JERSEY CITY REGIONAL WATERFRONT ACCESS AND DOWNTOWN CIRCULATION STUDY

EXECUTIVE SUMMARY

July 10, 2007

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1.0 Introduction

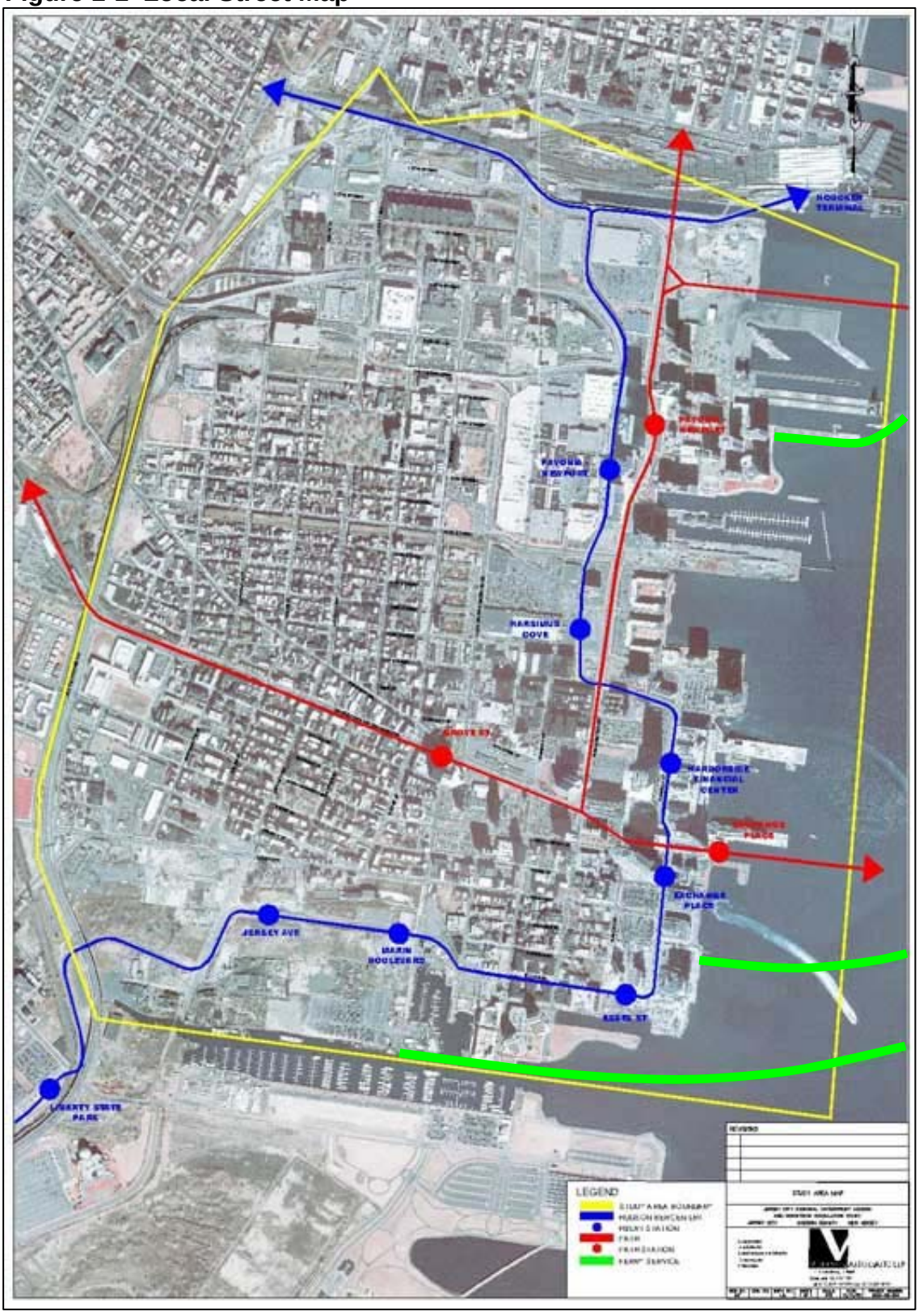
The Jersey City Hudson River Waterfront has grown drastically over the past 10 years and will continue to grow in the foreseeable future. As a regional employment center of over 40,000 employees and the home to 30,000 residents, assuring reliable and sufficient multi-modal access is critical to the economic health of the region. Meanwhile, the 2003 NJDOT Bergen Arches Best Use Study determined that transportation improvements in downtown Jersey City are needed to ensure local mobility while maintaining regional access. In order to ensure mobility and access to employment, recreation, cultural resources, and residences within downtown Jersey City, Stantec Consulting, Inc., in association with AKRF, Inc., Stump/Hausman, and Medina Consultants was commissioned by the Jersey City Division of City Planning with funding provided in part by the North Jersey Transportation Planning Authority to prepare the 'Regional Waterfront Access and Downtown Circulation Study.' This study is intended to identify specific deficiencies in the transportation network and opportunities for mobility improvements and make recommendations for specific transportation projects that will facilitate regional and local access and mobility to employment, recreational, and residential development in downtown Jersey City.

1.1 STUDY AREA DESCRIPTION

1.1.1 Study Area Boundary

The study area for this project extends from the Hudson River west to the New Jersey Turnpike Extension and from Liberty State Park north to the Jersey City border with Hoboken. The study also considers potential improvements to highways, rail and ferry service outside the immediate study area such as increased ferry, Port Authority Trans-Hudson (PATH), and Hudson Bergen Light Rail (HBLRT) access and ridership. Figures 1-1 illustrates the boundaries of the study area.

Figure 1-1 Local Street Map



2.0 EXISTING CONDITIONS ANALYSIS

2.1 DATA COLLECTION

To collect all of the required information for the project, the project team employed a multi-faceted approach to the data collection process, including existing reports and historic data.

2.1.1 New Data

In addition to historical counts, the project team performed peak hour traffic counts at key locations throughout the study area in January 2006. A complete list of these locations is provided in the final report.

2.2 TRANSPORTATION MODELING

2.2.1 Methodology

Transportation modeling is the process by which future land use forecasts are utilized to estimate future traffic volumes and the infrastructure improvements necessary to mitigate their impacts.

The transportation modeling process will be performed utilizing the standard four-step paradigm of trip generation, trip distribution, mode split and route assignment.

Data sources include existing and new traffic counts, 2000 U.S. Census Journey-to-work data, and the North Jersey Regional Transportation Model (NJRTM) of the North Jersey Transportation Planning Authority.

Data used from the Census has the advantage that it is from a survey and therefore is relatively accurate. This data also has several drawbacks. The first is that it only considers one type of trip – the journey-to-work trip, or home-based-work, trip. Also, the census data only provides existing data that has not been updated since 2000, and does not provide forecast data for future years.

The data available from the NJRTM has the advantage of including all types of trips, including home-based shopping, home-based other, and non-home based trips. The NJRTM also provides data for more recent years than the Census, and also provides data for forecast years. However, the data from the NJRTM has been synthesized from several sources and cannot be considered “real world” data like the census data, and is therefore inherently less accurate. Also, as a model covering the entire region of

northern New Jersey, the model may include assumptions that are not as accurate for the Jersey City study, particularly assumptions that pertain to mode choice.

Following standard practice, an Existing Conditions model was first calibrated. The Existing Conditions model attempts to recreate as accurately as possible the traffic conditions in the base year. This model was then adjusted to include traffic growth (both background growth and trips generated by specific planned developments) and infrastructure improvements for the horizon year 2020.

2.3 EXISTING TRAFFIC VOLUMES

Existing traffic volumes for the year 2006 are provided in the Technical Appendix.

2.4 SYNCHRO ANALYSIS / LEVEL OF SERVICE RESULTS

The existing operation of the intersections within the study area was determined using the software program Synchro, version 6.0. Synchro utilizes the methodology contained in the Transportation Research Board's Highway Capacity Manual 2000 to determine operation of intersections based on a calculation of the anticipated average delay a vehicle experiences or would experience at a given intersection. Information such as lane geometry, lane width, traffic signal timing, traffic volume, truck percentages, and turning restrictions are entered into the program to reflect traffic conditions. The resulting average delays are categorized by the HCM into Levels of Service.

Level of Service 'D' is generally considered the acceptable limit for delay in an urban setting.

The traffic volumes from the existing conditions travel demand model were analyzed by Synchro to determine the Levels of Service for each of the study locations. The signalized intersections are operating at poor or reduced Levels of Service under existing conditions. The following intersections operate at an overall Level of Service 'F' under existing conditions

During the Morning Peak Hour:
- Jersey Avenue at 12th Street
- Montgomery Street and Grove Street
- Montgomery Street and Marin Boulevard

During the Evening Peak Hour:
- Jersey Avenue and 14th Street

Detailed Level of Service results for each movement and intersection in the study area are attached in the Technical Appendix.

3.0 FUTURE CONDITIONS ANALYSIS

3.1 MARKET ANALYSIS

3.1.1 Introduction

Jersey City experienced major growth over the past two decades. As a result, new office and residential development, particularly on the waterfront, changed not only the skyline of New Jersey's second most populous city but also its business and demographic landscape.

3.1.2 Market Analysis Summary

The project team utilized existing independent population and employment projections to establish a baseline or neutral development scenario, an optimistic development scenario, and a pessimistic development scenario. (An additional, 'approved office' scenario is also being analyzed to consider the effects if all of the approved office development in the study area is developed).

Residential demand is likely to remain strong. All residential scenarios resulted in an increased demand for residential units.

Demand for commercial space is anticipated to stay soft. Only the optimistic commercial scenario resulted in an increase of demand that reaches beyond currently approved or proposed projects.

In the neutral scenario, which is assumed to provide the most probable picture of the future market conditions, AKRF estimates that Jersey City would need a total of 24,180 residential units and 830,000 square feet of commercial space to satisfy the projected demand.

To satisfy the demand estimated for the pessimistic scenario, 21,500 residential units would have to be added to Jersey City's housing stock. Demand for commercial space however, would be very low reaching about 260,000 square feet.

Net demand determined for the optimistic scenario would require 29,000 new residential units and about 1.6 million square feet of new office space.

Development sites identified to satisfy demand estimated for the three scenarios will serve as input variables for a traffic generation model. Since the list of the approved and proposed residential projects and the anticipated residential development sites is extensive, the tables containing the specific projects are provided in the main report.

3.2 TRANSPORTATION MODELING

3.2.1 Assigning Developments to Zones

For each of the four analysis scenarios, the new developments were identified by location and placed within one of the 182 internal zones within the study area. The total new development was summed by zone for each of four categories; the categories and their associated reference in the Institute of Transportation Engineers Trip Generation Manual, 7th Edition (2003) are shown below.

1) Residential (total dwelling units – Land Use #230, pp 368-369)
2) Office (1,000 square ft of gross floor area - Land Use #710, pp 1159-1160)
3) Hospital (1,000 square ft of gross leasable space - Land Use #610, pp 1102-1103)
4) Retail (1,000 square ft of gross leasable area -Land Use E#820, pp 1452-1453)

Future additional person trips were then calculated for each zone based on the average rates provided in the ITE manual. The average rates provided additional person trips for the AM and PM peak hours.

3.2.5 Planned Infrastructure Improvements

The No Build scenario generally includes a general background growth on the existing traffic, the additional traffic from the proposed developments, and all infrastructure improvements that have already been approved and are scheduled for completion before the horizon year 2020.

Based on the data, an average annual growth rate of 0.80 percent would appear to be reasonable for both time periods. This would result in a total background traffic growth factor of 11.80 percent during the 14-year period between the base year (2006) and the horizon year (2020).

4.0 No Build Conditions

The No Build scenario analyzes transportation condition in the year 2020 with the assumption that no improvements are made to the transportation system other than currently approved projects.

4.1 LAND USE FORECASTS

In order to ascertain traffic conditions under a variety of economic forecasts, four distinct land use scenarios were analyzed. The four scenarios are:

- Pessimistic: Assumes lower than expected economic growth and strong competition from other office-space markets, such as New York City;
- Neutral: Assumes expected economic growth and moderate competition from other office-space markets;
- Optimistic: Assumes higher than expected economic growth and weak competition from competing office-space markets;
- Approved Office: Assumes all currently approved office space will be constructed and occupied; residential development is assumed to be the same as the neutral scenario.

4.2 TRANSPORTATION IMPROVEMENTS

The No Build conditions assume no changes to the transportation network except those that have already been approved.

The approved transportation infrastructure improvements included in the No Build scenarios consist of the following projects:

- The construction of an additional right turn lane from the New Jersey Turnpike / 12th Street eastbound to Jersey Avenue southbound;
- The extension of Greene Street to the intersection of Washington Boulevard and 2nd Street;
- The redesign of Christopher Columbus Drive to provide 3 lanes eastbound during AM peak period and 3 lanes westbound during PM peak period across the entire span of the study area;
- The development of additional roads as part of the Liberty Harbor North development roads.
- The redesign of Newark Avenue between Christopher Columbus Drive and Grove Street to provide westbound service to buses only;

The No Build also scenario also assumes the extension of both Warren Street and Provost Street between 2nd Street and 6th Street. These are not currently approved projects, but it is assumed they will be completed by 2020.

4.3 NO BUILD TRAFFIC CONDITIONS

The Synchro traffic model was used to analyze traffic conditions during the AM and PM peak hour conditions for all four land use scenarios for the No Build transportation conditions.

4.3.1 Summary of No Build Traffic Results

In the Pessimistic scenario, **11** intersections would operate at an unacceptable LOS E or F during both the AM and PM peak hours. In the Neutral and Optimistic scenarios, between **13** and **17** intersections would operate at LOS E or F during the AM and PM peak hours. Finally, in the Approved Office scenario, **29** and **38** intersections are at LOS E or F during the AM and PM peak hours, respectively.

5.0 Description of Build Conditions

5.1 DISCUSSION OF PROCESS USED TO IDENTIFY CONCEPTS

The concept proposals were identified by the steering committee following a comprehensive review of transportation studies performed over the previous two decades.

5.2 ROADWAY PROJECTS

This section describes the eight roadway projects that were initially identified for this study. The first four concepts were deemed sufficiently viable for advancement to the next level of analysis.

5.2.1 Concept 1 – Jersey Avenue Extension to Audrey Zapp Drive

Concept 1 is the Jersey Avenue Extension (See Figure 5-1). Jersey Avenue currently terminates immediately south of Grand Street. This concept would entail the construction of a bridge spanning the Morris Canal Basin connecting the southern terminus of Jersey Avenue with Audrey Zapp Drive. The bridge would provide for one fifteen-foot lane of vehicular traffic in either direction.

The bridge would also provide striped bicycle lanes and 6-foot sidewalks in both directions; these facilities would maintain the pedestrian and bicycle access currently provided by the existing current wooden footbridge. Pedestrian access from the bridge sidewalk to the promenade planned along the north side of the canal basin in Liberty Harbor North will be provided.

This project is expected to have construction costs of approximately $6.4 million, with an additional $0.5 million estimated for right-of-way (ROW) acquisition. The project would require one year for design and construction. This concept would also require a wetlands/waterfront development permit and a floodplain encroachment permit. The permitting process should take less than one-year in entirety and not contribute significantly to the cost of the project.

Figure 5-1: Concept 1

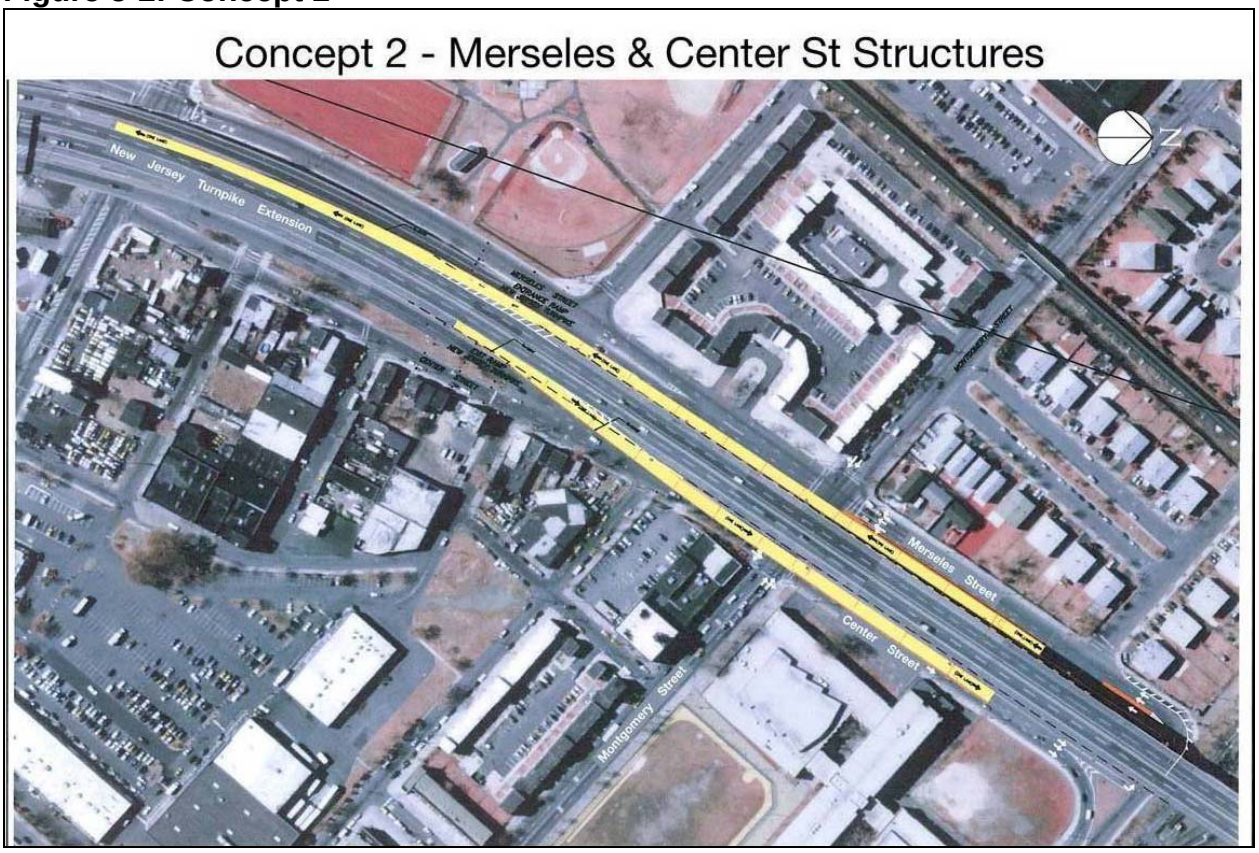
5.2.2 Concept 2 – Center/Merseles Streets Structures over Montgomery Street

Concept 2 is the Center and Merseles Streets Structures over Montgomery Street (see Figure 5-2). Under this concept, the New Jersey Turnpike ramps that currently come to grade at the intersection of Montgomery Street and Center / Merseles Streets would be extended over Montgomery Street and come to grade south of Christopher Columbus Drive. There are aesthetic and security concerns with Concept 2. An alternative concept to provide tunnels under Montgomery Street instead of flyovers would resolve those concerns. There is sufficient horizontal distance between the turnpike off-ramp and Montgomery Street to provide the tunnels.

This concept would significantly improve vehicular and pedestrian safety at the intersection of Montgomery Street with Center/Merseles Streets by removing the ramp approaches, while improving the traffic operations of these intersections.

This project is expected to have construction costs of approximately $18.3 million, with minimal additional cost for ROW acquisition. The project would require approximately 2.5-years for design and construction. Environmental impacts would be minimal and would not require any permitting.

Figure 5-2: Concept 2



5.2.3 Concept 3 –Merseles/Wilson/Aetna Street Extensions

Concept 3 is the Merseles / Wilson / Aetna Streets Extensions (See Figure 5-3). This concept would entail the construction of a northern extension of Wilson Street and a southern extension of Merseles Street that would connect at a signalized intersection with a western extension of Aetna Street. All of these new facilities would be designed to permit striped bicycle lanes and sidewalks.

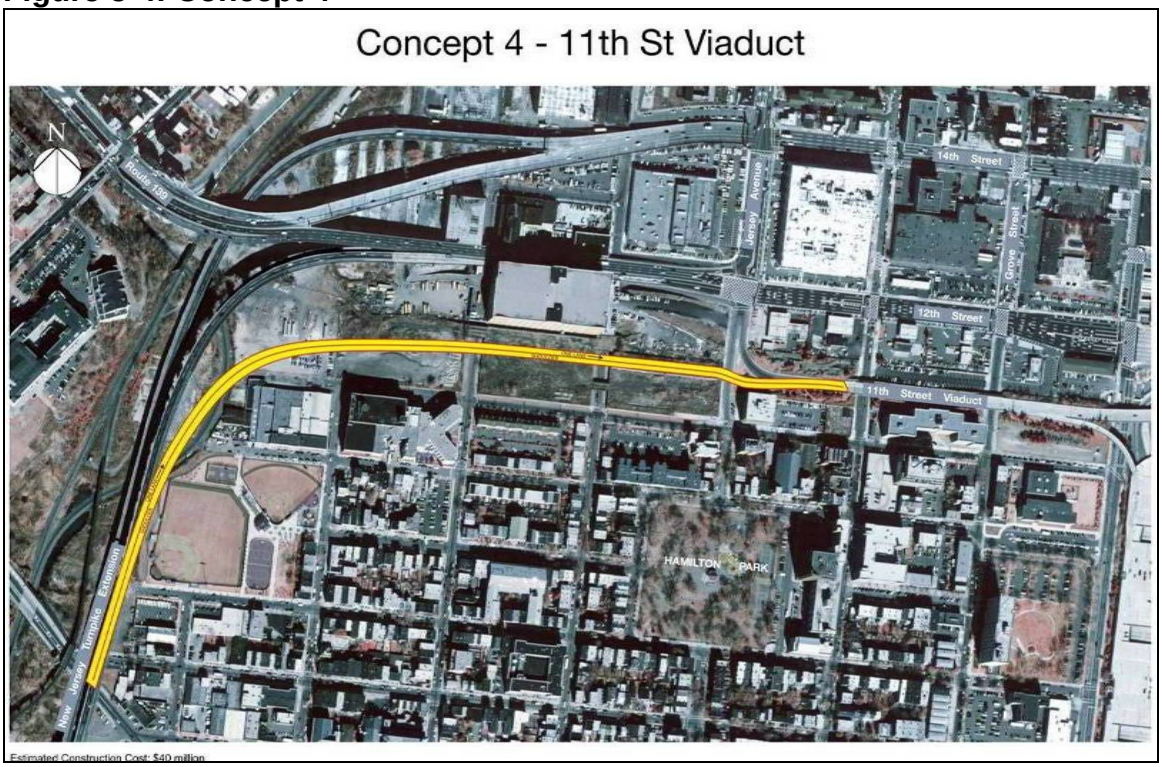
This project is expected to have construction costs of approximately $11.5 million, with an additional $2.5 million for ROW acquisition. The project would require 2.5-years for design and construction. This concept encroaches on Green Acres land in the vicinity of Audrey Zapp Drive, and would also require a floodplain encroachment permit.

Figure 5-3: Concept 3

5.2.4 Concept 4 – 11th Street Viaduct

Concept 4 is the 11th Street Viaduct (see Figure 5-4). This concept would entail the construction of a new exit ramp from the New Jersey Turnpike Extension to the existing 11th Street Viaduct that currently begins at Jersey Avenue. This project would have the effect of providing travelers to the northern part of the study area such as Newport with a unidirectional route to bypass to the long queues often experienced at the eastbound approach to the Holland Tunnel. This project is expected to have construction costs of approximately $80 million; the additional cost for ROW acquisition is unknown. The project would require approximately 3 years for design and construction.

Figure 5-4: Concept 4



5.2.5 Enhanced No Build

This concept assumes the same conditions as the No Build conditions. The only improvements are optimization of the traffic signals and spot improvements to intersections. Three intersections were chosen for spot improvements; these intersections were selected due to their low level of service in the optimistic scenario and for the feasibility for providing low-impact improvements at those intersections.

The spot improvements would be made to the following intersections:

- Montgomery Street and Monmouth Street: modify the northbound approach to operate as shared left-through and a right turn lane;
- Christopher Columbus Drive and Brunswick Street: modify the southbound approach to operate as shared left-through and a shared right-through lane;
- Montgomery Street and Greene Street: modify the eastbound approach to include a shared left turn, and modify the signal to operate as a split phase in the AM peak period;

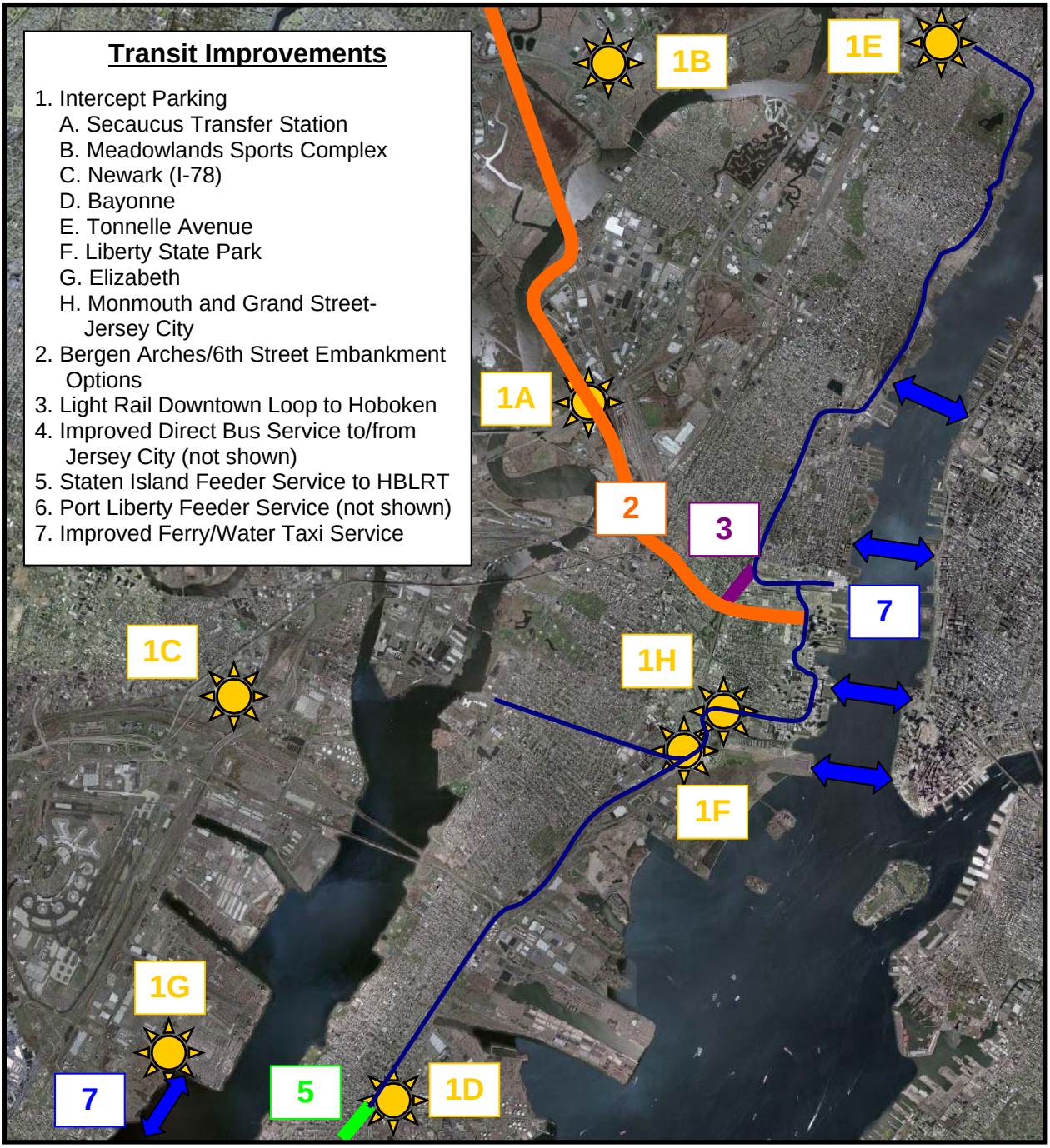
The spot improvements will not interfere with pedestrian or bicycle improvements, or with any of the concept plans, and the cost should be minimal as they do not involve major construction or ROW acquisition.

5.3 MASS TRANSIT PROJECTS

This section describes the seven transit projects that were initially identified for this study. The first five concepts were deemed sufficiently viable for advancement to the next level of analysis. The other two projects were not advanced due to reasons that are provided in the following subsections.

The locations of the transit projects are provided in Figure 5-5.

FIGURE 5-5: Transit Projects



5.3.1 Intercept Parking

This project would entail the construction of a remote, or “intercept”, parking garage or lot at one of eight possible locations.

The following three locations, external to the study area, are dependant on the extension of the HBLRT or another light rail system:

A. Secaucus Transfer Station
B. Meadowlands Sports Complex
C. Newark (near Turnpike Exit 14)

The following three locations, external to the study area, utilize the existing HBLRT system:

D. Bayonne
E. Tonnelle Avenue
F. Liberty State Park HBLRT station (parking garage)

The following location, external to the study area, is dependant upon the commencement of a new ferry service:

G. Elizabeth

Finally, the following location is internal to the study area:

H. Monmouth and Grand Streets in Jersey City

5.3.2 Bergen Arches/6th Street Embankment Mass Transit Options

This alternative assumes the construction of a Light Rail Transit (LRT) line or a Bus Rapid Transit (BRT) line through the Bergen Arches rail ROW parallel to NJ Route 139, along the Sixth Street Embankment, and connecting with the HBLR mainline. Although the precise alignment of the system is not yet determined, it would presumably connect the study area with the Secaucus Transfer Station. This concept would allow the development of intercept parking at the Secaucus Transfer Station and the Meadowlands Sports Complex.

5.3.3 Light Rail Downtown Loop to Hoboken

This concept assumed the construction of a light rail line looping between Jersey City and Hoboken. This concept was not advanced due to the perceived lack of benefits to regional traffic.

5.3.4 Improved Direct Bus Service To/From Jersey City

This concept would assume an increase in bus service to Jersey City, both from New York City and from elsewhere in New Jersey. The service would be provided by either New Jersey Transit or private carriers.

5.3.5 Staten Island Feeder Service to HBLRT

This project assumes the implementation of expanded bus service from Staten Island to the southernmost stop of the HBLRT; currently at 22nd Street, soon to be 8th Street.

5.3.6 Port Liberte Feeder Service

The alternative assumes that the Port Liberte development will provide bus transit service to selected locations such as HBLRT, PATH and ferry terminals.

5.3.7 Improved Ferry Service

This concept assumed increase ferry service between Jersey City and New York City. This concept was not advanced due to lack of information concerning the proposed service.

6.0 Evaluation of Concepts

In order to properly evaluate the potential costs and benefits of each project and rank the projects in priority order, it was necessary to develop a system to award projects points based on their achievement of certain goals.

The criteria were classified in four major groups. The four groups are:

- Cost
- Time Frame
- Traffic Impacts
- Other Local Impacts

The cost and time frame groups contain only one criterion each, while Traffic Impacts and Other Local Impacts both contain four criteria.

6.1 COST

Projects were scored based on their classification into one of the following four categories:

- Low: Construction cost is less than $10 million.
- Medium: Construction Cost is between $10 and $20 million.
- High: Construction cost is between $20 and $40 million.
- Very High: Construction cost is greater than $40 million.

6.2 TIME FRAME

Projects were scored based on their classification into one of the following four categories:

- Short Term: Time frame is less than 5 years.
- Medium Term: Time frame is between 5 and 10 years
- Long Term: Time frame is between 10 and 15 years
- Very Long Term: Time frame is greater than 15 years

6.3 TRAFFIC IMPACTS

Traffic impacts were disaggregated by their effect on regional and local routes. The regional routes are defined as major roadway facilities within the study area that are utilized by regional traffic (i.e. trips that start or end outside the study area). Any

roadway within the study area that was included in the traffic model and is not a regional route was considered a local route.

The regional routes include all or part of the following roadways:

- Pacific Avenue
- Grand Street
- Montgomery Street
- Christopher Columbus Drive
- Newark Avenue
- 12th Street
- 14th Street
- 18th Street
- Marin Boulevard
- Washington Boulevard
- Greene Street
- Center/Merseles Streets

The effect on total congested delay (i.e. delay per vehicle greater than 55.0 seconds) is shown in Table 6-1. Further detail of the model results, including the diversion diagrams, the volume diagrams, and the level-of-service diagrams, are provided in the Technical Appendix. The total vehicle hours of congested delay is provided for each scenario, along with the percent change from the No Build conditions. As shown in this table, the enhanced No Build (signal optimization plus spot improvements) produced the greatest reduction in total congested delay in both the AM and PM peak periods. All of the single-concept and combined-concept scenarios tend to reduce the total delay in the AM peak period. During the PM peak period, the combined-concept scenarios tend to increase to total congested delay; only the combination of Concepts 2 and 4 appears to offer significant reduction in the total delay.

The two transit options appear to offer similar benefits in both peak periods; a reduction of delay of approximately 5-percent in the AM peak period and 27 percent during the PM peak period.

Table 6-1: Total Vehicle Hours of Congested Delay By Scenario

Scenario	AM Peak Hour		PM Peak Hour	
	Hours	% Diff	Hours	% Diff
No Build	2,627	N/A	2,165	N/A
Spot Improvements	1,177	-55%	1,432	-34%
Concept 1 Only	1,472	-44%	1,830	-15%
Concept 2 Only	1,832	-30%	1,701	-21%
Concept 3 Only	1,585	-40%	2,147	-1%
Concept 4 Only	1,203	-54%	1,545	-29%
Concepts 1 & 2	1,223	-53%	2,378	10%
Concepts 1 & 3	1,433	-45%	2,341	8%
Concepts 1 & 4	1,411	-46%	2,485	15%
Concepts 2 & 3	1,423	-46%	2,365	9%
Concepts 2 & 4	1,121	-57%	1,621	-25%
Concepts 3 & 4	1,271	-52%	2,161	0%
Concepts 1, 2 & 3	1,315	-50%	2,447	13%
Concepts 1, 2 & 4	1,391	-47%	2,171	0%
Concepts 1, 3 & 4	1,304	-50%	2,277	5%
Concepts 2, 3 & 4	1,498	-43%	2,256	4%
Concepts 1, 2, 3 & 4	1,344	-49%	2,256	4%
Transit North	1,333	-49%	1,587	-27%
Transit South	1,316	-50%	1,571	-27%

The four criteria within this category are:

- Impact on regional routes during the AM peak period
- Impact on local routes during the AM peak period
- Impact on regional routes during the PM peak period
- Impact on local routes during the PM peak period

The projects were scored for traffic flow based on the difference between congested delay in the Build and in No Build option. Congested delay is defined as the total vehicle hours of delay that vehicles experience at Level of service E or F; that is greater than an average delay of 55 seconds per vehicle. The change in congested delay was examined for the four criteria. The projects were scored according to the following scale:

- Very Beneficial: Greater than 30 percent reduction in congested delay
- Beneficial: Between 10 and 30 percent reduction in congested delay
- Neutral: Less than 10 percent change in the congested delay
- Detrimental: Between 10 and 50 percent increase in congested delay
- Very Detrimental: Greater than 50 percent reduction in congested delay

6.4 OTHER LOCAL IMPACTS

These criterion are utilized to allow scoring of the projects based on impacts on the study area that are not based primarily on traffic flow. These four criteria are:

1. Pedestrian and Bicycle Accessibility: Does the project improve accessibility for bicyclists and pedestrians within Jersey City. Projects are scored based on whether they are beneficial, neutral or detrimental for this criterion;
2. Access to Study Area: Does the project impact access between another Jersey City neighborhood or area and the study area? Projects are scored based on whether they are improving access, are neutral towards access, or diminish access;
3. Pedestrian and Vehicular Safety: Does the project impact the safety of pedestrians, bicyclists or vehicular passengers? Projects are scored based on whether they are improving safety, are neutral towards safety, or diminish safety;
4. Construction and Environmental Impacts: What are the short term construction impacts and long term air quality and noise impacts to the area surrounding the project? The projects are scored based on their proximity to a residential neighborhood; the three categories are nearer (less than 500 feet to a residence) medium (between 500 and 100 feet, or with a physical barrier between the project and the neighbors), or farther (greater than 1000 feet to a residence).

6.5 BALLOTING PROCESS

Ballots to assign weights to the criteria were distributed at Steering Committee Meeting #7. Each organization in attendance was permitted one combined vote for all attendees. A full list of organizations is provided in the main report.

6.6 WEIGHTED SCORING

The ballots were used to determine the weighted score for each criterion. This gave each of the criteria an influence on the total project score (and thus ranking) based on the collective value placed on that criterion by the members of the steering committee.

The weighted criterion scores that resulted from the balloting are provided below in Table 6-2.

Table 6-2: Weighted Criteria Scores Resulting from Balloting

Jersey City RA/DC Study **Weighted Evaluation Criteria**	
Criterion	**Definition**

Goal 1: Cost (Maximum Goal Score: 185)

Capital Cost	What is the total project capital cost, including acquisition of ROW, permitting, design, and construction? (Maximum Criterion Score: 185)

Cost Category	**Points**	**Perc.**
Low Cost - Less than $10 million	185	100%
Med Cost - $10-$20 million	129	70%
High Cost - $20 -$40 million	74	40%
Very High Cost - Over $40 million	0	0%

Goal 2: Time Frame (Maximum Goal Score: 181)

Time For Total Completion	What is the time frame for completion of design, acquisition of funding, acquisition of R.O.W., permitting, and construction for all construction phases of the project? (Maximum Criterion Score: 181)

Time Frame Category	**Points**	**Perc.**
Short Term - (Less than 5 years)	181	100%
Medium Term (5-10 years)	127	70%
Long Term (10 to 15 years)	72	40%
Very Long Term (over 15 years)	0	0%

Table 6-2: Weighted Criteria Scores Resulting from Balloting (continued)

Goal 3: Traffic Flow (Maximum Goal Score: 346)

Downtown Circulation – AM Peak Hour

What would be the impact to traffic flow on the local streets in the study area in the AM peak by 2020? (Measured in total hours of congested delay, meaning total hours of vehicle delay above normal delay for the no-build scenario.) (Maximum Criterion Score: 96)

Traffic Impact Category	Points	Perc
Very Beneficial (Greater than 30% reduction in congested delay)	96	100%
Beneficial (Between 10% and 30% reduction in congested delay)	67	70%
Neutral (Between 10% reduction and 10% increase in congested delay)	38	40%
Detrimental (Between 10% and 50% increase in congested delay)	0	0
Very Detrimental (Greater than 50% increase in congested delay)	-38	-40%

Downtown Circulation – PM Peak Hour

What would be the impact to traffic flow on the local streets in the study area in the PM peak by 2020? (Measured in total hours of congested delay, meaning total hours of vehicle delay above normal delay for the no-build scenario.) (Maximum Criterion Score: 77)

Traffic Impact Category	Points	Perc
Very Beneficial (Greater than 30% reduction in congested delay)	77	100%
Beneficial (Between 10% and 30% reduction in congested delay)	54	70%
Neutral (Between 10% reduction and 10% increase in cong. delay)	31	40%
Detrimental (Between 10% and 50% increase in congested delay)	0	0
Very Detrimental (Greater than 50% increase in congested delay)	-31	-40%

Table 6-2: Weighted Criteria Scores Resulting from Balloting (continued)

Goal 3: Traffic Flow (cont.) (Maximum Goal Score: 346)

Regional Mobility - AM Peak Hour

What would be the impact on regional mobility to downtown employment and population centers in the AM peak by 2020? (Measured in total hours of congested delay on roadway corridors in the study area that provide regional access to Grand Jersey, Liberty Harbor North, Exchange Place, Newport, or the Jersey Avenue Redevelopment Plan Area.) (Maximum Criterion Score: 101)

Traffic Impact Category	Points	Perc
Very Beneficial (Greater than 30% reduction in congested delay)	101	100%
Beneficial (Between 10% and 30% reduction in congested delay)	71	70%
Neutral (Between 10% reduction and 10% increase in cong. delay)	40	40%
Detrimental (Between 10% and 50% increase in congested delay)	0	0
Very Detrimental (Greater than 50% increase in congested delay)	-40	-40%

Regional Mobility - PM Peak Hour

What would be the impact on regional mobility to downtown employment and population centers in the PM peak by 2020? (Measured in total hours of congested delay on roadway corridors in the study area that provide regional access to Grand Jersey, Liberty Harbor North, Exchange Place, Newport, or the Jersey Avenue Redevelopment Plan Area.) (Maximum Criterion Score: 72)

Traffic Impact Category	Points	Perc
Very Beneficial (Greater than 30% reduction in congested delay)	72	100%
Beneficial (Between 10% and 30% reduction in congested delay)	50	70%
Neutral (Between 10% reduction and 10% increase in congested delay)	29	40%
Detrimental (Between 10% and 50% increase in congested delay)	0	0
Very Detrimental (Greater than 50% increase in congested delay)	-29	-40%

Table 6-2: Weighted Criteria Scores Resulting from Balloting (continued)
Goal 4: Other Local Impacts (Maximum Goal Score: 291)

<table>
<tr><td>Pedestrian And Bicycle Accessibility</td><td>Does the project improve accessibility for bicyclists and pedestrians within Jersey City? (Beneficial is determined if there is the creation of a new safe bicycle and pedestrian route. Detrimental is determined if there is the addition of vehicular traffic to local streets anywhere in Jersey City.) (Maximum Criterion Score: 59)
<table>
<tr><th>Category</th><th>Points</th><th>Perc</th></tr>
<tr><td>Beneficial</td><td>59</td><td>100%</td></tr>
<tr><td>Neutral</td><td>29</td><td>50%</td></tr>
<tr><td>Detrimental</td><td>-29</td><td>-50%</td></tr>
</table></td></tr>
<tr><td>Access To Study Area</td><td>Does the project impact access between another Jersey City neighborhood or area and the Study Area? (Improves access is determined if there is creation of a new pedestrian, bicycle, vehicular, or mass transit route between another neighborhood or area and the Study Area. Diminishes access is determined if access is impeded for any reason.) (Maximum Criterion Score: 82)
<table>
<tr><th>Category</th><th>Points</th><th>Perc</th></tr>
<tr><td>Improves</td><td>82</td><td>100%</td></tr>
<tr><td>Neutral</td><td>41</td><td>50%</td></tr>
<tr><td>Diminishes</td><td>-41</td><td>-50%</td></tr>
</table></td></tr>
<tr><td>Pedestrian And Vehicular Safety</td><td>Does the project impact the safety of pedestrians, bicyclists or vehicular passengers? (Maximum Criterion Score: 92)
<table>
<tr><th>Category</th><th>Points</th><th>Perc</th></tr>
<tr><td>Improves</td><td>91</td><td>100%</td></tr>
<tr><td>Neutral</td><td>45</td><td>50%</td></tr>
<tr><td>Diminishes</td><td>-45</td><td>-50%</td></tr>
</table></td></tr>
<tr><td>Construction And Environmental Impacts</td><td>What is the short term construction impact and long term air quality and noise impacts to the area surrounding the project? (Measured by the proximity of the project to an existing neighborhood.) (Maximum Criterion Score: 57)
<table>
<tr><th>Category</th><th>Points</th><th>Perc</th></tr>
<tr><td>Farther (Over 1000 feet)</td><td>57</td><td>100%</td></tr>
<tr><td>Med or with a physical barrier (500-1000 feet or closer but physical barrier)</td><td>28</td><td>50%</td></tr>
<tr><td>Nearer (Less than 500 feet)</td><td>0</td><td>0%</td></tr>
</table></td></tr>
</table>

7.0 Build Analysis and Findings

7.1 OPTIMISTIC DEVELOPMENT SCENARIO FORECAST ONLY

A decision was made to use the optimistic development scenario only for the traffic forecasts. The traffic impacts of the Neutral and Optimistic development scenarios were similar enough to each other that it is assumed that transportation improvements that are appropriate for the Optimistic scenario are appropriate for the Neutral and Pessimistic scenarios also. The Approved Office development scenario was determined by the AKRF market analysis as unlikely to occur within the 2020 timeframe. Also, the modeling of the approved office development scenario under the no-build condition determined that there would be complete gridlock and it was determined that there would not be any marginal traffic flow benefit found in any of the proposed roadway concepts.

7.2 PROJECT COMBINATIONS

The roadway concepts were not only analyzed in isolation, but in the fifteen various combinations of the four concepts that are possible. This was necessary as the cumulative effect of two or more of the projects may have unanticipated effects that would not be apparent from the individual analysis. Therefore, each of the fifteen combinations was modeled and scored separately.

7.2.1 Transit Alternatives

The transit alternatives were modeled by assuming a best-case transit ridership scenario of 400 vehicles removed from the regional routes for any one transit scenario. This figure is based on the 2003 Bergen Arches Study Final Report, which estimated that a fully built Bergen Arches transit alternative could remove 4,000 total daily vehicle trips from the roadway system. The figure of 400 is estimated by assuming that 10 percent of the vehicle would be from the peak hours and all of those vehicles would be traveling to Jersey City.

This best-case transit scenario was assumed to apply only to the Bergen Arches transit alternatives. The other transit alternatives were scored based on a qualitative comparison with the best case alternative.

7.3 PROJECT SCORES / RANKING

The projects were scored based on the total points awarded for each of the criteria. The maximum number of points a project could receive was 1,000. The projects were then ranked in order according their relative scores. The roadway and transit projects were ranked separately.

The scores and rankings of the roadway project are shown in Table 7-19, the ranking of the transit projects is shown in Table 7-20.

Table 7-19: Scores and Rankings of Roadway Projects

		Total Points	Project					AM Peak - Regional		AM Peak - Local		PM Peak - Regional		PM Peak - Local		Ped and Bicycle Accessibility		Access to Study Area		Ped and Vehicular Safety		Construction and Env. Impacts	
Project	Description	(out of maximum 1000)	Ranking	Approximate Cost	Score	Points	Time Frame	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points
Enhanced No Build	Signal Optimization + Spot Improvements	838	1	Less than $5 Million	Low	185	Short Term	181	Very Ben	101	Very Ben	96	Very Ben	72	Neutral	31	Neutral	29	Neutral	41	Neutral	45	Farther	57
Concept 1	Jersey Avenue Extension	819	2	$7 Million	Low	185	Short Term	181	Very Ben	101	Beneficial	67	Very Ben	72	Detrimental	0	Neutral	29	Beneficial	82	Neutral	45	Farther	57
Concept 3	Merseles-Aetna-Wilson Extension	727	7	$14 Million	Medium	129	Short Term	181	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Medium	28
Concept 4	11th Street Viaduct	716	8	$40 Million	High	74	Short Term	181	Very Ben	101	Very Ben	96	Very Ben	72	Neutral	31	Neutral	29	Neutral	41	Improves	91	Nearer	0
Concept 2	Center-Merseles Structures over Montgomery	713	9	$18 Million	Medium	129	Short Term	181	Very Ben	101	Neutral	38	Very Ben	72	Neutral	31	Neutral	29	Neutral	41	Improves	91	Nearer	0
No Build	Only Currently Approved Projects	676	10	N/A	Low	185	Short Term	181	Neutral	40	Neutral	38	Neutral	29	Neutral	31	Neutral	29	Neutral	41	Neutral	45	Farther	57
Concept 1&2	[see above]	644	11	$25 Million	High	74	Short Term	181	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 1&3	[see above]	643	12	$21 Million	High	74	Short Term	181	Very Ben	101	Neutral	38	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Medium	28
Concept 2&4	[see above]	642	13	$58 Million	Very High	0	Short Term	181	Very Ben	101	Very Beneficial	96	Very Ben	72	Neutral	31	Neutral	29	Neutral	41	Improves	91	Nearer	0
Concept 2&3	[see above]	615	15	$32 Million	High	74	Short Term	181	Very Ben	101	Neutral	38	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 1&2&3	[see above]	590	16	$39 Million	High	74	Medium Term	127	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 1&4	[see above]	570	19	$47 Million	Very High	0	Short Term	181	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 3&4	[see above]	570	19	$54 Million	Very High	0	Short Term	181	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 1&2&4	[see above]	516	21	$65 Million	Very High	0	Medium Term	127	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 1&3&4	[see above]	487	22	$61 Million	Very High	0	Medium Term	127	Very Ben	101	Neutral	38	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 2&3&4	[see above]	487	22	$72 Million	Very High	0	Medium Term	127	Very Ben	101	Neutral	38	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Concept 1&2&3&4	[see above]	461	24	$79 Million	Very High	0	Long Term	72	Very Ben	101	Beneficial	67	Beneficial	50	Very Detrimental	-31	Neutral	29	Beneficial	82	Improves	91	Nearer	0

Table 7-20: Scores and Rankings of Transit Projects

		Total Points	Project					AM Peak - Regional		AM Peak - Local		PM Peak - Regional		PM Peak - Local		Ped and Bicycle Accessibility		Access to Study Area		Ped and Vehicular Safety		Construction and Env. Impacts	
Project	Description	(out of maximum 1000)	Ranking	Approximate Cost	Score	Points	Time Frame	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points	Score	Points
Enhanced No Build	Signal Optimization + Spot Improvements	838	1	Less than $5 Million	Low	185	Short Term	181	Very Ben	101	Very Ben	96	Very Ben	72	Neutral	31	Neutral	29	Neutral	41	Neutral	45	Farther	57
Transit 5	Improved Bus Service to/from JC	803	3	Less than $5 Million	Low	185	Short Term	181	Beneficial	71	Beneficial	67	Beneficial	50	Neutral	31	Neutral	29	Neutral	41	Improves	91	Farther	57
Transit 6	Staten Island Feeder Service to HBLRT	803	3	Less than $5 Million	Low	185	Short Term	181	Beneficial	71	Beneficial	67	Beneficial	50	Neutral	31	Neutral	29	Neutral	41	Improves	91	Farther	57
Transit 7	Port Liberte Feeder Service	803	3	Less than $5 Million	Low	185	Short Term	181	Beneficial	71	Beneficial	67	Beneficial	50	Neutral	31	Neutral	29	Neutral	41	Improves	91	Farther	57
Transit 3	Intercept Parking at External Location	746	6	$5 Million	Low	185	Short Term	181	Beneficial	71	Beneficial	67	Beneficial	50	Neutral	31	Neutral	29	Neutral	41	Improves	91	Nearer	0
No Build	Only Currently Approved Projects	676	10	N/A	Low	185	Short Term	181	Neutral	40	Neutral	38	Neutral	29	Neutral	31	Neutral	29	Neutral	41	Neutral	45	Farther	57
Transit 4	Intercept Parking at Internal Location	619	14	$5 Million	Low	185	Short Term	181	Neutral	40	Neutral	38	Neutral	29	Neutral	31	Neutral	29	Neutral	41	Neutral	45	Nearer	0
Transit 1	Bergen Arches/6th Street Embankment LRT	574	17	Greater than $100 Million	Very High	0	Long Term	72	Very Ben	101	Very Ben	96	Very Ben	72	Neutral	31	Neutral	29	Beneficial	82	Improves	91	Nearer	0
Transit 2	Bergen Arches/6th Street Embankment BRT	574	17	Greater than $100 Million	Very High	0	Long Term	72	Very Ben	101	Very Ben	96	Very Ben	72	Neutral	31	Neutral	29	Beneficial	82	Improves	91	Nearer	0

Notes:

The transit options assumed a maximum reduction of of 400 vehicles during AM and PM peak hours

The potential internal intercept parking location is at Monmouth and Grand Streets

The potential external intercept parking locations are a the following seven locations:

1) Secaucus Transfer Station
2) Meadowlands Sports Complex
3) Bayonne
4) Tonnelle Avenue
5) Liberty State Park
6) Newark (Near NJ Turnpike Interchange 14)
7) Elizabeth

8.0 Other Projects Considered and Findings

8.1 PARKING RATIO

Most urban areas have some form of parking management. However, few of these areas have attempted to limit the number of available spaces or provide incentives for non-single occupant vehicle (SOV) forms of travel. Jersey City has been one of a hand full of cities in the U.S. to limit the parking supply as a vehicle trip reduction strategy by setting a maximum parking space requirement that developers may not exceed. This is contrary to requirements in many areas that specify a minimum number of spaces that developers must create. In the private sector, many employers may provide preferential parking for carpoolers. These efforts may be performed voluntarily, or be required under a local trip reduction ordinance.

In order for Jersey City to continue to grow within the office and residential markets and to provide for economic growth of the Downtown area, public mass transit projects must be advanced ---- including the Transit Options 1, 2, 3 & 4 contained is this report --- since the roadway network can not and would not be able to accommodate additional traffic in the future. In addition, Jersey City must prohibit commuter park-and-ride parking near transit stations since an unlimited requirement could promote additional vehicles deep within the downtown area and defeat the intent of intercept parking.

An additional benefit of limiting parking space may result from the potential higher economic use of land that would otherwise be used for parking. However, an unintended consequence is that drivers may circle an area frequently in search of parking, which could lead to increased congestion. Also, vehicles could be drawn to fringe, retail-only, or residential parking, which may be undesirable for residents and require further enforcement and signage needs.

Costs of this measure include those incurred for administration of a program and for enforcement if the measure is required. Additional costs may include the costs of building facilities for preferential parking, signs, and parking booth attendants if they are required.

Parking management measures may be required by ordinance or they may be voluntary. The measure does not require a substantial amount of financial resources to implement, although a large amount of political capital may be required to overcome business and employer objections to reducing or limiting available parking. To implement overall parking limits, an area may need to conduct parking surveys and studies, and develop and seek input on plans**.** This section identifies general guidelines for future refinement and/or endorsement by the governing body.

Policies that limit available parking supply work best where the following conditions are met:

- Current parking is well utilized (where supply doesn't greatly exceed demand);
- Transit, bicycle and pedestrian, and ridesharing facilities and programs exist to absorb commuters that no longer drive;
- Vacant land and neighborhoods do not have the capacity to absorb the overflow or are well controlled by parking restrictions.

Parking policies generally affect all groups of commuters equally. Those already using public transit or with access to it may be inconvenienced the least. Those who must drive may bear more of the cost because they will be required to pay higher parking fees which usually result when the parking supply is limited. Commuters who are able to carpool or vanpool may benefit the most from preferential parking for HOVs. Urban residents may find that residential parking becomes limited if overflow parking is not controlled.

Recommendations

Jersey City should be cautious about the level of parking and traffic within the downtown area. In order to grow economically, Jersey City should focus on the mass transit options (such as Transit Options 1, 2, 3 and 4) to build on the 40% - 60% Transit usage and to reduce vehicular traffic on the regional and local roadway network. As it is today, and forecasted for the future, the roadway network can not process more traffic during the traditional "peak hour". Therefore, increased traffic would translate into a longer duration "peak hour" (peak two or three hour period).

The residential and office land uses have the potential to require and add a substantial amount of traffic. Continued office growth should rely on the public transit system and proposed options. Residential growth is less likely to effect the AM and PM peak hours as much compared to office; however, the amount of proposed growth could add over 35,700 parking spaces.

Jersey City must prohibit commuter park & ride parking near transit stations since an unlimited requirement could promote additional vehicles deep within the downtown area and defeating the intent of intercept parking.

Lastly, the preservation of right of way for bus service and other mass transit options will improve travel times via mass transit and assist in the continuation of Jersey City's growth.

Table 8-1 Parking Ratio Ranges by Land Use Type

Land Use Type	Max	Min	Comment	Anticipated Parking Req.	
Residential	1.0 space Per Unit	0.25 Spaces Per Unit	The shared parking concept should be studied to determine if reserved parking spaces for residents can be removed	29,020	7,255
Office	1.0 Space Per 1,000 sf	0.5 Spaces Per 1,000 sf		6,753	3,377
Retail	1.0 Space Per 1,000 sf	0.25 Spaces Per 1,000 sf			
Hotel	1.0 Space Per Room	0.25 spaces per room			
Total				35,773	10,632

The Transportation Policy Institute of Rutgers University prepared the *Jersey City Bicycle Plan* for the Jersey City Division of Planning in April 2000. This report provided guidelines for the development of and implementation of an extensive bicycle network throughout Jersey City. The report included illustrative guidelines that defined major bicycle routes, requisite signage, parking facilities, and a program to encourage the practice of bicycling as a mode of transportation for both commuting and for recreation. In 2006, the Jersey City Planning Board amended the Jersey City Master Plan to include a bikeway system, which was prepared by the RBA Group and identified on-road and off-road routes. The recommendations in this section are intended to supplement the RBA plan and the April 2000 Rutgers report by providing additional detail on the major bicycle routes within the study area.

East Coast Greenway

Jersey City will also be an important link in the proposed East Coast Greenway (ECG), a 3,000 mile Maine-to-Florida urban trail that is currently under construction by the ECG Alliance. The ECG is planned as a primarily off-road facility for the use of cyclists, hikers, and other non-motorized recreational users. In Hudson County, the ECG is currently envisioned as traveling southward along the bank of the Hudson River; in Jersey City the ECG would then travel westward on the 6th Street embankment and

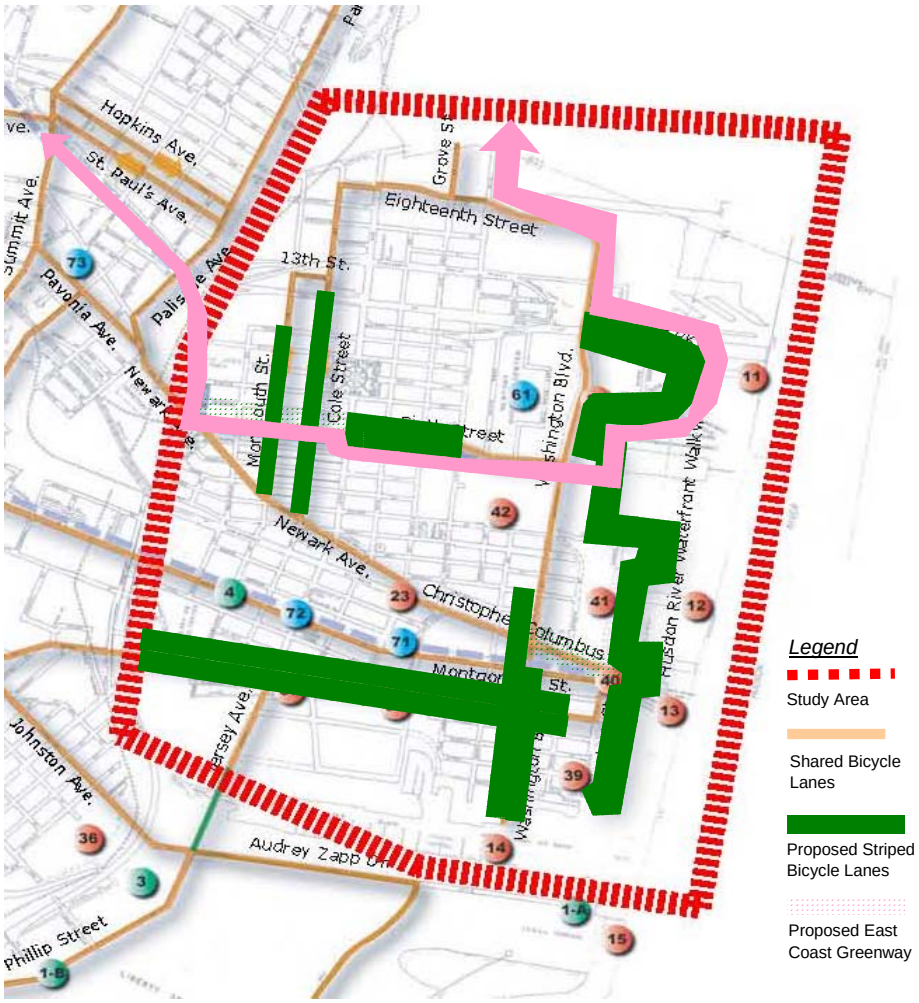
through the Bergen Arches ROW. Until this path is completed, Montgomery Street would serve as a temporary route.

Bicycle Parking Locations

Long term and short term bicycle parking facilities should be provided to accommodate bicyclists. Facilities should be located near transit stations, schools, libraries, employment centers, shopping malls, and public buildings. Key locations for bicycle racks, as identified by the year 2000 Rutgers University report are provided in the main report.

Standard signs and markings as defined by the *Manual of Uniform Traffic Control Devices* (MUTCD), and as presented in the April 2000 study, should be used for all routes.

Figure 8-2: Jersey City Downtown Proposed Bikeway System Striping Plan



8.2 COMPREHENSIVE BICYCLE PROGRAM

A program to encourage bicycle usage, provide regular maintenance of facilities, ensure compliance of laws regarding bicycle lane travel, and educate motorists and bicyclists about bicycle facilities should be implemented. Recommendations as presented in the Rutgers study are:

Encouragement

- Create a Jersey City Bicycle Map
- Support National "Bike to Work Week" in May
- Post publicity information on bicycling at bus shelters, schools, and government centers
- Encourage Jersey City employees to commute by bicycle

Engineering

- Design all roads for bicycle travel
- Maintain facilities to ensure safe use (street sweeping, pothole repair, etc.)

Enforcement

- Ensure compliance with bicycle lane and automobile travel lane laws;
- Increase priority on investigation of reported incidents of bicycle theft.

Education

- Publish safety literature and develop safety education programs to educate the community on safe bicycle operation on city streets.

8.3 PROPOSED PEDESTRIAN IMPROVEMENT LOCATIONS

The following six intersections were selected for identification of potential pedestrian improvements. These specific intersections were chosen due to their proximity to a school or other pedestrian generators of interest, such as a transit stations. Pedestrian crossing conditions are proposed to be improved through a variety of measures, including installing high visibility crosswalks, upgrading and retiming crossing signals, maintaining regulatory signs, and installing bollards. Many of the recommendations made for these intersections can be applied to other intersections throughout the study area.

- Intersection 1: Grand Street and Jersey Avenue
- Intersection 2: Montgomery Street and Washington Street
- Intersection 3: Montgomery Street and Jersey Avenue
- Intersection 4: Montgomery Street and Center Street / New Jersey Turnpike and Merseles Street
- Intersection 5: Christopher Columbus Drive and Grove Street
- Intersection 6: Newark Avenue and Jersey Avenue

The recommendations for each location are provided in the main report.

9.0 Public Participation Process

The public outreach effort for this project consisted of a two-part process to ensure that the project followed an open public process format. The steering committee represented the first part of the public outreach and was created to guide the project, help to collect information, and obtain input from major stakeholders and concerned organizations. A full list of the groups is provided in the main report.

The steering committee met ten times throughout the course of the study. At the meetings, the steering committee provided input and feedback on the consultant team's draft work products. The steering committee also played an integral role in the development and weighting of the evaluation criteria.

The second part of the public outreach process included a series of four public meetings at key milestones to inform the general public of the project and to obtain input and comments. The following is a list of public meeting dates and purpose:

- *Public Meeting 1, February 1, 2006*: Introduction to study goals and consultant team
- *Public Meeting 2, June 29, 2006*: Presentation of anticipated deficiencies in transportation network of study area and solicitation of potential improvement projects
- *Public Meeting 3, March 1, 2007*: Presentation of evaluation criteria, project scoring system, and proposed projects for analysis, including concept designs for roadway projects.
- *Public Meeting 4, May 24, 2007*: Presentation of the consultant team's final recommendations.

All public meetings were held in the Council Chambers of Jersey City City Hall. Flyers advertising the meetings were posted at City Hall and distributed to attendees of previous transportation study public meetings. A public comment period followed Public Meetings 1-4 during which the public was encouraged to submit written comments to the Jersey City project manager.

10.0 Summary and Next Steps

The Jersey City Regional Waterfront Access and Downtown Circulation Study has identified the complete set of feasible roadway and transit concepts that can be advanced during the next decade to provide improved accessibility and mobility in the Jersey City Downtown and Hudson River Waterfront area.

Table 10-1 provides a list of the identified projects and the time frame during which they should be advanced. A hand-off agency is identified for each project – this is the agency that would take responsibility for the project and advance it from the conceptual plans presented in this report to the next stage of planning, scoping, design and construction.

The Enhanced No Build option ranks highest, which indicates that the City should move forward with an aggressive signal optimization program and implement spot improvements to the selected intersections. It is also important that the city complete the projects assumed for the No Build scenario, particularly the project to expand Christopher Columbus Drive to three lanes in the peak direction.

The bicycle and pedestrian improvement plans discussed in Chapter 5 should be advanced in the short term (0 to 3 years). These plans would enhance the quality of life in Jersey City at low cost and provide additional transportation options. It would also be advisable to advance the low-cost transit options (Transit 5, 6, and 7). The Port Liberte feeder service can be classified as medium term as it does not need to be commenced until the Port Liberte development is significantly completed.

As shown above in Table 7-19 the combination of Roadway Concepts 1 and 2 scores the highest of all the combinations. This seems to indicate that Concepts 1 and 2 complement each other and should both be advanced in the short term. Concept 2 in particular will complement the expansion of Christopher Columbus Drive to three lanes. Aesthetic and security concerns can be resolved by implementing Concept 2 as tunnels under Montgomery Street, which would be more costly than flyovers.

The combination of Concept 2 and 4 is the best roadway combination from a strictly traffic flow perspective. As in the case of combination on Concepts 1 and 2, aesthetic and security concerns can be resolved by implementing Concept 2 as tunnels under Montgomery Street, which would be more costly than the flyovers.

Roadway Concepts 3 and 4 should be considered medium term prospect (3 to 5 years), possibly requiring additional reevaluation after the construction of the Jersey Avenue Extension and the Center/Merseles Streets overpasses and a reassessment of traffic

patterns by the updated traffic model. Concept 4 adds significant capacity to the system, at least in the inbound direction. Although it scores high for the traffic flow categories, the concept ranks lower than the other three roadway concepts due to it high costs and high construction and environmental impact.

The analysis indicates that the Bergen Arches transit projects have significant potential to reduce traffic congestion. However, the projects are ranked low due to their high cost and long time frame, and should be considered for long term implementation.

The traffic modeling does indicate that virtually all of the roadway concepts will have a detrimental effect on traffic flow on the local streets during the PM peak period. These concepts all have the effect of transferring vehicles from the regional routes to the local routes without adding major additional capacity to the local street system.

The traffic model indicates that this effect will be exacerbated as the concepts are combined. The roadway combination with one of the least detrimental impacts to both local traffic flow and overall traffic flow is the combination of Concepts 3 and 4. This combination also provides maximum access to developable land in the south end of the study area. Also, the combination of Concepts 1, 3 and 4 has a less detrimental effect on traffic than the combination of Concept 1 and 4.

The city will have to remain vigilant in efforts to mitigate the traffic congestion problem. The traffic model should be updated on an annual basis in order to adequately monitor levels of congestion. The projects should be implemented in a phased development sequence with reevaluation of the modeling assumptions following the completion of each phase.

Aggressive promotion of mass transit options such as the intercept parking and enhanced bus service will also be vital. None of the recommendations in this report should have a negative impact on existing or planned transit service, such as the planned increase in the frequency of the HBLRT.

Possible solutions to the potential gridlock scenario are the use of the parking management regulations to limit the demand into the study area, or the introduction of a congestion fee for vehicles that enter the study area during the morning peak period.

Table 10-1: Recommended Schedule for Advancement of Projects

Project	Description	Score	Rank	Cost	Handoff Agency
Short Term					
Enhanced No Build	Spot Improvements and Signal Optimization	838	1	< $5 million	Jersey City Engineering / NJDOT
Pedestrian Plan	Pedestrian Improvements at Select Locations	N/A	N/A	< $5 million	Jersey City Engineering / NJDOT
Bicycle Plan	Striped Bicycle Lanes at Selected Locations	N/A	N/A	< $5 million	Jersey City Engineering / NJDOT
Concept 1	Jersey Avenue Extension	819	2	$6.4 million	Jersey City Engineering / NJDOT
Concept 2	Center-Merseles Street Structures	713	9	$18.3 million	Jersey City Engineering / NJDOT
Transit 5	Improved Bus Service to Jersey City	803	3	< $5 million	New Jersey Transit / Hudson TMA
Transit 6	Staten Island Feeder Service to HBLRT	803	3	< $5 million	New Jersey Transit / Hudson TMA
Medium Term					
Concept 3	Merseles-Aetna-Wilson Streets Extension	727	7	$11.5 Million	Jersey City Engineering/NJDOT
Concept 4	11th Street Viaduct	716	8	$80.0 million	New Jersey Turnpike
Transit 7	Port Liberte Feeder Service	803	3	< $5 million	Hudson TMA
Transit 3	Intercept Parking at External Location(s)	746	6	$5 million	New Jersey Transit
Transit 4	Intercept Parking at Internal Location	619	14	$5 million	New Jersey Transit
Long Term					
Transit 1	Bergen Arches/6th Street Embankment LRT	574	17	>$100 Million	New Jersey Transit
Transit 2	Bergen Arches/6th Street Embankment BRT	574	17	>$100 Million	New Jersey Transit

Note: *Rank includes combinations of projects which are not shown here.*