

NJDOT Local Transportation Planning Assistance Task Order 4 Liberty State Park Transportation Circulation Master Plan Update



October 2002

| | |
|--|-----------|
| EXECUTIVE SUMMARY | 1 |
| 1. DEVELOPMENT CONTEXT | 1 |
| 2. NEW DEVELOPMENT | 1 |
| <i>A. Liberty State Park</i> | <i>1</i> |
| <i>B. North of Liberty State Park</i> | <i>2</i> |
| <i>C. West of Liberty State Park</i> | <i>2</i> |
| <i>D. South of Liberty State Park.....</i> | <i>2</i> |
| 3. LIBERTY STATE PARK ACCESS..... | 3 |
| 4. IMPROVEMENT PLAN CONCEPTS | 3 |
| 5. EXTERNAL ACCESS IMPROVEMENTS | 3 |
| 6. INTERNAL CIRCULATION IMPROVEMENTS..... | 7 |
| 7. PARK ATTENDANCE AND CARRYING CAPACITY..... | 8 |
| <i>A. Park Attendance.....</i> | <i>8</i> |
| <i>B. Park Carrying Capacity.....</i> | <i>10</i> |
| 8. RECOMMENDATIONS | 10 |
| 1. External Access | 10 |
| 2. Internal Circulation..... | 11 |
| 3. Parking..... | 11 |
| 4. Traffic..... | 12 |
| 5. Pedestrians | 13 |
| 6. Gateways | 13 |
| CHAPTER 1 – INTRODUCTION..... | 15 |
| 1.0 VISION..... | 15 |
| 1.2 STUDY AREA BOUNDARIES | 15 |
| 1.3 STUDY CONTEXT AND PREVIOUS REPORTS | 15 |
| 1.4 STUDY OBJECTIVES | 17 |
| 1.5 STUDY APPROACH..... | 17 |
| CHAPTER 2 – PARK DEVELOPMENT | 19 |
| 2.1 EXISTING ATTRACTIONS | 19 |
| 1. Liberty Science Center..... | 19 |
| 2. Central Railroad of New Jersey (CRRNJ) Terminal | 19 |
| 3. Interpretive Center | 20 |
| 4. Liberty Landing Marina | 20 |
| 5. Ellis Island..... | 20 |
| 6. Liberty Island | 21 |
| 7. Welcome Center / Park Office | 21 |
| 8. Liberty House Restaurant..... | 21 |
| 9. Liberty Industrial Park..... | 21 |
| 10. Camp Liberty..... | 21 |
| 2.2 FUTURE ATTRACTIONS..... | 21 |
| 1. Liberty Science Center..... | 21 |
| 2. Central Railroad of New Jersey (CRRNJ) Terminal | 22 |
| 3. Interpretive Center | 22 |
| 4. Liberty Landing Marina | 23 |
| 5. Ellis Island..... | 23 |
| 6. Liberty Island | 23 |
| 7. Welcome Center / Park Office | 23 |
| 8. Liberty House Restaurant..... | 24 |
| 9. Liberty Industrial Park..... | 24 |
| 10. Camp Liberty..... | 24 |
| 11. Inner Park Area..... | 24 |
| 12. World Trade Center Memorial | 24 |
| 2.3 SPECIAL EVENTS | 24 |

| | |
|---|-----------|
| CHAPTER 3 – ADJACENT DEVELOPMENTS..... | 27 |
| 3.1 ZONING AND LAND USE | 27 |
| 3.2 DEVELOPMENT SITES | 27 |
| 1. <i>Liberty Harbor North Development</i> | 27 |
| 2. <i>Downtown Jersey City Waterfront Development</i> | 28 |
| 3. <i>55 Lot Development, LLC</i> | 28 |
| 4. <i>Jersey City Medical Center & Public School</i> | 28 |
| 5. <i>HBLRT Parking Lot / Adjacent Parcels</i> | 29 |
| 6. <i>City of Jersey City Municipal Car Impound & Sewerage Treatment Facility</i> | 29 |
| 7. <i>Port Liberte’ Golf Course</i> | 29 |
| 8. <i>The Peninsula at Bayonne Harbor (former MOTBY Terminal)</i> | 29 |
| 9. <i>Lafayette Neighborhood</i> | 30 |
| 10. <i>Streichler Property – Caven Point Road and Morris Pesin Drive</i> | 30 |
| CHAPTER 4 – EXTERNAL ACCESS..... | 31 |
| 4.1 INTRODUCTION | 31 |
| 4.2 SOUTHWESTERN ENTRY | 31 |
| 4.3 NORTHWESTERN ENTRY..... | 31 |
| 4.4 PEDESTRIAN / BICYCLE CONNECTIVITY | 32 |
| 4.5 MASS TRANSIT | 32 |
| CHAPTER 5 –INTERNAL CIRCULATION AND PARKING..... | 36 |
| 5.1 INTERNAL ROADWAY SYSTEM | 36 |
| 5.2 PEDESTRIAN / BICYCLE CIRCULATION | 36 |
| 5.3 PARKING | 37 |
| 5.4 INTERNAL SHUTTLE SYSTEM..... | 39 |
| CHAPTER 6 – PROJECTED INTERNAL DEVELOPMENT | 41 |
| 6.1 INTRODUCTION..... | 41 |
| 6.2 LIBERTY STATE PARK ATTENDANCE..... | 41 |
| 1. <i>Overall Attendance</i> | 41 |
| 2. <i>Park Facilities and Activity Centers</i> | 41 |
| 6.3 VISITOR BEHAVIOR | 44 |
| 6.4 PARK TRIP DISTRIBUTION | 47 |
| 6.5 TRIP GENERATION..... | 48 |
| 6.6 TRANSIT MODE SPLIT AND AUTO OCCUPANCY..... | 48 |
| 6.7 PARK CARRYING CAPACITY | 49 |
| CHAPTER 7 – IMPACTS OF DEVELOPMENT..... | 52 |
| 7.1 INTRODUCTION..... | 52 |
| 7.2 OVERALL IMPACT LEVELS | 52 |
| 7.3 EXTERNAL IMPACTS | 53 |
| 7.4 INTERNAL IMPACTS – VEHICULAR | 54 |
| 7.5 INTERNAL IMPACTS – PARKING..... | 54 |
| 7.6 INTERNAL IMPACTS – PEDESTRIAN MOVEMENT AND NEEDS | 54 |
| 1. <i>Pedestrian Walkability</i> | 55 |
| 2. <i>Propensity to Walk</i> | 55 |
| 7.7 PARKING ANALYSIS | 57 |
| CHAPTER 8 – EXTERNAL ACCESS IMPROVEMENTS..... | 59 |
| 8.1 INTRODUCTION..... | 59 |
| 8.2 SOUTHWESTERN ENTRY | 59 |
| 1. <i>Interchange 14B</i> | 59 |
| 2. <i>Caven Point Road Realignment</i> | 59 |
| 3. <i>Route 185 Extension</i> | 60 |

| | |
|---|-----------|
| 8.3 NORTHWESTERN ENTRY..... | 61 |
| 1. <i>Interchange 14 C</i> | 61 |
| 2. <i>Grand Street Exit</i> | 61 |
| 3. <i>Columbus Boulevard</i> | 61 |
| 4. <i>Pacific Avenue, Center Street, Grand Street</i> | 61 |
| 5. <i>Communipaw Avenue</i> | 61 |
| 8.4 INTELLIGENT TRANSPORTATION SYSTEMS (ITS)..... | 62 |
| 8.5 JERSEY AVENUE EXTENSION..... | 62 |
| 8.6 BERGEN ARCHES..... | 63 |
| 8.7 MASS TRANSIT..... | 63 |
| 1. <i>HBLRT</i> | 63 |
| 2. <i>Local Bus Services</i> | 63 |
| 3. <i>Ferry Services</i> | 64 |
| 8.8 PEDESTRIAN / BICYCLE CONNECTIVITY..... | 64 |
| 8.9 DESTINATION: JERSEY CITY..... | 66 |
| 8.10 GATEWAYS..... | 67 |
| CHAPTER 9 – INTERNAL CIRCULATION IMPROVEMENTS..... | 70 |
| 9.1 INTRODUCTION..... | 70 |
| 9.2 ROADWAYS AND INTERSECTIONS..... | 70 |
| 1. <i>Audrey Zapp Drive and Phillip Street</i> | 70 |
| 2. <i>Phillip Street / Burma Road Realignment</i> | 70 |
| 3. <i>Burma Road Traffic Circle</i> | 71 |
| 4. <i>Morris Pesin Drive and Freedom Way</i> | 71 |
| 5. <i>Jersey City Boulevard and Phillip Street</i> | 71 |
| 9.3 PARKING..... | 71 |
| 9.4 CENTRAL PARKING FACILITY STAGING CONSIDERATIONS..... | 73 |
| 9.5 PARKING DESIGN CONCEPTS..... | 73 |
| 9.6 INTERNAL TRANSIT CIRCULATION..... | 74 |
| 1. <i>305 Liberty State Park Shuttle</i> | 74 |
| 9.7 PEDESTRIAN ACCESS – STREETSCAPE DESIGN..... | 76 |
| 9.8 GATEWAYS..... | 79 |
| CHAPTER 10 – RECOMMENDATIONS..... | 80 |
| RECOMMENDATIONS..... | 80 |
| 1. <i>External Access</i> | 80 |
| 2. <i>Internal Circulation</i> | 80 |
| 3. <i>Parking</i> | 81 |
| 4. <i>Traffic</i> | 81 |
| 5. <i>Pedestrians</i> | 82 |
| 6. <i>Gateways</i> | 83 |

EXECUTIVE SUMMARY

1. Development Context

Liberty State Park is a green oasis adjacent to the rapidly developing Downtown Jersey City residential and office market. The Park's connection to the regional road and mass transit network, as well as its location in the shadow of the Manhattan skyline places pressure not only from development, but also from the inevitable increase in visitors wishing to partake in the Park's recreational opportunities.

Despite these demands, the goal of such a public entity is to accommodate patrons while preserving open space and the ability of Park users to safely recreate. The Park's popular attractions, such as the Liberty Science Center, Central Railroad New Jersey (CRRNJ) Terminal and Ellis Island / Liberty Island Ferry will experience a continual increase in visitors. However, the goal of the Division of Parks and Forestry is to retain current Park acreage without increasing the road system or paving new parking lots.

The purpose of this report is to provide a description of these issues and the effect of full development within and around Liberty State Park. In order to understand this potential development, the horizon years 2005 and 2015 have been established for this report. The following descriptions highlight major developments in and around the Park with the greatest potential for development. The body of the report highlights other nearby projects that either incur less impact on the Park or have less potential for development. The map entitled *Existing & Future Development (2002 - 2015)* exhibits the development within Liberty State Park. Each attraction on the map is assigned a number that corresponds to a description in the report.

2. New Development

The following is a short list of potential developments within and around the Park that will be most influential on traffic demand. The *Existing & Future Development (2002 - 2015)* map represents the full development scheme of the Park. These attractions are also assigned a number that corresponds to text within the report.

A. Liberty State Park

Liberty Science Center

According to representatives of the Liberty Science Center, future plans include reorientation and expansion of the entrance to better accommodate visitor traffic. In the long term, Liberty Science Center officials are also considering the addition of a parking deck within the confines of the current lot.

Inner Park Area

The DEP has plans to re-create a Salt Marsh and Maritime Forest within 251 acres of the undeveloped inner area of the Park by 2010.

CRRNJ Terminal

The DEP has plans to restore the Terminal building and re-use the train shed for special events. Current parking adjacent to the Terminal will not be expanded to accommodate these events.

World Trade Center Memorial

According to DEP representatives, a World Trade Center Memorial is in the planning stages for the grounds adjacent to the CRRNJ Terminal.

B. North of Liberty State Park

Liberty Harbor North Development / Downtown Jersey City

The Liberty Harbor North Development is an 86-acre, “new town-in-town” on the north side of the Tidewater Basin directly across from Liberty State Park. The combination of projects currently under construction with those that have met approval will provide an additional 3.3 million square feet of office space in Downtown Jersey City, as well as the 4 million square feet of office space included in the plan for Liberty Harbor North. The Liberty Harbor North Development will add 6,000 residential units as well as a number of retail stores while 2,000 units and varied retail projects are slated for construction in Downtown Jersey City.

C. West of Liberty State Park

HBLRT Lot and Adjacent Parcels

New Jersey Transit is discussing ideas with the City of Jersey City that would double or triple the amount of parking at the Park and Ride to support a mixed use setting with residential and retail components. According to NJT officials, the owner of the warehouse property directly west of the Park and Ride would like to develop the warehouse into a mixed-use residential and commercial facility. NJT owns the Park and Ride property and is interested in an adjacent parcel northwest of the lot.

D. South of Liberty State Park

Traffic will increase at the approach to the southern entrance of the Park from new development within the Peninsula at Bayonne Harbor (former MOTBY Terminal) and the Port Liberte' Golf Course. Caven Point Road and Interchange 14B have the ability to contain this traffic so it does not have an adverse effect on Liberty State Park. In addition, future connection of the Hudson River Waterfront Walkway between Caven Point and the Park should have a positive effect on pedestrian traffic to the Park.

3. Liberty State Park Access

The Hudson County Extension of the New Jersey Turnpike is the primary access route to Liberty State Park. Impending connection of the Hudson Bergen Light Rail (HBLRT) to Hoboken Terminal and the burgeoning popularity of ferries in New York Harbor will offer many users the ability to reach Liberty State Park via mass transit; however, many Park patrons will continue to access the Park by vehicle. Improved signage by way of the Destination Jersey City program will promote Interchange 14C as the main entrance to the Park. Although vehicular traffic is an important factor in visitor attendance, in order to preserve the Park setting, alternative modes of travel to the Park must be promoted.

Due to long walking distances between attractions and limited access from areas north and west of the Park, pedestrian travel is currently an underutilized option to access Park activities. Possible improvements to the **Jersey Avenue** Footbridge will encourage pedestrian traffic; however, until pedestrian connections are bolstered from other directions, Park patrons will continue to prefer vehicles. For example, Johnston Avenue should be viewed not only as a connector for local vehicular traffic, but also as an active pedestrian route from the HBLRT station to the Park and from the Lafayette Neighborhood to the Park.

Vehicular access to the Park by way the New Jersey Turnpike offers a convenient and direct route to the Park. Ferry service and connections via the HBLRT will play a role in decreasing vehicular traffic to the Park. The combination of increased mass transit usage with enhanced pedestrian access and the existing Liberty State Park Shuttle will provide an incentive for some visitors to access Park activities by an alternative mode of travel. If this is successful, the potential exists to lessen vehicular traffic and better preserve the Park environment.

4. Improvement Plan Concepts

Nearby residential, commercial and office development in Downtown Jersey City will create a base of potential visitors in close proximity to the Park. Even with improvements to mass transit and hopeful rehabilitation of the **Jersey Avenue** footbridge, vehicular usage will remain high for patrons accessing Park activities. Expansion of the Central Parking Facility at the Liberty Science Center will avoid the creation of large paved parking areas adjacent to each attraction within the Park. Not only does such a facility decrease Park traffic and the necessity for paved parking areas, but it would provide a central hub for the Park Shuttle, giving users an incentive to park instead of drive throughout the Park. Increased activity at the Central Parking Facility may also promote the creation of an alternative Welcome Center or a Bike Rental / Service Station Facility in close proximity to the garage on the eastern edge of the Science Center property.

5. External Access Improvements

The following is a list of proposed, approved and potential projects that enhance access to the Park and Downtown Jersey City. These range from signage and infrastructure improvements to future plans for mass transit. The following items refer to the enclosed

map, *Existing & Future Transportation Infrastructure (2015)*. Each infrastructure improvement or access issue included on the map is complete with a number that corresponds to a specific description within the report.

A. Destination Jersey City

The Destination Jersey City signage and wayfinding program will incorporate signs throughout Downtown Jersey City to direct visitors to local attractions, including Liberty State Park. The program is also part of NJDOT's revised highway signage plan that will list major Jersey City destinations on the New Jersey Turnpike and other important highways leading into the city.

B. Intelligent Transportation Systems (ITS)

Information from the NJTPK operations center should be disseminated to Park patrons. At the approach to Interchanges 14B and 14C, Dynamic Message Signs (DMS) should be used to direct traffic to the appropriate exit during congested times, inform travelers of special events and warn drivers of full parking areas. These signs could be used to inform travelers of LSP events. Highway Advisory Radio (HAR) should also be used as a means to inform the public of events and traffic within LSP.

C. Interchange 14C

The New Jersey Turnpike Authority plans to improve signage directing eastbound traffic for Liberty State Park and the Liberty Science Center to Interchange 14C instead of Interchange 14B. This will decrease pressure on the Burma Road traffic circle and better segregate trucks bound for Liberty Industrial Park from Liberty State Park traffic. Interchange 14C will remain a partial interchange and westbound traffic from New York City will continue to be directed to Interchange 14B for access to the Park.

D. Grand Street Exit

The New Jersey Turnpike Authority is investigating improvements to the Grand Street Exit off the Turnpike. Enhancements will include a longer deceleration lane from the Turnpike coupled with a newly designed ramp to allow direct access to Christopher Columbus Boulevard for connections to Downtown Jersey City. The current configuration of the exit ramp does not offer immediate access to Grand Street or Montgomery Street. Vehicles must complete two left turns upon exiting the Turnpike in order to travel southbound for access to Grand Street.

E. Caven Point Road Realignment

The northern end of Caven Point Road between the Peninsula at Bayonne Harbor and Morris Pesin Drive has been realigned to the northwest, closer to the Hudson

County Extension of the Turnpike, to make room for the Port Liberte` golf course.

F. Route 185 Extension

The Port Liberte` property owner is pursuing the continuation of Route 185 from Linden Avenue to Caven Point Road. NJDOT planned to design and build the connection from Linden Avenue to Caven Point Road; however, the plans for a golf course require that the alignment be shifted.

G. Columbus Boulevard

The City of Jersey City is planning to widen Columbus Boulevard to accommodate four travel lanes and a median as well as one parking lane in each direction.

H. Pacific Avenue, Center Street, Grand Street

The City of Jersey City is considering reconfiguration of the Pacific Avenue / Grand Street intersection by way of a connector from Pacific Avenue to Center Street behind the existing gas station at Pacific Avenue and Grand Street.

I. Jersey Avenue Extension

Proposals exist to extend Jersey Avenue across the Tidewater Basin to the intersection of Audrey Zapp Drive and Phillip Street for vehicular traffic. Although the Jersey Avenue Extension would invariably provide better local access between Downtown Jersey City and the Park, pedestrian safety issues, the position of the Medical Center and PS 3 on Jersey Avenue, as well as quality of life issues for residents in the Van Worst Park Neighborhood are factors to be considered in discussing the feasibility of the project. In order for consensus to be met, further study from Jersey City officials and local stakeholders will be necessary to assess all the impacts of the Jersey Avenue extension.

J. Gateways

Based on Liberty State Park's former industrial character, its position adjacent to the New Jersey Turnpike and its geographic location surrounded by water, the Park currently lacks a definitive gateway. In general, a unified streetscape complete with banners, landscaping, lighting or a an actual gateway arch would provide a visual queue that places the Park in a position of importance and alerts the driver of entry into a unique district. At the same time, these treatments are pleasing to pedestrians and have a calming effect on traffic that may potentially decrease vehicle-pedestrian conflicts.

The most major vehicle-only gateway exists at Interchange 14C from the New Jersey Turnpike. The Destination Jersey City signage program, coupled with plans from the New Jersey Turnpike Authority for revised signage to 14C, will

increase the importance of the exit. Considering that Interchange 14C offers the most direct access to the Central Parking Facility and the HBLRT lot, the potential exists to place a small Welcome Center near the Central Parking Facility on Phillip Street.

Audrey Zapp Drive is an especially important gateway considering its linkage to the eastern edge of the Liberty Science Center and the HBLRT lot. Furthermore, Johnston Avenue, the continuation of Audrey Zapp Drive outside the Park, is a major local connector to neighborhoods west of the Park. In order to emphasize Audrey Zapp Drive as the Park's northern spine, streetscaping and pedestrian improvements along its route through the Park would be a positive touch.

Pedestrian entry to Liberty State Park is the least developed of all travel modes. The **Jersey Avenue** footbridge is in poor condition and is accessed through an area that has retained an unclean and unsafe industrial feel. Although, the bridge is repaired every year, the environment is generally not conducive to pedestrian travel until visitors are well within the Park. A properly landscaped and identifiable pathway to the Park over a stable bridge is necessary not only to accommodate current Park patrons, but also to provide the Downtown Jersey City population an incentive to travel to the Park on foot.

K. Pedestrian

1. If development of the 55 Lot Development, LLC property were to occur, the developer might be convinced to construct a pedestrian bridge over Mill Creek to replace the current bridge. According to officials within the Jersey City Division of City Planning, construction of the bridge would not be a condition of development for the project.
2. According to the LSDC, Prudential is sponsoring the construction of sidewalks from the HBLRT parking lot to Liberty State Park.
3. The possible **Jersey Avenue extension** project includes a walkway segment and bike path over Mill Creek.

L. HBLRT

The HBLRT will connect to Hoboken Terminal in Fall 2002 offering connection from the PATH and New Jersey Transit commuter trains to the HBLRT for increased access to Liberty State Park. By 2003, plans include extension of the line to the Weehawken Ferry followed by completion of the line through North Bergen to Ridgefield in 2005.

M. Ferry Services

A recent Metropolitan Waterfront Alliance report proposes two ferry lines, one for recreational and cultural traffic, and the other for commuters that would allow travel to points within the Upper New York Harbor. Stops within Downtown

Jersey City and the CRRNJ Terminal are included in the plan for both recreational and commuter ferry lines. The DEP does not support the inclusion of a commuter ferry stop within the Park.

6. Internal Circulation Improvements

The following is a list of infrastructure improvements within the Park that will promote better vehicular circulation and improve the environment within the Park for pedestrian travel. The map entitled *Future Transportation Infrastructure (2015)* highlights the following improvements to Liberty State Park's internal infrastructure.

A. Audrey Zapp Drive and Phillip Street

A traffic signal is planned at Audrey Zapp and Phillip Street paid for in part by NJ Transit. The signal would accommodate heavy vehicle-pedestrian traffic on Audrey Zapp Drive experienced during special events.

B. Phillip Street / Burma Road Realignment

Phillip Street turns sharply at the northwestern edge of the Liberty Industrial Park and becomes Burma Road, which aligns with the traffic circle at Morris Pesin Drive. In light of the Caven Point Road realignment, an opportunity exists to straighten the aforementioned section of Phillip Street / Burma Road to align with the intersection of Morris Pesin Drive and Caven Point Road.

C. Burma Road Traffic Circle

The straightening of Phillip Street / Burma Road and alignment with Caven Point Road at the intersection of Morris Pesin Drive would eliminate the need for the Phillip Street / Burma Road traffic circle. Realignment would provide a safer route of travel for trucks accessing the Liberty Industrial Park from Interchange 14B. In the interim, paving, signage and striping improvements at the traffic circle are necessary to decrease driver confusion and enhance safety.

D. Morris Pesin Drive and Freedom Way

Buses face difficult turns at the corner of Freedom Way and Morris Pesin Drive. It is recommended that the intersection be improved to increase turn radii and provide a bus turn around area.

E. Jersey City Boulevard and Phillip Street

Left turns should be prohibited for trucks turning from Jersey City Boulevard to Phillip Street. Except for local deliveries, do not permit trucks on Phillip Street between Jersey City Boulevard and Audrey Zapp Drive. Although Exit 14C prohibits truck traffic and the majority of trucks will properly use Exit 14B for Liberty Industrial Park, the left turn restriction will prevent truck traffic from

utilizing Liberty State Park as a short cut for access to Johnston Avenue, Grand Street and Downtown Jersey City.

F. Pedestrian

1. According to the DEP, pedestrian paths are being constructed from the Liberty Science Center to Audrey Zapp Drive and from Audrey Zapp Drive to the Jersey Avenue footbridge.
2. If development of the 55 Lot Development, LLC property were to occur, Jersey Avenue from the intersection of Audrey Zapp Drive and Phillip Street to the footbridge would be rebuilt for access to the residential high rise.
3. The DEP also plans to construct sidewalks from the intersection of Audrey Zapp Drive and Phillip Street to the Millenium Park.
4. The Department of Environmental Protection is promoting a pedestrian bridge from the South Overlook of the CRRNJ Terminal to Ellis Island instead of the current temporary structure from the Green Park to Ellis Island.
5. In the event of the development of the Inner Park Nature Preserve, a unified recreation walkway should be constructed in order to tie various activities within the Park to the Nature Preserve. If this is the case, pedestrian pathways linking the Liberty Science Center to the Nature Preserve and the Interpretive Center take on the role as an internal gateway.

7. Park Attendance and Carrying Capacity

A. Park Attendance

Attendance projections for Liberty State Park were determined by applying a 3.5% annual rate of change to current DEP attendance figures between 2001 and 2005. Between 2005 and 2015, it was assumed that attendance growth would remain steady but level off to a 3.0% annual rate. The projection determines that attendance will rise a total of 50% between 2001 and 2015 reaching a plateau of 6.6 million visitors.

TABLE 7.A.1 (Projected Liberty State Park Attendance)

| <i>Attendance Projections</i> | <i>FY 00</i> | <i>FY 01</i> | <i>2005</i> | <i>2015</i> | <i>2001 to 2005</i> | <i>2005 to 2015</i> | <i>Total Increase (2001-2015)</i> |
|-------------------------------|--------------|--------------|-------------|-------------|---------------------|---------------------|-----------------------------------|
| Liberty State Park | 4,326,357 | 4,481,192 | 5,108,559 | 6,641,127 | 3.50% | 3.00 | 50% |

Attendance for the Liberty Science Center, the CRRNJ Terminal and the Interpretive Center was determined by way of a ratio projection. The ratio projection assumes that the percentage of Park visitors to a certain activity will remain stable into the future. Essentially, attendance for a specific activity increases although the percentage of that activity to the entire population remains unchanged.

The recreational visitors category represents the difference between total Park visitors and annual attendance levels reported from the four major Park activities. Calculation of these numbers should be taken with care considering that 50% of weekday and weekend Park patrons visit more than one activity in the same visit. Many Park patrons essentially participate in one Park activity, but also enjoy the recreational opportunities of the Park.

In the case of the Circle Line Ferry, visitor numbers depend heavily on the popularity of Ellis Island and Liberty Island. Instead of applying the aforementioned ratio projection to Circle Line attendance figures, Ellis Island and Liberty Island visitor projections developed for the Ellis Island Draft Environmental Impact Statement were utilized to determine attendance for horizon years 2005 and 2015. Based upon future development occurring on Ellis Island, the Circle Line was assumed to capture 25% of total Ellis Island and Liberty Island visitors (1,775,000 / 2,587,500). If a managed access bridge to Ellis Island were constructed from a location in Liberty State Park, a 5% increase of Ellis Island attendees can be assumed due to the increased flexibility a pedestrian connection would offer Park patrons not wishing to travel by ferry. A 5% increase in patronage from the estimated 2015 total (2,587,500) will positively effect Ellis Island attendance by approximately 129,375 visitors, bringing total Circle Line attendees to 2,716,875 (40.91%).

TABLE 7.A.2 (Projected Ellis Island / Liberty Island Attendance)

| <i>Attendance Projections</i> | 2001 | 2005 | 2015 |
|--------------------------------------|-------------|-------------|-------------|
| Ellis Island | 2,000,000 | 2,500,000 | 3,450,000 |
| Liberty Island | 3,900,000 | 4,600,000 | 6,900,000 |
| Total | 5,900,000 | 7,100,000 | 10,350,000 |
| 25% Ratio (Total EI & LI) | 2001 | 2005 | 2015 |
| Circle Line Attendance | *842,021 | 1,775,000 | 2,587,500 |
| Managed Access Bridge | | 1,863,750 | 2,716,875 |

* 842,021 (actual DEP visitor data) is 14% of total visitors to Ellis Island & Liberty Island

TABLE 7.A.3 (Projected Park Attendance by Activity)

| <i>Attendance Projections</i> | 2000 | 2005 | 2015 | % LSP Total |
|-------------------------------|------------------|------------------|------------------|--------------------|
| Circle Line | 842,021 | 1,775,000 | 2,587,500 | 38.96% |
| Liberty Science Center | 681,919 | 805,209 | 1,046,772 | 15.76% |
| CRRNJ Terminal | 769,620 | 908,767 | 1,181,397 | 17.79% |
| Interpretive Center | 25,425 | 30,022 | 39,028 | 0.59% |
| Recreational Visitors | 2,007,372 | 1,589,561 | 1,786,429 | 26.90% |
| Total LSP Attendance | 4,326,357 | 5,108,559 | 6,641,127 | 100% |

TABLE 7.A.4 (Projected Park Attendance : Managed Access Bridge)

| <i>Attendance Projections</i> | 2000 | 2005 | 2015 | % LSP Total |
|-------------------------------|------------------|------------------|------------------|--------------------|
| Circle Line | 842,021 | 1,863,750 | 2,716,875 | 40.91% |
| Liberty Science Center | 681,919 | 805,209 | 1,046,772 | 15.76% |
| CRRNJ Terminal | 769,620 | 908,767 | 1,181,397 | 17.79% |
| Interpretive Center | 25,425 | 30,022 | 39,028 | 0.59% |
| Recreational Visitors | 2,007,372 | 1,500,811 | 1,657,054 | 24.95% |
| Total LSP Attendance | 4,326,357 | 5,108,559 | 6,641,127 | 100% |

B. Park Carrying Capacity

Increased attendance poses the issue of carrying capacity and the ability of parking and infrastructure within the Park to handle visitors. The three main entryways to the Park allow hourly volume rates of approximately 2,000 vehicles per hour. These conditions translate to approximately 19,200 passengers per hour on weekends and 15,600 passengers per hour on a weekday. During a large-scale weekday or weekend event, the amount of potential vehicles (6,000 vph) exceeds total available spaces (5,840 spaces). However, the addition of parking at the Science Center (1,864 spaces) and shared parking at the HBLRT lot (3,500 spaces) provides the capacity necessary to handle the overflow demand (9,340 spaces).

In order to determine true Park carrying capacity, mass transit options must be factored into the analysis. Assuming full capacity of the HBLRT, ferries, the Liberty State Park Shuttle and charter buses on an hourly rate, the Park is able to accommodate 46,000 visitors on a weekend day and just over 40,000 visitors on a weekday. Based on the amount of visitors that can be accommodated by mass transit (11,200 per weekend and 9,640 per weekday), the carrying capacity analysis legitimizes the viability of mass transit as an option to access Park activities and as a remedy to heavy traffic experienced during busy weekends and special events.

8. Recommendations

The goal of the Liberty State Park Transportation Plan Update is to develop recommendations that will aid in the reduction of vehicular impacts brought about by future development and projected levels of visitation. This transportation plan is a framework that aims at promoting Park goals such as the preservation of open space and the decrease of overall Park traffic in order to enhance the Park experience for the public. Recommendations are also based on the goal of accommodating an increased number of visitors within a protected park setting. In order to preserve the Park like character of Liberty State Park and to create a proper balance between development and open space preservation, the following is a list of policy guidelines:

1. External Access

- Encourage Ferries and the HBLRT as a viable way to access the Park.
- Study the feasibility of including a ferry dock at the western end of the Tidewater Basin near the Liberty Science Center with pedestrian pathways to the LSC.
- Link internal transit service to adjacent neighborhoods and Downtown Jersey City. Study the viability of a “Downtown Shuttle” that provides connections to the Park or to the **Jersey Avenue** footbridge.
- Analyze the feasibility of widening the off-ramp at Interchange 14C to two lanes in order to accommodate increased vehicular capacity into the Park. Such an improvement would aid traffic flow to the future Central Parking Facility and provide better access to Wilson Street and the HBLRT Station.

- Address the current lack of HBLRT access from New York City due to the closure of the Exchange Place PATH Station in Jersey City. The HBLRT connection to Hoboken is not scheduled until Fall 2002.

2. Internal Circulation

- Expand the Shuttle route to accommodate new development within the Park that will be occurring within the Inner Park Area and the Central Parking facility. The Liberty State Park Shuttle is an essential tool to minimize traffic flow and optimize parking. Examine creative ways to fund the Shuttle, such as private sponsorship.
- Provide shuttle vehicles that are of Park character and scale. They should be able to serve varying levels of demand and allow easy loading and unloading.
- Consider a managed access bridge to Ellis Island from Liberty State Park as an alternative form of entry to Ellis Island. Further analysis should be performed by way of the Ellis Island Environmental Impact Statement to determine the necessity of such a bridge and its optimal location. The positive aspects of placing the entry point of the bridge at the CRRNJ Terminal should be studied. The parking and vehicular infrastructure currently built at that site, as well as the CRRNJ Terminal's role as an activity center will help minimize impacts. Considering the goal of the DEP to reduce pavement and decrease vehicular impacts within the Park, care should be taken when considering the entrypoint of the existing bridge within the Green Park. The addition of a parking lot within the Green Park will not be considered as an option. Furthermore, the small parking lot on Freedom Way at the playground should not be expanded.
- Consider a bike service station near the Liberty Science Center offering a combination of long and short term bicycle parking, bicycle rentals, refreshments, restroom facilities, bicycle maps, merchandise and in house capability for minor repairs.

3. Parking

- Complete a Central Parking Facility at the Liberty Science Center to accommodate increased visitor attendance. Such a facility could become a Shuttle transit hub and may encourage visitors to park within the Central Parking facility and use the Shuttle instead of driving throughout the Park to other destinations. Besides the expansion of the Central Parking Facility, no other parking lot areas should developed or expanded within the Park. The creation of the Central Parking Facility in this location may further promote the construction of an alternative Welcome Center.
- Develop additional agreements between New Jersey Transit and the DEP for shared parking.
- Discuss current parking rates within the Park as a way to sustain the Park Shuttle.

- Install Dynamic Message Signs (DMS) within the Park to properly notify motorists of available parking lots. Continue to utilize the Highway Advisory Radio (HAR) of the New Jersey Turnpike Authority to notify Park visitors of events, traffic and parking conditions within the Park.
- Provide the minimum practical paved area. Locate lighting and landscaped buffers at parking areas to preserve views and enhance Park atmosphere. Utilize trees and landscaping to buffer unsightly structural barriers.
- Tickets for various events should not exceed parking availability within Liberty State Park.
- Do not charge a base Park entry fee.
- Coordinate parking plans with Waterfront Transit plans and other transportation programs.

4. Traffic

- Reduce automobile and truck traffic at locations and times when the Park visitation experience would be disrupted.
- Favor Park users over other uses when competing demand exists.
- Mitigate traffic congestion and discourage commuter traffic if Park purposes are thereby promoted. These include financial support of facilities needed for Park use, provision of transit service to the Park, marketing of Park activities, and utilization of otherwise unavailable infrastructure in off-peak times at non-intrusive intersections.
- Design roads and paths that reduce excessive pedestrian / vehicle conflicts.
- Do not consider one-way traffic on any of the main roads of the Park.
- Give preference to pedestrian travel by way of all pedestrian phases at signalized intersections and incorporating sidewalks and well defined crosswalks.
- Encourage transit over vehicular usage for internal Park movements.
- Discourage extensive traffic growth on internal Park roads (Morris Pesin Drive, Audrey Zapp Drive, Freedom Way) and do not widen any Park roads.
- Balance capacity on approach roads with main entry roads (Caven Point Road, Bayview Avenue, Johnston Avenue, **Jersey Avenue**, and Phillip Street).
- Provide a sustainable Shuttle service to accommodate visitors and reduce vehicular traffic.

- Utilize Intelligent Transportation Systems (ITS) such as HAR and DMS to notify visitors of Park related traffic issues and to properly detour traffic within and around the Park.
- Study post September 11th security issues and the implications of these possible changes to Park access.
- If Jersey City is selected for the proposed communications tower, and final design includes activities that generate tourist and vehicular traffic, these issues should be studied to identify potential impacts on Liberty State Park.

5. Pedestrians

- Link currently planned sidewalk improvements to Park activities in order to begin a Unified Recreation Walkway of pathways that properly separate vehicles from pedestrians. The implementation of the Inner Park Nature Preserve is a key factor in the development of such an entity.
- Consider the importance of the Jersey Avenue footbridge as a pedestrian entrypoint to the Park. The footbridge should be structurally improved and consideration should be given to providing access by emergency vehicles only.
- Encourage general pedestrian movement within the Park as an alternative to other modes of transportation.
- All facilities must meet current standards as indicated within the American's with Disabilities Act.

6. Gateways

- Consider Audrey Zapp Drive as the Park's primary local gateway entrance since the majority of activities occur on the northern edge of the Park.
- Study the need for improvements to Interchange 14C as the Park's most major vehicular entry point. Due to the amount of traffic that travels to the Park from this entryway, as well as the future construction of a Central Parking Facility in close proximity to the exit, enhancements should be made to Wilson Street and Jersey City Boulevard to welcome these visitors to the Park.
- Stabilize the Jersey Avenue footbridge and beautify the path from the footbridge to Phillip Street. Outside the Park, the approach to the bridge on Jersey Avenue also needs improvement.
- Study the impacts of the Jersey Avenue extension with respect to possible increases in pass through traffic and expanded access to the Park from Downtown Jersey City.
- Southwestern entry to the Park from the Phillip Street / Burma Road Traffic Circle is currently unattractive and confusing for vehicles entering the Park. In the short term,

signage and striping at the traffic circle should be improved. In the long term, landscaping and streetscaping along Phillip Street on the approach to the Science Center should be utilized to supplement these enhancements.

CHAPTER 1 – INTRODUCTION

1.0 Vision

The mission of the New Jersey Department of Environmental Protection - Division of Parks and Forestry for Liberty State Park is to provide the public with access to New York Harbor's resources, offer visitors a sense of the Park's history, and promote improvement to Park resources. The DEP envisions a pedestrian friendly internal circulation system for Liberty State Park that not only promotes visitor enjoyment and decreases vehicular traffic but also provides external connections to all visitors within the Jersey City pedestrian, vehicle and mass transit network. The future success of the Park is predicated on two factors. First, to maintain or increase the amount of green space within the Park, and second, to develop an integrated transportation system for people movement within the Park that will reduce traffic flow and the necessity for the paving of additional roads and parking lots.

1.2 Study Area Boundaries

The study area includes Liberty State Park, Ellis Island, and Liberty Island. The adjacent roadway network includes the New Jersey Turnpike Hudson County Extension, the Jersey City roadway network adjacent to the Park as well as the roadway network within the Park. In addition to the roadway network, the waterways and pedestrian walkways are also included in this study. For the purposes of this report, future references to the "Study Area" refer to the roadway network and pedestrian paths and waterways offering access to the Park.

1.3 Study Context and Previous Reports

The primary focus of this study is to update and improve the 1990 Liberty State Park Transportation Master Plan. In order to collect information on existing conditions, Vollmer conducted a series of meetings with stakeholders and other interested parties. The minutes obtained from these meetings were utilized to determine the most current information concerning access and development within and around the Park. Furthermore, details of each of the meetings were added directly to the report. The stakeholders included in meetings during the planning process are the following:

- City of Jersey City Housing and Economic Development
- City of Jersey City Planning
- City of Jersey City Redevelopment Authority
- City of Jersey City Traffic Engineering
- Destination Jersey City
- Hudson County Transportation Management Association
- Liberty State Park Superintendent
- Liberty Science Center
- Liberty State Park Development Corporation
- National Parks Service
- New Jersey Transit

- New Jersey Department of Environmental Protection, Parks and Forestry
- New Jersey Department of Transportation, Commerce Office
- New Jersey Department of Transportation, Planning Office
- New Jersey Department of Transportation, Manager Finance
- New Jersey State Parks Service
- New Jersey Turnpike Authority
- North Jersey Transportation Planning Authority
- Port Authority of NY and NJ
- Save Ellis Island!

Along with information collected in meetings, the following reports aided in the analysis of existing conditions:

1. Liberty State Park Transportation Master Plan
(Ebasco Services Inc., 5 / 90)
2. Jersey City Bicycle Plan
(Alan M. Voorhees Transportation Center, Rutgers University, 4 / 00)
3. Liberty State Park – Train Shed Master Plan Summary
(Curtis + Ginsberg Architects 10 / 00)
4. CRRNJ Prospectus – Liberty State Park
(New Jersey Department of Environmental Protection – Division of Parks and Forestry, 1 / 01)
5. Liberty State Park Attendance and Parking Facility Information
(New Jersey Department of Environmental Protection – Division of Parks and Forestry 1 / 8 / 01)
6. Liberty State Park Bus and Ferry Services
(New Jersey Department of Environmental Protection – Division of Parks and Forestry 1 / 25 / 01)
7. Liberty Harbor North Redevelopment Plan
(Duany Plater-Zyberk and Company, Architects and Town Planners, 2 / 01)
8. Transportation Plan – Cirque de Soleil – Liberty State Park
(New Jersey Department of Environmental Protection – Division of Parks and Forestry, 3 / 01)
9. Destination Jersey City Signage Plan
(The Hillier Group, 6/01)
10. Liberty State Park: General Management Plan for The Parks Interior Section
(New Jersey Department of Environmental Protection – Division of Parks and Forestry, 8 / 01)

11. Hudson County Waterfront Walkway – Analysis of Morris Canal Crossing Alternatives (Stevens Institute of Technology, 10 / 01)
12. New Jersey State Park Service - Attendance Report
(New Jersey Department of Environmental Protection – Division of Parks and Forestry FY 2000)
13. Research to Support Visitor Management at Statue of Liberty / Ellis Island Recreation Management Program, School of Natural Resources, University of Vermont, N/A)
14. Proposed Harbor Ferry Loop System for Upper New York Bay
(Metropolitan Waterfront Alliance, 2002)

1.4 Study Objectives

The main objectives of this study are to provide the framework for analysis of existing conditions; development of future conditions within the Park and to update the 1990 Transportation Circulation Study.

1.5 Study Approach

Vollmer coordinated and attended eight (8) meetings with stakeholders and interested parties. The minutes drafted from each meeting were circulated to the attendees for review and comment. The final report is a compilation of the technical memoranda, meeting minutes and other related materials and information.

Current reports and information related to the study area form the basis for analysis of existing conditions. Existing transportation data was evaluated in order to determine whether any additional data is needed to complete the study.

Recent aerial photographs, current mapping, and field reconnaissance were utilized to determine the possible and most likely travel routes to and from Liberty State Park. Access routes and means of travel to the Park included car, bus, rail, ferry, bike and pedestrian traffic.

The official City of Jersey City Zoning Map and the City of Jersey City Downtown Development Map were analyzed in order to understand existing conditions and the order of magnitude of development for parcels within and surrounding Liberty State Park.

Current attendance figures for Liberty State Park and Park related activities, as well as the identification of potential development sites on the outskirts of the Park were obtained from the appropriate Stakeholders during client meetings. This information was developed into future attendance projections for the Park and utilized to complete an estimate of the potential impacts of development within close proximity of the Park.

The Park's "carrying capacity" was determined based upon the potential expansion of the Park's infrastructure such as parking facilities, highways and mass transit access into the Park.

Based on information gathered concerning existing circulation, areas under served or in need of better linkages to Liberty State Park were identified. Views within Liberty State Park were also determined so a circulation plan that enhances gateways could be developed.

In order to obtain consensus from the various organizations, stakeholders were involved in the early stages of the project. During this project, a kick-off meeting was held with all the public agencies. The purpose of this meeting was to engage the public sector's help and input in developing the Liberty State Park Transportation Circulation Plan. Upon completion of a draft report, the entire group of public officials and local stakeholders will be assembled again to review the findings.

CHAPTER 2 – PARK DEVELOPMENT

2.1 Existing Attractions

According to the Liberty State Park General Management Plan, Liberty State Park occupies 1,212 acres of public open space that includes 598 upland acres, 523 tidal acres, 25 structures and 5.3 miles of roads. The southern entrance of the Park is dominated by Liberty Industrial Park. Morris Pesin Drive allows access to the Industrial Park as well as the Public Boat Launch and Fishing Piers. Morris Pesin Drive terminates in the southeastern corner of the Park at the Visitor Center. The Visitor Center is complete with exhibits, food vendors and souvenir stands. East of the Visitor Center are picnic tables, a playground, the U.S. Flag Plaza, the Liberation Monument, open recreational space, and the south overlook with views of the Statue of Liberty and Lower Manhattan.

The Interpretive Center is located adjacent to the natural area north of the Visitor Center on Freedom Way. Bicycle trails run parallel to Freedom Way and crisscross the Green Park connecting picnic and recreational areas with the Columbus Monument and the Liberty Walk Waterfront Walkway.

The northern edge of the Park is more active and includes major attractions such as the Liberty Science Center, Liberty Landing Marina and the Central Railroad of New Jersey (CRRNJ) Terminal. The Liberty Landing Marina, which lies just north of Millennium Park, includes numerous boat slips and the Liberty House Restaurant.

The Inner Park area, a former railroad yard, is currently undeveloped. The goal of the DEP is to limit development in order to preserve the natural character of the Park's interior for a public nature preserve, while at the same time providing enhanced public access.

The following is a list of major Park activities as well as a description of current usage. The map entitled *Existing & Future Development (2002 - 2015)* exhibits current development within Liberty State Park. Each attraction on the map is assigned a number that corresponds to a description in the report.

1. Liberty Science Center

The Liberty Science Center is a regional draw that offers a unique interactive approach to science education. The Science Center is open to visitors on a year round basis seven days a week. Exhibits and shows are popular for school field trips, families and youth groups. The majority of these patrons therefore arrive by car or bus.¹

2. Central Railroad of New Jersey (CRRNJ) Terminal

The historic train terminal is one of the main attractions within Liberty State Park's northern edge. The structure houses special events and exhibits, and is also the staging area for Circle Line Ferry Service to Ellis and Liberty Island.

¹ <http://www.lsc.org>

Train Concourse

Currently holds events from train and antique shows to concerts and award ceremonies.

Waiting Room

1. Area for permanent exhibits
2. Area for temporary exhibits
3. Area designated for public programming (i.e. teacher workshops, school groups, lectures etc.)

Blue Comet Auditorium

Seating for 100 persons to be used for the presentation of films and lectures.

Ferry Slips

One of the existing ferry slips is operational at the CRRNJ Terminal for Circle Line Ferry service between the Statue of Liberty and Ellis Island. The second slip can be made operational.²

3. Interpretive Center

The Interpretive Center houses exhibits that focus on environmental and historical issues related to the Hudson River and its environs. The center includes an auditorium and classroom space for group field trips and the general public.³

4. Liberty Landing Marina

The New Jersey DEP leases space on the southern edge of the Tidewater Basin to the Liberty State Park Development Corporation who subleases the site to the Liberty Landing Marina. The waterfront sidewalk, marina and parking lot are open to public usage. The marina currently offers 520 berths as well as dockside facilities on the north side of Audrey Zapp Drive for dry boat storage.

5. Ellis Island

The Main Building was refurbished in 1992 for use as an Immigration Museum to highlight the story of immigrants who entered the United States through Ellis Island. The museum contains three floors of self guided exhibits and audio/visual displays detailing the history of immigration to America. Ellis Island is reachable by way of the Circle Line Ferry from the CRRNJ Terminal.⁴

² CRRNJ Prospectus & <http://www.state.nj.us/dep/forestry/parks/liberty.htm>

³ <http://www.state.nj.us/dep/forestry/parks/liberty.htm>

⁴ <http://www.ellisland.com/indexInfo.html>

6. Liberty Island

The Liberty Island grounds are available to visitors by way of the Circle Line Ferry from the CRRNJ Terminal. The Statue, museum, pedestal and crown are closed indefinitely due to security measures.⁵

7. Welcome Center / Park Office

The Park Office is currently located on Morris Pesin Drive adjacent to the US Flag Plaza on the southern edge of the Park.

8. Liberty House Restaurant

The facility opened in March 2002 on the eastern edge of Liberty Landing Marina and includes a restaurant and banquet area for special events. The majority of these special events occur on weekends.⁶

9. Liberty Industrial Park

Liberty Industrial Park includes 135 acres (1.7 million square feet) of development space. Major tenants include: Palermo manufacturing, Wilman Paper, Charles J. Smith & Co., Suzette Manufacturing, Streichler Trucking, Ritter-Sysco Food Services and The New York Daily News. The New York Daily News is using 323, 000 square feet of a former Clorox plant as a central printing and distribution facility.⁷

10. Camp Liberty

The “L” shaped parcel lies in between Morris Pesin Drive and several functioning industrial uses. According to DEP officials, a swim club was operational in the Park until 1997, when the public pool area was closed and filled. Jersey City currently sponsors a youth summer camp onsite that includes the use of a small pool.

2.2 Future Attractions

The following is a list of potential developments within the Park that will contribute to increased traffic demand. The *Existing & Future Development (2002 - 2015)* map represents the full development scheme of the Park. These attractions are also assigned a number that corresponds to text within the report.

1. Liberty Science Center

According to representatives of the Liberty Science Center, future plans include reorientation and expansion of the entrance to better accommodate visitor traffic. The

⁵ <http://www.nps.gov/stli/>

⁶

http://www.libertystatepark.com/lsp%20liberty_landing_marina%20WATER%20TAXI.htm#Liberty%20House

⁷ <http://www.jcedc.org/commercialandindustrial.shtml>

proposal for the redesign of the parking lot will better segregate cars and buses. This makes sense for bus drop off and pedestrian safety from the parking lot to the main entrance. In the long term, Liberty Science Center officials are also considering the addition of a parking deck within the confines of the current lot.

2. Central Railroad of New Jersey (CRRNJ) Terminal

At full build out, DEP plans for the CRRNJ Terminal include a diner, regularly scheduled historical programs and a Museum highlighting the history of Liberty State Park, Ellis Island and the Statue of Liberty. Long term plans also include renovation of the train shed and the provision of additional office space on the upper floors.

Train Shed

The 330,000 square feet of covered space under the train shed offers a great opportunity for large public events or a modestly sized train museum. The schematic design developed for the Train Shed Master Plan in May of 2000 proposes that the first four track beds on the northern side of the shed be covered with concrete pavers. The fifth and ninth tracks are proposed to serve as a display ground for train cars. The remaining three tracks would also be covered and would allow room for restroom facilities or a gift shop.

Restaurant

The southeast and southwest section of the first floor, off the waiting room, could be remodeled to match its former use as a restaurant. Portions of the second floor in this section of the building could also be considered for a similar purpose.

Second and Third Floors

The northeast section of the second floor has been renovated and is currently used as office space. Plans are to remodel other areas of unused space throughout the second and third floor for office functions as well. The United Railway Historical Society and the Friends of New Jersey Transportation and Railway Museum have also been approved to establish archives in several spaces on the second floor.

Ferry Slips

Funding has been provided to refurbish an additional ferry slip at the CRRNJ Terminal for active service.⁸

3. Interpretive Center

According to DEP officials, the proximity of the Interpretive Center to the nature preserve and the Green Park, coupled with the presence of contaminated lands north of the site, restricts expansion. Although the Interpretive Center could be situated in a more identifiable area of the Park, the DEP will not move the building. An important DEP goal is to link the Interpretive Center to other programs within the Park and promote interaction by Park visitors in a variety of areas within the Park. For example, if

⁸ CRRNJ Prospectus

ecological restoration of the Park's interior were to occur, this could be highlighted in exhibits and programs within the Interpretive Center and the Liberty Science Center. It would therefore be essential to offer proper pedestrian connections from the Liberty Science Center to the Inner Park area and beyond to the Interpretive Center.

4. Liberty Landing Marina

Future plans for Liberty Landing Marina include additional berths and dockside facilities, restaurants, marine-related shops and a 250-boat storage building.⁹

5. Ellis Island

Representatives at Save Ellis Island! are working in partnership with the National Park Service on plans for the restoration and beneficial re-use of the 29 historic buildings which constituted the hospital complex on the southside of Ellis Island. Ellis Island has not fully utilized its wealth of historical resources, and thus has not reached maximum visitor potential. In its current program, The Ellis Island Immigration museum exhibits only part of the story of U.S. immigration and has not yet restored and put to re-use the south side hospital complex. An Ellis Island Re-use Study has already been completed to recommend various ideas for adaptive re-use of these buildings. There is significant room for expansion of services and an increase in visitors to Ellis Island. The Draft Environmental Impact Statement (DEIS) is currently being prepared by the NPS, and is expected to be complete by the spring of 2002. The EIS will include the possibility of a managed access bridge in the location of the existing access bridge or an appropriate alternative location. Re-use plans and related visitor information will be more defined upon completion of the EIS. However it is assumed that visitorship will increase and the possibility of a permanent managed access bridge exists.

6. Liberty Island

Discussions have been held with the National Park Service concerning visitation limits to Liberty Island that would allow the Island to be evacuated by two ferryboats during an emergency. Security issues for the National Park Service are complicated considering that patrons travel to Liberty Island from both New York and New Jersey. It remains to be seen how this may effect total attendance figures for the island.

7. Welcome Center / Park Office

The Welcome Center is currently positioned away from major Park activity centers and gateway entrances. A centrally located Welcome Center near the Liberty Science Center could be a positive link to vehicular and pedestrian traffic entering the northern edge of the Park. If a parking deck is added to the Central Parking Facility, vehicles may be influenced to utilize the Science Center lot, thus accessing the new Welcome Center and Liberty State Park Shuttle to travel throughout the Park.

⁹ <http://www.state.nj.us/dep/forestry/parks/liberty.htm>

8. Liberty House Restaurant

No current plans exist for expansion of the restaurant or banquet facilities.

9. Liberty Industrial Park

According to the Jersey City Division of City Planning, major redevelopment of the Industrial Park is unlikely based on the commitment and investment of tenants on property within the Industrial Park. Furthermore, large-scale redevelopment is an expensive prospect considering the industrial history of the site.

10. Camp Liberty

According to officials at the Educational Arts Team, Camp Liberty will continue to be utilized as a camp.

11. Inner Park Area

The DEP has plans to re-create a Salt Marsh and Maritime Forest within the undeveloped inner area of the Park. The 251-acre preserve would be linked to a series of environmentally sensitive, yet interactive, pedestrian trails. Considering that environmental mitigation measures are necessary on parts of the site, the project could cost anywhere from \$60 to \$100 million. Fortunately, the project has good political support and is a high priority for EPA grants under the National Estuary Program. The DEP is already receiving help from the New York and New Jersey Harbor Estuaries Program and the Army Corp of Engineers. In February 2002, the Army Corp of Engineers announced plans for a feasibility study concerning the Inner Area of the Park. It was authorized to allocate approximately \$2.5 million for the first phase of the study. The total plan cost of \$19 million will be split between the federal government and the Port of Authority of New York and New Jersey. The DEP considers that implementation of this project will complete development within Liberty State Park. The DEP hopes to complete the preserve within the inner park area for visitors by around 2010.¹⁰

12. World Trade Center Memorial

According to DEP representatives, a World Trade Center Memorial is in the planning stages for the grounds adjacent to the CRRNJ Terminal.

2.3 Special Events

According to officials at the Liberty State Park Development Corporation, special event coordination is problematic in Liberty State Park due to limited infrastructure and staffing. It appears some special events work as long as the DEP is selective. For large-scale events, proper event planning and organization of performance times is key to avoiding major traffic conflicts. In fact, event promoters must propose a transportation mitigation plan as part of the event permit application. Although traffic related to special

¹⁰ The Jersey Journal, February 5, 2002, p. A1, A10

events is always an issue, conflicts between normal Park users and special event patrons is not as apparent during weeknight events. Visible conflicts seem to occur during weekend day performances when event times coincide with peak recreation periods for normal Park users. The ability to eliminate vehicle traffic from the Park through utilization of mass transit service is the key to the success of future special events.

The challenge of people movement during large events is lessened when patrons utilize ferry or other mass transit alternatives to the Park. The largest event ever held at Liberty State Park, estimated at 250,000 people, was the July 4th Statue of Liberty Bicentennial celebration. On that day, vehicular traffic was excluded from the park and mass transit was provided from nearby locations. Some events have instituted special shuttle service to transfer patrons between remote parking lots and the Liberty State Park HBLRT or the Grove Street PATH station. In the case of such a service, it is essential that shuttle trips be staggered so the HBLRT system is able to accommodate the volume of passengers as fast as the shuttle buses are arriving.

Following is an event description from the Liberty State Park Development Corporation concerning Cirque du Soleil, which was the Park's major engagement of 2001:

A. Cirque du Soleil (CDS)

1. *Length* - 10-week engagement on the northern edge of the Park.
2. *Scheduling* - Showtimes were scheduled during off-peak Park recreation hours. According to the Liberty State Park Development Corporation this decreased conflicts between CDS attendees and normal Park users. Problems occurred during the Sunday 1 PM performance on April 22nd 2001. The showtime conflicted with the peak of the Circle Line Cruise as well as normal Park traffic experienced on a sunny afternoon.
3. *Transportation* - CDS was responsible for putting the transportation plan together, especially since the hours of operation for the HBLRT and 305 Shuttle did not coincide with end times of the CDS. In the future, it may be advisable to include New Jersey Transit in the special event transportation planning process. Approximately 25% of the 200,000 attendees, or 50,000 patrons, arrived by ferry at the CRRNJ Terminal ferry slips.
4. *Revenue* - LSPDC generated \$350,000 in parking and \$600,000 in total revenue for the 10-week event. New York Waterways paid \$50,000 to LSP to bring patrons to the Park for the event. CDS paid to replace the lawn near the CRRNJ that was used for the performance.

Following is a brief description of a single concert brought into the Park by the Liberty State Park Development Corporation:

B. Andrea Bocelli

- The event occurred during the busy week of July 4th 2001. Only 500 VIP parking spaces were provided within the Park, despite 12,500 total attendance. The majority of attendees parked in Bayonne and traveled to Liberty State Park by ferry.

CHAPTER 3 – ADJACENT DEVELOPMENTS

3.1 Zoning and Land Use

According to the current City of Jersey City Zoning map, the boundaries of Liberty State Park and land south of Bayview Avenue cleared for the Caven Point Road realignment are included within the Liberty Harbor Redevelopment Plan Area. The City of Jersey City designates Redevelopment Plan Areas for districts in need of specific development and design guidelines. The City of Jersey City Division of City Planning contends that Redevelopment Plans can be and usually are separate design and land use plans meant to improve the character of an area through dramatic change. Although Redevelopment Plans should be consistent with the Master Plan, most Redevelopment Plans outpace Master Plan updates. In this case, municipalities may approve a Redevelopment Plan inconsistent with the Master Plan as long as proper reasoning is provided.

Other Redevelopment Plan Areas within Jersey City exist north of Park along the entire length of the Tidewater Basin, directly west of Liberty State Park along the length of its western boundary, and directly south of Liberty State Park. Considering that Liberty State Park and all areas surrounding its boundaries are designated as a Redevelopment Plan Area, development can be controlled in a manner that will not be harmful to Liberty State Park.

3.2 Development Sites

The *Existing & Future Development (2002 - 2015)* map reveals the push of ongoing and potential development around Liberty State Park. Development pressure is especially noteworthy north of the Park across the Tidewater Basin within Downtown Jersey City. The following developments are noted on the map:

1. Liberty Harbor North Development

The Liberty Harbor North Development is an 86-acre, “new town-in-town” on the north side of the Tidewater Basin directly across from Liberty State Park. According to the Liberty Harbor North Redevelopment Plan prepared by Duany Plater-Zyberk & Company, the development will include approximately 6,000 housing units; between 150,000 and 775,000 square-feet of retail; 175,000 square-feet of school facilities; and approximately 4 million square-feet of office space and 1 million square-feet of hotel space. The development is complete with two stops on the HBLRT line and is within a short walk to the Grove Street PATH Station. The proximity of the development to Liberty State Park, its transit oriented nature, and mixed land uses will encourage pedestrian traffic from Liberty Harbor North to the Park.¹¹

¹¹ Liberty Harbor North Redevelopment Plan; <http://www.jcedc.org/libertyharbornorthresidential.shtml>;

2. Downtown Jersey City Waterfront Development

The Downtown Jersey City waterfront has undergone drastic change in the past decade and will continue to receive office and residential construction. A number of residential developments complement Liberty Harbor North on the northern edge of the Tidewater Basin. According to the City of Jersey City Division of City Planning Downtown Development Map, each of the smaller residential development projects on the northern edge of the Tidewater Basin have been approved and could be completed by 2005. These projects alone add just over 2,000 residential units to the waterfront. The Liberty Harbor North project that includes 6,000 residential units should take longer to reach full buildout.

The greatest impact on the waterfront, however, is within the office market. Goldman Sachs is currently constructing a 1.2 million square foot office complex with residential and retail components. According to information acquired from the Jersey City Division of City Planning, Goldman Sachs is proposing an additional tower, while two other approved office projects will bring 2.1 million square feet of office space to the waterfront.

The combination of projects currently under construction with those that have met approval will provide an additional 3.3 million square feet of office space in Downtown Jersey City, as well as the 4 million square feet of office space included in the plan for Liberty Harbor North.¹²

3. 55 Lot Development, LLC

The site is located east of the New Jersey Turnpike between Mill Creek and Audrey Zapp Drive. According to the Jersey City Division of City Planning, the parcel is zoned for 100 units per acre and the developer is interested in the possibility of constructing a high rise residential property. A fourth leg to the intersection of Phillip Street and Audrey Zapp Drive would be constructed, ending in a cul de sac. If the project were to occur, the developer would likely stabilize the footbridge over Mill Creek, however reconstruction of the footbridge is not a condition of development. This project should be considered in the long term as a potential development opportunity.

4. Jersey City Medical Center & Public School

Liberty Health Care Systems is developing a large scale medical facility north of the Park at **Jersey Avenue** and Grand Street. A new public school that will house elementary and middle school students is currently under construction across from the Medical Center on Grand Street.¹³

¹² <http://www.jcedc.org/new/waterfrontmajor.html>

¹³ <http://go-ahp.org/guide-to-giving/institutions/jersey.htm>

5. HBLRT Parking Lot / Adjacent Parcels

In the future, New Jersey Transit would like to better integrate the Liberty State Park HBLRT station with the neighborhood. NJT owns the Park and Ride property and is interested in an adjacent parcel northwest of the lot. NJT is also discussing ideas with the City of Jersey City that would double or triple the amount of parking at the Park and Ride to support a mixed use setting with residential and retail components. According to NJT officials, the owner of the warehouse property directly west of the Park and Ride would like to develop the warehouse into a mixed-use residential and commercial facility.

6. City of Jersey City Municipal Car Impound & Sewerage Treatment Facility

According to the City of Jersey City Division of Planning, the City of Jersey City is interested in moving its vehicle impound lot and consolidating an adjacent sewerage treatment plant to make way for infill development. The lot is zoned for mixed use however; environmental constraints associated with the parcels may make it difficult to move the facility to a new location. Any type of mixed-use development would enhance the importance of Phillip Street traffic within the Park and likely increase vehicular traffic exiting Interchanges 14B and 14C from the New Jersey Turnpike.

According to the Jersey Journal, the City of Jersey City previously granted approval for a proposed WNET communications tower on the site. In September 2002, however, a location north of the Park was determined to be a more feasible option.¹⁴

7. Port Liberte' Golf Course

The developers of the Port Liberte' residential development have included a world-class golf course in full buildout development plans. The course will be constructed between Liberty State Park and Port Liberte' off Caven Point Road. The course has undergone preliminary approval and will be completed by 2003. If the **Jersey Avenue Extension** is completed, traffic should be expected through the Park on Phillip Street.¹⁵

8. The Peninsula at Bayonne Harbor (former MOTBY Terminal)

In September 2001, the Department of Defense transferred ownership of the 476 acre site to the Bayonne Local Redevelopment Authority (LRA). The Peninsula at Bayonne Harbor is expected to have significant redevelopment over the next decade. Plans include a 160 acre port and an extensive mixed use development covering the remaining acres. The mixed use development will include office, commercial and residential land uses as well as a marina.

An official at the Hudson County Transportation Management Association stated that the Bayonne LRA adopted a redevelopment plan in August 2001 and is currently going through the RFP process to develop 20 acres. The HCTMA expects that the larger

¹⁴ The Jersey Journal (Thursday, September 12, 2002)

<http://www.nj.com/news/jjournal/index.ssf?/base/news-0/1031825113211449.xml>

¹⁵ <http://www.newportcity.com/Pages/news10.html>

container ships will increase truck traffic at the dock of the Peninsula at Bayonne Harbor. According to the HCTMA, the Peninsula at Bayonne Harbor will be the first of the channels in the area to be dredged to accommodate the deeper ships with 6,000 containers. Newer ships will have from 12,000 to 13,000 containers. Currently, ships that enter this area contain 1,000 containers. The Port Authority and NJDOT predict that use of the newly aligned Caven Point Road will be heavily utilized by truck traffic. Truck restrictions on Interchange 14C coupled with its location well south of Liberty State Park, should reduce the impact of truck traffic from the Peninsula at Bayonne Harbor on the intersection of Bayview Avenue and Caven Point Road. It also seems likely that traffic related to non-industrial uses in the remaining portions of the redevelopment area will be contained on Caven Point Road and within Interchanges 14A and 14B of the Turnpike. For these populations, infrastructure improvements that enhance access from areas south of the Park to the southwestern entrance of the Park are essential.

In matters related to Liberty State Park activities, the LSPDC has utilized the Peninsula at Bayonne Harbor as a staging area for parking and ferry service to special events. According to the HCTMA, an RFP is circulating for a full time ferry service provider to incorporate a stop at the Peninsula at Bayonne Harbor. The inception of permanent ferry service to the site, coupled with its existing proximity to the HBLRT will be an important element of future event planning and alternative access to the Park.¹⁶

9. Lafayette Neighborhood

According to officials within the City of Jersey City Division of City Planning, 850 units (600 low to moderate income and 250 ownership units) are to be developed under HUD's Hope VI program in which an existing housing project will be leveled for the construction of new townhomes.

10. Streichler Property – Caven Point Road and Morris Pesin Drive

According to representatives of the City of Jersey City Division of City Planning, the site has the potential to be developed based on its zoning classification. Considering that no application has yet been received by the City of Jersey City, development on this site should be considered in long term forecasts.

¹⁶ <http://www.bayonnenj.org/blra/districts.htm>

CHAPTER 4 – EXTERNAL ACCESS

4.1 Introduction

The *Existing & Future Transportation Infrastructure Map (2002 - 2015)* exhibits current roadway, mass transit and pedestrian infrastructure that provides access into or within the vicinity of the Park. The following sections highlight entry points to the Park from a regional and local perspective. Also included is an analysis of travel alternatives available to Park patrons and a discussion of issues related to possible improvements that may enhance Park access.

4.2 Southwestern Entry

Access to the southwestern edge of Liberty State Park occurs from Interchange 14B of the Hudson County Extension of the New Jersey Turnpike. The Turnpike Extension connects communities such as Bayonne and Newark and provides access to the Holland Tunnel and the remainder of Hudson County. More importantly, linkage to the Turnpike provides access to major east-west routes such as I-78, I-80 and north-south routes such as US 1 and 9. This advantageous location offers easy access to a vast amount of the regional population.

Interchange 14B from the Hudson County Extension of the Turnpike has 5 toll booths that are potentially reversible. A single lane feeds the Interchange 14B toll plaza from Bayview Avenue / Morris Pesin Drive.

Bayview Avenue is the main connector from Interchange 14B and leads under the Turnpike to become Morris Pesin Drive within the Park. Although Caven Point Road does not provide direct entry to the Park, the recent realignment of the road with Bayview Avenue offers improved access to Bayonne. At the Burma Road traffic circle, Bayview Avenue becomes Morris Pesin Drive and provides linkage to the South Overlook of the Park. At the traffic circle drivers may also choose to access the western end of the Park by way of Burma Road / Phillip Street.

4.3 Northwestern Entry

Regional traffic north of the Park utilizing the New Jersey Turnpike may exit at Interchange 14C for access to Jersey City Boulevard and the Central Parking Facility. Interchange 14C acts as a partial interchange and does not allow westbound traffic from the Holland Tunnel to exit until Interchange 14B.

Major local access occurs by way of Johnston Avenue, which leads under the Turnpike into the northwest corner of the Park to become Audrey Zapp Drive. The majority of travelers using Johnston Avenue are local; however, regional traffic may bypass the Hudson County Extension of the Turnpike by exiting at Interchange 15E for direct access to Communipaw Avenue and local linkage to Johnston Avenue. Based upon the congestion experienced on Communipaw Avenue as well as the presence of two lift

bridges along the route, it appears Interchanges 14B and 14C offer the best access for regional Park visitors.

The position of Johnston Avenue between Liberty State Park and Grand Street not only makes the street an important connector to Downtown Jersey City, but also well serves local vehicular and pedestrian traffic to the Park. If the **Jersey Avenue extension** project does not occur, the importance of Johnston Avenue as a local connector will further increase in importance. For patrons interested in the Liberty Science Center, access under the Turnpike is also possible by way of a frontage road for the Liberty State Park HBLRT Station to Wilson Street and the LSC parking lot on Jersey City Boulevard.

4.4 Pedestrian / Bicycle Connectivity

Pedestrian access to Liberty State Park by local streets is possible, but difficult due to inadequate sidewalks near the Park. Furthermore, barriers such as the New Jersey Turnpike and Tidewater Basin limit widespread access to the Park. Bicycles offer an alternative form of travel, but are also underutilized due to connectivity issues and the lack of designated bicycle lanes throughout Jersey City. General roadway safety issues as well as undefined pathways for pedestrians and bicyclists to the Park limit users and discourage these alternatives as a means of travel. Enhancement of the Hudson River Waterfront Walkway is one key to increasing pedestrian and bicycle access to the Park from Downtown Jersey City and other waterfront areas.

Liberty Walk / Hudson River Waterfront Walkway

The section of the Hudson River Waterfront Walkway (HRWW) traveling through Liberty State Park is known as the Liberty Walk. The section extends along the eastern edge of Liberty State Park but does not connect to adjacent developments north and south of the Park. On the southern end of the Park, a smaller scale walkway connects the US Flag Plaza to the public boat launch area. A walkway extends along the northern edge of the Park within the Liberty Landing Marina and connects to the **Jersey Avenue** footbridge. However, this pedestrian path has yet to be constructed with pavers consistent to those included within the Liberty Walk. In essence, the goal of the HRWW project is to connect gaps in Jersey City and other communities on the Hudson River Waterfront.

The HRWW would provide increased pedestrian and bicycle access to the Park and eventually provide a linear connection for communities up and down the Hudson River. Completing gaps within the walkway would essentially make the Park open to the public 24 hours a day. These connections are an essential link to residential and office development occurring along the Jersey City Waterfront.

4.5 Mass Transit

Hudson-Bergen Light Rail

New Jersey Transit's Hudson-Bergen Light Rail line commences in Bayonne and includes a stop at Liberty State Park before terminating at Pavonia / Newport in

Downtown Jersey City. Due to Federal Transit Authority (FTA) rules, funding to build light rail into Liberty State Park was not allowed. As a result, the Liberty State Park station sits outside Park property and the FTA may not support future funding to extend light rail into the Park. Construction is currently underway to extend the line to Hoboken by Fall 2002, which should increase ridership and ease access for patrons wishing to reach Park activities by mass transit. Linkage to the PATH is possible north of Liberty State Park at both Pavonia / Newport and Exchange Place. In the future, it will be important to encourage use of mass transit alternatives to the Park in such ways that ease group sales on the HBLRT and PATH.¹⁷

Fares

| | |
|----------------------|--------|
| Adult One-Way | \$1.50 |
| Reduced Fare One-Way | \$0.75 |
| Children's Fare | \$0.75 |

Port Authority Trans Hudson (PATH)

PATH service from Manhattan stops in Jersey City at Pavonia / Newport and Exchange Place for transfer to the Hudson-Bergen Light Rail. The PATH also serves Grove Street station in downtown Jersey City which lies within a 10 minute walk of the Park.¹⁸

Fares

\$1.50 for all trips (Children under 4 years ride for free)

Ferry Service

Liberty State Park is currently linked to ferry traffic at the CRRNJ Terminal and Liberty Landing Marina. Although the Circle Line only travels between the CRRNJ Terminal, Ellis Island and Liberty Island, ferry service from Liberty Landing Marina caters to both markets. With the connection of service from Liberty Landing Marina to Manhattan, ferry service is a positive alternative for patrons intending to access the Park on weekends or for special events. Although many of the piers are disintegrating or are in disrepair around the Park, the southern docking facility by the visitor's center has occasionally been used for service and could be made functional for full time usage.

Downtown Jersey City is also well served by ferry stops at Liberty Harbor North, Liberty Landing Marina, Sussex (Colgate), Harborside, 2nd Street, and Newport. Demand is currently high and established routes are receiving increased traffic. Plans for a new ferry terminal are also in the works for the Southern Colgate / Goldman Sachs site. When the HBLRT connects to ferry terminal sites in Hoboken and Weehawken, ferries have the potential to become an even more important piece of the regional transportation system.¹⁹

¹⁷ http://www.njtransit.com/sf_lightrail.shtm

¹⁸ <http://www.panynj.gov/path/index.html>

¹⁹ <http://www.nywaterway.com/commuter.html>

Circle Line Ferry

The Circle Line Ferry provides recreational ferry service from Liberty State Park to Ellis Island and Liberty Island. The ferry travels from the refurbished slips of the CRRNJ Terminal 7 days a week, 364 days a year, with the exception being Christmas Day. Boats travel first to Ellis Island and then to Liberty Island. Ferries run every hour and fifteen minutes from Liberty State Park beginning at 9 AM and ending at 3:30 PM. Each leg of the trip takes 15 minutes.²⁰

Fares

| | |
|---------------------------------|--------|
| Adults | \$8.00 |
| Senior Citizens (62 & Over) | \$6.00 |
| Children (3 to 17) | \$3.00 |
| Group Rates (25 or more Adults) | \$7.00 |

Liberty Park Water Taxi

All service travels from Liberty Landing Marina within Liberty State Park to Pier A, Battery Park, Manhattan. The return trip docks at Warren Street, Jersey City, New Jersey on the opposite side of the Tidewater Basin. As a result, the Liberty Park Water Taxi acts as a connection between Warren Street and Liberty Landing Marina. The Operation of the Water Taxi during the morning commuting hours is beyond the scope of their lease. As a result of the 9/11 tragedy, an exception has been granted, however this is a temporary condition and is currently being evaluated.²¹

MONDAY - WEDNESDAY

Departs: Liberty Landing Marina 6:30 AM to 8:30 PM (hour & half-hour)

Departs: Pier A, Battery Park 6:45 AM to 8:45 PM (15 & 45 minutes past the hour)

Departs: Warren Street, Jersey City (25 minutes & 55 minutes past the hour)

THURSDAY - FRIDAY

Departs: Liberty Landing Marina 6:30 AM to 9:30 PM (hour & half-hour)

Departs: Pier A, Battery Park 6:45 AM to 9:45 PM (15 & 45 minutes past the hour)

Departs: Warren Street, Jersey City (25 minutes & 55 minutes past the hour)

SATURDAY - SUNDAY

Departs: Liberty Landing Marina 8:30 AM to 9:30 PM (hour & half-hour)

Departs: Pier A, Battery Park 8:45 AM to 9:45 PM (15 & 45 minutes past the hour)

Departs: Warren Street, Jersey City (25 minutes & 55 minutes past the hour)

Fares

| | | | |
|-----------------------|--------|--------------------------|---------|
| Adults one-way | \$5.00 | 10 trip (Adults one-way) | \$45.00 |
| Children (12 & under) | \$3.00 | 20 trip (Adults one-way) | \$80.00 |

²⁰ <http://www.statueoflibertyferry.com/>

²¹ <http://www.libertylandingmarina.com/taxi.htm>

Grove Street Bus

According to the HCTMA, the Greenville Bus Company discontinued almost its entire 11 Route from Grove Street to Liberty Industrial Park on December 31, 2001. The failed route somewhat duplicates the HBLRT and the 305 Shuttle. It currently serves as the back-up for HBLRT service in the event of flooding or other service disruptions. Demand was steady; however, rising insurance costs forced them to truncate service. Although the Greenville Bus has limited service, the HCTMA asserts that demand for transit service remains for the approximately 7,000 people employed at the industrial park. Port Jersey Industrial Park and Port Liberte' just south of Liberty State Park are also under served by transit. Although the HCTMA has \$750,000 set aside to fund a reincarnation of the 11 Route, bureaucratic red tape is keeping the money from going to fund such a service.

Central Avenue Bus

According to NJT officials, the 7 Bus Company, now owned by Coach USA, ended its service to the Park on its Central Avenue / Garfield Avenue Bus route. The route ran to the CRRNJ Terminal within the Park from the Journal Square Transportation Center. This eliminates a direct connection to the Park from a viable commercial and multimodal node within the heart of Jersey City.

CHAPTER 5 –INTERNAL CIRCULATION AND PARKING

The DEP vision for Liberty State Park is to maintain its park character despite the presence of popular attractions. In order to accomplish this goal, parking lot and roadway design must take into account several factors:

1. Parking lots will be limited in size and number and they must be properly landscaped to fit into the Park setting.
2. Internal roadways must be attractive, have a suitable level of service and be integrated with fees and other policies within the Park.
3. Certain high volume Park attractions that have highly restricted parking must be linked to the internal transit system.

5.1 Internal Roadway System

All roadways within the Park are two lanes (one in each direction). Audrey Zapp and Morris Pesin Drives, which are the primary entrance and exit roads for the Park, travel the respective northern and southern edges of the Park. Johnston Avenue becomes Audrey Zapp Drive within the Park at the Liberty Science Center. It extends through a “T” intersection at Phillip Street and continues with a cobblestone surface past the Liberty House Restaurant and Liberty Landing Marina before terminating at the CRRNJ Terminal.

At the traffic circle by the southern entrance to the Park, Bayview Avenue becomes Morris Pesin Drive. Morris Pesin Drive travels past a service road for the Liberty Industrial Park, intersects with Freedom Way, and leads into the US Flag Plaza for access to a playground / picnic area, fishing piers, the Liberation Monument and the South Overlook.

Burma Road / Phillip Street and Freedom Way provide north-south connections between Morris Pesin and Audrey Zapp Drives to complete the loop through the Park. Freedom Way extends north from Morris Pesin Drive through the Salt Marsh and past the Interpretive Center. Freedom Way bisects the untouched Inner Park Area from the Green Park until it intersects with Audrey Zapp Drive near the Liberty Landing Marina.

Burma Road, under control of Jersey City, extends north from the traffic circle on a curvilinear and restricted alignment. It passes two roads servicing the industrial park and becomes Phillip Street. Phillip Street travels north past the sewerage pumping station, Jersey City municipal car lot and the Liberty Science Center before intersecting with Audrey Zapp Drive.

5.2 Pedestrian / Bicycle Circulation

A recreational hiking / biking trail parallels the length of Freedom Way providing access to the Green Park, Liberty Walk, a playground / picnic area and the Columbus

Monument. For trail entry a wooden beam gate offers access to either end of Freedom Way. Plans are in the works to add sidewalks on Audrey Zapp Drive to eventually connect the footbridge over Mill Creek at **Jersey Avenue** to the Millennium Park.

On the southern edge of the Park, a paved asphalt walkway connects parking areas to the fishing piers, the US Flag Plaza and the Liberty Walk. The Liberty Walk extends along the entire eastern edge of the Park and the northern edge of the Park before terminating at the Liberty Landing Marina. The Liberty Walk is designated with lampposts and decorative pavers until it reaches the Liberty Landing Marina. At this point, the trail narrows and becomes asphalt, still allowing access for pedestrians to the **Jersey Avenue** footbridge, but without the width necessary for comfortable passage of pedestrians and bicycles.

5.3 Parking

General

The main CRRNJ Terminal parking lot, the Liberty Landing Marina and the Liberty Science Center require a \$5 parking fee. Patrons park for free in all other lots throughout the Park although the small lot north of the CRRNJ Terminal permits only short term parking. The Liberty State Park Development Corporation (LSPDC) operates all lots but the Liberty Landing Marina lot. The parking revenue generated from parking pays off park projects constructed through the bond issue.

The remainder of parking is located on the south side of Liberty State Park near the South Overlook and recreational fishing piers. During weekdays, a number of school buses visiting the Liberty Science Center utilize the free parking lots as a waiting area. This is a reflection of inadequate bus parking within the Central Parking Facility. When expansion of the Liberty Science Center occurs, the lot will be reconfigured to improve circulation and create additional bus parking. However, as part of the DEP vision, no more green space within the Park should be given over to parking.

CRRNJ Parking Facilities

Currently, 50 bus parking spaces and 1,000 car parking spaces exist at the CRRNJ Parking lot. The New York Mercantile Exchange (NYMEX) now occupies 200 to 250 spaces a day for commuters by way of a post September 11, 2001 agreement. Due to the proximity of the lot to the Circle Line ferry and other recreational attributes of the Park, the lot experiences consistently high occupancy. Total vehicle numbers decreased 6% between 1998 and 1999; however, numbers from 2000 indicate a 5,900 vehicle increase to 147,037 between 1999 and 2000. This can be accredited to Opsail during the first week of July 2000 in which the CRRNJ lot experienced a 19,512 vehicle increase from the same month during the previous year. Partial parking data from the CRRNJ lot for 2001 is also skewed by the Cirque du Soleil event. By July 2001, the lot had already handled 133,417 vehicles.

Liberty Landing Marina Parking Lot

The Liberty Landing Marina lot currently holds 750 spaces and boat owners can park anytime to access boats and ferries for access to NYC. The Marina lot is also open to the public although the LSPDC does operate or collect revenue from the lot.

Liberty Science Center

The vast majority of visitors to the Liberty Science Center arrive by car or bus. The most evident problems concern bus parking and pedestrian movement from parking areas to the front door. The Liberty Science Center at present provides 25 parking spaces for buses, however as many as 85 buses may arrive at the LSC during the day. The lack of bus parking creates overflow issues, especially on Phillip Street, where as many as 20 buses may line the street on any given school day.

Vehicle parking at the Central Parking Facility decreased between 1997 and 1999. However, year 2000 numbers point to a slight upturn in total parked vehicles from 1999 numbers. Parking data through July 2001 exhibits is currently incomplete.

Special Events

Special Event parking is offered at \$8 per vehicle. During Cirque de Soleil, overflow parking occurred on the grass near the CRRNJ Terminal. Including the CRRNJ Terminal lot, the LSPDC asserts that this increased available parking capacity to 1300 or 1400 spaces. In the event of severe parking overflow, the Liberty Landing Marina parking lot and the LSC lot were viewed by the LSPDC as an emergency back up. According to the LSPDC, the mitigation plan included a shuttle from the LSC lot to transport people to the show in case of parking overflow.

Hudson Bergen Light Rail Parking lot

The HBLRT lot currently has 1,300 spaces and is normally filled to capacity during business hours. Expansion could increase the lot to as many as 5,000 spaces, although New Jersey Transit envisions capacity closer to 3,500 spaces. The lot is only available to those with a monthly permit or a daily ticket / parking combination. It is not possible to purchase parking without a light rail ticket. The daily parking ticket is good 24 hours from the time of purchase.

TABLE 5.3 (Available Parking within Liberty State Park)

| Parking Location | Address / Intersection | Capacity | Type |
|--|----------------------------------|-----------------|--------------------------------|
| Liberty Science Center | Communipaw Ave. & Phillip Street | 1,107 - Cars | \$5.00 all day |
| | | 25 - Buses | |
| NJ Transit – HBLRT | Johnston Ave. | 1,500 - Cars | \$5.00 all day |
| Boat Launch | Morris Pesin Drive & Hart Drive | 70 - Cars | Free |
| General Parking | Morris Pesin Drive | 125 - Cars | Free |
| General Parking | Morris Pesin Drive | 200 - Cars | Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 230 - Cars | Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 320 - Cars | Free |
| Interpretive Center | Freedom Way | 90 - Cars | Free |
| Green Park Lot | Freedom Way | 172 - Cars | Free |
| CRRNJ Terminal | Audrey Zapp Drive | 1,000 - Cars | \$5.00 all day |
| | | 50 – Buses | \$10.00 buses |
| CRRNJ Terminal / North Field | Audrey Zapp Drive | 144 - Cars | Free - 2 Hr. |
| Liberty Landing Marina | Audrey Zapp Drive | 750 -Cars | \$5.00 all day |
| Total Spaces | | 4,208 | Cars 75 Buses |

5.4 Internal Shuttle System

A Shuttle system within Liberty State Park is one method to decrease vehicular traffic and fill the gaps between HBLRT service and Park activities. From 1997 to 2000, the HCTMA funded a shuttle from the Grove Street PATH that looped through Liberty State Park and followed a route similar to the HBLRT. At one time, the Liberty State Park Development Corporation also funded a free weekend shuttle. However, high operation and maintenance costs made the system difficult to operate. New Jersey Transit (NJT) currently operates the 305 Shuttle on a limited schedule.

305 Liberty State Park Shuttle

New Jersey Transit operates a pair of 20 person shuttles (with one back-up spare vehicle) for its 40-minute loop of Liberty State Park. During the summer, the Shuttle runs every 20 minutes from 7:30 am to 9 p.m. During the winter, service is weather dependent and limited to weekends from 7:30 a.m. to 7:30 p.m. On April 1st, the Shuttle resumes a normal weekday / weekend schedule.

Periods of heavy traffic within the Park make it difficult for the Shuttle to complete a full circuit within the 40-minute timeframe. Audrey Zapp Drive receives the majority of Park traffic and is the most congested area for the Shuttle. Cobblestone pavers, high vehicular traffic and pedestrian conflicts due to the lack of sidewalks, force pedestrians into the street and impact the Shuttle route. These issues can at times make it difficult for the Shuttle to stay on schedule.

According to New Jersey Transit, the Shuttle volume, in and of itself does not warrant an exclusive bus lane along Audrey Zapp Drive. Factoring all bus volume may justify a bus

lane, however provision of sidewalks is a more cost-effective measure to improving Shuttle service. The cobblestone pavers on Audrey Zapp Drive should be preserved based on their historic importance within the Park.

During major events, roadways are closed to general vehicular traffic as well as to the Shuttle. Contracted buses are sometimes used to shuttle people between event parking areas or the HBLRT station. However, when contracted buses are not provided, the walk to special events from the HBLRT station and other points may be difficult for many individuals. Furthermore, if an event is poorly publicized, it may not be possible for Park attendees to know in advance that the Shuttle is not operating. It should be noted, however, that the existing capacity of the 305 Shuttle is not sufficient to handle large numbers of people at one time, such as would be required to handle attendance at many special events.

Stops on the line include:

- Liberty State Park Light Rail Station
 - Liberty Science Center
 - CRRNJ Museum
 - Ferry Terminals
 - Interpretive Center
 - Park Office
- * Passengers who board the Shuttle receive a “Day Pass” good for unlimited rides throughout the Park on the day of issue. On weekends, family fares permit an adult to take two children for free. Holders of NJ Transit Monthly Light Rail or Bus Passes ride for free.

CHAPTER 6 – PROJECTED INTERNAL DEVELOPMENT

6.1 Introduction

The purpose of this chapter is to establish internal development scenarios for the horizon years 2005 and 2015. Attendance projections and visitor behavior were analyzed to determine future traffic patterns within the Park. This analysis was utilized to develop a carrying capacity for the Park.

6.2 Liberty State Park Attendance

1. Overall Attendance

Overall Park attendance rose steadily throughout the middle 1990s experiencing a 7.5% annual rate of change from 2,831,900 visitors in 1994 to 4,326,357 visitors in 2000. This change represents nearly a 35% overall increase in attendance.

Projected expansion of the Liberty Science Center and Ellis Island coupled with the growing residential and office market in Downtown Jersey City will bolster Liberty State Park's customer base in the next decade. Furthermore, the impending connection of the HBLRT to Hoboken Terminal and increased ferry usage will provide better access for Park patrons traveling without vehicles. It is apparent that the combination of increased Park attractions and better mass transit options will have an effect on attendance increases throughout the decade.

Recent estimates from the New Jersey Park Service indicate a 3.5% increase in Park attendance between Fiscal Year 2000 and 2001 of 154,835 persons. This brings total visitor attendance figures for FY 2001 to 4,481,192. Utilizing this annual rate of change to project 2005 Park attendance, the projection indicates a 627,367 person increase in attendance to 5,108,559. A credible 2015 projection is difficult considering the potential effect of long term development in Liberty State Park and Downtown Jersey City. However, due to the projected increase in residential and office development at the Park's periphery as well as the expansion of facilities at Ellis Island, even a conservative 3.0% annual rate of change predicts visitor levels to reach 6,641,127.

TABLE 6.2.1 (Projected Liberty State Park Attendance)

| <i>Attendance Projections</i> | <i>FY 00</i> | <i>FY 01</i> | <i>2005</i> | <i>2015</i> | <i>2001 to 2005</i> | <i>2005 to 2015</i> | <i>Total Increase (2001-2015)</i> |
|-------------------------------|--------------|--------------|-------------|-------------|---------------------|---------------------|-----------------------------------|
| Liberty State Park | 4,326,357 | 4,481,192 | 5,108,559 | 6,641,127 | 3.50% | 3.00 | 50% |

2. Park Facilities and Activity Centers

Circle Line Ferry

According to numbers furnished by the DEP, the Circle Line Ferry experienced a 4.2% annual rate of change between 1994 (657,592) and 2000 (842,021). Between 1999 and 2000, attendance steadied and followed this pattern rising nearly 4% (33,412). Circle Line Ferry attendance represents all Ellis Island and Liberty Island visitors that travel

through the Park. Based on total attendance numbers acquired from Ellis Island and Liberty Island, the percentage of Circle Line users in 2000 that traveled through Liberty State Park was approximately 14%. Overall, Liberty Island experiences approximately two-thirds more visitors than Ellis Island. Of the 842,021 Circle Line attendees from the year 2000, this factor translates to approximately 278,000 Ellis Island visitors and 564,000 Liberty Island visitors.

In order to predict future Circle Line attendance, it is necessary to determine the effect of future Ellis Island redevelopment on ferry ridership. Based on projections from the Ellis Island Draft Environmental Impact Statement (DEIS), total attendance to both Ellis Island and Liberty Island will increase to 7.1 million by 2005, and 9.1 million by 2010. Between 2010 and 2015, it seems feasible that attendance to both facilities will increase, but will begin to level off. If a 12% visitor increase between 2010 and 2015 were applied to these facilities, instead of the 20% ratio utilized for the DEIS to measure the immediate impact of new construction, total attendance for Ellis Island and Liberty Island will reach 10,350,000 in 2015.

Based upon future development occurring on Ellis Island, the assumption in this report is that in 2005 and 2015, the Circle Line will capture 25% of total Ellis Island and Liberty Island visitors. According to this calculation, 1,775,000 visitors will travel through Liberty State Park to reach the Circle Line in 2005 and 2,587,500 attendees will do the same in 2015.

If a managed access bridge to Ellis Island were constructed by 2005 from a location in Liberty State Park, and a 5% increase of Ellis Island attendees is assumed for 2005 and 2015, the bridge will positively effect Ellis Island attendance by 88,750 in 2005 and 129,375 in 2015. Essentially, the addition of a managed access bridge will increase patronage to Ellis Island by providing a flexible pedestrian connection to Ellis Island for those wishing not to travel by ferry. A 5% increase in Ellis Island patrons would increase total attendance to 1,863,750 in 2005 and 2,716,875 in 2015 and enhance the potential capacity of the Circle Line Ferry. Increased attendance from the managed access bridge is reflected in the total Circle Line Ferry visitor numbers.

TABLE 6.2.2 (Projected Ellis Island / Liberty Island Attendance)

| <i>Attendance Projections</i> | 2001 | 2005 | 2015 |
|--------------------------------------|-------------|-------------|-------------|
| Ellis Island | 2,000,000 | 2,500,000 | 3,450,000 |
| Liberty Island | 3,900,000 | 4,600,000 | 6,900,000 |
| Total | 5,900,000 | 7,100,000 | 10,350,000 |
| 25% Ratio (Total EI & LI) | 2001 | 2005 | 2015 |
| Circle Line Attendance | *842,021 | 1,775,000 | 2,587,500 |
| Managed Access Bridge | | 1,863,750 | 2,716,875 |

* 842,021 (actual DEP visitor data) is 14% of total visitors to Ellis Island & Liberty Island

Liberty Science Center

Improvements to the Science Center and projected increases in Park attendance will have a positive effect on patronage within the decade. In order to predict Liberty Science Center attendance levels for 2005, a ratio projection model based on total attendance

within Liberty State Park was utilized. The assumption in this projection is that the ratio of Liberty Science Center visitors to total Park attendees will remain stable into the future. Essentially, the percentage of Park users that participate in a specific activity will remain constant, but total attendance levels for that attraction will rise based on the increased number of total patrons visiting the Park. The model in fact exhibits a 15% increase between 2000 and 2005 from 681,919 to 805,209 visitors. Between 2010 and 2015 attendance projections level off, but continue to increase at a rate of 23% to 1,046,772 visitors.

CRRNJ Terminal

The CRRNJ Terminal experienced a minimal drop of 1% in attendance from 778,370 in 1999 to 769,620 in 2000, but is a stable attraction for the Park. Utilizing the ratio projection model, 2005 estimates point to an increase in patronage from 769,620 to 908,767 followed by another increase during the next 5 years to 1,181,397 in 2015.

Interpretive Center

The Interpretive Center experienced a 23% increase in total patrons to 25,425 in 2000. Approximately 10,000 to 12,000 of these visitors arrive for organized programs. Applying the ratio projection of total Interpretive Center visitors to attendance levels at the Park, patronage should increase to 30,022 by 2005 and 39,028 by 2015. There are no plans to expand the Interpretive Center, but the Inner Park nature preserve should also bring patrons to the facility.

Recreational Visitors

The recreational visitors category represents the difference between total Park visitors and annual attendance levels reported from the four major Park activities. Calculation of these numbers should be taken with care considering that 50% of weekday and weekend Park patrons visit more than one Park activity in the same visit. For example, in 2005 and 2015 when Circle Line attendance is slated to rise based upon Ellis Island’s redevelopment, recreational visitors will not necessarily decrease. Instead, more visitors to the Park will participate in dual activities.

TABLE 6.2.3 (Projected Park Attendance by Activity)

| <i>Attendance Projections</i> | <i>2000</i> | <i>2005</i> | <i>2015</i> | <i>% LSP Total</i> |
|-------------------------------|------------------|------------------|------------------|--------------------|
| Circle Line | 842,021 | 1,775,000 | 2,587,500 | 38.96% |
| Liberty Science Center | 681,919 | 805,209 | 1,046,772 | 15.76% |
| CRRNJ Terminal | 769,620 | 908,767 | 1,181,397 | 17.79% |
| Interpretive Center | 25,425 | 30,022 | 39,028 | 0.59% |
| Recreational Visitors | 2,007,372 | 1,589,561 | 1,786,429 | 26.90% |
| Total LSP Attendance | 4,326,357 | 5,108,559 | 6,641,127 | 100% |

TABLE 6.2.4 (Projected Park Attendance : Managed Access Bridge)

| <i>Attendance Projections</i> | <i>2000</i> | <i>2005</i> | <i>2015</i> | <i>% LSP Total</i> |
|-------------------------------|------------------|------------------|------------------|--------------------|
| Circle Line | 842,021 | 1,863,750 | 2,716,875 | 40.91% |
| Liberty Science Center | 681,919 | 805,209 | 1,046,772 | 15.76% |
| CRRNJ Terminal | 769,620 | 908,767 | 1,181,397 | 17.79% |
| Interpretive Center | 25,425 | 30,022 | 39,028 | 0.59% |
| Recreational Visitors | 2,007,372 | 1,500,811 | 1,657,054 | 24.95% |
| Total LSP Attendance | 4,326,357 | 5,108,559 | 6,253,002 | 100% |

6.3 Visitor Behavior

Following is a summary of the Visitor Survey section of the 1990 report. Visitor behavior patterns highlighted in the 1990 report are assumed to be similar to current practice, although the Liberty Science Center has surely had an effect on the types of trips visitors take to the Park. In general, sporadic weekday visitors continue to use the Park for exercise and recreation, while night or weekend visitors are drawn at more specific hours to special events, attractions and the Park atmosphere. The inception of the Liberty Science Center enhances Liberty State Park’s position as a regional weekday and weekend draw. However, survey data from the 1990 report concerning where visitors come from, how and when they arrive and where they travel when they arrive, should still be considered. What remains unchanged since 1990 is the fact that the majority of Park visitors reach the Park by vehicle and utilize Interchange 14C or 14B of the New Jersey Turnpike. Internal development scenarios, developed later in the chapter, will better analyze the effect of development within and around the Park on visitor behavior.

1. Weekday with an Event

About 20% of visitors to Liberty State Park were from states other than New Jersey. Approximately half of this total came from areas east of the Hudson River (primarily New York City) as opposed to other states in the region. In New Jersey, 17% of Park patrons traveled from south, central or western areas of the state. In the New York metropolitan area, 23% of visitors hailed from Morris, Passaic, Union and Essex counties. Approximately 11% of the total hailed from Bergen County and 28% from Hudson County. Within Hudson County, 16% were Jersey City locals, 6% were from Bayonne, and the remaining 7% were from other areas within Hudson County.²²

TABLE 6.3.1 (Visitor Distribution -Event)

| <i>Visitor Distribution (with an event)</i> | |
|---|-----|
| South Central & Western New Jersey | 17% |
| Morris, Passaic, Union & Essex | 23% |
| Bergen County | 11% |
| Jersey City | 16% |
| Bayonne | 6% |
| Remainder Hudson County | 7% |
| Outside New York Metro | 10% |
| East of the Hudson River | 10% |

²² Liberty State Park Transportation Master Plan (1990)

2. Weekday with No Event

On a weekday with no event occurring at the CRRNJ Terminal, the proportion of visitors from Jersey City increased to 46%. Out of state visitation levels increased to 24%, with the majority of this population from areas outside the New York region. The remaining 30% of visitors were divided evenly between visitors hailing from the south, central or western areas of the State, Morris, Passaic, Union and Essex Counties and Bergen County.²³

TABLE 6.3.2 (Visitor Distribution – No Event)

| <i>Visitor Distribution (with no event)</i> | |
|---|-----|
| South Central & Western New Jersey | 10% |
| Morris, Passaic, Union & Essex | 10% |
| Bergen County | 10% |
| Jersey City | 46% |
| Outside New York Metro | 24% |

3. Patron Arrival Rates

Group visitors to Liberty State Park average about 3.2 persons per group. Few people arrived alone; many came in groups of 2 people, and less than 2% came in a group of 7 or more. About 19% of all visitors were 16 years of age or younger.²⁴

TABLE 6.3.3 (Visitor Arrival - Weekend)

| <i>Average Weekend (with an event)</i> | |
|--|-----|
| People Arrived Alone | 3% |
| People Arrived in Groups of 2 | 28% |
| People Arrived in Groups of 3 | 15% |
| People Arrived in Groups of 4 | 19% |
| People Arrived in Groups of 5 or More | 34% |

* 3.2 People per Vehicle (on average)

TABLE 6.4.4 (Visitor Arrival - Weekday)

| <i>Average Weekday (with no event)</i> | |
|--|-----|
| People Arrived Alone | 10% |
| People Arrived in Groups of 2 | 29% |
| People Arrived in Groups of 3 | 20% |
| People Arrived in Groups of 4 | 15% |
| People Arrived in Groups of 5 or More | 26% |

* 2.6 People per Vehicle (on average)

²³ Liberty State Park Transportation Master Plan (1990)

²⁴ ibid

4. Places Visited

On the weekend, 89% of all visitors came to the Park directly from home, and 81% went from the Park directly to home. On a weekday, 54% came directly from home, and 54% went directly home from the Park.

Of those who made stops in places other than Liberty State Park before or after visiting the Park, slightly less than half went shopping, ate a meal, or visited friends or relatives. About one fifth of non-Park stops were in New York City, one quarter to one third were in New Jersey, and only 5% were out of the area.

Those visiting other destinations within the Park were generally involved in sightseeing. However, one quarter of those surveyed also stopped elsewhere within the Park or at the Statue of Liberty. About half of all visitors traveled to more than one location within the Park.

Between 60% and 70% of weekend visitors and 75% of weekday patrons that were surveyed visit the Park at other times. In general, weekday visitors perform regular visits to the Park, averaging 3 trips per week. Of weekend visitors that had been to the Park before, visitation occurred about once every 3 weeks. The average frequency of visits for all weekend patrons was 11 trips per year. For those surveyed that had previously visited the Park, the average frequency of trips rose to 17. Regular weekday patrons provide the greatest amount of return visits from 100 to 150 times per year.

About 60% of frequent weekend visitors indicated being attracted to special events in the Park. When asked about future Park visits, only 3% said “No” and 2% “Maybe”. Of those visitors who would return to the Park, 32% base their decisions on special events, 21% on general activities, and 41% on a combination of special events and general recreation.²⁵

TABLE 6.4.4 (Visitor Trip Distribution)

| | |
|--|-----|
| <i>Weekend Visitors to Liberty State Park</i> | |
| Arrived Directly from Home | 89% |
| Returned Directly to Home | 81% |
| Visited Statue of Liberty and Park | 25% |
| Visited More than One Attraction in the Park | 50% |
| Visited the Park Before (Average 1 trip / 3 weeks) | 67% |
| <i>Weekday Visitors to Liberty State Park</i> | |
| Arrived Directly from Home | 54% |
| Returned Directly to Home | 54% |
| Visited the Park Before (Average 3 trips / week) | 75% |

²⁵ Liberty State Park Transportation Master Plan (1990)

5. Trip Characteristics

Only 2% of respondents did not have a car available for trips to the Park (but note that if transit were more readily available, more transit dependent visitors might come).

About 2% of visitors indicated walking or biking to the Park. Charter or regular bus brought 2% of visitor groups, but 5% to 15% of people entering the Park. People entering the Park as auto drivers or passengers varied from 84% (with a high charter bus proportion) to 93%.²⁶

TABLE 6.4.5 (Mode of Visitor Arrival)

| <i>Trip Characteristics to Liberty State Park</i> | |
|---|-----------|
| Walked or Biked | 2% |
| Charter Bus or Transit Bus | 5% - 15% |
| Automobile (Without a Special Ferry Service) | 84% - 93% |
| Automobile | 77% |
| Special Ferry Service | 7% |

5. Time Characteristics

On a weekday, visitor arrivals are spread throughout the day, with the majority of departures occurring in the afternoon and evening hours. The average length of stay was 2 ½ hours, although shorter times were frequently observed.

Weekend visits are also sporadic, but correspond to special event times. Peak departure times occur during the dinner hour (5 PM to 7 PM) and with the closure of special events. The duration of stay during a weekend averaged slightly less than 3 hours.²⁷

6.4 Park Trip Distribution

Home to work trips: Work trips to each Park attraction were distributed based on households and travel time. Participation factors limited travel time to 75 minutes, and reduced attraction from east of the Hudson River.

Non-home origin trip: The distribution of trips from areas other than home (lunch hour / after-work trips) were based on employment and travel time. Participation factors limited these trips to nearby surrounding areas.

Home pattern A (local neighborhood): For attractions like fishing and some general visitation, factors reflected income level and auto availability. This also restricted these trips to Jersey City.

Home pattern B (other local trips): This pattern uses households and travel time. Trips are restricted to Hudson County, the Meadowlands area and the Palisades area. This

²⁶ Liberty State Park Transportation Master Plan (1990)

²⁷ *ibid*

reflects a higher visit rate from these areas to attractions such as the Liberty Science Center and the Interpretive Center (for example, school trips).

Home pattern C (sub-regional): Based on households and travel time. Households are restricted by income, and travel time to 60 minutes. Trips from east of the Hudson River were also reduced. Attractions in this pattern include the Liberty Landing Marina and the Liberty Science Center.

Home pattern D (sub-regional): Using households and travel time as variables, this pattern was somewhat less restrictive in travel time limits and the reduction of trans-Hudson trips. This pattern is applied to CRRNJ Terminal events.

Home pattern E (regional): All zones included, using households and travel time as variables. Used for regional attractions, such as Circle Line Ferry for Ellis and Liberty Island.²⁸

6.5 Trip Generation

The number of trips for attractions in Liberty State Park was estimated. Trip levels were computed for each hour of the day, each day of the week (weekend or weekday) and each season of the year (summer, non-summer). Further, trips were separated by distribution pattern (described previously), and divided by persons in vehicles, private vehicles, and special modes (ferry, charter bus, school bus, walk) in certain cases.

The “base case” focuses on trips to each attraction, and accumulation of these trips for peak approach, departure, and accumulation analyses. Later detailed adjustments were made for new intra-park trips and internal pattern or time changes due to parking insufficiency, internal circulation system enhancements, attraction interaction trip inducements, special access such as walkways or ferries, and similar details.²⁹

6.6 Transit Mode Split and Auto Occupancy

Auto occupancy for all park visitors was estimated from the 1990 survey of park visitors as well as literature reviews. An overall auto occupancy of 3.2 persons per vehicle was used for all visitor trips to Park attractions. For Park workers, an auto occupancy of 1.2 persons per vehicle was used for all visitor trips to Park attractions.

Transit mode split was assumed to be 0% for all uses, except for the Liberty Science Center, to estimate vehicle trips by time of day. This was done as a conservative approach to determine roadway and parking needs. Transit usage is heavily influenced by the availability and quality of transit service to the Park.³⁰

²⁸ Liberty State Park Transportation Master Plan (1990)

²⁹ *ibid*

³⁰ *ibid*

6.7 Park Carrying Capacity

Increased attendance poses the issue of carrying capacity and the ability of parking and infrastructure within the Park to handle visitors. The information included within the following tables offers a snapshot in time that determines the ability of Liberty State Park's roadways and related mass transit infrastructure to bring patrons into the Park. As the table below indicates, the three main points for vehicular entry allow an hourly volume of approximately 2,000 vehicles per hour into the Park. Based on weekend and weekday vehicle occupancy levels for Park visitors, approximately 19,200 passengers per hour on a weekend and 15,600 passengers per hour on a weekday may potentially enter the Park. The following assumptions were considered in the carrying capacity analysis of Liberty State Park :

Vehicles

- 2.6 people per vehicle (weekday)
- 3.2 people per vehicle (weekend)

HBLRT

- 8 HBLRT trains per hour (weekday)
- 8 HBLRT trains per hour (weekend)
- 4 HBLRT cars per hour
- 1 Ferry per hour (weekday)
- 1 Ferry per hour (weekend)

Bus

- 60 Bus parking capacity at the LSC
- 200 Bus parking capacity at the LSC

Shuttle

- 3 LSP Shuttles per hour

TABLE 6.7.1 (Access Roadways: Hourly Volume Rates)

| <i>Access Roadways</i> | <i>Roadway Capacity</i> | <i>Weekend</i> | <i>Weekday</i> |
|-------------------------------------|----------------------------|------------------------------|------------------------------|
| | <i>(vehicles per hour)</i> | <i>(passengers per hour)</i> | <i>(passengers per hour)</i> |
| Johnston Avenue | 2,000 | 6,400 | 5,200 |
| | | | |
| NJ Turnpike Interchange 14C | 2,000 | 6,400 | 5,200 |
| | | | |
| Morris Pesin Drive / Phillip Street | 2,000 | 6,400 | 5,200 |
| | | | |
| | 6,000 | 19,200 | 15,600 |

During a large-scale weekday or weekend event, the amount of potential vehicles (6,000 vph) exceeds total available spaces (5,840 spaces). However, the addition of parking at the Science Center (1,864 spaces) and shared parking at the HBLRT lot (3,500 spaces) provides the capacity necessary to handle the overflow demand (9,340 spaces).

TABLE 6.7.1 (On-Park Parking Totals to Passenger Totals)

| <i>Parking Facility</i> | <i>Parking Capacity</i> | <i>Weekend (passenger totals)</i> | <i>Weekday (passenger totals)</i> |
|--|-------------------------|---|---|
| Liberty Landing Marina / Liberty House Restaurant | 750 | 2,400 | 1,950 |
| CRRNJ Terminal (WTC Memorial, Circle Line Ferry) | 1,000 | 3,200 | 2,600 |
| CRRNJ Terminal - North Field | 144 | 461 | 374 |
| Playground | 172 | 550 | 447 |
| Interpretive Center | 90 | 288 | 234 |
| Welcome Center / Park Office / Morris Pesin Drive Lots | 1,020 | 3,264 | 2,652 |
| Dog Field | 800 | 2,560 | 2,080 |
| Total Available On-Park Parking | 3,976 | 12,723 | 10,338 |
| | | | |
| Liberty Science Center | 1,864 | 5,965 | 4,846 |
| Total Available On-Park Parking | 5,840 | 18,688 | 15,184 |
| | | | |

TABLE 6.7.2 (On-Park and Off-Park Parking Totals to Passenger Totals)

| | | | |
|---|--------------|---------------|---------------|
| Total Available On-Park Parking | 3,976 | 12,723 | 10,338 |
| | | | |
| Liberty Science Center | 1,864 | 5,965 | 4,846 |
| HBLRT Station Parking Lot | 3,500 | 11,200 | 9,100 |
| Total On-Park Plus Off-Park Parking with Expansion | 9,340 | 29,888 | 24,284 |

In order to determine true Park carrying capacity, mass transit options must be factored into the analysis. Assuming full capacity of the HBLRT, ferries, the Liberty State Park Shuttle and charter buses at an hourly rate, the Park is able to accommodate 46,000 visitors on a weekend day and over 40,000 visitors on a weekday. Based on the amount of visitors that can be accommodated by mass transit, the carrying capacity analysis legitimizes the viability of mass transit as an option to access Park activities and as a remedy to heavy traffic experienced during busy weekends and special events. If parking were expanded at the LSC and the HBLRT, potential overflow of vehicles could be accommodated. Calculating potential mass transit visitors to the Park and adding this to total vehicle volume determines the carrying capacity of Liberty State Park.

TABLE 6.7.3 (Park Carrying Capacity)

| <i>Transit (HBLRT)</i> | <i>HBLRT Capacity</i> | <i>Weekend</i> | <i>Weekday</i> |
|---|-------------------------------|------------------------------|------------------------------|
| | <i>(passengers per train)</i> | <i>(passengers per hour)</i> | <i>(passengers per hour)</i> |
| | 240 | 1,920 | 1,920 |
| | | | |
| <i>LSP Shuttle - 305</i> | <i>Bus Capacity</i> | <i>Weekend</i> | <i>Weekday</i> |
| | <i>(passengers per bus)</i> | <i>(passengers per hour)</i> | <i>(passengers per hour)</i> |
| | 20 | 60 | 60 |
| <i>Ferries (Circle Line, Liberty Park Water Taxi)</i> | <i>Ferry Capacity</i> | <i>Weekend</i> | <i>Weekday</i> |
| | <i>(passengers per ferry)</i> | <i>(passengers per hour)</i> | <i>(passengers per hour)</i> |
| | 564 | 564 | 564 |
| | 500 | 500 | 500 |
| | 80 | 160 | 160 |
| | | | |
| <i>Charter/Private Buses</i> | <i>Bus Capacity</i> | <i>Weekend</i> | <i>Weekday</i> |
| | <i>(passengers per bus)</i> | <i>(passengers per hour)</i> | <i>(passengers per hour)</i> |
| | 50 | 3,000 | 3,000 |
| | 50 | 10,000 | 10,000 |
| | | | |
| CARRYING CAPACITY OF LIBERTY STATE PARK | | 46,092 | 40,488 |

CHAPTER 7 – IMPACTS OF DEVELOPMENT

7.1 Introduction

As more varied facilities are developed within and around the Park, the number of visitors will increase. When analyzing residential, commercial, or office development, very repetitive patterns are seen. The morning and afternoon peak period trip volumes and directions do not vary greatly from one weekday to another. In a park environment, however, use of facilities and demand for Park services varies by weather and time of day. Thus, care must be taken to determine a time period and demand condition to properly discuss impacts within the Park. The full development condition will not necessarily be the absolute peak condition, since peak demand for events like the July 4th celebration or Cirque de Soleil, occur once a year or on a limited basis. Events such as this should be considered in impact analysis, but may not justify major capital improvements.

To represent a reasonable demand for design, the summer weekend day full development condition will be evaluated. To place this level in perspective and assist with economic analysis of proposed investments, the summer weekday full development condition, and both conditions for the interim level of development will be compared with the higher level to determine comparative changes in facilities needed.

For these conditions, the heaviest inbound traffic flow hour, the heaviest outbound traffic flow hour and the hour with the greatest accumulation of people and vehicles within the Park will be evaluated. In all cases, a worst case (i.e. no transit diversion except for the Liberty Science Center) scenario in terms of auto use is assumed. This conservative approach was undertaken to ensure roadway facility and parking needs, were not underestimated.

For each analysis, the needs for external access improvements and the needs for internal access improvements, although analyzed together, will be presented separately. After considering the major elements of improvement needed, the necessary design details will be addressed, along with policy and cost implications of improvement proposals.³¹

7.2 Overall Impact Levels

During the summer season, Liberty State Park experiences about 3,000 entering vehicles on a typical Saturday and about 4,300 vehicles on a typical Sunday. On a summer holiday, vehicular traffic ranges from 2,300 vehicles to over 11,000 vehicles (4th of July in good weather).

By hour, inbound traffic peaks at about 500 vehicles between 2 PM and 3 PM on a heavy weekend day, and about 400 vehicles in the outbound peak during the 5 PM to 6 PM period. Therefore, the heaviest hourly traffic movement is in the order of 12% to 13% of the day's directional flow.

³¹ Liberty State Park Transportation Master Plan (1990)

The largest accumulation of vehicles generally occurs from 2 PM to 3 PM, with up to 800 vehicles parked in the available 1,438 spaces. On a summer weekday, traffic at the Park is about one third of weekend levels.

All visitation numbers are highly dependent on weather conditions and on what events are scheduled for a particular day and location. In addition to the effect on total daily visitation, a particular event may draw a large number of people for a comparatively short time span, while other events may have attendance spread throughout the day. For example, attendance at an all day show is diffused throughout the day, while an auction of specific items concentrates attendance at the sales time.

Future visitation was projected separately for the interim level of development (year 2005) and for the full development condition (year 2015). Weekend days and weekdays were also considered separately. The following discussion refers to summer conditions.³²

7.3 External Impacts

The impact of Park traffic on the surrounding infrastructure system depends on facilities available to carry this traffic, how much Park traffic will use those facilities, and what paths Park traffic will take to enter and leave the Park.

The resulting loadings were examined to locate points of congestion caused by Park traffic. Two locations of concern exist: the Interchange 14B area of the New Jersey Turnpike and the local Jersey City roads in the vicinity of Pacific Avenue. At all other locations, Park traffic sufficiently dissipated and did not cause excessive traffic loadings or congestion.

The proportion of traffic using Johnston Avenue to Audrey Zapp Drive from the northwest, or Bayview Avenue to Morris Pesin Drive in the southwest, is dependent on the origin of visitors, information on available routes to access the Park, directness and clarity of the entrance path, and congestion along the preferred route. Under future conditions, with no specific improvements or modifications, 44% of Park visitors enter at the northwestern portal in the summer on Sunday or weekday PM peak hour, and 36% leave by the northwestern portal. Considering that the Destination Jersey City signage program directs visitors to enter the Park at Interchange 14C and that many of the local signs related to the program direct traffic to Johnston Avenue, it seems feasible that the above percentage of Park visitors entering the Park from the northwest could actually increase in the future.

At the southwestern entrance, Caven Point Road can be used to access points south. Bayview Avenue / Morris Pesin Drive provides access to the Park from Interchange 14B on the Turnpike. With the straightening of Phillip Street and realignment with Caven Point Road, access will be much more direct and traffic congestion occurring at the traffic circle at Burma Road and Morris Pesin Drive will be eliminated.

³² Liberty State Park Transportation Master Plan (1990)

Without improvement, traffic on a summer Sunday or weekday PM peak hour would approach 80% of capacity at the southwestern portal.³³ With continued growth of visitors, peak hour volumes would exceed capacity.

7.4 Internal Impacts – Vehicular

The increase of vehicular traffic inside the Park will have an effect upon roads and intersections, especially at Phillip Street and Audrey Zapp Drive. Furthermore, the Park atmosphere must be maintained as much as possible. A balanced roadway system, without points of congestion or stretches of excess capacity is essential to proper traffic flow. Transit and pedestrian flows must be accommodated within the flows of private vehicles. Parking supply must be balanced by demand, without disruption to the Park setting and without excessive infrastructure investment. Improvements such as intersection enhancements and expansion of off-Park parking will be required to achieve such balance.³⁴

7.5 Internal Impacts – Parking

Parking demand at each lot within the Park was compared with supply at those locations for the time of maximum vehicle accumulation. In the future, improved parking management would aid supply and demand discrepancies between attractions. Additional parking should be placed at the Central Parking Facility adjacent to the Liberty Science Center or at the HBLRT lot to decrease traffic within the Park and ensure that paving of new lots does not occur within the Park. A parking system that includes large-scale garages on the periphery of the Park emphasizes the importance of the Park Shuttle system. As the table below exhibits, major activity centers within the Park lie outside the range of accepted walking distance, which is generally a quarter mile. The majority of vehicular traffic would attempt to find parking adjacent to a desired activity unless positive alternatives, such as a reliable Shuttle or well designed pedestrian paths, are present to deter complete reliance on vehicles. Below are the approximate walking distances between several of the Park’s major attractions:³⁵

TABLE 7.5 (Walking Distances Between Activity Areas (feet))

| | <i>Liberty Science Center</i> | <i>Interpretive Center</i> | <i>South Overlook</i> |
|------------------------|-------------------------------|----------------------------|-----------------------|
| Interpretive Center | X | X | 1,000 |
| Liberty Science Center | X | 4,200 | 5,200 |
| CRRNJ Terminal | 6,000 | 6,000 | 7,000 |

*Note: 5,280 feet / mile

7.6 Internal Impacts – Pedestrian Movement and Needs

The DEP vision for internal Park circulation is to accommodate pedestrian traffic in the interior of the Park while keeping vehicles on perimeter roads. Roadways should be

³³ Liberty State Park Transportation Master Plan (1990)

³⁴ *ibid*

³⁵ *ibid*

limited to what is in existence and pedestrian routes should be enhanced. In this sense, potential development and infrastructure improvements within Liberty State Park should keep in mind the wide separation of attraction areas within the Park.

In order to fulfill the DEP vision for the Park, pedestrian walkability and the Shuttle system are essential players. Better pedestrian connections to Downtown Jersey City by way of the HRWW should enhance pedestrian traffic within the Park. However, unpleasant walking distances between activity centers, typically those greater than a quarter mile (10 minutes) increases the demand for automobile use and has the potential to produce unwanted traffic. Due to the regional popularity of the Park, automobile use will always be a popular choice. The goal then is to provide incentives for pedestrian travel in the form of better connections to Downtown Jersey City, improved pedestrian entrypoints as well as streetscape and sidewalk enhancements within the Park.

1. Pedestrian Walkability

Pedestrian walkability between various Park activities is complicated due to Liberty State Park's scale. Furthermore, significant numbers of mass transit riders (ferry, bus and light rail) have access to the Park and need to be able to reach activities without an automobile. Separation of major activity centers, such as the Liberty Science Center from the CRRNJ Terminal, increases the demand for auto circulation within the Park and places importance on an internal circulation system that combines auto access, shuttle service and pedestrian movement.

In order to preserve the Park environment for pedestrians while supporting current activity centers, auto and pedestrian traffic must coexist. It is therefore important to provide safe and comfortable sidewalks as well as other pedestrian connections or paths between Park activities. Although many Park users rely on the automobile, pedestrians should be accommodated within the Park by way of wide sidewalks, noticeable crosswalks and streetscaping improvements to instill a safe and comfortable walking environment.³⁶

2. Propensity to Walk

Following are some general assumptions concerning pedestrians and the willingness to travel on foot between certain activities.

- Under 1,400 feet (5 – 7 minutes)
For distances under 1,400 feet almost all pedestrians will choose to walk even if it is possible to drive.
- 1,400 to 3,000 feet (10 – 15 minutes)
Between 1,400 to 3,000 feet humans will walk only if it is the obvious choice. For young children and elderly persons who have more difficulty walking long distances, well designed walkways with benches and resting points make this possible.

³⁶Liberty State Park Transportation Master Plan (1990)

Also important are design elements that provide a comfortable walking environment and promote foot travel. Elements like proper landscaping, shade trees and protection from the wind, not only make a comfortable walk, but assure pedestrians that walking is a good option. Put simply, if foot travel does not appear inviting, most will choose to drive instead of walk.

– 3,000 feet to 1 mile (10 to 30 minutes)

Trips between 3,000 feet and 1 mile will discourage most pedestrians from walking. Unless design elements are used to provide an incentive to walk, most pedestrians will choose to drive or take transit. Exceptions may occur during special events like sporting events or concerts in which pedestrians travel from remote parking. Football games and concerts generally draw younger, more able walkers. In these cases, patrons are willing to walk longer distances. If shuttle service is provided at a special event, patrons will likely take advantage of the service, even at a relatively short distance.

– Greater than 1 mile (20 to 30 minutes)

For distances greater than 1 mile, few pedestrians will choose to walk unless no alternative transit exists or a recreational walk is the main objective.

In Liberty State Park, where recreation is a major reason for attendance, pedestrians may be willing to walk increased distances. In essence, the combination of proper design and the Park's presence as a recreation area provides an opportunity to utilize foot traffic as an important part of the internal circulation program.

The large amount of space between activities within Liberty State Park makes it necessary to combine Shuttle service and pedestrian movement. Bicycles should also be promoted as an alternative form of transportation, and bike lanes could be provided along pedestrian walks.³⁷

³⁷ Liberty State Park Transportation Master Plan (1990)

7.7 Parking Analysis

TABLE 7.7.1 (Total Parking: Expanded Central Parking Facility)

| Parking Location | Address / Intersection | Capacity | Type |
|--|----------------------------------|-----------------|-----------------------|
| Liberty Science Center | Communipaw Ave. & Phillip Street | 1,864 | Cars -\$5.00 all day |
| | | 60 | Buses |
| Boat Launch | Morris Pesin Drive & Hart Drive | 70 | Cars - Free |
| General Parking | Morris Pesin Drive | 125 | Cars - Free |
| General Parking | Morris Pesin Drive | 200 | Cars - Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 230 | Cars - Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 320 | Cars - Free |
| Interpretive Center | Freedom Way | 90 | Cars - Free |
| Green Park Lot | Freedom Way | 172 | Cars - Free |
| CRRNJ Terminal | Audrey Zapp Drive | 1,000 | Cars - \$5.00 all day |
| | | 50 | Buses - \$10.00 buses |
| CRRNJ Terminal - North Field | Audrey Zapp Drive | 144 | Cars - Free 2 Hr. |
| Liberty Landing Marina | Audrey Zapp Drive | 750 | Cars -\$5.00 all day |
| Total Spaces | | 4,965 | Cars |
| | | 110 | Buses |

TABLE 7.7.2 (Parking Totals: Weekend HBLRT Shared Parking)

| Parking Location | Address / Intersection | Capacity | Type |
|--|----------------------------------|-----------------|-----------------------|
| Liberty Science Center | Communipaw Ave. & Phillip Street | 1,107 | Cars -\$5.00 all day |
| | | 25 | Buses |
| Boat Launch | Morris Pesin Drive & Hart Drive | 70 | Cars - Free |
| General Parking | Morris Pesin Drive | 125 | Cars - Free |
| General Parking | Morris Pesin Drive | 200 | Cars - Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 230 | Cars - Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 320 | Cars - Free |
| Interpretive Center | Freedom Way | 90 | Cars - Free |
| Green Park Lot | Freedom Way | 172 | Cars - Free |
| CRRNJ Terminal | Audrey Zapp Drive | 1,000 | Cars - \$5.00 all day |
| | | 50 | Buses - \$10.00 buses |
| CRRNJ Terminal - North Field | Audrey Zapp Drive | 144 | Cars - Free 2 Hr. |
| Liberty Landing Marina | Audrey Zapp Drive | 750 | Cars -\$5.00 all day |
| HBLRT Lot | Johnston Ave. | 1,300 | *Cars -\$5.00 all day |
| Total Spaces | | 5,508 | Cars |
| | | 75 | Buses |

* Light Rail Ticket is required w/ parking ticket

TABLE 7.7.3 (Parking Totals: Central Parking Facility & Expanded HBLRT lot)

| <i>Parking Location</i> | <i>Address / Intersection</i> | <i>Capacity</i> | <i>Type</i> |
|--|----------------------------------|---------------------|--|
| Liberty Science Center | Communipaw Ave. & Phillip Street | 1,864 60 | Cars -\$5.00 all day Buses |
| Boat Launch | Morris Pesin Drive & Hart Drive | 70 | Cars - Free |
| General Parking | Morris Pesin Drive | 125 | Cars - Free |
| General Parking | Morris Pesin Drive | 200 | Cars - Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 230 | Cars - Free |
| Fishing Piers / Park Office / U.S. Liberation Monument | Morris Pesin Drive & Freedom Way | 320 | Cars - Free |
| Interpretive Center | Freedom Way | 90 | Cars - Free |
| Green Park Lot | Freedom Way | 172 | Cars - Free |
| CRRNJ Terminal | Audrey Zapp Drive | 1,000 50 | Cars - \$5.00 all day Buses - \$10.00 buses |
| CRRNJ Terminal - North Field | Audrey Zapp Drive | 144 | Cars - Free 2 Hr. |
| Liberty Landing Marina | Audrey Zapp Drive | 750 | Cars -\$5.00 all day |
| HBLRT Lot | Johnston Ave. | 3,500 | *Cars -\$5.00 all day |
| <i>Total Spaces</i> | | <i>8,465</i> | <i>Cars</i> <i>110 Buses</i> |

* Light Rail Ticket is required w/ parking ticket

CHAPTER 8 – EXTERNAL ACCESS IMPROVEMENTS

8.1 Introduction

The increased popularity of Park attractions and development of the Downtown Jersey City Waterfront places added pressure on the New Jersey Turnpike and local streets in the vicinity of the Park. The following recommendations ease vehicular access to or from the Park and the New Jersey Turnpike. In the future, improved mass transit service as well as bicycle and pedestrian connections from Downtown Jersey City to the Park may aid congestion and reduce the necessity of auto access to the Park. The following section refers to the enclosed map, *Existing & Future Transportation Infrastructure (2015)*. Each infrastructure improvement or access issue included on the map is complete with a number that corresponds to a specific description within the report. The following timetable highlights infrastructure improvements occurring in the near future and within horizon years 2005 and 2015.

TABLE 8.1.1 (Future External Access Improvements)

| <i>Future Infrastructure</i> | | |
|---|--------------------|------------------|
| <i>Project</i> | <i>Status</i> | <i>Completed</i> |
| Interchange 14B | No Improvement | |
| Caven Point Road Realignment | Complete | 2000 |
| HBLRT Hoboken | Under Construction | 2002 |
| HBLRT Weehawken | Approved | 2003 |
| HBLRT Bayonne 22nd St. | Approved | 2003 |
| Interchange 14C Signage | Proposed | 2005 |
| Columbus Boulevard / Grand St. Exit | Approved | 2005 |
| HBLRT N. Bergen / Ridgefield | Approved | 2005 |
| Ferry Service | Potential | 2005 |
| Jersey Avenue Extension | Potential | 2015 |
| Jersey Avenue Footbridge (55 Lot, Dev., LLC) | Potential | 2015 |
| Route 185 Extension | Proposed | 2015 |

8.2 Southwestern Entry

1. Interchange 14B

Interchange 14B of the Hudson County Extension of the New Jersey Turnpike experiences heavy flow from trucks accessing Liberty Industrial Park and the Greenville Industrial Park. Truck traffic from the Peninsula at Bayonne Harbor will have access via Route 185/Caven Point Road and Interchange 14B. Widening of Caven Point Road to match Route 185 will be necessary in the future.

2. Caven Point Road Realignment

The northern end of Caven Point Road between the Peninsula at Bayonne Harbor and Morris Pesin Drive is being realigned to the northwest, closer to the Hudson County

Extension of the Turnpike, to make room for the Port Liberte` golf course. This northern section of Caven Point Road was not designed to accommodate heavy truck traffic. Truck traffic from the Peninsula at Bayonne Harbor may utilize Route 185/Caven Point Road as a direct connection from Turnpike Interchange 14B. The Port Authority and NJDOT predict that use of this route by truck traffic will be heavy. A study of Caven Point Road will be added to the current Portway Study. The Portway Study will also investigate other alignment alternatives for Route 185. The Portway Study will study the implications of these various alignments as well as the extension of Route 185 and Caven Point Road.

3. Route 185 Extension

Drivers wishing to access the New Jersey Turnpike at Interchange 14B or Liberty State Park from Route 185, must weave their way through Caven Point. As traffic grows in the future, there will be a need to improve the flow along the route. The Route 185 Alternatives are designed to improve the traffic flow between Linden Avenue and Bayview Avenue. It is being designed with signalized intersections at Linden Avenue and Chapel Avenue. There will be no driveway access along Route 185.

Route 185 is classified as an urban arterial and connects Route 169 with Linden Avenue. The 4-lane highway is approximately 1 mile long. Heavy trucks make a significant contribution to the traffic in the area. Numerous large industries and port facilities generate the traffic. To reach the northern parts of Hudson County, New York, or the Turnpike, truckers are currently using Caven Point Road to Interchange 14B. Automotive traffic mainly consists of motorists who are employed at the commercial industries located in the area. There is some traffic resulting from the Port Liberte` Ferry to Lower Manhattan.

Truck traffic is projected to increase over the next decade. Dredging the channels will enable larger container ships to dock at the Peninsula at Bayonne Harbor. The City of Jersey City realizes that Route 185/Caven Point Road is an ideal route for truck traffic from the Peninsula at Bayonne Harbor heading to Turnpike Interchange 14B. With residential and commercial development in the area, automotive traffic in the area will increase. Proposed future extensions of the Hudson River Waterfront Walkway along Caven Point and Port Liberte` should generate additional pedestrian and bicyclist traffic along Chapel Avenue.

There are several design alternatives being studied by NJDOT. All of the alternatives incorporate a 4-lane section of Route 185. Caven Point Road, which has been realigned, will remain a 2-lane section at its intersection with Morris Pesin Drive.

The following recommendations should be incorporated into any design scheme for improvements to Route 185. Firstly, Route 185 / Caven Point Road should have 4 lanes to accommodate for future increases in traffic. Caven Point Road should be vacated between Chapel Avenue and the proposed Golf Course Access Road. Southbound Caven Point Road / Route 185 intersection with the proposed Golf Course Access Road might require a left turn lane. Route 185 / Caven Point should have a wide outside lane (15

feet) or a shoulder for bicyclists. A sidewalk should be constructed along Chapel Avenue to protect pedestrians traveling between the residential areas west of the Turnpike and the proposed Hudson River Waterfront Walkway. The intersection of Route 185 with Chapel Avenue should have pedestrian signal heads and phasing as well as sidewalks and bicycle lanes.

8.3 Northwestern Entry

1. Interchange 14 C

The New Jersey Turnpike Authority is revising the signage for Liberty State Park and the Liberty Science Center, by directing motorists traveling toward the Holland Tunnel to Interchange 14C rather than Interchange 14B. Proposals exist to construct a full interchange at 14C to allow traffic from New York City the ability to exit at the interchange. Despite the benefits of the project for direct access to the Park, the endeavor is not in the current plans of the New Jersey Turnpike Authority. Interchange 14C will remain a partial interchange and westbound traffic from New York City will continue to be directed to Interchange 14B for access to the Park.

2. Grand Street Exit

The New Jersey Turnpike Authority is investigating improvements to the Grand Street Exit off the Turnpike. Enhancements will include a longer deceleration lane from the Turnpike coupled with a newly designed ramp to allow direct access to Christopher Columbus Boulevard for connections to Downtown Jersey City. The current configuration of the exit ramp does not offer immediate access to Grand Street or Montgomery Street. Vehicles must complete two left turns upon exiting the Turnpike in order to travel southbound for access to Grand Street.

3. Columbus Boulevard

The City of Jersey City is planning to widen Columbus Boulevard to accommodate four travel lanes and a median, as well one parking lane in each direction. Parking will be prohibited during AM and PM peak hours. Beautification funding for necessary streetscape improvements is included in the plan.

4. Pacific Avenue, Center Street, Grand Street

The City of Jersey City is considering reconfiguration of the Pacific Avenue / Grand Street intersection by way of a connector from Pacific Avenue to Center Street behind the existing gas station at Pacific Avenue and Grand Street.

5. Communipaw Avenue

Extension of Communipaw Avenue under the New Jersey Turnpike to Jersey City Boulevard is unnecessary considering the presence of Wilson Street as a link between the HBLRT parking lot and Jersey City Boulevard.

8.4 Intelligent Transportation Systems (ITS)

Utilizing Interchange 14C of the Hudson County Extension of the New Jersey Turnpike improves access to LSC. Information from the NJTPK operations center should also be disseminated to Park patrons. At the approach to Interchanges 14B and 14C, Dynamic Message Signs (DMS) should be used to direct traffic to the appropriate exit during congested times, inform travelers of special events and warn drivers of full parking areas. Currently, NJDOT has DMS on the Pulaski Skyway. These signs could be used to inform travelers of LSP events. Highway Advisory Radio (HAR) should also be used as a means to inform the public of events and traffic within LSP. The NJTPK operates at 590 AM, but signal range limitations exist due to the topography of the Jersey City area. A Highway Advisory Radio transmitter could be installed for coverage of the entire Park area, operated jointly by the New Jersey Turnpike Authority or TRANSCOM along with the Park Service.

8.5 Jersey Avenue Extension

Proposals exist to extend Jersey Avenue across the Tidewater Basin to the intersection of Audrey Zapp Drive and Phillip Street for vehicular traffic. Extension of Jersey Avenue over the Tidewater Basin to Phillip Street would provide a secondary entrance to the Park from the north. Ideally, Mill Creek would be covered with fill so the Jersey Avenue extension could be built over the fill. If filling of Mill Creek were not permitted, extension would occur by way of a bridge.

Considering the population density in neighborhoods adjacent to the Park as well as the growing office and residential population along the Jersey City Waterfront, it seems that the Jersey Avenue Extension may increase Park through traffic adjacent to the Liberty Science Center. The Jersey Avenue Extension would allow Downtown bound traffic the ability to cut through the Park, potentially increasing the number of vehicles on Phillip Street as well as creating potential vehicle-pedestrian conflicts within the Park. For trucks, the extension of Jersey Avenue would not be a designated truck route; however, the alignment would be an attractive alternative between Jersey City and the NJTPK interchanges. Access improvements from the current Grand Street exit on the Turnpike to Christopher Columbus Drive may reduce the popularity of this detour during off peak traffic. However, during rush hour, eastbound traffic heading to Downtown Jersey City by way of the Grand Street exit may use Interchange 14C to reach Phillip Street and bypass Holland Tunnel back ups on the Turnpike by way of the extension.

Greater traffic volumes on Jersey Avenue may also create safety issues for the Medical Center and the \$48 million Jersey City Public Schools Educational Complex being built along Jersey Avenue. Furthermore, extension of Jersey Avenue may be contrary to the purpose of the HBLRT, which was built to take people into downtown areas, essentially reducing traffic through historic neighborhoods adjacent to Downtown Jersey City. Instead, the extension of Jersey Avenue would likely bring traffic through these neighborhoods.

Currently, a driveway for emergency vehicles along the route of the HBLRT provides a direct route for police and paramedics to Jersey Avenue from Johnston Street and the new

Medical Center. Although the **Jersey Avenue Extension** would invariably provide better local access between Downtown Jersey City and the Park, pedestrian safety issues, the position of the Medical Center and PS 3 on **Jersey Avenue**, as well as quality of life issues for residents in the Van Worst Park Neighborhood are factors to be considered in discussing the feasibility of the project. It seems apparent that in order for consensus to be met, further study from Jersey City officials and local stakeholders will be necessary to assess all the impacts of the **Jersey Avenue extension**.

8.6 Bergen Arches

A study is being prepared for NJDOT and NJTPA concerning the re-use of this former rail right-of-way as an alternate north-south route for train, bus or passenger cars. The impact on access to Liberty State Park is not known.

8.7 Mass Transit

1. HBLRT

According to officials at New Jersey Transit, the HBLRT will connect to Hoboken Terminal in Fall 2002 offering connection from the PATH and New Jersey Transit commuter trains to the HBLRT for increased access to Liberty State Park. By 2003, plans include extension of the line to the Weehawken Ferry followed by completion of the line through North Bergen to Ridgefield in 2005. The southbound portion will be completed by 2003 to 22nd Street in Bayonne.

Considering that travel time between Newport / Pavonia and Liberty State Park on the HBLRT is currently 18 minutes, it seems feasible that connection between Hoboken Terminal and Liberty State Park in 2002 will take approximately 25 minutes. Riders traveling from 33rd Street in Manhattan on the PATH could transfer to the HBLRT at Hoboken Terminal or Newport / Pavonia and conceivably reach Liberty State Park in approximately 40 to 45 minutes. According to the HCTMA, these projects are currently funded and advancing through the final design and construction process. An official at the HCTMA mentioned that if Federal statutes were changed to allow extension of the HBLRT into the Park, the capital cost of extending the light rail might be \$30 million.³⁸

2. Local Bus Services

According to the HCTMA, employment centers near the Park such as the Liberty Industrial Park and the Greenville Industrial Park are underserved by local bus routes. However, local bus carriers that once included connection to these areas have recently cut service. Due to increasing operating costs and competition from the HBLRT, it does not seem likely that local carriers will increase service to areas in and around the Park.

³⁸ Liberty State Park Bus and Ferry Services Information

3. Ferry Services

The burgeoning popularity of ferry service as an alternative mode of transit will play an important role in the way patrons access Park activities. According to the HCTMA, existing providers are presently utilizing all their vessels, and in 2005, ferry service will likely mirror current levels. In the future, ferry service could be considered as an alternative to Holland Tunnel commuters or other forms of mass transit in the case of restrictions or closure.

A recent Metropolitan Waterfront Alliance report proposes two ferry lines, one for recreational and cultural traffic, and the other for commuters that would allow travel to points within the Upper New York Harbor. Stops within Downtown Jersey City and the CRRNJ Terminal are included in the plan for both recreational and commuter ferry lines. Officials at the Liberty Science Center have also spoken to the Metropolitan Waterfront Alliance concerning the feasibility of including a ferry stop in the loop plan near the western end of the Tidewater Basin. The recreational ferry would operate on Saturday, Sunday and Holidays making a circular route to points in Jersey City, Bayonne, Staten Island, Brooklyn and Manhattan. The proposed commuter route would operate Monday through Friday and travel an almost identical route to the recreational ferry. No timeline for a possible opening date of the proposed lines are posted, however, the DEP does not support the inclusion of a ferry stop for commuters within the Park.

The combination of the loop system with transit hubs throughout the region will encourage regional Park patrons to utilize ferry service instead of vehicles.³⁹ From New Jersey, future HBLRT connections to Hoboken and Weehawken will complement existing HBLRT and ferry connections in Jersey City to Park bound ferry service. This in turn will have a positive effect on the amount of pedestrian traffic within the Park and should increase ridership of the Park Shuttle.

In the long term, ferry service to Monmouth County, the Sandy Hook National Recreation Area and other locations on the Jersey Shore should be incorporated as a way to get to the Park. Further opportunity for the CRRNJ slips may arise for lunch / dinner cruises or boat tours of the New York Harbor. Furthermore, development of a single State entity to control or coordinate regional ferry operation may further encourage ferry usage. If the industry were coordinated more efficiently, it might be possible to partner with bus and light rail providers for better organization of transfers, schedules and ticketing.

8.8 Pedestrian / Bicycle Connectivity

1. Liberty Walk / Hudson River Waterfront Walkway

The following improvements and proposals will increase bicycle and pedestrian accessibility in the immediate environs of the Park as well as diminish gaps in the HRWW between Liberty State Park and Downtown Jersey City. Current connections between Downtown Jersey City and the Park are largely untapped due to such physical

³⁹ <http://www.waterwire.net/FerryMap/Harborloop.doc>

barriers as the Tidewater Basin and existing industrial land uses. The **Jersey Avenue** footbridge is the only link between Downtown Jersey City and activities occurring within the Park. Utilizing pedestrian bridges to cross the Tidewater Basin may be difficult considering the cost of engineering a bridge that allows proper clearance for boats.

- a) If development of the 55 Lot Development, LLC property were to occur, the developer would construct a pedestrian bridge over Mill Creek to replace the current bridge.
- b) The possible **Jersey Avenue extension** project includes a walkway segment and bike path over Mill Creek.
- c) According to the LSDC, Prudential is sponsoring the construction of sidewalks from the HBLRT parking lot to Liberty State Park.

2. Jersey City Bicycle Plan

The Transportation Policy Institute within the Alan M. Voorhees Transportation Center at Rutgers University produced a year 2000 bicycle plan for Jersey City. Inclusion of major bikeway goals by Jersey City officials in its eventual Bicycle Master Plan not only has the potential to make Jersey City more bicycle friendly, but will create important connections to Liberty State Park. A multimodal road network encourages alternative travel behavior and makes amenities, such as Liberty State Park, more accessible to all segments of the population.

The plan identifies roadways within the Jersey City network that provide linkage to major activity centers (schools, parks, transit stations, shopping districts) and include the right of way necessary to construct proper bicycle facilities. None of the roadways designated within the plan require street widening or reduction in vehicle capacity and parking.

Considering that access to the Park is limited, Bayview Avenue / Morris Pesin Drive, Johnston Avenue, and **Jersey Avenue** represent the three major connections in the bicycle plan that filter bicyclists to the Park from the proposed bikeway system. The plan in fact recommends **Jersey Avenue** for initial implementation as a major connector between Downtown Jersey City and Liberty State Park.⁴⁰

3. Bike Facilities

The placement of bike racks, long term bike lockers, a bike rental facility / “bike service station” in strategic locations in and around the Park promotes bike usage and provides a positive alternative to vehicular traffic. The HBLRT station, the Liberty Science Center and the CRRNJ Terminal are great locations for these services. Such facilities at the LSC or the HBLRT station may offer an alternative to the 305 Shuttle and provide an incentive for Park users to travel between activities by bike instead of car.

⁴⁰ Jersey City Bicycle Plan

The bike service station concept is that of a permanent hub offering a combination of long and short term bicycle parking, bicycle rentals, refreshments, restroom facilities, bicycle maps, merchandise and in house capability for minor repairs. Such a facility would make the Park more bicycle friendly and at the same time encourage bicycle usage throughout the Park.⁴¹

4. Bike Regulations on Mass Transit

The following are regulations placed on bicyclists by the major transit operators serving Jersey City. The bikeway plan complements mass transit stops within Downtown Jersey City as well as the extent of the HBLRT. An enhanced bikeway network has the ability to open bike accessibility to the Park, the HRWW, and a large segment of the region. In the event of such a connection, bike racks, lockers and a small refreshment stand / bicycle service station could be strategically placed within the Park near entrance to the HRWW.

PATH

Bicycles are allowed on board with no extra fare or bike permit. No bicycles are permitted except during peak hours (6:30 AM – 9:30AM and 3:30 PM – 6:30 PM, Monday through Friday). No more than two bicycles are allowed per car, and group travel is limited to four accompanying cyclists.⁴²

NY Waterway

Bicycles are permitted on board for a one-dollar fare, but restricted during peak periods. No permit is necessary.⁴³

New Jersey Transit HBLRT

Bicycles are permitted except during peak hours (6AM – 9:30 AM and 4PM – 7:30 PM, Monday through Friday). No permit is required.⁴⁴

New Jersey Transit Bus

Bicycles are permitted at all times on buses with bike racks on the front or underfloor storage compartments. Currently, the Northern New Jersey bus fleet is not equipped to accommodate bicycles on the front of its buses.⁴⁵

8.9 Destination: Jersey City

The New Jersey Department of Transportation awarded grant assistance to Jersey City to develop a signage and wayfinding program throughout Downtown Jersey City. The Local Aid for Centers Program awards funding to qualified applicants for non-traditional transportation projects. Liberty State Park and other major attractions within the Park will be included in plans for directional signage. The wayfinding program will incorporate signs throughout Downtown Jersey City to direct visitors to local attractions.

⁴¹ *ibid*

⁴² <http://www.panynj.gov/path/pathrules.htm>

⁴³ http://www.nywaterway.com/commuter_ferry.html

⁴⁴ http://www.njtransit.com/cs Ride_bike.shtm#lrbike

⁴⁵ http://www.njtransit.com/sf_bus_tips.shtm

The program is also part of NJDOT's revised highway signage plan that will list major Jersey City destinations on the New Jersey Turnpike and other important highways leading into the city. The signage program will emphasize Interchange 14C as a primary entry point into the park. As part of the wayfinding program, detailed Park maps will be placed within Pedestrian Information Displays (PIDS) at the Liberty State Park Station of the HBLRT to assist patrons from the transit station to various Park activities.⁴⁶

The Destination Jersey City signs within and around the Park reference and direct visitors to Park attractions. As reflected in the *Multimodal Access* map, the Destination Jersey City program categorizes signs in several categories, including Gateway Signs, District Signs, Destination Signs, Identification Signs and Departure Signs. Sign types not featured on the *Multimodal Access* map are District Signs and Identification Signs. Gateway Signs notify visitors of entry to the Park, while Destination Signs point Park patrons to various attractions. Gateway Signs are featured at the three main entrypoints of the Park and include the Burma Road Traffic Circle, Jersey City Boulevard just off Interchange 14C, and Audrey Zapp Drive. Destination Signs are placed proximate to Park attractions on each end of the Park, but especially along Phillip Street, adjacent to the HBLRT lot and on Audrey Zapp Drive. The majority of the signs will be located on Phillip Street and Johnston Avenue and will direct visitors to either the Liberty Science Center or the CRRNJ Terminal / Ferry to Ellis Island and the Statue of Liberty. A limited number of signs will inform visitors of the Hudson River Waterfront Walkway, the Interpretive Center, and the Holocaust Statue. The departure sign highlighted on the map directs visitors to the New Jersey Turnpike.

8.10 Gateways

Based on Liberty State Park's former industrial character, its position adjacent to the New Jersey Turnpike and its geographic location surrounded by water, the Park currently lacks a definitive gateway. As emphasized in the *Multimodal Access Map*, the Turnpike acts as the Park's western wall, providing both a mental and physical barrier for Park patrons accessing the Park. The Turnpike is essentially the main culprit in Liberty State Park's less than impressive gateways. From an urban design standpoint, the development of an inviting gateway not only enhances the Park experience for visitors, but makes it easier for first time users to realize they are entering the Park setting. The Destination Jersey City project will play a large role in identifying major travel routes to the Park from the Jersey City road network. However, considering that access to the Park is limited, each vehicle or pedestrian entry point should be improved to welcome visitors to the Park.

Integrated vehicle and pedestrian gateways are difficult to design considering the speed by which vehicles travel through destination points. In general, a unified streetscape complete with banners, landscaping, lighting, or an actual gateway arch would provide a visual queue that places the Park in a position of importance and alerts the driver of entry into a unique district. At the same time, these treatments are pleasing to pedestrians and have a calming effect on traffic that may potentially decrease vehicle-pedestrian conflicts. Audrey Zapp Drive and Morris Pesin Drive each have the capacity for the creation of

⁴⁶ <http://www.state.nj.us/transportation/press/2001releases/051701b.htm>

such a linear gateway. Audrey Zapp Drive is especially important considering its linkage to the eastern edge of the Liberty Science Center and the HBLRT lot. Furthermore, Johnston Avenue, the continuation of Audrey Zapp Drive outside the Park, is a major local connector to neighborhoods west of the Park.

The most major vehicle-only gateway exists at Interchange 14C from the New Jersey Turnpike. The Destination Jersey City signage program, coupled with plans from the New Jersey Turnpike Authority for revised signage to 14C, will increase the importance of the exit. Considering that Interchange 14C offers the most direct access to the Central Parking Facility and the HBLRT lot, the potential exists to place a small Welcome Center near the Central Parking Facility on Phillip Street. The creation of a Welcome Center node on Phillip Street has the potential to become a Park Shuttle stop, a possible location for the bike service station, an information booth, and a trailhead for the future Inner Park Nature Preserve.

Pedestrian entry to Liberty State Park is the least developed of all travel modes. However, in Johnston Avenue lies the potential to link pedestrian traffic from the HBLRT lot and the Lafayette Neighborhood to Liberty State Park. If streetscaping improvements were to occur along Johnston Avenue, these improvements could be linked to the pedestrian friendly gateway at Audrey Zapp Drive and Phillip Street. Further pathways could be extended to the potential Welcome Center east of the LSC on Phillip Street.

Due to the presence of the Tidewater Basin, pedestrian traffic north of the Park is filtered to the well used pedestrian bridge over Mill Creek. The current pedestrian bridge is in poor condition and is accessed through an area that has retained an unclean and unsafe industrial feel. Although, the bridge is repaired every year, the environment is generally not conducive to pedestrian travel until visitors are well within the Park. A properly landscaped and identifiable pathway to the Park over a stable bridge is necessary not only to accommodate current Park patrons, but also to provide the Downtown Jersey City population an incentive to travel to the Park on foot. Furthermore, the alignment of the **Jersey Avenue** footbridge with the intersection of Audrey Zapp and Phillip Street is a perfect access point for these visitors to experience the gateway and Welcome Center.

Unfortunately, access from Downtown Jersey City to the **Jersey Avenue** footbridge is currently difficult. The *Multimodal Access Map* exhibits the difficulty pedestrians have accessing the footbridge. Due to industrial land uses near the footbridge, pedestrian travel is hindered and limited to a circuitous route via Grand Street and **Jersey Avenue**. The future Liberty Harbor North development, mass transit improvements and potential connections from Downtown Jersey City by way of the HRWW will remedy these issues in the long term. Unfortunately, a pedestrian bridge over the Tidewater Basin at either Washington Street or at the mouth of the Tidewater Basin does not appear to be a viable option. This essentially increases the importance of the **Jersey Avenue** footbridge and an enhanced pedestrian path from the footbridge to Audrey Zapp Drive. In the short term, sidewalk enhancements from Phillip and Audrey Zapp Drives to the Millennium Park, will boost pedestrian linkage between Park activities and the fabric of Jersey City. The next

step will be to develop a dedicated walkway from the intersection of Audrey Zapp and Phillip Street to the **Jersey Avenue** footbridge.

1. Johnston Avenue / Audrey Zapp Drive

Audrey Zapp Drive is the strongest gateway into the Park despite the physical barrier of the New Jersey Turnpike. Once vehicles travel under the Turnpike, visitors experience a clear view of the Manhattan skyline and New York Harbor framed by downtown Jersey City and the CRRNJ Terminal. Cobblestone pavers on Audrey Zapp Drive offer a sense of the Park's historical past.

Considering that major activities occur on the northern edge of the Park, Audrey Zapp Drive should be considered the Park's primary local gateway and entrance. The short term construction of sidewalks along Audrey Zapp Drive and improvements to its intersection with Phillip Street properly enhances pedestrian connectivity to the **Jersey Avenue** footbridge. Future streetscape enhancements to Audrey Zapp Drive should consider its importance as both a vehicular and pedestrian point of entry. Intersection improvements should reduce vehicular traffic at this important entry point.

2. Interchange 14C

The Park's most major vehicle only entrance is difficult to treat with landscaped or artistic enhancements. Most important here is directional signage for visitors to the Central Parking Facility that may reduce the number of vehicles circulating throughout the Park.

3. **Jersey Avenue** Footbridge

The majority of pedestrians enter the Park from the **Jersey Avenue** footbridge. Although the bridge is repaired every year, it is not an attractive entry point. Considering that passive recreation is a major draw for the Park, pedestrian entryways should be enhanced wherever possible. Future improvement to the Audrey Zapp Drive / Phillip Street intersection is a step in the proper direction.

4. Extension of **Jersey Avenue**

The possible roadway extension will provide an alternative means of vehicular access to the Northwestern edge of the Park from Downtown Jersey City. If this project were to occur, the importance of Audrey Zapp Drive as Liberty State Park's northern spine and main gateway would be further enhanced.

5. Burma Road / Phillip Street Traffic Circle

The current state of the traffic circle provides unattractive and confusing entry to the Park. Vehicles must pass industrial uses within the Liberty Industrial Park on the approach to the south overlook. The possible realignment of Caven Point Road with the straightening of Burma Road / Phillip Street and elimination of the traffic circle offers an opportunity to provide a more inviting entryway from the southwest. If this were to occur, landscaping and streetscaping improvements to Phillip Street near the LSC would be a welcome touch.

CHAPTER 9 – INTERNAL CIRCULATION IMPROVEMENTS

9.1 Introduction

Road improvements within the Park should be limited to overall maintenance and improvement of unsafe intersections. In essence, greater emphasis should be placed on mass transit improvements and pedestrian connectivity. The map entitled *Future Transportation Infrastructure (2015)* highlights the following improvements to Liberty State Park’s internal infrastructure. The following timetable highlights internal infrastructure improvements occurring in the near future and within horizon years 2005 and 2015.

TABLE 9.1.1 (Future Internal Circulation Improvements)

| <i>Future Infrastructure</i> | | |
|--|---------------|------------------|
| <i>Project</i> | <i>Status</i> | <i>Completed</i> |
| Audrey Zapp Dr. & Phillip Dr. (Signal) | Approved | 2005 |
| Burma Road Traffic Circle | Proposed | 2005 |
| Jersey City Blvd. & Phillip Dr. (No Lt. Turn) | Potential | 2005 |
| Sidewalk Improvements w/ in Park | Approved | 2005 |
| Permanent Managed Access Bridge (Ellis Island) | Potential | 2005 |
| Jersey Avenue Footbridge (55 Lot, Dev., LLC) | Potential | 2015 |
| Phillip Dr. Extension @ Audrey Zapp Dr. (55 Lot, Dev., LLC) | Potential | 2015 |
| Phillip Dr. / Burma Rd. Realignment | Potential | 2015 |
| Morris Pesin Dr. / Freedom Way | Potential | 2015 |
| Unified Recreation Walkway | Potential | 2015 |

9.2 Roadways and Intersections

1. Audrey Zapp Drive and Phillip Street

A traffic signal is planned at Audrey Zapp and Phillip Street paid for in part by NJ Transit. The signal would help alleviate vehicle and pedestrian conflict and reduce traffic congestion experienced during peak park use and special events.

2. Phillip Street / Burma Road Realignment

Phillip Street turns sharply at the northwestern edge of the Liberty Industrial Park and becomes Burma Road, which aligns with the traffic circle at Morris Pesin Drive. In light of the Caven Point Road realignment, an opportunity exists to straighten the aforementioned section of Phillip Street / Burma Road to align with the intersection of Morris Pesin Drive and Caven Point Road.

3. Burma Road Traffic Circle

The straightening of Phillip Street / Burma Road and alignment with Caven Point Road at the intersection of Morris Pesin Drive would eliminate the need for the Burma Road traffic circle. Realignment would provide a safer route of travel for trucks accessing the Liberty Industrial Park from Interchange 14B. In the interim, paving, signage and striping improvements at the traffic circle are necessary to decrease driver confusion and enhance safety.

4. Morris Pesin Drive and Freedom Way

Tourist buses utilize Freedom Way as a staging area, but face difficult turns at the corner of Freedom Way and Morris Pesin Drive. It is recommended that the intersection be improved to increase turn radii and provide a bus turn around area.

5. Jersey City Boulevard and Phillip Street

Left turns should be prohibited for trucks turning from Jersey City Boulevard to Phillip Street. Except for local deliveries, do not permit trucks on Phillip Street between Jersey City Boulevard and Audrey Zapp Drive. Although the majority of trucks will use Exit 14B for Liberty Industrial Park, the left turn restriction will prevent truck traffic from utilizing Liberty State Park as a short cut for access to Johnston Avenue, Grand Street and Downtown Jersey City. This entry point requires enhancement particularly if parking is established at the Liberty Science Center.

9.3 Parking

Parking spaces are generally available for Park visitors; however, it is difficult for Park patrons to know which lots are full and which have open parking spaces. Furthermore, many visitors are unaware of the location of the less popular parking lots. A parking management system may be warranted which would include a counting system at each lot to assess the total vehicles parked at any one time and portable DMS throughout the parking lot to inform motorists of the availability of spaces.

1. Central Parking Facility

The most evident area for parking expansion directly within the Park exists at the Central Parking Facility. The sublease agreement between the LSPDC and the LSC contemplates an elevated parking structure. However, Liberty Science Center officials are also interested in preserving the view of the Liberty Science Center from the Turnpike, therefore limiting the height of the garage. The possibility for development of a central garage coupled with a good connection to the Park from Interchange 14C would encourage use of the parking garage and decrease vehicle circulation within the Park.

According to representatives at the LSC, current problems concern bus parking and pedestrian movement from parking areas to the front door. Buses currently line up along Phillip Street during overflow periods. Plans for the Liberty Science Center include reorienting the entrance and redesigning the parking lot. The proposal to redesign the parking lot will better segregate cars and buses for improved access and egress of bus traffic. The new design will enhance bus drop off and increase pedestrian safety from the parking lot to the main entrance. Parking lot reconfiguration could expand the lot by 50 or more bus spaces.

A Central Parking Facility located at the LSC would be functional for special events, major CRRNJ Terminal events, Ellis Island / Liberty Island parking, and peak weekends. During off peak hours or non-special event periods, a garage would not be heavily occupied. This leaves significant capacity for other weekday uses. Based on the Liberty Science Center's position near the HBLRT parking lot, the possibility of shared commuter parking may be possible in the event of commuter overflow from the HBLRT lot. Parking fees from such usage would help amortize the garage investment. To assure space availability for Park patrons, a section of the garage could be utilized for park and ride services on weekdays. Sections of the garage at grade with the entrance of the Science Center would open at 10 AM for park patrons. Thus, revenue could be derived from spaces empty on weekdays, but needed on weekends. Commuter parking may in fact increase awareness of the Park and its activities for a greater number of people.

2. CRRNJ Terminal Lot

Based on the potential expansion of both the Central Parking Facility and the HBLRT lot, the CRRNJ Terminal lot should not be expanded in any manner. According to the LSPDC, the current design of the CRRNJ Terminal lot may allow room for 25 additional bus parking spaces. Therefore, the current configuration of parking spaces could be reexamined.

3. HBLRT Park and Ride

The Liberty Science Center and New Jersey Transit have worked out an agreement that will allow the LSC to utilize surplus parking spaces at the HBLRT lot on days the LSC experiences overcrowding. Considering that the LSC's busiest days occur on weekends and holidays, overflow from the LSC lot will occur when the HBLRT lot experiences reduced capacity. Depending upon the success of the shared parking deal with the LSC and the necessity for overflow parking related to Ellis Island and Liberty Island patrons, the potential to extend the shared parking agreement to other Park activities may be warranted in the future. In the event of such an agreement, the Liberty State Park Shuttle would become an extremely important asset for people movement between the periphery of the Park and Park activities. As a result of increases in light rail ridership expected by the HBLRT connection to Hoboken and the parking agreement, it may be necessary to expand Shuttle service for spring and summer weekends.

9.4 Central Parking Facility Staging Considerations

To avoid creation of large paved parking areas adjacent to each activity within the Park, a garage structure is proposed on the site of the current Central Parking Facility at the Liberty Science Center. The structure would serve as the main parking area and act as a transit hub for the 305 Liberty State Park Shuttle.

Several staging considerations are important in this discussion. The garage represents by far the greatest proportion of transportation improvement costs within the Park. To conserve scarce financial resources, the construction of the garage should be staged to match Park demand peaks on summer weekends. High costs are particularly hard to recover when the average capacity of parked cars would be limited. Commuter usage can be of considerable help in this regard, but does not make up for occasional spurts of full occupancy. In essence, the opportunity to generate revenue from commuters must be optimized.

Staged construction requires that spaces be taken out of service to allow room for various phases of construction. If construction starts too late, takes too long, or occurs in the wrong season, parking demand for Liberty Science Center and other activities may exceed the supply of parking in available facilities. The placement of piles, designed for full buildout, in the initial stage, even if construction occurs only on a surface lot, may be cost effective and necessary for the maintenance of required parking levels during the construction of later stages. Special event parking can occasionally be provided at the Dog Field or other overflow areas with Shuttle service to the event location. The Dog Field may hold up to 1000 vehicles and the Industrial Park an additional amount, but frequent usage of these facilities is not desired by the DEP.⁴⁷

9.5 Parking Design Concepts

Large expanses of parked cars and pavement detract from the scenic quality of the Park experience. Suggested design concepts protect and enhance the natural setting of the Park, while allowing for the provision of necessary transportation facilities.

The visual impact of parking lots can be mitigated through landscaped berms and tree coverage that provide greenery and divide the sea of concrete. Raised berms also blend in to the Park's natural landscape and provide an improved growth environment above existing ground level soil.

Parking lots should be separated from roadways through the combination of landscaped screening, physical distance, and man-made topography. Pedestrian separation, signing, and lighting are also part of the design of transportation facility placement.

A minimum fifteen foot setback should be used for all parking facilities. Berming should be carefully graded and landscaped to screen parked cars and provide a natural appearance. Plantings used within and around parking areas add visual interest and an

⁴⁷ Liberty State Park Transportation Master Plan (1990)

element of color to the Park. Environmentally and aesthetically appropriate plantings should be selected based on the Park's riparian setting.

Pedestrian access points between parking areas, transit stops, and activity centers should be clearly marked to provide safe access and designed with aesthetics in mind. Lighting should be provided for pedestrian movement as well as vehicle decision points.⁴⁸

– For specific locations within the Park, the following suggestions are provided:

1. Liberty Science Center

The buffer strip between Phillip Street and the transit station offers an opportunity to transition between Park uses and the roadway (Phillip Street) to the east, the parking area and lot, buildings (parking garage and Science Center), and the Turnpike structure to the west. Low berming and landscaping will soften the edges, but will maintain the connection between the transit station, the roadway and the Park. Within the parking lot, site furnishings such as bollards and flagpoles are appropriate to the setting, provide maximum visual impact and can be moved or removed as garage construction commences. Pedestrian pathways should be distinguished by pavement color and texture, as well as furnishing placement.

2. Liberty Landing Marina

Tree cover and other landscaping treatments should be utilized to soften the view of the Liberty Landing Marina parking lot from Freedom Way.

3. CRRNJ Terminal

Tree cover and other landscaping treatments should be utilized to soften the view of the CRRNJ Terminal parking lot from Freedom Way.

4. Interpretive Center

The types of planting and landscaped treatment to be in place along Freedom Way should be continued in front of the Interpretive Center parking area.⁴⁹

9.6 Internal Transit Circulation

1. 305 Liberty State Park Shuttle

The Shuttle currently experiences low ridership; however, the future connection of the HBLRT line from Jersey City to Hoboken will increase Park accessibility and the amount of patrons reaching Liberty State Park by mass transit. Furthermore, residential, commercial and office development around the Park will positively benefit Shuttle usage as well as any additional parking created at the LSC or HBLRT lots. Without a Shuttle

⁴⁸ Liberty State Park Transportation Master Plan (1990)

⁴⁹ *ibid*

bus system, direct pedestrian access from the HBLRT station to Park activities is difficult. Due to funding constraints, the life of the NJT 305 Shuttle may be limited. According to the HCTMA, the cost of operating and maintaining a Shuttle system within the Park is approximately \$1 million per year. The HCTMA has \$750,000 set aside to fund the Shuttle, but bureaucratic red tape is keeping the money from going to NJT. It is important to include language in the next version of TEA-21 that would allow funding for a fixed transportation system within the Park. Ex-Congressman Roe is working with the HCTMA to develop such language.

The internal transit circulation system is designed to serve several functions for intra-park movement. Many patrons accessing Park activities will be without a personal vehicle or will not want to move vehicles from paid parking areas to reach other activities. Serving the demands of Park users who need assistance to reach activities outside the range of desired pedestrian travel is crucial to internal park circulation and the successful functioning of parking layout and Park policy. Park traffic in need of Shuttle service can generally be divided into several major groups:

- 1) Patrons parking at the Central Parking Facility for access to the CRRNJ Terminal and other activities.
- 2) HBLRT riders traveling from Liberty State Park station to Park activities.
- 3) Ferry riders originating in New York and traveling to the Science Center or other Park activities.
- 4) Pedestrian traffic entering the Park from new development in Downtown Jersey City for access to Park activities or recreational usage of the Park facilities.
- 5) Intra-park use by patrons going from one activity to another.

Solid demand for the Shuttle is largely a function of the projected rise in Park patrons utilizing mass transit and pedestrian alternatives to enter the Park. As alluded to in previous chapters, it can be assumed that the HBLRT connection to Hoboken and proposed ferry routes will increase transit usage to the Park, while the numerous residential and office developments in Downtown Jersey City have the potential to enhance pedestrian traffic. Furthermore, construction of a Central Parking Facility at the Liberty Science Center has the potential to capture a veritable amount of vehicular traffic that would normally circulate throughout the Park.

The principal demand for use of the Central Parking Facility as a fringe facility will come from persons using the Liberty Island / Ellis Island / New York ferries. Science Center patrons arriving by ferry from New York will also use the Shuttle service. As a result, it will be desirable to provide seamless transfer between the Shuttle and existing ferry stops in order to link important Park activities. Persons using the Liberty Science Center as a fringe parking facility have already chosen not to park at the CRRNJ Terminal and are probably faced with the situation, especially during summer weekdays, weekends, and some fall / spring weekends, of not having any parking available at the CRRNJ.

It is recommended in the parking section that most ferry parking be located at the Liberty Science Center rather than treating this facility as an overflow lot. This will decrease traffic within the Park by keeping most ferry-related traffic out of the CRRNJ Terminal parking area. Directing ferry riders to the Liberty Science Center will also free the limited CRRNJ Terminal supply for those uses directly associated with Terminal areas; thus increasing the flexibility for staging events at the CRRNJ Terminal. Impacts to Ellis Island and Liberty Island visitors would need to be evaluated and again, friendly, efficient Shuttle service is critical.

The concept for Shuttle service has been defined to primarily link northern activity centers like the LSC and CRRNJ Terminal with less active areas at the southern end of the Park. The Shuttle terminus at both ends should be located as close as possible to designated activities. On the northern end, the proximity of the ferry dock to the Shuttle stop is of great importance in relieving the anxiety of ferry patrons traveling from the remote Science Center lot location. Shuttle vehicles should be allowed to utilize the service road on the south side of the CRRNJ Terminal building stop in front of the ferry dock, and then proceed back along the southside of the ferry terminal building. On the southern end of the Park, the presence of paved parking areas adjacent to the current Park Welcome Center allow easy drop off and a short walk from the Shuttle stop.

Considering that a shuttle vehicle could be considered an intrusion into the peaceful setting of the Park, it is strongly recommended that a tram or small scale shuttle continue to be used for this service rather than a conventional transit bus. A smaller vehicle is also able to negotiate tighter corners, thus reducing the roadway requirements for these vehicles and assuring that future paving and road widening does not occur within the Park.

Service should follow a route identical to the current 305 Shuttle with the addition of stops that serve long term development. If the Park Welcome Center were moved to the intersection of Phillip Street and Audrey Zapp Drive, a new stop could be added at the intersection to accommodate these visitors as well as pedestrian traffic from the potential 55 Lot Development LLC property and the Mill Creek pedestrian crossing. An additional stop or stops would also be necessary on Freedom Way so Park patrons may access the future Inner Park Area nature preserve. The remainder of the route from the Interpretive Center to the Park Welcome Center should remain the same as the current route of the 305 Shuttle.⁵⁰

9.7 Pedestrian Access – Streetscape Design

1. Roads

According to the Jersey City Division of City Planning, if the 55 Lot Development, LLC property were developed, Phillip Street would be extended from the intersection of Audrey Zapp Drive and Phillip Street to the Jersey Avenue footbridge. Currently, the intersection of Audrey Zapp Drive and Phillip Street is slated for improvements.

⁵⁰ Liberty State Park Transportation Master Plan (1990)

2. Sidewalks

- a) According to the DEP, pedestrian paths are being constructed from the Liberty Science Center to Audrey Zapp Drive and from Audrey Zapp Drive to the Jersey Avenue footbridge.
- b) If development of the 55 Lot Development, LLC property were to occur, sidewalks along Jersey Avenue from the intersection of Audrey Zapp Drive and Phillip Street to the footbridge will be rebuilt for access to the residential high rise.
- c) The DEP also plans to construct sidewalks from the intersection of Audrey Zapp and Phillip Streets to the Millenium Park.
- d) The DEP is promoting a pedestrian bridge from the South Overlook of the CRRNJ Terminal to Ellis Island instead of the current service bridge from the Green Park to Ellis Island. The Ellis Island Environmental Impact Statement will include discussion about the bridge issue and possible utilization of the existing service bridge

3. Unified Recreation Walkway

The concentration of activities, like the Liberty Science Center and the CRRNJ Terminal along the northern edge of the Park, focuses the majority of pedestrian activity in this area. As a result, the most likely pedestrian travel pattern within the Park is entry from the Jersey Avenue footbridge at Jersey Avenue followed by a walk to the North Overlook in front of the CRRNJ Terminal.

The second most likely travel pattern is a recreation loop through the Park. Although recreation trails are prevalent throughout the Park's eastern edge, in the future, it is essential that activities in other areas of the Park be well accessible to pedestrian traffic. A unified recreation walkway would provide Park users with interesting walking trip options, such as a loop from the Liberty Science Center. The incorporation of a Park related theme to the walkway with interesting design elements has the potential to become an attraction in it own right. The circuit linking each of the Park's different attractions could be traveled in a day's visit to the Park. The path would also provide joggers with an appropriate length for a workout.

A unified walkway would increase pedestrian traffic within the Park, provide incentive for drivers to park in a central facility and would offer a convenient connection between the Interpretive Center and the Liberty Science Center for school groups to visit both areas without having to reboard buses. Furthermore, it would grant museum patrons access to a convenient and comfortable walk to the waterfront well separated from vehicular traffic within the Park. Linking the Park's major attractions with a pedestrian walkway not only supplies necessary linkages for pedestrian traffic, but also provides a recreational loop for walkers and joggers not currently in existence.⁵¹

⁵¹ Liberty State Park Transportation Master Plan (1990)

- The following elements should be considered in the design of the walkway:

Reduce the perceived distance

Due to the distance between activity centers in the Park, it is important to design walkways in a manner that reduces the perceived distance between points. Specially designed entranceways and public plazas may not reduce the actual length of the walk, but provide an arrival point that can make the perceived walk more interesting and manageable.

Provide diversions along the walkway

Activities along the walkway that encourage people to stop or linger provide designated resting points and work to create an interesting walk. Other diversionary events should also be considered including children's play features. These activities should of course be included outside the main flow of pedestrian traffic.

Minimize barriers to pedestrians

The proposed walkway should not have major constraints to pedestrian flow. It will be located on a flat site, and will have its own right of way, free of vehicles.

The Phillip Street Crossing

1. At the Liberty Science Center end, Phillip Street will be a barrier to pedestrian flow. One option is to construct a pedestrian bridge over Phillip Street to allow safe passage for pedestrians instead. The pedestrian bridge will have the following objectives:
 - Limit conflicts between vehicle and pedestrians.
 - If the bridge were tied into a pedestrian plaza between the parking garage and the museum, the bridge would serve the dual role as a point of interest along the walkway and as an arrival point to the Liberty Science Center.

A pedestrian bridge across Phillip Street should not have a vertical curve in excess of 5% so that walkers may be able to cross the bridge with ease. Given the extensive distance of the walkway, it should be relatively easy to provide the necessary vertical transition as well as provide scenic views of the river from the elevation of the bridge.

2. A less costly approach to pedestrian safety at Phillip Street is the development of a wide, identifiable crosswalk directly in front of the LSC or at the intersection of Phillip and Audrey Zapp Drives. A crosswalk at the intersection would complement the proposed stoplight at Phillip and Audrey Zapp Drives as well as sidewalk improvements planned for the same intersection. The design of the crosswalk would not only alert drivers of the pedestrian crossing but would also serve as a traffic calming device.

Provide adequate walkway width

The pedestrian path should anticipate heavy use, especially during heavy foot traffic at the end of a special event. The walkway will have to accommodate a flow rate of approximately 355 persons per minute, equivalent to over 21,000 persons per hour. Utilizing pedestrian capacity formulas published in the Highway Capacity Manual, this flow rate requires a walkway width of 25 feet for a level of Service D operation and 35 feet for a Level of Service C. The actual width will have to be greater near activity areas that may accumulate a greater than normal traffic flow.

The Highway Capacity Manual indicates that level of Service C provides pedestrians sufficient space so that walkers will be able to select their normal walking speeds and will be able to bypass other pedestrians in a primarily unidirectional stream. At this level of service, an average walkway span greater than 240 feet per minute can be supported. The maximum flow rate permitted to achieve this level of service is 10 pedestrians per minute per foot of walkway width.⁵²

9.8 Gateways

1. Liberty Science Center

A potential inner Park gateway exists at the Liberty Science Center if a pedestrian bridge were constructed over Phillip Street. Wonderful views of the Manhattan skyline are already possible from the Science Center. Utilizing the vertical elevation of a pedestrian bridge over Phillip Street, these views could be utilized as an inviting panorama for pedestrians entering the future nature preserve and connected walking path.

Although an identifiable crosswalk would incorporate a less breathtaking gateway, pavers, artwork, lighting and other design elements could be utilized to offer pedestrians a sense of place as they enter other areas of the Park. The concept of a readily identifiable crosswalk could be utilized to link the site of the Welcome Center at the recommended entrance to the Inner Park Nature Preserve and other activities.

⁵² Liberty State Park Transportation Master Plan (1990)

CHAPTER 10 – RECOMMENDATIONS

The goal of the Liberty State Park Transportation Plan Update is to develop recommendations that will aid in the reduction of vehicular impacts brought about by future development and projected levels of visitation. In order to preserve the Park like character of Liberty State Park and to create a proper balance between development and open space preservation, the following is a list of policy guidelines:

Recommendations

1. External Access

- Encourage Ferries and the HBLRT as a viable way to access the Park.
- Study the feasibility of including a ferry dock at the western end of the Tidewater Basin near the Liberty Science Center with pedestrian pathways to the LSC.
- Link internal transit service to adjacent neighborhoods and Downtown Jersey City. Study the viability of a “Downtown Shuttle” that provides connections to the Park or to the Jersey Avenue footbridge.
- Analyze the feasibility of widening the off-ramp at Interchange 14C to two lanes in order to accommodate increased vehicular capacity into the Park. Such an improvement would aid traffic flow to the future Central Parking Facility and provide better access to Wilson Street and the HBLRT Station.
- Address the current lack of HBLRT access from New York City due to the closure of the Exchange Place PATH Station in Jersey City. The HBLRT connection to Hoboken is not scheduled until Fall 2002.

2. Internal Circulation

- Expand the Shuttle route to accommodate new development within the Park that will be occurring within the Inner Park Area and the Central Parking facility. The Liberty State Park Shuttle is an essential tool to minimize traffic flow and optimize parking. Examine creative ways to fund the Shuttle, such as private sponsorship.
- Provide shuttle vehicles that are of Park character and scale. They should be able to serve varying levels of demand and allow easy loading and unloading.
- Consider a managed access bridge to Ellis Island from Liberty State Park as an alternative form of entry to Ellis Island. Further analysis should be performed by way of the Ellis Island Environmental Impact Statement to determine the necessity of such a bridge and its optimal location. The positive aspects of placing the entry point of the bridge at the CRRNJ Terminal should be studied. The parking and vehicular infrastructure currently built at that site, as well as the CRRNJ Terminal’s role as an activity center will help minimize impacts. Considering the goal of the DEP to

reduce pavement and decrease vehicular impacts within the Park, care should be taken when considering the entrypoint of the existing bridge within the Green Park. The addition of a parking lot within the Green Park will not be considered as an option. Furthermore, the small parking lot on Freedom Way at the playground should not be expanded.

- Consider a bike service station near the Liberty Science Center offering a combination of long and short term bicycle parking, bicycle rentals, refreshments, restroom facilities, bicycle maps, merchandise and in house capability for minor repairs.

3. Parking

- Complete a Central Parking Facility at the Liberty Science Center to accommodate increased visitor attendance. Such a facility could become a Shuttle transit hub and may encourage visitors to park within the Central Parking facility and use the Shuttle instead of driving throughout the Park to other destinations. Besides the expansion of the Central Parking Facility, no other parking lot areas should developed or expanded within the Park. The creation of the Central Parking Facility in this location may further promote the construction of an alternative Welcome Center.
- Develop additional agreements between New Jersey Transit and the DEP for shared parking.
- Discuss current parking rates within the Park as a way to sustain the Park Shuttle.
- Install Dynamic Message Signs (DMS) within the Park to properly notify motorists of available parking lots. Continue to utilize the Highway Advisory Radio (HAR) of the New Jersey Turnpike Authority to notify Park visitors of events, traffic and parking conditions within the Park.
- Provide the minimum practical paved area. Locate lighting and landscaped buffers at parking areas to preserve views and enhance Park atmosphere. Utilize trees and landscaping to buffer unsightly structural barriers.
- Tickets for various events should not exceed parking availability within Liberty State Park.
- Do not charge a base Park entry fee.
- Coordinate parking plans with Waterfront Transit plans and other transportation programs.

4. Traffic

- Reduce automobile and truck traffic at locations and times when the Park visitation experience would be disrupted.

- Favor Park users over other uses when competing demand exists.
- Mitigate traffic congestion and discourage commuter traffic if Park purposes are thereby promoted. These include financial support of facilities needed for Park use, provision of transit service to the Park, marketing of Park activities, and utilization of otherwise unavailable infrastructure in off-peak times at non-intrusive intersections.
- Design roads and paths that reduce excessive pedestrian / vehicle conflicts.
- Do not consider one-way traffic on any of the main roads of the Park.
- Give preference to pedestrian travel by way of all pedestrian phases at signalized intersections and incorporating sidewalks and well defined crosswalks.
- Encourage transit over vehicular usage for internal Park movements.
- Discourage extensive traffic growth on internal Park roads (Morris Pesin Drive, Audrey Zapp Drive, Freedom Way) and do not widen any Park roads.
- Balance capacity on approach roads with main entry roads (Caven Point Road, Bayview Avenue, Johnston Avenue, Jersey Avenue, and Phillip Street).
- Provide a sustainable Shuttle service to accommodate visitors and reduce vehicular traffic.
- Utilize Intelligent Transportation Systems (ITS) such as HAR and DMS to notify visitors of Park related traffic issues and to properly detour traffic within and around the Park.
- Study post September 11th security issues and the implications of these possible changes to Park access.
- If Jersey City is selected for the proposed communications tower, and final design includes activities that generate tourist and vehicular traffic, these issues should be studied to identify potential impacts on Liberty State Park.

5. Pedestrians

- Link currently planned sidewalk improvements to Park activities in order to begin a Unified Recreation Walkway of pathways that properly separate vehicles from pedestrians. The implementation of the Inner Park Nature Preserve is a key factor in the development of such an entity.
- Consider the importance of the Jersey Avenue footbridge as a pedestrian entrypoint to the Park. The footbridge should be structurally improved and consideration should be given to providing access by emergency vehicles only.

- Encourage general pedestrian movement within the Park as an alternative to other modes of transportation.
- All facilities must meet current standards as indicated within the American's with Disabilities Act.

6. Gateways

- Consider Audrey Zapp Drive as the Park's primary local gateway entrance since the majority of activities occur on the northern edge of the Park.
- Study the need for improvements to Interchange 14C as the Park's most major vehicular entry point. Due to the amount of traffic that travels to the Park from this entryway, as well as the future construction of a Central Parking Facility in close proximity to the exit, enhancements should be made to Wilson Street and Jersey City Boulevard to welcome these visitors to the Park.
- Stabilize the **Jersey Avenue** footbridge and beautify the path from the footbridge to Phillip Street. Outside the Park, the approach to the bridge on **Jersey Avenue** also needs improvement.
- Study the impacts of the **Jersey Avenue extension** with respect to possible increases in pass through traffic and expanded access to the Park from Downtown Jersey City.
- Southwestern entry to the Park from the Phillip Street / Burma Road Traffic Circle is currently unattractive and confusing for vehicles entering the Park. In the short term, signage and striping at the traffic circle should be improved. In the long term, landscaping and streetscaping along Phillip Street on the approach to the Science Center should be utilized to supplement these enhancements.

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- OPEN SPACE
- INSTITUTIONAL
- STATION STOPS
(Ferry, HBLRT, Path)



**EXISTING & FUTURE
DEVELOPMENT (2002-2015)**

-  HBLRT
-  PATH
-  EXISTING FERRY
-  LIBERTY STATE PARK SHUTTLE
-  PROPOSED FERRY
-  STATION STOPS (Ferry, HBLRT, Path)
-  ROADWAY IMPROVEMENTS
-  SIDEWALKS
-  HRWW
-  PROPOSED HRWW
-  INTERSECTION IMPROVEMENTS
-  NJTPK INTERCHANGE / EXIT
-  BRIDGE
-  PARKING LOTS



EXISTING & FUTURE TRANSPORTATION INFRASTRUCTURE (2002-2015)

-  NODES
-  GATEWAYS
-  POTENTIAL GATEWAY
-  BARRIER
-  VEHICULAR PATH
-  MASS TRANSIT PATH
-  PEDESTRIAN PATH
-  PROPOSED PEDESTRIAN PATH



SIGN KEY:

- A - Gateway Sign
- B - District Sign
- C - Destination Sign
- D - Departure Sign



MULTIMODAL ACCESS