS' FUNDING WE DON'T NEED FUNDING FOR TROLLEYS EITHER PUBLIC OR PRIVATE>

What's more, We the People of the United States have a Bill of Rights guaranteeing our freedoms and especially the pursuit of collective happiness. Liberty State Park brings this to each visitor. Joy of spacious skies, walkways meadows, trees foot bridges and natural habitat of birds views of Manhattan.... HOW GOOD IS THIS.. HOW GOOD IS THIS? This Park promotes “America the Beautiful,”-- A BACKDROP TO LADY LIBERTY Thanks to Morris Pesin and the thousands of

volunteers that work without monetary pay To keep it so? Leading the way is Sam Pesin and Friends of Liberty State Park and thousands more of supporters.

PLEASE TAKE A SERIOUS EVALUATION OF THE SOLUTION I OFFER ABOVE. IT WILL BE NEWSWORTH AND PROMOTE NEW JERSEY'S IMAGE AS A CREATIVE EXAMPLE OF HOW TO PROTECT THE ENVIRONMENT , WHILE OFFERING THE PUBLIC QUIET TRANSPORTATION SERVICES THAT ARE EFFICIENT AND NON – DISRUPTIVE TO THE SENSITIVITIES OF THOSE MILLIONS OF VISITORS WHO ENJOY THE PARK FOR ITS NATURAL BEAUTY AND TRANQUILITY

Addendum:

In Years 1989-1992 I assisted UNEP in presenting their annual "United Nations Global Youth Forum" that hosted hundreds of young people seated in the General Assembly of The United Nations representing many countries worldwide, where they formed debating to express their country's environmental issues, exchange ideas and proposed solutions. All was data based, and the top issues and its solutions where chosen and sent to each representatives Government. (Including the White House)

Year 1989 I arranged for New Jersey 's Department of Environmental Protection's Commissioner, Chris Daggett's participation. A few weeks later received his letter of appreciation, wherein he stated, "The Youth Forum was impressive" also the opportunity extended to meet and be photographed with Forum's Guest Speaker NASA's Astronaut Colonel Buchli. Documents now available show these young people have made a huge difference in the world of protecting the environment

Our Liberty State Park is the globally recognized backdrop to the Statue of Liberty. IT must be preserved as the Environmental Treasure it is. Given my years of supporting those who protect our environment, I respectfully ask NJ Transit's consideration of all points made-- Then do the RIGHT THING., as requested by The Friends of Liberty State Park, who in my opinion and thousands of others , are the heroes that tend and keep Liberty State Park New Jersey State's Treasure to the world..as a fitting backdrop to our Lady Liberty who stands holding the torch of freedom along with her book that spells justice. . THANK YOU

23. I am writing to express my deep opposition to transit options that require construction of a permanent infrastructure at Liberty State Park. An option being considered is a trolley, this is amongst the worst options. The degradation of the parks natural beauty, the lack of flexibility in routing (should needs change) and the

effect of increased vehicular traffic stops are just a few reasons. Please consider very seriously the option of a clean energy, bus shuttle. This option allows a large degree of flexibility, requires no infrastructure changes such as tracks and overhead wires and is a great opportunity to display the practical use alternate fuel vehicles. This educates and inspires park visitors to consider utilizing fuel efficient options to meet their own transportation needs in the future.

24. I support a GREEN SHUTTLE BUS, not a trolley.

LSP's open space must be preserved, a bus system is more safe and efficient in so many ways.

DO NOT install a trolley system at LSP. This is an idea akin to the Spectra pipeline and the 9/11 memorial: nonsensical, unethical, elitist and heartbreaking.

People before profits.

25. As a tax payer, PhD (Urban Services), park lover, and citizen I oppose the Liberty State Park "Trolley" plan and support the "Shuttle Bus" plan. Common sense concludes that the cost of engineering, design, building, purchasing a trolley and maintenance of said trolley would be greater over ten years than either purchasing a shuttle bus or leasing it over ten years. In addition, our experience with natural disasters and the fact a tracked trolley can't be moved while a shuttle bus can be moved out of harms way may reduce insurance costs and actual damage costs. Add to that the real possibility of future transportation technology improvements and this really is a no brainer.

I am shocked that so much tax payer money to date has gone into this process when just a simple public hearing regarding this issue would have ended the many years of meetings and costs. Needless to say, I favor the shuttle bus because of its ten year cost advantage, flexibility of route, options for future technology upgrades to cut costs and provide equal service.

Thank you for your consideration.

26. Thanks again for your major accomplishment in this important study which hopefully will be a foundation for future funding.

At the Spring public meeting, someone who identified himself as a "transportation planner" said that he saw kids loving to ride a trolley at the Kingston, NY waterfront.

What I didn't hear him say, which I found on the internet, that the Kingston trolley rides are part of the "Trolley Museum of New York" (TMNY) on the Kingston waterfront. So the draw is not just a trolley ride but kids going to a trolley museum. It's website says that the TMY is a top "thing to do" for all visitors to the Kingston Waterfront. So the Kingston example isn't really comparable to Liberty State Park, which has no trolley or train museum.

As I wrote to the study earlier, I don't think many people at all, who weren't going to come to LSP anyway to take ferries to Lady Liberty and/or Ellis Island or for other park uses, will come to LSP just to take a 15 minute round trip trolley ride.

That's my last point, minutes before the deadline.
Have a wonderful holiday weekend.

MAY 21 2013

TO New Jersey Transit Study Team

RE: Egress Transportation from Outside Liberty State Park taking visitors to the Destination Point within Liberty State Park, on utilizing Electronically Operated Shuttle buses.

FR E. Jean Ward,
201 Saint Pauls Ave., 17K Jersey City ,NJ 07306 EMAIL ejeanward@Verizon.net

The many people with whom I have spoken with concerning NJ Transit's current proposal to dig up land adjacent to Audrey Zapp Drive within Liberty State Park, to lay tracks for Trolleys to transport visitors from the entrance to Liberty State Park to a destination hub, has been met with disbelief, It will despoil the landscape and desecrate the park's unspoiled vistas with noise pollution for ever .

Since the Park's beginnings some 50 years ago, thousands of volunteer stewards have fought to keep Liberty State Park the beautiful tranquil natural treasure that it is. The Friends of Liberty State Park, and its untiring leader Mr. Sam Pesin are in unison in to stop proposed Trolley use in the park all support An electrically operated scheduled Shuttle Buses which is environmentally safe.

May I suggest the Shuttle Buses be of a special type, large windows to take in the views, and uniquely sport paintings of Liberty State Park's vistas on the body and roof....Very recognizable and unique asset in showcasing New Jersey State's support of Environmentally safe transportation and Liberty Park itself. After all the park hosts 3 million visitors (Most come by Tour Buses)

Shuttle buses would be an asset in promoting and expanding ridership on Hudson County's Light Rail. Visitors from metro New York and Local environs - PATH to Lt.Rail FERRY to LtRAIL etc.
Electric Shuttle buses painted in lively colors would be a welcoming symbol of the State's famous park

FUNDING: May I respectfully suggest that PANYNJ take a partnership role in financial support?
Or, maybe NJ Transit would look into forming a public/private partnership with Corporate Sponsor's advertising on the buses ? This would be a win/win: A Partnership-Commitment in any form highlights the importance of partnering to protect and support this incredibly beautiful natural park, which is the backdrop to the world's most famous icon: The Statue of Liberty that leads the way.

WHATEVER IT TAKES -- 'Scheduled electrically operated Shuttle Buses ' is the ONLY WAY to offer transportation visitors expect when entering Liberty State park

E. J. Ward ,
Jersey City. NJ

Please read the attached opposition to proposed Trolley's transport inside Liberty State Park

Addendum: from E. Jean Ward, Jersey City NJ

In Years 1989-1992, I was privileged to assist UNEP's "United Nations Global Youth Forum: held in the Chambers of the General Assembly of the UN New York City. Many Countries around the world chose young representatives -mostly in their Teens - to attend. . They formed debating teams to express their own country's most pressing environmental issues, exchanging data, ideas and proposing solutions. All was data based , then top issues and their solutions were chosen from each country, and read before the assemblage The results of which was sent to each representative's government, including one issue sent to the White House.**

**This was a special issue from twin boys from Labrador where herds of Moose migrations had changed – travelling Hundreds of miles from their longstanding migration patterns. This was due to noise of aircraft to which their original Flight Paths had changed. Their villages were dependent on Moose meat for sustenance to live, were in dire straits. Their issue was sent to the White House and pleaded their cause to the President. Within a few months, Air routes were changed back to their original flight plans. It was a great outcome as the Moose returned in the Fall, and saved lives of villagers. The pollution was NOISE. True example of how 2 young teens could move mountains of red tape to right a wrong.

In Year 1989 Annual UNGYF, I arranged for New Jersey's Department of Environmental Protection's Commissioner, Chris Daggett to participate as a speaker. A few weeks later received his letter of appreciation to me wherein he stated: "The Youth Forum was Impressive", and was pleased to meet and be photographed with the Forum's Special Guest Speaker NASA's Astronaut: Colonel Buchli Recently, 22 years later-- Documents now available show hundreds of these young Forum representatives have made huge strides in the world of protecting the environment . Some have become world renowned

Year 2013 – We have an opportunity to protect the environment of Liberty State Park, and a great number of us have taken time and effort to plead the cause of protection from noise pollution

We can only trust our state government to heed the reasons stated and do the right thing,

Thank you

The Friends of Liberty State Park
P.O. Box 3407 Jersey City, NJ 07302 201-792-1993 www.folsp.org
pesinliberty@earthlink.net

FOLSP Position Statement Supporting “Green”LSP Shuttle Bus and Opposition to Trolleys on Tracks (TOT) in LSP

Friends of LSP strongly support a "green" shuttle bus - either an electric bus or another type of alternative non-polluting fuel – showcasing a clean energy vehicle in LSP, one of our greatest urban parks. We also support bus connections from Jersey City neighborhoods and Hudson County to the Light Rail station to connect with the “green” shuttle bus.

We strongly oppose Trolleys on Tracks in LSP (TOT) which would take away precious and priceless urban open space grass from unstructured recreation use for Hudson County residents, LSP’s primary purpose. Hudson County is the nations’ 6th most densely populated county, a concrete county with a tremendous deficit of open space for its residents. The trolley’s 12 feet wide, Right of Way, would destroy open space grass and be a new an unnecessary transportation corridor. People can’t put a picnic blanket on the proposed “grass between the trolley tracks”.

Buses have least impact & least cost.

- **Loss of open space-Trolley “right of way” to take away 12 feet wide of grass.**
- **Visual pollution** of any TOT electrical overhead power lines (catenary wires)
- **Trolley by Zapp Dr.** - On south side of cobblestone Zapp Drive, is the “**Grove of Remembrance**”, the peaceful 743 tree sanctuary planted in memory of NJ’s 9/11 victims; the Grove and the paths in and by it must not have adjacent trolley tracks.

The Study’s estimates include trolley costs of traffic lights at beginning of Zapp Dr. at Phillips St. and also at Zapp and Freedom Way. The trolley would also cross in front of the entry/exit to the ferry parking lot. **There would be safety issues & also inevitable consequence of traffic backing up at trolley crossings.**

The safety issues, especially in this family park with playing and running children will give unavoidable stress to parents, who come to LSP as everyone else, to get away from the stress of urban living.

- **Inevitable blowing of horns/bells by driver** for safety or to impress riders, will harm this treasured park’s peacefulness, serenity and integrity.
- The trolley would cross N. side of “Millennium Park” field before Freedom Way. Many unstructured games of soccer, cricket, etc. are played in this field.
- **Regarding park history, there were never trolleys running in LSP.** The railroads did have buses running from local communities to the train and ferry terminal.

- High costs of constructing tracks and maintaining the tracks. Estimates are far higher for establishing trolleys on tracks in LSP, than for shuttle buses.
- **TOT Helping Tourism is invalid and irrelevant argument**
LSP's core purpose is to provide free and green open space to serve the unstructured recreation needs of the urban people. LSP's core purpose is not to be exploited and diminished to supposedly benefit commercial interests of JC hotels -but they won't be benefited because if people stay in JC hotels, it will be because they are cheaper than NYC hotels. **Hardly anyone is going to come to LSP – who wasn't going to come anyway – just because there's a 7 minute trolley ride each way between the Light Rail Station and the CRRNJ Terminal.**

flaw in the pros and cons is that the "attraction" misguided concept of a trolley, would work also for a promoted green shuttle bus riding on a bumpy historic late 1800s cobblestone road. There are probably only a couple of cobblestone roads left in JC and though the bus driver would need extra cushions, it is a point that can't be ignored by the study's pros and cons. A modern shuttle bus on a historic cobblestone road is a unique experience for many and we feel just as many or almost as many people, which isn't a lot anyway, would come to park for either trolley or a promoted historic cobblestone road. The road has been there for a long time and LSP never had a trolley and has no relationship to true LSP area's transportation history and there were buses taking people to railroads.

Please do some research on cobblestone roads and please add this as a Pro for the shuttle buses.

- **There is no need at all to create any further supposed tourist “attractions” for the public at LSP**, because an incredible attraction already exists – the views of the Statue of Liberty, Ellis Island, the Manhattan skyline and views of the river and harbor. LSP's open space land is the greatest tribute to those iconic monuments and views. There are already two great tourist attractions at LSP - Liberty Science Center and the Statue Cruises ferries to Lady Liberty/Ellis Island.
- **Building tracks for a bell-ringing trolley on tracks where grass was, next to the Grove of Remembrance, for a few more annual tourists can never justify destroying grass and violating LSP's true purpose as an open space haven.**

The Friends support the “green shuttle bus” option and hope government will step up to fund it in the future.

For now, it is shameful that there is no shuttle bus service into and around LSP, though it would only cost around \$25,000 for a shuttle bus on weekends from Memorial Day to Labor Day.

LHRy/LSP Heritage Trolley Rail Shuttle

Statements & Positives Submitted 15 May 2013

Liberty Historic Railway Supports a Heritage Trolley Rail Shuttle Solution for the Transportation Needs of Liberty State Park Primary Corridor - Zapp Drive. The following are our reasons encompassed in supporting statements;

LHRy IS ON BOARD

Agreement with study findings to date.

First, Liberty Historic Railway (LHRy) congratulates North Jersey Transportation Planning Authority, Jersey City Division of Planning and Sam Schwartz Engineering for the excellent job they have done on this study. We support the findings of the study, although we have quibbles with some of the assumptions. The study's focus on the primary and most viable corridor, Audrey Zapp Drive, which accounts for 89% of intrapark ridership, is sound. Also, LHRy fully supports the definition of the Heritage Trolley Rail Shuttle (HTRS) alternative.

GOALS

Sustainable Parks Goals

LHRy strongly believes that the specific goals of the NJ DEP Division of Parks (DEP Parks) for future usage of Liberty State Park (LSP) should guide this study rather than any unwritten assumed objectives. For example, the goals of Governor Christie's Sustainable Parks Plan are to enhance and expand park programs, facilities, amenities, and offerings to generate more visitors (e.g.: to encourage more tourism) and revenues that can make our parks more financially self-sustaining, while maintaining their environmental integrity and increasing their popularity. The mission statement of LSP is consistent with these overarching goals and includes: "...to provide public access to New York Harbor." A

(HTRS) would enhance the goals and missions of both DEP Parks and LSP as well as being a desirable way of conveying potential patrons without automobiles between the Hudson Bergen Light Rail System (HBLRS) and the Central RR of NJ Terminal; Statue of Liberty / Ellis Island Ferries; Liberty House & Maritime Parc Restaurants; Liberty Landing Marina; the Empty Sky 9/11 Memorial; and the Water Taxi to NYC.

Liberty State Park Circulation Master Plan Update (prepared by Vollmer Associates, Oct. 2002) is also consistent with blending these overarching goals. Those goals state:

- “The goal of DEP Parks is to retain current Park acreage without increasing the road system or paving new parking lots” (p. 1)
- “In order to preserve the Park setting, alternative modes of travel to the Park must be promoted” (p. 3)
- “Encourage transit over vehicular usage for internal Park movements” (p. 12)
- “Discourage extensive traffic growth on internal Park roads and do not widen any Park roads” (p. 12)
- “Provide sustainable shuttle service to accommodate Park visitors and reduce vehicular traffic” (p. 12)

The Reality

Identified transportation gaps (most especially between the HBLRS station and the CRR of NJ Terminal ferry docks) impede Park access and the non-driving public’s mobility, specifically those on foot and riders of public transit. These transportation deficiencies build pressure for more cherished green space to be converted to undesirable and impervious parking lots that inefficiently gobble up a great deal of valuable green space. Past major events at LSP have created gridlock conditions on Park roadways and overflow parking destroying grass lawns. Therefore we believe, as the Park serves

various needs, the focus should be the movement of people in, out, and around the Park as opposed to increasing road traffic. A single track HTRS can provide the needed safety valve for future growth in Park visitation and reduce pressure for the expansion of parking lots and roads. Another land-conserving feature of the HTRS is that it will utilize double ended trolley cars. Thus there will be no requirement for turning space. A bus requires a significant paved roadway for turning.

BENEFITS

Functional Benefits

The HTRS at LSP would benefit the rapidly growing population of residents living near the Park, and other visitors, more than any other plan and provide better service than any other alternatives. *(Recent reports indicate that robust residential development within walking distance of the edge of LSP has resumed - per Jersey City Economic Development Corporation.)* LSP also attracts a significant number of tourists and travelers from throughout the U. S. and the World. Many of these visitors arrive via the HBLRS and are confronted with a walk of over one mile to reach the ferries to the Statue of Liberty and Ellis Island via the CRR of NJ Terminal. To access these points they must either walk or try to find a taxi. As a result there is currently a mission deficiency at LSP in the failure to “provide access to the harbor’s resources” for visitors without their own automobiles, which the HTRS can address. To assist in this purpose, each trolley vehicle will be fully compliant with the current ADA accessibility requirements.

Historic Rail Corridor

The historic rail corridor between the Central RR of NJ Terminal and Liberty Science Center / HBLRS had continuous rail passenger service for over 100 years. The HTRS would be a restoration of one single track of that exact historic rail transit route, providing a

realistic and viable connection for LSP with its heritage. It would also reinforce the following portion of the mission statement of LSP: “provide an appreciation and understanding of its ...related transportation, and immigration history, and provide the opportunity to enjoy outdoor recreation activities.”

POSITIVE FACTORS

Trolley Convenience

The HTRS will be more convenient than a bus shuttle. It will be able to deliver its passengers directly to the Central RR Terminal Concourse, much closer than a bus or by automobile.

Shorter, Faster & Smoother

The point to point, nearly straight line, HTRS route would be significantly shorter than a bus route which would need to cross the HBLRS twice and encounter three traffic lights. A bus alternative would need to follow a meandering route south on Phillip Drive; west on Jersey City Blvd.; north and west on Wilson Street (past the Light Rail Station); and return east on Johnston Avenue/Zapp Drive. The HTRS will not cross the Light Rail line at all. This will mean the HTRS would provide more frequent, safer, and direct service than a bus alternative. In addition, the trolley will actually be much faster for riders: at the same 15 mph operating speed as a shuttle bus, its travel distance (and time) will be *much* shorter. These efficiencies will allow fewer trolleys to carry more visitors, faster, more comfortably, safer, and with greater frequency. In comparison, the bus ride over the historic Belgian block paving of Audrey Zapp Drive would be uncomfortably bumpy.

Traffic Signals Not Needed

LHRy respectfully disagrees with the finding of the Circulation Study, to wit, the need for traffic lights or grade crossing protection at trolley track crossings of roads. The low speed HTRS would stop

at any road or driveway crossing and not proceed until safe to do so. This would further reduce the capital cost estimates of the HTRS. Expensive traffic lights or other signaling will not be required, and we believe this will be validated by detailed traffic engineering in a next study phase.

Trolley Is Superior

An advantage of the HTRS, especially to strangers to LSP, is that its route will be virtually a straight line, so the vehicle will be visible to prospective riders in the Park 90% of the operating time. This will entice potential riders to ride the trolley. Whereas, a shuttle bus, out of sight for most of its larger loop travel distance, will not encourage waiting riders (out of sight, out of mind). In addition, the trolley will be more reliable, because it will be able to bypass the traffic jams which snare and catch buses on busy, gridlocked traffic days.

Ridership

We also respectfully disagree with the “conservative” Circulation Study finding that only a 10% “novelty premium” should be projected for the HTRS ridership over a bus. Research of Transit Engineer Edson Tennyson, documented in an article published in the *Transportation Research Record*, that a rail solution would increase ridership by between 34 and 43% over a bus. Many communities have found that there is a special appeal of a unique HTRS which will attract the ridership of the public and make it more economically viable than a shuttle bus. (*Reference: Heritage Trolleys are used instead of buses in Dallas, TX; Kenosha, WI; Little Rock, AR; Lowell, MA; Memphis, TN; New Orleans, LA; Philadelphia, PA; Portland, OR; San Francisco, CA; and many other cities.*) In comparison shuttle bus operation within LSP has failed in four recent years to generate sufficient funding or enough additional patronage to be economically viable. (*Reference: Sam Schwartz Engineering research for the LSP Circulator Study.*)

Funding Opportunities

The cost of the implementation of the HTRS will be significantly reduced by the rail and track materials already on hand and available for donation. This would reduce the overall project cost by \$2,700,000, from a cost estimate calculated if such a donation were not available. In addition, about 800 feet, or about 15%, of the track needed for the HTRS is already in place at the east end of the proposed route. Also, several suitable trolley cars are available to be donated for the service. LHRy is aggressively working on funding & grant opportunities / possibilities for a HTRS and has pledged to increase its funding for implementation / construction up to \$500,000.

POSITIVE ENVIRONMENTAL FACTORS

No visual Impact

The HTRS, as defined in the Definition of Alternatives phase of this study, will not create visual pollution as the trolleys will be battery powered, as opposed to the usual installation of overhead power supply wires and supporting poles. The vehicles will be charged from any of a variety of environmentally friendly, green power sources.

No Meaningful Noise Impact

Noise from the battery-powered HTRS would be significantly less than that created by automobiles or buses. This will be accomplished because:

- The trolley track would be perfectly straight track (no curves) from Phillip Drive eastward.
- At a 15 mph operating speed the HTRS will be very quiet and provide a far smoother ride than that of a bus on the Belgian block-paved Audrey Zapp Drive.

- The negligible sound of the trolley operating over smooth rails, which will be located over 100 feet away from the Grove of Remembrance, will be rendered inaudible by the noise emanating from traffic on Audrey Zapp Drive. The trolley will be only 10 feet closer to the Grove than the traffic traversing the rough surface of Audrey Zapp Drive.

No Greenery Loss

The Definition of Alternatives specifically stipulates that the HTRS right-of-way will be covered by grass. Other “green” factors include;

- Trolley track lays lightly on the land, allowing rain to percolate through it, thereby will not cause runoff. If left untreated, grass will naturally grow up through the trackbed and blend in with the Park landscape.
- Only about a half dozen small trees would need to be moved/replanted.
- The single track HTRS route right-of-way would require less than 25,000 square feet. Expressed as a fraction this would only be 0.0004 or 4 ten-thousandths of the total area of LSP. This figure should be contrasted with 45,000 square feet of impervious paving recently constructed for the new picnic pavilions in Freedom Field to provide increased access for automobiles to LSP.

OTHER

Educational Opportunities

Opportunities will be created for demonstration of solar, wind, tidal, bio-diesel, electric power grids, modern super capacitors and battery technologies with the HTRS as an adjunct to the educational programs at Liberty Science Center. As noted above, an HTRS would serve as a restoration and demonstration of the Park’s rail

transportation history. And, the trolley will be a visual / tactile / historic technology exhibition on its own.

Safety

Once the HTRS is in operation, safety will be the number one priority. All operators (paid or volunteer personnel) will be required to have prior commercial passenger or rail vehicle operating experience. In addition, they will be required and tested to be knowledgeable in the specific operating rules of the LHRy system and will also be required to be qualified (tested) on the specific characteristics of the LSP line and the trolley itself. For example, trolleys will be required to come to a complete stop to assure that they are clear of motor vehicles and/or pedestrians before crossing any roadway or driveway. Each employee or volunteer will also be required to have a radio or cell phone for emergency communication as well as a valid Transport Worker's Identification Card. A uniform (heritage preferred) will be worn by all HTRS operators.

Morris Pesin's Trolley

The idea of a trolley in LSP as the best way to improve intrapark mobility is not new. [*“Mr. Pesin estimated that 3 million visitors would go to the Statue of Liberty annually over the tram railway”* (a trolley or streetcar per Webster's Dictionary) *“he said could be installed on the causeway”* (between parking lots in LSP and the Statue of Liberty). *Reference: The New York Herald Tribune, Sunday, October 7, 1962*] Morris Pesin had the right idea!



LIBERTY HISTORIC RAILWAY

www.LHRy.org



May 23, 2013

Naomi Hsu

Senior Transportation Planner

City of Jersey City

Division of City Planning

30 Montgomery Street, 14th floor

Jersey City, NJ 07302.

Dear Naomi,

This letter from the Liberty Historic Railway, Inc. supplements our previous correspondence, dated May 15, 2013, which commented on the bulk of the draft report submitted for the Liberty State Park Circulation Study by Sam Schwartz Engineering. This letter, as you requested, focuses on pages 7-1 through 7-9.

Full documentation of National Park Service stakeholder interest

Although the National Park Service (NPS) local staff is expected to attend the final Technical Advisory Committee, this presence at a single meeting does not guarantee that the full benefit of the advice and opinions of this important Circulation Study stakeholder can be reflected in the final document. We understand that Jersey City must submit its final report shortly, and there may not be sufficient time for the National Park Service staff to internally vet, to be thoroughly interviewed, and to contribute fully to the final product and help shape its future course.

Early in this study, that local NPS staff indicated it has an interest in relieving pressure at its Lower Manhattan ferry dock and encouraging more visitors to reach its world-wide attractions via ferries from Liberty State Park. Improved mobility from the Liberty State Park HBLRT station, the closest node on the region's public transit system, is integral to shifting ferry passenger arrivals to Liberty State Park, so the NPS staff's commentary on the relative value of the transit alternatives should be highly relevant. In addition, the NPS' local staff from the Statue of Liberty National Monument and Ellis Island Immigration Station is familiar both with the funding source possibilities available to its agency and with the FHWA's Federal Lands Highway Program and its personnel.

The voice of the NPS local staff has been stilled in this study, since its facilities suffered serious damage from Hurricane Sandy and its personnel were scattered. Fortunately, as this study concludes, the local staff has been re-assembled, even though it remains heavily engaged in trying re-open its damaged facilities to the public in the near future. If the interchange with NPS is in any way foreshortened and not sufficiently developed in the opinion of either Jersey City or NPS, this report should acknowledge that it is not complete without such a fully considered contribution of the local representatives of the NPS regarding strategic mobility issues and funding sources.

Next stage planning and engineering

In the opinion of Liberty Historical Railway, Inc., the Implementation section has been improved but still could be improved in demonstrating the urgency of finding funding for the next stage of planning and engineering, especially of the Heritage Trolley Shuttle Option. We are pleased that the inference that the lead agency or agencies should wait until 2016 to seek funding for a rail option does not appear in the report. Instead, the report should urge whichever lead agency or agencies emerge in advancing planning and engineering of the alternatives that they should vigorously explore every conceivable funding possibility.

- Use of FTA funds

We are pleased that the draft final report now acknowledges that "... it is advisable to contact FTA to explore if some monies could be obtained through this funding source." Its "Very Small Starts" funding category is one of the funding possibilities that should be pursued vigorously by the lead agency or agencies that will advance the planning into the next stage. Political support for such an initiative should be considered.

- Federal Lands Access Program (FLAP)

Liberty Historic Railway, Inc. agrees that the organization of this new program should be closely monitored. We are pleased by the report's approach to the evolution of FLAP. We applaud the recommendation that the City of Jersey City request that it be designated as the "appropriate political subdivision" on New Jersey's "Programming Decisions Subcommittee." We wholeheartedly agree that the goal should be to secure FLAP funds to continue the planning and engineering of the Heritage Trolley Shuttle option.

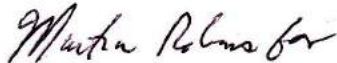
We also whole-heartedly agree that since MAP-21 will be up for reauthorization late next year, local governments in Hudson County, in concert with the NJ Department of Environmental Protection, should work with their Congressional delegation on a federal legislative amendment to FLAP to add a suitably-sized discretionary pot for "non-preference" states, such as New Jersey. This would recognize that special cases for improved access to federal lands in "non-preference" states do exist to "high-use recreation sites and economic generators," such as the Statue of Liberty and Ellis Island Immigration Station. Such a discretionary pot would greatly enhance the prospect that implementation of a Liberty State Park mobility solution could be addressed by this otherwise appropriate funding source.

- Unified Planning Work Program (UPWP)

Liberty Historic Railway, Inc. strongly disagrees with the Draft Final Report's conclusion that the Liberty State Park circulator would not qualify for Project Development Work Program (PDWP) funding at NJTPA, because it doesn't fit within governing project prioritization criteria. In fact, inclusion of the heritage trolley rail shuttle for funding of further planning and engineering would be consistent with a discussion the Liberty Historic Railway, Inc. had with a Federal Transit Administration (FTA) representative in the New York Regional Office.

Using the NJTPA's funding permitted under the PDWP for further planning and engineering of the heritage trolley rail shuttle should not be ruled out in the final report. This strategically important park circulator is qualitatively different from other transit projects and was not on the horizon when NJTPA established those PDWP project prioritization criteria. The lead agency or agencies responsible for advancing the Liberty State Park circulator should vigorously explore what steps (e.g., amendment) might be necessary to qualify a next stage of study of the Liberty State Park circulator for funding from the PDWP.

Sincerely,



William J. McKelvey, Jr.

Chairman

Liberty Historic Railway, Inc.

(1)

Bill Kadish
Box 2136
Hoboken, NJ
07030

Div of City Planning
30 Montgomery St # 400
Jersey City, NJ 07302

5/15/13

Dear Sirs,

As a user and supporter of
LSP I was alarmed at the talk
of installing a train-trolley into
the park.

LSP is not intended for tourists.
Tourists are welcome but the
primary purpose of LSP is to
serve the people of Jersey City,
Hudson County and the rest of
the state

→

(2)

LSP doesn't need more industries, development. There's plenty of roadways already. LSP is not an "Amusement Park" and doesn't need added "attractions."

This land is precious and the area impacted by the trolley and Tracks would be far greater than just the width of the roadbed.

This railway would be an unnecessary intrusion of the peaceful park.

A shuttle bus or trolley bus would service visitors as good or better, at a fraction of the cost, and with virtually no negative impact on LSP.

Yours truly,
Bill H. Adick

A public comment period will be held until 5 PM on Thurs., May 23. Please submit written comments to lspransitstudy@gmail.com or by US mail to attention of Naomi Hsu at Division of City Planning, 30 Montgomery Street, Suite 1400, Jersey City, NJ 07302.

FOLSP Position Statement Supporting “Green”LSP Shuttle Bus and Opposition to Trolleys on Tracks (TOT) in LSP

Friends of LSP strongly support a "green" shuttle bus - either an electric bus or another type of alternative non-polluting fuel – showcasing a clean energy vehicle in LSP, one of our greatest urban parks. We also support bus connections from Jersey City neighborhoods and Hudson County to the Light Rail station to connect with the “green” shuttle bus.

We strongly oppose Trolleys on Tracks in LSP (TOT) which would take away precious and priceless urban open space grass from unstructured recreation use for Hudson County residents, LSP’s primary purpose. Hudson County is the nations’ 6th most densely populated county, a concrete county with a tremendous deficit of open space for its residents. The trolley’s 12 feet wide, Right of Way, would destroy open space grass and be a new an unnecessary transportation corridor. People can’t put a picnic blanket on the proposed “grass between the trolley tracks”. Buses have least impact & least cost.

- **Loss of open space**-Trolley “right of way” to take away 12 feet wide of grass.
- **Visual pollution** of any,TOT electrical overhead power lines (catenary wires)
- **Trolley by Zapp Dr.** - On south side of cobblestone Zapp Drive, is the “**Grove of Remembrance**”, the peaceful 743 tree sanctuary planted in memory of NJ’s 9/11 victims; the Grove and the paths in and by it must not have adjacent trolley tracks.
- The Study’s estimates include trolley costs of traffic lights at beginning of Zapp Dr. at Phillips St. and also at Zapp and Freedom Way. The trolley would also cross in front of the entry/exit to the ferry parking lot. **There would be safety issues & also inevitable consequence of traffic backing up at trolley crossings.**
- The **safety issues**, especially in this family park with playing and running children will give unavoidable stress to parents, who come to LSP as everyone else, to get away from the stress of urban living.

- Inevitable blowing of horns/bells by driver for safety or to impress riders, will harm this treasured park's peacefulness, serenity and integrity.
- The trolley would cross N. side of "Millennium Park" field before Freedom Way. Many unstructured games of soccer, cricket, etc. are played in this field.
- Regarding park history, there were never trolleys running in LSP. The railroads did have buses running from local communities to the train and ferry terminal.
- High costs of constructing tracks and maintaining the tracks. Estimates are far higher for establishing trolleys on tracks in LSP, than for shuttle buses.
- **TOT Helping Tourism is invalid and irrelevant argument**
LSP's core purpose is to provide free and green open space to serve the unstructured recreation needs of the urban people. LSP's core purpose is not to be exploited and diminished to supposedly benefit commercial interests of JC hotels -but they won't be benefited because if people stay in JC hotels, it will be because they are cheaper than NYC hotels. Hardly anyone is going to come to LSP - who wasn't going to come anyway - just because there's a 7 minute trolley ride each way between the Light Rail Station and the CRRNJ Terminal.
- **There is no need at all to create any further supposed tourist "attractions" for the public at LSP,** because an incredible attraction already exists - the views of the Statue of Liberty, Ellis Island, the Manhattan skyline and views of the river and harbor. LSP's open space land is the greatest tribute to those iconic monuments and views. There are already two great tourist attractions at LSP - Liberty Science Center and the Statue Cruises ferries to Lady Liberty/Ellis Island.
- **Building tracks for a bell-ringing trolley on tracks where grass was, next to the Grove of Remembrance, for a few more annual tourists can never justify destroying grass and violating LSP's true purpose as an open space haven.**

The Friends support the "green shuttle bus" option and hope government will step up to fund it in the future.

For now, it is shameful that there is no shuttle bus service into and around LSP, though it would only cost around \$25,000 for a shuttle bus on weekends from Memorial Day to Labor Day.

I strongly support the resumption of shuttle bus service from H&R into LSP. There must not be any destruction or construction which would detract from LSP mission to offer the most natural unspoiled open park space/wildlife area for our urban community or other visitors.

Barbara Schueler

Naomi,

Thank you for sending me the link to the final draft report and executive summary. As requested, we will take this opportunity to provide comments in response to the final draft.

First of all, I would like to extend a note of sincere appreciation to the City of Jersey City, Division of City Planning, and to Sam Schwartz Engineering, for undertaking the Liberty State Park Circulator Study. I'm very impressed that you were able to simultaneously coordinate so many tasks to keep this project on time, integrate goals and expectations from multiple agencies, solicit public input, and produce a valuable final product.

Liberty State Park (LSP) is, by far, the most visited state park in the nation. It is unique in our NJ State Park System, as it also serves as an attraction and a travel destination for thousands of out-of-state and international tourists as well. In fact, many US residents can trace their genealogy to individuals who first set foot in the USA at Ellis Island, and took their first ride on public transportation on a train at the rail terminal, in what is now LSP. This gem of a park was literally carved out of a rail yard, but it now and forever will serve as a green urban oasis in the most densely populated and developed area in the country. Certainly, this park, which had its roots in rail transit, is worthy of direct linkage to public mass transit, and its size warrants a circulator transportation link within the park, as well.

Our goals for LSP are to increase park attendance as can safely be accommodated and to improve public access to the public with the least amount of impact to the park. One way to achieve both goals, without wasting valuable park space for the construction of additional vehicular parking, would be to provide a direct link to existing mass transportation systems. Of course, LSP will always be of immediate importance to the local residents of Jersey City and the surrounding communities, but transportation planning for LSP must consider linkage to regional transportation systems, to make the park accessible to US and world travelers. So any decisions about public transportation planning at LSP should be made on a global scale.

In the earliest stages of transportation planning for Liberty State Park, we believe we should keep all options open and investigate providing a combination of transportation modalities. If capital and operational funding can be identified, we might potentially link the adjacent light rail station with the Liberty Terminal Building by trolley, and provide a circulator bus route through the park, as discussed as an option in the final draft report. Beyond serving as a people mover, the proposed restored and battery powered trolley car might actually serve as an additional attraction to the park. A trolley line into the Historic Rail Terminal would be reminiscent of the multiple rail lines in the train shed which served as the gateway for immigrants to the 48 contiguous states. The next phase of project study should consider whether trolley tracks installed at grade and camouflaged in the lawn area adjacent Audrey Zapp Drive would be invasive to the park or vehicular traffic. Bus service (whether it is standard, replica trolley or minibus) might then provide loop service to connect points of interest within the park. Replica trolley bus service, however, would be ideal, as it would carry the trolley theme throughout the park.

As I discussed in previous messages, although the traffic circulator study planning process is valuable, without the funding for the operation of a circulator route, or infrastructure improvements like trolley rails, trolley stations and/or bus stops, I do not see how this agency can move the process forward. We would be totally reliant on federal or State transportation grants, and given our currently priorities rebuilding from Hurricane Sandy damage, I don't even think the State Park Service would have the staff available to "take the lead," as proposed in the final draft, to either file grant applications or administer such grants at the present time.

The proposal to connect LSP to a public mass transportation system and develop a transit circulation loop in the park is a visionary plan and an absolute must for a park that provides regional open green space in this urban setting, but I do not see a readily available means to get there right at the present time.

Thank you again for the opportunity to provide comments in response to the final Liberty State Park Transportation Circular Study draft report.

All the best to you!

John

John G. Trontis, CPRP

Assistant Director of Parks & Forestry



City of Jersey City
Division of City Planning

Liberty State Park Circulator Cost-Benefit Analysis

Public Meeting 1

Thursday, January 24, 2013
City Hall - Anna Cucci Memorial Council Chambers
280 Grove Street
Jersey City, NJ 07302

Agenda

- 4:30 PM – 6:30 PM: Open House
Review display boards and talk to members of the project team
- 6:30 PM: Presentation by Mike Monteleone, AICP, PP, Senior Project Manager, Sam Schwartz Engineering
- 7:00 PM – 8:00 PM: Questions and Answers
Ask questions or provide feedback on the presentation

Public Comment Period

Written comments may be submitted through 5:00 PM, Thursday, February 7, 2013.

E-mail: lsprtransitstudy@gmail.com

Mail: Division of City Planning, 30 Montgomery Street, Suite 1400, Jersey City, NJ 07302, Attn: Naomi Hsu, AICP, PP, Senior Transportation Planner

For more information, please visit the project website:
www.lsprtransitstudy.com

This study is funded by the City of Jersey City and the North Jersey Transportation Planning Authority.



STUDY PURPOSE AND GOALS

STUDY PURPOSE:

- Establish purpose and need
- Evaluate concepts for a mass transit circulator service
 - Various routes and modes will be considered
 - Range of options will be evaluated
- Identification of feasible concepts
 - Eliminate cost-infeasible alternatives
 - Results will be consistent with NEPA and FTA requirements
 - Will prioritize concepts but will not identify a “preferred” alternative

STUDY GOALS:

- Reduce auto travel to park
- Capitalize on the multi-modal mass transit network to make park more accessible
- Consider transportation needs of underserved communities
- Develop connectivity within Liberty State Park and consider destinations near the park
- Recognize park as local and regional destination
- Support tourism
- Improve linkages with National Monuments



LIBERTY STATE PARK CIRCULATOR PROJECTED ANNUAL SHUTTLE RIDERSHIP

Market	2011	2020	2035
LSC Visitor	4,800 (8%)	5,100 (6%)	5,800 (5%)
Ferry Visitor	26,500 (44%)	28,300 (34%)	31,800 (27%)
Local Recreational	28,700 (48%)	50,900 (60%)	79,900 (68%)
Total	60,000 (100%)	84,300 (100%)	117,500 (100%)

Based on results of a travel survey and forecast model developed for this study.

PURPOSE & NEED

Draft Purpose Statement: Liberty State Park Transit Circulator

“The purpose and need statement should be concise and understandable as possible....is typically only one or two paragraphs long...that focuses on the primary transportation challenges” (FTA/FHA Guidance on Purpose and Need)

The purpose of the Liberty State Park Transit Circulator is to provide a reliable transit service to and from the park that:

1. Provides an alternative to predominantly automobile access to the park;
2. Serves the current and projected future transit demand to the park for recreational and tourist markets;
3. Provides the means to visit the park for Jersey City residents who do not have access to a car.



TRAVEL SURVEY RESULTS

Survey Type

Responses

Liberty State Park Interview Survey	733
Liberty Science Center Interview Survey	738
On-line Survey	528
Generic Survey (handout)	47

Total	<i>*Surveys conducted in Summer, 2012</i>	2,046
--------------	-------------------------------------------	--------------

Main Takeaways:

- LSP - Recreational trips were mostly from the local areas
- On Line - 58% of respondents come from Jersey City
- Most travel by car (61%-80%)
- Likelihood they would use shuttle service if available:
 - Very likely: 31-36%
 - Very unlikely: 29-36%

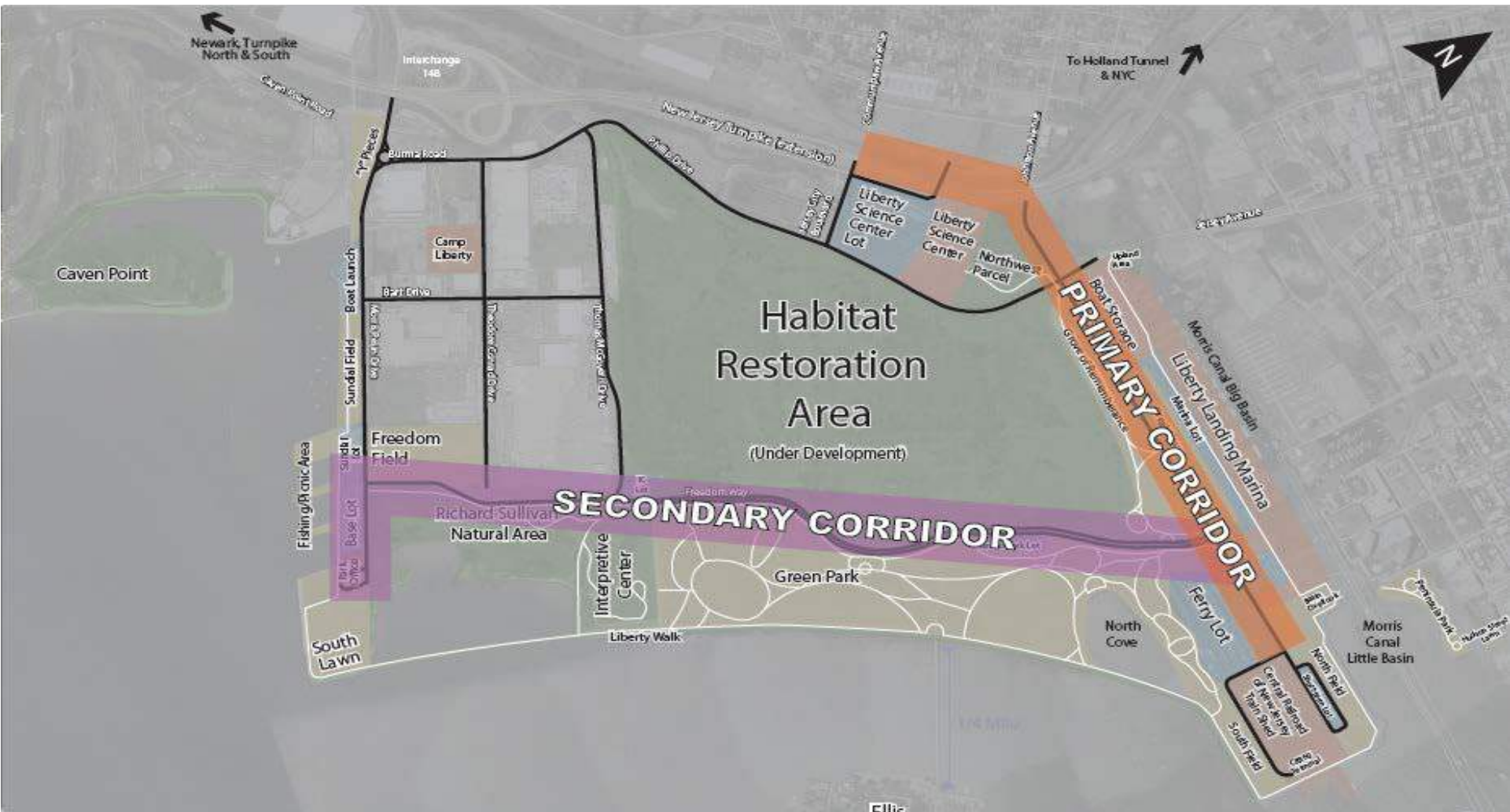
PERCENTAGE RIDERSHIP BY CORRIDOR



DESTINATIONS IN LIBERTY STATE PARK







PROPOSED SERVICE CORRIDORS



- Destinations outside the park should be served as resources allow
- Service through industrial park area should be re-evaluated as new destinations come online over time

ELIMINATED VEHICLES/MODES

	Requires barrier or grade separation	Requires excessive infrastructure	Prohibitively expensive	Insufficient capacity
Heavy Rail 	X	X	X	
Light Rail 		X	X	
Automated Guideway Transit 	X	X	X	
Bus Guideway 		X		

POTENTIAL SERVICE VEHICLES (BUS)

Mini Bus/Jitney



SPECS

- CAPACITY: up to 30 seats
- SIZE: less than 40 feet
- AVG COST: \$90,000

POSITIVES

- Least expensive vehicle
- Uses existing infrastructure and right of way
- Routing flexibility
- May be low or zero emission (at additional cost)

NEGATIVES

- Some local emissions unless more expensive vehicles are used
- Serves purely as transportation, not attraction in and of itself
- Shorter life than standard bus (for least expensive types)

Bus



- CAPACITY: 80
- SIZE: 40 feet
- AVG COST: \$480,000

- Less expensive than streetcars
- Uses existing infrastructure and right of way
- Routing flexibility
- May be low or zero emission (at additional cost)

- Some local emissions or more expensive vehicles are used
- Serves purely as transportation, not attraction in and of itself

Replica Trolley (Bus)



- CAPACITY: approx 80
- SIZE: approx 40 feet (varies)
- AVG COST: \$280,500

- Less expensive than streetcars
- Uses existing infrastructure and right of way
- Routing flexibility
- Creates historic ambiance

- Some local emissions
- Not likely to be its own attraction

POTENTIAL SERVICE VEHICLES (RAIL)

Battery/Ground Level Power Supply Modern Streetcar



SPECS

- CAPACITY: avg 157 passengers
- SIZE: 66 feet (or up to 148 feet)
- AVG COST: \$3.5 - \$4.5 M

POSITIVES

- New vehicles may be easier to maintain (compared to historic streetcars)
- New vehicles may be more comfortable for passengers (compared to historic streetcars)
- No local emissions
- No charging mechanism needed at route termini for ground level power supply

NEGATIVES

- More expensive than bus service
- Serves purely as transportation, not attraction in and of itself
- Need charging mechanism at one or both route termini for battery powered vehicles

Battery-Powered Historic Streetcar



- CAPACITY: approx 70
- SIZE: 46 – 50 feet
- AVG COST: est \$1.5 M for renovation

- Historic cars can be attraction in and of themselves – boosting ridership
- No local emissions

- More expensive than bus service
- Need charging mechanism at one or both route termini
- Historic cars may be difficult to maintain and less reliable than new cars

New Battery-Powered Historic Replica Streetcar



- CAPACITY: 88 passengers
- SIZE: ~50 feet
- AVG COST: \$900,000

- Historically accurate cars can be attraction in and of themselves – boosting ridership
- New cars may be easier to maintain and more reliable than historic cars
- No local emissions

- More expensive than bus service
- Need charging mechanism at one or both route termini

PRELIMINARY ASSESSMENT OF MODE OPTIONS

BUS

- Service (standard or minibus) for one or both segments has lowest cost and does not require significant additional infrastructure.
- Replica trolley (bus) not considered an historic attraction to draw additional riders, but may add ambiance.

STREETCAR

- Service only considered for segment between HBLR/LSC and the CRRNJ Terminal, as the projected ridership for rest of park does not justify streetcar infrastructure and associated requirements at this time.
- Elimination of modern streetcar:
 - Expensive and requires additional infrastructure
 - Will not likely improve travel times compared with bus service
 - Does not serve as an attraction in and of itself
- Inclusion of historic/replica streetcar:
 - More expensive than bus service and requires additional infrastructure, but may draw additional riders as park attraction for historical context
- Subsequent study should determine whether rehabilitated historic streetcars or new replica cars should be used for alternatives that include streetcars.

PRELIMINARY SERVICE GUIDELINES

- Grass tracks and no overhead wires could be standard for rail options
- No or ultra-low emissions could be standard for all bus options
- Service design and vehicle selection could facilitate transit excursion through the park as attraction
- Historic streetcar may be an attraction on its own



Grass Trackbed in New Orleans



Zero Emissions Bus in Scotland



Park Shuttle in Zion National Park

PROPOSED OPTIONS FOR COST/BENEFIT EVALUATION

1. Bus service between HBLR and CRRNJ terminal only
2. Bus service for both proposed segments
3. Historic/replica streetcar between HBLR and CRRNJ terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ terminal and bus for other segment



LIBERTY STATE PARK CIRCULATOR

Cost Benefit Analysis



SAM SCHWARTZ
ENGINEERING

Stump/Hausman
Partnership

City of Jersey City
Public Meeting I

January 24, 2013



WELCOME

- **Introductions**
- **Study background**
- **Project schedule**
- **Public outreach**
- **Travel survey**
- **Future conditions**
- **Purpose and need**
- **Concept initiatives**
- **Next steps**



TAC MEMBER ORGANIZATIONS

Central Parking
Educational Arts Team
EZ Ride (Meadowlink)
Friends of Liberty State Park
Hudson County Engineering
Hudson County Planning
Hudson TMA
Jersey City Division of City Planning
Jersey City Division of Engineering
Jersey City Economic Development Corporation
Jersey City Mayor's Office
Liberty Historic Rail
Liberty National Golf Club
Liberty Landing Marina
Liberty Science Center
Liberty State Park
NJDEP Division of Parks and Forestry
NJDOT Bureau of Capital Program Development
New Jersey Transit
NJTPA
Pole Position
Port Authority of New York and New Jersey
Save Ellis Island
Statue Cruises
US National Park Service

SAM SCHWARTZ
ENGINEERING



STUDY PURPOSE



Source: <http://www.destinationnexus.com/Liberty-State-Park-in-Jersey-City-New-Jersey.html>

- **Establish purpose and need**
- **Evaluate concepts for a mass transit circulator service**
 - Various routes and modes will be considered
 - Range of options will be evaluated
- **Identification of feasible concepts**
 - Eliminate cost-infeasible alternatives
 - Results will be consistent with NEPA and FTA requirements
 - Will prioritize concepts but will not identify a “preferred” alternative

STUDY GOALS

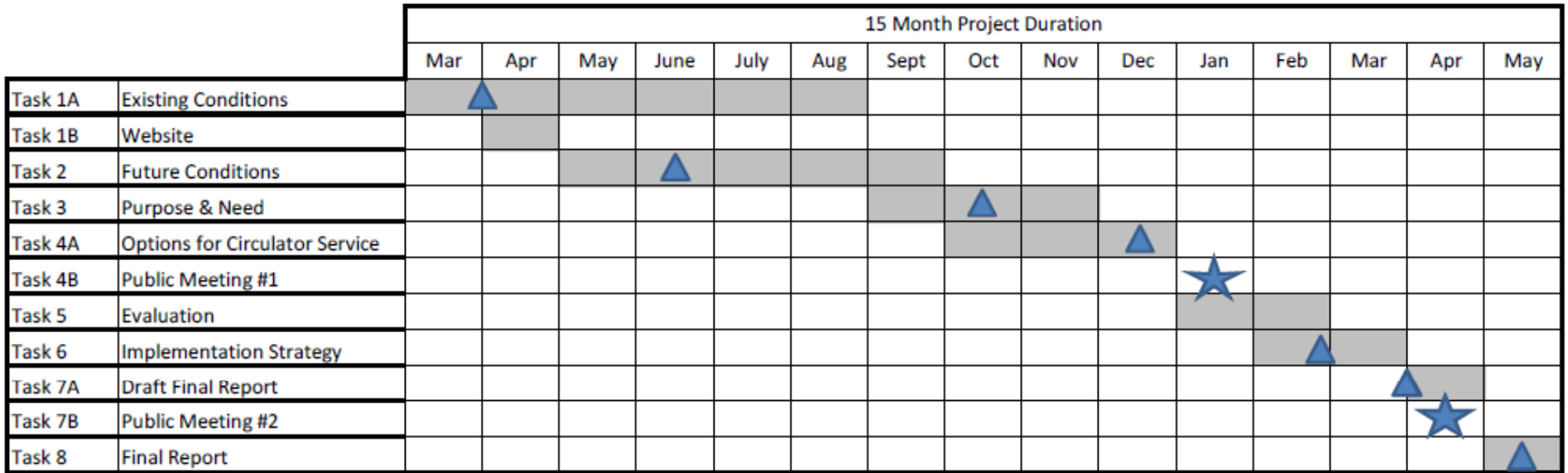
- Reduce auto travel to park
- Capitalize on the multi-modal mass transit network to make park more accessible
- Consider transportation needs of underserved communities
- Develop connectivity within Liberty State Park and consider destinations near the park
- Recognize park as local and regional destination
- Support tourism
- Improve linkages with National Monuments



PROJECT SCHEDULE

Liberty State Park Circulator Cost-Benefit Analysis

Project Schedule



Legend

-  Technical Advisory Committee (TAC) Meeting
-  Public Meeting

Monday, January 07, 2013

Note: The exact dates of the TAC and Public Meetings are to be determined.

PUBLIC OUTREACH

- **Two public meetings**
 - Initial data and project approach
 - Evaluation of findings
- **Website (Lsptransitstudy.com)**
- **Survey of park visitors**



WEBSITE



Welcome

The City of Jersey City is conducting the Liberty State Park Circulator Cost-Benefit Analysis, a study that will explore various options for mass transit service throughout Liberty State Park. With over 5 million visitors each year, Liberty State Park is a major local and regional destination that provides open space and is home to several popular attractions. This study will identify recommendations that enhance the mass transit network to serve current and future park visitors in order to reduce usage of private automobiles – a goal that supports the City of Jersey City's efforts to create a more sustainable city. The study's final report is anticipated by Summer 2013.

Project Schedule.

Announcements

COMING IN JUNE 2012: The project team will implement an online survey to better understand the travel behavior of park users. We want to hear from you!



SAM SCHWARTZ
ENGINEERING

- Lsptransitstudy.com
- Developed to generate interest in study
- Content:
 - Link to on-line surveys
 - Links to study team
 - Announcements
 - Project Overview
 - Photo gallery
 - Documents

SAM SCHWARTZ
ENGINEERING



TRAVEL SURVEY

<u>Survey Type</u>	<u>Responses</u>
Liberty State Park Interview Survey	733
Liberty Science Center Interview Survey	738
On-line Survey	528
Generic Survey (handout)	47
<hr/>	
Total	2,046

**Surveys conducted in Summer, 2012*

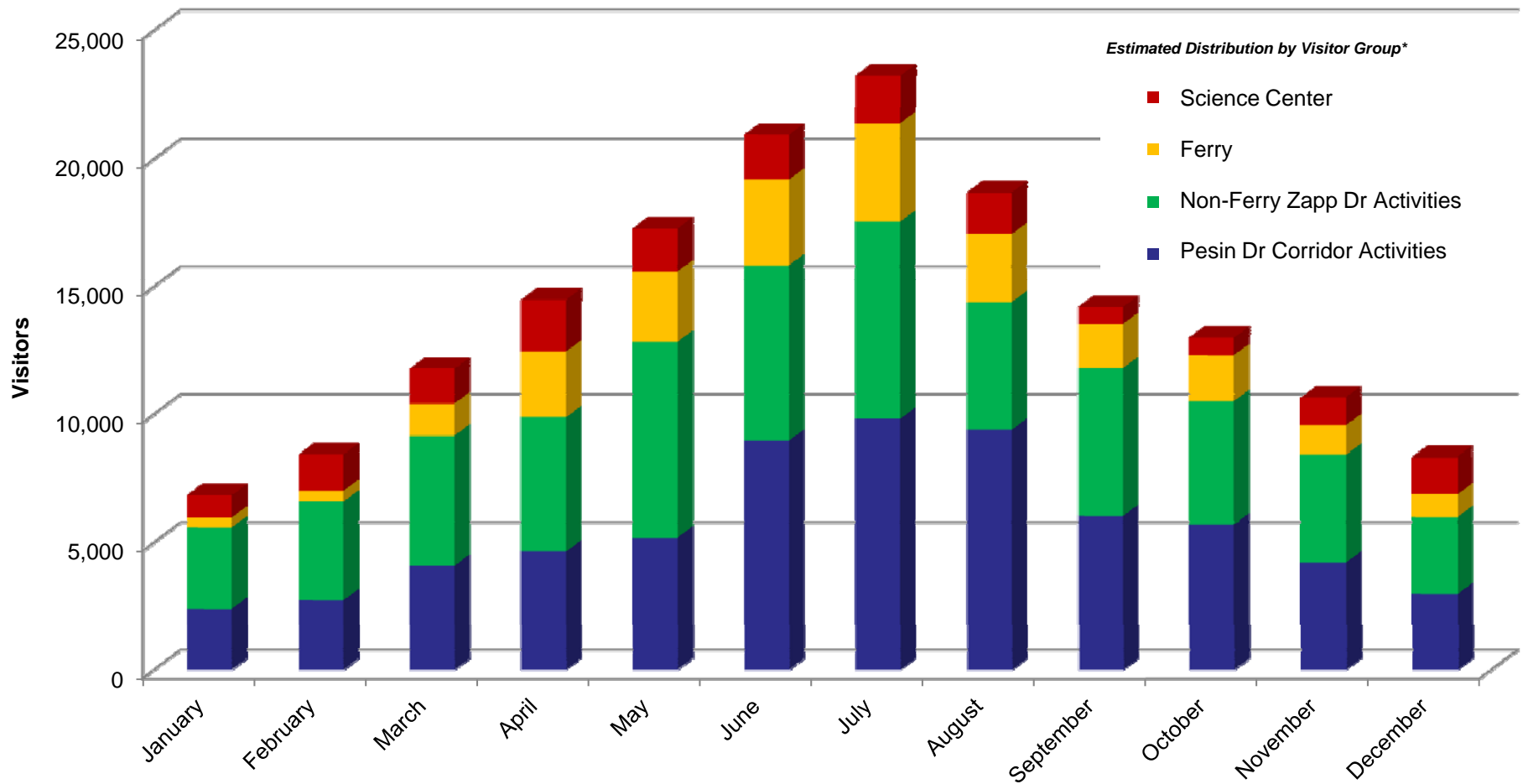
TRAVEL SURVEY RESULTS

Main Takeaways:

- LSP - Recreational trips were mostly from the local areas
- On Line - 58% of respondents come from Jersey City
- Most travel by car (61%-80%)
- Likelihood they would use shuttle service if available:
 - Very likely: 31-36%
 - Very unlikely: 29-36%

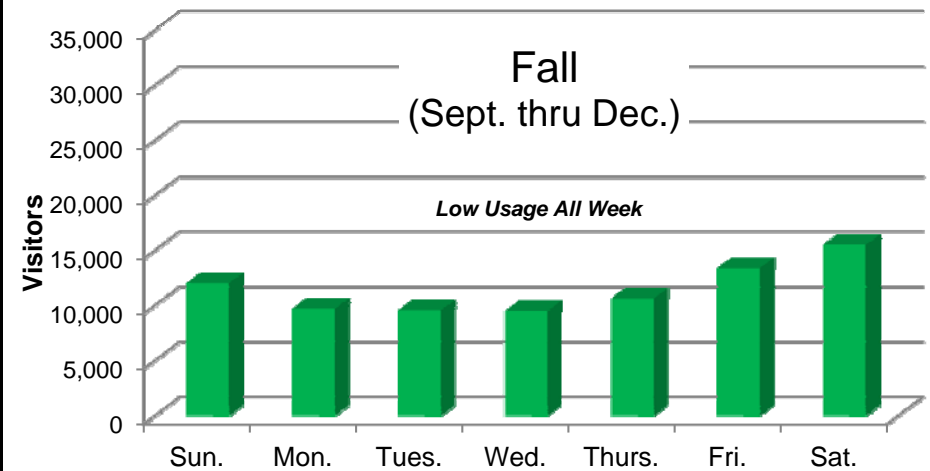
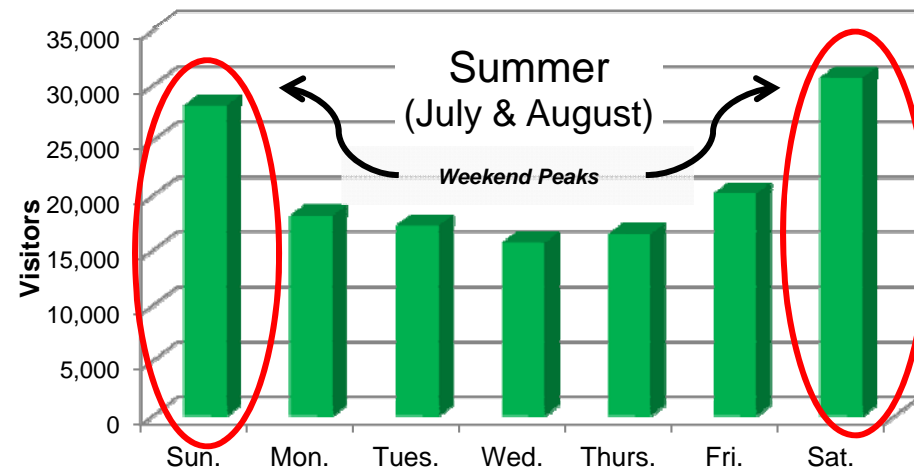
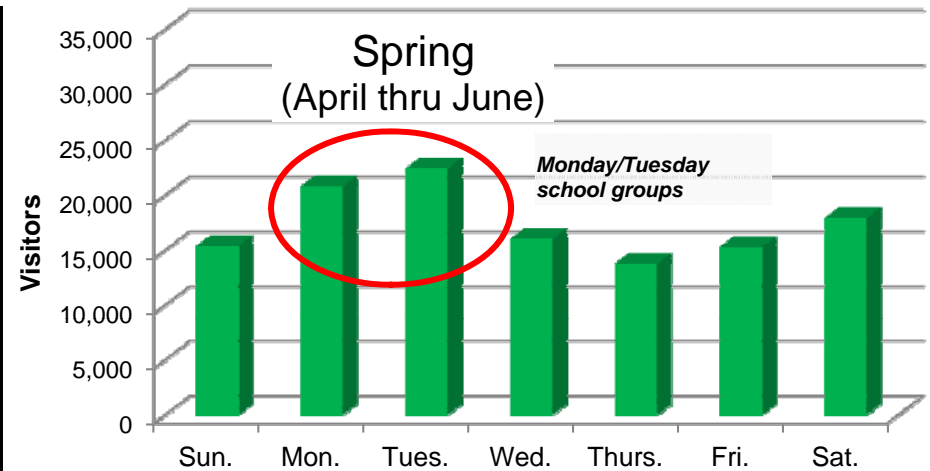
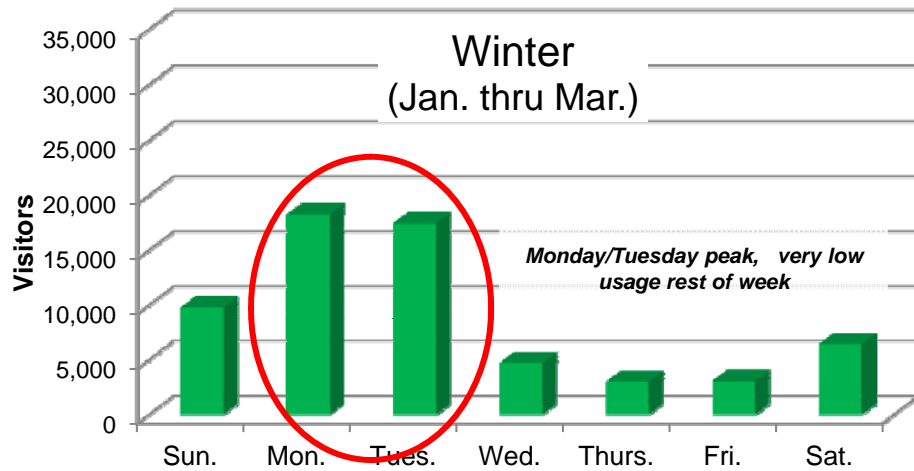


LIBERTY STATE PARK DAILY VISITORS MONTHLY DISTRIBUTION 2011



*Based on Data Provided and Bus & Auto Occupancy Rate
Estimates from Liberty State Park

LIBERTY STATE PARK DAILY VISITORS SEASONAL WEEKLY DISTRIBUTION 2011



*Based on Data Provided and Bus & Auto Occupancy Rate Estimates from Liberty State Park

FUTURE CONDITIONS



- Projections using regional transportation models
- Model tailored for recreational trips
- Evaluated target markets included the following:
 - Liberty Science Center visitors
 - Central Railroad of New Jersey Terminal visitors
 - Statue of Liberty/Ellis Island visitors
 - Liberty Landing ferry
 - Industrial park workers
 - Local recreational visitors

LIBERTY STATE PARK CIRCULATOR PROJECTED ANNUAL SHUTTLE RIDERSHIP

Market	2011	2020	2035
LSC Visitor	4,800 (8%)	5,100 (6%)	5,800 (5%)
Ferry Visitor	26,500 (44%)	28,300 (34%)	31,800 (27%)
Local Recreational	28,700 (48%)	50,900 (60%)	79,900 (68%)
Total	60,000 (100%)	84,300 (100%)	117,500 (100%)

PURPOSE & NEED

Draft Purpose Statement: Liberty State Park Transit Circulator

The purpose of the Liberty State Park Transit Circulator is to provide a reliable transit service to and from the park that:

1. Provides an alternative to predominantly automobile access to the park;
2. Serves the current and projected future transit demand to the park for recreational and tourist markets;
3. Provides the means to visit the park for Jersey City residents who do not have access to a car.



CONCEPT INITIATIVES AND SCREENING

1. “No build” option
2. Previous shuttle bus service
3. Primary attractions for LSP circulator riders, proposed service corridors
4. Potential service vehicles
5. Preliminary service guidelines
6. Proposed options for evaluation

“NO BUILD” OPTION

- **Does not meet purpose and need of project:**
 - **Social-based need for transit**
 - **Demand for transit service within the park**
 - **Reduce auto travel within the park**
 - **Support tourism and transit connectivity with the ferry to monuments**

PREVIOUS LSP SHUTTLE ROUTES

- **Operated for 11 years:**
 - Jan, 2001 – May, 2010 (NJT)
 - June – Sept, 2010, May – Sept, 2011 (Hudson TMA)
- **Connected HBLR and:**
 - Liberty Science Center
 - Ferry Terminal
 - Liberty Landing Marina
 - CRRNJ Terminal
 - Liberty State Park Office/ Welcome Center
- **In 2003, service converted to weekends only January through March; daily at all other times.**
- **30 – 40 minute headways**
- **\$1.00 cash fare for unlimited daily rides (most of its existence)**



Source: http://www.nj.com/hudson/index.ssf/2010/05/liberty_state_park_shuttle_a_v.html

PREVIOUS LSP SHUTTLE RIDERSHIP BY STOP



SHUTTLE STOP	AVERAGE DAILY RIDERSHIP
HBLR	127 (43%)
Liberty Science Center	20 (7%)
Restaurants	9 (3%)
Historic Terminals/Ferry	109 (37%)
Playground/Green Park	5 (2%)
Interpretive Center	1 (<1%)
Park Office Visitor's Center	23 (8%)
Liberty Park Café	2 (<1%)

75% of trips linked to HBLR,
25% intra-park

NOTE: Ridership numbers are for the May through August, 2011 TMA weekend service and include all stop-level boarding and alighting activity.

PERCENTAGE RIDERSHIP BY CORRIDOR



LEGEND

- Shuttle Route
- Roadways
- HBLR** Hudson-Bergen Light Rail Station



PRIMARY ACTIVITY CENTERS



LIBERTY SCIENCE CENTER



- More than 1 million annual visitors, including many school groups
- 7% of ridership on previous shuttle
- 77% arrived by car on weekdays (89% on weekends)
- 23% of visitors come from New York State on weekdays (25% on weekends)
- Previous LSP shuttle not marketed as a way for New Yorkers to visit LSC via Liberty Landing ferry
- LSC proposes targeted shuttle/ferry advertising for New York visitors

CRRNJ TERMINAL/FERRY LANDING



- **37% of ridership on previous shuttle service**
- **Historic building and train shed, LSP 9/11 Memorial, ferry to monuments**
- **Hub of activity within the park, on corridor of heaviest ridership for previous shuttle**

PLAYGROUND/GREEN PARK



- **Playground is primary purpose of LSP visitation for 2 - 4% of survey responses**
- **Playground is secondary purpose of LSP visitation for 4 – 5% of survey responses**
- **Picnicking primary purpose for 4-10% of survey responses, secondary purpose for 3-6%— takes place here and throughout the park**

PARK OFFICE / SOUTH LAWN



- 8% of previous shuttle ridership
- Heavily used area of the park for picnicking
- Good potential for circulator service but is not on corridor of heaviest use

FUTURE HABITAT RESTORATION AREA



- **Restoration/creation of habitat area with trail system**
- **Attraction for hikers, birders, nature enthusiasts and others**
- **Proposed access from LSC, Audrey Zapp Dr, Freedom Way and industrial park**

LIBERTY INDUSTRIAL PARK



Source: <http://metrony.sysco.com/images/items/IMAGE8.JPG>

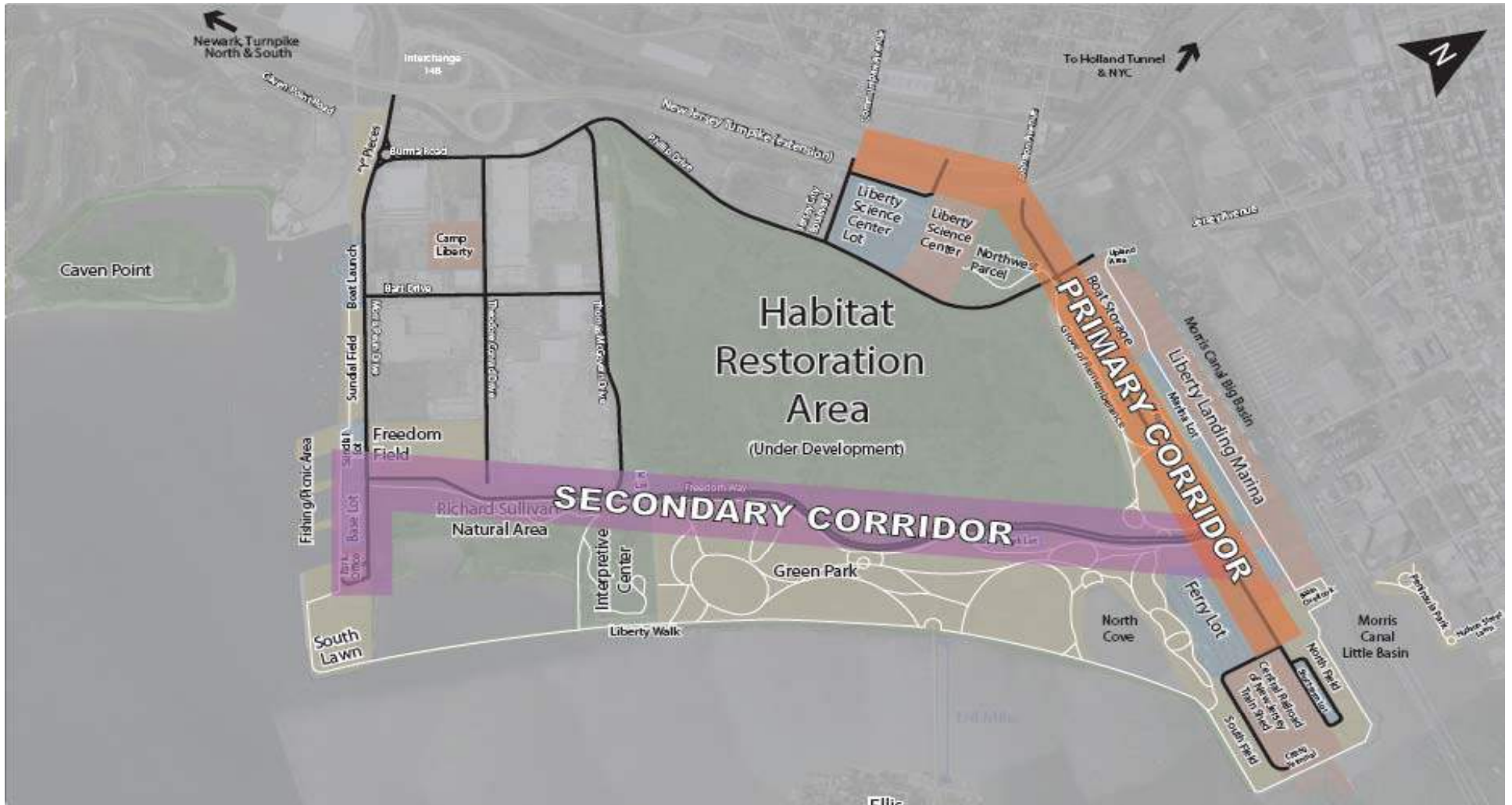
- **135-acre industrial area located near Burma Road/ Morris Pesin Drive west of LSP**
- **Major tenants include:**
 - New York Daily News
 - Sysco Food
 - Diversified Global Graphics Group (DG3)
 - Yama Seafood
- **2,000+ employees as of October 2012**
- **Largest employers operate 24 hours per day/7 days per week**
- **Current demand under-served based on 2009 NJ Transit Bus Study. Route 981 eliminated in 2010 service cuts.**
- **Hours of recreational service not a good fit with industrial park shift hours.**

PRIORITY OF ACTIVITY CENTERS

Priority based on previous shuttle ridership and proximity to other ridership generators.

- **Tier 1 – must be served:**
 - **HBLR Station**
 - **Liberty Science Center**
 - **CRRNJ Terminal/Ferry Landing**
 - **Future Habitat Restoration Area Trails**
- **Tier 2 – should be served**
 - **Liberty Landing/Restaurants**
 - **Park Office/South Lawn**
 - **Green Park/Playground**
- **Tier 3 – service not justifiable at this time**
 - **Industrial Park/Camp Liberty**
 - **Interpretive Center**

PROPOSED SERVICE CORRIDORS



- Destinations outside the park should be served as resources allow
- Service through industrial park area should be re-evaluated as new destinations come online over time

LONG LIST OF VEHICLES/MODES (RAIL) FOR SCREENING



Heavy Rail



Light Rail



Automated Guideway Transit



Battery/Ground Level Power Supply Modern Streetcar



Battery-Powered Historic Streetcar



New Battery-Powered Historic Replica Streetcar

LONG LIST OF VEHICLES/MODES (BUS) FOR SCREENING



Bus Guideway



Bus (Standard or Electric)



Replica Trolley (Bus)



Mini Bus/Jitney

VEHICLE/MODE FATAL FLAW SCREENING





CRITERIA:

- **Must not require grade separation or barrier**
- **Must not require excessive infrastructure that does not benefit ridership or running time**
- **Must not be prohibitively expensive**
- **Must have sufficient capacity**




VEHICLE/MODE SCREENING:

- **All were screened**
- **Those without a fatal flaw were retained for further study**

ELIMINATED VEHICLES/MODES

	Requires barrier or grade separation	Requires excessive infrastructure	Prohibitively expensive	Insufficient capacity
Heavy Rail 	X	X	X	
Light Rail 		X	X	
Automated Guideway Transit 	X	X	X	
Bus Guideway 		X		

POTENTIAL SERVICE VEHICLES (BUS)

	SPECS	POSITIVES	NEGATIVES
<p>Mini Bus/Jitney</p> 	<ul style="list-style-type: none"> • CAPACITY: up to 30 seats • SIZE: less than 40 feet • AVG COST: \$90,000 	<ul style="list-style-type: none"> • Least expensive vehicle • Uses existing infrastructure and right of way • Routing flexibility • May be low or zero emission (at additional cost) 	<ul style="list-style-type: none"> • Some local emissions unless more expensive vehicles are used • Serves purely as transportation, not attraction in and of itself • Shorter life than standard bus (for least expensive types)
<p>Bus</p> 	<ul style="list-style-type: none"> • CAPACITY: 80 • SIZE: 40 feet • AVG COST: \$480,000 	<ul style="list-style-type: none"> • Less expensive than streetcars • Uses existing infrastructure and right of way • Routing flexibility • May be low or zero emission (at additional cost) 	<ul style="list-style-type: none"> • Some local emissions or more expensive vehicles are used • Serves purely as transportation, not attraction in and of itself
<p>Replica Trolley (Bus)</p> 	<ul style="list-style-type: none"> • CAPACITY: approx 80 • SIZE: approx 40 feet (varies) • AVG COST: \$280,500 	<ul style="list-style-type: none"> • Less expensive than streetcars • Uses existing infrastructure and right of way • Routing flexibility • Creates historic ambiance 	<ul style="list-style-type: none"> • Some local emissions • Not likely to be its own attraction

POTENTIAL SERVICE VEHICLES (RAIL)

Battery/Ground Level Power Supply Modern Streetcar



SPECS

- CAPACITY: avg 157 passengers
- SIZE: 66 feet (or up to 148 feet)
- AVG COST: \$3.5 - \$4.5 M

POSITIVES

- New vehicles may be easier to maintain (compared to historic streetcars)
- New vehicles may be more comfortable for passengers (compared to historic streetcars)
- No local emissions
- No charging mechanism needed at route termini for ground level power supply

NEGATIVES

- More expensive than bus service
- Serves purely as transportation, not attraction in and of itself
- Need charging mechanism at one or both route termini for battery powered vehicles

Battery-Powered Historic Streetcar



- CAPACITY: approx 70
- SIZE: 46 – 50 feet
- AVG COST: est \$1.5 M for renovation

- Historic cars can be attraction in and of themselves – boosting ridership
- No local emissions

- More expensive than bus service
- Need charging mechanism at one or both route termini
- Historic cars may be difficult to maintain and less reliable than new cars

New Battery-Powered Historic Replica Streetcar



- CAPACITY: 88 passengers
- SIZE: ~50 feet
- AVG COST: \$900,000

- Historically accurate cars can be attraction in and of themselves – boosting ridership
- New cars may be easier to maintain and more reliable than historic cars
- No local emissions

- More expensive than bus service
- Need charging mechanism at one or both route termini

REFINEMENT OF MODES

BUS

- Service (standard or minibus) for one or both segments has lowest cost and does not require significant additional infrastructure.
- Replica trolley (bus) not considered an historic attraction to draw additional riders, but may add ambiance.

STREETCAR

- Service only considered for segment between HBLR/LSC and the CRRNJ Terminal, as the projected ridership for rest of park does not justify streetcar infrastructure and associated requirements at this time.
- Elimination of modern streetcar:
 - Expensive and requires additional infrastructure
 - Will not likely improve travel times compared with bus service
 - Does not serve as an attraction in and of itself
- Inclusion of historic/replica streetcar:
 - More expensive than bus service and requires additional infrastructure, but may draw additional riders as park attraction for historical context
- More detailed study should determine whether rehabilitated historic streetcars or new replica cars should be used for alternatives that include streetcar.

PRELIMINARY SERVICE GUIDELINES

- **Grass tracks and no overhead wires could be standard for streetcar options**
- **No or ultra-low emissions could be standard for all bus options**
- **Service design and vehicle selection could facilitate transit excursion through the park as attraction**
- **Historic streetcar may be an attraction on its own**



Grass Trackbed in New Orleans



Zero Emissions Bus in Scotland



Park Shuttle in Zion National Park

PROPOSED OPTIONS FOR COST/BENEFIT EVALUATION

1. Bus service between HBLR and CRRNJ terminal only
2. Bus service for both proposed segments
3. Historic/replica streetcar between HBLR and CRRNJ terminal only
4. Combination historic/replica streetcar and bus: historic/replica streetcar between HBLR and CRRNJ terminal and bus for other segment



NEXT STEPS

- **Consider comments received from public meeting (Deadline: February 7, 2013)**
- **Develop alignment and service plans for four short-listed options, including connectivity to HBLR**
- **Service evaluation of four short-listed options**
 - **Costs (i.e., capital, operating)**
 - **Benefits (i.e., ridership, social-based need, meets study goals)**
 - **Impacts (i.e., environmental, cultural, recreational)**
- **Determine final service options to be studied further (as part of a future study)**
- **Identify funding and timeframe for final service options**
- **Present results of study to public (Public Meeting #2 – Spring 2013)**

Public Comment Period through February 7, 2013

Please submit written comments to

lsprtransitstudy@gmail.com

or

**Division of City Planning
30 Montgomery Street, Suite 1400
Jersey City, NJ 07302
Attn: Naomi Hsu**

**SAM SCHWARTZ
ENGINEERING**



JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Public Meeting #1 Thursday, January 24, 2013, 4:30 PM – 8:00 PM SUMMARY

The first public meeting for the Liberty State Park (LSP) Circulator Cost-Benefit Analysis was held on Thursday, January 24, 2013 at City Hall, 280 Grove Street, in the Anna Cucci Memorial Council Chambers.

PROJECT TEAM MEMBERS PRESENT:

Naomi Hsu, Jersey City Division of City Planning
Mike Monteleone, Sam Schwartz Engineering
Kate Sargent, Sam Schwartz Engineering
Melanie Harris, Sam Schwartz Engineering

MATERIALS DISTRIBUTED:

Meeting Agenda
Comment Form

An open house was held from 4:30 p.m. to 6:30 p.m. during which members of the public were able to view displays and talk one-on-one with members of the project team. At 6:30 p.m., the project team made a formal presentation. Following a brief welcome by Naomi Hsu, Mike Monteleone presented the agenda for the meeting, ridership numbers for the previous LSP circulator service and a summary of activity centers within LSP. Kate Sargent presented the priority ranking for the various activity centers within the park, the resulting proposed corridors for service, the long list of vehicles/modes considered for service, the refinement of vehicles/modes, and the resulting four circulator options that were retained for further study in the next phase of this project. Mike Monteleone presented next steps for the study.

During the question and answer session, the following questions and topics were raised. Responses by Mike Monteleone and the project team appear in italics.

-
- How will a trolley be powered without overhead wires? *It was reiterated that the trolley could be battery-powered.*
 - Was the establishment of a transit museum in Liberty State Park considered to generate additional ridership for a circulator? *The consideration of the establishment of a museum is beyond the scope of the current study.*
 - It appears that rail is the first choice for mode for the circulator. *The project team has approached the study objectively and has no mode preference for the circulator.*
 - Why would a battery-powered trolley operate on a fixed-rail system? Will transit displace right-of-way for automobiles? The proposed circulator will not improve mass transit service to communities not served by the Hudson-Bergen Light Rail (HBLR). Will the study recommend the removal of existing parking lots? *Battery-powered vehicles produce fewer emissions and are less disruptive to the park. At this point, a specific alignment for the circulator service has not been defined. It has yet to be determined if the circulator will operate within the roads. The focus of this study is to develop a circulator that serves destinations within the park and the existing mass transit on the edges of the park. There are no plans to remove existing park parking if a circulator service is implemented.*
 - A staging area to charge the battery-powered vehicles will be needed, which will take land away from the park. Tracks will take land as well. *The next phase of the study will examine the impacts to park land. Grass tracks may be an option to minimize the impact to open space.*
 - In light of recent events like Hurricane Sandy, will the study include recommendations to address climate change and flood management? Will the study look at impacts of flooding on rail tracks? *It is a concern, but the study will not include detailed engineering plans. Flooding would need to be addressed when the circulator is engineered.*
 - Will Jersey City taxpayers bear the cost of the circulator? *The project team is looking at potential funding from various sources and levels of government.*

-
- The design of the vehicle should consider why people are going to the park. Vehicles should accommodate bicycles, picnic equipment, etc. *The project team will consider trip purpose when forming recommendations on vehicle type.*
 - Rail tracks will still require safety zones and detract from open space. Steel-on-steel will create noise. Rail is not true to the vision of the park's founders. *The project team will investigate new technology that minimizes noise. Detailed engineering, which is outside the study's scope, would be needed to design a rail system that addresses noise impacts.*
 - Given its seasonal nature, is projected ridership sufficient to support a rail option? Construction costs, especially in this fiscal climate, should eliminate rail options. Bus options are the only realistic option. *The project team will perform a cost-benefit analysis that will examine the estimated costs and projected ridership for all options.*
 - If the streetcar option is chosen, technology exists that would enable the streetcar to operate with little to no noise. Replica streetcars in New Orleans run on grass tracks with little to no noise. Another example is the streetcar in San Francisco dubbed "The Magic Carpet," because it was so quiet. *The project team will investigate new technology that minimizes noise.*
 - Please explain the operation of the bus/rail combination option (Option 4). *Option 4 would include rail along the Audrey Zapp Drive corridor (Primary Corridor) between the HBLR station and the Central Railroad of NJ (CRRNJ) Terminal due to the higher projected ridership along this corridor. Bus would serve the Secondary Corridor along the Freedom Way between the CRRNJ Terminal and the Park Office. This option would require a transfer between modes.*
 - Would the proposed circulator service be free for passengers? Funding should be guaranteed for at least ten years, not annually, before implementation. *The fare structure for the service will have to consider available funding and operation costs. [The product of this study will not include a detailed fare plan.]*
 - Are you also considering how frequent the circulator would operate (headway)? *The project team will not develop a detailed service plan or schedule as part of this study. However, the project team will make assumptions on service frequency to inform the cost-benefit analysis. The project team recognizes that the circulator must be frequent (e.g., one every 15 minutes) in order to be successful.*

-
- What will be different about this proposed service from the service operated by NJ TRANSIT, and then the private company, that will sustain ridership? *NJ TRANSIT service ended due to budget shortfalls and the resulting elimination of non-traditional services. Virtually no transit service is self-sustaining (i.e., generates enough revenue to cover operation expenses). Flaws in the operating plan for the Liberty Loops shuttle (the privately-operated shuttle during Summer 2012), such as long headways, unreliable service, and lack of marketing, seemingly led to its cancelation. A successful circulator needs to provide frequent and reliable service and have a strong branding/marketing plan. The project team will look into the farebox recovery rate for the NJ TRANSIT shuttle.*
 - How did the project team make ridership projections? Are they from the transit agencies? *A model was developed specifically for this study to forecast future ridership.*
 - What type of safety buffers would need to be required by a rail option? How much land would they consume? *The project team will determine a general space requirement for rail safety buffers but not the specific dimensions of those buffers.*
 - Why do you feel transit is needed within the park? Previous service was not well-used. Visitors should walk/jog around the park. *Based on the previous service and the surveys conducted as part of this study, there is demand for transit to and within the park. A circulator would serve a range of visitors, including those who do not have access to a car and those for whom walking is physically impossible or impractical.*
 - Did the survey ask if respondents would visit the park if a circulator service did not exist? *No. The majority of surveys were collected in the park vs. online. The current lack of a circulator did not deter respondents from accessing park destinations.*
 - What are the advantages of rail over bus? Rail is more intrusive, and there are plenty of existing roadways within the park that could accommodate a bus. Development within the park should be minimized. Open space in the park should be preserved. *The cost-benefit analysis will flesh out the comparison between the two modes.*

-
- What other corridors did you look at? Why doesn't this study look at connections between Liberty State Park and the larger Jersey City community? The recommendation for a circulator between the Liberty State Park HBLR station and the CRRNJ Terminal is not very useful, because it does not cover a great distance. *The focus of this study is to identify a potential circulator that serves destination within Liberty State Park and existing transit service located on the edges of the park. The study of connections to areas beyond the park would require significant resources not available as part of this study. However, if a circulator is implemented in Liberty State Park, it can be a building block for a larger system that serves the greater area, which would require future study.*
 - This community is more concerned with bringing people to the park than transporting them around the park. Enhancement to transportation within the park is probably not at the top of the list of improvements that would attract more visitors to the park. *Comment noted.*
 - The connection to the history of the land is lost. The land now occupied by Liberty State Park was once occupied by rail yards. A rail connection between the CRRNJ Terminal and HBLR could highlight this history. Also, rail may be an attraction in and of itself. The trolley in New Orleans, which operates on grass tracks, may serve as a model. For some, the distance between the HBLR station and the CRRNJ Terminal is too far to walk. *Comment noted.*
 - Friends of Liberty State Park (FOLSP) supports a "green" shuttle bus and oppose rail/tracks that would take up open space. There is a deficit of open space in Hudson County, which is the sixth most densely populated county in country. A trolley would negatively impact the Grove of Remembrance along the south side of Zapp Drive. If it is along the north side of Zapp Drive, a crossing of Zapp Drive and signal would be required. Furthermore, a trolley along Zapp Drive may lead to a trolley along Freedom Way. The park should be preserved as a pastoral setting for passive recreation. FOLSP does not think it is feasible or desirable for the trolley to attract tourists. The park was created for the residents of the surrounding urban area. Also, grass tracks do not diminish the impact to open space, because one cannot picnic or play ball on grass tracks. [FOLSP submitted a written statement.] *Comment noted.*

-
- You should look at the Lowell, MA example, where they chose to implement a historic replica trolley on tracks and saw success almost immediately. The trolley enables circulation through the park and does not disturb the tranquility. *The project team researched the trolley service in Lowell National Historical Park service as part of this study.*
 - Due to the recent economic downturn, an influx of visitors to the park can be expected, as it is viewed as a low-cost entertainment option. Therefore, it is important to identify ways to bring large numbers of visitors to the park with minimal impact to surrounding neighborhoods. *Comment noted.*
 - Please consider the impact of rail on the natural habitats of birds and other wildlife in the park. *Comment noted.*
 - The study should recommend long-term strategies to improve transit connections between the park and neighborhoods throughout Jersey City. *Comment noted.*
 - The priority should be to improve mass transit access to the park. Once that is resolved, improvements to transit within the park can be identified. A trolley will produce noise and introduce a safety hazard, especially to children playing in the park. Buses are the way to go. *Comment noted.*
 - The Lowell, MA and New Orleans trolley examples are not relevant to LSP. *Comment noted.*

It was announced that the deadline for public comments was February 7, 2013. Written comments could be submitted using the comment forms available at the meeting or via e-mail to lsprtransitstudy@gmail.com. The presentation was posted on the project website, www.lsprtransitstudy.com.

The second public meeting will be held in the spring of 2013.

JERSEY CITY

DEPARTMENT OF HOUSING, ECONOMIC DEVELOPMENT & COMMERCE
DIVISION OF CITY PLANNING



ROBERT D. COTTER, PP, FAICP
PLANNING DIRECTOR

JERRAMIAH T. HEALY, MAYOR
CARL S. CZAPLICKI, DIRECTOR

Liberty State Park Circulator Cost-Benefit Analysis Public Comments

*Submitted after Public Meeting #1 on
Thursday, January 24, 2013, 4:30 PM – 8:00 PM*

The first public meeting for the Liberty State Park (LSP) Circulator Cost-Benefit Analysis was held on Thursday, January 24, 2013 at City Hall, 280 Grove Street, in the Anna Cucci Memorial Council Chambers. An open house was held from 4:30 p.m. to 6:30 p.m. during which members of the public were able to view displays and talk one-on-one with members of the project team. At 6:30 p.m., the project team made a formal presentation, which is available for download from the project website, www.lsptransitstudy.com.

A **public comment period** was held through Thursday, February 7, 2013 during which written comments could be submitted via e-mail to Lsptransitstudy@gmail.com or US mail to Division of City Planning, 30 Montgomery Street, Suite 1400, Jersey City, NJ 07302, Attn: Naomi Hsu.

Below are the comments submitted during the public comment period following the first public meeting, without personal information. The purpose of the first public meeting was to solicit feedback on the identification of potential options for a circulator service to serve destinations in Liberty State Park. Next steps include the assessment of the costs and benefits of those identified options, and the following public comments will inform that phase of work.

1. Has LSP ever considered improving the pedestrian link between the Paulus Hook neighborhood and LSP? That would solve many of the problems.

Of course, a pedestrian bridge would have to be tall enough for sailboats in the marina to pass under. but a pedestrian bridge would improve the link between the park and the city, be close enough to mass transit (light rail and PATH) and increase the profile of the park.

-
2. The roads in the park are barely adequate for the auto traffic, mixing busses and cars on them would be the worst possible idea. Riding Historic Trolleys or Replica Trolleys would be additional incentives for people to leave their car at home and come by light rail. Rail transportation is historically important to the park area and would be the best solution in my opinion.
 3. I favor the opinion that would like to see a non-polluting bus route running every 15 minutes on weekends and most holidays and stopping at the most popular sites within the park. It should end up or begin at the Liberty Science Center light rail stop. There should be a provision for an all day pass to allow people to get on and off and the bus should be large enough and handle the handicapped as the NJ transit buses do.

A light rail or trolley system is too expensive and time consuming to build and the infrastructure required would be ugly to look at in a passive park like Liberty. Money for that system should be used elsewhere in the Jersey City area.

4. Please provide a green bus route to ensure that Liberty State Park maintain as much open space as possible.

As a resident of Jersey City, who uses Liberty State Park for exercise, relaxation, education, in addition to having been married in Liberty House, I cherish the fact that it is a safe haven & natural environment. The park's open space IS its attraction. Adding trolley tracks will not only diminish the tranquility, but will impact the integrity of natural habitat of plant & animal. It would be a giant mismanagement & an undermining step backward to add a trolley system.

I urge you to take steps mindfully and to refrain from pursuing negative development in Liberty State Park. It will undermine the very treasure that is the park.

5. When the bridge was in place I was a daily user of the Park, riding my bike from Downtown JC into the Park.

I was disturbed to learn that a Trolley is being considered.

A chief appeal of the Park is its simplicity. There seems to be no reason to install a trolley when 'green' buses could quietly and cleanly address transportation needs without disrupting the beauty & ecology of the Park.

Perhaps the issue of the State Pk Police constantly running the engines of SUV, whether they are in them or not, whether the weather is extreme or not, polluting the air and needlessly using gasoline, could be addressed.

Thank you for your work on the Park and the plan to promptly replace the bridge.

6. I am a former Jersey City resident but still make many trips to my beloved Liberty State Park.

YES ... to the "green" shuttle on current roadwork.

And a resounding NO ...to installing trolley tracks in the much needed open space of the park.

7. I am writing to offer some brief comments on the LSP Circulator ideas. (I am sorry but could not attend the meeting last week.)

I favor the low- or zero-emission vehicle over a trolley on new tracks. Here are my thoughts for this conclusion:

1. The vehicle doesn't require the significant capital expense of building tracks.
2. The vehicle is more flexible. Once the circulator is in operation, if a decision is made to change the route because of changing needs, it is very easy to re-route a vehicle. If you have to build new tracks, it's not so easy.
3. Tracks would take up additional park land. The vehicle can use existing streets.
4. If we have another storm surge flooding event, it will be cheaper and easier to move the vehicles to higher ground. There might not be higher ground available on a trolley-track system, so the rolling stock could be at risk. Additionally, if there is storm damage to the rails, I suspect it will be more expensive to repair than if there is storm damage to the asphalt roads.
5. More about flexibility: Suppose there's a special event such as the Go West music festival or something similar. If a track system is used, and it goes through the festival area, the logistics could get really complicated. But if it's a vehicle on the

road, you could just re-route the vehicle. And you could run special routes specifically to the festival.

6. I don't think a trolley on tracks is going to draw incrementally more people to the park. I think people come to the park for the reasons they already come to the park (open space, views, picnicking, NJCRR terminal, etc.), and they will look at the circulator as an additional convenience that enhances the park. I don't think we need a trolley on tracks in order to make the park a more attractive place to go.

If you have questions about any of my comments, please feel free to let me know. Thank you for undertaking this project and for soliciting comments from the public.

8. A green shuttle bus makes the most sense...
9. It is way too expensive to lay tracks and build the necessary infrastructure to operate and maintain a trolley for transportation to and within Liberty State Park. A shuttle bus is a much less expensive option. A shuttle bus does not involve the high capital and maintenance costs that a trolley would incur.

A shuttle bus also offers much more flexibility. If a road has a detour for an accident or any number of other reasons (e.g. construction), a shuttle bus can use another route. A trolley cannot drive around a detour. If a shuttle bus breaks down, another bus can be brought in as a replacement. If a trolley breaks down, the track has to be cleared/repaired first and a replacement may not be available. If overhead lines come down due to high winds or accident, the system could be indefinitely out of operation.

A shuttle bus does NOT have to be dedicated to Liberty State Park making it more lucrative for an owner/operator. For example, for times during the year (month, week, day, etc) when ridership is low, a shuttle bus could be used for other business ventures.

In only the recent past, there has not been enough ridership to justify even a summer weekend bus shuttle. It makes no financial sense then to make the enormous investment that a trolley would involve not only initially, but for the life of the system.

10. Busses are good: cost-effective, environmentally sound, and flexible. Fixed transportation systems are the exact opposite.

Foot path via Jersey Ave into LSP is good. Vehicle bridge into LSP is unnecessary.

LSP is a wonderful resource that my family, including dogs, and I use on a regular basis. Tens of thousands of our neighbors walk, run and bike in the park.

Keep LSP pedestrian- and family-friendly while avoiding the expense of transportation systems that will never be fully utilized.

11. I am writing to express support for a "green" shuttle bus to serve Liberty State Park on already constructed roads, and to oppose the introduction of a trolley line that would erode unstructured open space in the park. Such a shuttle would be relatively inexpensive and flexible transportation.

Our parks are often viewed by commercial interests as serving their narrow purposes. Liberty State Park was intended as "the people's park," and it should remain free of intrusions such as the proposed trolley line. We have scant public open space in Hudson County, and we should not whittle away what we do have.

12. As a Jersey City resident and frequent user of the park, I would love to see the footbridge rebuilt in its former footprint, no vehicular bridge, and shuttles--not a trolley--serving the park. Trolleys would require tracks, which eat up valuable open space, and the known tendency of the park to flood bodes ill for track maintenance. Shuttles have the option of altering their routes as conditions change; trolleys are inflexible and a costly piece of unnecessary infrastructure.

13. We write in support of the energy-efficient shuttle bus for transportation through Liberty State Park.

We support the shuttle bus for these reasons. First, as NJ Transit knows, the population that would use the shuttle is small in numbers. This does not indicate that the park should not have transportation, but that the transportation should fulfill the need. Those who actually need it are: people who don't own cars or don't drive due to disability, age or preference. Also, **there are tourists who prefer to use the light rail from their hotel in Jersey City to go to the Statue of Liberty ferries in the park.**

We understand that Gov. Christie desires to privatize the park to make money. The historic train buffs may be hoping that this gives them an opportunity. However, the opportunity for a "train village" should have been considered years ago when the

park's land was an abandon industrial site. Over the decades, many people have put their shoulder to the task of making Liberty State Park a "green oasis" for Hudson County's urban dwellers and for tourists from around the world. The park is claimed as a People's Park. To tear open the land to install tracks for a larger train route would be destructive of the trees and gardens that so many people have planted in the park over the years. **This destruction would make many park patrons very angry.**

Many people admire the history of the railroads, but railroads also have a destructive side. Fences and safety zones along the train tracks would be necessary. Children and wildlife will **face risks that do not presently exist in the park.** Train tracks moving through the park would also divide the park into segments, isolating each segment in the same way the old railroads isolated the residents in Jersey City's past.

We ask you to consider our arguments and choose the shuttle bus for Liberty State Park.

14. I agree with LSP's recommendations to use green bus service on existing roads for moving people around Liberty State Park. I don't think a trolley adds much appeal, and I believe building tracks in currently open space (our family's very favorite thing about this place) will surely take away from its offerings.

But if you're committed to the charm of a trolley, why not consider this? [click for photo] NYU has a bus in the shape of a trolley they use to shuttle students around their endlessly sprawling downtown Manhattan campus. It might lend the effect you seek without compromising our very precious open space.

Thanks for so carefully considering this meaningful improvement to the jewel in Jersey City's crown.

15. I am writing to express my strong support for a low/no emissions bus type of transportation system in Liberty State Park.

Options requiring a fixed infrastructure such as trolley tracks or overhead wiring are far too obtrusive and damaging to the park.

The park has literally evolved from an industrial eyesore into a beautiful green refuge amidst our urban environment.

We need to assure that the progress we have made and all enjoy is not compromised with permanent structural / environmental alterations.

16. My family has been visiting Liberty State park since the early 1980's we have played ball, had numerous picnics and cycled around the park many times we were glad that there was such open space near to where we lived- Jersey City. Liberty State Park is our own green oasis and a great place to go to re-ignite our tired spirits we appreciate the work The Friends of LSP is doing to protect the park from unnecessary taking of precious open space the trolley as suggested steel on rail tracks built on parts of LSP is an absurd and capricious (out of harmony with the main original purpose of the park) the purpose: to be a safe-haven of peace and tranquility away from the concrete world beyond the borders of the park

if you are to satisfy your transit needs around the park, the best solution would be a re-chargeable zero-emission trolley - looking small bus.

please save the open space we have left in LSP for the people who need it the most those people who are looking for that green oasis on the waterfront.

17. I support a green shuttle bus for transportation around Liberty State Park. I oppose a trolley because it will reduce the amount of urban open space, cause safety issues and high costs. I also support bus connections to the Liberty Park light rail station. There are many people in Jersey City and other Hudson County communities who do not own cars and depend on public transportation.

18. I am a resident of Van Vorst Park Historic District, a neighborhood walking distance from the Jersey Avenue entrance to Liberty State Park. Before Hurricane Sandy damaged the footbridge connecting Jersey Avenue to the park, I frequently crossed over to make a 2 and 1/2 mile loop from there to the promenade along the Harbor, following it in front of the Historic CRRNJ Railroad Terminal and along Morris Canal back to the Jersey Avenue entrance. In the summer I often drive to the South end of the park to enjoy the Great Lawn.

The park is the jewel of Jersey City and an amazing urban resource. When I moved here, in 1971 the park did not exist but I made some forays into the overgrown area which harbored packs of feral dogs. I watched with joy as the park took shape. As an

art teacher with the Jersey City Public Schools I came with classes to the Interpretive Center. I was saddened that over the years it has been burdened by so many functions which compete with it's main one - of providing open space and a glimpse of nature in a dense urban setting, one with extraordinary views of a city and harbor with historical and contemporary world importance.

The commercial activity in the park may be needed to help support it - the marina, boat repair, and restaurants, but care must be taken that they do not exclude the public uses of the park. A controversial monument to those lost in the attack of 9-11 blocks substantial parts of the amazing views of New York, and the Statute of Liberty and was planned without input from local users of this state park.

Now discussion of transportation within the park is looking at two alternatives. One, a trolley, would require tracks, an additional intrusion of structure in a park which is in danger of losing it's ability to be a park --Can one jog, or stroll through the park with cars here, trolleys there? The other, a shuttle bus, would use existing roads without requiring any new permanent changes to the fragile ecosystem in place. I highly recommend that the trolley system NOT be built. If it is true that a shuttle bus service was tried previously and was unsuccessful due to lack of ridership, then that is more of an argument NOT to build track for the trolley. And this is true without even bring economics into the picture.

Please allow a shuttle system to function. It has the potential to be more adaptive to changing need without requiring long term investment and maintenance in unneeded infrastructure. Whose needs are really being considered here? The park visitors or those who represent trains?

Thank you for your consideration.

19. Regarding feedback on the Liberty Park Transit Study deciding whether to build trolley tracks or use clean-fueled buses, my opinion would be clean fueled buses. The problem with trolley tracks is many. It would take away from the beautiful open space of grass for recreation purposes for Hudson County residents, LSP's primary purpose. There is a safety issue, especially in a family park with running children that will give there parents added stress which is the antithesis of why they come to Liberty State Park in the first place. Also there are costs of liability insurance and maintenance of the tracks in these tough economic times.

As a long-time resident of a Jersey City and Hudson County, I would vote for clean-fueled buses.

20. Regarding your study between building trolley tracks and trains or clean-fueled buses, I would take the position clean-fueled buses. Here are some reasons: The trolley trains would take away some of the beauty of the open space grass from recreation used by Hudson County residents, LSP's, primary purpose, also safety issues especially in a family park with children running and it will give unavoidable stress to parents, who come to LSP as everyone else, to get away from the stress of urban living, and finally the costs of insurance liability premiums and maintenance of the tracks could be daunting in these trying economic times.

Again, as a long-time Jersey City and Hudson County resident, I would support clean-fueled buses.

21. At the heart of Liberty State Park is the Central Railroad of New Jersey's landmarked Communipaw Terminal, and the milepost 0.00 from which all distances on the railroad was measured. My office at One World Trade Center (where I worked on planning and building transportation facilities) used to overlook the park. So, this Liberty State Park Transit Study greatly interests me, and I appreciate the opportunity to weigh-in on this.

Cost Advantage of Trolleys: Savings in operating costs. Trolley cars last for many decades, and they don't break down often and require replacement every few years. Also, due to trolleys' larger passenger capacity you will need employ fewer drivers, whose salaries and benefits cumulatively weigh on your annual operating budget. These are real advantages over operating buses – which will become burdensome quickly.

I can think of no more perfect way to honor New Jersey's rich rail heritage than to build and operate a working electric trolley line to transport visitors and employees about Liberty State Park. Whether visitors arrive at LSP by light rail, ferry, or their own vehicle, I strongly believe seeing the trolley set against the spectacular scenic setting of the harbor monuments and the NYC skyline will instantly make it an attraction in its own right. I personally believe choosing a trolley over a bus will interest more visitors in visiting visit the park's historic railroad terminal where they can learn about how the CNJ's history is intertwined with immigration at Ellis Island, and how this symbiotic relationship helped to settle much of the interior of this country. And it will not pollute the air park goers breathe.

I'm looking forward very much to boarding the first trolley car because (hopefully) you recognize that trolleys' outsized popularity throughout the world will make it a very worthwhile investment.

22. Liberty State Park should only use buses for transportation, A trolley car or light rail would do serious environmental, ecological permanent damage to flora, fauna, migratory bird nestings and animal habitat not to mention air borne particulate matter of pollution to economic minority census thus creating environmental injustice.

Buses provide the least impact at the least cost and the most flexibility as to schedules.

23. As a member of Friends of Liberty State Park, and having attended the January 24th public meeting at City Hall, I CANNOT support the "potential improvements to mass transit service within (our beloved) Liberty State Park". The importance/value of every inch of open space far outweighs ANY perceived "improvements". I've never been there, but I'm not aware of a trolley in Yosemite, or the Grand Canyon - both vastly larger parks than LSP. For the most part, visitors to any park expect - and even look forward to - a lot of walking. It puts us in close touch with the beauty of nature - much of which we'd miss while seated in a trolley. Walking benefits us physically and mentally as we enjoy the peace, beauty and openness around us. I support the use of the "green" shuttle bus, but not the trolley. Please do not precede with the trolley - an encroachment on open space - an encroachment on OUR beautiful park.

24. A shuttle bus is a good idea for LSP. LSP doesn't need a trolley with its tracks and infrastructure. LSP doesn't need a "tourist" magnet. LSP is not a commercial entity, it's a park - with free, precious open space! Please don't over develop LSP.

The Friends of Liberty State Park
P.O. Box 3407 Jersey City, NJ 07302 201-792-1993 www.folsp.org
pesinliberty@earthlink.net

FOLSP Position Statement Supporting “Green”LSP Shuttle Bus and Opposition to Trolleys/Rails on Tracks (TROT) in LSP

Friends of LSP strongly support a "green" shuttle bus - either an electric bus or another type of alternative non-polluting fuel – showcasing a clean energy vehicle in LSP, one of our greatest urban parks. We also support bus connections from Jersey City neighborhoods and Hudson County to the Light Rail station to connect with the “green” shuttle bus.

We strongly oppose Trolleys/Rails on Tracks in LSP. Trolleys/Rails on Tracks (TROT) and its unavoidable safety buffer zone, would take away precious and priceless urban open space grass from unstructured recreation use for Hudson County residents, LSP’s primary purpose. Hudson County is the nations’ 6th most densely populated county, a concrete county with a tremendous deficit of open space for its residents. The space for a trolley will basically be adding a new lane, an unnecessary transportation corridor in additional to existing roads.

- Loss of open space-Trolleys are at least 8 feet wide plus a safety buffer zone.
- Visual pollution of any TROT electrical overhead power lines (catenary wires)
- Trolleys crossing Zapp Drive - On the south side of cobblestone Zapp Drive, is the “Grove of Remembrance”, the 743 tree sanctuary planted in memory of NJ’s 9/11 victims, and that peaceful Grove and path must not have trolley tracks adjacent to it. On north side, the marina side, of Zapp Dr., the trolley would need to cross over Zapp Dr., necessitating a traffic light on that busy road, before it got to restaurants’ parking lot and before busy entrance to the ferry lot on other side.
- Inevitable blowing of horns/bells by driver for safety or to impress riders, will harm this treasured park’s peacefulness, serenity and integrity.
- If the trolleys were approved for Zapp Drive, it would be the foot in the door and there would be a push to eventually have the trolley go along Freedom Way and Morris Pesin Drive – meaning that along both roads, many existing trees, needed for shade and beauty would be cut down.
- There are inevitable safety issues, especially in this family park with playing and running children and it will give unavoidable stress to parents, who come to LSP as everyone else, to get away from the stress of urban living.
- Regarding park history, there were never trolleys running in LSP. The railroads did have buses running from local communities to the train and ferry terminal.
- High costs of constructing tracks and maintaining the tracks. Also the costs of any “Car Barn”/Maintenance facility, even if there was nearby land.
- The cost of extra insurance liability due to the tracks’ safety issues.

- TROT Helping Tourism is invalid and irrelevant argument
LSP's core purpose is to provide free and green open space for the urban people. **LSP's core purpose is not to be exploited and diminished to benefit commercial interests of JC hotels and restaurants.** In addition, there is no need to create any further attractions for the public, because an incredible attraction already exists – the views of the Statue of Liberty, Ellis Island, the Manhattan skyline and views of the river and harbor. LSP's open space land is the greatest tribute to those iconic monuments and views. There is also Liberty Science Center and the Statue Cruises ferries to Lady Liberty/Ellis Island. If people stay in JC hotels, it will be because JC hotels are cheaper than NYC hotels and LSP ferry lines are shorter than at Battery Park. People from out of state are not going to decide to stay in JC hotels and eat in JC restaurants just because LSP has a trolley.
- **LSP was established to serve the unstructured recreation open space needs of the urban people and for all people to enjoy the inspiring views; and not to have a supposed tourist attraction that would take away LSP's open space.**
- When the CRRNJ Train Sheds are restored in the future, a few trains can be displayed there for free, in addition to the existing two near the Terminal, as a link to LSP's railroad past.

We urge that this study recommend the “green shuttle bus” option and hope government will step up to fund it in the future. For now, it is shameful that there is no shuttle bus service into and around LSP, though it would only cost around \$25,000 for a shuttle bus on weekends from Memorial Day to Labor Day.

LSP Circulator post-public meeting responses from LHRy

LHRy supports a Heritage Trolley Rail Shuttle on the primary corridor

Agreement with study findings to date.

Liberty Historic Railway (LHRy) fully supports the findings of the Liberty State Park (LSP) Circulation Study through the Definition of Alternatives stage. The study's focus on the primary and most viable corridor - Audrey Zapp Drive - which accounts for 89% of intrapark ridership is sound. Also, LHRy supports the definition of the Heritage Trolley Rail Shuttle (HTRS).

Goals to be pursued

LHRy strongly believes that the goals of the New Jersey Department of Environmental Protection, Division of Parks for future usage of Liberty State Park should guide this study. Transportation gaps identified impede Park access and mobility by walkers and public transit riders. These transportation deficiencies build pressure for more cherished green space to be converted to impervious parking lots. Past major events at LSP have created gridlock conditions on Park roadways and overflow parking on grass lawns. Therefore, the focus needs to be on the movement of people in, out, and around the Park and not on any increased road traffic. A single track trolley rail shuttle can provide the needed safety valve for future growth in Park visitation and reduce pressure for expansion of parking lots.

These goals are outlined in the *Liberty State Park Circulation Master Plan Update* (prepared by Vollmer Associates, Oct. 2002);

- ◆ “The goal of (NJ DEP) Division of Parks is to retain current Park acreage without increasing the road system or paving new parking lots” (p. 1)
- ◆ “In order to preserve the Park setting, alternative modes of travel to the Park must be promoted” (p. 3)
- ◆ “Encourage transit over vehicular usage for internal Park movements” (p. 12)
- ◆ “Discourage extensive traffic growth on internal Park roads and do not widen any Park roads” (p. 12)
- ◆ “Provide sustainable shuttle service to accommodate Park visitors and reduce vehicular traffic” (p. 12)

Liberty State Park Mission

“The Mission of LSP is to provide the public with access to the harbor’s resources, a sense of its history and the charge of responsibility for its continued improvement.” (*NJ Transport Heritage*, Vol. 17, No. 2, April, 2008)

A Heritage Trolley Rail Shuttle would serve as a restoration and demonstration of the Park’s rail transportation history. The corridor between the Central RR of NJ Terminal and Liberty Science Center / Hudson Bergen Light Rail had continuous rail passenger service for over 100 years.

Governor Christie’s Sustainable Parks Plan

In November 2011 Governor Chris Christie announced New Jersey’s Sustainable Parks Plan at Liberty State Park. Components of the plan include enhancing and expanding Park programs and events to generate more visitors (*and tourists*), with a goal of making the Parks more financially self-sustaining. (NJ DEP News Release, June 6, 2012)

“It’s part of Governor Christie’s Sustainable Parks Plan to enhance and expand park programs, facilities, and offerings to generate more visitors and revenues that can make our parks more financially self-sustaining, while maintaining their environmental integrity. Parks are about families and youths and connecting them to the outdoors in New Jersey and to our great history.” (NJ DEP Commissioner Robert Martin, at Liberty State Park, June 6, 2012)

“We want Liberty State Park to be more of a destination for New Jersey residents and persons from other states who might come through here to see Ellis Island, the Statue of Liberty, New Jersey’s 9/11 Memorial, the Liberty Science Center, or just some incredible views of New York’s skyline. This is part of the DEP’s overall sustainable parks effort to encourage more tourism (*from New Jersey, the Nation and the World*) to our state parks, forests and historic sites.” (Quote from former NJ DEP Assistant Commissioner for Natural Resources, Amy Cradic, speaking about the plan, from the *Jersey City Independent* of March 13, 2012.)

A Heritage Trolley Rail Shuttle would enhance the objectives of the NJ Sustainable Parks Plan.

Resumption of adjacent development

Recent reports indicate that robust residential development within walking distance of the edge of Liberty State Park has resumed. (See attached list provided by Dan Frohwirth, Jersey City Economic Development Corporation.) This confirms the urgency of providing improved mobility for citizens reaching the Park by public transit or by foot.

Visual impact limited

The Heritage Trolley Rail Shuttle (HTRS), as defined in the Definition of Alternatives phase of this study, will not create visual pollution from overhead power supply wires and supporting poles, as the trolleys will be battery powered. The vehicles could be charged from a variety of environmentally friendly, green power sources.

Educational opportunities provided

Opportunities will be created for demonstration of solar, wind, tidal, bio-diesel, electric power grids, modern super capacitors and battery technologies with the HTRS in concert with educational programs at Liberty Science Center. As noted above an HTRS would serve as a restoration and demonstration of the Park's rail transportation history. And, the trolley will be a visual / tactile / historic technology exhibition on its own.

Noise impact limited

Noise from the battery-powered HTRS would be very limited due to;

1. The trolley track would be designed with straight track (no curves) from Phillips Drive eastward.
2. At a 15 MPH operating speed the HTRS will be very quiet and provide a far smoother ride than that of a bus on the Belgian block-paved Audrey Zapp Drive.
3. The negligible sound of the trolley, over 100 feet distant from the Grove of Remembrance, will be easily overwhelmed by the heavy motorized traffic on Audrey Zapp Drive, as the trolley will be only 10 feet closer and on smooth rails instead of rough Belgian block paving.

Loss of greenery negligible

The Definition of Alternatives stipulates that the HTRS right-of-way will be covered by grass;

1. Grass covered track is used extensively in Europe and in several US cities, notably New Orleans.
2. Track will be barely visible in contrast with the park's grassy surface
3. Trolley track lays lightly on the land, allows rain to percolate through it, and will not cause runoff.
4. The single track grass covered HTRS route right-of-way would require only 32,000 square feet. Expressed as a fraction this would only be 0.0006 or 6 ten-thousandths of the total area of LSP. Contrast this figure with 45,000 square feet of impervious paving constructed for the new picnic pavilions in Freedom Field to provide increased access for automobiles to LSP.

Sincerely,

Bill McKelvey

William J. McKelvey, Jr.
Chairman, Liberty Historic Railway, Inc.

Div of City Planning
30 Montgomery St. Suite 1400



Jersey City, NJ 07302
Attn: Naomi Hsu

Thank you for attending the

Liberty State Park Circulator Cost-Benefit Analysis Public Meeting January 24, 2013

We want to hear from you.

Please use this form for comments on the content of this evening's public meeting.

a shuttle bus is a good idea for LSP
LSP doesn't need a trolley, with
its tracks and infrastructure.
LSP doesn't need a "tourist magnet"
LSP is not a commercial entity,
it's a park - with free, precious
open space / Please don't over-
develop LSP!

Name (optional):

Bill Kadish