Elizabeth Midtown Multi-Modal Integration Study

Final Report

NJTPA

NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

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Elizabeth Midtown Multi-Modal Integration Study

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The North Jersey Transportation Planning Authority (NJTPA) is the federally authorized Metropolitan Planning Organization (MPO) for the 13-county northern New Jersey region. Each urbanized region of the country is required to establish an MPO in order to qualify for the receipt of federal transportation funding. The NJTPA serves a region of 6.6 million people, one of the largest MPO regions in the country. The NJTPA evaluates and approves proposed transportation improvement projects. It also provides a forum for cooperative transportation planning efforts, sponsors transportation and planning studies, assists county and city planning agencies and monitors the region's compliance with national air quality goals.

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I. EXECUTIVE SUMMARY

The NJ TRANSIT rail station in the City of Elizabeth is the sixth busiest along the heavily-used Northeast Corridor rail line, but the station facilities are outdated. The historic "Midtown" business district adjacent to the station has several large tracts available for redevelopment, but no major development has occurred recently. The City's vision for the station area is a new station facility that will serve as a focal point and a catalyst for redevelopment and revitalization of the area. NJ TRANSIT's vision for the station is a regional multi-modal transit center that serves multiple transportation modes in a central location, with enhanced rail and bus passenger facilities, and convenient connections to promote increased transit use and transfers to existing and future services.

The North Jersey Transportation Planning Authority, the federally-mandated Metropolitan Planning Organization for the 13-county northern New Jersey region, has conducted the *Elizabeth Midtown Multi-Modal Integration Study* to help the City of Elizabeth and NJ TRANSIT produce a conceptual staging plan for integrating future redevelopment and multi-modal circulation improvements in the immediate station-area.

This study's work builds on a number of recent studies and plans and identifies key circulation and development issues. The study assessed alternatives, formulated recommendations, and prepared a unified concept plan that illustrates these recommendations, also incorporating all known circulation improvements being planned or implemented in the study area by other entities.

The circulation assessment identified various circulation and station access issues, and either proposed new improvement concepts or supported previous study findings to address these issues.

Traffic Circulation Needs
Some intersections in the Midtown area experience significant peak period traffic congestion. Potential improvements include installing new and upgraded traffic signal equipment, creating a small roundabout at the Arches, and making more efficient use of the existing street space to improve traffic flow.

Parking Needs
The study area also is experiencing some short-term parking constraints as a new parking deck is constructed. Recommendations include increasing on-street parking enforcement, maximizing use of available off-street parking areas, and identifying potential long-term parking areas.

Bus Service Needs
Frequent bus service along Broad Street both contributes to, and is delayed by, traffic congestion, and bus stops throughout the station area are scattered and lack amenities. Proposed improvements include establishing multiple bus pull-out areas at two stops along Broad Street, enhancing bus stop amenities, and future coordination with NJ TRANSIT to establish an off-street bus hub that could also service a proposed bus rapid transit (BRT) service along the old Central Railroad of New Jersey (CNJ) right-of-way.

Pedestrian & Bicyclist Needs
The study area currently has considerable pedestrian activity but current pedestrian and bicycle facilities are in need of improvement. Recommendations include enhancing pedestrian facilities as part of new and upgraded signals, incorporating a parallel bicycle-pedestrian trail into the proposed BRT corridor, and increasing bicycle parking and storage facilities.

Station Frontage and Access

The station-area concept plan ties station entrance enhancements to specific station area circulation needs and the surrounding redevelopment sites. Integration of the area surrounding the old CNJ station into a multi-modal transit facility is key and will become even more so if the proposed Union County BRT, currently under study, is implemented. Improvements to the station entrances at the platform ends, due to recent or planned development projects, are equally important. To provide the station area with improved vehicle drop-off / pick-up that will not impede traffic flow, the study recommends advancing a proposed "kiss-and-ride" location along Julian Place.

The proposed kiss and ride, along with active uses like a farmers market, would enliven the station plaza with additional pedestrian activity and help to create a focal point for surrounding development and retail opportunities. Improving station stair and elevator access points with canopies, lighting and wayfinding signage would improve the customer experience walking from the current rail station to the old CNJ station area and to North Broad, West Grand and West Jersey Streets.

Development Assessment

A development assessment was conducted to identify some of the major constraints to future station-area development and suggests a development staging plan that would follow permitted uses, and also identifies infrastructure upgrades to complement the study's circulation and station access recommendations. One constraint discovered through the market analysis is the lack of a current Class A (highest value) office market. The greatest potential for future development lies in residential and retail development. Of the of the City's six available parcels in the Midtown Redevelopment Plan area, the study recommends first redeveloping Parcel D, along Union Street, with mixed-use development including retail, residential, and possibly some office development. The next target areas for development should be Parcels A and C, along Grand Street, which would include a mix of residential and retail development, along with greenway and park development in the areas near the Elizabeth River. The assessment revealed a potentially strong market for new residential development in an urban setting near multi-modal transportation options.

The recommended circulation improvements and station-area concept plans provide a framework to help NJ TRANSIT prepare design plans for a new rail station facility that will function efficiently as a multi-modal transportation hub. The estimated costs for the many of the recommended circulation improvements are not high, and various program funding sources may be available to help to finance these improvements. Implementing and / or funding agencies may include the City of Elizabeth, Union County, the Elizabeth Development Company, NJ TRANSIT, the New Jersey Department of Transportation (NJDOT), and the North Jersey Transportation Planning Authority (NJTPA).

II. BACKGROUND

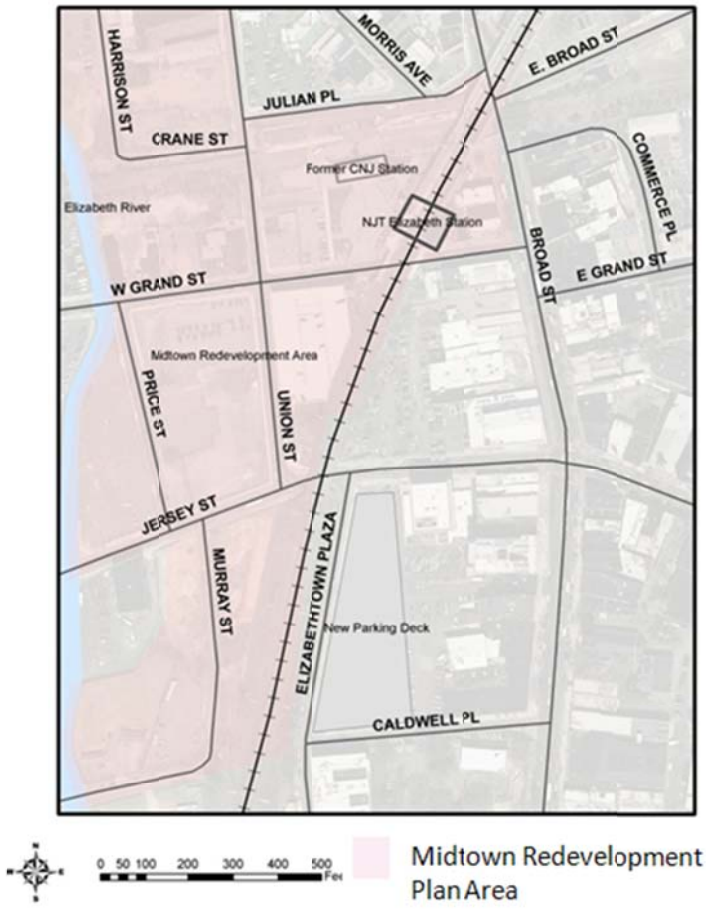
Study Purpose

The North Jersey Transportation Planning Authority (NJTPA), in coordination with NJ TRANSIT, the City of Elizabeth, and Union County, conducted the Elizabeth Midtown Multi-Modal Integration Study. This effort produced a conceptual plan for integrating local circulation improvements, redevelopment and revitalization efforts, and potential future improvements to NJ TRANSIT's Elizabeth commuter rail station. The study developed recommendations for enhancing circulation, safety, and infrastructure for traffic, buses, pedestrians and bicyclists accessing transit and traversing "gateway" corridors that provide access to the station. Those corridors include Broad Street, West Grand Street, West Jersey Street, Julian Place and Morris Avenue. The plan also identifies opportunities to enhance multi-modal transfers for travelers connecting between rail and buses at the station, and the plan links circulation improvements to current and planned surrounding land uses.

Study Area

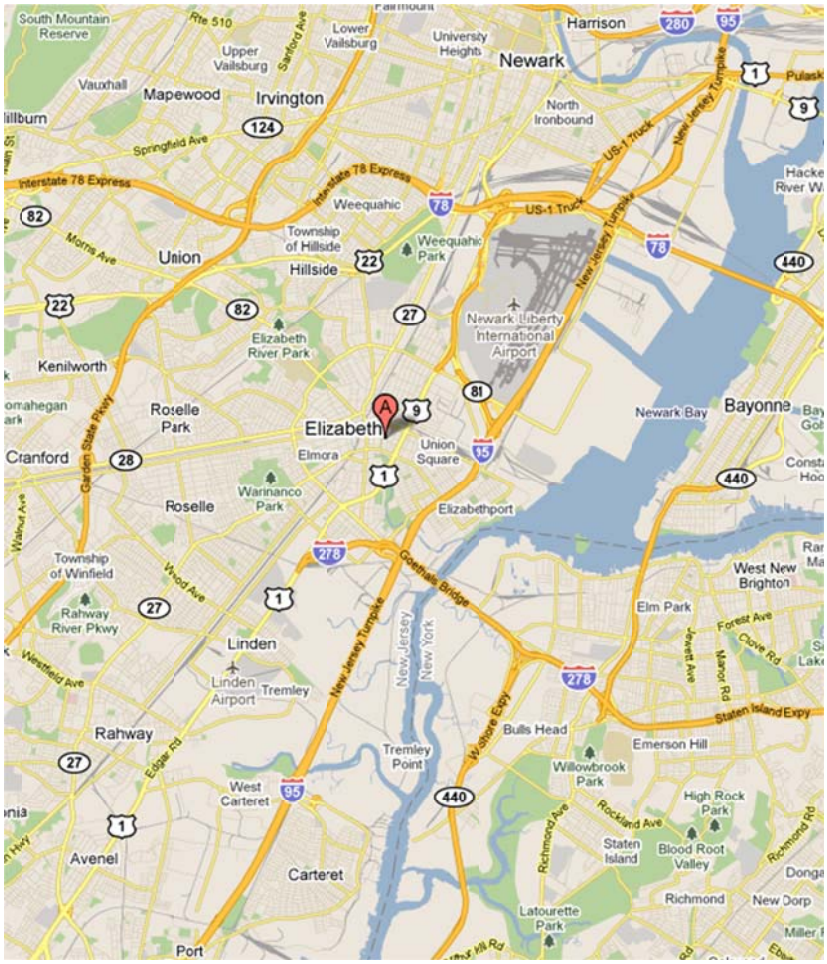
Figure 1 shows the project study area. While the focus of the assessment was on the area closest to the NJ TRANSIT Elizabeth station, the study also considered issues relating to the 2006 Midtown Redevelopment Plan Area, which extends west to the Elizabeth River and south below Jersey Street, as well as the effects of the new parking deck currently under construction along Elizabethtown Plaza between Jersey Street and Caldwell Place.

Figure 1 Study Area & Midtown Redevelopment Plan Area



Source: AECOM

Figure 2 Regional Map



Source: google.com

Summary of Work Activities

The scope of work for this study included the following main tasks:

- collect background information and assess preliminary issues
- prepare development assessment
- assess circulation issues
- recommend circulation improvements
- prepare concept design plans
- conduct ongoing outreach program

Chapter III describes the circulation issues assessment. Key work activities included reviewing background information, conducting field surveys, and preparing a traffic analysis. Several recent studies have addressed transportation and land use issues in the study area. These studies provided a considerable amount of information for the project team to use to assess key issues and potential improvement concepts. The project team also conducted two field surveys to gather information on traffic volumes, circulation patterns, and bus ridership. The survey information helped in preparing the traffic simulation model development and analysis, which assessed current and projected future traffic conditions in the Midtown area. The circulation assessment identified several preliminary areas of circulation improvement needs.

An important component of the work plan was to evaluate development and redevelopment opportunities in the Midtown area. Chapter IV provides a summary of this development assessment, which included reviewing the Midtown Redevelopment Plan and analyzing market conditions for different development types including residential, retail, and office.

Based upon the circulation issues assessment and previously-identified improvement concepts, the project team prepared recommendations for circulation improvements in the study area. Chapter V presents and describes circulation improvement concepts under five main categories: traffic circulation, parking, bus service and facilities, pedestrians and bicyclists, and station frontage and access.

Chapter VI provides a summary of the land use and circulation recommendations. For land use, this chapter includes recommended development types, along with a proposed development staging plan. For circulation, the chapter lists the recommended improvements, and it includes station-area concept plans that incorporate the circulation improvements with preliminary design concepts. This chapter also includes an implementation plan, which, for each circulation recommendation, identifies the responsible agency, time frame, and preliminary cost estimates.

Stakeholder outreach was key throughout the study and Chapter VII provides a summary of the various outreach activities. This included discussions with officials from NJ TRANSIT, the City of Elizabeth and Union County, as well as meetings with a Technical Advisory Committee and a local stakeholder's focus group . These stakeholders provided input on key issues and feedback on possible circulation improvements.

The following sections provide background information on the station area and current related planning initiatives.

Overview of Elizabeth Rail Station and Planned Improvements

Elizabeth has had rail passenger service since 1836. At one time, two main lines, the Pennsylvania Railroad (now the Amtrak/NJ TRANSIT Northeast Corridor Line) and the Central Railroad of New Jersey (CNJ), served the city. The point at which the Pennsylvania Railroad crossed over the CNJ, which in turn crosses over Broad Street, is known as "The Arches," due to the large stone bridge that carries the Northeast Corridor tracks (see **Figure 3**).

Figure 3
Two views of the Arches

Sources: AECOM (left) and NJTPA (right)

Today, Amtrak owns and operates intercity rail passenger service over the Northeast Corridor Line through Elizabeth. NJ TRANSIT also operates commuter rail service over this line, including their Northeast Corridor and North Jersey Coast Line services. As of July 2010, about 93 Amtrak trains pass through Elizabeth each weekday, although none stop at the Elizabeth station. About 275 NJ TRANSIT trains per weekday pass through the Elizabeth station, with 167 of them stopping. Annual ridership is over one million, making Elizabeth the sixth busiest station on NJ TRANSIT's Northeast Corridor line service.

The section of the Northeast Corridor Line at the Elizabeth station has four tracks. Just west of the station, the tracks enter an "S-curve," which limits the speed of all westbound trains to 45 MPH and eastbound trains to 65 MPH (see **Figure 4**).[1] Just west of the curve is the Elmora Interlocking, a partial crossover interlocking that extends for about ½ mile. At this point, moving westbound, the number of tracks expands from four to six.

Figure 4
S-Curve

Source: nycsubway.org

Trains heading northeast, towards New York, through the Elizabeth Midtown Station are considered "eastbound" by Amtrak and NJ TRANSIT. Trains headed southwest, towards Trenton and Philadelphia, are considered "westbound."[1]

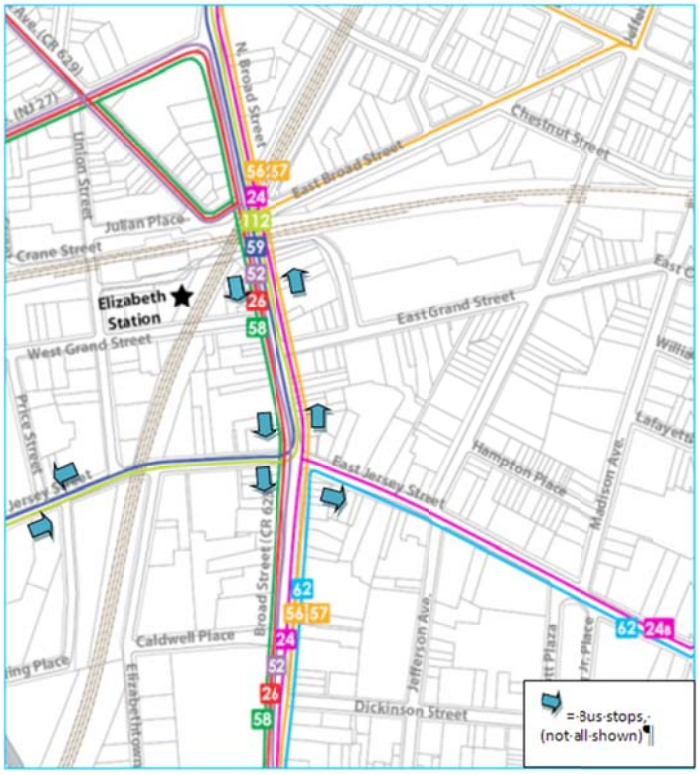
Amtrak's 2010 *Northeast Corridor Infrastructure Master Plan* proposes long-term increases in Amtrak service. Among many recommendations, the Amtrak plan calls for straightening the S-curve and adding a fifth track on a 2.5 mile section, which includes the Elizabeth station. Also, although the Access to the Region's Core or "THE Tunnel" project was officially cancelled in October 2010, NJ TRANSIT is examining other ways of increasing service on its Northeast Corridor and North Jersey Coast lines. NJ TRANSIT projected that the new tunnel would enable it to increase service on these lines, while also creating a one-seat ride to Manhattan from nearby stations like Union and Roselle Park on the Raritan Valley Line.

The current Elizabeth rail station is elevated above grade level and facilities at the Grand Street/Station Plaza entrance (main entrance) include a ticket office, waiting room, restrooms, and a small retail space. The station has high-level platforms on both the eastbound (New York) and westbound (Trenton/Long Branch) sides. Additional stairs to the street are located on both platforms on the south side of Grand Street and north side of West Jersey Street, and from the eastbound platform at the Arches. Elevators to the platform are at the Station Plaza (westbound) and Broad Street & Commerce Place (eastbound). Passengers can transfer to buses at six bus stops located on Broad Street at either Grand Street or Jersey Street (see **Figure 6**).

NJ TRANSIT has recently completed minor renovations at the station. The aging and limited station facilities, particularly relative to passenger volume, along with an unremarkable building exterior (see **Figure 5**) and maintenance issues, have led the City to propose a new modern multi-modal transit center.

Figure 5
Main Entrance to Elizabeth Station

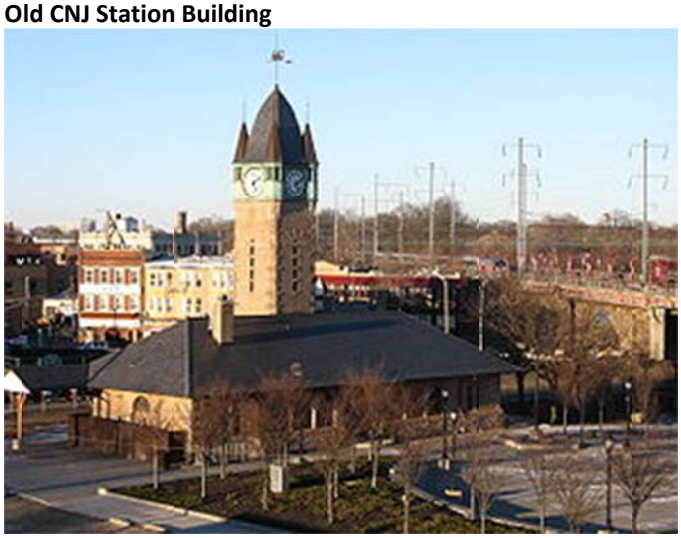
Figure 6
Bus Routes and Key Bus Stops in Study Area



Source: Urban Engineers

The City has received state Transit Village designation for the station area making it eligible for certain state grants, and it has converted the area between the current station and the former CNJ rail station into a pedestrian plaza. It also has refurbished the former CNJ station building, which now houses a restaurant (see **Figure 7**).

Figure 7
Old CNJ Station Building



Source: greatrealtyusa.com

Recently, NJ TRANSIT has begun to consider major enhancements to the Elizabeth station including improved platforms, waiting rooms, and entrances. In addition, NJ TRANSIT is studying the feasibility of developing a cross-county bus rapid transit system (BRT) system, including a dedicated busway and bicycle-pedestrian path within the old CNJ right-of-way between Elizabeth and Cranford, and with a Midtown Elizabeth BRT station at the site of the former CNJ rail station. The BRT system is envisioned to provide a new direct link between points to the east, such as Jersey Gardens and Newark Liberty International Airport, and points west of Elizabeth, also connecting with the NJ TRANSIT Raritan Valley Line rail service from western Union County, and Somerset and Hunterdon Counties.

Within this background of past, present, and future rail service, this study assessed circulation issues in the station area and proposed concepts for a new multi-modal station facility in Elizabeth.

III. CURRENT CIRCULATION ISSUES

The circulation issues assessment involved several work activities including reviewing previous studies and obtaining background information, conducting field surveys, and conducting a traffic analysis. This chapter provides a summary of these activities.

Background Information

The first step in the study process was to assess the recommendations of previous studies conducted by the City, County, NJ TRANSIT and New Jersey Department of Transportation. Several key reports that have addressed transportation and land use issues in the study area include the 2010 *Elizabeth Parking and Traffic Circulation (EPTC) Study,* the 2010 *Morris Avenue Revitalization Study*, a 2006 Walkable Communities Workshop, and a traffic impact study of the redevelopment area.

This previous work provided a considerable base of issues and improvement concepts for this current study to utilize. Urban Engineers, part of this study's consultant team, had prepared the 2010 EPTC study for various clients including NJDOT, the Elizabeth Development Company (EDC), and Union County. As such, the consultant team was able to re-analyze certain EPTC study recommendations in light of recent developments like the NJ TRANSIT station and BRT planning efforts. This study was especially useful in providing a considerable base of issues and improvement concepts for this current study to utilize. **Appendix A** provides a summary of other studies and background information.

Field Surveys

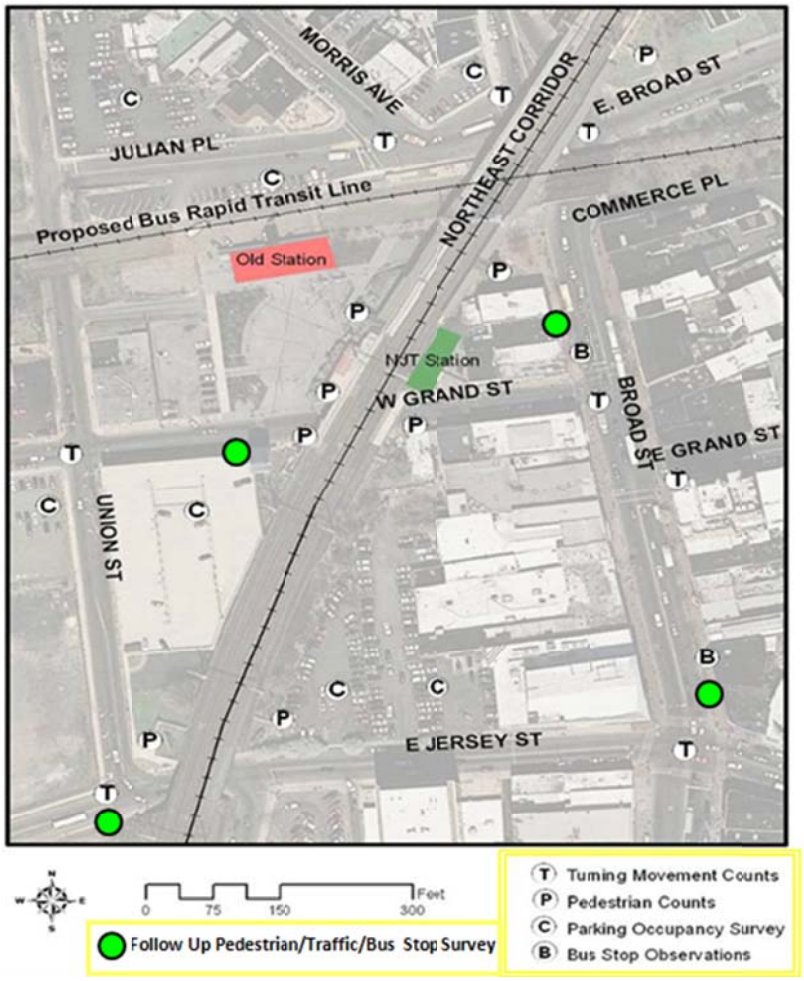
Another important part of the assessment work was to conduct field surveys. The project team conducted two field surveys. The first field survey occurred in May 2010. The survey included making observations and obtaining the following information:

- Vehicle turning movements and pedestrian crossings at main intersections
- Pedestrian flows to and from the access points to the station and its platforms
- Occupancy of main off-street parking areas
- Taxi and other vehicle drop-offs and pick-ups at the station
- Traffic signal timing and key geometric features

The surveys occurred on May 13 and May 20, 2010, during the afternoon peak period, 4 PM – 6 PM. The May 13 survey focused on the Broad Street - Jersey Street area, while the May 20 survey focused on the area immediately surrounding the station, including Broad Street, Grand Street, and Julian Place (see **Figure 8**). It is important to note that Union County College's (UCC) spring term classes ended before the surveys occurred; therefore, the observed traffic, pedestrian, and parking volumes were lower than if classes were still in session. The field survey involved conducting vehicle turning movement counts during the evening peak hour at the following locations:

- Morris Avenue & Julian Place
- Morris Avenue & Broad Street
- North Broad Street & East Broad Street
- Grand Street & Union Street
- Broad Street & Grand Street
- Jersey Street & Union Street
- Broad Street & Jersey Street

Figure 8
Field Survey Locations- May and November, 2010



Source: AECOM.

To collect additional data while UCC classes were in session, a follow-up field survey occurred on November 16, 2010, during the morning peak period, 7AM to 9:30AM. This survey focused on bus ridership, parking, and general traffic and pedestrian circulation. The project team recorded the number of passengers boarding and alighting buses at the main bus stops in the Midtown area during the morning peak hour. The survey also observed traffic flows at the entrances to the Elizabeth Development Company (EDC) parking deck, as well as vehicle and pedestrian flows throughout the study area.

Appendix B provides a summary and details of the field survey observations.

Traffic Analysis

The background information and field survey work provided the necessary information to conduct the traffic analysis. The project team used the *Synchro* simulation software to analyze traffic flows at the main study area intersections during the evening peak period (4-6 PM). The analysis determined if traffic is flowing freely or is operating either near or over capacity by calculating the intersection level of service (LOS). The analysis found congestion at the following intersections during the current evening peak period:

- Julian Place and Morris Avenue
- Broad Street and Grand Street
- Jersey Street and Union Street

The project team also used the existing conditions information to prepare and assess alternative scenarios of traffic operations in the study area in 2018. These scenarios assumed the opening of the new parking deck along Elizabethtown Plaza and converting Caldwell Place into two-way operations, along with development on all available redevelopment parcels. **Appendix C** provides a summary of the traffic analysis, and a separate technical document provides detailed information on the methodology for the traffic analysis.

Crash Data Analysis

The project team also compiled data on vehicle crashes at the main study area intersections. The data for 2008 and 2009 show relatively few crashes at these locations (see **Figure 9**). The leading crash locations are the intersections of Broad Street with East and West Grand Street, Broad Street & East Jersey Street, and North Broad Street & East Broad Street. These data supplement previous crash analysis, which also found that Broad Street & Grand Street is the intersection with the greatest number of crashes.

Figure 9
Crashes at Study Area Intersections, 2008-09

	Total Crashes		Pedestrians		Bicycles	
	Crashes	Injuries	Crashes	Injuries	Crashes	Injuries
Julian Place & Union St.	0	0	0	0	0	0
Julian Place & Morris Ave	0	0	0	0	0	0
Broad & Julian Place	3	0	0	0	0	0
North Broad St. and East Broad St.	7	0	0	0	0	0
Union St. & Grand St.	6	0	0	0	1	0
Broad St. & West Grand St.	9	0	0	0	0	0
Broad St. & East Grand St.	18	2	2	2	0	0
Jersey St. & Union St.	5	0	0	0	0	0
Broad St. & East Jersey St.	9	0	0	0	0	0

Source: NJTPA, from Plan4Safety statewide crash database, Rutgers University.

Based upon the circulation assessment, the following is a list of potential improvement needs in the study area.

Traffic Circulation

- Reconfigure intersection controls and traffic flow in area of the Arches.
- Improve operations of Broad Street & Grand Street intersection.
- Improve traffic flow and safety along Broad Street by formalizing two-lane operations.
- Implement necessary traffic flow revisions to accommodate the new parking deck.
- Designate West Grand Street and East Jersey Street west of Broad Street as a one-way pair.

Parking

- Identify possible new off-street parking locations, in case the rail improvement project requires acquiring the Central parking deck or development generates additional parking needs
- Enhance the mid-block pedestrian crossing between the Central parking deck and the station

Bus Facilities and Service

- Improve efficiency of bus operations along Broad Street by adding bus pull-out areas.
- Add new service, as recommended by the Greater Newark Bus Study.
- Provide bus layover spaces in the Midtown area.
- Enhance bus-to-bus and bus-to-rail transfers at the rail station.
- Increase amenities such as shelters, benches, bus route and departure information, and directional signage to different transportation modes.

Pedestrian and Bicycle Facilities

- Improve pedestrian crossing treatments at intersections, particularly along Broad Street.
- Provide pedestrian wayfinding signage.
- In the new station design, incorporate inside elevators, platform improvements, wayfinding and information, and a physical connection to the former CNJ station.
- Implement streetscaping improvements along the key gateway corridors.
- Increase bicycle parking and related amenities. Incorporate a trail along the proposed BRT into the station-area circulation system.

Station Frontage and Access

- Review operations of the new taxi stand and revise traffic flow as necessary.
- Construct a new “kiss and ride” location at the former CNJ station.
- In conjunction with the new station design, consider a possible drop-off / pick-up area along Broad Street.
- Incorporate station access and egress, multi-modal connections, and wayfinding into concepts for the station and station-area redesign.

IV. CIRCULATION NEEDS ASSESSMENT

This chapter identifies and describes circulation needs and potential improvements in the study area. The improvements cover the following five topic areas: traffic circulation, parking, bus facilities and services, pedestrian and bicycle, and station frontage and access. For each topic, the report identifies both planned improvements, which are projects that already are in the planning stages, and proposed improvements, additional potential improvement concepts that this report is proposing.

A. Traffic Circulation

Planned Improvements

New Signal at Morris Avenue and Julian Place

The traffic analysis found congested peak period conditions at the currently-unsignalized intersection of Morris Avenue and Julian Place. Previous studies have proposed either a traffic signal or a roundabout at this location. The City currently is preparing plans to install a traffic signal at the intersection. The draft signal plan includes crosswalks at their current location, new curbing, and a signal timing plan that includes a pedestrian phase.

Circulation Improvements in Area of the New Parking Deck

The City currently is constructing a new parking deck along Elizabethtown Plaza. When complete, this deck will affect traffic circulation in the surrounding area, and the City is preparing plans for circulation improvements in this area. These improvements include installing a new traffic signal at the intersection of Jersey Street, Elizabethtown Plaza, and Union Street; converting Caldwell Place to two-way operations; and reconfiguring the Broad Street and Caldwell Place intersection, including modifying the current signal at this location.

Upgrade Traffic Signal Equipment

The current traffic signals in the Midtown area use old technology, which may preclude optimizing individual and overall intersection performance. The City has identified the need to upgrade existing signal equipment with new technology at several intersections, including Grand Street and Union Street, Broad Street and Grand Street, and Broad Street and Jersey Street. New signal technology would enable setting signal timings to provide optimal intersection performance (including safe pedestrian crossings) and to coordinate the signal timing for all intersections with an integrated signal management system, in order to provide the most efficient traffic flow across the Midtown street network.

Proposed Improvements

Roundabout at the Arches

The traffic analysis identified issues of congestion and conflict at the existing intersection of North Broad Street, East Broad Street, and Morris Avenue at the Arches. The geometric configuration of this area may enable a roundabout, which would provide various benefits to traffic pedestrian and circulation and safety, as well as aesthetics. A roundabout would permit currently-restricted turning movements, including left-turn movements from Morris Avenue onto northbound North Broad Street, from East Broad Street onto North Broad Street, and from North Broad Street onto Morris Avenue.

A roundabout is similar to a traffic circle but with a few key differences. At roundabouts, which are typically smaller than traffic circles, entering traffic must yield to traffic already in the roundabout. Also, the entry and center island of roundabouts deflects, or slows down, entering traffic. The entry point of roundabouts may be flared to provide increased capacity.

Roundabouts also are characterized by splitter islands, which guide traffic entering the roundabout, as well as serving as pedestrian refuge areas that allow pedestrians to cross one direction of traffic at a time. Roundabouts thus also benefit pedestrian circulation and safety by providing pedestrian crossing opportunities at all approaches to the roundabout and encouraging lower vehicle speeds through the yield-controlled condition at each approach, as well as improved geometry. Crosswalks on roundabouts are located about 20 feet from entry and exit points, which create better sight lines for vehicles and pedestrians.

A preliminary review of the physical feasibility of a roundabout found that while the Northeast Corridor piers present a design challenge, an oval-shaped roundabout is feasible (see **Figure 11**). The traffic analysis found that a single-lane roundabout would perform at an acceptable level of service during the evening peak hour in 2018, addressing the currently failing level of service at this location. The analysis found that the proposed roundabout would accommodate buses or other large vehicles of up to 45 feet in length.

The potential widening of the Northeast Corridor to five tracks would produce structural changes that could affect the geometric feasibility of a roundabout at this location. More detailed analysis will be necessary to verify the capacity of the roundabout, under its final design, to accommodate vehicles of this size or larger. Further analysis also will be necessary to address any possible issues regarding site distance and visibility. The proposed oval shape of this roundabout is acceptable, as long as the curves are not too tight.

The roundabout design could incorporate design elements (such as pavers, textured pavement, and landscaping) that complement potential streetscaping improvements in the surrounding area. Similar roundabouts exist in places like Bound Brook (see **Figure 12**).

In the short-term, whether or not the roundabout is implemented, the Arches area could benefit from smaller-scale improvements to improve safety and aesthetics. These potential improvements included increasing overhead lighting; installing median islands on the North Broad Street, East Broad Street, or Morris Avenue approaches; and striping the shoulder along southbound Broad Street to reduce vehicle speeds by narrowing the travel lane and to provide a buffer between pedestrians and traffic.

Figure 11
Proposed Roundabout at the Arches

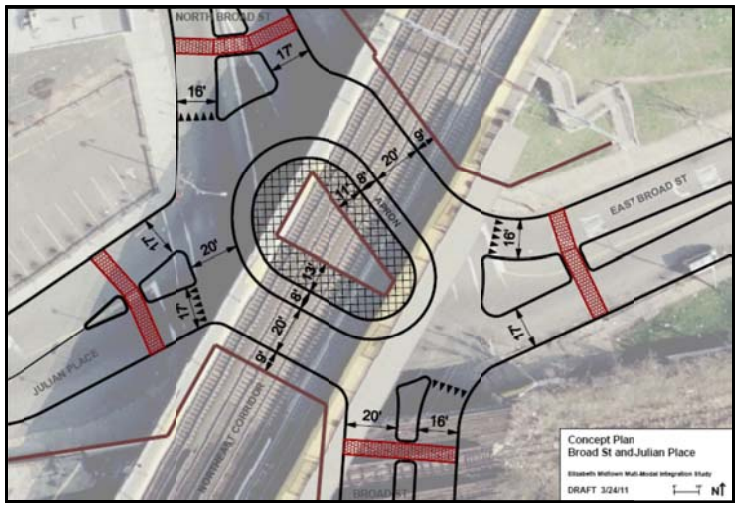


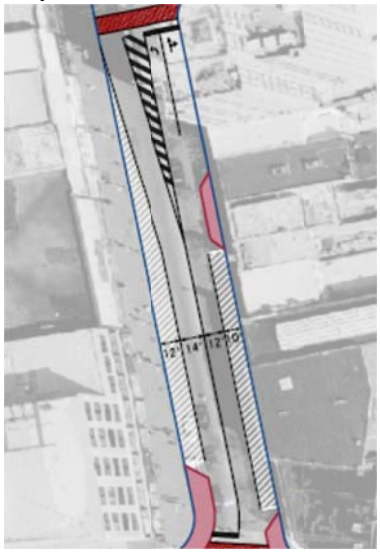
Figure 12
Example of a Roundabout, Bound Brook, NJ

Source (Fig.11): Urban Engineers.
Source (Fig.12): google.com

Two-Lane Broad Street

Previous studies have proposed formalizing two-lane operations along Broad Street by using striping to reduce the width of the travel lanes to a normal width of 12 to 14 feet, in order to reduce conflicts and improve both vehicular and pedestrian safety (see **Figure 13**). The new configuration would complement ongoing streetscaping improvements by the City along the corridor, and it would expedite traffic flow, improve vehicular and pedestrian safety, and make the street more conducive to multi-modal use and business development. Specifically, narrower travel lanes would eliminate the current and hazardous tendency for some drivers to pass vehicles heading in the same direction along Broad Street. In conjunction with intersection improvements, the improvement also would reduce the crossing distance for pedestrians, a commonly used practice that can improve pedestrian safety. It also would be compatible with establishing bus pull-out locations along the street since it would enable the lane closest to the curb to be designated exclusively for a pull-out, while preserving ample sidewalk space. The traffic analysis indicates that a two-lane cross-section for Broad Street (including turning lanes) will be adequate to handle the current and projected future traffic volumes along Broad Street during the evening peak hour in 2018.

Figure 13
Proposed Broad Street Section between Grand Street and Jersey Street



Source: Elizabeth Parking and Traffic Circulation study.

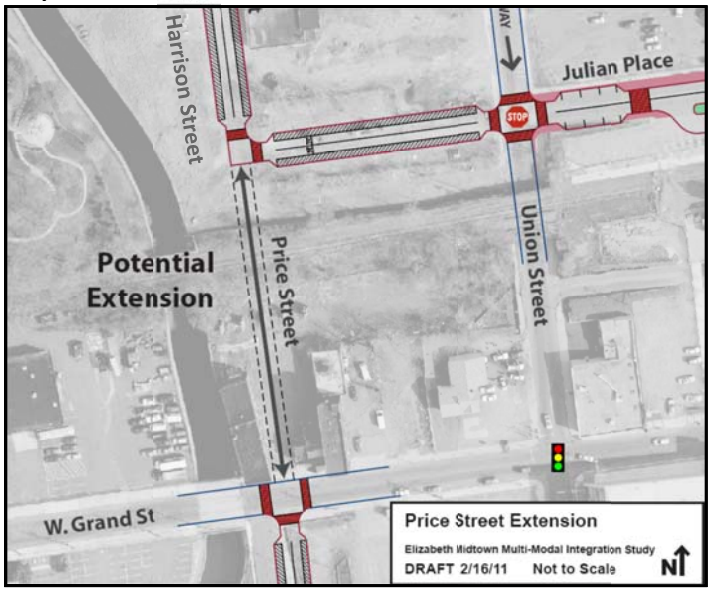
Broad Street and Grand Street Improvements

This intersection suffers from peak hour traffic congestion, but due to the physical characteristics of the location, only limited improvements appear feasible. One proposed improvement is to delineate more clearly the left-turn lanes along Broad Street. Also, upgrading the traffic signal equipment could enable the intersection to perform more efficiently. Another possible strategy is to emphasize the use of Commerce Place by westbound Grand Street vehicles seeking to head northbound on Broad Street. The field survey traffic counts observed that some vehicles westbound on Grand Street in the peak hour turn right onto Broad Street and continue north, which contributes to congestion at the intersection. This is because, due to the intersection configuration and traffic signal timing plan, these vehicles must stop immediately after turning right onto Broad Street.

Price Street Extension

Previous studies have identified constraints to through-route connectivity and efficient circulation in the study area. One potential improvement concept is to extend Price Street from Grand Street to connect with Harrison Street at an extension of Julian Place (**Figure 14**). Due to the grade and retaining wall associated with the embankment of the old CNJ right-of-way, this improvement concept proposes that an extended Price Street intersect with an extended Julian Place, which will replace the existing Crane Street. The Price Street extension, approximately 360 feet long**,** would create another north-south route, which could help to reduce traffic and congestion along Broad Street and Union Street. The new segment also would benefit redevelopment prospects by improving local access and circulation and complementing a planned trail along the river. One key design issue for this concept is to address how the new street would cross the embankment of the old CNJ right-of-way. Another issue is that the extension would traverse land slated for a riverfront promenade under the Midtown Redevelopment Plan. Thus, the planning for this improvement should be coordinated with NJ TRANSIT's planning for a BRT service along the old CNJ right-of-way and the City's planning for redevelopment in Parcels B and C.

Figure 14
Proposed Price Street Extension



Source: Urban Engineers.

Two-Way Elizabethtown Plaza

A previous study recommended converting Elizabethtown Plaza to two-way operations between Jersey Street and Caldwell Place. At this time, the City plans to maintain Elizabethtown Plaza as a one-way southbound street. A 2-way street would help traffic flow in the area, particularly during the evening peak hour, by providing direct access from the new parking deck to West Jersey Street for vehicles traveling west, instead of requiring them to use Broad Street. This improvement also would involve modifying the signal timing at the planned new signal at Jersey Street, Elizabethtown Plaza, and Union Street.

One-Way Pair along Grand Street and Jersey Street

Previous studies have recommended designating Grand Street and Jersey Street (west of Broad Street) as one-way streets in order to improve traffic circulation in the Midtown area. The Elizabeth Parking and Traffic Circulation (EPTC) Study reviewed this concept and concluded that it would create various concerns relating to overall network operations, connectivity, and pedestrian activity, as well as circulation issues relating to the new parking deck. Furthermore, this change would require adding signage, revising signal timing, and other related modifications. Thus, the EPTC did not recommend this improvement concept. Based upon those prior recommendations and stakeholder input during this study, a one-way pair is not recommended.

B. Parking

Planned Improvements

New Parking Deck

Parking demand in the Midtown area has increased in recent years due to several user groups including the County offices, Union County College, the City, and daily visitors. Previous analysis of long-term future parking needs in the Midtown area indicated the need for additional off-street parking supply, and construction is underway on the new Elizabethtown Plaza parking deck, scheduled to open in 2011. The previous analysis concluded that the new deck will accommodate future parking demand, including demand related to future redevelopment.

Proposed Improvements

On-Street Parking Enforcement

On-street metered parking spaces in the study area have 1-hour, 2-hour, or 4-hour time limits. This study, like the previous studies, identified on-street parking issues, particularly overtime parking. The field surveys found that most on-street parkers exceed the posted time limit. Increasing enforcement of on-street parking regulations would increase the turnover of vehicles using on-street spaces, thereby increasing the effective short-term parking supply and generating increased revenue for the City.

Off-Street Parking Utilization

The opening of the new Union County College Kellogg Building in 2009 has resulted in higher weekday usage of the Elizabeth Development Company (EDC) parking deck, and, along with construction of the new deck, this has led to some parking availability constraints. Various off-street parking areas appear to have the potential to provide additional capacity to meet parking demand. These areas include the Elizabeth Parking Authority (EPA) Lot #11 at the corner of Grand Street and Union Street (see **Figure 15**), EPA Lot #2 at Commerce Place, and areas along Morris Avenue.

Figure 15
EPA Lot #11

Source: Google.com

Vehicle Flow at EDC Parking Deck Entrance

During the morning peak hour at the West Grand Street entrance to the EDC parking deck, some conflicts occur involving left- and right-turning vehicles and the minimal driveway queuing capacity for entering vehicles. One possible approach to addressing this issue is to designate both gates along Grand Street for entry only. Another approach is to restrict left turns into the deck from Grand Street and direct entering traffic to the deck's Union Street entrance. Additional analysis of the projected impact of these measures upon the traffic patterns in the study area would be necessary before implementing them.

Enhanced Mid-Block Pedestrian Crossing

The field survey also observed pedestrian flows and safety improvement needs along the main paths to and from the EDC deck. These paths include the existing mid-block crossing of West Grand Street and the crossing of Jersey Street at or near Union Street. For Grand Street, improvement options include enhancing the current crosswalk with landscaping, additional signage, and possibly a small median refuge island to improve pedestrian visibility and safety (see **Figures 16 and 17**). A preliminary assessment found that Grand Street is wide enough (33 feet) to accommodate a 6-foot wide island while maintaining travel lanes of sufficient width (12+ feet). For Jersey Street, the planned new traffic signal at Union Street will include various pedestrian accommodations.

Figure 16
Current Grand Street Mid-Block Crosswalk

Source: NJTPA

Figure 17
Example of Enhanced Mid-Block Crosswalk

Source: City of Bellevue, WA.

Additional Off-Street Parking Areas

An issue that could have a long-term effect on parking supply in the study area is the possible re-alignment of the Northeast Corridor rail line. A proposal by Amtrak to eliminate the S-curve **(**see **Figure 4)** along the rail line just west of the Elizabeth station and widen the line to five tracks could result in the need to acquire and alter or demolish properties along the right of way, including the EDC parking deck. There is currently no funding or schedule for this Amtrak proposal. This circumstance would require a substantial re-assessment of Midtown parking needs, including those of station users. Even if this improvement does not occur, it may be prudent for the City to identify other possible locations for a parking deck in case future longer-term development generates the demand for additional parking capacity.

C. Bus Facilities and Services

Planned Improvements

Bus Rapid Transit Service

Previous studies have explored the feasibility of a new transit service along the inactive former Central Railroad of New Jersey (CNJ) right-of-way. NJ TRANSIT currently is conducting a preliminary feasibility assessment for a bus rapid transit (BRT) service along this corridor. This exclusive busway service would include a station stop near the former CNJ station in Elizabeth. The preliminary design concept for BRT station stops is similar to that for NJ TRANSIT light rail stations, which feature platforms, shelters, ticket vending machines, schedule information, and lighting. **Figure 18** provides an example of a BRT route and station in Los Angeles.

Figure 18
Example of BRT Busway and Station

Source: NJTPA.

Proposed Improvements

Broad Street Bus Pull-Outs

The current level of bus service along Broad Street, particularly during the peak hours, contributes to congestion and conflicts among passenger vehicles, buses, and pedestrians. One potential improvement concept is to establish two bus pull-out bays, one northbound and one southbound, which would each accommodate at least two buses outside the travel lane (see **Figure 19**). Bus pull-outs would improve the efficiency of vehicular and bus flow along Broad Street in the vicinity of bus stops, by giving multiple buses room to pull out of the travel lane and pick up or drop off passengers without blocking traffic.

Pull-out design requires room for bus deceleration and acceleration as well as the berth area. Design standards indicate a minimum length of 220 feet for a 2-bus pull-out and 270 feet for a 3-bus pull-out. The two busiest bus stops in the Midtown area (based on morning peak period ridership) that may be suitable are the southbound stop just north of West Grand Street and the northbound stop north of Jersey Street. Preliminary investigation suggests that adequate length may be available for a 2-bus pull-out at the southbound stop, while the northbound stop may be able to accommodate a 3-bus pull-out. On the southbound side, if subsequent assessment, including further development of new NJT station plans, determines that the location north of Grand Street is not feasible, then the pull-out area could be located south of Grand Street.

Figure 19
Two views of a Bus Pull-Out Area in Newark

Source: photobucket.com.; NJTPA

In addition, NJ TRANSIT is seeking to identify a suitable location for a bus layover area (accommodating at least two buses), to allow for short-term parking of buses off of Broad Street in between scheduled trips that terminate in Midtown Elizabeth. This is important to ensuring on-time performance of buses that serve the study area. One possible location for the layover area is along Julian Place, but establishing this location will require coordinating with future plans for the proposed BRT service and kiss-and-ride location.

On-Street Bus Stop Passenger Facilities

Bus stops in the study area generally lack passenger amenities such as shelters, benches, and service information. All bus stops not on private property in New Jersey are under the jurisdiction of the municipality. No statewide requirements exist for passenger amenities and facilities, although they must meet accessibility requirements set by the federal Americans with Disabilities Act (ADA). NJDOT determines the minimum length of bus stop no-parking zones.

Shelters, including benches, are most appropriate at stops with frequent service, multiple routes, and high ridership. NJ TRANSIT reviews all requests for shelters on a case-by-case basis, and it attempts to provide requested shelters, particularly at locations that serve concentrations of elderly persons and / or persons with mobility impairments. Under the NJ TRANSIT shelter program, the municipality agrees to sponsor and maintain the improvement. Another maintenance option is advertiser-sponsored shelters for which a vendor under contract can be responsible for seating, lighting, cleaning, snow removal, and repairs in return for ad revenue.

Benches may be appropriate at other stops where shelters are not warranted. Based upon ridership volumes and service frequency, and complementary to the proposed bus pull-out areas, the two best candidates for bus shelters may be the southbound stop along Broad Street north of Grand Street and the northbound stop along Broad Street north of Jersey Street.

A previous study also proposed a new bus stop and related facilities in front of the Union County College Kellogg Building along Jersey Street near Union Street. While a stop now is located just to the west along Jersey Street at Price Street, stakeholders have expressed interest in a stop at the Kellogg Building, which could generate ridership to justify the stop. Students were observed walking between the bus stop and the Kellogg Building.

Site specific review of proposed shelters is necessary to ensure adequate sidewalk width on all sides to accommodate anyone using a mobility device, as well as for adequate vehicle lift deployment. In general, the location and design of shelters and benches should provide at least five feet of clearance along the sidewalk. The width of the sidewalks along Broad Street in the Midtown area is sufficient to accommodate shelters and benches. The design also will need to conform to ADA requirements, particularly to ensure adequate wheelchair access. Other desired bus stop design elements may include partitioning shelter benches for personal security, larger, smaller, or narrower bus shelters to meet conditions, and providing an electrical power source to accommodate lighting and potential future "next bus" real-time rider information displays (see **Figure 20**).

Figure 20
Examples of Enhanced Bus Stop Facilities

Bus schedule – bus map – dynamic "next bus" signage – partitioned seating – narrow bus shelter

Source: NJTPA.

Potential Off-Street Bus Hub and Layover Space

NJ TRANSIT's recent Greater Newark Bus Study made several recommendations for the Elizabeth area, including establishing a bus hub. This concept could provide various benefits including facilitating transfers between bus routes and between bus and rail service, as well as the proposed Union County BRT system. It also could include an increased level of passenger amenities and further improve the efficiency of bus operations along Broad Street by removing the current on-street stops near Grand Street. One possible location for such a facility is the area of Julian Place near the former CNJ station. The hub or another nearby location also could include a bus layover area (see **Figure 21**). Planning for a hub in this location would need to coordinate with other nearby improvement concepts, including the new signal at Morris Avenue and Julian Place and a proposed "kiss and ride" location. The facility design should provide adequate separation of bus operations and the kiss and ride location to ensure pedestrian safety.

Figure 21
Designated Bus Layover Space

Source: NJTPA

Potential Future Bus Services

The Greater Newark Bus Study also identified several possibilities for increasing bus service to and from the study area. NJ TRANSIT has been considering opportunities for expanding bus service, but additional service will be contingent upon available funding. New bus service could provide connections with rail service, existing bus service, and the new BRT service, and complement an enhanced multi-modal transit center in Midtown Elizabeth. One specific new bus service candidate is a new route connecting Kean University and the Midtown area via Morris Avenue. The recent Morris Avenue Revitalization study proposed this route, along with an educational campaign to encourage greater student use of the existing 26 and 52 bus routes to reach the rail station and other destinations in Midtown.

D. Pedestrian and Bicycle Facilities

Planned Improvements

Pedestrian Accommodations in Signal Plans

The planned new and improved traffic signals will provide an opportunity to incorporate necessary pedestrian enhancements. For example, the City's plans for a new signal at the intersection of Jersey Street, Elizabethtown Plaza, and Union Street and a modified signal at the intersection of Broad Street and Caldwell Place currently include the following pedestrian accommodations:

- Marked crosswalks;
- Signage directing pedestrians to cross at the crosswalks;
- Pedestrian signal heads with push-button actuation, educational plaques, and countdown timers; and
- "No Turn on Red" signs for motorists.

Streetscaping Improvements

The City is in the process of completing streetscaping improvements to Broad Street between the Elizabeth River and the Arches (see **Figure 22**), and it is planning additional streetscaping improvements along North Broad Street north of the Arches to Westfield Avenue. These improvements include improved lighting, sidewalks and crosswalks, traffic and wayfinding signs, trees, and trash receptacles, among other elements. Streetscaping under the two railroad bridges at the Arches will provide much needed improvements and should be coordinated with NJ TRANSIT because of the proximity to the station entrances and the proposed Bus Rapid Transit service over the former CNJ rail line right-of-way.

Figure 22
Broad Street Streetscaping Project

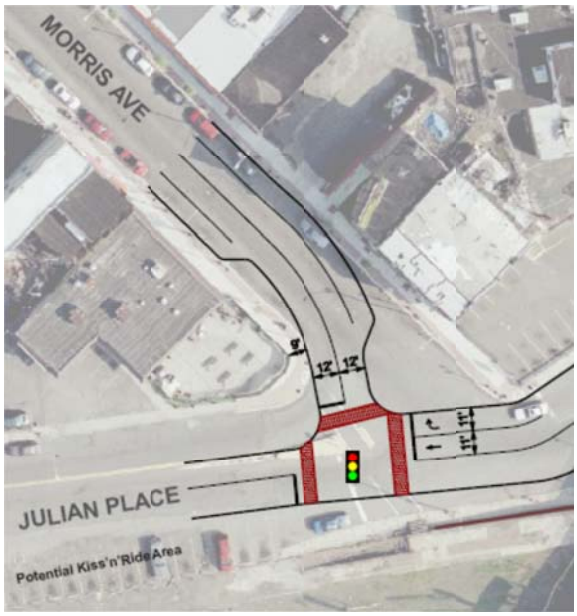
Source: NJTPA (Fall 2010).

Proposed Improvements

Additional Pedestrian Accommodations at Intersections

The planned signal improvement projects could benefit from additional accommodations to improve pedestrian access and safety. **Figure 23** shows a proposed design concept for the Morris Avenue and Julian Place intersection. This concept incorporates additional crosswalks and curb extensions, which increase pedestrian visibility and reduce crossing distances.

Figure 23
Proposed Design for Morris Avenue and Julian Place



Source: Urban Engineers

For the signal plans noted above at the intersections of Jersey Street, Elizabethtown Plaza, and Union Street and at Broad Street and Caldwell Place, the project team proposes the following additional enhancements to improve pedestrian and traffic safety:

- Curb extensions at the Elizabethtown Plaza & West Jersey Street intersection (south side): This would reduce the distance required for pedestrians crossing both streets and control the speed of vehicles turning on/off of Elizabethtown Plaza;
- Pedestrian phase fixed into the signal cycle: A fixed pedestrian phase across West Jersey Street would reduce wait times for the high volumes of students and other pedestrians to receive a walk signal and could thereby reduce jay walking. It could also avert hazardous crossing conditions that may occur over time if there is a failure of the pedestrian actuated push-button
- "Turning Vehicles Stop for Pedestrian" signs for motorists: A visual reminder that turning drivers are required by state law to stop for pedestrians in the crosswalk when both have the signal.
- Two crosswalks across West Jersey Street, Elizabethtown Plaza and Broad Street: A second crosswalk could significantly reduce pedestrian crossing times and occurrences of jay walking.

Morris Avenue Streetscaping Improvements

The Morris Avenue Revitalization Study recommended streetscaping improvements along Morris Avenue between Kean University in Union Township and Midtown Elizabeth. Possible design elements include aesthetic treatments such as pavers, textured pavement, and landscaping. The study also proposed design elements that

would provide an attractive "gateway" treatment to the station area from the north along Morris Avenue. These design elements could be coordinated with signal design plans, and other nearby improvement concepts, including a roundabout at the Arches, kiss-and-ride location on Julian Place, and proposed BRT station.

Benches along Broad Street

As part of future streetscaping improvements, the City should consider the possibility of providing on-street benches along Broad Street between the Arches and Jersey Street, especially at or near bus stops. This would have the dual benefit of creating a safer and more pleasant environment for pedestrian activity and a place for commuters and shoppers to sit waiting for buses in front of stores, restaurants, and offices.

Improved Station Access

Another pedestrian objective is ensuring convenient and safe access to, from, and within the station area. Proposed concepts for improving pedestrian access to the station include the following:

- Provide covered paths, including a canopy-covered walkway between the old CNJ station and the current rail station, canopies / covers for all staircases, and possibly a direct connection between the EDC parking deck and the westbound station platform.
- Provide pedestrian wayfinding signage program. The City recently completed a wayfinding signage program in the study area, in order to assist motorists. Additional wayfinding signage oriented toward pedestrians also may be helpful, especially in the area closest to the station.

Bicycle-Pedestrian Trail along CNJ Right-of-Way

The study area has no dedicated bicycle facilities, such as trails or routes. The preliminary BRT concept plans include a multi-use bicycle-pedestrian path (commonly called a "rail trail") along either the north or south side the busway within the right-of-way. Such trails are popular with many communities in New Jersey as a means of encouraging more walking and biking for both work and recreational trips, and could serve here as a trunk route for a local and regional trail network. Connections to this trail within the study area could be located at the proposed Price Street extension, proposed Elizabeth River promenade, the old CNJ station, or at EPA Lot 2, which also would facilitate a good connection between this parking area and the new BRT station facility. This study proposes the City, County and NJ TRANSIT coordinate to ensure a trail and trail connections (if and where feasible) are provided.

Increased Bicycle Parking and Storage

Limited bicycle parking and storage facilities are available in the study area. Increasing available facilities could encourage greater use of bicycling and enable bicycle connections with transit services. More bicycle parking and storage would be appropriate not only at the station but also at Union County College facilities and major employment sites. The City and NJ TRANSIT could work with Kean University and Union County College to promote bicycle use and placement of bicycle racks. Also, enclosed bike lockers at the rail station and other locations would serve better to protect bikes from the elements and vandalism (see **Figure 24**). NJ TRANSIT and the Meadowlink TMA have jointly implemented such lockers at several Union County rail stations, including Rahway, Roselle Park, Cranford, Westfield, and Summit.

Figure 24
Bicycle Locker at Station

Source: Meadowlink.org.

E. Station Frontage and Access

Planned Improvements

Short-Term Station Improvements

NJ TRANSIT recently completed some station improvements, including renovating the waiting room and rest room and improving lighting. NJ TRANSIT now is considering additional short-term improvement plans, including repairing platforms and possibly adding a new stairway on the westbound side.

Proposed Improvements

Improve West Grand Street Traffic Flow

The new taxi stand appears to be functioning efficiently, with one possible exception. The field survey observed a few conflicts between taxis departing the stand onto West Grand Street and vehicles turning from West Grand Street into the taxi stand area, which also includes some public parking spaces. One proposed improvement concept is to designate the flow of the taxi stand driveway as one-way, thereby prohibiting turns from Grand Street into the driveway. In addition, if and when redevelopment occurs on Parcel A, a design option would be to construct the new building over the taxi stand, providing a sheltered driveway area.

Also, the field survey observed some vehicles, including taxis, still stopping along Grand Street, as well as making U-turns. These traffic movements pose safety hazards both to motorists and pedestrians. This issue suggests the need for stricter enforcement of traffic regulations including no stopping or standing and no U-turns along Grand Street. In addition, the City may want to consider a physical means of preventing U-turns, such as a small median island whose design could be coordinated with that of the enhanced mid-block crosswalk previously recommended.

Plaza Improvements

The West Grand Street station frontage, including the station entrance and the plaza, could benefit from various enhancements including better lighting, repainting, and increased maintenance. Additional improvements to the plaza could include establishing a farmers' market, providing outdoor dining facilities, and using portable kiosks for special events and activities. Such active uses of the plaza would help to reinforce the public realm, improve safety and security, and establish a sense of place for the station area (see **Figure 25**).

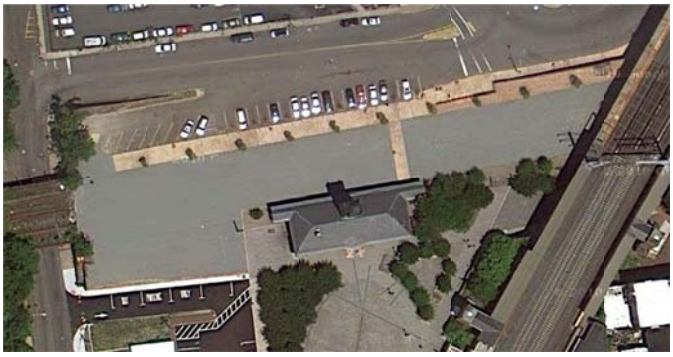
Figure 25
Example of Station Plaza Improvements

Source: Town of Babylon, NY

Julian Place Kiss-and-Ride

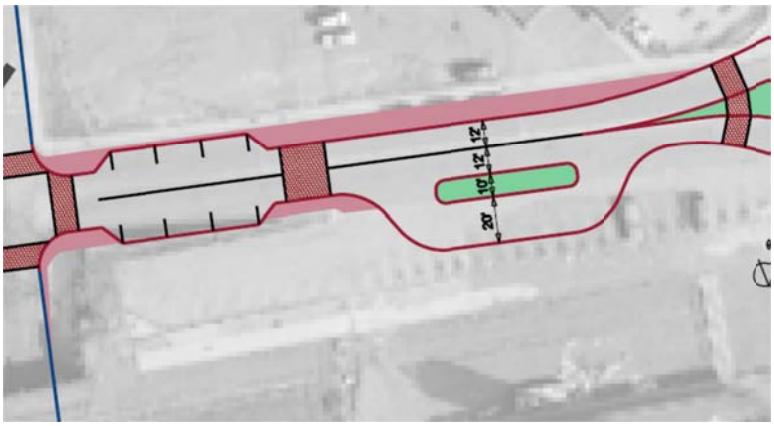
Previous studies have recommended a new "kiss and ride" location along Julian Place next to the former CNJ station. This location already serves as a general drop-off and pick-up point. The City recently completed some physical improvements in this area, including clearing the old right-of-way, adding landscaping, improving a retaining wall, and installing a paved path across the old right-of-way to the station plaza, replacing a narrow wooden walkway (see **Figure 26**). As previous chapters have described, other nearby proposed improvement concepts include new traffic controls at the Arches, a BRT service along the old rail right-of-way with a new station, and a bus hub. Thus, it will be necessary to consider a kiss-and-ride area along Julian Place within the context of these other improvements. **Figure 27** is a preliminary concept for the kiss-and-ride location.

Figure 26
Former CNJ Station Area Improvements



Source: Google.com

Figure 27
Proposed Kiss-and-Ride Location



Source: Elizabeth Parking and Traffic Circulation study.

Broad Street Station Access

The area along southbound North Broad Street just below the Arches is a nominal "front door" to the current station. This area includes an NJ TRANSIT sign, an elevator providing access to and from the eastbound platform, and a small plaza, along with a pedestrian path connecting with the station plaza. Also, the Broad Street curb front currently serves as an informal drop-off / pick-up location for station patrons. Additional landscaping and streetscaping elements could serve to make this area a more attractive entrance to the station and a public gathering place. These elements could be incorporated into the design of the reconstructed station, as well as coordinated with assessing the suitability of a bus pull-out area at this location.

Safe and Convenient Pedestrian Flows

A major current concern about the station design is that the elevators are located outdoors and away from the station entrances, which makes them susceptible to vandalism. In turn, this diminishes the overall attractiveness and desirability of the station area. Thus, a key element of designing a new station facility should be providing interior elevators within the station facility (see **Figure 28**). The station design also should include interior or canopy-covered stairways for better visibility and safe pedestrian access in all light and weather conditions (see **Figure 29**).

Figure 28
Interior Elevator and Stairway

Source: nycsubway.org

Figure 29
Covered Stairway at Station

Source: NJTPA

Passenger Information

Station area plans should include passenger information in the form of signage and wayfinding. Such information should include electronic rail/bus departure monitors at the main entrance and rail-bus transfer wayfinding signs at the platform level and "Elizabeth Station" and rail destination signs (e.g, "Trains to New York") at the street level of all entrances, and "you are here" local wayfinding maps at station entrances. The City's current wayfinding maps could be enhanced to include the area's rail and bus routes and boarding locations. This information will help direct travelers arriving by train or bus to the Midtown area's major destinations and promote multi-modal transit connections.

New Station Design Elements

The design of a new station facility (currently under development by NJ TRANSIT) would include improvements to the station platforms, passenger waiting areas, and entrances. The plans for the station and immediately surrounding area also should consider design elements that enhance personal safety and security and help to create a "sense of place," or public realm. Such design is essential in making the station an attractive destination that will serve multi-modal transportation needs and attract economic development.

Safety and Security

Visibility is important to provide a safe environment in the station area. Crimes against people often occur in places hidden from the view of others. Columns, walls, fences, shrubbery, and level changes can all obstruct sightlines, block observers' views, and conceal an attacker. Thus, the station area should have good sightlines with no obstructions or secluded areas. Additional safety and security measures may include ensuring adequate lighting, increasing police or security force presence, and providing surveillance cameras.

Good maintenance also is important. Well-maintained environments appear owned and are less likely to be scenes of crimes because they are and feel safer. NJ TRANSIT and the City should coordinate to provide for

increased general maintenance and upkeep in the form of activities such as trash pick-up, landscape improvements, and re-painting.

Public Realm and Sense of Place

The design principles for safety and security also relate to the broader design objectives of reinforcing the station area as part of the public realm and establishing a sense of place. A well-designed station area will support transit use, pathways to and from the area, and surrounding land uses and environment. **Figure 30** shows the NJ TRANSIT rail station along the Northeast Corridor in Rahway. This station includes a large public plaza that is a focal point for downtown activity, including a farmers' market, outdoor festivals, and other public events.

Figure 30
Rahway Station

Source: NJTPA.

V. DEVELOPMENT ASSESSMENT

Land use and development in the Midtown Elizabeth area is an important component of the future vision for a multi-modal transit center. While the Broad Street corridor between the Arches and Caldwell Place has a relatively stable economy with many small retail and service businesses and few vacancies, west of Broad Street and the rail line are several large vacant or underutilized parcels that provide new development and redevelopment opportunities. One task of this project was to assess the development and redevelopment potential of the study area. This work included a real estate market analysis of the Midtown area, and this chapter provides a summary of the development assessment.

In 2006, the City adopted an updated Midtown Redevelopment Plan (2006 MRP), which focuses on the area west of the tracks. This plan divides the redevelopment area into nine parcels and identifies permitted and accessory uses for each parcel (see **Figure 10**). In general, the plan endorses multi-story buildings with ground floor retail and upper floor office and / or residential development as suitable uses. The plan includes more detailed guidelines for the mix and density of uses, as well as various design standards.

Parcels that already have been redeveloped are Parcel E (Union County College Kellogg Building), Parcel G (Elizabeth Development Company Parking Deck), and Parcel H (former CNJ station building and station plaza). While the other parcels in the redevelopment area have been available for some time, no recent private development has occurred here.

Figure 10
2006 Midtown Redevelopment Plan Parcels

Source: AECOM

This study conducted a high-level real estate assessment, which included reviewing market conditions, conducting a field survey, and preparing site evaluations. Based upon this assessment, the following is a summary of current market conditions and future development prospects for the three main types of uses: residential, retail, and office.

Residential

The City's population increased during the 2000's, and NJTPA projections indicate that the population will increase at an increased rate through 2035. The development assessment concluded that a new residential community of mid- and high-rise buildings would be appealing to those preferring urban living, new construction, and easy access to the NJ TRANSIT commuter rail system. In addition, proposed streetscaping, bicycle and pedestrian improvements, and a planned linear park called "Riverwalk" along the Elizabeth River (encompassing portions of Parcels B, C, D, and F) would make the area more attractive for residential development.

Retail

The study area currently has considerable retail activity, particularly along Broad Street. The available retail spaces generally are small to moderate-sized. The development assessment identified the potential for a small amount of additional ancillary retail outside the core on well-connected primary streets, notably Grand Street and Westfield Avenue. Commuters and college students could provide small, but captive, future target markets.

Office

The Midtown area currently has no Class A office space, and future office development may be constrained by the lack of good access to the regional highway network. The study area thus has limited potential for office development, except perhaps on Parcel D, where a large floorplate building with convenient access to the rail station could be attractive to office users. Also, Parcel F may be suited for institutional and government uses, e.g., a new building for Union County College.

The development assessment led to recommended uses for each redevelopment parcel, along with a staging plan for future development in the various parcels. These recommendations are included in Chapter VI, and **Appendix D** provides a detailed summary of the development assessment.

VI. RECOMMENDATIONS & CONCEPT PLAN

This chapter is a summary of the recommendations of this report. The first section second section provides a summary of circulation improvement recommendations. The second section describes recommended development types by parcel and a proposed staging plan for redevelopment, and the third section presents concept plan drawings that incorporate these improvements with some conceptual design elements. The fourth section provides an implementation plan, which lists all circulation improvements, along with their anticipated sponsoring agency, estimated time frame for implementing, and preliminary cost estimates.

A. Summary of Circulation Improvement Recommendations

This section is a summary of the recommended circulation improvements based on the Circulation Assessment in Chapter 5. The numbering system provides a reference for the concept plan drawings in the next section. The recommendations in bold are those that already are in the planning or implementation phase.

Traffic Circulation

T-1 Advance plans for new signal at Morris Avenue and Julian Place, including pedestrian crossing treatments such as pedestrian signal heads, a pedestrian phase in the signal cycle, and enhanced crosswalks.

T-2 Complete planning for new signal at intersection of Jersey St, Elizabethtown Plaza, and Union St. to ensure that signal is operational when the new parking deck opens in 2011.

T-3 Complete planning for 2-way Caldwell Place and signal modifications at Broad St. and Caldwell Place to ensure that improvements are complete when new deck opens.

T-4 Continue efforts to upgrade outdated traffic signal equipment and move toward an integrated signal management system in Midtown area.

T-5 Assess the physical feasibility and desirability of a roundabout at the intersection of North Broad Street, East Broad Street, and Morris Avenue.

T-6 Formalize two-lane traffic operations along Broad Street by reducing the travel lane widths through re-striping and implementing other design features consistent with the recent streetscaping improvements.

T-7 Improve efficiency of operations at Broad St and Grand St intersection by clearly delineating left-turn lanes along Broad Street, upgrading traffic signal equipment, and improving signage to direct motorists westbound along East Grand Street to use Commerce Place to access North Broad Street.

T-8 Investigate the possibility of constructing a Price Street extension to improve street network connectivity and provide a new north-south route in the Midtown area.

T-9 After new parking deck opens, monitor traffic patterns and consider the possibility of converting Elizabethtown Plaza to two-way operations.

Parking

P-1 Complete new parking deck along Elizabethtown Plaza.

P-2 Increase enforcement of on-street parking regulations, particularly time limits, as a means of improving short-term parking supply.

P-3 Encourage the use of additional off-street parking resources including EPA Lot 11, EPA Lot 2, and parking areas along Morris Avenue.

P-4 Address vehicle conflicts along Grand Street at the entrance to the EDC parking deck with measures involving the designated location of deck entrances and / or traffic flow along Grand Street.

P-5 Enhance the mid-block pedestrian crossing of West Grand Street between the EDC parking deck and the station, with additional signage, landscaping, and a pedestrian refuge island.

P-6 Consider possible locations for another parking deck, particularly if the EDC parking deck is lost to Northeast Corridor realignment in the long-term.

Bus Facilities and Services

B-1 Continue planning for a BRT system and coordinate planning with other circulation elements, including new signal at Morris Avenue and Julian Place and possible kiss-and-ride location along Julian Place.

B-2 Assess the feasibility of bus pull-out areas along Broad Street at the current stops southbound north of Grand Street and northbound north of Jersey Street. Determine if existing bus stop space is adequate to allow buses to pull over to the curb lane. Consider location for bus layovers.

B-3 Provide shelters, benches, and transit information displays at the Broad and Jersey Street and Broad and Grand Street bus stops. Ensure that the placement and design of facilities is compatible with sidewalk dimensions and other streetscaping elements.

B-4 Further consider the feasibility of a bus hub in the Midtown area, possibly located near the old CNJ station. Evaluate how a bus hub would interface with current traffic patterns, the proposed BRT system, parking, pedestrian flows, and bus routing and schedules.

B-5 Evaluate the potential of a new bus services, including a route running along Morris Avenue and connecting Kean University and the Midtown area.

Pedestrian and Bicycle Facilities

PB-1 Incorporate pedestrian enhancements into all new and upgraded traffic signal plans. These include crosswalks, curb extensions, pedestrian signal heads with actuation, pedestrian phases in the signal cycle, and appropriate signage. As appropriate, incorporate additional enhancements, including curb extensions, fixed pedestrian signal phase, and additional crosswalks.

PB-2 Complete streetscaping work along Broad Street up to the Arches and advance streetscaping work along Broad Street north of the Arches.

PB-3 Consider additional pedestrian enhancements in signal plans for Morris Avenue and Julian Place and intersections in area of new parking deck.

PB-4 Consider streetscaping improvements for Morris Avenue, including gateway treatment at Morris Avenue and Julian Place.

PB-5 Consider adding benches to streetscaping along Broad Street.

PB-6 Improve pedestrian access to, from, and within the station area by providing covered paths including connection between the old and new stations and providing pedestrian wayfinding signage.

PB-7 If feasible, include a new bicycle-pedestrian trail within the old CNJ rail right-of-way parallel to the proposed busway, as part of NJ TRANSIT's BRT plan. The City, County, and NJ TRANSIT should coordinate to identify locations for local connections to this possible trail.

PB-8 Increase bicycle parking at the rail station, as well as at Union County College and other major businesses and employers. Work with Kean University and Union County College to promote bicycle use and placement of bicycle racks. Explore the potential for enclosed bike lockers at the rail station and other locations.

Station Frontage and Access

S-1 Plan and implement short-term station improvements including platform repairs and possible new stairway to the westbound platform.

S-2 Designate the new taxi stand for one-way traffic flow with the entrance on Union Street and thereby prohibit turns into the taxi stand area from West Grand Street.

S-3 Enforce traffic regulations, including no stopping / standing and no U-turns, along West Grand Street. Consider a physical means of preventing U-turns, such as a small median island whose design could be coordinated with that of an enhanced mid-block crosswalk at the EDC parking deck.

S-4 Implement active uses in the plaza area including a farmers' market, outdoor dining, and portable kiosks.

S-5 Advance consideration of a potential kiss-and-ride area and coordinate with other design issues affecting the Julian Place area.

S-6 At the current station entrance along southbound North Broad Street, provide plaza improvements linked to the overall station design and a possible bus pull-out area.

S-7 Incorporate convenient and safe pedestrian flow in the new station design, particularly including interior elevators and stairways.

S-8 Provide passenger information in the form of signage and wayfinding. Include electronic rail/bus departure monitors at the main entrance, station name & rail-bus transfer signage, and "you are here" wayfinding maps at all station entrances enhanced to show the area's rail and bus routes and boarding locations.

S-9 Increase safety and security measures such as improving lighting, expanding hours of police or security presence, and providing surveillance cameras.

S-10 Incorporate general design principles to improve station area appearance and safety, reinforce it as part of the public realm, and provide a sense of place.

B. Land Use Recommendations and Redevelopment Staging Plan

Based upon the assessment of market conditions, and review of the characteristics of available redevelopment parcels in Chapter IV, the project team identified recommended uses for the available redevelopment parcels (see **Figure 31**). This suggested staging plan encourages the redevelopment of vacant or underutilized properties with permitted uses that would complement the proposed circulation improvements.

Figure 31
Recommended Uses by Parcel

Parcel	Location	Recommended Uses
A	Grand and Union Streets (northeast corner)	Residential, Retail along Grand Street
B	Westfield Avenue and Union Streets	Residential, Retail along Westfield Avenue
C	Grand and Union Streets (northwest corner)	Residential, Retail along Grand Street
D	Grand and Union Streets (southwest corner)	Residential, Medical and professional services office, Retail along Grand St. and Jersey St.
F	Sterling Place	Institutional, Government
I	Broad and Grand Streets	Retail, Residential or Office

Future development in the station area is likely to start with Parcel D, which offers the opportunity for a large-scale mixed-use project on an easily-developable site. Development prospects for this site are enhanced by its proximity to the new Union County College (UCC) Kellogg Building, the Elizabeth Development Company (EDC) parking deck and the under-construction Elizabethtown Plaza parking deck, the rail station, and the Broad Street corridor.

Parcel I, which includes the current rail station, could be part of the initial development phase. The time and costs involved in planning a joint development project with the station renovation may suggest developing this site after the station renovation. Any future redevelopment on this parcel should account for the possibility that Amtrak will widen the Northeast Corridor to five tracks, as proposed by the 2010 *Northeast Corridor Infrastructure Master Plan*.

After Parcel D would introduce new residential and commercial activity to the study area, the best candidates for the second phase of development are Parcel A and Parcel C. Both parcels benefit from their proximity to the rail station and location along Grand Street. The proposed uses for each parcel are ground-floor retail oriented toward Grand Street, along with mid- to high-rise residential.

The third development phase includes Parcel B and Parcel F. Parcel B would provide a mix of retail, oriented toward Westfield Avenue, and residential development, and it would benefit from the activity that the prior phases generate. Parcel F could support residential uses, but its proximity to the county jail may make the site better suited for institutional / government uses.

C. Station Area Concept Plans

The final step in the study process was to prepare concept plan drawings, which show certain circulation improvement recommendations, incorporated with some conceptual design elements. **Figure 32** shows the study area and the location of the two concept plan drawings, and **Figures 33 and 34** are the two drawings for the north and south sections of the study area, respectively. NOTE: These plans DO NOT incorporate preliminary design plans for the Elizabeth rail station platforms and waiting areas being developed separately by NJ TRANSIT. The numbering of the items in the concept plans corresponds with the summary of recommendations in the previous section, and the items in bold are those projects already in the planning or implementation phase.

Figure 32
Study Area and Concept Plan Locations

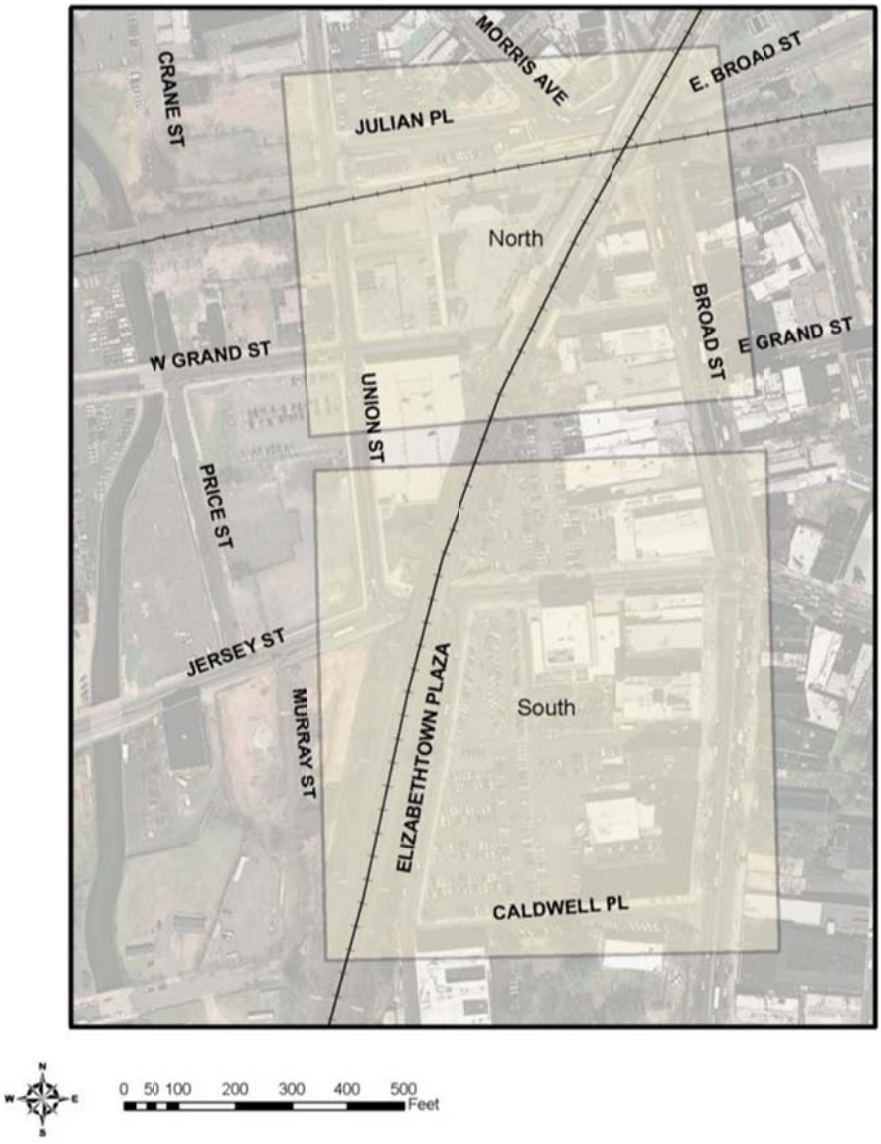


Figure 33
Concept Plan for North Section

TRAFFIC CIRCULATION
- (1) NEW TRAFFIC SIGNAL
- (4) UPGRADE SIGNAL EQUIPMENT
- (5) ROUNDABOUT & PEDESTRIAN ENHENCEMENTS
- (7) IMPROVE INTERSECTION OPERATION

PARKING
- [3] UTILIZE OFF-STREET PARKING LOTS
- [4] NO LEFT TURNS INTO PARKING DECK
- [5] ENHANCED MID-BLOCK CROSSWALK

BUS SERVICE
- (1) PROPOSED BUS RAPID TRANSIT & STATION
- (2) BUS PULL-OUT
- (3) POTENTIAL BUS HUB
- (4) ENHANCED BUS STOP FACILITIES

PEDESTRIAN - BICYCLE
- (2) STREETSCAPING ALONG NORTH BROAD ST.
- (3) CROSSWALKS AND CURB EXTENSIONS
- (4) STREETSCAPING ALONG MORRIS AVENUE
- (6) ENLARGE WALKWAY
- (7) BIKE LANES
- (8) ENHANCED BICYCLE PARKING AND STORAGE

STATION ACCESS
- (2) ONE-WAY TAXI STAND
- (3) MANAGE TRAFFIC FLOW ALONG GRAND ST.
- (5) KISS-AND-RIDE
- (6) PLAZA IMPROVEMENT
- (7) COVERED WALKS / CANOPIES

Figure 34
Concept Plan for South Section

TRAFFIC CIRCULATION
- (2) NEW TRAFFIC SIGNAL
- (3) 2-WAY CALDWELL PLACE AND MODIFIED SIGNAL
- (4) UPGRADED SIGNAL EQUIPMENT
- (6) FORMALIZED 2-LANE OPERATIONS
- (9) 2-WAY ELIZABETHTOWN PLAZA

PARKING
- [1] NEW PARKING DECK
- [2] ON-STREET PARKING ENFORCEMENT
- [4] INCREASED USE OF DECK ENTRANCE

BUS SERVICE
- ◇2 BUS PULL-OUT
- ◇3 ENHANCED BUS STOP FACILITIES

PEDESTRIAN-BICYCLE
- ⬡3 CROSSWALKS, CURE EXTENSIONS, AND ADDITIONAL PEDESTRIAN ENHANCEMENTS

STATION ACCESS
- △7 COVERED WALKS / CANOPIES

D. Implementation Plan

Figure 35 provides an implementation plan for the recommended circulation improvements. For each recommendation, the table includes the following information:

Implementing Agency This item indicates the public agency(ies) likely to have the jurisdiction or responsibility for planning and implementing the project.
Current Status "Planned" projects refer to those that a public agency already is planning. All other recommendations are "Proposed."
Time Frame This item is a general estimate of the time period in which the recommendation is likely to be implemented given the availability of resources. "Short" reflects one year or less, "Medium" is one to five years, and "Long" is over five years.
Cost Estimate This item provides general estimates of the costs of constructing certain proposed recommendations. It does not provide cost estimates for the projects currently in planning or implementation, nor projects that do not require any construction or materials. The estimated costs are order of magnitude estimates based on the improvement concepts and not detailed design parameters. Also, the costs do not include any right-of-way, utility relocation, or environmental costs. **Appendix E** provides more details on the methodology for the cost estimates.

Potential funding sources for these projects include the following:

- Elizabeth participates in the state's Urban Enterprise Zone (UEZ) program, which the New Jersey Department of Community Affairs (DCA) administers. This program has various elements, including providing funding for projects. Under the program, sales tax revenues generated by UEZ businesses are dedicated for use within the zones for economic development projects. To date, the program has approved over 2,600 projects with a total value of $960 million. The city has received past funding from the UEZ program for various projects, including its Broad Street streetscaping project. On the local level, the Elizabeth Development Company (EDC) manages the city's UEZ program.

- The NJDOT Local Aid and Economic Development program administers state and federal funding programs for local improvements.

  The State-funded programs include: *Municipal Aid, County Aid, Centers of Place, Local Aid Infrastructure Fund discretionary funding, Bikeways, Historic Bridge Preservation, Safe Streets to Transit, and Transit Village.*
  The federal programs include: *Local Scoping, Local Lead, Transportation Enhancement, and Safe Routes to School*.

These programs assist local governments in improving transportation facilities by encouraging investment in projects that will yield the greatest mobility, have the least environmental impact, and make the most cost-effective use of available resources. In some cases, partnerships between local or county governments and state agencies (e.g., NJ TRANSIT) can optimize the timeframe and cost efficiency of implementing improvements.

Figure 35
Implementation Plan

#	Recommendation	Implementing Agency	Current Status	Time Frame	Cost Estimate
	Traffic Circulation				
T-1	New signal at Morris Ave. and Julian Place	City, County	Planned	Short	a/
T-2	New signal at intersection of Jersey Street, Elizabethtown Plaza, and Union Street	City	Planned	Short	a/
T-3	2-Way Caldwell Pl. and upgraded signal at Broad St.	City, County	Planned	Short	a/
T-4	Upgrade traffic signal equipment	County, City	Planned	Medium	a/
T-5	Roundabout at the Arches	County, City	Proposed	Medium	$800,000
T-6	Formalized two-lane cross-section along Broad St.	County	Proposed	Medium	$350,000
T-7	Broad St. and Grand St. improvements	County	Proposed	Medium	
T-8	Price St. extension	City, NJ TRANSIT	Proposed	Long	$3,500,000
T-9	2-Way Elizabethtown Plaza	City	Proposed	Short	$83,000
	Parking				
P-1	New parking deck along Elizabethtown Plaza	City	Construction	Short	a/
P-2	On-street parking enforcement	City	Proposed	Short	$100,000
P-3	Off-street parking utilization	City	Proposed	Short	b/
P-4	Managed flow at Grand St. entrance to EDC deck	CIty	Proposed	Medium	$30,000
P-5	Enhanced mid-block pedestrian crossing	CIty	Proposed	Medium	
P-6	Additional off-street parking possibilities	City	Proposed	Medium	b/
	Bus Service and Facilities				
B-1	BRT service along former CNJ right-of-way	NJT, City	Planned	Long	a/
B-2	Bus pull-out areas along Broad Street	County, NJT	Proposed	Medium	$100,000
B-3	Improved bus stop facilities	City, NJT	Proposed	Medium	$50,000
B-4	Bus hub	City, NJT	Proposed	Medium	$50,000
B-5	Potential new bus services	NJT, City	Proposed	Medium	$300,000 / yr
	Pedestrians and Bicyclists				
PB-1	Pedestrian accommodations in signal plans	City, County	Planned	Short	a/
PB-2	Broad St. streetscaping improvements	City, County	Planned	Short	a/
PB-3	Additional pedestrian enhancements at intersections	City, County	Proposed	Short	$50,000
PB-4	Morris Ave. streetscaping improvements	City, County	Proposed	Medium	$500,000
PB-5	Benches along Broad Street	City	Proposed	Short	$15,000
PB-6	Improved station access	NJT, City	Proposed	Medium	$100,000
PB-7	Multi-use trail as part of BRT	NJT	Proposed	Long	Part of BRT plan
PB-8	Increased bicycle parking and storage	City and NJT	Proposed	Short	$6,000
	Station Frontage and Access				
S-1	Short-term station improvements	NJ TRANSIT	Planned	Medium	a/
S-2	1-way taxi stand	City	Proposed	Short	$300
S-3	Managed flow along West Grand St.	City	Proposed	Short	$80,000
S-4	Station Plaza improvements	City	Proposed	Medium	$50,000
S-5	Kiss-and-ride location along Julian Place	City	Proposed	Medium	$370,000
S-6	North Broad Street station access	County, City, NJT	Proposed	Medium	Part of station renovation design work
S-7	Convenient and safe pedestrian flow	NJ TRANSIT	Proposed	Medium	
S-8	Improved passenger information	County, City, NJT	Proposed	Medium	
S-9	Station area safety and security	City, NJT	Proposed	Medium	
S-10	General design for public realm and sense of place	City, NJT	Proposed	Medium	

a/ In planning or implementation phase
b/ No construction or materials costs

VII. OUTREACH

The study process included several events and activities designed to obtain stakeholder input. In general, the project team structured these activities to provide information about the study and to obtain input on key issues and potential improvement concepts. The key activities were meetings with NJ TRANSIT, City, and County staff, along with a stakeholders' focus group and a Technical Advisory Committee (TAC) meeting. The following is a summary of these meetings.

Meeting with NJ TRANSIT staff, May 27, 2010 At this initial meeting, the project team presented information about the study and learned more about various recent NJ TRANSIT planning initiatives, including the Greater Newark Bus Study, the BRT feasibility study, and preliminary station design sketches for the Elizabeth station.

Meeting with City staff, June 2, 2010 The project team introduced the study at this meeting to the Mayor and other key City staff members and County staff. The participants provided input on their concerns and vision for the station and surrounding area, and they also discussed ideas for additional outreach.

Focus Group meeting, Oct 7, 2010 This meeting included representatives of various stakeholders groups, including the City, County, NJ TRANSIT, Chamber of Commerce, Elizabeth Parking Authority, Midtown Elizabeth SID, Union County College, and Kean University, among others. The project team gave a presentation on the study objectives, its status, and the preliminary issues assessment. The participants provided input on the issues and potential improvement concepts.

Meeting with NJ TRANSIT staff Oct 18, 2010 The focus of this second meeting with NJ TRANSIT was to learn more about the current status of NJT planning efforts and to discuss how to coordinate this study's efforts with those of NJ TRANSIT. This meeting also set the stage for another meeting with the City, which also included NJ TRANSIT staff.

Meeting with City and NJ TRANSIT staff, Oct 28, 2010 This meeting included both City and NJ TRANSIT staff, and it thereby provided the opportunity for these two agencies to communicate directly regarding the status of NJ TRANSIT planning efforts, including a reconstructed Elizabeth station, the Union County BRT service, and a possible bus hub in the study area.

Technical Advisory Committee (TAC), Dec 9, 2010 Similar to the focus group meeting, the participants were an invited group of stakeholders, which included representatives of NJDOT, NJDEP, and the Meadowlink TMA, along with City, County, and NJ TRANSIT staff. The project team gave a presentation that focused on identifying draft improvement concepts, and the participants provided feedback on these concepts.

Appendix F contains summaries for each of these meetings.