

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.

One reason for the increase in development activity in Jersey City was the events of September 11, 2001, which caused many corporations to rethink their locational strategies, to decentralize their business functions, and to look for contingency locations for business-critical activities. At the same time, companies increased their efforts to relocate parts of their organizations that were not crucial to their core business. Information technology and other mid-level administrative functions in particular were relocated to places that are more cost effective than the high-priced office locations in New York City. Jersey City was one—if not *the*—city that benefited most from these relocation efforts.

On the residential side, Jersey City went through a similar dramatic transformation. Increased regional housing costs, especially in New York City, made Jersey City, with its less expensive real estate and close proximity to the region's core, a favorable place to be for young professionals and other urbanites.

Figure 3-1 illustrates the remarkable changes experienced by some of the city's neighborhoods. Places like Newport transformed from a post-industrial wasteland to a thriving business and residential center. The same can be said about downtown Jersey City, which has been energized by such high-profile developments as the Goldman Sachs Tower and the Colgate Redevelopment Area.

Figure 3-1: Newport 1986 and 2006

Source: LeFrak 2006

Changes in traffic patterns and volumes depend largely on the shifts in employees commuting to work and residents living in the area. As part of the team's analysis, AKRF estimated the extent of the future growth and identified locations where future development is likely to occur based on changes in residential and commercial demand. The following report begins with a description of the current real estate market conditions in Jersey City, explains in detail the methodology applied, and continues with an outline of the four scenarios used to illustrate the potential future development of the real estate market in Jersey City and the subsequent change in traffic volume and capacity. The study concludes with the identification of the development projects that are expected to satisfy the projected demand for residential and office space in the various scenarios.

3.1.2 Current Real Estate Market Conditions

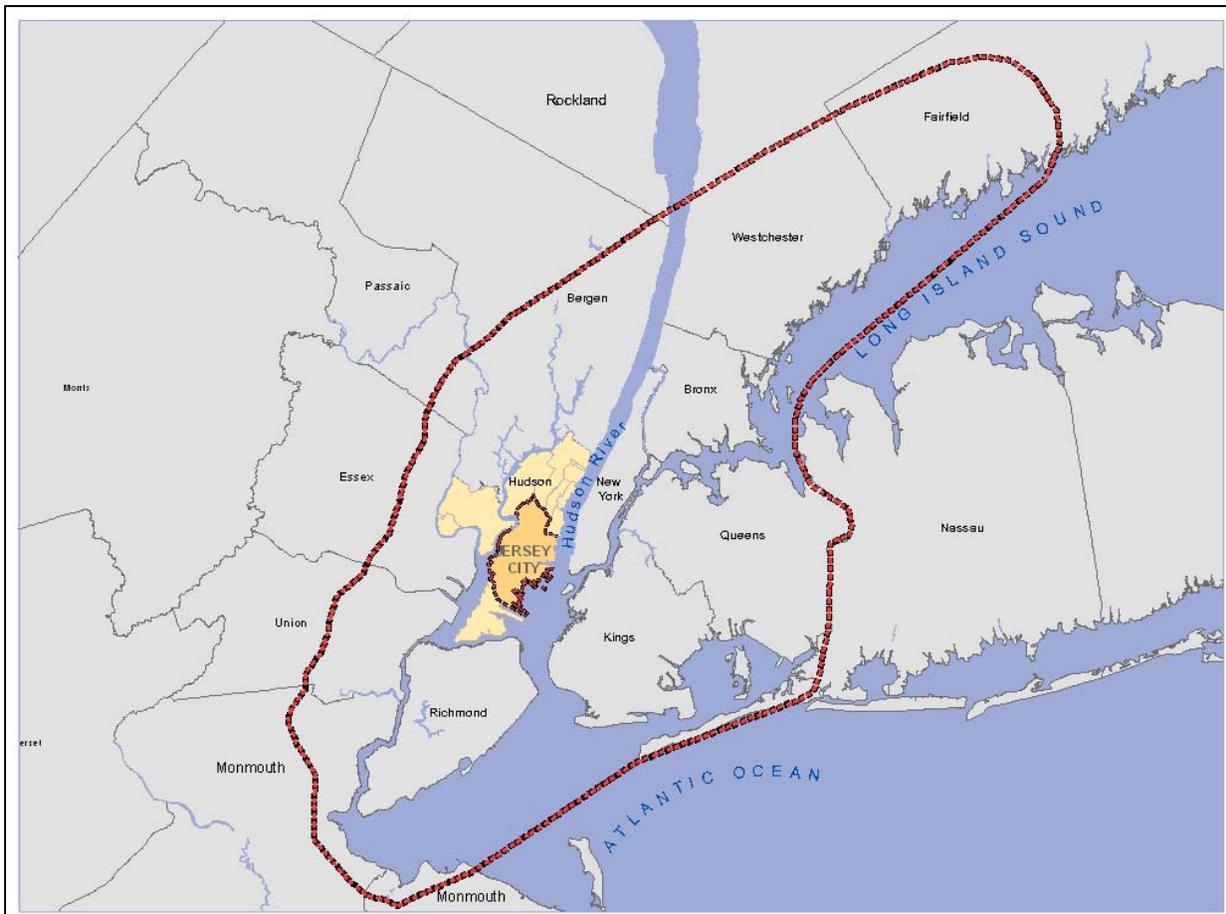
Jersey City's real estate market is best understood when viewed within its larger regional context. When evaluating Jersey City's current and future market, AKRF not

only assessed Jersey City's local residential and commercial developments but also included developments in other competitive markets in the region, for example, New York City and New York and northern New Jersey suburban markets. Although these markets greatly vary in terms of associated costs and accessibility, they offer businesses or residents a potential alternative to locating in Jersey City. As detailed below, our analysis analyzed the current market conditions in the larger New York metro region, inventoried the residential and commercial real estate market in Jersey City, and evaluated the employment and population projections for the region and Jersey City.

Competitive Regional Market Delineation

Not all markets within the greater New York/New Jersey metropolitan area have the same potential to compete with Jersey City. Generally, only markets close to New York City and with good access to transportation infrastructure can compete with Jersey City.

Figure 3-2: Market Analysis Study Area



For example, other areas (especially office locations) in suburbs farther away from New York City, such as Parsippany, cater to functions that do not require immediate access to the region's center.

Therefore, proximity and accessibility to New York City were the key factors used when delineating the study area for this analysis, shown in Figure 3-2. Areas included in the larger New York/New Jersey/Connecticut study area were the five boroughs of New York City, lower Westchester County, the I-95 corridor in south-west Fairfield County, and, portions of Bergen, Passaic, Essex, Union, and Middlesex County in New Jersey, an area bounded by as far west as the Garden State Parkway.

Demand Projections

AKRF used 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). All demand estimates for the various scenarios relevant to the New Jersey portion of the study area, including Jersey City, are based on growth projections provided by the North Jersey Transportation Planning Authority (NJTPA). The New York Metropolitan Transportation Council (NYMTC) supplied projections for the New York portion of the study area. While NJTPA provides data on a municipal level for all counties in northern New Jersey, data from NYMTC were only available on a county basis.¹

Both NYMTC and NJTPA use a number of key demographic variables from the 2000 Census (such as household income, household size, etc.), macroeconomic trends (such as nationwide economic forecasts), and local factors (such as inter-county migration trends) to model future population and employment growth.

Development Inventory

To estimate the extent of the current residential and commercial market in Jersey City, AKRF created an inventory of all current and planned major real estate projects in Jersey City. Major input was provided by the JCHEDC, the JCDCP, and the Jersey City Economic Development Corporation (JCEDC). JCHEDC supplied AKRF with a list of all residential and commercial developments for which development applications were recently filed. Included in the list are filings from projects dating back to 2002. Using this list, which was produced for New Jersey's Council on Affordable Housing (COAH), AKRF was able to identify names and locations of residential and commercial development projects and the square footage associated with each project. The

¹ Counties for which NJTPA provides data include: Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren Counties. Counties for which NYMTC provides data include: Bronx, Dutchess, Kings, New York, Nassau, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, and Westchester Counties.

consultant team met with members of both agencies throughout the analysis to refine the inventory list and to categorize development projects according to their position in the development project lifecycle (i.e., existing/built, approved or proposed, or anticipated/planned).

With the assistance of JCHEDC and JCDCP, AKRF categorized development projects into three development status categories:

Existing development projects

This category includes all larger existing development projects or projects that were under construction at the beginning of the study (December 2005).

Approved and proposed development projects

This category includes all development projects for which development applications were filed. Some projects were already approved while applications for others were still pending. In general, the analysis assumes that projects in this category will be built within the analysis time frame (by 2020).

Anticipated development projects

This category includes development sites that are located within planned redevelopment areas, and are considered by the staff of JCHEDC and JCDCP to be potential development sites. However, no development applications have been filed, nor specific development plans proposed as of May 2006. Most of the sites are part of a redevelopment plan and can potentially be developed if market demand changes.

Table 3-1 shows inventoried residential and commercial developments by project status. The inventory was compiled using the extensive local knowledge of JCEDC, JCDCP, and JCHEDC staff members.

Table 3-1: Development Projects by Project Status

Status Category	Residential Developments No. of Units	Commercial Developments in Square Feet
Existing development	18,372 ¹	15,492,238 ¹
Approved and proposed development	17,049	1,420,715
Anticipated development	22,487	6,753,450 ²
Notes: ¹ Based on information from Jersey City Division of City Planning (DCP). ² Includes two properties which were approved prior to 1994 but classified as anticipated Sources: Jersey City Department of Housing Economic Development and Commerce (HEDC) and Jersey City Division of City Planning.		

The existing development category only lists more recent residential developments, i.e., those which were built between 1995 and August 2005. In addition, only units in buildings with more than 40 units were included in this category. According to JCDCP,

approximately 18,400 residential units were constructed in Jersey City between 1995 and 2005, which is about one-fifth of the total number of residential units (93,648) recorded for Jersey City by the U.S. Census in 2000.

In terms of office space, the above inventory offers an almost complete picture for large office developments. Projects recorded in the COAH list were supplemented with information on development projects from JCDCP. The square footage for existing commercial (office) developments includes only buildings with more than 40,000 square feet and reaches as far back as 1913. Developments in this category were only included to determine the current status quo. Projects in this category did not impact the future development scenarios.

Approved and proposed projects represent all projects (commercial and residential) for which an official development application was filed with JCHEDC between 2002 and August 2005. This development status category includes projects which were, as of August 2005, already approved and projects for which applications were still pending. Overall, JCHEDC recorded 17,049 residential units and about 1.4 million square feet of office space for which development applications were filed.

Anticipated development projects are projects that can potentially be realized if demand should increase. Most of the anticipated development projects are located in redevelopment districts, designated to accommodate potential future employment and/or population growth. Redevelopment districts, such as the Powerhouse Arts District or the Morris Canal Redevelopment Area, are typically re-zoned from manufacturing to residential uses or up-zoned to allow for more dense development. JCDCP estimated the realistic potential development capacity of each redevelopment area and the realistic potential number of residential units or commercial square footage most likely to be constructed on a given site. Where development districts were already in the early development stages (i.e., Liberty Harbor North), JCDCP estimated the remaining development capacity. Overall, the analysis identified almost 20,000 residential units that are located in redevelopment areas and could potentially be developed in the future.

Besides anticipated commercial projects that are part of redevelopment districts, anticipated commercial developments also include two larger projects (99 Hudson and Evertrust II) that were previously approved. However, since both projects were approved more than 10 years ago without ever being developed, it was suggested by JCHEDC and JCDCP to include them in the anticipated category. Altogether, AKRF identified about 20 potential commercial redevelopment sites, which would total about 5.4 million square feet of anticipated commercial space.

3.1.3 Methodology

To help JCDCP plan for a wide variety of potential traffic conditions in Jersey City's downtown area, AKRF developed three distinct demand and supply scenarios. These scenarios in turn would provide the basis for three different traffic circulation conditions.

The neutral scenario, or "as is" condition, assumes that basic population and employment projections will occur as estimated by NJTPA. Next, the optimistic or high competition scenario represents a situation in which demand is assumed to increase due to demographic and economic shifts within the New York metro region. This scenario is expected to cause an increase in residential and commercial development activities in Jersey City to accommodate the higher demand. Increases in commercial and residential development activities are expected to impact traffic pattern and capacities. Finally, the pessimistic or low competition scenario depicts a "worst-case" scenario for Jersey City. Due to assumed weak market conditions in the region, Jersey City would experience a period of low real estate demand and a decrease in development activities. The pessimistic scenario would in turn decrease traffic volumes and capacities in the Jersey City downtown area.

Population and employment projections provided by NJTPA and NYMTC were treated in this analysis as constant variables and remained the same for all scenarios evaluated. The time frame for all three scenarios evaluated included the analysis years from 2005 to 2020.

After each scenario is developed, it will result in a total demand for additional residential and commercial space. Projects classified as proposed or approved projects are assumed to be built and are therefore subtracted from the total demand, creating a net demand for new space. In the case where the net demand was zero, only approved or proposed projects were geo-coded and fed into the traffic model. With a negative net demand, approved or proposed residential units or commercial space believed to have a lower likelihood of being developed were removed from the future development list.

If the net demand was positive, it was assumed that it would be satisfied by anticipated residential units and commercial space located in Jersey City's redevelopment districts. For the purpose of this analysis, anticipated residential units and commercial space are assumed to be part of a "development projects pool" from which sites can be taken to satisfy an un-met net demand.

However, not all redevelopment areas have the same likelihood of being developed. With the assistance from JCDCP, AKRF prioritized and quantified potential development projects in the redevelopment districts. Later sections describe in detail how projects to be included in the scenarios were selected. Projects were then assigned to the various scenarios according to their priority ranking.

All projects identified to satisfy the un-met demand (proposed, approved, and prioritized anticipated development projects) were then geo-coded and used as input variables for the traffic model.

Neutral/Baseline Scenario

The neutral or baseline scenario represents the most probable real estate development scenario for Jersey City. This scenario is solely based on future employment and population growth as projected by NJTPA. Outside influences from New York City and other neighboring markets are assumed be stable and would not development pressures beyond their normal impact.

Residential Demand

Jersey City’s downtown has undoubtedly received most of Jersey City’s economic and demographic growth. However, demographic and employment variables and projections cannot be isolated for this specific study area, since data provided by NJTPA are only available for the entire city.

For the purpose of analyzing Jersey City’s future housing demand, AKRF assumed that each new household would require one new apartment unit. While developers will build residential developments with apartments ranging from studios to two- and three-bedroom units, the analysis did not distinguish between the various unit sizes.

Between 1990 and 2000, the U.S. Census recorded an increase of 6,251 households for Jersey City. Over the next 15 years (from 2006 to 2020), NJTPA projects that Jersey City will grow at an even faster pace, adding an additional 24,180 households to the city’s population (see Table 3-2).

Table 3-2: Projected Household Growth for Jersey City, 2005–2030

Year	Households	Cumulative Growth
2005	93,180	-
2010	101,180	8,000
2015	109,600	16,420
2020	117,360	24,180
2025	120,940	27,760
2030	124,330	31,150

Source: North Jersey Transportation Planning Authority 2005.

Since each additional household is assumed to require one new unit, the total demand for new residential units under the neutral scenario is equal to the total increase in households. Table 3-3 illustrates how the projections for the neutral scenario will impact the future demand and supply situation in Jersey City.

Table 3-3 shows that while demand for housing is expected to increase by 24,180, only 17,049 apartments are currently approved or proposed. If all of these planned units are constructed, Jersey City would still face a shortage of 7,131 units by 2020.

Table 3-3: 2020 Residential Demand—Neutral Scenario

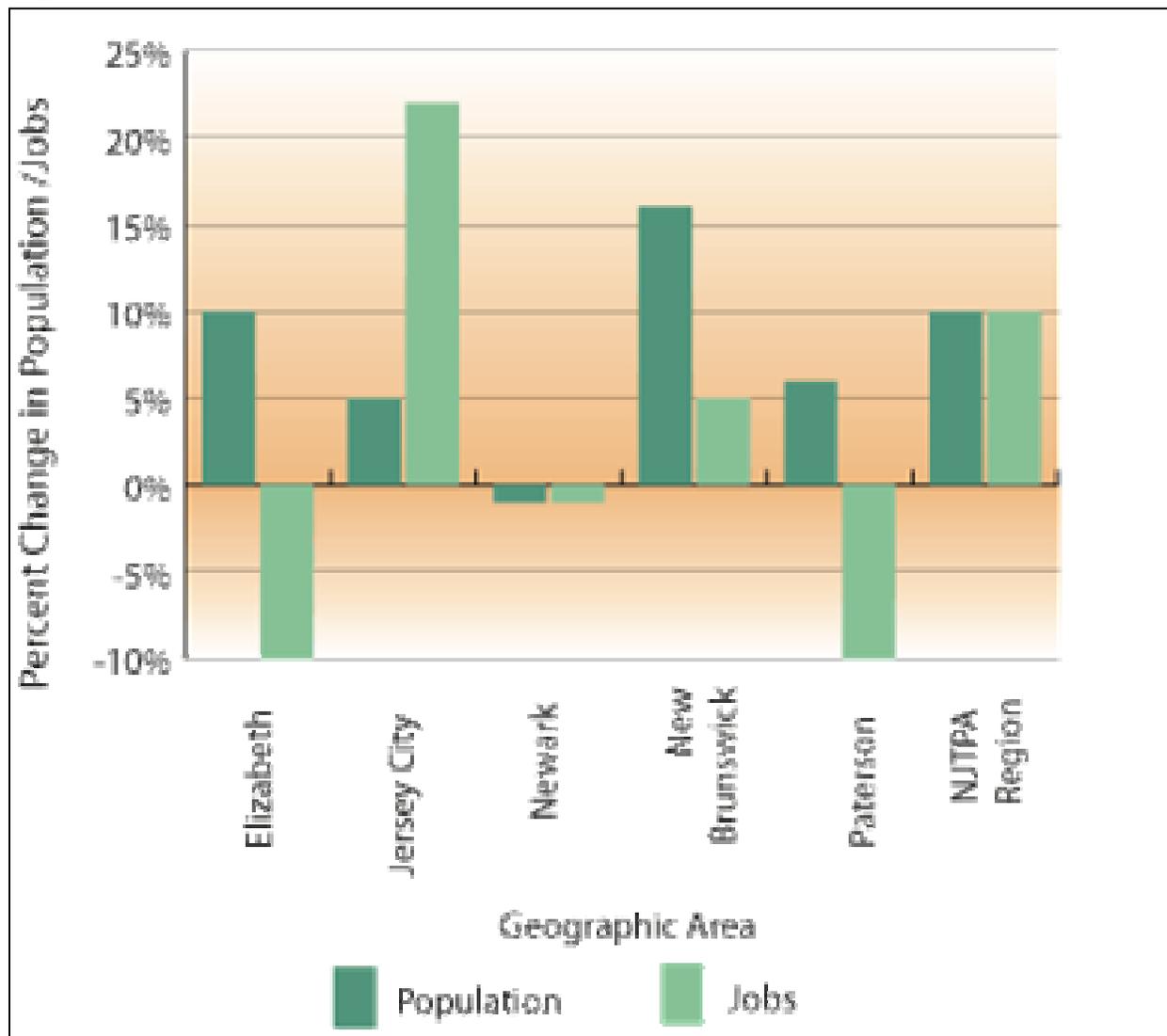
	Total Demand	Supply	Net Demand
Jersey City	Projected HH Demand Total (2006–2020)	Approved and Proposed Units (2006–2020)	Demand Beyond Approved and Proposed Units
Future (2020)	24,180	17,049	7,131
<i>Source: Census 2000 and JCHEDC</i>			

In order to satisfy the additional demand beyond the approved and proposed units, the net demand would have to be filled with units, categorized as anticipated, that are part of the redevelopment districts. (This does not account for some vacancy that would be needed to accommodate the dynamics of the market, as some households vacate units and while others occupy residential units.)

Commercial Demand

Between 1990 and 2000, Jersey City experienced the largest job growth of all North Jersey’s urban centers (see Figure 3-3). According to NJTPA, Jersey City’s workforce grew by approximately 22 percent during the past decade, while employment in the overall North Jersey region grew by only about 10 percent. It was also in this period when Jersey City experienced major commercial development. Especially in the late ‘90s and early 2000s the downtown waterfront area was the target for increased office construction when projects such as some of the Newport Office Center buildings and Harborside X were completed.

Figure 3-3: Population and Job Growth in North Jersey Urban Centers, 1990–2000



Source: NJTPA 2006

For the analysis time frame between 2005 and 2020, NJTPA projects that employment in Jersey City will continue to grow at a fast pace and increase by about 26,640 jobs (Table 3-4). The estimated total employment growth serves as a starting point to estimate the future commercial/office space demand for Jersey City.

Of the projected 26,640 new jobs, not all will require office space. Most jobs in high-growth sectors, such as educational and health services, and leisure and hospitality do not operate in an office environment and only require a limited amount of office space (i.e., administrative overhead space).

Table 3-4: Total Employment Growth for Jersey City, 2005–2030

Year	Jobs	Cumulative Growth
2005	118,150	-
2010	130,780	12,630
2015	137,640	19,490
2020	144,790	26,640
2025	148,480	30,330
2030	155,570	37,420

Source: North Jersey Transportation Planning Authority (NJTPA), 2005

To find out the share of office jobs of Jersey City's total job growth, AKRF examined 2020 employment projections categorized by industry segment. Due to the lack of Jersey City- specific industry data, AKRF employed NYMTC growth projections (produced for the New York metro area) to determine patterns of employment that would require commercial office space. Table 3-5 shows employment growth for New York City categorized by industry. The table also illustrates the growth rates for each sector and their share of the total employment growth.

Table 3-5: 2020 Distribution of Employment by Industry Category

New York Industry Segments	No. of Jobs in New York (in Thousands)	Percent Growth (2005–2020)	Percent of Total
Non-Agricultural Employment	6,667	89.6%	85.1%
Construction and Natural Resources	263	2.8%	3.4%
Manufacturing	230	-3.2%	2.9%
Transportation, Trade, And Utilities	1,054	7.1%	13.5%
Information	250	3.1%	3.2%
Finance, Insurance, Real Estate, and Leasing	607	4.0%	7.8%
Professional and Business Services	1,192	36.0%	15.2%
Educational and Health Services	1,243	18.9%	15.9%
Leisure and Hospitality	526	9.3%	6.7%
Other Services	319	7.6%	4.1%
Government	978	3.9%	12.5%
Proprietors	1,167	10.4%	14.9%
Total	7,835		100%

Source: NYMTC 2005

Using NYMTC's employment projections, AKRF estimates that about 38.7 percent of jobs in the New York metro area in 2020 will be office occupations. Industry segments included in the office employment category are: Information Technology (3.2 percent), Finance, Insurance, Real Estate, and Leasing (7.8 percent), Professional and Business Services (15.2 percent), and Government (12.5 percent).

The analysis further assumes that the percentage of office occupations projected for the New York metro region will be similar to the share of office occupations in Jersey City. Applying the percentage above to the overall total job growth for Jersey City (26,640) results in about 10,300 new office jobs in Jersey City by 2020 (Table 3-6).

To translate the number of projected office jobs into an amount of usable square feet of office space required, AKRF applied an industry ratio of office space-per-employee. According to Officefinder, an office information and referral network, office space standards on a per employee basis can vary significantly. Officefinder lists a typical VP office at 150 to 250 square feet while an executive office is listed at approximately 100 to 150 square feet.

For the purpose of this analysis AKRF assumed that space efficiencies will further increase over the next 15 years by making use of office efficiency concepts, such as hoteling and flex space. Using a base ratio of 140 square feet per office job and adding a circulation factor of about 25 percent, which accounts for hallways and other common space, results in total square-feet-per-employee ratio of about 175 square feet.

Multiplying the 10,300 new office jobs expected to be created in Jersey City by 2020, with a square-feet-per-employee ratio of 175, results in a new total office space demand of about 1.8 million square feet (see Table 3-6).

Table 3-6: 2020 Office Space Demand - Neutral Scenario

	Demand							Supply	Net Demand
Jersey City	Total Employment Growth 2006-2020	Percent Office Employment	Office Jobs (2005-2020)	SF per office job	Office Space Demand	Current Vacancy Rate	Vacancy Adjusted Demand	Approved & Proposed Space (2005-2020)	Demand beyond approved and proposed space
Future (2020)	26,640	38.7%	10,310	175	1,804,194	14.3%	828,183	1,420,715	(592,532)

Sources: Census 2000, Officefinder, Cushman & Wakefield, and JCHEDC

However, Jersey City’s current high office vacancy rate of more than 14 percent is likely to absorb a major portion of the new office space demand. In addition, developers typically do not invest in new (speculative) office space before a much lower vacancy rate is achieved. For this analysis, AKRF assumed that Jersey City’s office vacancy rate would have to be driven down to about 8 percent before additional office space would be built.

Currently, Jersey City has about a total of 15 million square feet of office space. Absorbing about 6.5 percent, or 970,000 square feet, of vacant space would lower the

total vacancy adjusted office space demand for the neutral scenario to approximately 830,000 square feet.

Table 3-6 shows that if all approved and proposed projects are developed, Jersey City would experience an over supply of office space under the neutral scenario. If all the approved and proposed office space (1.4 million square feet) is constructed, Jersey City would have an oversupply of about 600,000 square feet of office space of newly constructed office space and a total oversupply of about 1.78 million square feet, which would result in a vacancy rate of 10.8 percent.

High Competition—Optimistic Scenario

The high competition or optimistic scenario was created to illustrate how a continuing high-growth environment within the New York metro area could impact demographic and economic conditions in Jersey City. Results of such a high-growth period are assumed to be in addition to neutral scenario outcomes.

The underlying assumption for this scenario is that markets within the New York metro area highly depend on conditions in New York City. Changes in demand and supply in New York City are expected to ripple through other major markets within the study area. A limited supply in a real estate product is assumed to increase prices. Resulting high costs associated with residential and commercial space in New York City may in turn push residents and businesses to markets where they can live or operate more cost effectively. Jersey City would be expected to be one of the markets in the overall study area that would benefit from such a high competition condition.

Residential Demand

The starting point for the optimistic residential scenario is the demand projected for the baseline condition. In addition to the baseline condition, Jersey City is assumed to receive an increased inflow of households, which in turn is creating an increased demand for housing. -AKRF assumed that two major factors would contribute to a shift of households from other areas in the New York metro region to Jersey City, resulting in a higher share of the region's population: (1) New York City will experience a shortage in supply of residential real estate and (2) in-migration into Jersey City will occur at the highest levels observed over the past 20 years.

NYMTC projects that New York City will grow by an additional 330,000 households by the year 2020, which will generate demands for an equal amount of housing units. To satisfy these housing needs, New York City would need to realize a number of large-scale development projects, each containing several thousand units, such as the Atlantic Yards project in Brooklyn or the Hudson Yards rezoning project on Manhattan's West Side. Considering its lack of easily developable space, the cumbersome regulatory procedures, and increasing construction cost, New York City may not be able to complete some of the projects in time, while some may not be built at all. Even

missing its projected demand by just 10 percent would result in a significant shortage of about 33,000 units.

For the optimistic scenario, AKRF assumes that the situation described above becomes reality, leaving New York City with an un-met demand of 33,000 housing units by 2020. Since New York City would not be able to provide the needed housing, these households are assumed to seek apartments in the various markets within the study area. Depending on their preferences, households would settle in more urban environments, such as Jersey City or Bayonne, or opt for a suburban lifestyle in Westchester, Fairfield, or Bergen County.

To estimate how much of the potential overflow Jersey City would receive, AKRF created a county-level gravity model with distance and population as the two major input variables (see Table 3-7). The gravity model takes into account the population size of two places and the distance between the two locations. The gravity model that AKRF developed for the Jersey City analysis incorporates these two features, since larger places attract people, ideas, and commodities more than smaller places and since places closer together have a greater attraction on each other.

Table 3-7: County-Based Gravity Attraction Model

County	State	Distance (miles)	Population	Percent attracted
Fairfield	Connecticut	49	882,567	3.6%
Litchfield	Connecticut	84	182,193	0.4%
Bergen	New Jersey	20	884,118	10.8%
Essex	New Jersey	18	793,633	10.9%
Hudson	New Jersey	8	608,975	21.7%
Middlesex	New Jersey	31	750,162	5.3%
Morris	New Jersey	34	470,212	3.0%
Passaic	New Jersey	30	489,049	3.6%
Somerset	New Jersey	37	297,490	1.7%
Union	New Jersey	20	522,541	6.2%
Dutchess	New York	74	280,150	0.7%
Nassau	New York	18	1,334,544	17.7%
Orange	New York	52	341,367	1.3%
Putnam	New York	51	95,745	0.4%
Rockland	New York	32	286,753	2.0%
Suffolk	New York	58	1,419,369	4.7%
Westchester	New York	33	923,459	6.0%

Source: Census 2000

Using distributions based on the gravity model, AKRF estimates that Hudson County would receive about 21.7 percent, or 7,325 households, of New York City's excess

demand of 33,000 households (see Table 3-7). Since the model is county based, the distribution in the model only estimates the number of households that are likely to migrate to Hudson County. To predict the number of households moving to Jersey City, AKRF examined the various municipalities in Hudson County and their share of the total Hudson County population growth between 1990 and 2000. According to the distribution, shown in Table 3-8, Jersey City received about 20.6 percent of the total Hudson County population growth between 1990 and 2000. The study assumes that the growth distribution in the future will be similar to the past decade so that Jersey City would receive 20.6 percent, or 1,510 households, of the total projected growth in Hudson County by 2020.

In addition to receiving a demand overflow from New York City, the optimistic scenario also assumes that Jersey City will experience in-migration levels into Hudson County similar to its peak-level years at the turn of the century (1997–2001). During these high in-migration years, Hudson County received on average 1,077 more households than during the average year between 2000 and 2005. County-to-county migration data were provided by the Internal Revenue Service (IRS). Based on individual tax returns the data identify the number of filers that moved in or out of any county in the U.S. between two consecutive tax years.

Since migration data is only available on a county basis, the analysis again uses Hudson County's growth distribution by municipality shown in Table 3-8. Applying Jersey City's share of the total Hudson County growth (20.6 percent) would result in an additional annual in-migration of 222 households. Assuming that this high-growth pattern would continue over the 15 year study period, it would yield 3,330 households migrating to Jersey City.

Table 3-8: 1990–2000 Population of Hudson County by Municipality

Municipality	Population Growth	Percent of Total	Out-Migration Captured
Bayonne	398	0.7%	52
East Newark	220	0.4%	29
Guttenberg	2,539	4.5%	333
Harrison	999	1.8%	131
Hoboken	5,180	9.3%	679
Jersey City	11,518	20.6%	1,510
Kearny town	5,639	10.1%	739
North Bergen	9,678	17.3%	1,269
Secaucus	1,870	3.3%	245
Union City	9,076	16.2%	1,190
Weehawken	1,116	2.0%	146
West New York	7,643	13.7%	1,002
Total	55,876	100%	7,325

Source: U.S. Census 2000

Combining the estimated supply shortage in NYC and surrounding areas and the generally high in-migration levels would yield a total of 4,840 additional households between 2005 and 2020. Adding the additional demand of 4,840 residential units to the projected net demand identified for the neutral scenario (7,131) would result in a total optimistic scenario demand of 11,971 units (See Table 3-9).

Table 3-9: 2020 Residential Demand – Optimistic Scenario

	2020 Neutral Scenario			2020 Optimistic Scenario	
	Demand	Supply	Net Demand	Additional Demand	New Total Demand
Jersey City	Projected HH Demand 2006-2020	Approved & Proposed Units (2006-2020)	Demand Beyond Approved & Proposed Units	High Population Growth and Supply Shortage in NYC	Demand Beyond Approved & Proposed Units
Future (2020)	24,180	17,049	7,131	4,840	11,971

Sources: Census 2000 and JCHEDC

In order to satisfy the additional demand beyond the approved and proposed units, the net demand would have to be filled with units categorized as anticipated units located in the redevelopment districts.

Commercial Demand

Assumptions for the optimistic or high competition commercial scenario also depend largely on New York City’s real estate market. In comparison to the residential market, New York City’s commercial market—with almost 400 million square feet in Midtown and downtown Manhattan—plays an even more influential role. Changes in overall volume, price, and vacancy have a direct impact on the commercial markets in the surrounding communities.

Using employment projections by NYMTC, AKRF estimates that New York City will have an additional demand of approximately 63 million square feet of office space by 2020. Table 3-10 shows a number of planned major commercial projects that would help to satisfy New York City’s demand for new office space and to further strengthen its position within the New York metro area.

Table 3-10: Major New York City Office Projects

New York City Office Projects	Location	Build Year	Commercial Office (SF)
World Trade Center	Lower Manhattan	2015	10,000,000
Hudson Yards Rezoning	Midtown West	2025	28,000,000
Atlantic Yards	Brooklyn	2016	1,275,000
First Avenue Properties	Midtown East	2014	1,119,979
West Chelsea Rezoning	Chelsea	2013	160,000
Downtown Brooklyn	Brooklyn	2013	4,600,000
Brooklyn Bridge Park	Brooklyn	2012	36,000
Long Island City	Queens (multiple sites)	2020	655,000
Flushing Commons	Flushing, Queens	2009	13,255
Total			45,885,234
<i>Source: AKRF</i>			

However, as mentioned earlier, large-scale projects in New York City (for example, the World Trade Center redevelopment) often have to overcome a number of hurdles, not all of which can be controlled by the developer, before they can be successfully completed. For the analysis, AKRF assumed that one major project may experience such a delay beyond 2020. For example, a project like the redevelopment of Hudson Yards could face significant delays that might limit or curtail its development potential. Its substantial scale and its associated No. 7 subway train extension make it an extraordinarily complex project. Current residential construction activities in the area, reaching as far west as Tenth Avenue, indicate that the residential portion of the plan has a high likelihood of being realized, even without extending the subway line.

However, new offices will require a far better infrastructure to bring commuters into and out of the area. However, if the No. 7 extension were significantly delayed (as was the experience with the proposed construction of the Second Avenue subway), a large part, if not all, of the commercial space in Hudson Yards may not be built.

The loss of 28 million square feet of office space would force employers to find space at other office locations throughout the New York metro area. While some jobs will need to stay in Manhattan, some would be expected to be relocated outside the city. For the purpose of the analysis, AKRF assumes that of the 160,000 employees that could potentially be housed in the Hudson Yards redevelopment area, only those performing back-office functions would be relocated to suburban locations.

To identify the share of employees that could be potentially relocated to suburban locations, AKRF examined office employment in New York City by industry. Table 3-11 indicates that of all private office employment in New York City, approximately 19 percent, or 144,752 positions, can be classified as back-office jobs. Applying this percentage to the overall number of jobs associated with the Hudson Yards projects results in a total of about 30,000 back-office jobs.

Table 3-11: Office Employment by Sector

Industry Sector	NAICS	New York City	Hudson County
Information	51	150,088	103,092
Data Processing Services	5142	7,983	9,946
Finance and Insurance	52	315,516	215,689
Financial Transactions Processing, Reserve, and Clearinghouse Activities	52232	9,115	9,354
Professional, Scientific, and Technical Services	54	289,606	262,139
Payroll Services	541214	40,434	29,955
Computer Systems Design and Related Services	5415	42,921	51,069
Management, Scientific, and Technical Consulting Services	5416	26,833	29,164
Administrative and Support and Waste Management and Remediation Services	56	185,372	249,478
Business Support Services	5614	17,466	18,452
Total Office Employment (Private Sector)		772,676	599,372
Total Back Office Employment		144,752	147,940
Back-Office Employment as a Percentage of Total Office employment		18.73%	24.7%
<i>Source: Department of Labor 2006</i>			

AKRF assumes that not all of the 30,000 office jobs would relocate to one alternative location. Instead, the employment would be distributed to a number of locations within the New York metro area. Table 3-12 shows selected office locations within the northern New Jersey, Westchester, and Fairfield County markets that are likely to compete with the Jersey City for back-office jobs.

Table 3-12: Major Non-New York City Office Markets in the New York Metro Area

Area	Square Feet	Percent of Total
Northern N.J. Total	77,366,948	74%
Bergen County	25,839,682	25%
Essex County	23,232,460	22%
Hudson County	23,540,809	23%
Passaic County	4,753,997	5%
Westchester Total	12,709,624	12%
White Plains CBD	6,258,872	6%
Eastern	6,450,752	6%
Fairfield Total	14,149,108	14%
Stamford CBD	6,307,898	6%
South Central	7,841,210	8%
Total	104,225,680	100%
Jersey City	15,500,000	15%

Source: Cushman & Wakefield 4Q/05

According to the office space distribution between these markets, northern New Jersey would receive about 74 percent, Westchester 12 percent, and Fairfield County approximately 14 percent of the total office job growth. The office space in Jersey City itself represents about 15 percent of the total competitive office market and is assumed to receive a corresponding share of office jobs. Receiving about 15 percent of the 30,000 back-office jobs from the Hudson Yards project would result in a job gain of about 4,500 back-office jobs in Jersey City.

Using a square feet per employee ratio of 175 square feet yields a total of 800,000 square feet of additional office space (see Table 3-13) and would result in new total demand of about 200,000 square feet, which would have to satisfied with anticipated office space located in the redevelopment areas.

Table 3-13: 2020 Office Space Demand—Optimistic Scenario

	2020 Neutral Scenario			2020 Optimistic Scenario		
	Demand		Supply	Net Demand	Additional Demand	New Total Demand
Jersey City	Total Employment Growth 2006-2020	Vacancy Adjusted Demand	Approved & Proposed Space (2006-2020)	Demand Beyond Approved & Proposed Space	Some major NYC projects will not be fully developed, demand will shift to Jersey City	Demand Beyond Approved & Proposed Space
Future (2020)	26,640	828,183	1,420,715	(592,532)	800,000	207,568

Sources: NJTPA 2006 and JCHEDC

Low Competition—Pessimistic Scenario

The low competition or pessimistic scenario illustrates a condition in which Jersey City’s real estate market is assumed to experience a decrease in demand. The scenario functions as a counter weight to the optimistic conditions, assuming soft market conditions in Jersey City, which are expected in turn to produce traffic levels below those in modeled for the neutral scenario.

Residential Demand

The basic assumption for the pessimistic residential scenario is that Jersey City will partially lose its attraction as a preferred residential location. A potential reason for such a situation could be a weak residential real estate market in New York City, with high residential vacancy rates and low rents and sales prices. Such a situation is assumed to prevent residents from leaving who would have otherwise been priced out and forced to leave New York City in a bullish real estate market.

Another reason for a declining residential in Jersey City could be an overall economic downturn in the New York metro region. Such a situation could cause fewer people to move to the New York metro area, including Jersey City. In general, AKRF assumes that such a situation would be characterized by low levels of in-migration into Hudson County, including Jersey City.

To quantify the effects of a low-competition market, AKRF assumed that overall in-migration into Hudson County will be similar to its lowest level in early 2000, when on average about 862 fewer households moved to Hudson County than during the average year between 2000 and 2005. To estimate the potential impact on Jersey City, AKRF turned again to the distribution of population growth within Hudson County. Using Hudson County’s growth distribution by municipality, shown in Table 3-14, an annual loss of 178 households in Jersey City would result. Assuming that this low-growth pattern would continue over the entire analysis time period would yield 2,670 households leaving Jersey City between 2005 and 2020.

Table 3-14: 2020 Residential Demand - Pessimistic Scenario

	2020 Neutral Scenario			2020 Pessimistic Scenario	
	Demand	Supply		Additional Demand	Net Demand
Jersey City	Projected HH Demand Total 2006-2020	Approved & Proposed Units (2006-2020)	Demand beyond approved & proposed units	Out Migration Will Reach Level of Peak Years	Demand Beyond Approved & Proposed Units
Future (2020)	24,180	17,049	7,131	-2,670	4,461

Sources: NJTPA 2006 and JCHEDC

Applying the loss to the neutral scenario total residential demand would reduce the net demand by 2,670 units to 4,461 by 2020 (see Table 3-14). To satisfy the additional demand beyond the approved and proposed units, the net demand would have to be filled with units that are categorized as anticipated and located in the redevelopment districts.

Commercial Demand

Similar to the pessimistic residential scenario, the commercial scenario is also based on the assumption that Jersey City would lose its competitive advantage, which could lead to a smaller employment base than that projected in the neutral scenario.

One potential reason for an employment decline could be that Jersey City would lose some of the office jobs currently located in its buildings. This could result from increased competition from overseas locations, such as Southeast Asia, or from other low-cost locations in the southern U.S. or Canada. Back-office functions such as data warehousing or programming are especially vulnerable to changes in employment cost. Currently, Jersey City has a comparably high share of office jobs. When compared with New York City, Jersey City has almost 6 percent more back-office jobs, as shown in Table 3-11.

For the pessimistic scenario, the study assumes that Jersey City would lose back-office jobs until the percentage of back-office jobs reaches a level similar to that in New York City. In other words, Jersey City's current share of office jobs of 24.7 percent would decrease to 18.7 percent.

As shown in Table 3-15, NJTPA projects that the total employment in Jersey City will be 144,790 by 2020. AKRF estimates that 38.7 percent of the total jobs, or 56,077, would be office jobs. Based on Hudson County's current percentage of back-office jobs of 24.7 percent, AKRF estimates that 13,841 of office employees would perform back-office tasks.

Assuming that the percentage of back-office jobs decreases from 24.7 percent to a level comparable to New York City at 18.6 percent would reduce employment growth by approximately 3,336 jobs compared to the neutral scenario.

Table 3-15: 2020 Office Space Demand—Pessimistic Scenario

	2020 Neutral Scenario				2020 Pessimistic Scenario	
	Demand		Supply		Additional Demand	Net Demand
Jersey City	Total Employment Growth 2006-2020	Vacancy Adjusted Demand	Approved & Proposed Space (2006-2020)	Demand Beyond Approved & Proposed Space	Back Office Functions Reach Level Similar to NYC Level	Demand Beyond Approved & Proposed Space
Future (2020)	26,640	828,183	1,420,715	(592,532)	(600,000)	(1,192, 532)
<i>Sources: NJTPA 2006 and JCHEDC</i>						

Applying the job loss to the total commercial demand in the neutral scenario would reduce the net demand by 600,000 and therefore increasing the already negative net demand in the neutral scenario to approximately 1.2 million square feet in the pessimistic scenario (see Table 3-15). It is expected that in this case some of the approved and proposed projects would not be constructed.

Anticipated Development

As described in the methodology section, the neutral scenario demand provides the baseline for all three scenarios. As the most probable scenario, the neutral scenario is carried out without any changes in demand. Changes in market conditions in the New York metro region are reflected in the pessimistic and optimistic scenarios and assumed to either decrease or increase the total demand for residential units and commercial space (see Table 3-16 and Table 3-19). Proposed and approved units are deducted from the total demand which results a new net demand. The anticipated development projects will be directly linked to the resulting net demand for each scenario. Where additional residential or commercial space is required it will be taken out of “the pool of anticipated space” located in Jersey City’s redevelopment districts.

All residential units and commercial space (approved & proposed as well as anticipated) needed to satisfy demand will be treated as new development projects which will be geo-coded and serve as inputs into the traffic model.

Residential Development

Based on total household growth projected, the residential demand in the neutral scenario would be 24,180 units by 2020. Since no additional demand is assumed for the neutral scenario, the total demand is equal to the baseline projection in the neutral scenario. Deducting the number of units that are already approved or proposed, results in a net demand of 7,131 units (see Table 3-16).

Table 3-16: Demand Summary – Residential Scenarios

	Neutral Scenario	Pessimistic Scenario	Optimistic Scenario
Neutral Scenario Demand	24,180	24,180	24,180
Additional Demand	0	-2,670	4,840
Total Demand	24,180	21,510	29,020
Proposed and Approved Projects	17,049	17,049	17,049
Net Demand	7,131	4,461	11,971
<i>Sources: NJTPA 2006 and JCHEDC</i>			

As shown in Table 3-16 above, the pessimistic scenario assumes that the neutral scenario demand would be reduced by 2,670 units, resulting in a total demand of 21,510. Subtracting approved and proposed units yields a net demand of 4,461 residential units. Assumptions in the optimistic scenario would result in demand for an additional 4,840 units over the neutral scenario, which increases the total demand to 29,020. Deducting the approved and proposed units results subsequently in a net demand of 11,971 units (see Table 3-16).

Resulting residential net demand for each scenario would be satisfied with anticipated units from the various redevelopment districts. Besides development activities in redevelopment areas, Jersey City also experiences small scale development (one- to three family units). To account for these units, AKRF examined the background growth likely to occur in Jersey City within the analysis time frame.

Based on building permits² issued for one- to three-family units in Jersey City over the last 10 years, and small-scale housing projected by JCHEDC, AKRF was able estimate the volume of small scale development in Jersey City. An average for the neutral scenario (167) was calculated using annual building permits issued between 1996 and 2002. The lowest number of building permits issued over the same period (150) was used to represent the pessimistic scenario. Since the current conditions are assumed to mirror a high growth condition, COAH's future five-year annual growth average for small scale development (367) was used to represent the optimistic scenario.

Multiplying the background growth by the number of analysis years (15) yields a total of 2,505 units of background growth in the neutral scenario, 2,250 units in the pessimistic scenario, and 5,505 units in the optimistic scenario (see Table 3-17).

Accounting for the estimated background growth reduces the total net demand for the various scenarios to 4,626 units in the neutral scenario, 2,211 units in the pessimistic scenario, and 6,300 units in the optimistic scenario.

² U.S. Census records building permits issued by municipality and classifies according to the number of units included in the structure

Table 3-17: Background Growth & Adjusted Residential Net Demand

	Neutral Scenario	Pessimistic Scenario	Optimistic Scenario
Net Demand	7,131	4,461	11,805
Background growth by 2020 (1-3 unit development)	2,500	2,250	5,505
Net Demand (Anticipated to be satisfied by large developments)	4,626	2,211	6,300
Occupancy Rate	94%	94%	95%
Adjusted Net Demand	4,943	2,343	6,662
<i>Sources: NJTPA 2006 and JCHEDC</i>			

Assuming an overall occupancy of approximately 95 percent would result in adjusted net demand of 4,943 units in the neutral scenario, 2,343 units in the pessimistic scenario, and 6,662 in the optimistic scenario (see Table 3-17).

To distribute the adjusted net demand by redevelopment area AKRF analyzed the anticipated units located in the various redevelopment districts in Jersey City. With the help JCDCP and JCHEDC, AKRF quantified the capacity of each redevelopment area and prioritized the development sites, according to their development probability. Table 3-18 shows the complete list of potential redevelopment projects in Jersey City.

Development sites were ranked from 1 to 29, with 1 representing the area or project with the highest probability of getting realized, while the 29th rank represents the area or site with the lowest perceived likelihood of being developed. According to the ranking, the 400 units in the Lafayette neighborhood have the highest potential of being developed within the analysis time frame, while the 3,400 units of the later phase of Liberty Harbor North are believed to have the lowest probability of being developed by 2020 (see Table 3-18).

Table 3-18: Anticipated Development by Redevelopment Area/Sites

	Anticipated Units	Rank	Pessimistic Scenario (units)	Neutral Scenario (units)	Optimistic Scenario (units)
Lafayette Neighborhood (various projects north of HBLRT)	400	1	200	400	400
Powerhouse Arts District	1,500	2	450	1,200	1,500
Monaco (6 th Street) & San Remo)	674	3	200	550	674
M Works Future Phases (American Can Building)	600	4	200	300	600
Newport Jersey Ave RDP, Bl. 360, L. 1	200	5	200	200	200
Liberty Harbor North (Blocks 6, 7, 11, 12, 13, 14 & 15)	2,825	6	350	700	1,000
Newport NE Quadrant, Bl. 20, L. 3.13	40	7	40	40	40
Newport NE Quadrant, Bl. 20, L. 3.15	362	8	62	162	262
Newport Jersey Ave RDP, Bl. 323, L. 1	200	9	100	200	200
Newport Jersey Ave RDP, Bl. 395.1, L. 1	200	10	100	200	200
Newport NE Quad, Bl. 20, L. 3.15a	152	11	52	152	152
Newport NE Quadrant, Bl. 20, L. 3.18	325	12	125	225	325
Newport NE Quad, Bl. 20, L. 3.21a	476	13	76	176	276
Port Liberte (phases 4-7)	812	14	50	100	200
Newport NE Quad, Bl. 20, L. 3.21b	238	15	38	138	238
Journal Square (various projects)	1,500	16	50	100	150
Hudson Exchange	960	17	50	100	150
Liberty Landing (Grand Jersey RDP)	145	18	0	0	95
Jersey Avenue Redevelopment Area	1,000	19	0	0	0
Bates Avenue Redevelopment Area	861	20	0	0	0
Kellogg Street Northside	300	21	0	0	0
NJCU West Campus	100	22	0	0	0
Harborside IX	700	23	0	0	0
Harborside VIII	600	24	0	0	0
Columbus Plaza	1,100	25	0	0	0
Westside Station	350	26	0	0	0
Sip Avenue Redevelopment Area	100	27	0	0	0
Lafayette (100 Acres south of HBLRT)	2,345	28	0	0	0
Liberty Harbor North (2015-2020)	3,422	29	0	0	0
Total Units:	22,487		2,343	4,943	6,662
<i>Sources: JCHEDC</i>					

Table 3-18 shows the anticipated ‘best guess’ for the number of units in each redevelopment area. The table also shows the rank of each project and the total number of units to be built at each redevelopment site/area for each scenario. For example, 400 available units in the Lafayette neighborhood are expected to be built under the neutral and optimistic scenario, while under the pessimistic scenario only 200 units are expected to be built. The Powerhouse Arts District has a total capacity of 1,500 units. Only under the optimistic scenario all 1,500 are expected to be completed. The determination of the number of units to be built in each area for each development scenario was based on the ranking and the size of each development. Each project was ranked by JCDCP according to its likelihood of being built. In most cases, JCDCP also had a strong opinion on the number of units to be completed. Also, it was assumed that smaller projects would have a higher likelihood of being developed in their entirety since these projects bear a lower risk. Increased risk was also considered on larger projects, such as Liberty Harbor North, where development would likely occur in phases so that developers would have the chance to adjust to a changing market.

The table also illustrates that for the optimistic scenario only 11 out of the 29 redevelopment areas would not need to be developed at all, while under the pessimistic and neutral scenario, 12 out of 29 areas would remain undeveloped.

Development locations and associated unit counts for each scenario were then geo-coded and fed into the transportation model.

Commercial Development

While residential demand is expected to be strong for all scenarios, demand for office space is anticipated to be much softer. Based on the projected employment growth, the analysis estimates a base demand of 828,000 square feet of office space. Without any shifts in demand, as depicted in the neutral scenario, the approved and proposed units would exceed the estimated demand by almost 600,000 square feet (see Table 3-19). The pessimistic scenario would yield about 1.2 million square feet of excess office space. The optimistic scenario is the only scenario expected to require office space beyond what is already approved and proposed, i.e., an additional 207,468 square feet.

Table 3-19: Demand Summary–Commercial Scenarios

	Neutral Scenario (square feet)	Pessimistic Scenario (square feet)	Optimistic Scenario (square feet)
Neutral Scenario Demand	828,200	828,200	828,200
Additional Demand	0	-600,000	800,000
Total Demand	828,200	228,200	1,628,200
Proposed and Approved Projects	1,420,715	1,420,715	1,420,715
Net Demand	-592,532	-1,192,532	207,468
<i>Sources: NJTPA 2006 and JCHEDC</i>			

Overall, conditions assumed for neutral and pessimistic scenario would force the market to adjust. This could mean that commercial projects would get converted into residential projects or that they would not get built at all. For the purpose of this analysis AKRF assumes that some of the approved and proposed projects would not be realized. Table 3-20 shows approved and proposed as well as anticipated commercial projects in Jersey City.

Table 3-20: Approved, Proposed, and Anticipated Commercial Space

Projects	Status	GSF
Harborside IV	Approved & Proposed	1,067,000
Misc. Small Commercial Projects	Approved & Proposed	300,000
99 Hudson St.	Approved since 1994, treated as anticipated	1,202,550
Evertrust II	Approved prior to 1994, treated as anticipated	555,000
55 Hudson St.	Anticipated	966,400
Harborside VI	Anticipated	626,100
Harborside VII	Anticipated	1,486,400
2 JSQ Plaza (Phase 2)	Anticipated	550,000
Total		6,753,450
<i>Sources: JCHEDC</i>		

In contrast to the residential conditions, even the neutral commercial scenario shows an oversupply situation in the case that all approved and proposed projects would be realized. To account for this oversupply condition, AKRF assumes that the smaller miscellaneous approved and proposed, commercial development projects would not be built, while the approved Harborside IV development is anticipated to be completed. This would decrease the oversupply of approximately 600,000 square feet by 50 percent. The remaining 300,000 square feet in excess space are anticipated to remain vacant and would result in a lower vacancy rate of about 9 percent.

The pessimistic scenario results in almost 1.2 million square feet of excess office space. AKRF assumes that the market will react to the oversupply conditions so that none of the approved and proposed projects would be built. The resulting net demand of about 200,000 would be absorbed by the existing space.

The optimistic scenario is the only scenario that would result in a demand that goes beyond the approved and proposed units. As a result of the additional demand of more than 200,000 square feet, AKRF assumes that the Evertrust II building, already approved in 1994, will be realized.

Out of the ordinary events may change the development probability of some of the commercial development site. Some projects may be realized, even though no immediate demand may exist. For example, a large company may decide to come to Jersey City, independent of the existing market conditions and occupy a multi-million square feet tower for use by their own employees only.

To reflect such a condition in the transportation model the consultant team created a fourth scenario, in which all of the approved and proposed and anticipated projects in Table 3-20 were included and added to the neutral residential scenario.

Developments included in the various development scenarios were then geo-coded and served as input for the transportation model.

3.1.4 Market Analysis Summary

The study resulted in the overall conclusion that 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. Table 3-21 shows a summary of the total demand and the development projects selected to meet the estimated demand. The lists of specific developments for each scenario are provided in Tables 3-22 through 3-26. The list of specific developments occurring in each traffic zone for each scenario is provided in Technical Appendix A.

Table 3-21 - Development Locations

Neutral Scenario

	<i>Residential</i>		<i>Commercial</i>	
	Development Projects	Residential Units	Development Projects	Office Space
Approved & Proposed Units	See Table 3-22	17,049	Harborside IV	1,100,000
Anticipated Units	See Table 3-24	4,943		0
Total Demand		24,180		828,200

Pessimistic Scenario

	<i>Residential</i>		<i>Commercial</i>	
	Development Projects	Residential Units	Development Projects	Office Space
Approved & Proposed Units	See Table 3-22	17,049	-	0
Anticipated Units	See Table 3-25	2,343	-	0
Total Demand		21,510		228,200

Optimistic Scenario

	<i>Residential</i>		<i>Commercial</i>	
	Development Projects	Residential Units	Development Projects	Office Space
Net Demand				
Approved & Proposed Units	See Table 3-22	17,049	Harborside IV	1,067,000
Anticipated Units	See Table 3-26	2,343	Misc. Small Office Projects	300,000
			Evertrust II	555,000
Total Demand		29,020		1,628,200

Table 3-22: Approved and Proposed Residential Units

Address	Block	Lot	Decision Date	New Units
Grand & Greene Streets	68	P, 1A, 39	Dec. 14, 2004	40
203,205,207,209 Woodward Street; 51 and 160 Lafayette St; 288,290,292,295.5, 297, 323,325 Halladay Street, 222-224 Pine Street	2050, 2053, 2054, 2056, 2057, 2066	A.1, 8, 9, A.2, 24.A, 24.B, 25, 11.B, 12, A.4, 8.C, 6.C, 5.A, 18, N, O	Jun. 11, 2002	40
452-460 Grand Street; 115-123 Colden Street	2140	7A, 8, 9, 10,11, 22, 23 ,24, 25 & 26	Nov. 29, 2005	41
Ocean and Van Nostrand Avenues	1347, 1342, 1465, 1463	1,2,3,4,3A, 4A, A,1D,3D,4D,1E,2C,3E,4B,2 B,30,5C,6B,7B,8B,10B,11B	Mar. 11, 2003	43
170 Lafayette Street	2057	17	Mar. 11, 2003	43
376-382 Bergen Avenue	1977	A.3		43
475 Claremont Avenue / 70 Water Street	1775.1	97 & A.9	Jun. 22, 2004	44
Kearney and Rose Avenues	1993, 1994	B,12,13,14 dup.,16,17A,18A,19,20,21,2 2,13.A,15,A,16.A,18.A dup.,19.A,21.A,22.A,23.A,24 .A,7 dup.,8.A,8.B,9,10.A,12.E,12. F	Aug. 5, 2003	48
457-475 Claremont Avenue (phase 1)	1775.1	85, 89	Jun. 14, 2005	52
Independence Way	1500	29.02	May 6, 2003	57
6, 7, & 8 Bernius Court.; 334-336, 328-332, 324- 326 Bergen Avenue	1979, 1980	35A, 36, 37, 38, B & 5A, C1, 16, 17, A1, 13, 14, 15, 1B	Nov. 9, 2004	57
Christopher Columbus Drive & Barrow Street	239	45		58

Table 3-22: Approved and Proposed Residential Units (Cont.)

Address	Block	Lot	Decision Date	New Units
222 10 th Street. aka 187 Erie Street	286	A,B,C,D,E,F,5,9,10	Nov. 12, 2002	58
198 Van Vorst Street	131	91,92,93,95A,95B	Nov. 9, 2004	59
140 Bay Street	141	B.3	Apr. 17, 2003	59
106-118 York Street	102	X	Sep. 27, 2005	60
68-122 St. Paul's Avenue; 40-94 Oakland Avenue	563	8.A, 10.A, 11, 12, 14, & 15 & 13		64
332, 336, 340 Duncan Ave	1651	A	Jul. 26, 2005	66
311 Washington Street	106	A.1	May 20, 2004	68
511 Grand Street (Lafayette Gardens)	2088	1	Jun. 11, 2002	70
175 Twelfth Street and 548 Manila Avenue	218, 219	4	Nov. 5, 2003	71
210-240 Pacific Avenue	2044	25A, 35B	Nov. 9, 2004	72
209-215 Newark Avenue; 291 First Street	311	26-30, 54.B, 55.A, 57.B, 60.A	Jan. 16, 2003	76
Steuben and Morgan St.	139	99-113	May 24, 2005	78
136-138 Oakland Avenue	702	T.1	Jun. 17, 2004	78
203-207 Van Vorst Street	165	3, 1.E, B, C.1	Aug. 23, 2005	83
833 Jersey Avenue	330	1-5, 3C	Sep. 28, 2004	84
15-23 Oakland Avenue; 12-20 Cook Street	527	5C, 5E, 6, 7, 16, 17, 18B, 18C	Aug. 23, 2005	92
15 Warren Street (Pierhouse I)	60	33 and 33a	Jun. 11, 2002	106
36-44, 46-50 Atena Street	60	19.L, 19.M	May 24, 2005	107
103-109 Greene Street	70	C.2, R.2, 31	May 15, 2003	113
25 Hudson Street	33	20	Aug. 9, 2005	119
414-418 Hoboken Avenue	571	42.A, 42.B, 50.A, M.2	Nov. 3, 2005	121
Chapel Ave. (Phase 3D)	1500	50.04, 51.01	Aug. 10, 2004	121
180 Tenth Street	218	B5	Sep. 27, 2005	128
100 Paterson Plank Road	751	G	Jan. 20, 2005	128
2854 Kennedy Boulevard	1864	22, B.2, 36.A, 38.D, 38.E	Oct. 22, 2002	130
364 9th Street; 269 Brunswick Street	420	A,B,C,D,-G1, H2 & J1 5-1		143
45 14 th Street	20	3.06, 3.07, 3.08	Jan. 7, 2003	144
125 Monitor Street	2048	A & A1		152
50 Dey Street	637	1A, A1	Nov. 29, 2005	202
700 Grove Street	228	A and S	May 25, 2004	230

Table 3-22: Approved and Proposed Residential Units (Cont.)

Address	Block	Lot	Decision Date	New Units
376-378 Luis Munoz Marin Boulevard; 160-166 first Street; 169-173 Second Street	173	B, C, E, F, J, 126A, 127	Dec. 13, 2005	153
7-33, 35-39 Aetna Street	2145	415 & 41R		189
689 Luis Munoz Marin Boulevard	228	C.2, C.4, D	Dec. 14, 2004	230
94-108 First Street	109	1, 3, C	Feb. 8, 2005	250
150 Bay Street	172	F.2, G.1	Mar. 18, 2004	260
126-142 Morgan Street	140	A.1, B.1	Oct. 11, 2005	263
North Pier	10,15	26(aka 7.30), 12,13,18, 36	Mar. 11, 2003	297
Merrit St. & Pamrapo Ave.	1381	17	Mar. 25, 2003	307
160 Lafayette Street (Whitlock Mills)	2057	18	Sep. 9, 2003	330
Chapel Ave. (Phase 3B)	1500	50.03, 50.06, 50.07, 46.01	Sep. 14, 2004	331
Washington Blvd & 14 th St	20	3.02, 3.06, 5.08	Jul. 13, 2004	341
475 Washington Blvd.	20	1.15	Nov. 9, 2004	414
270 Luis Munoz Marin Boulevard	170	1A	Jun. 15, 2004	420
Shore Club	20	3.06, 3.08, 5.13, 5.17	Nov. 9, 2004	428
193 Luis Marin Boulevard	60	28.H and 28.D	Dec. 16, 2003	432
Newark Avenue & Luis Munoz Marin Boulevard	205	4.A, 5-34	Jun. 24, 2003	525
Mill Creek Lane	2145	55A, 55B, 55C	Nov. 30, 2004	575
180 Baldwin Avenue	1880, 507	1, 20, 21 & 1	Sep. 14, 2004	596
The area bounded by Grand Street, Luis Munoz Marin Blvd., Jersey Ave., & the HBLRT Rail Tracks	60, 268	51, 29c, 29, 43, Plots C, D, E, 21D, 22B, 23A, 24B, 25F, and all vacated portions of Canal Street	Oct. 28, 2003	667
Montgomery Street & Baldwin Avenue	1899, 1915	1,2,3,4,5,6,7,10,24, 8,9,23	Oct. 11, 2005	838
Entire Port Liberte' Project Area			Aug. 10, 2004	841
328-342 Washington St.	75	PL1, 152, 153	Feb. 8, 2005	862
77 Hudson Street	36	40	Feb. 17, 2006	896
100 Caven Point Road	1497	3M1, 3M2	Oct. 22, 2002	932
Units in Building with less than 40 units				2,024
Total				17,049

Sources: Jersey City Department of Housing Economic Development and Commerce (2006)

Table 3-23: Approved and Proposed Commercial Space

Address	Block	Lot	Decision Date	Square Feet
25 Oakland Avenue	517	15	Oct. 3, 2002	325
10 Paterson Street	815	481	Sep. 22, 2005	640
79 Ocean Avenue	1411	9	Aug. 21, 2003	750
53 Tonnele Avenue	1848	14	Jun. 17, 2004	936
125 Palisades Avenue	553	V	NA	1,020
3523 Kennedy Boulevard	919	2.B	Nov. 13, 2003	1,233
159 Palisade Avenue	555	C	May 19, 2005	1,300
801-803 West Side Avenue	1660	453,454, & 455	NA	3,000
512 Summit Avenue	521	6.P	NA	3,271
571 MLK Drive	1937	4	Nov. 30, 2004	4,736
235 Newark Avenue	369	33, 36	Feb. 11, 2003	4,890
37 Edward Hart Road	2154.2	26	Sep. 9, 2003	5,026
789-791 Newark Avenue	589.5	10	Jul. 13, 2004	5,400
511 Grand Street (Lafayette Gardens)	2088	1	Jun. 11, 2002	5,975
97 Burma Road	2154	13.B	Dec. 16, 2003	6,493
667-677 Garfield Avenue	1476	1,2,3,29	Oct. 24, 2002	8,000
1584-1600 Kennedy Blvd. / 215-223 Neptune Avenue	1376	1-4, 7, A, 91A, 8A, 8, 9, 10A	May 18, 2004	10,870
3182-3184 Kennedy Blvd.	842	4 & 5	Mar. 18, 2004	13,630
953-965 Garfield Avenue	1966	12A,A2,5 & 6	NA	20,200
6-14 Jones Street & 391 Summit Avenue	1867	20-24,31	NA	22,845
38-40 State Highway & 220 Hopkins Avenue	630.A, 630	L.2, 16.c, 57.C	Nov. 3, 2005	68,247
801 NJ Route 440	1745	E.2	Apr. 21, 2005	74,928
355 Grand Street	60.12	3	May 3, 2005	90,000
Christopher Columbus Drive & Hudson Street (Plaza IV)	10	20	Feb. 5, 2002	1,067,000
Total				1,420,715
<i>Sources: Jersey City Department of Housing Economic Development and Commerce (2006)</i>				

Table 3-24: Anticipated Development Locations and Unit Count for Neutral Development Scenario

	Units	Rank	Neutral
Lafayette Neighborhood (various projects north of HBLRT)	400	1	400
Powerhouse Arts District	1,500	2	1,200
Monaco (6 th Street) & San Remo	674	3	550
M Works Future Phases (American Can Building)	600	4	300
Newport Jersey Avenue RDP, Block 360, Lot 1	200	5	200
Liberty Harbor North (Blocks 6, 7, 11, 12, 13, 14 & 15)	2,825	6	700
Newport NE Quadrant, Block 20, Lot 3.13	40	7	40
Newport NE Quadrant, Block 20, Lot 3.15	362	8	162
Newport Jersey Avenue RDP, Block 323, Lot 1	200	9	200
Newport Jersey Avenue RDP, Block 395.1, Lot 1	200	10	200
Newport NE Quadrant, Block 20, Lot 3.15a	152	11	152
Newport NE Quadrant, Block 20, Lot 3.18	325	12	225
Newport NE Quadrant, Block 20, Lot 3.21a	476	13	176
Port Liberte (phases 4-7)	812	14	100
Newport NE Quadrant, Block 20, Lot 3.21b	238	15	138
Journal Square (various projects)	1,500	16	100
Hudson Exchange	960	17	100
		Total	4,943
<i>Source: Jersey City Department of Housing Economic Development and Commerce (2006)</i>			

Table 3-25: Anticipated Development Locations and Unit Count for Pessimistic Development Scenario

	Units	Rank	Pessimistic
Lafayette Neighborhood (various projects north of HBLRT)	400	1	200
Powerhouse Arts District	1,500	2	450
Monaco (6th Street) & San Remo	674	3	200
M Works Future Phases (American Can Building)	600	4	200
Newport Jersey Avenue RDP, Block 360, Lot 1	200	5	200
Liberty Harbor North (Blocks 6, 7, 11, 12, 13, 14 & 15)	2,825	6	350
Newport NE Quadrant, Block 20, Lot 3.13	40	7	40
Newport NE Quadrant, Block 20, Lot 3.15	362	8	62
Newport Jersey Avenue RDP, Block 323, Lot 1	200	9	100
Newport Jersey Avenue RDP, Block 395.1, Lot 1	200	10	100
Newport NE Quadrant, Block. 20, Lot 3.15a	152	11	52
Newport NE Quadrant, Block 20, Lot 3.18	325	12	125
Newport NE Quadrant, Block 20, Lot 3.21a	476	13	76
Port Liberte (phases 4-7)	812	14	50
Newport NE Quadrant, Block 20, Lot 3.21b	238	15	38
Journal Square (various projects)	1,500	16	50
Hudson Exchange	960	17	50
Total			
<i>Source: Jersey City Department of Housing Economic Development and Commerce (2006)</i>			

Table 3-26: Anticipated Development Locations and Unit Count for Optimistic Development Scenario

	Units	Rank	Optimistic
Lafayette Neighborhood (various projects north of HBLRT)	400	1	400
Powerhouse Arts District	1,500	2	1,500
Monaco (6th Street) & San Remo	674	3	674
M Works Future Phases (American Can Building)	600	4	600
Newport Jersey Ave RDP, Block 360, Lot 1	200	5	200
Liberty Harbor North (Blocks 6, 7, 11, 12, 13, 14 & 15)	2,825	6	1,000
Newport NE Quadrant, Block 20, Lot 3.13	40	7	40
Newport NE Quadrant, Block 20, Lot 3.15	362	8	262
Newport Jersey Avenue RDP, Block 323, Lot 1	200	9	200
Newport Jersey Avenue RDP, Block 395.1, Lot 1	200	10	200
Newport NE Quadrant, Block 20, Lot 3.15a	152	11	152
Newport NE Quadrant, Block 20, Lot 3.18	325	12	325
Newport NE Quadrant, Block 20, Lot 3.21a	476	13	276
Port Liberte (phases 4-7)	812	14	200
Newport NE Quadrant, Block 20, Lot 3.21b	238	15	238
Journal Square (various projects)	1,500	16	150
Hudson Exchange	960	17	150
Liberty Landing (Grand Jersey RDP)	145	18	95
<i>Source: Jersey City Department of Housing Economic Development and Commerce (2006)</i>			

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.

3.2.2 Mode Split

The 2000 Census Journey-to-Work data was utilized to determine the mode split of the additional person trips generated by the new development in the study area. The mode split, as defined for this project, is the percentage of trips that are made by non-automobile modes such as rail transit, bus transit, ferry, taxi, bicycle, or walking.

A large supply of transit services are available to travelers within the study area, including the PATH rail service, the HBLRT service, local and interstate bus service, and NY Waterways trans-Hudson ferry service.

Therefore, the percentage of trips made by automobile is relatively low for both residents and workers, particularly in comparison to the rest of northern New Jersey, to the rest of Hudson County, and even to Jersey City outside the study area.

Separate transit mode share estimates were developed for the new residential and commercial developments in the study area. The transit mode shares, shown in Table 3-26 (next page), were based on the 2000 Census Journey to Work data for study area resident and workers, respectively. In computing these mode shares, study area residents who either work within the study area or who work at home, were excluded from these calculations since these short trips were not part of the trip table development process.

Table 3–26: Mode Split

Travel Market Segment	Percent Automobile	Percent Transit
Study Area Residents	30%	70%
Study Area Workers	58%	42%
<i>Source: US Census</i>		

For retail trips, it was assumed that retail developments with less than 40,000 square feet of gross leasable area would not attract trips from outside the study area, and therefore would not be considered in the modeling process. For the 13 retail developments with greater than 40,000 square feet of gross leasable area, it was assumed that 50 percent of the generated trips would be either pass-by trips or trips diverted from elsewhere in the study area. Therefore, the remaining 50 percent of the generated retail trips are assumed to come from outside the study area, and these trips are all assumed to be auto trips.

3.2.3 Origins / Destinations

Following the calculation of trip generation by future developments and the percentage of those trips that will be made by automobile, the next step is to assign those trips to the traffic network. It is assumed that the new auto trips will be entering or exiting the study area for one end of their journey; therefore, the trips must be assigned to a study area entry or exit point, also known as an external location.

Thirteen external locations for the study area were defined and are listed in Table 3-27 and shown in Figure 3-4.

Table 3–27: External Zone Assignments

Zone	External Location
101	Pacific Avenue
102	Grand Street
103	Bright Street
104	Montgomery Street
105	NJ Turnpike Exit 14C
106	Newark Avenue
107	Jersey Avenue (Hoboken)
108	Grove Street (Hoboken)
109	Marin Blvd (Hoboken)
110	Route 139
111	Wayne Street
112	Holland Tunnel
113	Hoboken Avenue

Figure 3-4: External Zone Assignments



The external traffic distribution for the morning and evening peak period was synthesized based primarily on the available traffic counts for both external and internal locations within the study area and then checked by comparison with the 2000 Census Journey-to-Work data for Study Area residents and workers. The external traffic distribution for the study area is shown in the table below:

In order to compare the external traffic distribution with the Census data, it is necessary to develop generalized relationships between the external locations and the actual trip origin or destination (home or work location). These relationships are summarized in Table 3-28.

Table 3-28: External Traffic Distribution

Zone	External Location	From Study Area		To Study Area	
		AM Pk Hr	PM Pk Hr	AM Pk Hr	PM Pk Hr
101	Pacific Avenue	12%	16%	21%	17%
102	Grand Street	14%	16%	15%	16%
103	Bright Street	2%	2%	2%	2%
104	Montgomery Street	6%	7%	7%	6%
105	NJ Turnpike Exit 14C	42%	33%	31%	30%
106	Newark Avenue	8%	9%	9%	10%
107	Jersey Avenue (Hoboken)	1%	1%	1%	1%
108	Grove Street (Hoboken)	0%	0%	1%	0%
109	Marin Blvd (Hoboken)	1%	0%	1%	1%
110	Route 139	10%	11%	8%	11%
111	Wayne Street	0%	0%	2%	2%
112	Holland Tunnel	3%	3%	4%	4%
113	Hoboken Avenue	0%	0%	0%	0%

Table 3-29: Equivalent External Areas

Zone	External Location	Equivalent External Area
101	Pacific Avenue	Other Hudson County, Other New Jersey via Turnpike Exit 14B
102	Grand Street	Other Hudson County, Other New Jersey via Turnpike Exit 14B
103	Bright Street	Other Jersey City
104	Montgomery Street	Other Jersey City
105	NJ Turnpike Exit 14C	Other Hudson County, Other New Jersey
106	Newark Avenue	Other Jersey City
107	Jersey Avenue (Hoboken)	Hoboken
108	Grove Street (Hoboken)	Hoboken
109	Marin Blvd (Hoboken)	Hoboken
110	Route 139	Lincoln Tunnel via Tonnelle Ave, Other Hudson County, Other New Jersey
111	Wayne Street	Other Jersey City
112	Holland Tunnel	Holland Tunnel
113	Hoboken Avenue	Other Jersey City

The next step is to convert the Census data into a format that can be compared to the synthesized trip table data. The Census data provides information for study area residents and study area workers traveling by all modes. For this exercise, only residents and workers who traveled by automobile were considered. The time of day of travel was not considered. Further, the study area resident data is compared to trips originating in the study area in the morning and destined for the study area in the evening. The study area worker data is compared to trips destined for the study area in the morning and originating in the study area in the evening. The comparison is summarized in the following table. The equivalent data from the North Jersey Regional Transportation Model has been included for comparison. Additional origin-destination data from a 2005 New Jersey Department of Transportation (NJDOT) survey is not comparable to this data due to its focus on eastbound NJ Route 139 traffic.

Table 3-30: Trip Table Percentages Comparison

Equivalent External Area	Synthesized Trip Table		2000 Census Data		NJRTM	
	To Study Area	From Study Area	Residents	Workers	To Study Area	From Study Area
AM Peak Hour						
Other Jersey City	19%	16%	22%	18%	39%	48%
Hoboken	2%	2%	2%	3%	3%	6%
Lincoln Tunnel, Other Hudson County, Other New Jersey	75%	78%	74%	75%	56%	45%
Holland Tunnel	4%	3%	3%	4%	1%	1%
PM Peak Hour						
Other Jersey City	20%	19%	18%	22%	48%	39%
Hoboken	2%	2%	3%	2%	6%	3%
Lincoln Tunnel, Other Hudson County, Other New Jersey	74%	76%	75%	74%	45	56%
Holland Tunnel	4%	3%	4%	3%	1%	1%

Based on this analysis, it was determined that the synthesized distribution was reasonable and could be used for new residential, commercial and retail (i.e. shopping) trips.

3.2.4 New Jersey Transit Review / Concurrence

The development data, zonal system and mode split data was submitted to New Jersey Transit in May, 2006 for review and comparison with analysis performed utilizing the New Jersey Transit mode split model.

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.

The NJRTM was utilized to determine 2006 and 2030 volumes at major external stations of the study area for the AM and PM peak periods. The external volumes and the associated average annual growth rate are shown in Table 3-31.

Table 3-31: Existing and Future Volumes and Growth Rates at Selected External Stations

Link	Dir	Morning		Growth		Evening		Growth	
		2006	2030	Total	Annual Rate	2006	2030	Total	Annual Rate
Newark Avenue	In	3,503	4,632	32%	1.17%	1,551	2,536	64%	2.07%
Newark Avenue	Out	328	493	50%	1.71%	3,285	4,808	46%	1.60%
Holland Tunnel	In	5,130	5,647	10%	0.40%	6,612	7,267	10%	0.39%
Holland Tunnel	Out	5,863	6,544	12%	0.46%	7,029	7,830	11%	0.45%
Marin Boulevard	In	2,129	2,838	33%	1.20%	3,520	4,417	25%	0.95%
Marin Boulevard	Out	1,142	1,441	26%	0.97%	4,394	5,263	20%	0.75%
Grand Street	In	2,338	4,858	108%	3.09%	468	681	46%	1.58%
Grand Street	Out	484	633	31%	1.12%	1,294	3,025	134%	3.60%
NJ Route 139	In	3,624	5,166	43%	1.49%	2,750	2,837	3%	0.13%
NJ Route 139	Out	2,614	2,826	8%	0.33%	4,518	4,283	-5%	-0.22%
New Jersey Turnpike	In	8,169	8,940	9%	0.38%	5,436	7,120	31%	1.13%
New Jersey Turnpike	Out	2,035	3,046	50%	1.69%	8,194	9,716	19%	0.71%
Montgomery Street	In	5,399	4,698	-13%	-0.58%	4,002	4,970	24%	0.91%
Montgomery Street	Out	2,561	3,082	20%	0.77%	6,426	6,615	3%	0.12%
Total Inbound		30,292	36,779	21%	0.81%	24,339	29,828	23%	0.85%
Total Outbound		15,027	18,065	20%	0.77%	35,140	41,540	18%	0.70%
Total		45,319	54,844	21%	0.80%	59,479	71,368	20%	0.76%

As shown in this table, the average annual growth rate at the individual stations varies from a low of -0.58 percent at Montgomery Street inbound to a high of 3.60 percent at Grand Street outbound. However, when viewed in totality for all traffic entering and exiting the study area at the listed stations, the growth rates are within the narrow range of 0.70 to 0.85 percent for inbound and outbound traffic for AM and PM peak periods.

Based on the data presented in this table, 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).