

4. ANALYSIS

Jersey City’s Circulation Element is an action-oriented plan which identifies the Actions necessary to facilitate the movement of people and goods through 2050. As stated in the City’s vision, “by the year 2050, Jersey City’s extensive and sustainable development, redevelopment and neighborhood revitalization activity will have transformed the City into a bustling, “green,” world-class center with a range of housing and retail choices, many employment and business opportunities, and excellent recreational, entertainment and cultural amenities.” Therefore, the multi-modal system must be prepared to serve this world-class city.

Many of the Actions within this Circulation Element require rights-of-way to be preserved, and modifications to the layout of the existing roadways so all users are accommodated efficiently and safely including motorists, bicyclists, and pedestrians. The Actions support a pedestrian-friendly, traffic-calmed, aesthetically-appealing circulation system that serves pedestrians, bicyclists, vehicles, mass-transit, and freight. The multi-modal system must be seamless, reliable, and efficient, within the City and to and from the region. This Circulation Element provides Jersey City a plan to accommodate growth through 2050, and enables the City to strengthen the link between land use and transportation, while serving the needs of all of its users.

4.1 Projected Growth

Any act of planning for the future requires a sense of what is to come. As such, forecasts of population and future growth are integral to this Circulation Element, since they yield valuable information about the City’s future development. The following sections describe the future growth of the City, as forecasted by the North Jersey Transportation Planning Authority (NJTPA) and the City’s professional city planning staff.

4.1.1 North Jersey Transportation Planning Authority Projections

In its capacity as the Metropolitan Planning Organization (MPO) for Hudson County and twelve other counties in northern New Jersey, North Jersey Transportation Planning Authority (NJTPA) has prepared municipal-level growth projections for Jersey City and the other subregions.

These projections examine population, household, and employment growth through 2030, and are used as a basis for studies and plans of the NJTPA. The NJTPA’s projections for Jersey City and Hudson County are presented in the table below.

	2010	2015	2020	2025	2030	Percent Change
Jersey City						
Population	265,610	281,630	296,340	302,690	308,180	16.0
Households	101,180	109,600	117,360	120,940	124,330	22.9
Employment	130,780	137,640	144,790	148,480	155,570	19.0
Hudson County						
Population	667,000	694,000	720,800	740,600	760,700	14.0
Households	257,100	271,300	285,700	297,100	309,100	20.2
Employment	297,000	311,200	328,300	339,900	361,600	21.8

Source: NJTPA

As shown above, the NJTPA projects a significant level of growth for both Jersey City and Hudson County from 2010 to 2030. With particular regard to Jersey City, the NJTPA projects a 16.0 percent increase in population, 22.9 percent increase in households, and a 19.0 percent increase in employment. These increases exceed those projected for Hudson County in all categories but employment.

The counts of population, households, and jobs will experience significant growth in Jersey City during the NJTPA-projected period and beyond. However, a closer look at the future growth of the City is warranted, since the NJTPA does not project to 2050, which is the horizon year of this Circulation Element and the regionally-focused methodology employed in the NJTPA projections limits the depth of local analysis, which is particularly important in communities with extensive redevelopment activity. As such, the City prepared independent analyses of future residential development and additional non-residential development anticipated through 2050.

4.1.2 Future Residential Development

To estimate Jersey City's future population development potential, an inventory of all residential redevelopment projects that are expected to be completed by 2050 was prepared by Jersey City's professional planning staff. This inventory revealed that as of May 2008, it is anticipated that Jersey City will gain 80,330 residential units through redevelopment activity by the year 2050.

This information can be used to estimate potential population in 2050 by converting the 80,330 anticipated residential units in redevelopment areas to population, and adding it to the City's estimated May 2008 population of 260,712 residents²⁴. When the 2000 US Census' estimate of average household size (2.67 members/household) is used as a conversion factor for the 80,330 anticipated residential units, it is then determined that the



Photo Source: Leon Yost

City has the potential for a population of at least 475,193 residents in 2050^{25,26,27}.

The following chart illustrates this population growth potential.

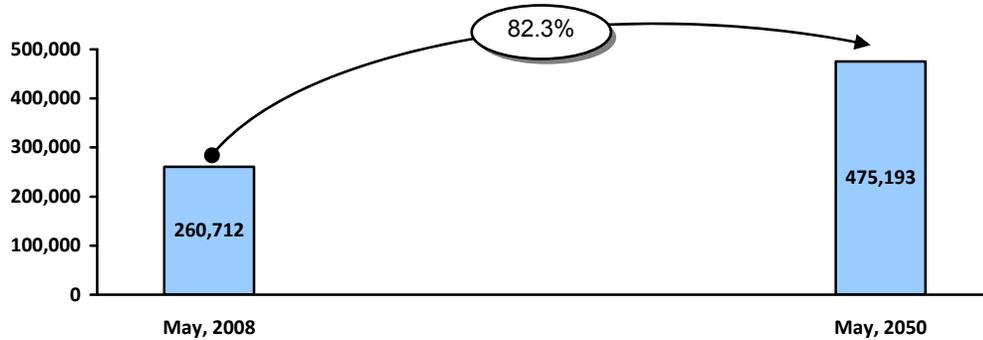
²⁴ The May 2008 Estimate is equal to the pro-rated difference between the NJTPA's (April 1) 2010 projection of 265,610 residents, and the (April 1) 2000 US Census Bureau's count of 240,055 residents, calculated on a monthly basis.

²⁵ This figure is derived with the following operations: (80,330 new units anticipated in redevelopment areas from May 2008 through 2050 x 2.67 members per household) + Estimated May 2008 population of 260,712 residents = Potential minimum population of 475,193 residents in May 2050.

²⁶ This figure is hypothetical. Actual population will be impacted by other factors, such as fertility and mortality.

²⁷ Assumes all units created through redevelopment activity would be occupied.

Figure 4.1-1 – Growth Projection



When the population growth potential for the period from May 2008 through May 2050 is examined, it is clear that there is significant growth potential in Jersey City’s population. In total, it is anticipated that the City’s population could grow by about 82.3 percent during this period, based on current development and redevelopment trends. The build-out data can be found in the appendices and is identified in Figure 4.1-2.

4.1.3 Additional Non-Residential Development

The Division of City Planning also carefully examined non-residential development activity and determined that Jersey City can expect approximately 9.8 million square feet of new non-residential development through 2050.

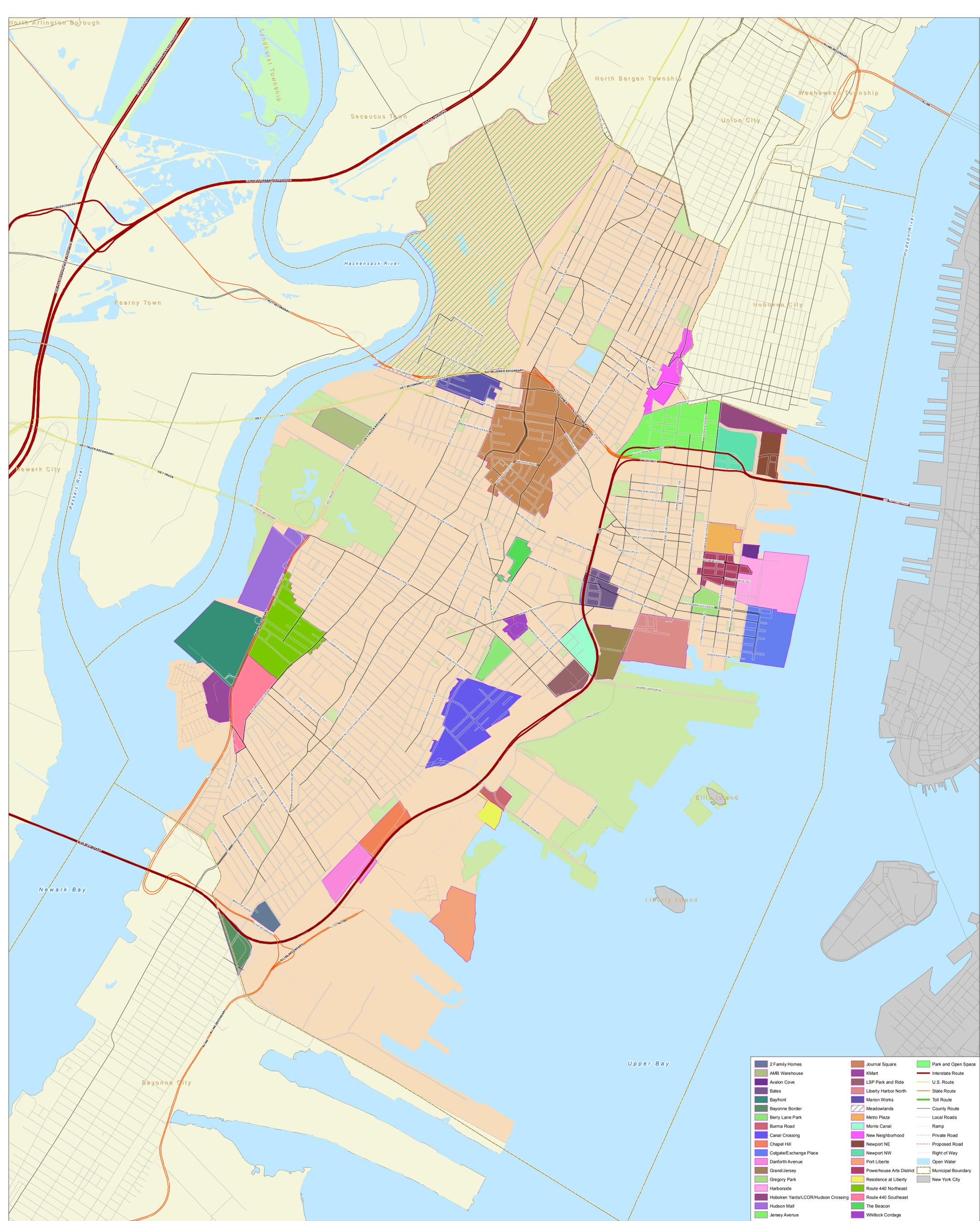
4.2 Circulation

As indicated in the Action Plan, various roadway and transit improvements are proposed to be studied, designed and eventually implemented over the next 40 years in and around Jersey City. In reviewing the adequacy of the multi-modal circulation system to accommodate the growth of the City, the redevelopment projects were reviewed that are anticipated to be implemented over the next 40 years within Jersey City as outlined in Section 4.1. It is anticipated that by 2050, redevelopment will result in 80,330 units and 9,844,000 square feet of commercial space. The



Photo Source: Leon Yost

population of Jersey City is anticipated to be 475,193 by the year 2050. The proposed Actions address improvements to the multi-modal transportation system. These Actions address many of the anticipated areas of congestion within Jersey City. However, in the future, individual assessments of the impacts of the proposed roadway and proposed transit improvements, and the proposed redevelopment and development projects on the roadway



- | | | |
|------------------------------------|--------------------------|---------------------|
| 2 Family Homes | Journal Square | Park and Open Space |
| AMB Warehouse | KMart | Interstate Route |
| Avalon Cove | LSP Park and Ride | U.S. Route |
| Bates | Liberty Harbor North | State Route |
| Bayfront | Marion Works | Toll Route |
| Bayonne Border | Meadowlands | County Route |
| Berry Lane Park | Metro Plaza | Local Roads |
| Burma Road | Morris Canal | Ramp |
| Canal Crossing | New Neighborhood | Private Road |
| Chapel Hill | Newport NE | Proposed Road |
| Colgate/Exchange Place | Newport NW | Right of Way |
| Danforth Avenue | Port Liberty | Open Water |
| Grand/Jersey | Powerhouse Arts District | Municipal Boundary |
| Gregory Park | Residence at Liberty | New York City |
| Harborside | Route 440 Northeast | |
| Hoboken Yards/LCOR/Hudson Crossing | Route 440 Southeast | |
| Hudson Mall | The Beacon | |
| Jersey Avenue | Whitlock Cordage | |



network and the transit system, should be made. Many of these assessments will occur in the Planning and Zoning Board review process, when traffic impact studies are conducted on a development-by-development basis. Later in this document, there is a Traffic Calming Plan, which provides a means to manage traffic volume and travel speeds within the various neighborhoods in Jersey City.

4.2.1 Adequacy of the Circulation System through 2050

In order to identify roadway locations where congestion is anticipated through 2050, the anticipated growth identified in Section 4.1 was imported into the North Jersey Transportation Planning Authority's North Jersey Regional Transportation Model-Enhanced (NJRTM-E). The NJRTM-E analyzed the volume of the roadway system versus the capacity of the system. Areas of insufficient capacity were identified and categorized by delay: one (1) hour, two (2) hours, or greater than three (3) hours of congestion. Copies of these maps can be found in the appendices of this report and are entitled Exhibits A, B and C.

Once areas of congestion were identified, the congestion-mitigating effects of the proposed improvements identified in the Action Plan in the vicinity of the congested roadways were examined. In most cases the Actions appear to provide the infrastructure necessary to support approved and anticipated development and redevelopment. This confirms that the Action Plan supports the land use plan and the corresponding development and redevelopment objectives and strategies of the City.

The Actions that were reviewed include extensions to the roadway network and completion of street grids, which helps to provide alternative routes for traffic, pedestrians and the movement of goods and services within Jersey City. Actions related to infrastructure projects were reviewed, as well as new roadways outside of the City that provide relief to congestion on the local roadway system within the City. Other Actions which increase the efficiency of the existing roadway network include interchange improvements, traffic signal coordination/synchronization, timing adjustments and reversible lanes. Transit improvements reviewed included additional stations and extension of the Hudson Bergen Light Rail Transit system, improvements to the PATH system, better connectivity between PATH, HBLR and bus, and additional bus service.

Although the NJRTM-E provided a useful tool to examine the Actions in conjunction with proposed development, the model should not be used out of context. The NJRTM-E is based on the year 2000 traffic and transit data and does not capture the capacity of the local street grid in detail. The year 2000 did not account for the Hudson-Bergen Light Rail Transit system. Therefore, the transit ridership projections of the NJRTM-E for the year 2030 do not show significant ridership for the HBLR. As a result, the modeling identified areas of congestion that would likely have been eliminated if the HBLR were imported into the model. This was taken into account in reviewing the adequacy of the Action Plan. Additionally, the NJRTM-E includes the demographics of the year 2030 and the infrastructure improvements that in the NJTPA Transportation Improvement Projects (TIP) through the year 2012 and the Project Development Work Program (PDWP) through the year 2010, including major projects such as Portway and the rehabilitation of the Route 139 Viaduct. The street grid improvements in this plan are not included in the NJRTM-E. Therefore, the effects of the proposed improvements in the Action Plan were considered when evaluating congested areas identified by the NJRTM-E.

The NJRTM-E identified congested areas in the vicinity of Route 440, in the Downtown Hudson River Waterfront, in the vicinity of Journal Square, and in the vicinity of the NJ Turnpike Extension in the Greenville neighborhood. Proposed Actions in each of these areas were reviewed to examine their impacts on anticipated congestion.

4.2.2 Vicinity of Route 440 (Bergen and Greenville)

Redevelopment of the area to the west of Route 440 will generate traffic and transit needs. The Volume/Capacity ratios of Route 440, Routes 1&9 Truck, and many of the local streets are anticipated to exceed acceptable values by 2050 if not mitigated. Therefore, decreases to volumes, increases to capacity or a combination of both need to be implemented. The Action Plan identifies improvements to the roadway network and improvements to the transit system in the vicinity of the Bayfront I Redevelopment and the Future New Urbanist Street Grid. These improvements include new streets grids, an HBLR extension, and HBLR station, 440/Route 1&9 Truck Multi-Use Urban Boulevard, the recommended use of Intelligent Transportation Systems (ITS), and completion of the Portway projects.

The extension of the HBLR line across Route 440 with a new station for both Bayfront I and the New Urbanist Street Grid would be a positive improvement to provide an alternative to the automobile. The HBLR extension should be grade separated from Route 440 to eliminate the impact of the HBLR on the traffic operations of Route 440. Completion of the Route 440/Route 1&9 Truck Multi-Use Urban Boulevard could provide additional roadway capacity for vehicle trips associated with these two development projects. The Portway projects should also provide some relief to the congestion along Routes 1&9T and Route 440.

The use of Intelligent Transportation Systems (ITS) should provide another means to manage the traffic and transit networks. Media broadcasts to motorists and dynamic message signs could be deployed and incorporated into the mix of improvements. These ITS measures should provide benefits to motorists by managing traffic demand, identifying incidents and developing quick response to clear incidents. ITS for transit could also be deployed. Mass transit systems that are equipped with advanced transit management systems could improve transit efficiencies by providing information to transit riders regarding times of arrival/departure, available seats and alternative routes.

However, it should be noted that the combination of the above mentioned Actions which complete street grids, extend the HBLR, add ITS, and complete the Portway and Route 440/Routes 1&9T Urban Boulevard may not add enough capacity to the roadway and transit system or reduce the demand enough to accommodate the demand of the area at build-out. More detailed traffic and transit studies should be conducted to assess the best ways to manage transit passenger demands on the HBLR and vehicular demand on the roadway network.

4.2.3 Vicinity of the Hudson River Waterfront (Downtown)

Anticipated redevelopment activity in Downtown Jersey City will generate additional traffic and transit demand. In the 2050 horizon, the modeling showed that there will be many streets within the Downtown that have V/C ratios that exceed acceptable conditions. In order to address the excessive demand and the lack of capacity within the Downtown, investments in the roadway and transit infrastructure must be made.



Photo Source: Jersey City Division of City Planning

The Downtown is served well by existing HBLR stations. The extension of Jersey Avenue across the Mill Creek would improve access to and from Downtown Jersey City.

A comprehensive transit study needs to be conducted for the Downtown street grid and the HBLR. The focus of this transit study would be to develop a balance between HBLR service, vehicular capacity and pedestrian access within Downtown. Access must be provided for the movement of goods and services; however, a balance must be struck to provide more efficient movement of goods, services and patrons to the Downtown. When completing the street grids within the Downtown, sensitivity and balance must be given to the HBLR service and the movement of people and goods. The Downtown HBLR Circulator should help to reduce vehicle trips within the Downtown area. The HBLR Wye Bypass on the Hoboken border should improve travel times for HBLR vehicles in and out of Jersey City. Improved connections between HBLR and PATH should remove some vehicles from the road network, thus mitigating traffic. Grade separation of 14th Street and the 11th Street viaduct should separate Holland Tunnel-bound traffic from Downtown-bound traffic and improve circulation in the vicinity of the entrance and exit of the Holland Tunnel.

Improvements that facilitate the movement of pedestrians, vehicles, goods and services within the Downtown are necessary to provide access between places of employment and other commercial destinations and the transportation system. Restrictions on parking should be considered, as well as maximum parking ratios in the Downtown.

4.2.4 Vicinity of Journal Square (Journal Square and Marion)

Journal Square is well served with PATH and bus service. There are also parking facilities that serve passenger cars entering Journal Square. In order to support redevelopment of Jersey City's Central Business District, improvements to pedestrian access, reduction of vehicular trips, improved bicycle access, and improvements to transit are necessary. This policy of reducing the number of cars would help to reduce congestion within Journal Square. Adequate transit systems should be provided to shuttle passengers into and out of Journal Square in a timely manner and to potentially connect Journal Square with parking facilities outside of Journal Square.



Photo Source: Jersey City Division of City Planning

4.2.5 Vicinity of NJ Turnpike Newark Bay Extension (Greenville)

The implementation of the Canal Crossing redevelopment plan and construction of the street grids of the Claremont Industrial and Danforth Transit Village redevelopment plans would facilitate the completion of a roadway grid network, but redevelopment would also generate demand for passengers on the HBLR and traffic on the road network. The Action Plan includes projects like the Turnpike Interchange 14A Reconfiguration to improve access between these areas and the Turnpike.

The HBLR provides service and stations along this corridor; however, the future demand and the capacity of this leg of the HBLR and the confluence of the Westside line into the Downtown should be assessed. Garfield Avenue improvements, and the NJ Turnpike Interchange 14A Reconfiguration should also facilitate better movement in this area. Connections to the HBLR and street grids should facilitate better access to the HBLR. The Danforth Interlocking should allow HBLR trains to be turned around at this location to provide additional service during peak demand. The Morris Canal Greenway and preservation of the Lehigh Valley Railroad right-of-way should also provide improved pedestrian and bicycle circulation in this area.

4.2.6 Additional Recommendations

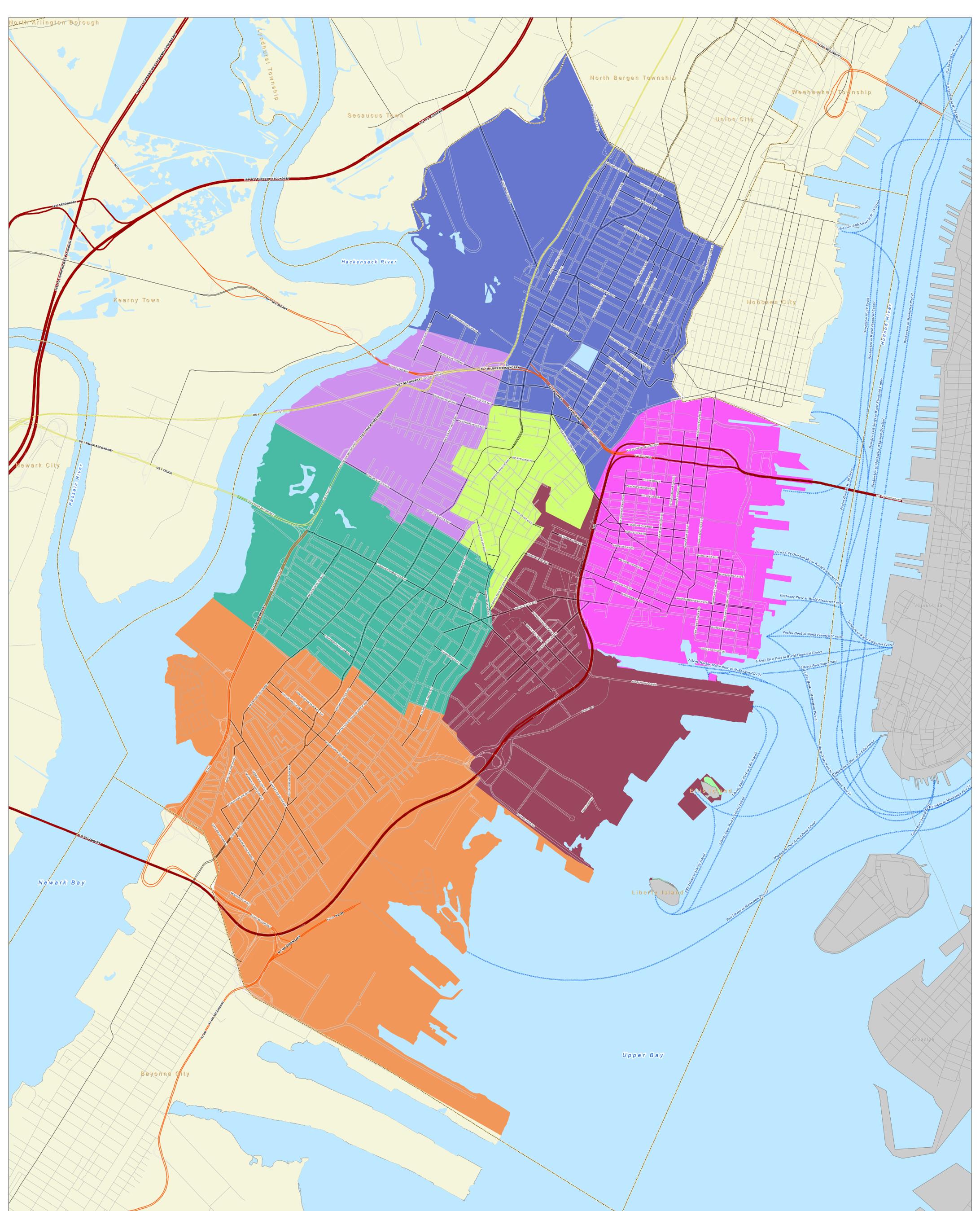
In most cases, the proposed Actions in the Circulation Plan Element appear to provide the infrastructure necessary to support approved and anticipated development and redevelopment. In addition to the Actions, future development and redevelopment will be reviewed on a case-by-case basis. Future traffic studies should analyze the modal splits of vehicular, pedestrian and transit for each redevelopment and development project based on the proximity to existing and proposed transit systems and roadway networks.

Off-site improvements should be assessed for development and redevelopment projects to mitigate congestion. An assessment of the capacity of the HBLR system to accommodate the additional ridership of these developments should also be conducted. The transit system must be developed, expanded and improved to maximize efficiency and provide as much coverage to Jersey City without

compromising the system. A capital investment prioritization study should be undertaken to develop an implementation schedule for transit improvements and use of capital resources. The goals of the capital investment prioritization study should include improved efficiency, reduced delays, and improved reliability. Buses, Light Rail, and PATH should all be assessed together. Issues such as seamless service and coordination of connections and capacity should be considered in the study.

4.3 Mobility Study Findings

As part of the research performed to produce the Circulation Plan Element, the City conducted a mobility survey entitled “Jersey City 2050 Mobility Survey”, which collected data on the origins and destinations of commuters to and from Jersey City, as well as data on intermediate trips on the way to or from work. A copy of this report is located in the Appendices of this Plan. The survey was conducted by Eastland Systems Group, with insight from Resource Systems Group and T&M Associates. The mobility survey solicited responses to survey questions pertaining to travel to, from and within Jersey City. The survey began in April 2008 and ended in May 2008. The purpose of the survey was to obtain current, neighborhood-specific data that could be used to determine the shortcomings of the multi-modal transportation system to, from, and within Jersey City, and to determine the mobility patterns of the City’s residents and workers. Therefore, data was obtained from seven neighborhoods as defined by New Jersey Transit, which are depicted on Figure 4.3-1.



4.3.1 Overview

The 2050 Mobility Survey focused on three (3) market segments. The market segments and sample sizes are as follows:

- Market Segment 1: People who work in Jersey City and live elsewhere.
Sample size: 1,437
- Market Segment 2: People who work elsewhere or do not work and live in Jersey City.
Sample size: 668
- Market Segment 3: People who work and live in Jersey City
Sample size: 694

The Jersey City Mobility Survey was conducted primarily online through the project website. Responses were supplemented with paper surveys conducted in the field at multiple locations, including the public libraries in each neighborhood, local community organizations, and City Hall.

4.3.2 Key Findings

Most stakeholders agreed that mass transit had several shortfalls, and that improvements are needed to provide better neighborhood connectivity within Jersey City, and enhanced service to the region. Many reported that mass transit needed extended hours, and more frequent service. Roadway maintenance was a concern, and many congested areas were cited. Some stakeholders voiced a need for biking incentives at work, bike facilities on streets, and bike accommodations on mass transit carriers and at mass transit stations. Mobility concerns for the disabled were raised, which included ADA compliant mass transit facilities and walkways, and adequate capacity. There were concerns raised relative to the safety of the circulation system, for vehicles, bicycles, and pedestrians.

The survey found that the overall transit share by market segment was much higher than the 2000 Journey-to-Work Census, which may be due to the opening of the Hudson-Bergen Light Rail in 2000 and the significant increase in office and residential development, especially in Downtown Jersey City, after 2001. Specifically, the following is a breakdown of how survey respondents commute to work by market segment:

- Market Segment 1: People who work in Jersey City and live elsewhere.
62% Transit; 38% Non-Transit
- Market Segment 2: People who work elsewhere or do not work and live in Jersey City.
76% Transit; 24% Non-Transit
- Market Segment 3: People who work and live in Jersey City
35% Transit; 65% Non-Transit
- Combination of Market Segments 1, 2, &3
58% Transit; 42% Non-Transit

The survey found that the overall busiest time for morning travel within Jersey City among all markets is between 6:00 AM and 10:00 AM. The busiest time in the evening was between 4:00 PM and 7:45 PM. Overall, a large number of commuters are traveling to and from New York counties that are east-of-the-Hudson River, and also to and from Monmouth, Middlesex, Union or Ocean counties. Additionally the lowest transit share is experienced by people going to work in Lafayette (14%) Greenville (28%) and Jersey City Heights (28%) which indicates the need for more neighborhood connectivity for mass transit.

Lastly, the survey identified that the most important aspects of mass transit for Jersey City stakeholders are that it stops close to home, that the service is frequent, safe, and reliable, and cheaper than driving.

4.3.3 Incorporation with Circulation Element

The respondents' concerns were used to form the fourteen (14) Goals, as well as the Objectives, Strategies, and Actions of the Circulation Plan Element. The first priority for all market segments corresponds to Goal 2: "Increase, improve, and enhance public transit service to, from, and within all areas of Jersey City". The second priority for market segments 1 and 3 corresponds to Goal 8: "Improve access between Jersey City and the greater region". The second priority for market segments 1 and 3 corresponds to Goal 3: "Integrate and connect neighborhoods, and improve public access to waterfront areas".

The report that summarizes the findings of the mobility survey recommends multiple Actions that were incorporated in the Circulation Plan Element. Notably, the mobility report recommends that Jersey City work closely with New Jersey Transit to support and collaborate on the design of future study that examines the anticipated expansion of the Hudson-Bergen Light Rail in Jersey City. This Plan recommends that the City work with NJ TRANSIT and other mass transit carriers for the expansion of services, including the Hudson Bergen Light Rail, and recommends that mass transit carriers analyze the efficiencies of the system and prepare for growth. Additionally, the plan recommends implementing the recommendations of the NJ TRANSIT/NJTPA/Jersey City local bus study and identifies rights-of-way for the extension of the HBLR as well as for other circulation needs.

The Plan facilitates improvements to the multi-modal system. The survey revealed that people who worked and lived in Jersey were the most likely to drive. Therefore, there are multiple Goals, Objectives, Strategies, and Actions that address improved neighborhood connectivity. In regards to safety and maintenance, the Plan includes a Traffic Calming Plan and a Sidewalk Maintenance Plan, to achieve a safer streets and sidewalks that are well maintained. The Plan provides a means to monitor the City's achievement of their Goals which ultimately will improve the multi-modal system and meet the identified needs of all of its stakeholders.

4.4. Right-of-Way Needs

Right-of-way is a parcel of land with a specific owner where the public at large or a specific private party has a legal right to traverse the land in some specified manner. In essence, right-of-way makes up and connects the circulation system. Right-of-way may contain public or private roads, sidewalks, trails, walkways, and private rail lines. Jersey City will require additional right-of-way through 2050 in order to connect the various aspects of its circulation system. As indicated on the Right of Way Needs mapping, Figure 4.4-1, fifty-seven (57) locations of new potential right-of-way were identified within Jersey City. The mapping