



# CITY OF PERTH AMBOY BICYCLE & PEDESTRIAN PLAN

JANUARY 2016



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## ACKNOWLEDGEMENTS

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### **PREPARED FOR**

City of Perth Amboy, New Jersey



### **PROJECT PARTNER**

New Jersey Department of Transportation



### **PROJECT PARTNER**

Federal Highway Administration



### **PREPARED BY**

Urban Engineers, Inc.

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## INTRODUCTION

The City of Perth Amboy initiated this planning effort to develop a comprehensive bicycle and pedestrian circulation plan with a desire to make the entire city safer and more accessible for pedestrians and bicyclists. The ***Perth Amboy Bicycle and Pedestrian Plan*** sets out a framework to improve pedestrian and bicycle conditions in Perth Amboy. Recommendations from the plan will guide the planning and design of future bicycle and pedestrian projects and help the City to attract financial support for implementation through grant programs that fund bicycle and pedestrian projects. This project was funded through the New Jersey Department of Transportation – Office of Bicycle and Pedestrian Programs (NJDOT/OBPP) Local Bicycle/Pedestrian Planning Assistance program, and Urban Engineers, Inc. (Urban) served as the project consultant.

The ***Perth Amboy Bicycle and Pedestrian Plan*** is one component of a group of complementary City-led planning projects, including a Master Plan Circulation Element update by BFJ Planning; a School Travel Plan by Keep Middlesex Moving (KMM), the regional Transportation Management Association (TMA); an update to the City’s Redevelopment Plan by Maser Consulting, PA; and preparation of zoning revisions and design standards for the central business district by Perkins Eastman and Clarke Caton Hintz. Preparation of this plan was undertaken in cooperation with these other efforts, and it is anticipated that the Bicycle and Pedestrian Plan will be adopted as part of the Circulation Element.

The recommendations presented in this plan are intended to create a comprehensive city-wide bicycle and pedestrian network that enhances non-motorized safety and mobility and promotes access to local and regional destinations in and around Perth Amboy. While the bicycle and pedestrian components of the plan are addressed individually, in reality they work together to form an integrated bicycle and pedestrian network that expands non-motorized transportation options. And while land use is not specifically addressed in this plan, the integration of bicycle and pedestrian considerations into future land use development decisions would further advance the goals of this plan.

The concepts and recommendations presented in this plan were developed in accordance with current design guidance. Implementation of many of the recommendations may require engineering studies to further refine design elements.

# PEDESTRIAN PLAN

## A. CONNECTIVITY IMPROVEMENTS

The main objective of the pedestrian plan is to develop a continuous network of safe and convenient facilities that allow residents and visitors to walk to and from activity generators. This section presents the strategies that are proposed to increase pedestrian connectivity.

### Sidewalk Network

Perth Amboy features an extensive network of continuous sidewalks throughout the city limits. However, a few areas of the city – mainly along high volume auto corridors and in more industrial areas – lack sidewalks. In some of these areas, regular pedestrian use is evident through worn footpaths. While it is recommended that the City implement sidewalks along all street segments where pedestrian activity is present, the street segments listed below have been identified as priority “missing links” in the sidewalk network (also shown in **Figure 1**):

- **Convery Boulevard (Route 35):** Approx. 3000’ between Dorothy Avenue and Florida Grove Road on the east side of the road
- **Pfeiffer Boulevard (Route 184):** Approx. 670’ between Florida Grove Road and Convery Boulevard on the south side of the road
- **State Street (CR 611):** Approx. 1000’ between Rudyk Park and High Street on the east side of the road
- **Florida Grove Road (CR 655):** Approx. 1050’ between Florida Grove Manor and 440 Connector Road on the east side of the road
- **440 Connector Road (CR 624):** Approx. 650’ between Florida Grove Road and Convery Plaza on the north side of the road



**Lack of Sidewalks on Pfeiffer Boulevard**



**Figure 1 - Connectivity Improvements**

## Pedestrian Crossings

Providing safe and convenient crossing opportunities is an essential component of pedestrian circulation. Simply put, pedestrians should have the opportunity to cross the road safely. Based on public input, site observations, and crash analysis, it was determined that additional marked crosswalks and intersection control features are necessary at the locations listed in this section.

Marked crosswalks at midblock locations are important to overall pedestrian and bicycle network connectivity. The following new midblock crossings are recommended (see **Figure 1**):

- **State Street (CR 611)** across from Rudyk Park
- **Riverview Drive** between Herbert Street and Grant Street (at existing trail crossing)
- **Hall Avenue** between Elizabeth Street and State Street (in conjunction with an extension of the existing Perth Amboy Bicycle & Pedestrian Trail)

Additional intersection control features are recommended at the following intersections to provide protected crossings along existing or future bicycle/pedestrian routes (see **Figure 1**):

- **Pfeiffer Boulevard (Route 184)** at Columbus Drive (Candidate Pedestrian Hybrid Beacon)
- **Pfeiffer Boulevard (Route 184)** at Cartlock Avenue (Candidate Pedestrian Hybrid Beacon)
- **Convery Boulevard (Route 35)** at Sayre Avenue (Candidate Pedestrian Hybrid Beacon)
- **Market Street (CR 658)** at Goodwin Street (Candidate Traffic Signal)
- **Market Street (CR 658)** at 2nd Street (Candidate Traffic Signal)
- **Smith Street (CR 656)** at Goodwin Street (Candidate Traffic Signal)
- **Smith Street (CR 656)** at Riverview Drive (Candidate Traffic Signal)
- **440 Connector Road (CR 624)** at Convery Plaza (Candidate Pedestrian Hybrid Beacon)
- **Proposed Connector Road** at Convery Boulevard (Candidate Traffic Signal)
- **Proposed Connector Road** at Amboy Avenue (Candidate Traffic Signal)

Several treatments can be used to improve safety at crossing locations. These measures include high-visibility crosswalk striping, In-Street Pedestrian Crossing signs (R1-6a), Pedestrian Warning Signs (W11-2), textured crosswalks, curb extensions, median refuge islands, and Rectangular Rapid Flashing Beacons (RRFBs). At locations with higher vehicle speeds/volumes and/or multiple lanes in each direction, a higher level of control is desired to stop vehicles and provide additional protection for pedestrians. Types of intersection control include Pedestrian Hybrid Beacons (PHBs), pedestrian-actuated traffic signals, and full traffic signals. Each location should be evaluated to determine the appropriate treatment. At the locations where a new traffic signal is recommended, the City should request the entity with jurisdiction (State or County) to initiate an engineering study to determine if warrants specified in the *Manual of Uniform Traffic Control Devices (MUTCD)* can be met.





**Existing Pedestrian Crossing at Route 35 and Sayre Avenue**



**Rectangular Rapid Flashing Beacon**  
*(source: [www.pedbikeimages.org/mf](http://www.pedbikeimages.org/mf))*



**Pedestrian Hybrid Beacon**  
*(source: KXAN, Texas)*

## Underpass between Catherine Street & Dillman Lane

NJ Transit’s North Jersey Coast Line right-of-way bisects the local street grid and severely limits access between the eastern and western portions of the city. There are no opportunities to cross the rail line north of Hall Avenue, which makes Hall Avenue the only walking and biking route to Perth Amboy High School and Schull Middle School from neighborhoods to the east.

A pedestrian underpass exists between Dillman Lane (on the west side) and Catherine Street (on the east side); however, the tunnel was closed years ago due to security concerns. The underpass has a number of characteristics that likely contributed to its closure, including its length – nearly 300 feet – along with ramp configurations that limit visibility and a lack of stairways that would have allowed for quicker exits (see **Figure 2**).

Considering the need for east-west connectivity in Perth Amboy’s pedestrian/bicycle network, and that the infrastructure is already in place, this plan recommends studying the feasibility of re-opening the underpass. A re-opened underpass has the potential to significantly improve bicycle/pedestrian access to schools in this area by reducing trip lengths, relieving dependency on Hall Avenue, and promoting additional bicycle and pedestrian travel. However, any plans to re-open the underpass need to address the security concerns that led to its closure. The following strategies are recommended to improve the security and attractiveness of a re-opened underpass (shown in **Figure 2**):

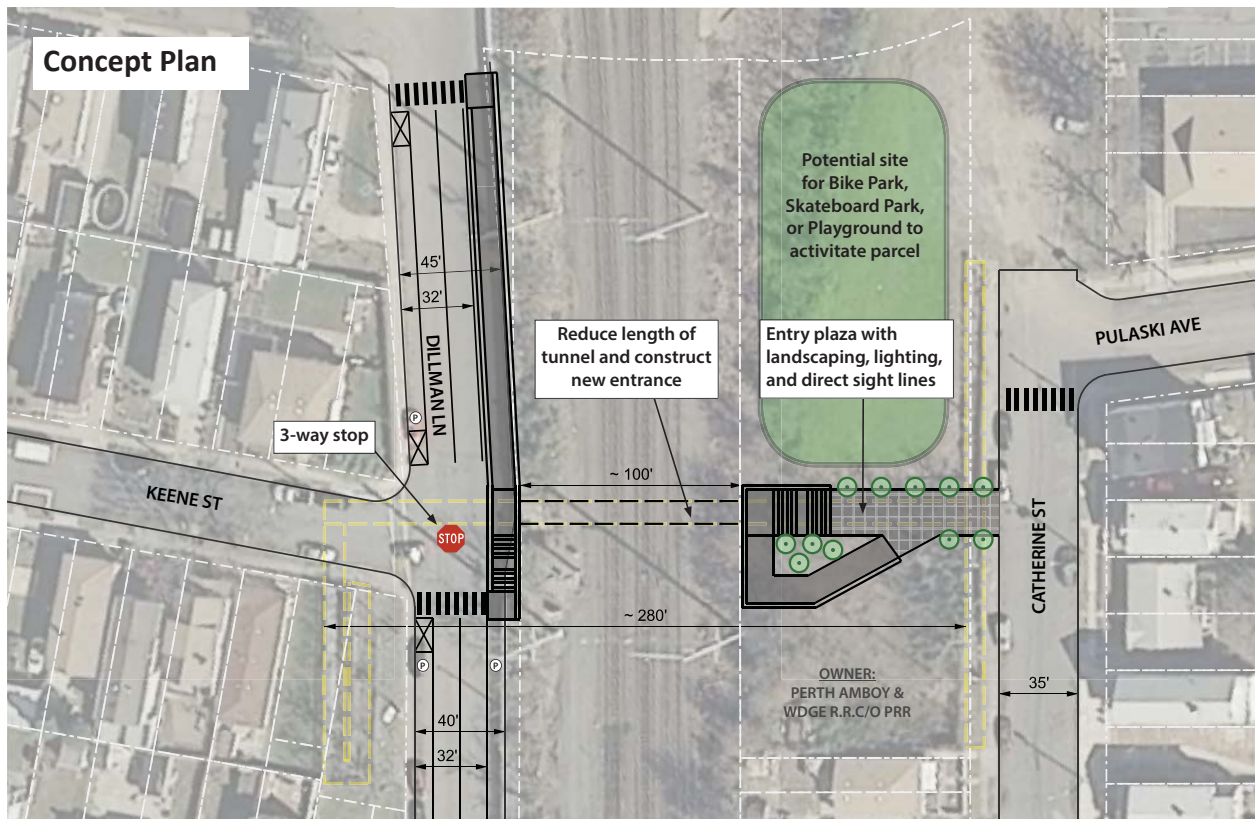
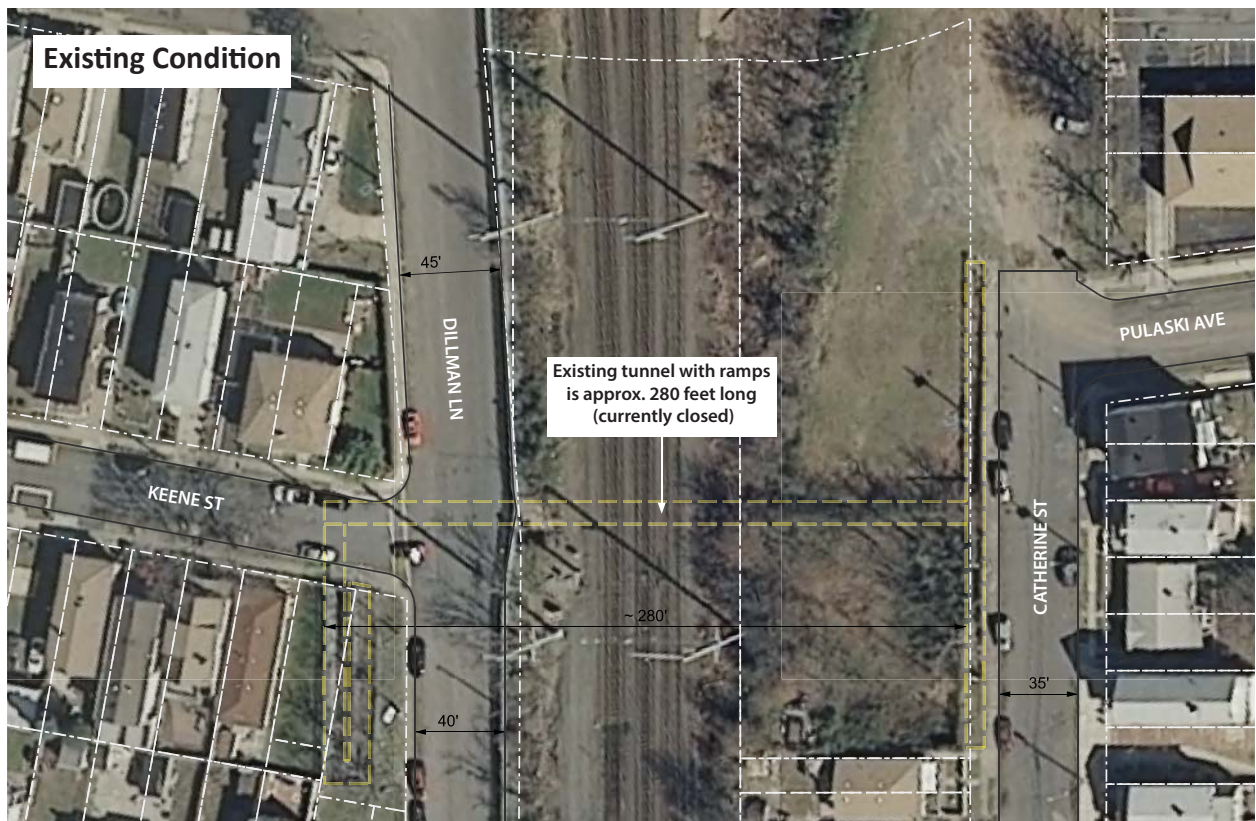
- Reduce the underpass length (from 280’ to 100’) by constructing new entry areas closer to the rail ROW line at each end
- Create an attractive entry plaza adjacent to Catherine Street with lighting, landscaping, and a prominent stairway that enables direct sight lines
- Relocate the entryway on the Dillman Lane side from a “backyard” parcel to the Dillman Lane cartway, thereby improving visibility and allowing for a stairway exit
- Activate the vacant parcel to the north of the Catherine Street entry area; potential uses could be a bike park, skateboard park, playground, or other neighborhood amenity



**Dillman Lane Entrance**  
(source: GoogleEarth)



**Catherine Street Entrance**  
(source: GoogleEarth)



**Figure 2 - Underpass between Catherine Street & Dillman Lane**

## B. INTERSECTION IMPROVEMENTS

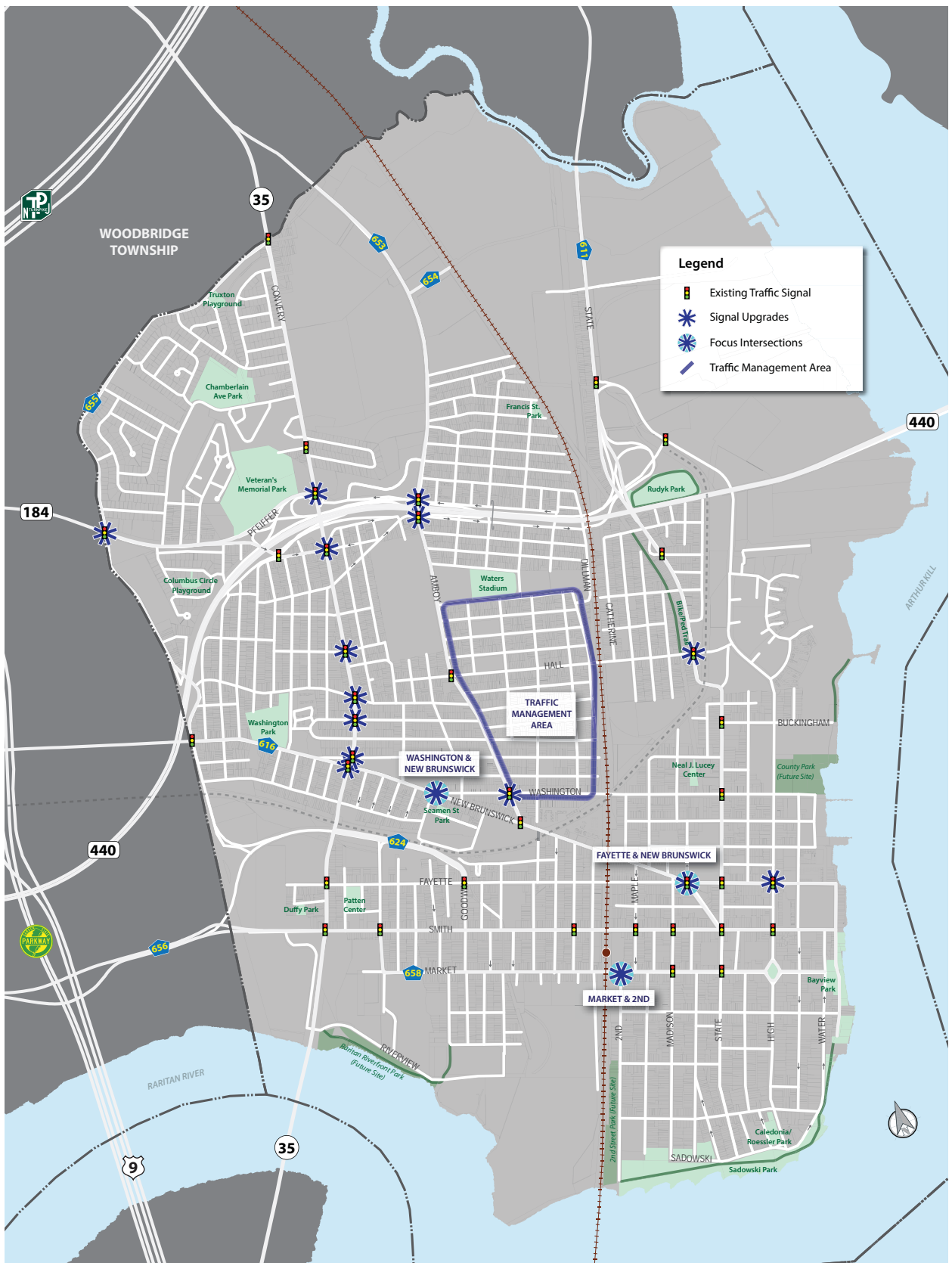
The recommendations described in this section were developed to address deficiencies, improve conditions, and redesign pedestrian and bicycle elements at priority intersections in Perth Amboy. **Figure 3** presents an overview of these recommendations, which are described in further detail below.

### Signalized Intersections

Addressing deficient conditions at signalized intersections is an important component of improving pedestrian safety; for instance, over 60% of the bicycle/pedestrian crashes along Convery Boulevard (NJ Route 35) occurred at signalized intersections. Full signal upgrades are recommended at the following signalized intersections in Perth Amboy where existing signals lack full or partial pedestrian features (identified in **Figure 3**):

- Convery Boulevard (Route 35) at Pfeiffer Boulevard (Route 184) – including I-440 ramps
- Convery Boulevard (Route 35) at Harding Avenue – including I-440 ramps
- Convery Boulevard (Route 35) at Harrington Street
- Convery Boulevard (Route 35) at Brace Avenue
- Convery Boulevard (Route 35) at Compton Avenue
- Convery Boulevard (Route 35) at Lawrie Street
- Convery Boulevard (Route 35) at New Brunswick Avenue (CR 616)
- New Brunswick Avenue (CR 616) at Florida Grove Road (CR 655)
- Amboy Avenue (CR 653) at Washington Street
- Amboy Avenue (CR 653) at Grove Street
- Amboy Avenue (CR 653) at Lawrence Street
- State Street (CR 611) at Hall Avenue
- Fayette Street at High Street

Upgrades should include high-visibility painted crosswalks, ADA-compatible curb ramps, countdown pedestrian signal heads, and No Turn on Red (R10-11 in MUTCD) signage at each of the four intersection legs. The No Turn on Red signage recommendation, per MUTCD, is based on the potential for pedestrian conflicts with right-turn-on-red maneuvers.



**Figure 3 - Intersection Improvements**

## Focus Intersections

Concept plans were developed for three focus intersections to address existing deficiencies and redesign pedestrian and bicycle elements. These locations were identified by stakeholders as particular areas of need, as well as opportunities to improve bicycle/pedestrian travel. In addition to bicycle and pedestrian improvements, the concept plans for these intersections provide other benefits including traffic calming, parking management, opportunities for green infrastructure and stormwater management, and enhancements to the urban environment.

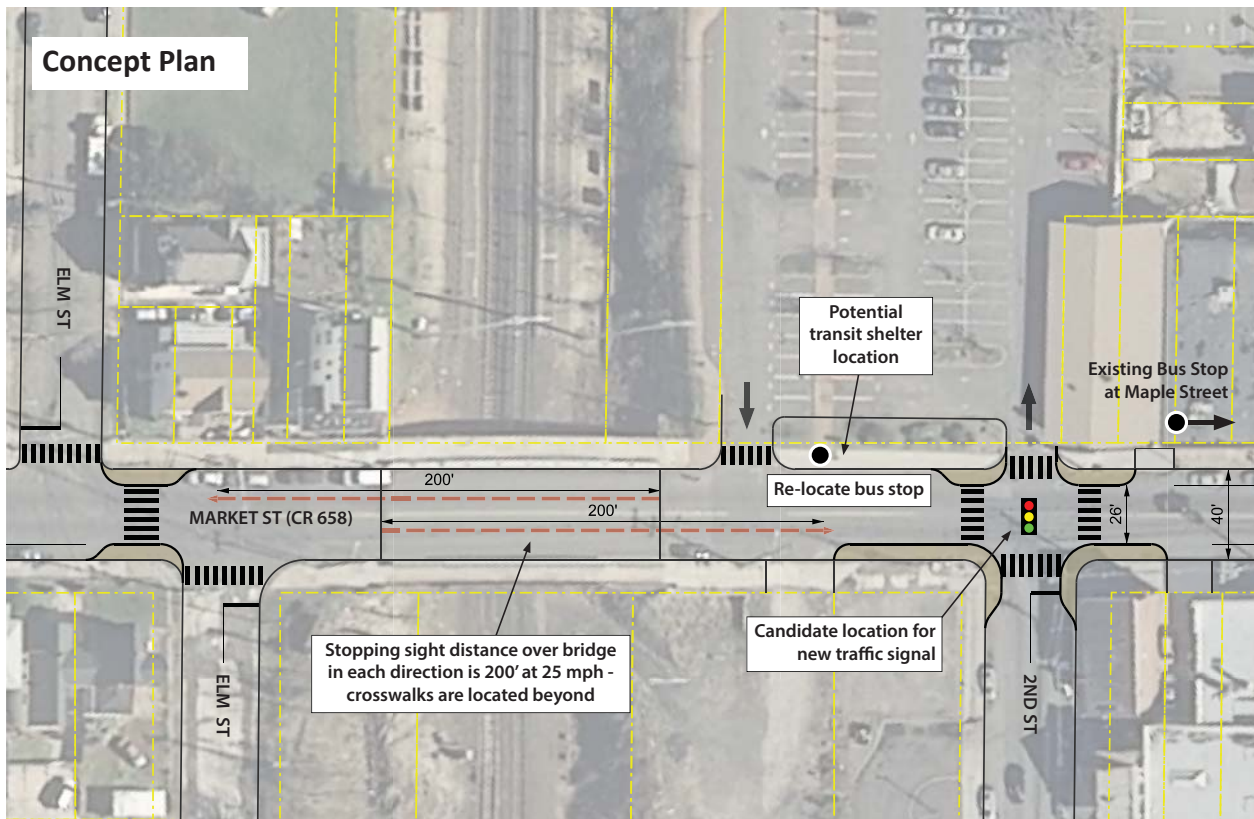
### Market Street (CR 658) at 2<sup>nd</sup> Street

This intersection is a major gateway to Perth Amboy Train Station, but is difficult to navigate for both pedestrians and vehicles turning out of 2<sup>nd</sup> Street. **Figure 4** shows the existing intersection along with a concept plan to create a “gateway” intersection to the station from the south. Features of the plan include:

- A high-visibility crosswalk with corner curb extensions at the intersection of Market Street and Elm Street
- High visibility crosswalks and curb extensions at the 2nd/Market intersection
- Relocation of the WB bus stop at Maple Street to the grass area directly in front of the station (approx. 200’) along with the addition of a transit shelter
- Based on observations of both pedestrian and vehicular volumes, this is a candidate location for a traffic signal



**Market Street/2nd Street Intersection, Looking East**



**Figure 4 - Market Street (CR 658) & 2nd Street**

### New Brunswick Avenue (CR 616) at Washington Street

The existing skewed geometry at this intersection leads to high-speed turns to and from Washington Street and also creates an excessive amount of pavement (see **Figure 5**). With a new elementary school being constructed on Seamen Street, this intersection will be part of school access route for many children. A concept plan (see **Figure 5**) was developed to improve pedestrian safety, manage traffic speeds, provide opportunities for green infrastructure, and enhance the urban environment. Features include:

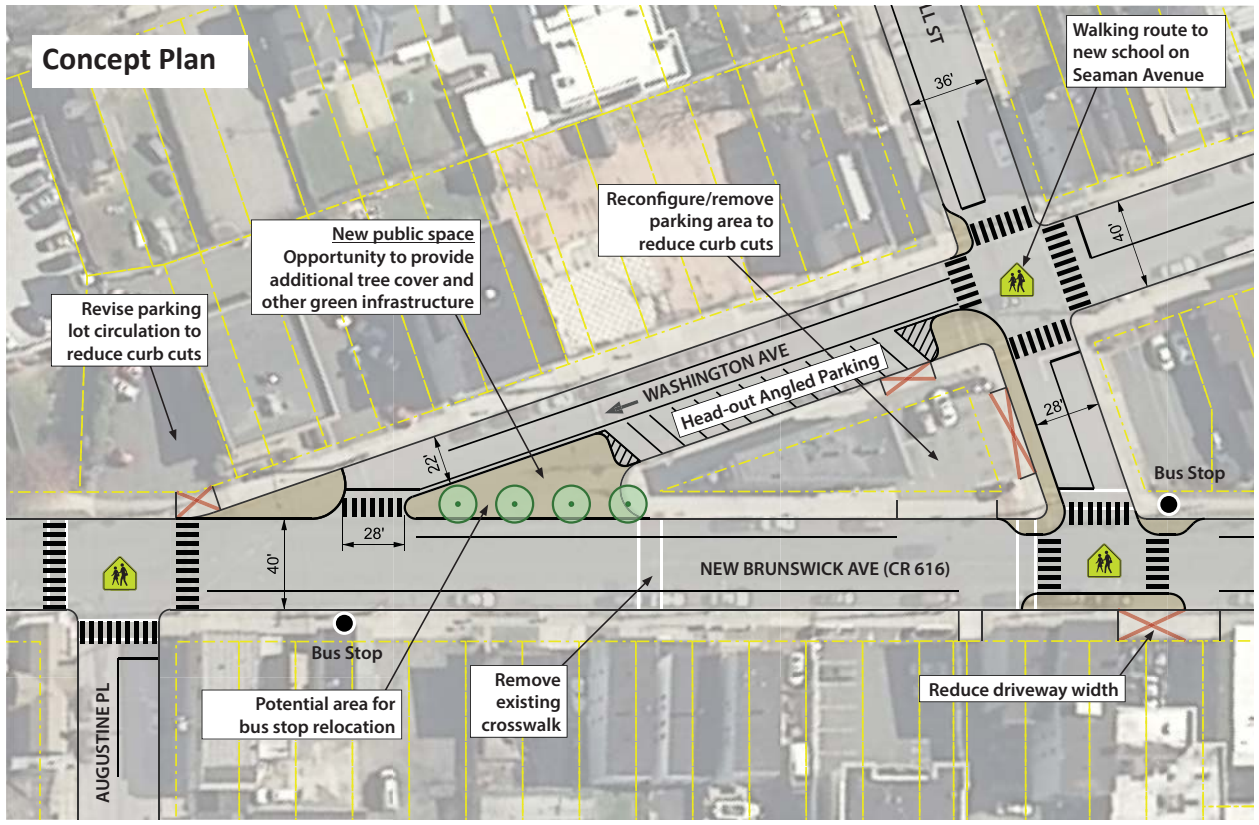
- Converting one block of Washington Street to one-way vehicle movement (towards New Brunswick Avenue) and expand the center island, which would allow for a significantly shorter and more convenient pedestrian crossing and provide opportunities for additional tree cover and other green infrastructure
- Reconfigure parking areas to reduce the number of curb cuts in the vicinity of this intersection (particularly in the center island)
- Curb extensions and high visibility crosswalks at the nearby intersections of Cornell Street with Washington Street and New Brunswick Avenue



**New Brunswick Avenue/Washington Street Intersection, Looking East**

*(source: GoogleEarth)*





**Figure 5 - New Brunswick Ave (CR 616) & Washington St**

### New Brunswick Avenue (CR 616) at Fayette Street

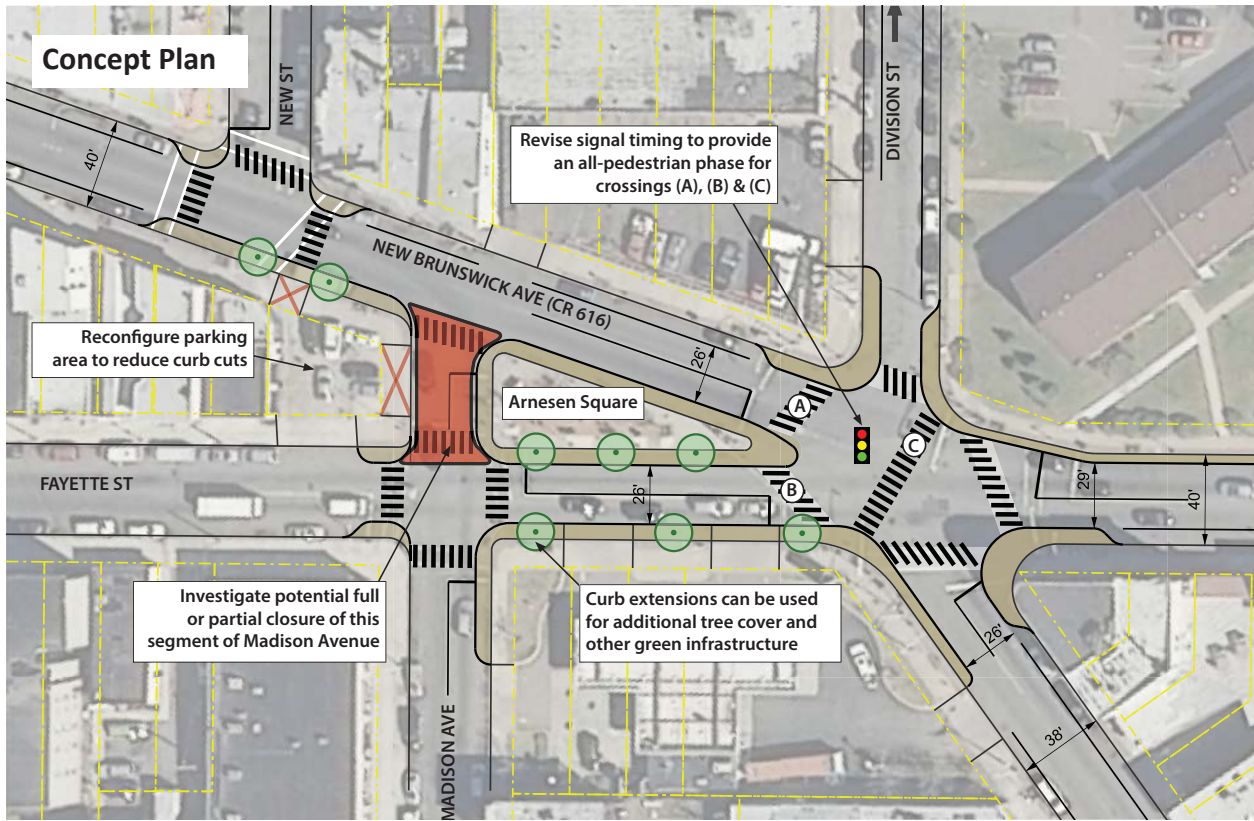
This five-legged intersection is a major gateway to downtown from neighborhoods to the north and is adjacent to a pocket park (Arnesen Square). However, a pedestrian crossing is not provided across the west side of the intersection (adjacent to the park). In addition, the skewed geometry increases the length of the other pedestrian crossings and creates an excessive amount of pavement (see **Figure 6**). The concept plan shown in **Figure 6** includes the following features to improve pedestrian and bicycle conditions at this intersection:

- Curb extensions to reduce the length of pedestrian crossings, increase the size of Arnesen Square, and provide space for green infrastructure
- Revising the signal timing to include a pedestrian crossing of the western legs of the intersection through an “all-pedestrian” phase
- Reconfiguring the parking lot along Madison Avenue to reduce curb cuts
- Potential closure of the segment of Madison Avenue between New Brunswick Avenue and Fayette Street to allow expansion of Arnesen Square and improve safety in this area. Closure of Madison to vehicle traffic, combined with a closure of New Brunswick Avenue near the Five Corners intersection (as recommended in the Circulation Element), would likely impact vehicular access to the Central Business District. A partial closure of Madison and/or converting Maple Street to two-way operations would help to maintain vehicular access. A traffic circulation study should be conducted to investigate the impacts of these alternatives, taking into account future redevelopment of this area.



**New Brunswick Avenue/Fayette Street Intersection, Looking West**

*(source: GoogleEarth)*

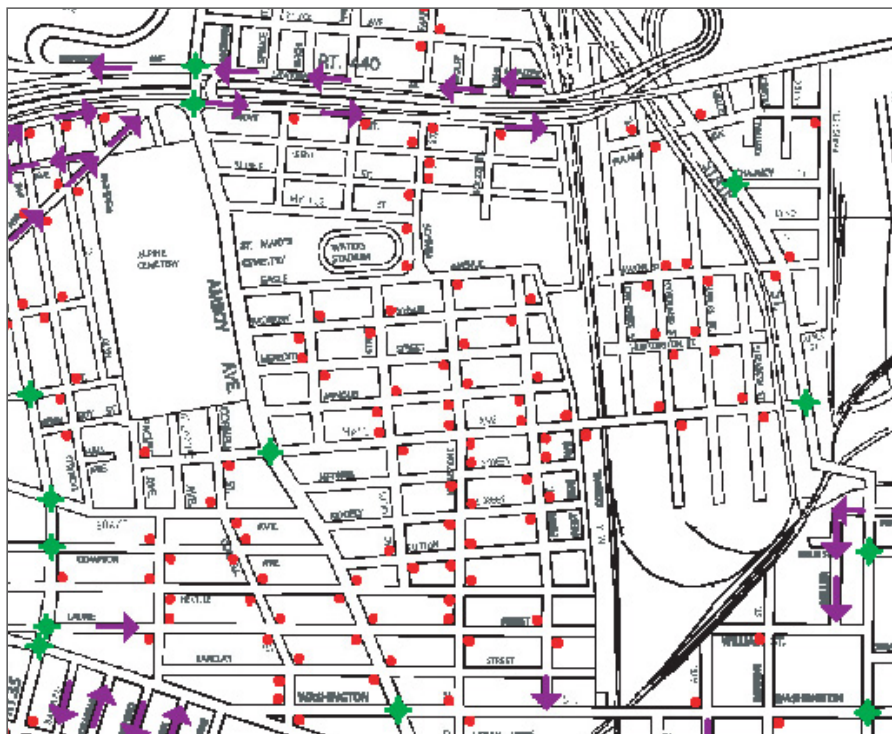


**Figure 6 - New Brunswick Ave (CR 616) & Fayette Street**

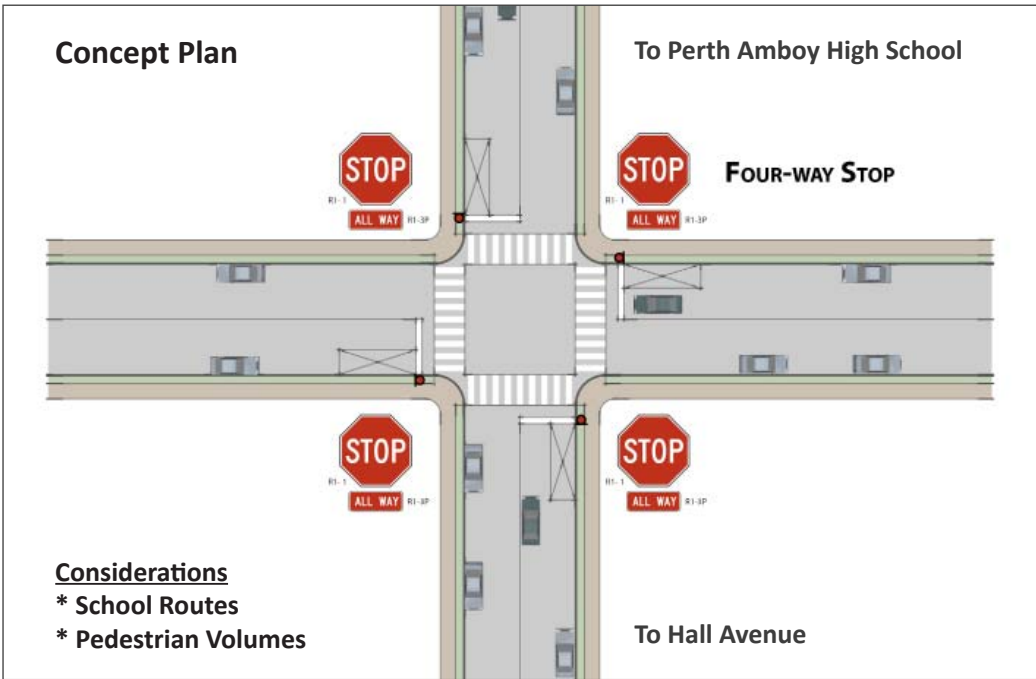
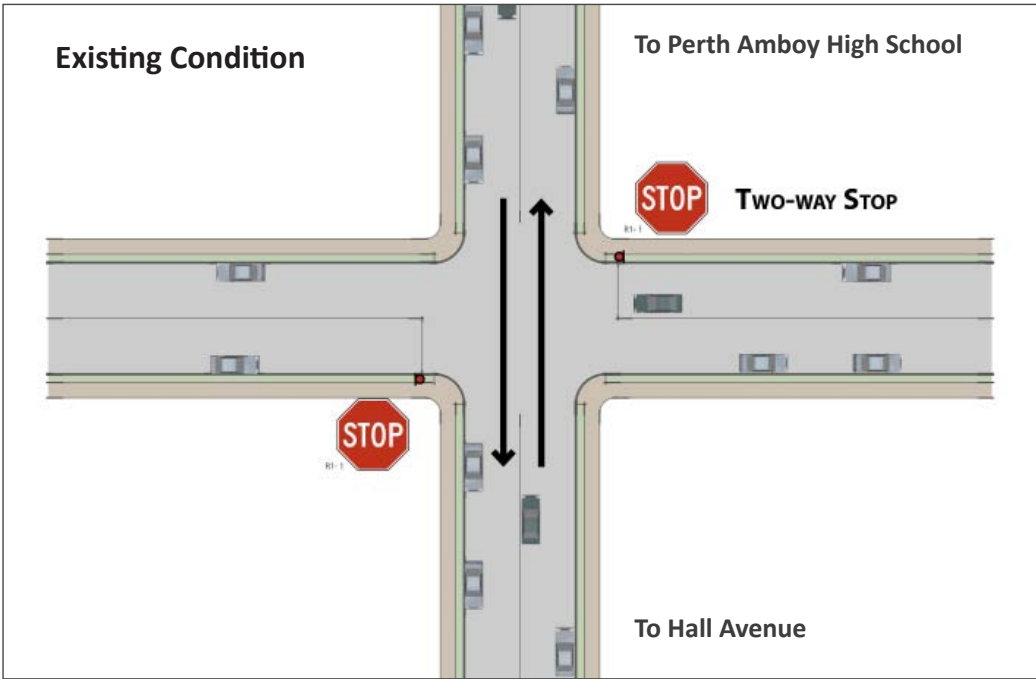
## Perth Amboy High School Area – Traffic Management

Bounded by Amboy Avenue, Eagle Avenue, West End Avenue, and Washington Street, the dense residential neighborhood south of Perth Amboy High School generates a large number of student walking trips. The majority of streets in this neighborhood are stop-controlled in the east/west direction but uncontrolled in the north/south direction, and many intersections do not have marked crosswalks (**Figure 7** shows a typical intersection). These characteristics can lead to both driver and pedestrian confusion over who has the right-of-way, along with higher vehicle operating speeds.

The proposed configuration shown in **Figure 7** is recommended along school access routes and other routes with high pedestrian volumes to reduce confusion and better accommodate walking and biking trips to the numerous schools in this neighborhood. Primary routes for consideration include Penn Street, Johnstone Street, and Jacques Streets; segments of other streets may also be candidates for this treatment. The main change would be to install high-visibility crosswalks and multi-way or “four way” stop control in place of the existing two-way stop control. The proposed configuration also includes the “daylighting” of parking near intersections (see discussion of treatments on Page 24). Daylighting is particularly important during school pick-up and drop-off periods, which is when short-term parking encroaches on the crosswalk space. These recommendations are consistent with guidance provided by the MUTCD on multi-way stops.



Traffic Control Device Map (from 2003 Circulation Plan)



**Figure 7 - Traffic Management near Perth Amboy High School**

## C. CORRIDOR IMPROVEMENTS

In addition to specific connectivity and intersection improvements, corridor-wide recommendations were developed for key streets in Perth Amboy to improve the walking/biking environment, enhance the business environment, and/or improve access to schools. The selected corridors are shown in **Figure 8** and described below.

### Commercial Corridors

Many of the commercial corridors in Perth Amboy – including portions of Amboy Avenue (CR 653), Smith Street (CR 656), Market Street (CR 658), and State Street (CR 611) – were identified as “crash corridors” in the crash analysis (discussed in the Circulation Element). Crash corridors contain multiple intersections that have experienced four (4) or more bicycle/pedestrian crashes in a 10-year period. The following actions are recommended to make it safer, more convenient, and more attractive to walk along and across these corridors:

- Use a consistent crosswalk striping pattern (high-visibility continental style is recommended)
- Improve pedestrian visibility by “daylighting” intersections (see discussion on Page 24)
- Provide automatic “WALK” signals at intersections where pedestrian activity is routine (see discussion on Page 24). Good examples include Smith Street at New Brunswick Avenue (Five Corners Intersection) and State Street at Hall Avenue.
- Install opposite side bump-outs at 3-way intersections; examples along Smith Street include intersections with McClellan Street, Hobart Street, and King Street
- It is often impractical to drive at 25 mph on commercial corridors city-wide due to the presence of on-street parking, bicycle/pedestrian activity, and transit operations. Investigate lowering speed limits in these corridors to 15 or 20 mph, which is more consistent with desired operating speeds.



**Continental-Style Crosswalk**



**The Five Corners Intersection**



**Figure 8 - Corridor Improvements**

### Automatic WALK Signals

Pedestrian signal heads can be pedestrian-actuated through the use of pedestrian pushbuttons (PPBs). The use of PPBs often results in longer waits for people trying to cross the street, as they may miss a cycle if they fail to push the button in time. Studies have also shown that compliance with PPBs is low – roughly 50 percent of pedestrians at intersections do not activate pushbuttons to cross at the intersection. This situation can be improved by employing automatic “WALK” signals at traffic signals (also referred to as pedestrian recall). Pedestrian recall gives pedestrians a “WALK” signal at every cycle, and thus no pushbutton or detection is necessary. Pedestrian recall is appropriate in areas with routine pedestrian activity and demonstrates that intersections are meant to serve both vehicles and pedestrians. Pedestrian recall can be used for the entire day, or limited to parts of the day with the busiest pedestrian activity. As an example, the City of Boston’s policy is for the pedestrian phase to be automatic during every cycle at locations where pedestrians are present more than 50 percent of the time during peak hours, or where studies indicate reasonable benefit (*source: FHWA website, [www.pedbikesafe.org](http://www.pedbikesafe.org)*).

### Intersection Daylighting

When vehicles are parked (or are idling) too close to pedestrian crossings, they limit the sightlines of both pedestrians and motorists, which can increase the risk of crashes. Restricting parking and other sight obstructions adjacent to crosswalks – also known as intersection “daylighting” – helps pedestrians to safely cross the street by providing motorists with a clearer view of pedestrians and pedestrians with a clearer view of oncoming vehicles.

New Jersey state law requires that vehicles not be parked within 25 feet of an intersection (or 50 feet from a stop sign); however, this requirement is not always followed. A variety of treatments can be used to encourage better parking behavior (see adjacent photos for examples in or near Perth Amboy):

- Painting the curb
- Roadway striping (box or triangle)
- Flexible bollards
- Curb extensions

While low cost treatments such as paint or striping may be effective in some areas, in others it may be necessary or desirable to provide physical roadway measures such as flexible bollards or curb extensions to prevent motorists from parking too close to the crosswalk. Curb extensions also shorten the distance that pedestrians need to cross a roadway, and the extra sidewalk space that is gained from curb extensions can be used for sidewalk furniture, bicycle parking, and/or “green infrastructure” elements such as storm water infiltration and street trees. Flexible bollards can also be combined with bicycle parking to provide an additional benefit.





**Curb Painting**



**Curb Extensions**



**Flexible Bollards**

*(source: [www.togethernorthjersey](http://www.togethernorthjersey))*



**Curb Extensions with Landscaping**

*(source: [www.pedbikeimages.org/db](http://www.pedbikeimages.org/db))*



**Flexible Bollards with Parking**

*(source: [www.togethernorthjersey](http://www.togethernorthjersey))*



**Curb Extensions with Planters**

*(source: [www.pedbikeimages.org/cs](http://www.pedbikeimages.org/cs))*

## 2nd Street Corridor

The 2<sup>nd</sup> Street corridor was identified in the *Bay City Transit District Strategy (Together North Jersey, 2013)* as an opportunity to strengthen the bicycle/pedestrian connection between Perth Amboy Station and the waterfront. **Figure 9** shows a concept plan for this corridor. Primary components of the plan include an enhanced sidewalk (10-15' wide with lighting and landscaping) along the west side of 2<sup>nd</sup> Street, pedestrian improvements at each of the three-way side street intersections, and shared lane markings. For the enhanced sidewalk component, the plan anticipates that the section between Market and Patterson will be implemented through redevelopment while the section between Patterson and Sadowski Park will be implemented as part of the new 2<sup>nd</sup> Street Park. Additional components of the plan are listed below:

- Curb extensions, high-visibility crosswalks, and potential signalization at the 2nd/Market intersection
- Curb extensions, high-visibility crosswalks, landscaping, and either raised or textured surfaces at the intersections with Gordon Street, Patterson Street, and Lewis Street (see **Figure 10** for an intersection zoom-in)
- A marked pedestrian crossing with high-visibility crosswalks and bump-out at the intersection with the R. Wilentz Elementary School's loading dock access road
- Shared lane markings along both directions of 2nd Street for bicycle travel
- A plaza area at the southern end of 2nd Street with bicycle parking and connection to the existing trail through Sadowki Park

A similar design strategy for the Elm Street corridor between Market Street and the waterfront should be integrated into future development plans for the Gerda Ameristeel redevelopment site.



**Figure 9 - Concept Plan for 2nd Street Corridor**

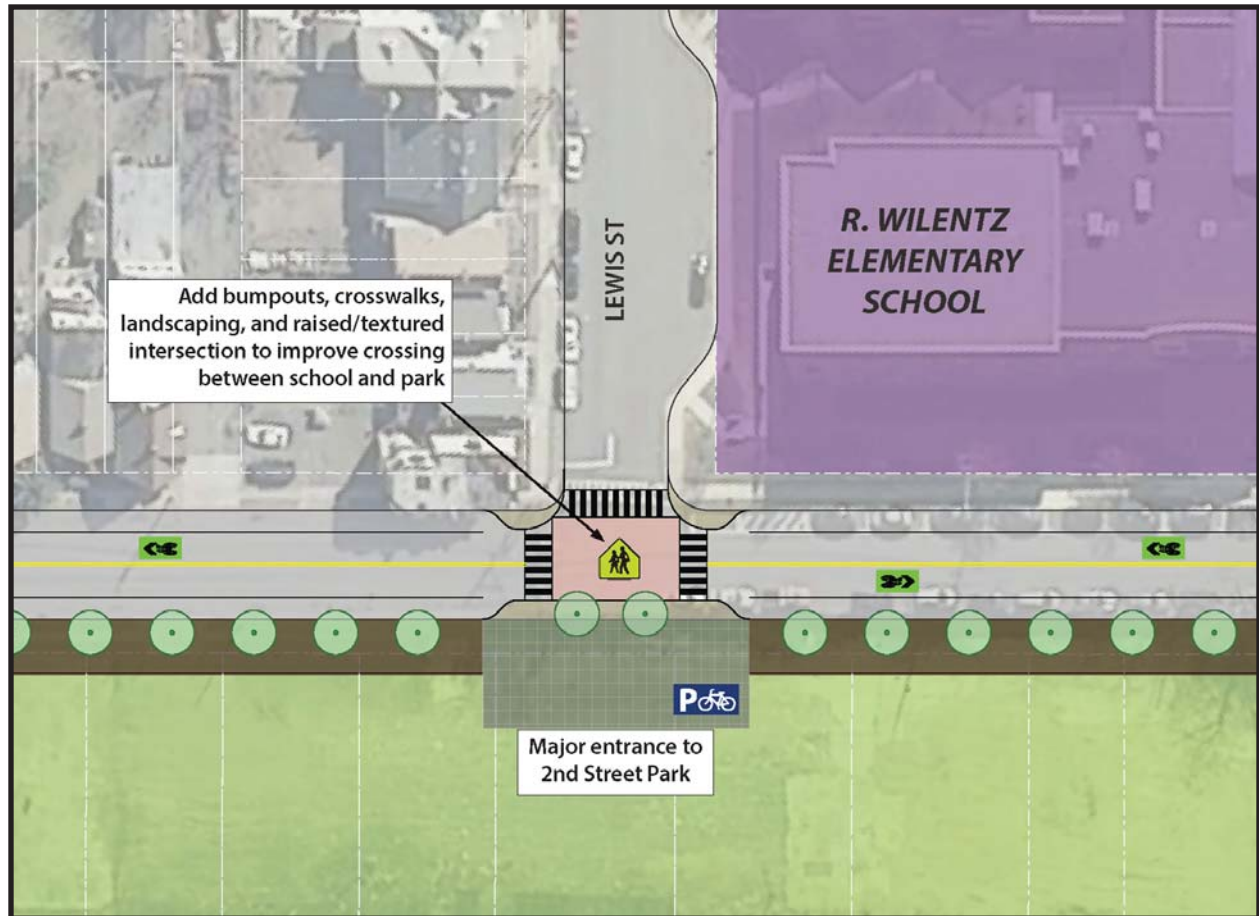
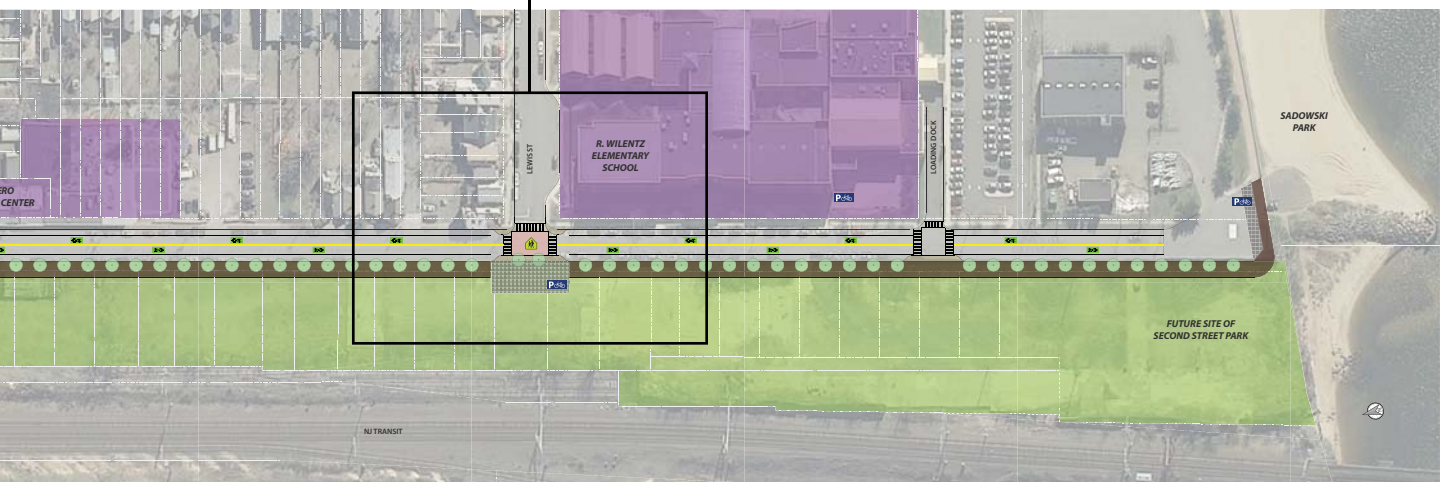


Figure 10 - Typical Intersection Treatment



## Hall Avenue Corridor

Hall Avenue is a very important route for school travel, with Perth Amboy High School, Schull Middle School, and two elementary schools located along the street or within close proximity. Hundreds of students from neighborhoods to the south cross Hall Avenue on the way to and from school, and crossing guards are located at seven intersecting streets – Jacques, Johnstone, Penn, Charles, Cortland, Elizabeth, and High. Hall Avenue was also identified as a “crash corridor” through the crash analysis, with a pedestrian fatality, three serious pedestrian injuries, and five intersection crash clusters. Recommendations to improve pedestrian safety along Hall Avenue include:

- Establishing a school zone along Hall Avenue (see discussion of school zones below)
- Reducing the posted speed limit from 25 mph to 20 mph accompanied by a speed reduction education/outreach effort (see adjacent example from Hoboken, along with discussion on Page 50)
- Adding in-street pedestrian crossing signs (R1-6a in MUTCD) at key intersections; for instance, at signed School Crossing locations near schools and either end of the bridge near Catherine Street
- Improving pedestrian visibility by “daylighting” intersections (see discussion of treatments on Page 24)

### School Zones

School zones can be established along school access routes to alert drivers to the high concentration of children and remind them to treat the area with special care and attention. Components of a school zone typically include school zone signage, school crossing signage at uncontrolled crosswalks, and a reduced speed limit. Establishing and enforcing a proper school zone speed limit is critically important, as driving just 5 mph slower can have a profound impact on the safety of pedestrians.

The City should work with the Perth Amboy School District to establish school zones city-wide to improve safety for children walking and biking to local schools. Designating a school zone is accomplished by local action, and school zones do not need to be adopted by municipal ordinance or resolution. One available resource is the *New Jersey School Zone Design Guide*, which was published by NJDOT in 2014 and provides information that municipalities and school districts can use to implement school zones.

**Not So Fast!**

**SPEED  
LIMIT  
25**


BUT

**TWENTY  
IS  
PLENTY  
20**


DRIVING JUST 5MPH SLOWER CAN SIGNIFICANTLY DECREASE THE LIKELIHOOD OF A PEDESTRIAN'S DEATH IN A COLLISION.

Pedestrians Chance of Death If Hit by a Motor Vehicle

Speed	Chance of Death
20 mph	5%
30 mph	45%
40 mph	85%



PLEASE WATCH AT INTERSECTIONS FOR CHILDREN, DISABLED, ELDERLY, BICYCLISTS, PEDESTRIANS, AND OTHER VEHICLES.  
*Drive Safely, Hoboken*



**HOBOKEN PARKING UTILITY**

94 Washington Street • Hoboken, NJ 07030 • parking@hobokennj.org • 201.663.1919

IAN SACCI, P.E.  
Director Of Transportation & Parking

**Hoboken Speed Reduction Campaign**



**In-street  
Pedestrian  
Crossing Sign**



**Typical Pedestrian Crossing on Hall Avenue**

## Pfeiffer Boulevard Corridor Improvements

Pfeiffer Boulevard (NJ Route 184) separates neighborhoods to the south – along with Columbus Circle Playground - from neighborhoods and activity generators to the north such as Veteran’s Memorial Park, Flynn Elementary School, and the proposed site for the new Perth Amboy High School. The road forms a barrier to pedestrian and bicycle travel, with a posted speed limit of 40 mph and no pedestrian crossings over a ½ mile segment between Florida Grove Road (CR 655) and Convery Boulevard (Route 35). This segment was the location of a pedestrian fatality and a serious pedestrian injury over the most recent 10-year period.

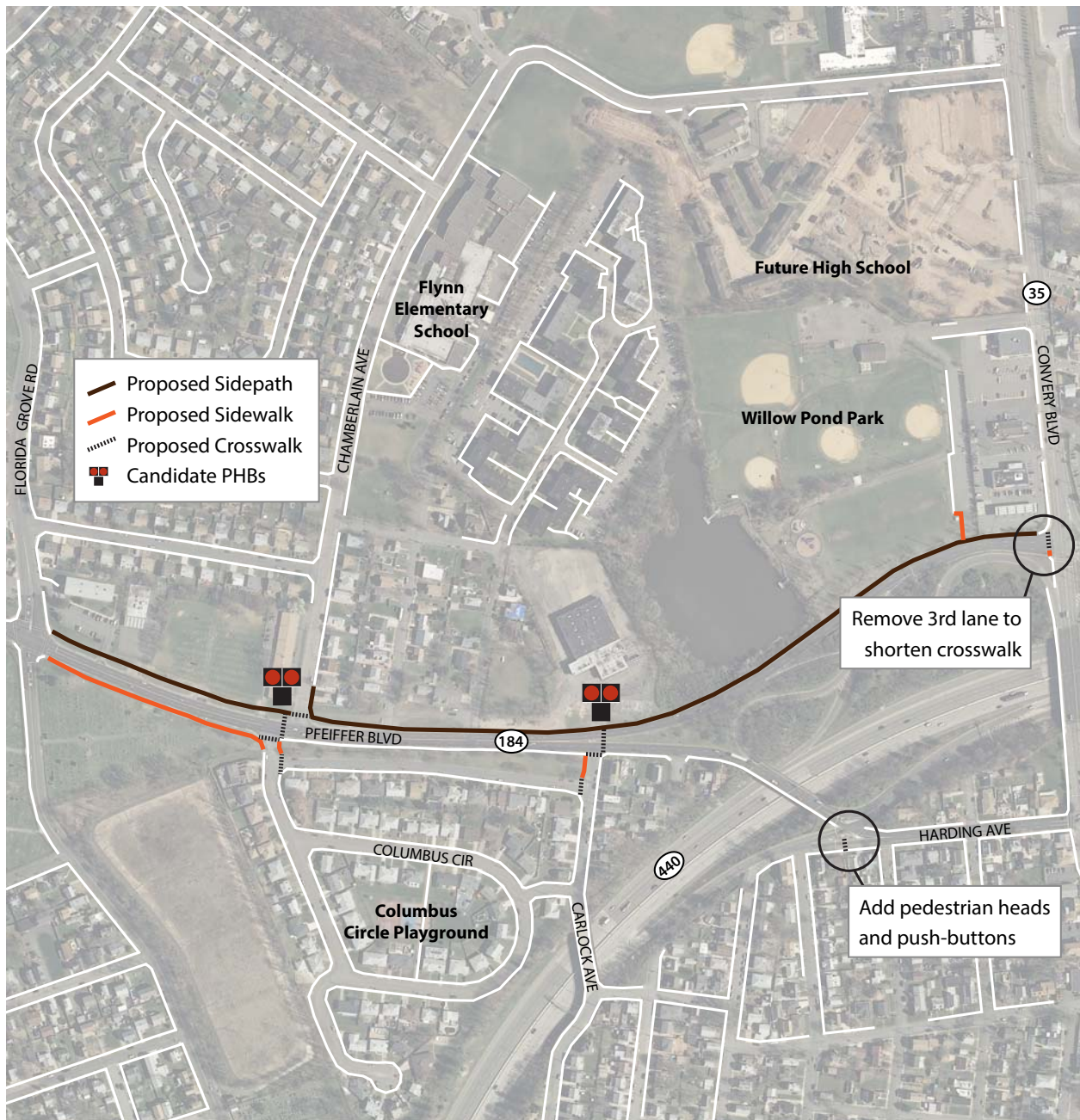
**Figure 11** presents a comprehensive strategy for improving pedestrian and bicycle conditions along this stretch of road, including pedestrian access to the destinations listed above. For travel along Pfeiffer Boulevard, a shared-use path is proposed along the north side of the road to serve bicyclists and pedestrians. In addition, new pedestrian crossings are recommended at Columbus Drive and Cartlock Avenue. Due to Pfeiffer Boulevard’s high operating speeds, multilane cross-section, and average daily traffic volumes that exceed 20,000 vehicles, both intersections are candidate locations for a Pedestrian Hybrid Beacon (PHB).



**Existing Crossing of  
Pfeiffer Boulevard at Columbus Drive**



**Existing Crossing of  
Pfeiffer Boulevard at Route 35**



**Figure 11 - Pfeiffer Boulevard Improvements**

# BICYCLE PLAN

## A. FUTURE BICYCLE NETWORK PLAN

**Figure 12** shows the recommended future bicycle network for Perth Amboy. Each link within the future bicycle network is color-coded according to the recommended facility type, which are described in this section. The plan was developed to connect major destinations within the city and make bicycling a viable alternative for citywide travel. Desired bicycle routes were identified based on the location of activity generators, input from the public and other stakeholders, and physical characteristics of the street network. Specific facility types for each identified route were determined based on street characteristics – curb-to-curb widths, posted speed limits, and traffic volumes – and guidance from the Steering Committee.

The majority of Perth Amboy’s street network consists of one travel lane and one parking lane in each direction, which limits the ability to provide separated bicycle facilities. On-street parking is not allowed within bike lanes; therefore, at least one parking lane would need to be removed from streets that are not wide enough to accommodate separate bike and parking lanes. On-street parking is an important component of the city’s transportation network – both for transportation and economic development purposes – and in general was retained on both sides of city streets. One exception is Fayette Street, which was identified as a candidate street for parking consolidation if the City desires to implement east-west bicycle lanes through the central business district. Also, while not shown as part of the future bicycle network, Perth Amboy has numerous low volume/ low speed residential streets that are bikeable without additional treatments.

### Shared Lane Markings

Shared lane markings (commonly referred to as “sharrows”) are appropriate on streets where the posted speed limit is low enough to accommodate bicyclists and motor vehicles in the same lanes (35 mph or less). They are useful in situations where providing separate facilities for cyclists is difficult due to insufficient width. Shared lane markings on the pavement increase the visibility of cycling along a street and provide guidance to the cyclist on the proper location to ride. Similar to bike lane symbols, sharrows should be placed after each intersection and then spaced as required in the MUTCD. Shared lanes markings are recommended for the following streets and corridors in Perth Amboy (shown in **Figure 12**):

- **New Brunswick Avenue (CR 616):** Between Florida Grove Road and Fayette Street
- **Market Street (CR 658):** Between Goodwin Street and High Street
- **Amboy Avenue (CR 653):** Between I-440 and New Brunswick Avenue
- **Rector Street:** Between Fayette Street and Washington Street
- **Pulaski Avenue:** Between Catherine Street and State Street
- **Hall /Pacific/Brace Corridor:** Between Florida Grove Road and State Street
- **Goodwin/Sherman/Patterson Corridor:** Between Fayette and the existing waterfront trail
- **Fayette Street:** Entire length (both SLMs and BLs are options for Fayette Street)
- **2<sup>nd</sup>, Elm, Washington, Patterson, & Front Streets:** Entire length





**Figure 12 - Future Bicycle Network Plan**

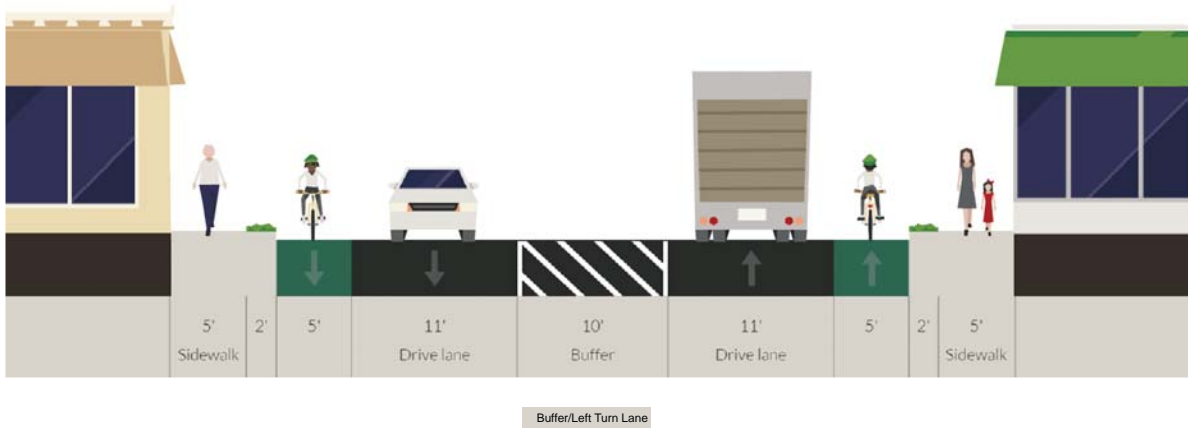
## Bike Lanes

Bike lanes are portions of the roadway that are reserved for the exclusive use of cyclists through designated signage, striping, and pavement markings. Bike lanes increase the comfort of cyclists by providing a dedicated space, increase driver awareness of cycling, and increase the predictability of bicycle and motor vehicle movements. Bike lanes travel in the same direction as motor vehicle traffic and should be a minimum of 5 feet wide on curbed roadways. While 5 feet wide bike lanes are typical, wider lanes are often desirable on streets with higher traffic speeds and volumes, a high percentage of heavy vehicles, on-street parallel parking, and/or relatively steep inclines.

At 7 feet wide or wider, a buffered area can be striped to further separate bike traffic from motor vehicle traffic and/or the door zone of parked vehicles. When bike lanes are placed next to parking, these buffered areas enable bicyclist to ride outside of the “door zone” where drivers enter and exit vehicles. Where possible, a 2 foot wide separation between the parking lane and the bike lane is desirable. Parking is not permitted inside of the bike lane. Drainage grates can also pose a hazard for cyclists if the openings are parallel to the direction of travel. Bicycle safe drainage grates must be installed on all roads with bike lanes.

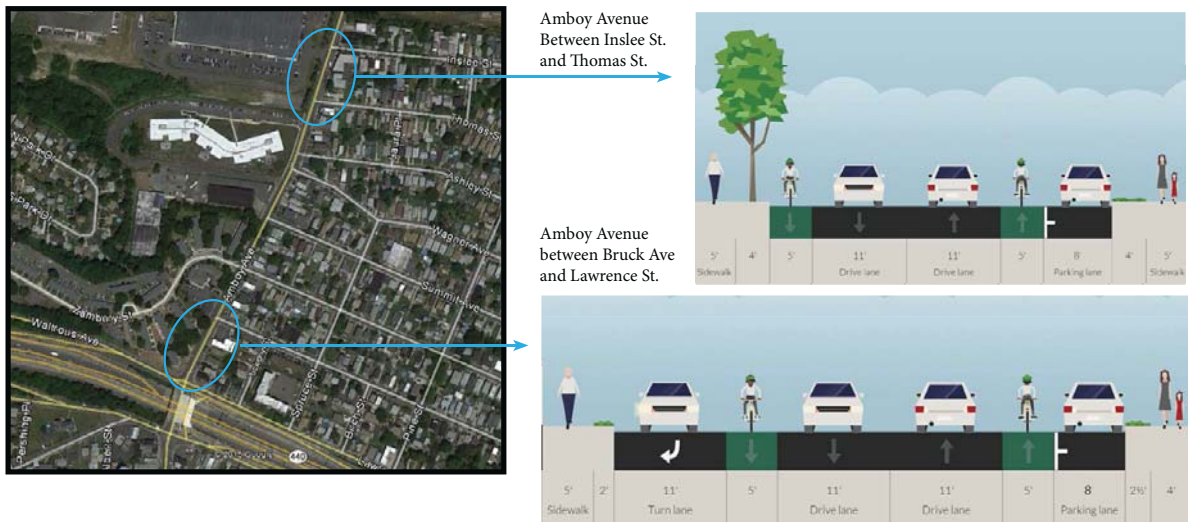
Bike lanes are recommended for the following streets in Perth Amboy:

- **Convery Boulevard (Route 35):** Sufficient width for bicycle lanes is contingent on implementing a conversion to two travel lanes with a center turn lane and bicycle lanes (i.e. Road Diet), which is a recommendation in Perth Amboy’s Master Plan Circulation Element (see **Figure 13**)
- **Amboy Avenue (CR 653):** North of I-440, existing width is sufficient to stripe bicycle lanes in both directions (see **Figure 14**)
- **State Street (CR 611):** North of Rudyk Park, existing width is sufficient to stripe bicycle lanes in both directions
- **Florida Grove Road (CR 655):** Sufficient width for bicycle lanes is contingent on restricting on-street parking to one side of the road and shifting the roadway centerline
- **Lawrence Street/Grove Street:** Existing width on each one-way street is sufficient to stripe a bicycle lane in the direction of travel; the two streets would form a couplet between Amboy Avenue and Dillman Lane
- **Maple Street:** Existing width is sufficient to stripe a southbound bicycle lane on this one-way street; would be paired with shared lane markings on Elm Street
- **Hall Street:** Existing width is sufficient to stripe buffered bike lanes between State Street and High Street
- **High Street:** Existing width is sufficient to stripe bicycle lanes in both directions, with minor street modifications (more detail is provided under High Street Bicycle Lanes)
- **Buckingham Avenue:** Sufficient width for bicycle lanes in this one block stretch (between High St and waterfront) is contingent on restricting on-street parking to one side
- **Fayette Street:** Sufficient width for bicycle lanes is contingent on restricting on-street parking to one side of the road and shifting the roadway centerline (see **Figure 15**). Both SLMs and BLs are options for Fayette Street.



**Figure 13 - Route 35 Road Diet**

Source: Circulation Element, BFJ Planning



**Figure 14 - Amboy Avenue Bike Lanes**

Source: Circulation Element, BFJ Planning

## Shared Use Paths

Shared use paths (also referred to as “multi-use trails”) provide a dedicated pathway for bicycles and pedestrians that is physically separated from motor vehicle traffic. These facilities can be placed along roadways, through parks, or along other rights of way such as rail corridors. **Figure 12** shows existing shared use paths in Perth Amboy, which include sections along the waterfront, in Rudyk Park, and adjacent to State Street.

New shared use paths proposed for Perth Amboy are discussed under the Middlesex County Greenway Extension section. Shared use paths should be a minimum of 10 feet wide to accommodate bi-directional traffic, but additional width may be necessary or desirable in areas with high bicycle and pedestrian demand. In congested areas, centerline striping can help clarify the direction of traffic and organize pathway traffic. Signage can also be used to remind bicyclists to yield to pedestrians and pass on the left, and remind slower users to keep right (a variety of sign options are provided in Part 9 of the MUTCD).

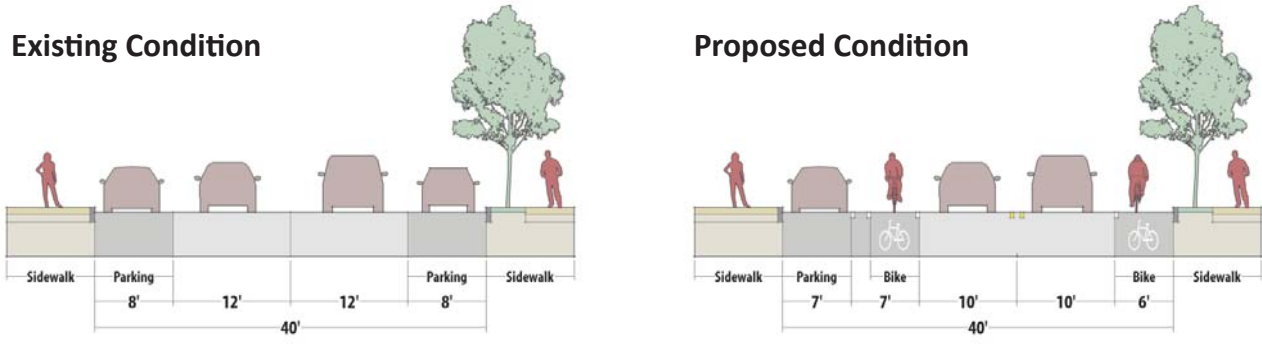
## Sidepaths

Sidepaths are a category of shared use paths located adjacent to the roadway. They should be designed with an adequate buffer between the path and the roadway, and careful design is necessary to minimize conflicts with side street crossings and driveways. The following sidepaths are recommended to provide key connections within the future bicycle network:

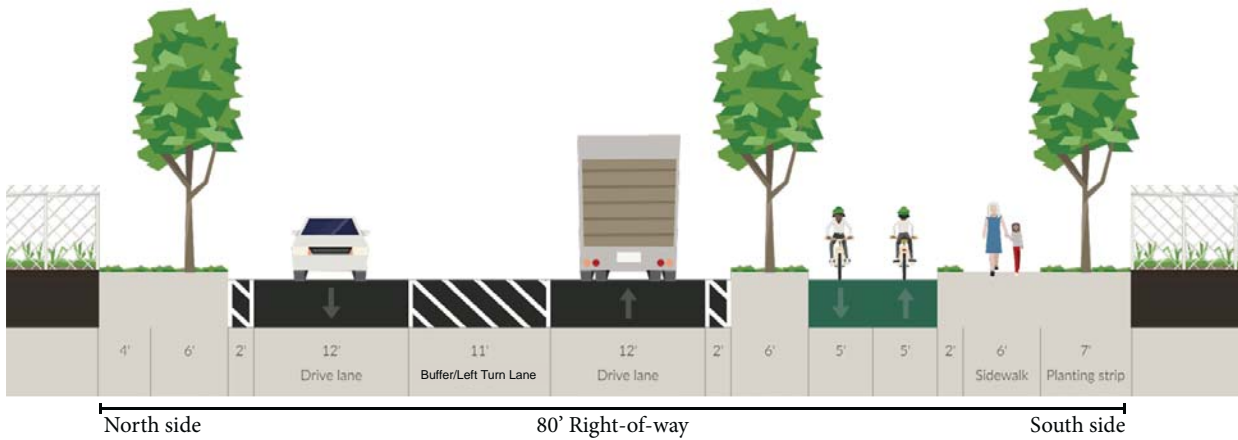
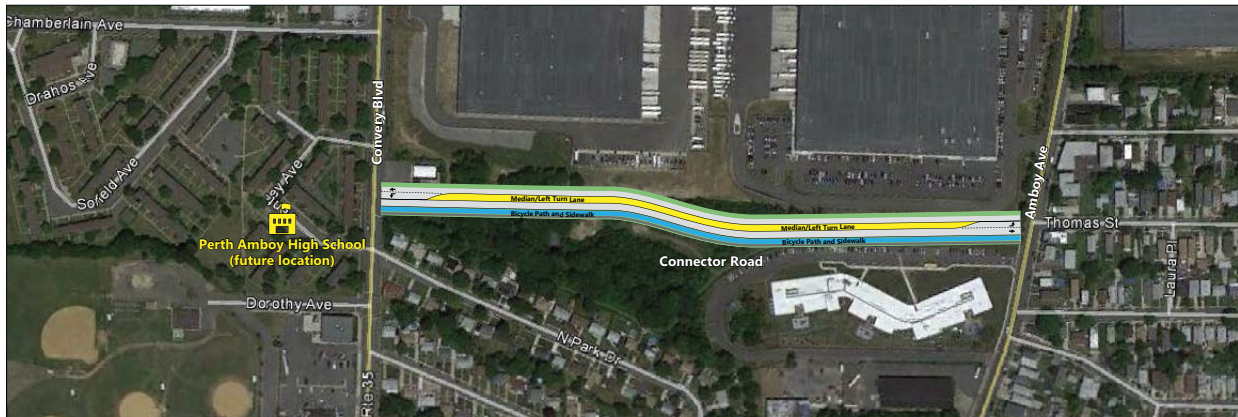
- **Pfeiffer Boulevard (Route 184):** Approx. 3200’ between Florida Grove Road and Route 35 on the north side of the road
- **Route 440 Connector (CR 624):** A short 500’ section to connect a future extension of the Middlesex County Greenway Extension with shared lane markings on Goodwin Street
- **Riverview Drive:** Approx. 2100’ to connect existing bike lanes over the Route 35 bridge with the existing waterfront trail at Raritan Riverfront Park
- **Proposed Connector Road:** Approx. 1800’ along the south side of this proposed road between Convery Boulevard and Amboy Avenue (see **Figure 16**)
- **Train Station Redevelopment Site:** A separated bicycle/pedestrian path that would provide access to Perth Amboy Train Station from both Fayette Street and Market Street; to be integrated into future redevelopment plans for this area.
- **Gerdau Ameristeel Redevelopment Site:** A separated bicycle and pedestrian path running through the Gerdau Ameristeel site that would connect Elm Street with Patterson Street; to be integrated into future redevelopment plans for this area.

## Pedestrian Walk

The City is actively planning to create a continuous walkway and trail system along the waterfront, from the Victory (Route 35) Bridge to Harbortown. The waterfront segments shown in **Figure 13** as existing or future Shared Use Paths have (or are intended to have) characteristics that enable use by both pedestrians and bicyclists – including adequate width and curve radii. The waterfront segment shown as a Pedestrian Walk (between Gordon Street and Washington Street) is intended for pedestrian use only due to constrained width, tight turns, and other features that make bicycling inappropriate in this section. Shared Lane Markings on Front Street and Rector Street are recommended to provide a continuous bicycling route parallel to the Pedestrian Walk segment.



**Figure 15 - Fayette Street Bike Lanes**



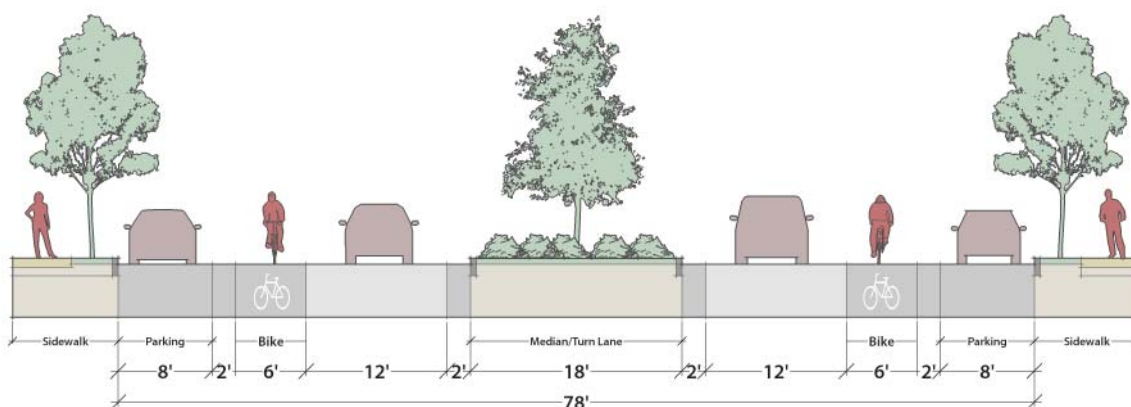
**Figure 16 - Proposed Connector Road Sidepath**

Source: Circulation Element, BFJ

## B. HIGH STREET BICYCLE LANES

With a generous curb-to-curb width for most of its length, High Street presents a unique opportunity within Perth Amboy to provide continuous bike lanes connecting the northern portion of the city to the downtown area, marina, and waterfront. **Figure 17** shows how curb-to-curb widths vary along High Street and provides a recommended configuration for each segment. These segments are described below:

- **State Street to Long Ferry Road (north end of Harbortown):** This segment of High Street has two travel lanes and a shoulder in each direction. The travel lanes will need to be narrowed and restriped to provide adequate width for bicycle lanes.
- **Long Ferry Road to Great Beds Court (south end of Harbortown):** High Street through Harbortown features an 18 foot wide center median, with one travel lane and on-street parking in both directions. As shown in **Figure 18**, this segment has sufficient width to accommodate bike lanes in both directions.



**Figure 18 - Proposed Cross Section (Harbortown)**

- **Great Beds Court to Buckingham Avenue:** There is enough width in this segment to extend the Harbortown median south to Buckingham Avenue while striping bike lanes adjacent to the existing parking lanes. Paint striping is an interim option for delineating the median area prior to installing a raised and/or landscaped median.
- **Buckingham Avenue to Washington Street:** The curb-to-curb width narrows from 60 to 50 feet in front of the Perth Amboy Vocational School, which is located on the west side of this block. Approximately 100-200 feet of on-street parking on the west side of the street would need to be eliminated to allow enough width to stripe a bicycle lane in each direction. Plans for new parking facilities for the Vocational School should consider the loss of these on-street spaces.

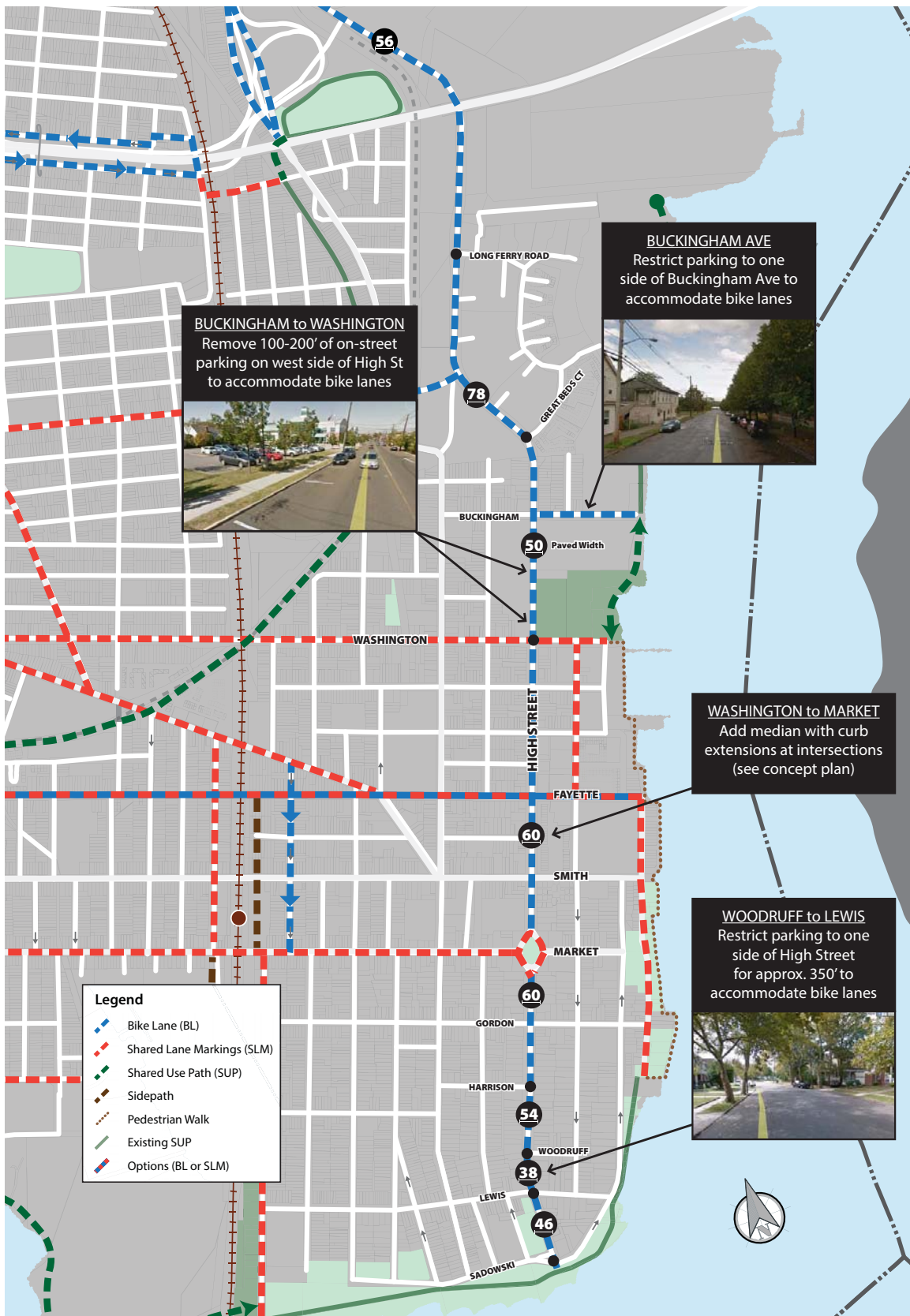
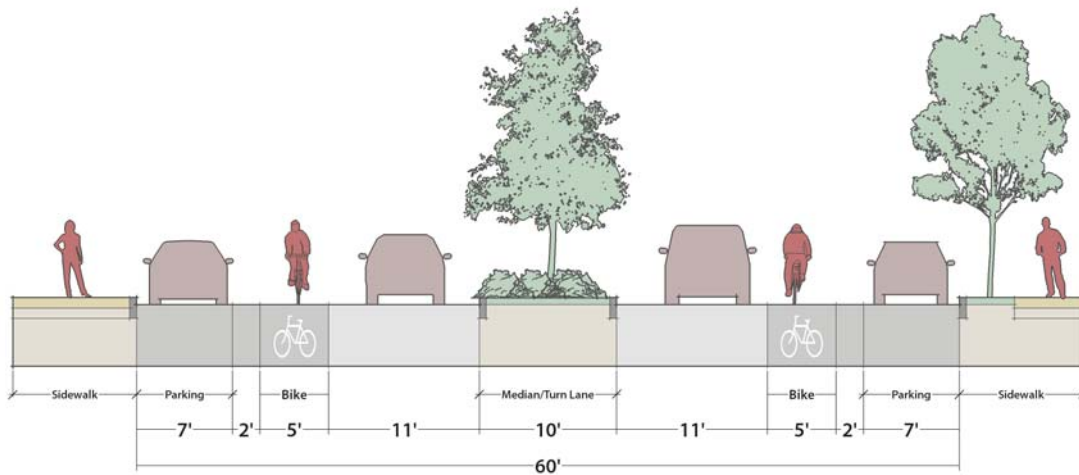
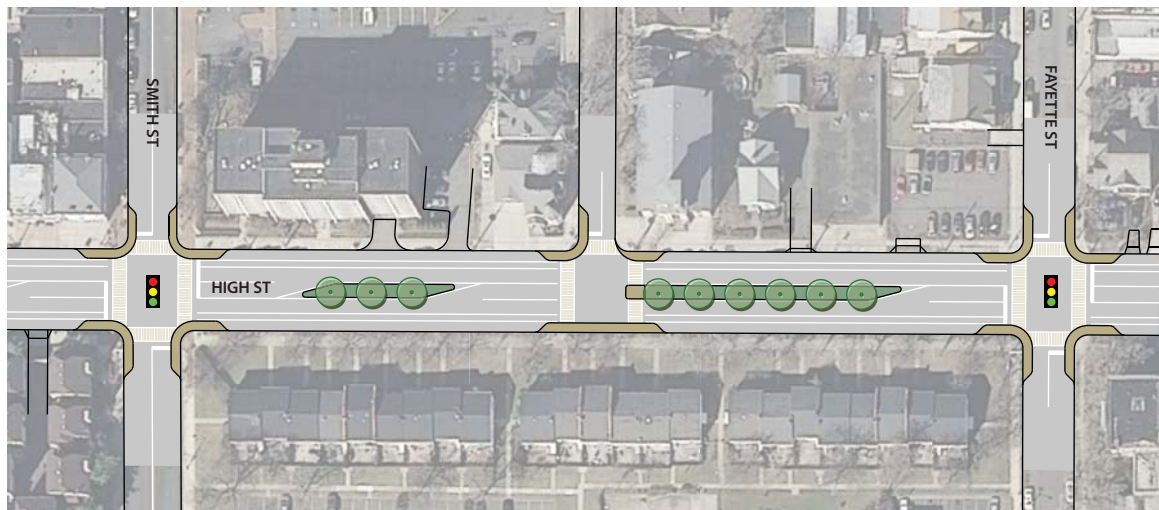


Figure 17 - High Street Bicycle Lanes

- Washington Street to Market Street:** This segment of High Street has a 60 foot wide curb-to-curb width and represents the eastern edge of the downtown area. **Figures 19 and 20** show a proposed roadway configuration for this segment that would transform the street from a wide auto-dominated road to a complete street with bicycle lanes and a landscaped median. At intersections, the median would be used as a turn lane for left turning vehicles, which would help to reduce conflicts between through bicyclists and vehicles using the bike lane to pass turning vehicles. Curb extensions and high-visibility crosswalks are also proposed through this segment to reduce pedestrian crossing distances and improve the streetscape. Paint striping is an interim option for delineating the median area prior to installing a raised and/or landscaped median.



**Figure 19 - Proposed Cross Section (Washington to Market)**



**Figure 20 - Proposed Concept Plan (Washington to Market)**



- **Market Street to Woodruff Place:** This segment, which is also 60 feet wide, has a more residential character than the commercial segment north of Market Street and features large street trees, lower traffic volumes, and angled parking. The proposed configuration for this segment is to convert the existing parking on the east side of the street to head-out angled parking and install bicycle lanes. A median is not proposed for this segment.



- **Woodruff Place to Lewis Street:** Where High Street bends just south of Woodruff Place, the street width narrows to a minimum of 38 feet. On-street parking would need to be restricted to one side of the street for a short segment (around 200') to allow space for a bicycle lane in each direction.



- **Lewis Street to Sadowski Parkway/Waterfront:** The southern-most segment is wide enough to accommodate bike lanes in its current configuration and would connect the High Street bicycle route with the waterfront trail in Sadowski Park.

## C. MIDDLESEX COUNTY GREENWAY EXTENSION

One of the City’s main objectives is to plan for a future regional trail system that will connect residents and visitors with the waterfront and other key destinations throughout Perth Amboy. This study investigated conceptual alignments for extending the Middlesex County Greenway into Perth Amboy. The alignment options shown in **Figure 21** were developed based on contour data, parcel lines, aerial photograph, and site visits. This figure also shows other existing and planned trails that the greenway should connect with including existing bike lanes on the Victory (Route 35) Bridge, the Sadowski Park trail system, and Rudyk Park. Specific sections of the proposed greenway extension are described below.

### Main Alignment Options

Two options were considered for the extension’s main alignment through Perth Amboy – one along New Brunswick Avenue (CR 616) and another along the CSX freight rail corridor. These alignments are not mutually exclusively, and could be developed as short and long-term options.

- **New Brunswick Avenue (CR 616) Option:** This alignment would run the greenway along New Brunswick Avenue from Woodbridge into downtown Perth Amboy. Due to the constrained street width and the need to retain on-street parking in this area, the recommended treatment is shared lanes designated by signage and shared lane markings. Jersey Avenue in Woodbridge could be used to make the connection between the existing Middlesex County Greenway (MCG) off-road trail corridor and the New Brunswick Avenue on-street alignment.
- **Rails with Trails Option:** This option would extend the MCG along either the north or south side of the freight rail tracks from the existing trail terminus in Woodbridge to Rudyk Park. Preserving the railroad corridor for freight rail service along the currently inactive corridor is necessary to serve markets to the southwest of Perth Amboy. Therefore, an extension of the greenway will need to be located adjacent to the existing rail tracks. Four existing rail bridges will need to be widened, replaced, or circumvented with a parallel structure to provide space for both the greenway and rail service (see **Figure 21**).



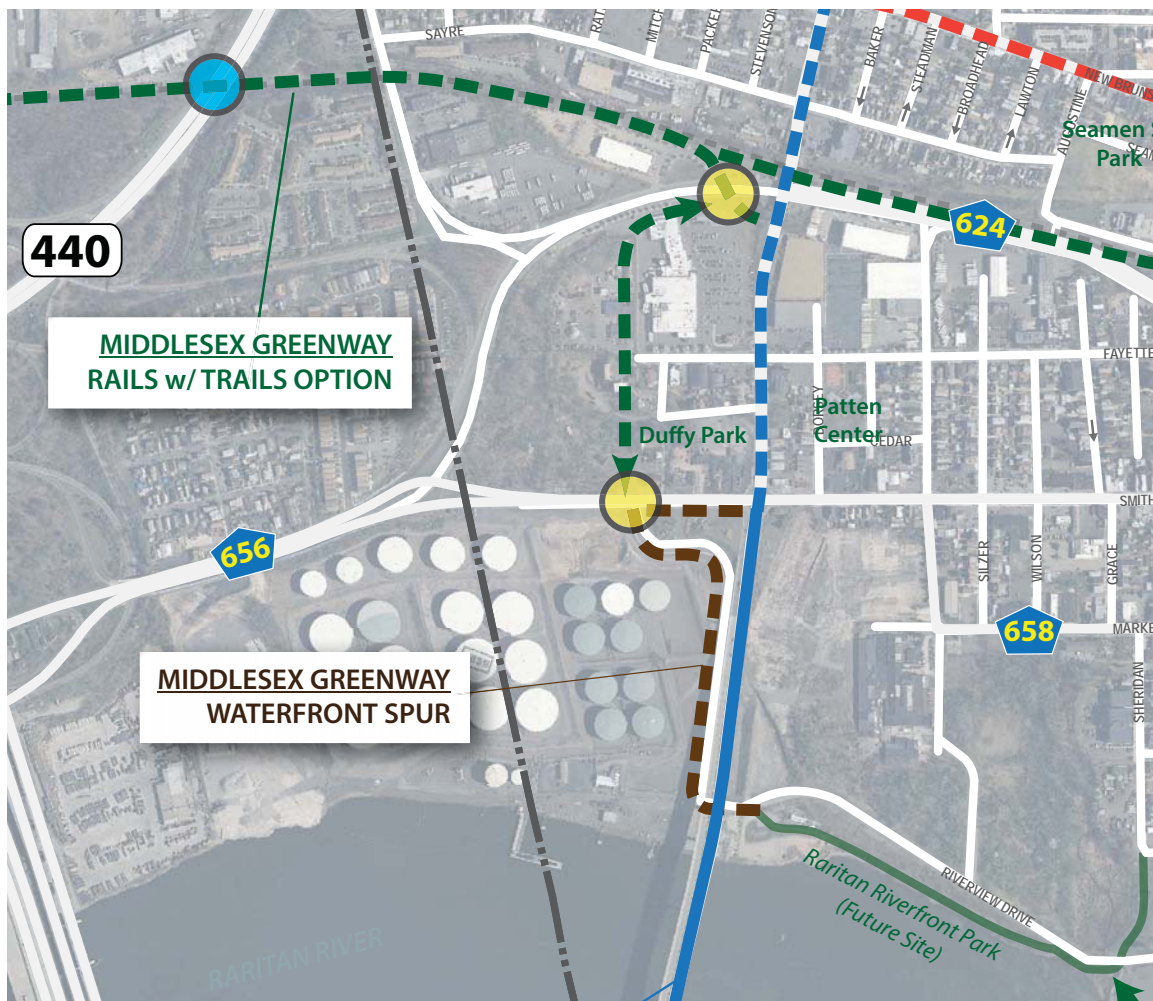
**Existing MCG**



**Figure 21 - Middlesex County Greenway Extension: Alignment Options**

## Waterfront Spur

Creating an off-road connection between the greenway extension and the waterfront trail system would expand non-motorized access to the waterfront for both residents and visitors. It would also connect the Middlesex Greenway to Perth Amboy's portion of the New Jersey Coastal Heritage Trail, which begins at the waterfront. Alignment options were investigated to connect the Rails with Trails Option to the future Raritan Riverfront Park at the base of the Victory Bridge. The proposed "spur" alignment shown in **Figure 22** would branch off the freight rail right-of-way just west of the Route 35 overpass and cross the 440 Connector Road via a new at-grade pedestrian crossing (discussed in the Pedestrian Plan). From there, the trail would head south/southwest through a City-owned parcel and cross Smith Street via a new traffic signal at Riverview Drive (also discussed in the Pedestrian Plan). The trail would then run as a sidepath along Riverview Drive and connect with the existing trail at Raritan Riverfront Park.



**Figure 22 - Waterfront Spur**



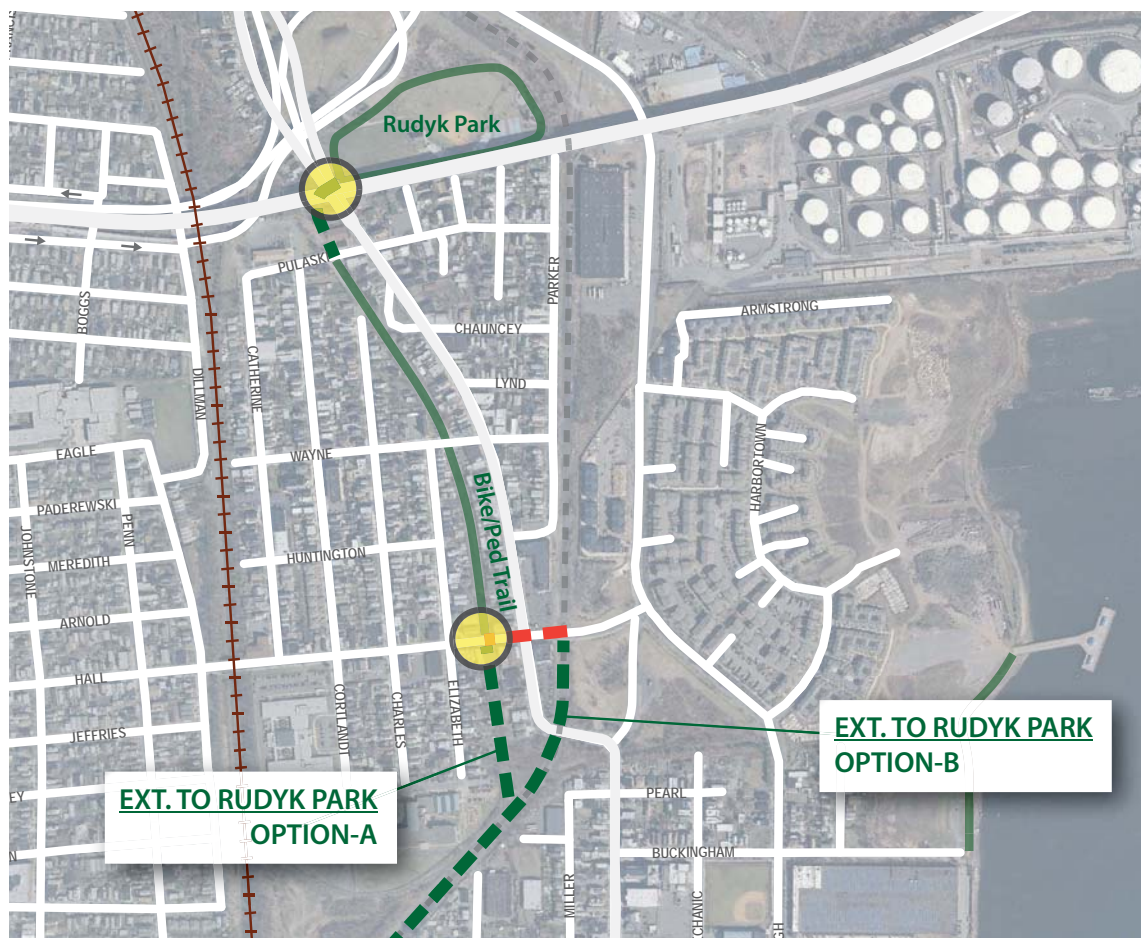
**Proposed Pedestrian Crossing Location on 440 Connector**



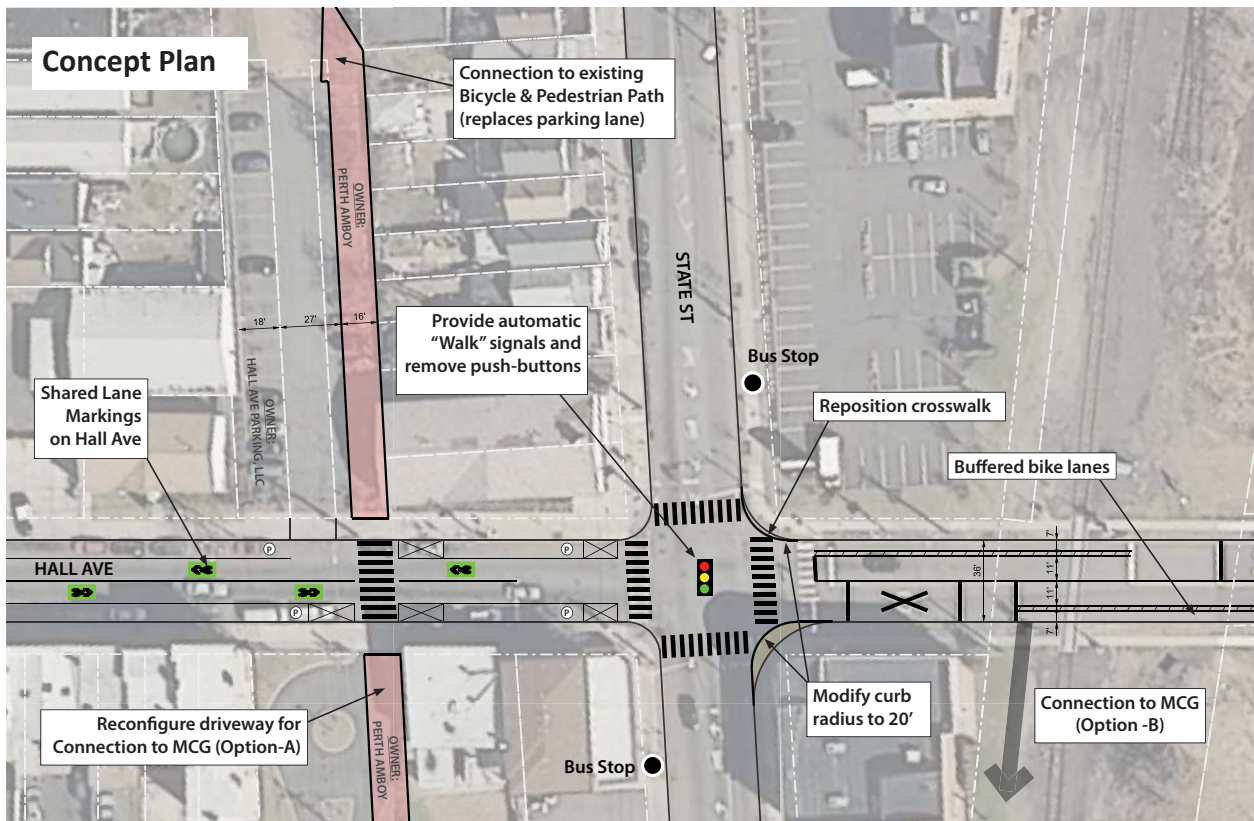
**Proposed Riverview Drive Sidepath Corridor**

## Access to Rudyk Park

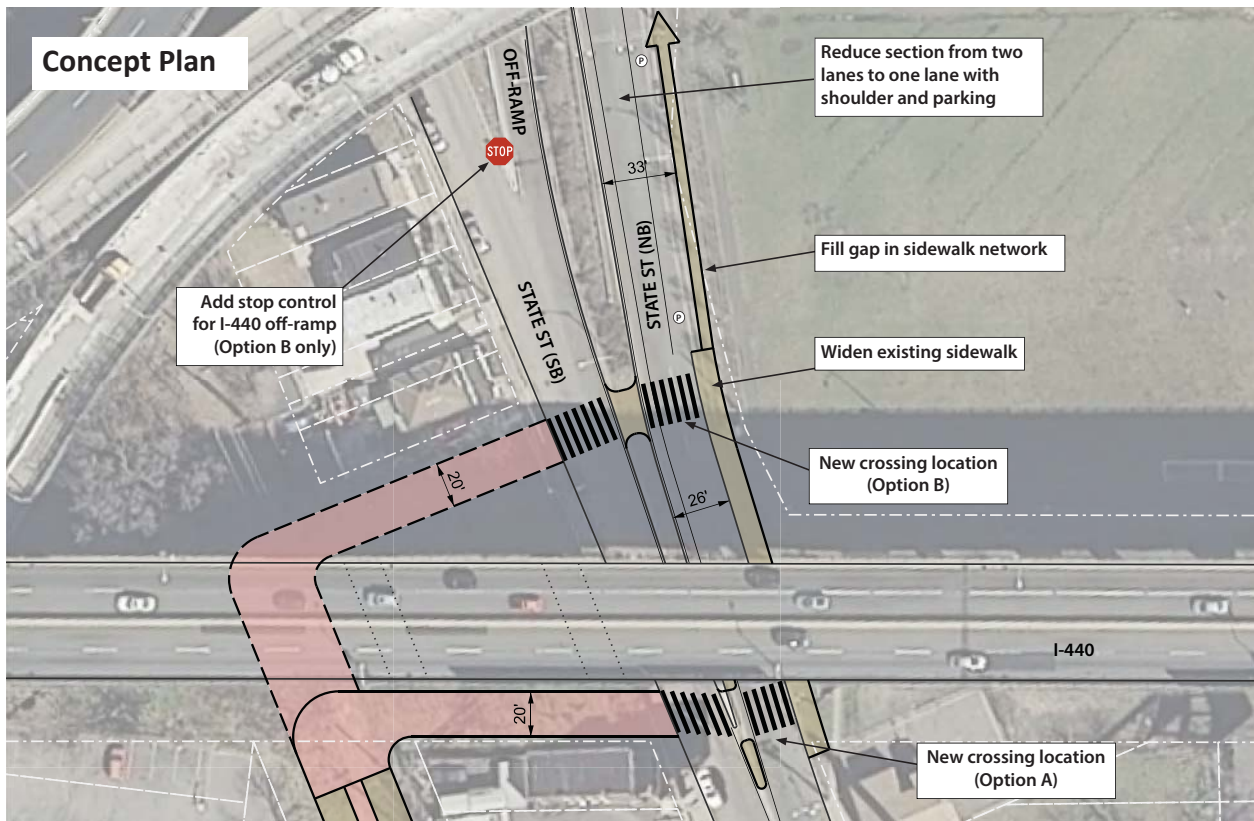
Two alignment options (see **Figure 23**) were considered east of the NJ TRANSIT line to connect the Rails with Trails Option with Rudyk Park. The primary option (Option A) would branch north off the freight rail corridor to connect with the existing Bicycle & Pedestrian Trail and then continue on to Rudyk Park via an extension of the trail to State Street; this alignment would require modifications to the access driveway of a carwash located on the west side of State Street. An alternative alignment (Option B) is shown using the at-grade crossing at Hall Avenue to access the existing Bicycle & Pedestrian Trail. **Figure 24** shows where both of these corridors would run relative to the State Street intersection with Hall Avenue. It also shows pedestrian improvements that are recommended at State and Hall to accommodate either (or both) options. **Figure 25** shows two potential options for extending the existing Bicycle & Pedestrian Trail north into Rudyk Park. Both options would cross State Street via a new at-grade crossing that features a median refuge island, high visibility crosswalks, and connecting sidewalk. The availability of right-of-way and sight distance along State Street are important considerations for further study in determining the preferred option.



**Figure 23 - Extension to Rudyk Park**



**Figure 24 - State Street at Hall Avenue**



**Figure 25 - Crossing Options to Rudyk Park**



## **D. BICYCLE ROUTE/DESTINATION SIGNAGE**

Bicycle Destination Signs (D1-1 through D1-3 in the MUTCD) are recommended along on-road and off-road bicycle routes to direct path users to important destinations within the city, such as the waterfront, downtown, and City Hall. These signs should be placed at major intersections along each route, and should be designed in accordance with Perth Amboy's adopted municipal public access plan. Bicycle Route Guide Signs (D11-1) signs should be placed at regular intervals along the Middlesex County Greenway Extension and the waterfront trail system to inform bicyclists approaching the path from side streets that they are entering a bicycle route.

## **E. BICYCLE PARKING**

Bicycle parking is important at activity generators including businesses, schools, transit stops, public facilities such as libraries or recreation centers, and other employment centers. Secure, well-lit bicycle parking located close to building entrances and transit entry points can make bicycling more attractive. It also reduces the risk of bicycle damage or theft.

Bicycle parking can be provided in the form of bike racks and corrals, or more secure facilities such as bike shelters and lockers. Bike racks are relatively low cost, have a small footprint, and can be customized to match or enhance local aesthetics. Bike corrals have a larger footprint and provide storage for multiple bicycles. Bike shelters provide secure, covered protection for multiple bicycles, while bike lockers provide added protection from theft by using an enclosed storage space. It is recommended that bicycle parking be added to destinations throughout the city including:

- City Hall (bike racks and/or corrals)
- Schools (bike racks, corrals, and/or shelters)
- Parks and other recreational areas (bike racks and/or corrals)
- Commercial streets (bike racks on sidewalk along with on-street corrals)
- Bus stops – particularly those serving two or more routes (bike racks and/or shelters)
- Perth Amboy Train Station (bike racks, corrals, shelters, and/or lockers)

## **F. BIKE SHARE SYSTEM**

Bike share is an urban transportation concept based on collective use of a distributed supply of bicycles. The bike share concept was pioneered (in its current form) in Europe and is now being implemented, designed, and/or studied in many North American cities. Through this system, bicycles are made available for shared use to individuals on a short term basis. A major benefit of bike share is that people are allowed to borrow a bike from point "A" and return it at point "B". Given the success in other Northeastern cities, including Hoboken, it is recommended that the City study the feasibility of implementing a bike share system in Perth Amboy. Many of the activity generators listed in the previous section – including Sadowski Park, Rudyk Park, and Perth Amboy Train Station – would be candidate locations for bike share stations.

## POLICY & PROGRAM RECOMMENDATIONS

The bicycle and pedestrian recommendations outlined earlier in this plan are designed to provide safe and convenient access to activity generators for non-motorized forms of transportation. While “engineering” solutions can go a long way to meet this need, a successful bicycle and pedestrian program also relies on policy and program-related recommendations. Program recommendations can improve conditions for bicyclists and pedestrians by focusing on education, enforcement, and encouragement actions, while policy actions that benefit bicycle and pedestrian travel can have long-lasting effects with minimal or even no financial cost.

### A. POLICY RECOMMENDATIONS

#### Modifications to Municipal Code

The portions of Perth Amboy’s City Code that cover bicycle and pedestrian issues – Chapter 158 (Bicycles), Chapter 386 (Streets & Sidewalks), and Chapter 430 (Zoning & Land Development) – were reviewed to understand how these sections of the code influence bicycle and pedestrian conditions. The modifications to the code described below are recommended to improve conditions for bicycle and pedestrian travel and create a more comfortable environment for walking and biking in Perth Amboy:

##### Bicycle Licensing (§ 158-1 through 8)

This section sets forth licensing requirements for bicycle travel in the city. However, these requirements are unnecessary, difficult to enforce, set unfair burdens on bike usage, and may discourage regional bicycle trips to destinations within the city – especially for bicyclists from nearby municipalities that do not have similar requirements. The City should remove this requirement.

##### Block Lengths (§ 430-65)

Section 430-65 specifies a minimum block length of 1000’ feet for non-collector roads. The minimum length should be eliminated, as longer blocks create longer walking routes and less connectivity for pedestrians. Also, policies should be put in place to sustain and reinforce Perth Amboy’s traditional grid system.

##### Sidewalk Width (§ 430-77)

The minimum sidewalk specified in Section 430-77C of the City’s code is 4 feet. The minimum width should be set at 5 feet. Five feet, which is the space needed for two people walking side by side to pass a third, is now being recommended as the minimum sidewalk width in *ITE’s Designing Walkable Urban Thoroughfares*, *the Public Right-of-Way Access Guidelines (PROWAG)*, and the forthcoming *AASHTO Guide for Pedestrian Facilities*.

### Local Street Design (§ 430-81)

Section 430-81 E(1) expresses a preference for cul-de-sac or loop streets for local streets. This section should be removed, as these types of design increase walking lengths and decrease connectivity for pedestrians.

### Street Trees (§ 430-85)

Section 430-85 prohibits street trees from being planted within 5 feet of future or existing sidewalks. This may preclude the use of street trees on many of the city's streets where there is limited right-of-way and/or sidewalk width. Street trees have been documented to provide many benefits including increased property values, shade, stormwater management, and aesthetics (among others). Therefore, this section should be removed to allow street trees to be planted within the landscape/utility zones of sidewalk corridors. If damage to sidewalks or utilities due to street trees is a concern, the City can develop a Recommended Street Tree Species List identifying allowable tree species that are suitable for planting in urban conditions. Many cities – including Philadelphia – have developed similar lists that are publicly available.

## **Bicycle Parking Ordinance**

The City should add a bike parking ordinance to their code to further support bicycling trips throughout the city. Bike parking ordinances typically require that bicycle parking is provided with new development and redevelopment. The number of required bike parking spaces is usually determined by the following development characteristics:

- Square footage
- Number of residential units
- Number of employees
- Number of auto spaces
- Minimum spaces per use (i.e. restaurants)

## **B. PROGRAMS RECOMMENDATIONS**

### **Education & Enforcement**

Crash data analysis shows that engineering improvements alone will not reduce the incidence of pedestrian injuries and fatalities. Sustained education, coupled with enforcement, has proven over time to be highly effective in changing behaviors and improving safety.

The goal of an effective education program is to increase public awareness of non-motorized travel modes, and to teach safe behavior to walkers, cyclists, and motorists. Pedestrians, cyclists, and motorists all need to be taught how to co-exist safely, and that each is a legitimate user of the road. Successful education strategies can help motivate a change in specific behavior, and teach safety skills that can reduce the risk of injury. These programs also help raise awareness of pedestrian and bicycle issues.

Bicycle/pedestrian education programs for children help encourage walking and cycling at an early age. Adult education is also an important component of a successful program. To reach its residents, Perth Amboy should consider publishing bi-lingual bicycle and pedestrian materials on their website. For instance, a map showing the bicycle network can help encourage cyclists to use designated routes – while also teaching motorists to expect cyclists on these routes. Rules of the road, along with biking and walking policies, could also be posted to the website.

#### Street Smart NJ

Street Smart NJ is a public education, awareness, and behavioral change pedestrian safety campaign created and coordinated by the North Jersey Transportation Planning Authority (NJTPA) that has proved successful at changing travelers' behavior so that they are making smarter, safer decisions on the road. The campaign was first piloted in 2013 in five New Jersey communities – Hackettstown, Jersey City, Long Beach Island, Newark, and Woodbridge – and demonstrated the value of community-based efforts to change pedestrian and motorist behavior to improve safety.

The campaign uses radio, outdoor, and transit advertising – along with grassroots public awareness efforts and law enforcement – to address pedestrian safety. Communities and organizations can use the strategies and materials that are available on NJTPA's website to create their own campaigns that build on the successes realized in the initial pilot communities.

### **Encouragement**

Improvements to the bicycle and pedestrian network can encourage more use, but other strategies can also be used to encourage people to walk or bike instead of driving. For example, the health benefits of active transportation should be advertised and reinforced regularly. Other methods include:

### Bicycle Maps and Brochures

The City should consider developing maps and brochures that identify existing bicycle and pedestrian routes and connections, including pedestrian bridges and tunnels. By highlighting preferred routes for walking and biking, these maps can be useful to both residents and visitors. Maps can also contain information about the benefits of non-motorized transportation, walking and biking safety tips, relevant traffic laws, bicycle parking locations, and information about local biking or walking groups.

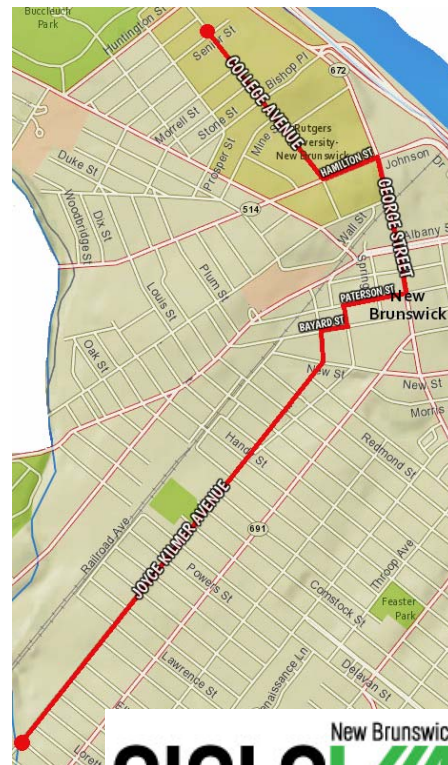
### Open Streets Events

Open Streets initiatives temporarily close streets to automobile traffic, so that people may use them for walking, bicycling, playing, socializing, and other activities. These events also allow residents to explore streets and neighborhoods that they may otherwise avoid due to traffic concerns.

A local example is the New Brunswick Ciclovía, which was initiated in 2013 as a way to promote healthy, active living and provide a safe place for people to exercise and play. During Ciclovía, a 3-mile route traversing both residential and commercial areas of New Brunswick became temporarily car-free for five hours. Families were able to walk, run, skate, ride bikes, and enjoy sponsored activities along the route. A similar event in Perth Amboy could be a fun and exciting way to encourage bicycling and walking in the city.



**New Brunswick Ciclovía**  
(source: [www.newbrunswickciclovía.com](http://www.newbrunswickciclovía.com))



## IMPLEMENTING THE PLAN

The range of actions necessary to implement this plan vary based on the recommended facility type and character of the existing street (or corridor). Improvements may be as simple as adding pavement markings and signage, or require more complex actions such as moving curblines or constructing new sidewalks and shared use paths. Some of the recommendations will require additional planning and engineering efforts and may take years to implement, while others could be achieved in a shorter timeframe. The plan also contains policy and program recommendations, some of which can be implemented at little to no cost.

The concepts and recommendations presented in this plan were developed in accordance with current design guidance, but are not fully engineered. Implementation of many of the recommendations will require engineering studies to refine design elements related to traffic warrants, right of way, drainage design, utilities, and other considerations. This study did not investigate whether existing curb ramps or other pedestrian features are compliant with current ADA standards.

Detailed implementation tables were developed for both the Pedestrian Plan (**Figure 26**) and the Bicycle Plan (**Figure 27**). These tables include a description, estimated timeframe, order-of-magnitude cost, and lead implementation agency for each recommendation.

### **Project Phasing and Priority**

Since the projects and programs presented in this plan would be developed over many years, the priority of the improvements is an important consideration. Recommended timeframes for major plan elements are included in each implementation matrix, while Immediate Action items are described in more detail below.

### **Immediate Actions**

Several of the project and program recommendations in this Plan could be implemented soon after it is adopted. These immediate action items will improve pedestrian and bicycle conditions in specific areas, creating early successes. These items will also build momentum for implementing the other recommendations.

### **Immediate Actions: Programs and Policies**

- Adopt this Plan through the local master planning process as the Bicycle and Pedestrian Component of the Circulation Element
- Use this Plan as a basis for future Safe Routes to School, Safe Routes to Transit, Bikeways, and Municipal Aid applications
- Implement recommended modifications to the City Code

### **Immediate Actions: Planning and Development**

- Partner with Middlesex County to implement sidewalk and bicycle network recommendations along County roads
- Submit a Problem Statement to NJDOT for corridor improvements along Pfeiffer Boulevard (including sidewalk improvements and crossing improvements)

### **Project Funding**

The City can pursue implementation of the Plan's recommendations through its planning and engineering policies, including their adopted Complete Streets Policy. The City can also use this Plan to pursue funding through grants programs such as FHWA's Transportation Alternatives Program and NJDOT's Safe Routes to School, Municipal Aid, and Bikeways Programs.

Additionally, the New Jersey Transportation Planning Authority (NJTPA) has developed networking screening lists for pedestrian intersections and corridors. Numerous intersections within Perth Amboy – including several along State Street, Smith Street, Fayette Street, among others – rank high on these lists. NJTPA, in conjunction with NJDOT in 2005, has established a Local Safety Program (LSP) that can provide funding to advance selected safety improvements on county and eligible local roadway facilities within its region.

PEDESTRIAN PLAN						
Category	Location	Quantity / Description	Complexity	Cost	Priority	Jurisdiction
Sidewalks / Other Connectivity	Convery Boulevard (Route 35) - East Side	3000' of new sidewalk between Dorothy Ave & Florida Grove Road	Med	\$\$\$	Med	State
	Pfeiffer Boulevard (Route 184) - South Side	670' of new sidewalk between Florida Grove Road and Convery Boulevard	Low	\$\$	High	State
	State Street (CR 611) - East Side	1000' of new sidewalk between Rudyk Park and High Street	Low	\$\$	High	County
	Florida Grove Road (CR 655) - East Side	1050' of new sidewalk between Florida Grove Manor and 440 Connector Road	Low	\$\$	Med	County
	440 Connector Road (CR 624) - North Side	650' of new sidewalk between Florida Grove Road and Convery Plaza	Low	\$\$	Med	County
	Underpass between Catherine St & Dillman Lane	Re-open existing underpass contingent on safety/visibility improvements	High	\$\$\$	Med	NJ Transit
	Code Modifications - Walkability Improvements	Modify street tree, street design, block length requirements	NA	NA	High	City
	Code Modifications - Minimum Sidewalk Width	Increase minimum to 5 feet	NA	NA	High	City
Pedestrian Crossings (MIDBLOCK CROSSINGS)	State Street (CR 611) across from Rudyk Park	Marked crosswalk with median refuge island	Med	\$\$	High	County
	Riverview Drive (between Herbert St and Grant St)	Marked crosswalk at existing trail crossing	Low	\$	Med	City
	Hall Avenue (between State St and Elizabeth St)	Marked crosswalk at future trail crossing	Low	\$	Med	City
Pedestrian Crossings (NEW TRAFFIC CONTROL)	Pfeiffer Blvd (Route 184) at Columbus Circle	Candidate Pedestrian Hybrid Beacon	Med	\$\$	Low	NJDOT
	Pfeiffer Blvd (Route 184) at Cartlock Avenue	Candidate Pedestrian Hybrid Beacon	Med	\$\$	Med	NJDOT
	Convery Boulevard (Route 35) at Sayre Avenue	Candidate Pedestrian Hybrid Beacon	Med	\$\$	High	NJDOT
	Market Street (CR 658) at Goodwin Street	Candidate Traffic Signal	Low	\$\$	High	County
	Market Street (CR 658) at 2nd Street	Candidate Traffic Signal	Low	\$\$	High	County
	Smith Street (CR 656) at Goodwin Street	Candidate Traffic Signal	Low	\$\$	High	County
	Smith Street (CR 656) at Riverview Drive	Candidate Traffic Signal	Low	\$\$	Med	County
	440 Connector Road (CR 624) at Convery Plaza	Candidate Pedestrian Hybrid Beacon	Med	\$\$	Low	County
	Proposed Connector Road at Convery Blvd	Candidate Traffic Signal	Low	\$\$	Med	City
	Proposed Connector Road at Amboy Avenue	Candidate Traffic Signal	Low	\$\$	Med	City
Intersection Improvements (EXISTING CROSSINGS)	Convery Boulevard (Route 35) at Pfeiffer Blvd	Full signal upgrade	Low	\$\$	High	NJDOT
	Convery Boulevard (Route 35) at I-440 Ramps	Pedestrian crossing improvements	Low	\$\$	High	NJDOT
	Convery Boulevard (Route 35) at Harding Avenue	Full signal upgrade	Low	\$\$	High	NJDOT
	Convery Boulevard (Route 35) at Harrington Street	Full signal upgrade	Low	\$\$	Low	NJDOT
	Convery Boulevard (Route 35) at Brace Avenue	Full signal upgrade	Low	\$\$	Med	NJDOT
	Convery Boulevard (Route 35) at Compton Avenue	Full signal upgrade	Low	\$\$	Low	NJDOT
	Convery Boulevard (Route 35) at Lawrie Street	Full signal upgrade	Low	\$\$	Med	NJDOT
	Convery Boulevard (Route 35) at New Brunswick Ave	Full signal upgrade	Low	\$\$	High	NJDOT
	New Brunswick Ave (CR 616) at Florida Grove Road	Full signal upgrade	Low	\$\$	Low	County
	Amboy Avenue (CR 653) at Washington Street	Full signal upgrade	Low	\$\$	Med	County
	Amboy Avenue (CR 653) at Grove Street	Full signal upgrade	Low	\$\$	Low	County
	Amboy Avenue (CR 653) at Lawrence Street	Full signal upgrade	Low	\$\$	Low	County
	State Street (CR 611) at Hall Avenue	Full signal upgrade	Low	\$\$	High	County
	Fayette Street at High Street	Full signal upgrade	Low	\$\$	Low	City
	Market Street (CR 658) at 2nd Street	Curb extensions, crosswalks, SWM	Med	\$\$	High	County
	New Brunswick Avenue (CR 616) at Washington Street	Curb extensions, crosswalks, SWM	Med	\$\$\$	Med	County
	New Brunswick Avenue (CR 616) at Fayette Street	Curb extensions, crosswalks, SWM	Med	\$\$\$	Med	County
Perth Amboy High School - Area Traffic Management	Multi-way stops and crosswalks	Low	\$\$	Med	City/BOE	
Corridor Improvements	Commercial Corridors (General)	Curb extensions, crosswalks, other	Med	\$\$-\$	Med	County
	- Five Corners Intersection	Automatic WALK Signals	Low	\$	High	County
	- State Street at Hall Avenue	Automatic WALK Signals	Low	\$	Med	County
	2nd Street	Curb extensions, crosswalks, SWM	High	\$\$\$	High	City
	Hall Avenue	Signage, daylighting, school zones	Low	\$	Med	City

Figure 26 - Implementation Table for Pedestrian Plan



BICYCLE PLAN						
Category	Location	Quantity / Description	Complexity	Cost	Priority	Jurisdiction
Shared Lane Markings	New Brunswick Avenue (CR 616)	Florida Grove Road to Fayette Street	Low	\$\$	High	County
	Market Street (CR 658)	Goodwin Street to High Street	Low	\$\$	Med	County
	Amboy Avenue (CR 653)	I-440 to New Brunswick Avenue	Low	\$\$	High	County
	Rector Street	Fayette Street to Washington Street	Low	\$	Med	City
	Hall Avenue/Pacific Avenue/Brace Avenue	Florida Grove Road to State Street	Low	\$\$	Med	City
	Goodwin Street/Sherman Street	Fayette Street to existing trail	Low	\$	High	City
	Pulaski Avenue	Catherine Street to State Street	Low	\$	Med	City
	2nd Street	Entire length	Low	\$	High	City
	Elm Street	Entire length	Low	\$	High	City
	Fayette Street (Bike Lanes are also an option)	Entire length	Low	\$	Med	City
	Front Street	Entire length	Low	\$	High	City
Patterson Street	Entire length	Low	\$	Low	City	
Washington Street	Entire length	Low	\$	Med	City	
Bike Lanes	Convery Boulevard (Route 35)	Entire length (contingent on road diet)	Med	\$\$	High	NJDOT
	Amboy Avenue (CR 653)	I-440 to Convery Boulevard	Low	\$\$	Med	County
	State Street (CR 611)	North of Rudyk Park	Low	\$\$	Med	County
	Florida Grove Road (CR 655)	Convery Boulevard to Sayre Avenue	Med	\$\$	Med	County
	Lawrence Street/Grove Street	Amboy Avenue to Dillman Lane	Low	\$	Low	City
	Maple Street	New Brunswick Ave to Market Street	Med	\$	High	City
	Hall Street	State Street to High Street	Low	\$	Med	City
	High Street	State Street to Water Street	Med	\$\$	High	City
	Buckingham Avenue	High Street to Waterfront	Med	\$	High	City
	Fayette Street (Sharrows are also an option)	Entire length	Med	\$\$	Low	City
Sidepaths	Pfeiffer Blvd (Route 184) - North Side	3200' of new sidepath between Florida Grove Road and Convery Boulevard	High	\$\$\$	Med	NJDOT
	Route 440 Connector (CR 624) - East Side	500' to connect MCG with Goodwin St	Low	\$\$	Med	County
	Riverview Drive - West Side	2100' of new sidepath to connect Route 35 with Raritan Riverfront Park	Med	\$\$	High	City
	Proposed Connector Road - South Side	1800' of new sidepath between Convery Boulevard and Amboy Avenue	Low	\$\$	High	City
	Train Station Redevelopment Site	Path connecting Fayette Street and Market Street to the Train Station	Med	\$\$	High	City
	Gerdau Ameristeel Redevelopment Site	Path connecting Elm Street to Patterson Street	Med	\$\$	Med	City
Middlesex County Greenway Extension	Rails with Trails Alignment	Extension from Woodbridge to Rudyk Park	High	\$\$\$	Med	County
	Waterfront Spur	Spur connecting with Smith Street and waterfront	High	\$\$\$	Med	City
	Extension of existing Bicycle/Pedestrian Trail	Adjacent to State Street	Med	\$\$\$	Low	City
Other Bicycle-Related Recommendations	Bicycle Route/Destination Signage	City-wide bike signage system	Med	\$\$	Med	City
	Bicycle Parking Facilities	Various locations	Low	\$	High	City / Private
	Open Streets/Ciclovía Event	Education/encouragement event	Low	\$	Low	City
	Bicycle Brochures/Maps	Education/encouragement materials	Low	\$	Low	City
	Bike Share System	Further study to determine feasibility	High	\$\$	Low	City
	Bicycle Parking Ordinance	New ordinance	Low	NA	Med	City
	Elimination of Bicycle Licensing Requirement	Code modification	Low	NA	High	City

LEGEND:	COMPLEXITY & PRIORITY	COST
	(H) - High	\$ - 0 to \$10K
	(M) - Medium	\$\$ - \$10K to \$100K
	(L) - Low	\$\$\$ - \$100K +

**Figure 27 - Implementation Table for Bicycle Plan**

**CITY OF PERTH AMBOY  
BICYCLE & PEDESTRIAN PLAN**