

A **Strategic Vision** Plan
for the City of

perth
ambooy



The Edward J. Bloustein
School of Planning & Public Policy
Rutgers, The State University of New Jersey

Planting the Seeds
for Success



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Introduction

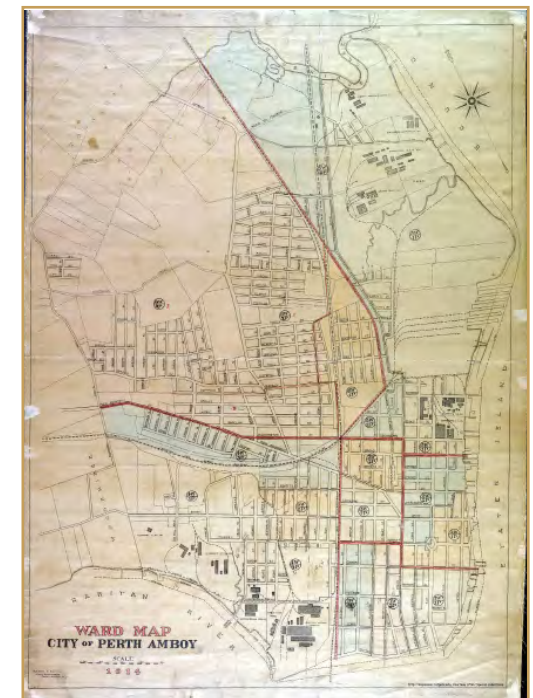
The City of Perth Amboy (the City) is in a period of transition and currently attempting to better position itself for the future. Changes in leadership have led to a desire for a new strategic direction. The City faces many challenges, but also has many assets. It needs to better understand those challenges, develop appropriate strategies, prioritize actions and marshal resources. This is precisely the role that assertive and pro-active planning should play.

The City's guiding planning and development documents are dated and lack strategic focus. Focus 2000 -- the City's Redevelopment Plan, which covers a substantial portion of the City -- was initially adopted in 1998. Although updated in 2003, it is now more than a decade old. Its emphasis and strategies need to be critically re-examined and re-evaluated, in light of what it has actually accomplished.

The City's Master Plan is also dated and largely lacking in strategic direction. The City's Zoning and Land Development Regulations desperately need to be re-examined. The whole planning and development framework needs to project a coherent, unified message, in line with contemporary planning thinking, in tune with demographic and economic trends and in support of a unified strategic vision.

The City has been aggressively pursuing technical assistance and grant opportunities from foundations (Wells Fargo), professional organizations (APA-NJ's Community Planning Assistance Program) and public agencies (Port Authority of New York and New Jersey, Together North Jersey and the New Jersey Department of Community Affairs).

With this support, the City has engaged in several worthwhile planning-related initiatives. One currently in the works is an application to NJDOT's Transit Village program, which seeks to provide priority funding and technical assistance to municipalities looking to develop around existing transit stations. But how should a greater (or different) planning emphasis on the area around the train station be integrated with the bigger picture? How can the transit village, the downtown, the three waterfront areas (recreational, residential and industrial), the residential neighborhoods, the commercial arterials and all the various pieces of the Perth Amboy puzzle be reconciled in a coherent, self-supporting way?



Sources: townmap usa, rutgers mapmaker

Only a strategic vision can clarify the role that each individual planning initiative should play and how these different areas and districts should converge to create a better community.



To go one step further, how is Perth Amboy unique, and different from other places, in Middlesex County, New Jersey and elsewhere? Is the City seeking to deal with generic challenges, for which off-the-shelf planning solutions might suffice, or is the City confronting challenges that result from those very forces and dynamics that make it unique, and different, and, as a result demand unique, custom-tailored planning responses?

Only a data-driven, empirically-based inquiry can provide the necessary answers, and lead to the appropriate strategies for how to better approach and resolve the existing challenges.



The Edward J. Bloustein School at Rutgers University was approached by the City to commission a graduate planning studio that would analyze the City's potential and assist in providing strategic direction. The plan described in this document is the product of the studio's work. It is an exercise in strategic thinking that attempts to address the future of the City from an outsider's perspective at bird's-eye view.

Over a period of three months, the Bloustein studio conducted fieldwork, undertook background research and met with stakeholders, to better understand both the real world conditions in the City and the local high priority items. The process was initiated by a group bus tour followed by a meeting with City agencies and officials. Regular meetings were held with City Planning staff. The studio also participated in steering committee meetings for the various planning studies actively underway. Studio members undertook multiple site visits on their own.

The findings from these inquiries were combined with the team's own analysis and thought process to formulate recommendations for the City's strategic direction. These recommendations were reviewed with key stakeholders within the City and presented to the City Council at a public meeting on December 9, 2013. It is believed that the recommendations contained in this report, if appropriately implemented, will help the City to better shape its own future instead of simply reacting to forces it does not control.

Figure 1: Public Meeting in Perth Amboy 9/25/13 and Resulting Issues Map

In the end, the studio team organized the strategic vision plan as a three-pronged approach focused on neighborhood stabilization and improved housing conditions, targeted economic development and a green infrastructure approach to transportation and environmental enhancement.



Vision Statement

The Strategic Vision Plan for the City aims to provide sound, cost-effective short-term and long-term recommendations to improve the livability of the City for residents, enhance the City as a destination for visitors, and “plant the seeds” for future investment. Prospective development should lead to a more balanced population in terms of age demographics and a stronger financial foundation, capitalizing on the city’s finest assets – a dense urban street grid, excellent accessibility to public transportation, and the most beautiful waterfront vistas in New Jersey between Hudson County to the north and the Atlantic shore to the south.

Seven interdependent objectives were identified as the most significant action items to guide future planning, research, and other resources to achieve the suggested improvements upon livability in the City:

1. ADDRESS THE ISSUES OF OVERCROWDING AND NEED FOR NEIGHBORHOOD STABILIZATION THROUGH HOUSING POLICY
2. CAPTURE THE LATENT VALUE OF THE RESIDENTIAL/COMMERCIAL WATERFRONT AREA OVER TIME
3. CAPITALIZE ON EXISTING INFRASTRUCTURE AND PROGRAMS TO ATTRACT THE RIGHT KIND OF INDUSTRY TO THE INDUSTRIAL WATERFRONT AREA
4. IMPROVE THE BUSINESS CLIMATE AND MINIMIZE RETAIL LEAKAGE THROUGH MORE STRATEGIC COMMUNICATION AND PLANNING
5. MITIGATE THE IMPACT OF COMBINED SEWER OVERFLOW (CSO) AND RESTORE WATER QUALITY \\ THROUGH THE IMPLEMENTATION OF GREEN INFRASTRUCTURE
6. ENHANCE TRAFFIC SAFETY AND CALMING MEASURES BY INCORPORATING COMPLETE STREETS DESIGN STANDARDS
7. CONNECT THE CITY BY REMOVING BARRIERS TO ACCESSIBILITY THROUGH THE USE OF NEW BIKEWAYS, PEDESTRIAN CONNECTIONS AND OPEN SPACE



Source: Carlos Rodrigues

ADDRESS ISSUES OF OVERCROWDING AND NEED FOR NEIGHBORHOOD STABILIZATION THROUGH HOUSING POLICY

As the key demographics in Table 1 display, Perth Amboy residents are much younger, significantly less affluent, substantially less educated and substantially less mobile when compared to the rest of Middlesex County.

These startling demographics become even more startling when we realize that they are not uniformly distributed throughout the City, but in fact are concentrated in the neighborhoods that constitute the southeast quadrant of the City.

Understanding the root causes behind these very significant demographic distortions – and finding and implementing the appropriate policy responses -- will be critical in order for Perth Amboy to make significant progress in addressing its challenges.

The housing stock in Perth Amboy increased from 14,114 year-round housing units in 1980 to 16,556 in 2010 – a net gain of 2,442 units, or a 17% increase.

Over the course of the same 30 years, the number of households increased from 13,617 to 15,419, a net increase of 13%; and the household size grew from 2.82 persons per household to 3.25, a net increase of 15%.

During the same period, the population increased 38,951 to 50,814. This represents a growth rate of 30%, or twice the growth rate of the housing stock.

	Perth Amboy	Middlesex County
Median Age	32.4	37.2
Median Household Income	\$45,369	\$78,622
Families Below Poverty Line	16.50%	4.90%
No High School Diploma	13.70%	6.00%
Households that do not own vehicles	23.30%	8.20%

Table 1: Key Demographics for City of Perth Amboy and Middlesex County
Source: U.S. Census Bureau, American Community Survey, 2007-2011 5-Year Estimates

This means that the housing stock is providing shelter for a growing population, and that the number of occupants per housing unit is substantially increasing.

But is this true for every type of housing unit?

The analysis of building permit data is very revealing in this respect. Between 1980 and 2012, the City issued a total of 2,105 building permits¹. Of these 670 (32%) were for new single-family structures, 110 (5%) for units in new two-family structures, 14 for new units in structures with 3 to 4 units, and 1,311 (62%) for units in structures with 5 or more housing units.

So almost 2/3 of the growth in new housing stock in Perth Amboy over the last 30 years has been in units in multi-family structures. These units tend to be considerably smaller than typical single-family structures, and are occupied by smaller households, often single person or two person households. It is therefore very unlikely that these new multi-family units are providing housing for the expanding households or that they can account for the growing household size.

This leads to postulation that a substantial portion of the City's population growth over the last 30 years has occurred through an increased occupancy in the City's single-family neighborhoods. Given the demographic indicators discussed above, it is likely that this growth has occurred in the older single-family housing stock and not in the new single-family units added to the housing stock. In other words, a substantial portion of the City's population growth has occurred through over-crowding of older single-family housing units.

A commonly accepted definition for overcrowding is a housing unit that has more than one person per room². To understand where the City ranks in terms of overcrowding the city was compared to Middlesex County. According to the 2007-2011 American Community

Survey 5-Year Estimate, the City had 6.9% of its population living in conditions where there were more than one person per room³, whereas for Middlesex County the rate of overcrowding is 3.4%⁴. In other words, Perth Amboy has double the level of overcrowding as Middlesex County as a whole. Figure 2 on the following page displays the percentage of overcrowded living units by Census tract in the City.

However, the levels of overcrowding are not uniform across City neighborhoods, and are in fact heavily concentrated in the southern neighborhoods. When the percentage of overcrowded units is mapped by census tract, the southernmost census tracts reveal the highest percentage of overcrowding at 10.3% and 11.5%.

As previously mentioned the city's population grew at double the rate of the housing stock between 1980⁵ and 2010⁶. Overcrowding of the existing housing stock by a population with lower economic means and lower educational levels will necessarily strain city resources and stress the physical environment.

While data on building code violations or building code-related complaints was not able to be obtained, there is ample anecdotal evidence to suggest that serious overcrowding in specific neighborhoods is indeed occurring. This was confirmed in informal conversations with interested stakeholders. Visual indicators, such as the number of mail boxes, utility meters, trash cans and recycling containers, cars and bicycles, poor property maintenance and others constitute signs of overcrowding.

Overcrowding raises public health and quality of life issues in the affected neighborhoods. It starts as a housing problem, but it has far ranging impacts, even beyond the housing sector. It also presents a number of other, potentially very serious implications for the host community, in terms of strains to its public school system, park system, recreational facilities, circulation system, and its water and

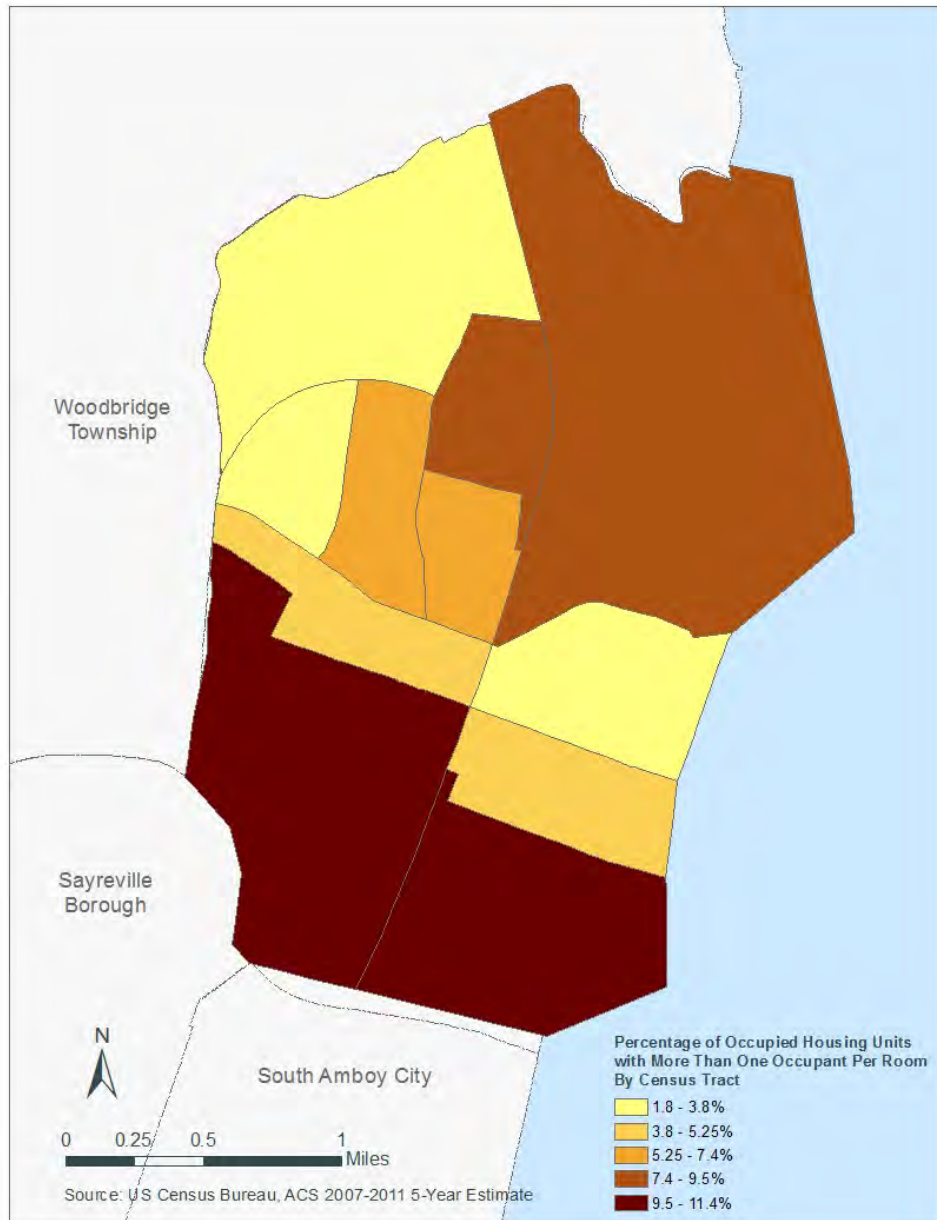


Figure 2: Percentage of Overcrowded Housing Units in Perth Amboy

sewer infrastructure. Perth Amboy faces challenges in each one of these areas. These challenges are not inevitable - indeed, they are avoidable.

Average household size is a key demographic indicator, which has been declining steadily in New Jersey communities and indeed throughout the nation. The fact that average household size in Perth Amboy has actually increased 15% between 1980 and 2010 runs counter to the overall trends and suggests that a very different dynamic is at play in Perth Amboy, a dynamic that requires close attention.

It is believed that understanding the true extent of overcrowding and the root causes behind it, and devising and implementing appropriate strategies to reverse it are paramount to the City's long-term sustainability. The first two recommendations are strategies aimed at addressing overcrowding, while a third recommendation highlights an opportunity for future housing efforts.

Code Enforcement

Limited staff resources, and lack of prioritization, mean that many violations of the City's housing code are not accounted for. While the housing code allows for adequate enforcement visits, it needs to become an explicit priority for the City's five code enforcement officers. To ensure adequate code compliance, it is also possible that additional resources will need to be provided to the code enforcement office so code violations can be discovered and remedied in a timely manner.

In addition, a rental unit registration program would also be an important step towards better housing conditions. Under a registration program, landlords of rental properties would be required to register with the code enforcement office, allowing the city to maintain an up-to-date and useful data base of landlords and rental properties.

To empirically document the overcrowding phenomenon, and uncover the driving forces behind it, the City should focus its efforts in the southern neighborhoods, where overcrowding is most prevalent. It is recommended that a field survey of the housing stock and living conditions be conducted. This will entail a door-to-door survey; interviews with homeowners, landlords and tenants; consultations with faith-based groups, non-profit social service providers and community development organizations; and interviews with City staff: code compliance, police, public works, and fire and emergency services.

The City can find a valuable precedent for these actions in *Illegal Dwelling Units: Potential Source of Affordable Housing in New York City*, a report to the New York City Department of Housing Preservation and Development⁷. This report was prepared by Chhaya Community Development Corporation with technical assistance provided by

Citizens Housing & Planning Council (CHPC). The intention of the report is to better comprehend illegal dwelling conversions in two New York City neighborhoods -- Jackson Heights and Briarwood Queens -- by identifying and evaluating housing with illegal residential conversions. The illegal conversions uncovered in the report were mainly basements that had been converted to one or two apartments. Chhaya and CHPC believed that gaining a full understanding of the underlying issues of overcrowding was a necessary precursor to bringing these illegal units up-to code, eliminating hazardous conditions and providing more housing. The most valuable lesson which can be drawn from this case study is the holistic approach in which the problem was understood.

Chhaya and CHPC used a grassroots approach of surveying that was aimed at both tenants and homeowners. Before the surveyors' field work was started, letters were sent to homeowners explaining the purpose and intent of the research and home visit to follow. Surveyors in the field used the Housing Vacancy Survey and expanded it to include questions about a secondary dwelling⁸. The surveying team



Figure 3: Accessory Housing Units in Perth Amboy

was composed of seven to ten people, all with language capabilities matching the neighborhood demographic. Surveys were handed out by teams of two during the evening and weekend hours over a period of two months. Among the overcrowding indicators mentioned were utility wiring, cable splitters, separate entrances, as well as the number of cars, mailboxes, trash cans, and doorbells.

Perth Amboy's community based organizations -- such as the Jewish Renaissance Foundation and Perth Amboy Redevelopment Team for Neighborhood Enterprise and Revitalization (PARTNER) – along with the Perth Amboy Housing Authority, and local faith-based organizations would be appropriate partners in implementing such a survey. Some of the most important findings to be uncovered in this survey would be:

1. The overall number of overcrowded/potentially overcrowded units
2. Living conditions in the overcrowded units
3. Demographic make-up of tenant population
4. What is motivating landlords to sub-divide units
5. What is motivating tenants to live in over-crowded conditions

The answers to these questions are key to understanding the forces driving overcrowding in these neighborhoods. The information collected from these surveys is critical to help guide and strengthen future policy related to housing.

Areas for New Housing Development

The City's Redevelopment Plan calls for a substantial number of new multi-family housing units along the Eastern waterfront, facing

the Staten Island Sound, through conversion of former industrial properties. This strategy has stalled for many years, as a result of a weak residential market, costs and complications involved with reclamation of former industrial lands, redeveloper travails and a host of other reasons.

While a strategy of promoting housing in the Eastern waterfront may be sound, in the long-term, the City should consider other locations for further housing development that do not require the substantial up-front costs in infrastructure, property acquisition and site remediation needed at that location. Sites in appropriate locations suitable for smaller, less capital-intensive housing development can continue to provide immediate opportunities for continued growth in the housing stock.

One approach is to target centrally-located, marginal non-conforming commercial and industrial uses, located in otherwise residential neighborhoods, and that might be redeveloped for housing.

To that effect, several areas in the City were identified that are ripe for new housing developments or for the conversion of commercial uses to residential uses. The primary areas are around the City's train station and the New Brunswick Avenue corridor. The train station is an excellent facility that can be used to attract commuters along with its proximity to downtown. The New Brunswick Avenue corridor has the infrastructure and the space to allow for new development in the area. Between New Brunswick Avenue and Smith Street, several areas of non-conforming uses were observed. The land, while zoned for residential use, is occupied by auto-related businesses.

In addition, several underutilized upper-floor commercial spaces that could have potential to be converted into residential space were identified. Figure 4 highlights these areas of interest.

This strategy is consistent with the recommendations of the Transit-Oriented Development Study recently conducted by Perkins Eastman and funded by Together North Jersey.

The City may have other hidden housing opportunities. In order to recognize these opportunities the city will need to expand its knowledge about its housing stock and its conditions. A more systematic and exhaustive analysis should be conducted. As mentioned, the focus should be on smaller, well-located parcels that can be redeveloped with a minimum of complications.

As part of this strategy, the City will need to determine how much of the new housing should be targeted for work-force housing and/or for households with incomes below the area median. Any decisions with respect to housing affordability should be informed by a better understanding of the underlying dynamics that have been driving the overcrowding conditions, and should be positioned, to the extent possible, to assist in providing relief from the demographic pressures brewing in the overcrowded neighborhoods.



Figure 4: Future Housing Area

Source: Google Maps. (2014) [Perth Amboy, New Jersey] [Satellite Map] Accessed from: <https://maps.google.com/>

Economic Development Overview

Economic development is a priority of our vision plan, to bring more opportunities to City residents, but also to acknowledge strategies that can generate more revenue for the City. Many of our recommendations are oriented towards making the City an increasingly attractive place to live, work, and play. As discussed in the following sections, employment data reveal that there is room to provide more relevant employment opportunities and training for the City's residents. Other data suggest a need to fortify or re-orient the small business community in the City to improve profitability for their owners, and more stable working conditions for current and potential employees. Strengthening and expanding the consumer and employment bases within the City will influence demand to live and work there.

Economic development strategies include increasing its appeal factor for both residents as well as visitors through place-making and recreational opportunities. These economic strategies are based on real estate patterns that show increased property values and greater demand to live in vibrant communities with various amenities, leisure, and employment access. The City has great potential from the many possibilities presented by the waterfront. Our proposals and suggestions include ideas for maximizing the potential and use of the waterfront for recreational, "place-making," and even business development. Our strategies also address the need for strong and sustained revenue generation to supplement growth activities.

Each component of the economic development strategy was conceived in recognition of the City's unique characteristics, assets

and challenges that are inherent in its socioeconomic, geographic, and historic qualities. Finally, the economic development strategy was also developed with the understanding that the potential success of each strategy may depend upon the effectiveness of the efforts to implement other objectives.

Current Conditions

The City is a young municipality with a median age of 32.5 and is comprised mainly of family households (71.8%). 31.5% of the population are without a high school diploma. This population speaks to a market of young and family households that present opportunity for retail as much as they present challenges to meet employment, education, and recreational needs. Encouraging new businesses to anchor in the City could attract more visitors and residents who work and live in the City, with the potential to expand the tax base and begin a cycle that would subsequently encourage additional businesses to locate within the City [See Table 7 in Appendix A].

The unemployment rate in the City is 6.8%, with a rate of 7.9% in Middlesex County and 8.7% in New Jersey. Although in comparison the rate might seem marginally different, the City's median household income is about \$33,000 less than the County's. A large part of this disparity may be attributable to a higher rate of poverty in the City. It is also important to note that 36.2% of residents were born in a different country, and that 61.2% of those are not U.S. citizens. Both

of these factors could suggest added challenges to finding work because of language or citizenship barriers. Business development efforts taken by the City, therefore, should not only focus on widening the tax base by bringing in more profitable industries, but also address the training, education, and employment needs of its residents [See Table 7 in Appendix A].

Currently, the largest employer in the City is the Raritan Bay Medical Center with 3,900 employees. Following the Medical Center is the Board of Education, which employs 1,000 people and Mendez Dairy Inc. with 250 employees. However, the majority of businesses (65%) only employ 1-4 people.⁹ Almost half of the businesses in the City make less than \$500,000 in sales volume, as displayed in Figure 5. This represents minimized revenue generation from sales taxes to the City as a whole, as well as limited sales for business owners.

The top seven types of businesses in the City^{10 11} are:

1. Physicians & Surgeons
2. Restaurants
3. Attorneys
4. Churches
5. Non-classified Establishments
6. Beauty Salons
7. Dentists

As of 2011, 37% of residents worked outside of the City, while 7.3% work in the city. The number of non-residents who work in the City outweigh the residents by 7,085 jobs. In comparison, 58.4% of Middlesex County residents work outside of the county and 41.6 % of people working within the county. This data indicates that there is potentially a mismatch between the employment offered and the experience or education of the resident population to fill these positions [See Figure 21 in Appendix A].



Figure 5: Perth Amboy Businesses' Sales Volumes
Source: Economic Census Data

According to the U.S. Census, the following is true for residents of the City:

- 16% work in the educational service, health care, and social assistance industry
- 14.8% of residents work in the manufacturing industry
- 13.8% work in retail trade
- 11.9% work in transportation and warehousing, and utilities industries, and
- 10.8% of work in professional, scientific, and management services

[See Figure 22 in Appendix A]

CAPTURE THE LATENT VALUE OF THE RESIDENTIAL/COMMERCIAL WATERFRONT AREA OVER TIME

One of the City's largest assets is its historic waterfront, providing unobstructed vistas of Arthur Kill and Staten Island. For years the site of industry, the area has evolved to incorporate high and low density residential, green space, commercial, historic and recreational attractions. Much of the redevelopment strategy of the City has been focused on the waterfront as an economic engine to spur further development in the City. This vision is aimed at attracting large-scale development, such as commercial, mixed-use high-density uses and new industrial tenants. The City has taken actions to lay the foundation for such development through the re-designation of land along the waterfront as redevelopment areas. These re-designations loosened density and use restrictions to allow for higher density, mixed-use, and commercial uses.

However, the market has largely yet to respond to these redevelopment opportunities. Currently, the waterfront suffers from an abundance of spaces that are underutilized. In addition, properties lie vacant or abandoned (see Figure 6 and Figure 23 in Appendix B). Instead of exclusively, or primarily, pursuing large-scale development, the city should shift its strategy to focus on activating these spaces. As the groundwork has already been laid for more permanent development, it is suggested that the activation of these spaces would encourage later development. The City should pursue interim or temporary uses to create excitement about the waterfront. Temporary uses can vary in length, from a few hours, to days, months, or even longer. For almost every possible use or activity, there is a temporary or mobile version. Figures 24-29 in Appendix B demonstrate just a small sampling of potential programs and uses.

An added benefit of temporary uses is that they allow for experimentation. Without permanently committing to the use, the city can take a trial and error approach to identify which uses would be most successful¹². In addition, temporary uses can attract more permanent tenants and provide an incentive for landlords to provide the housing necessary for newcomers. Some even suggest that temporary



Figure 6: Abandoned Sites along Residential Waterfront Area in Perth Amboy



Figure 7: Local Terra Cotta Examples in Perth Amboy

uses provide opportunities for placemaking and that the very process of developing these uses creates community bonds¹³. The City has been successful in providing annual or infrequent events, such as the annual cultural festivals, and should build on this success by providing recurring or “pop up” events and uses.

Current access to the City’s waterfront is fragmented, as can be seen in Figure 8. This map displays areas of public access as well as barriers. Given the desire to capitalize on the waterfront as a destination, the city should promote connectivity and wayfinding between access points. Recently installed signage throughout the City to denote historic and tourist attractions is a welcome addition (see Figure 23 in Appendix B). However, we recommend that the city promote increased placemaking and wayfinding through the installation of a pavement marker denoting areas of access and promoting linkages to the downtown business district. A pavement marker might be a more effective method of wayfinding, as people typically cast a 10-degree gaze while walking¹⁴. The City could hire a local artist or work with historical and cultural institutions to hold a design competition for the marker. Potentially, the marker could incorporate the City’s terra-cotta history, as seen in Figure 7. The development of bike paths should also be a priority in order to increase access and connectivity to the area, while providing alternative modes of travel.

In order to implement these recommendations, the City should first review its zoning code and ordinances to remove regulatory and financial barriers to temporary uses. Efforts can also be taken to reduce any start-up barriers by, for example, ensuring transparency in the process of obtaining necessary licenses or contracts. In addition, the City should partner with local cultural institutions to conduct community outreach to better understand what activities would be useful and exciting to both local residents and visitors. To the extent possible, the City should also consider facilitating the marketing of the vacant and underused spaces to attract potential temporary users.





Figure 8: Waterfront Access in Perth Amboy

CAPITALIZE ON EXISTING INFRASTRUCTURE AND PROGRAMS TO ATTRACT THE RIGHT KIND OF INDUSTRY TO THE INDUSTRIAL WATERFRONT AREA

The City was a stronghold for industry like many northeastern cities and was a major producer of both architectural terra-cotta and copper products. In recent years, it has shifted to becoming a center for oil refineries. Because of existing suitable land for industry and its distance from less noxious uses, the City should strive to keep existing industry as industry; the City should not seek to convert lands dedicated to industrial uses into residential, office, and/or commercial. The City is on track to revitalize its industrial areas, making them both more active and attractive. The main industrial area of the city, in the northeastern quadrant (shown in Figure 9), is being revitalized by Buckeye Industries, as well as Veridian Partners, which is working with the New Jersey Department of Environmental Protection (NJDEP) to remediate the site and find an industrial tenant.

The long-term intentions for this area, as an active industrial district, should be further clarified. By doing so, the City signals to industrial developers that these are sites that will serve their needs, and that they have neighbors who may be doing similar work. In nearby Edison and Woodbridge, the former Raritan Arsenal Site, once home to over 200 ammunition magazine, an arguably heavy industrial area, was redeveloped into the successful Raritan Center, which is now home to hundreds of companies including Fortune 500 companies, Global 500 companies, and companies representing every sector²⁵. The Brooklyn Navy Yard in New York City is another example of an industrial park that is very successful. Though the site was once an old shipyard, New York City created a development corporation to oversee its transition from shipyard to industrial park. Part of what makes the area so successful is the fact that it is very clearly separated from any and all residential and commercial uses. The Navy Yard is surrounded by walls and gates and is overseen by security guards. Its presence is clearly demarcated with signs. There is no reason why the City cannot incentivize

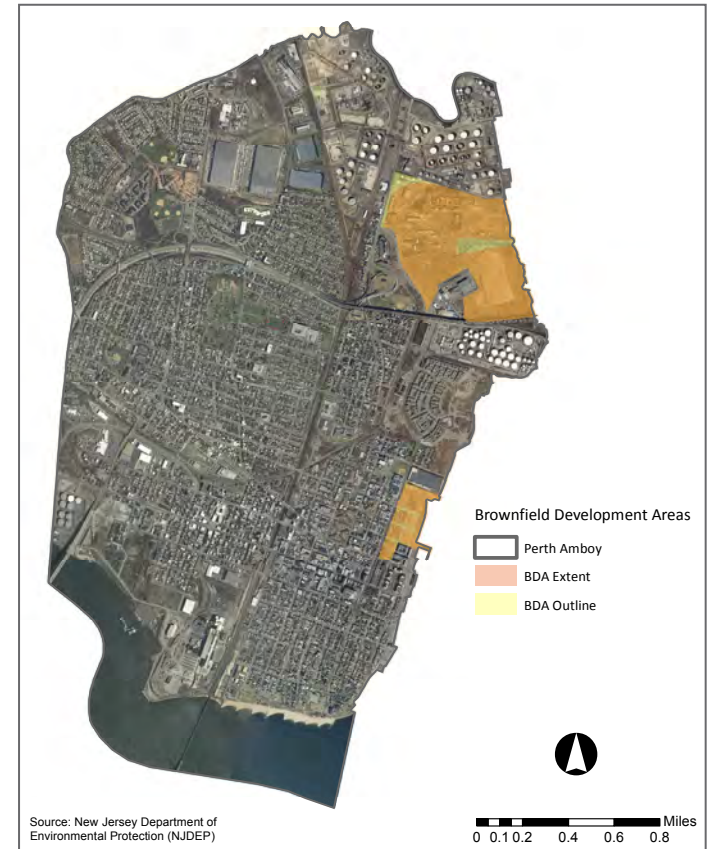


Figure 9: Brownfield Development Areas in Perth Amboy



Figure 10: The Brooklyn Navy Yard
Source: Buck Ennis, *Crain's New York Business*

developers to repeat these successful scenarios in its main industrial area and/or alter current zoning in an environmentally sound way so as to be flexible with developers who are already interested in ways that allow them to make a profit and stem further growth in the process.

The City could potentially secure numerous tenants for the Veridian site that is being remediated versus having only one tenant. The City can use maps to keep records of who owns which buildings, and create databases of existing tenants and vacant spaces. It is important for there to be a continuous dialogue between the City, Veridian Partners, and Buckeye. This ongoing dialogue will further the understanding of potential tenant's needs leading to the creation of a vibrant working industrial city.

Industry	Location Quotient
Administrative and Waste Services	1.53
Transportation and Warehousing	1.52
Beverage & Tobacco Product Manufacturing	2.17
Apparel Manufacturing	1.28
Paper Manufacturing	1.69
Furniture and Related Product Manufacturing	1.59
Chemical Manufacturing	1.79
Plastics and Rubber Manufacturing	1.62
Water Transportation	1.86
Warehousing and Storage	3.06

Table 2: Agglomeration Industries in Middlesex County
Source: BLS.gov

By using NAICS codes, the major sectors of exports within the Middlesex County were identified and are shown in Table 2. The identification of these sectors can help the City understand the kinds of industries it may want to bring to the supply chain.

A strategic economic development policy requires securing the right kind of industrial tenants. Much light industry requires highly skilled labor. Given that much of the City's population does not carry more than a high school degree, it is important to identify industries that do not require advanced degrees to complete the work. Additionally, industries should also be made aware of the educational offerings of the vocational school and junior colleges that exist in the area. The City could consider opening up a dialogue with the Middlesex County Vocational school to tweak or change some of the course offerings to better reflect the growing demand for jobs in chemical, technological, medical and pharmacological, and accounting trades.



Objective

4

IMPROVE THE BUSINESS CLIMATE AND MINIMIZE RETAIL LEAKAGE THROUGH MORE STRATEGIC COMMUNICATION AND PLANNING

In addition to maximizing industrial development, a comprehensive economic development strategy should also emphasize the role of small business. Ninety-three percent of businesses in the City employ twenty or fewer people.

While there are few downtown vacancies in the City, there is a lack of retail diversity. Using ESRI's Business Analyst software, we took a closer look at the city's retail leakages and surpluses (Figure 11). With the exception of just one industry subsector (gasoline stations), there are leakages across all industry subsectors, meaning that residents are leaving the City to purchase necessary goods and services. This illustrates that there are opportunities for business expansion or recruitment and a market to support such expansion.

The City can do more to improve access to necessary goods and services for its residents. The City's Business Improvement District (BID) has a significant role to play in attracting new businesses. A greater portion of the BID's budget should be devoted to marketing efforts aimed at expanding the city's retail base.

Smaller entrepreneurs often face structural, financial, and time-related barriers that discourage new business establishments. Therefore, the City should take steps to improve its overall business climate. For instance, streamlining the permitting process and connecting

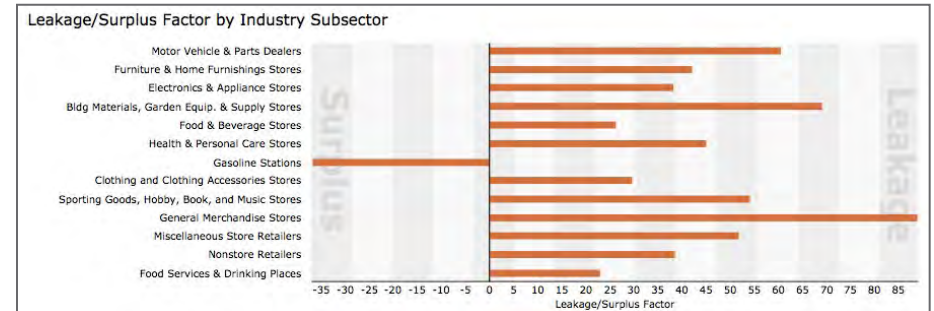


Figure 11: Retail Leakages and Surpluses in Perth Amboy
Source: ESRI Business Analyst

businesses with available incentives will improve the City's image as being amenable to business expansion. One recommendation is to establish a business portal. New York City offers an impressive case study. In 2005, Mayor Michael Bloomberg introduced NYC Business Express, a one-stop online portal where business owners can file permits and licenses and search available incentives across multiple city agencies¹⁶. Though the development of this site came at a hefty price tag, the City could replicate this concept at a smaller scale.

Revenue Generation

A strategic economic development plan requires an effective revenue allocation approach. In light of the City's current fiscal situation, this approach becomes all the more imperative. The City's current revenue generation is encouraging and a few considerations are proposed here that will help maximize revenue allocation.

Targeted Economic Development

In the face of mounting economic strains, many cities across the country have sought to diversify revenues from taxes, through rate as well as base increases. In its 2013 City Fiscal Conditions Report, the National League of Cities projected a continued decline in property tax revenues¹⁷. Given the still-recovering real estate market and the City's potential to become a destination and residence for many new people, a higher property tax credit is not recommended at this time, but rather encourage the continued maintenance of property assessments in the City. In addition, following the recommendations made as part of the earlier housing and neighborhood stabilization analysis will increase property values and thereby maximize the potential revenue stream of properties in the City. These steps will ensure that the City is able to maximize revenue from its properties. The City Fiscal Condition Report also projects an increase in revenues from sales taxes. The City's position as one of New Jersey's Urban Enterprise Zone (UEZ) cities provides an opportunity to attract new businesses. Higher end retail in particular has been noted as an unmet demand from city residents¹⁸. Furthermore, rising consumer confidence in New Jersey indicates a high potential for revenue maximization through sales taxes¹⁹.

The current economy has undeniably hampered the ability of local governments to fund public services. It is equally clear that the provision of services like maintenance and street cleaning are essential to creating an environment that fosters economic growth. Many cities have managed to maintain a stable revenue stream by imposing fees and charges for services. In considering this option, the studio team thought about ways to minimize the effect on the City's residents -- particularly those of low-income -- while also fostering a more livable environment. In that vein, the city's low car ownership rate, which at 23.3% is nearly 3 times greater than the county's rate²⁰, bolsters the argument for parking fees. These could be imposed particularly to curtail or direct parking, especially in business districts. The City could also serve two purposes by imposing a greater fee on traffic

violations. The analysis pinpoints some of the City's most accident-prone areas (see Objective 6). Higher fines for traffic violations would help promote safe streets. Lastly, it is recommended that a review of the City's current licensing fees be undertaken to assess if there are any additional opportunities for revenue creation in this arena, such as with the City's marina, shown in Figure 12.

Coordination & Leadership

Efficiency and effectiveness across city agencies are threatened when there is limited coordination on leadership. A number of impactful projects can be accomplished independently, but in pursuit of development that benefits an entire city, success and impacts can be limited if efforts are poorly coordinated. Very often, a lack of coordination leads to overlap in plans to the extent that there are a number of the same issues being addressed, while others' continue to be overlooked. Not only do resources and efforts then become inefficient in these instances, but conflicting interests present themselves due to lack of communication.

If feasible, it would be in the best interest of the City to hire an individual(s) to specifically address the pressing economic development issues. However, as is the case with numerous municipalities across the state, the city's budget may not allow such a pursuit quite yet. Therefore, it is highly recommended that in the interim, the City create a body of representatives from relevant city departments that would mimic the nature of an economic development commission. It is further recommended that not only would this body meet regularly, but also have regular meetings and briefings with major non-profit organizations throughout the City. This would ensure that efforts across the city are coordinated all across the board, and more importantly ensure that efforts are on target with the city's overall development objectives.

In addition to an economic development body, the necessity of an up-to-date website cannot be underestimated. In an age of rapidly advancing technology, the public looks for ways to become well-informed about activities in their community to become involved in efforts. A municipality's website is not only for information regarding city hall and waste pick-up, but it is more importantly a way for the city to inform residents (as well as non-residents) about what the city has to offer. The public is able to stay well-connected with the city's efforts, and even before the City is actually involved in the process of development projects, the website can potentially generate excitement throughout the community.

Lastly, the website can serve as effective advertising for projects as well as a means to advertise to employers who would consider locating in the City. New businesses, visitors, and investors are attracted to areas that invoke excitement and liveliness, and a website is a great way to present opportunities in the City. However, a website will not substitute strong and direct advertising by other means to attract new businesses. Businesses will eventually advertise to support their own livelihood in the City, but in order to attract and entice businesses that meet the City's development objectives, the City must be consistent in sending representatives to communicate with business leaders about its plans and opportunities.



Figure 12: Perth Amboy Marina

Source: Dougtone, Flickr

Sustainable Infrastructure

MITIGATE THE IMPACT OF COMBINED SEWER OVERFLOW (CSO) AND RESTORE WATER QUALITY THROUGH THE IMPLEMENTATION OF GREEN INFRASTRUCTURE

Like most post-industrial cities in the Northeast, Perth Amboy is highly urbanized and its land coverage is largely impervious. The map in Figure 30 in Appendix C shows the percentage of impervious surfaces for all tax parcels in the City. The vast majority of lots have over 50% impervious coverage. However, pervious surfaces allow for stormwater capture and flow reduction during high precipitation events. A lack of pervious surfaces equates to higher stormwater runoff volumes. In cities such as Perth Amboy, with combined stormwater and sanitary sewer systems, large storm events can routinely overwhelm the treatment capacity at the sewer treatment plants, leading to the bypassing of treatment and the dumping of raw sewage into the bodies of water, in this case the Raritan Bay.

Green infrastructure represents a strategic, cost-effective solution for improving stormwater management, especially in areas with CSO issues. There are widespread benefits to the implementation of green infrastructure. The use of green infrastructure helps lessen runoff during storm events, which reduces flooding, lessens the potential for pollution, and improves groundwater recharge. Increasing the amount of vegetation and ground cover, for example, slows water down during rain events, allowing it to be absorbed into the ground and decreasing strain on a combined sewer system. An increase in vegetation also

improves the aesthetics and livability of neighborhoods.²¹

Cities across the United States, such as Philadelphia and Portland, have become leaders in implementing green infrastructure in a manner that is environmentally sensitive and economically beneficial within the urban fabric of their neighborhoods. They are realizing benefits through annual economic value of this natural capital by avoiding costs that would otherwise be astronomical for stormwater management and pollution. For example, the City of Philadelphia saved over \$5.9 million in annual expenditures in 2007 by investing in their green infrastructure throughout the city to reduce stormwater and pollution problems.²²

Cities can incorporate green infrastructure into their urban redevelopment plans in ways that creates jobs, engage and enrich the learning experiences of the area's youth, improve overall quality of life, and generate economic gains and development from within.

Green infrastructure can be implemented through the use of publicly and privately owned land and can translate into additional recreation, open and green space. Prospective new home purchasers are generally willing to pay more for a house located across the street from a park or preserved open space. The value often felt or ascertained as a result of proximity, referred to by economists as hedonic value, can be a significant driver of residential property values near parks and open space. This has been to be true across the country and around the world. According to a report developed by Southwick Associates for the National Fish and Wildlife Foundation, properties in close proximity to parks and open spaces are typically appraised with values

20 percent higher than properties that are similar but not within a close distance to recreational areas.²³

This increase in property value translates into an increased ratable base for the City and can also mean a city-wide decrease in property tax rates, ensuring equitable and fair tax burden of the City’s tax levy across all property owners to shoulder the expense of city services. It is relevant to note that with 108 acres of parks and open space, the City is currently operating at a modest open space deficit, when compared to relevant standards like the New York City Open Space Index or the New Jersey Balanced Land Use standard as depicted in the table below. This presents a great opportunity for the City to increase property value in several areas with the right mechanisms to create more open space.

Comparable Standard	Resulting Deficit/Surplus
New Jersey Balanced Land Use Standard Based on 3% of developable or developed land available as parkland / open space	Exceeds by 16 acres
New York City Open Space Index Based on 2.5 acres per 1,000 persons	Deficit of 9.4 acres
National Recreation and Park Association Standard Based upon 2012 median benchmarking ratio of 11.1 acres per 1,000	Deficit of 466 acres
American Planning Association Standards for Outdoor Recreational Areas Based on 117 facilities for a community of 50,000 people	Deficit of 63 facilities

Table 3: Lack of Parks and Open Space
 Source: City of Perth Amboy Master Plan, Recreation Element

Green infrastructure can have a lasting effect on job creation as well. Parks provide employment opportunities due to the management and maintenance they require. These jobs include on-the-ground roles, such as landscapers and rangers, as well as administrative positions that focus on events and programming, which can be managed through the city. The 2009 Report Card for America’s Infrastructure, provided by to the American Society of Civil Engineers (ASCE), noted that parks and recreational areas boost the national economy by \$730 billion per year, part of which supplements the salaries and wages of nearly 6.5 million jobs.²⁴

Green infrastructure can also be used as a tool to invest in the City’s future. Getting the city’s youth involved with urban parks, for example, provides for quality afterschool programs. Incorporating green infrastructure in urban parks provides a connection with natural, safe, and healthy environments. Activities for youth to help with the implementation process can also help develop urban youth socially by inspiring them to be committed to civic engagement, build better relationships with those around them, feel more comfortable around members of other communities and organizations, and have a better sense of belonging and overall cultural understanding.

Best Management Practices (BMPs)

To reduce the effects of the CSO events, the City should consider the implementation of a combination of green infrastructure tools, including rain gardens, bio-swales, rain barrels; green roofs, constructed wetlands, street trees, stormwater tree pits and pervious pavement. Greater detail about each of these specific tools is provided.

- Rain gardens are vegetated gardens that detain and filter runoff, providing some infiltration during rain events. These can be used in residential and commercial areas.
- Bioswales are similar to rain gardens in that they also filter runoff water, but instead of being detained, the runoff is discharged to the stormwater system through a drain that runs underneath it. Bioswales can be used in residential as well as commercial buildings and they can be placed on the sides of highways.
- Rain barrels are systems that collect and store rainwater from the roof of a home.
- Green roofs are vegetated flat roofs that absorb and filter rainwater during storms. They can be used in commercial, residential, and industrial areas. Constructed wetlands act the same as a natural wetland and detain and treat runoff through the vegetation.
- Tree pits are much like rain gardens but are applied to one tree and its root system.
- Pervious pavement can be used to infiltrate and treat runoff. Some pervious pavers have underground reservoirs that can store run-off before infiltration. Pervious pavement can be used in parking lots and spaces as well as on bike paths; they should not be used on streets with heavy traffic, as they require a high level of maintenance and cannot handle a large amount of weight without becoming ineffective.

BMPs	Recommended Location	Ideal Grade (Slope/Topography)	Ideal Soils (Permeability)	Drainage Area
Rain Gardens	Ideally suited to many ultra-urban areas, such as parking lots	Relatively shallow slopes (less than 5%)	Can be used on almost any soil type	Small drainage areas of less than 5 acres
Bioswales	Well suited for treating highway or residential road runoff because they are linear practices	Relatively flat slopes of less than 4% slope; 1-2% slope is recommended	Can be used on most soil types (some restrictions on most impermeable soils)	Small drainage areas of less than 5 acres
Rain Barrels	Anywhere (very few site constraints)	Flat ground and connected to a downspout, and elevated	N/A	Capture runoff from small roof areas
Green Roofs	New construction or Retrofitted to existing construction of residential, commercial, and industrial buildings	Easily constructed up to a 20 percent slope (but range from 0 to 40 degrees)	N/A	Captures and evaporates 10-100% of the precipitation
Constructed Wetlands	Can be used in an urban environment if a relatively large area is available downstream of the site	Upstream slope of up to about 15%	Can be used in almost all soils	Range from 10 - 25 acres, depending on the type of wetland
Street Trees	Delineating lines along a critical root zone (CRZ) rather than a straight line is essential to preserving trees	A medium-sized tree can intercept 2,380 gallons of rain per year	Open basin area surrounding the base of the tree should be a level surface	Open soil in a tree basin is discouraged
Porous Pavement	Not recommended for use in flood prone areas	For slopes greater than 2%, terracing may be needed to slow runoff from flowing through the pavement	The minimum design permeability rate of subgrade soils below a system's runoff storage bed is 0.5 inches/hour	N/A

Table 4: Summary of High Level Impacts of Best Management Practices
 Source: Together North Jersey Hoboken Green Infrastructure Plan

BMP Identification by Area of the City

During the summer of 2013, a consultant team led by NJ TRANSIT, in conjunction with the Together North Jersey Regional Sustainable Plan, created a green infrastructure plan for the City of Hoboken, NJ. The result of this study provided Hoboken with a strategic framework for locating various Best Management Practices in specific areas in the City, an estimated quantity of expected runoff savings by implementing the infrastructure and a series of policy recommendations and other methods of implementation within the context of Hoboken. The procedure used to formulate results for the Hoboken project was used as a guideline to perform the analysis for Perth Amboy.

The characteristics of the various green infrastructure Best Management Practices were compiled to understand their respective benefits, siting considerations and cost. GIS data was collected for the City from various sources, including the FEMA floodplain advisory levels following Superstorm Sandy, digital elevation models, impervious surface data in land use/land cover datasets, location of publicly-owned property, location of designated redevelopment areas, soil group and bedrock depth data.

Once the data was compiled and reviewed, the next step was to site the Best Management Practices according to their most applicable locations within the context of the characteristics of the City. A suitability analysis was performed to understand where green infrastructure could be installed, factoring in the constraints defined as amenable. For the Hoboken project, the consultant team was able to obtain data on the sewersheds in the City; however, this data was not readily available for the City. Instead, the suitability analysis was conducted for the entire City using ArcGIS. The methodology can be seen in the following process flow chart (Figure 13).

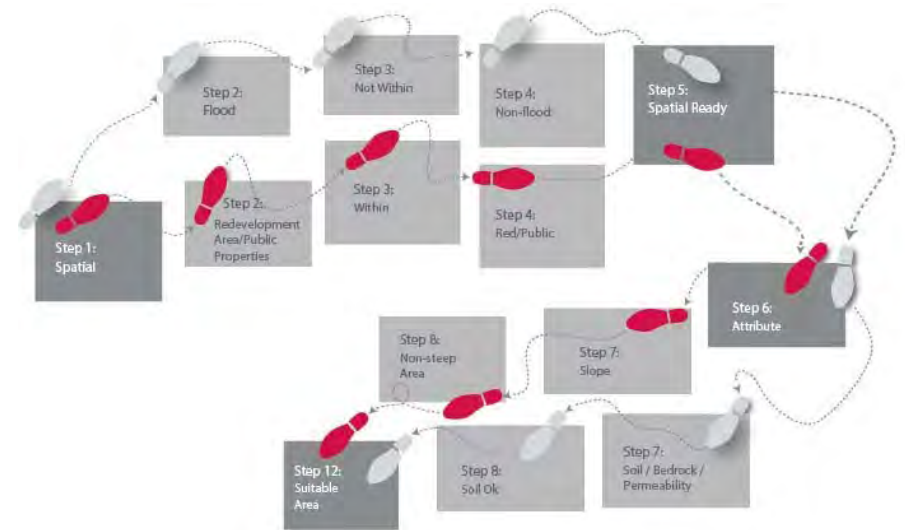


Figure 13: BMP Suitability Analysis Process

Using the suitability analysis results, the applicable BMPs were assigned to the numerous sections and the total area by installing the green infrastructure was estimated. In addition, the potential sites of green roof installation in the municipality were mapped and that total area was added to the suitability map. Finally, various green infrastructure was proposed for over 91 miles of the public right-of-way in the City, aside from the publicly-owned land in the suitability analysis. The area of green infrastructure proposed for the streets was also added to the total area across the City using an assumed percentage of green infrastructure installation per right-of-way area (5%). This area was then multiplied by the average rainfall in Middlesex County to estimate the total potential runoff savings that the installation of green infrastructure could capture over the course of a year. The combined suitability analysis results map can be found in Figure 14, while further details of the analysis can be found in Appendix C.



Figure 14: BMP Suitability Analysis Results

Expected Runoff Savings

By adding up all the areas from the public/redevelopment land, green roof and street suitability analyses, the proposed area available for green infrastructure in the City was found to be 24,986,649 square feet. The 50-year National Weather Service average precipitation experienced in Middlesex County was found to be 43.9 inches per year (3.658 feet).²⁵ Multiplying this expected precipitation by the total area proposed for green infrastructure results in an estimated amount of rainfall that could be captured by green infrastructure and prevent it from running off into the combined sewer system. This value was estimated to be over 683 million gallons (91,409,489 cubic feet) per year. Since this value assumes that 100% of the proposed area identified as suitable for green infrastructure was realized, a sensitivity analysis was performed to understand the feasibility of impact on stormwater.

The City typically experiences over **370 million gallons** of stormwater runoff through the CSO system into the Raritan Bay annually²⁶. Based upon the studio team findings, it is estimated that the implementation of green infrastructure could potentially capture this amount of rainfall on an annual basis.



Total Area (sq. ft.) - Public/Redevelopment Land Suitability Analysis	19,045,160	Total Area (sq. ft.) - Green Roof Suitability Analysis	4,499,330	Total Area (sq. ft.) - Green Street Analysis	1,442,159
Sensitivity Analysis: Build-out Percentage	100% of proposed area	75% of proposed area	50% of proposed area		
Total Area - Combined Suitability Analysis (sq. ft.)	24,986,649	18,739,986	12,493,324		
Total Volume of Estimated Precipitation Captured Annually (cu. ft.)	91,409,489	68,557,117	45,704,745		
Total Volume of Estimated Precipitation Captured Annually (gallons)	683,790,514	512,842,886	341,895,257		

Table 5: Expected Runoff Savings Breakdown

ENHANCE TRAFFIC SAFETY AND CALMING MEASURES BY INCORPORATING COMPLETE STREETS DESIGN PRINCIPALS

At just over four square miles, the City could be a very walkable and bicycle-friendly city. In order to understand the existing traffic safety issues that result from an auto oriented city design and be better prepared to make design recommendations towards a more pedestrian/bicycle oriented street framework, the studio team started by analyzing the traffic crash data from 2003 to 2012 using the crash point dataset from the Center for Advanced Infrastructure and Transportation, Rutgers University (CAIT). The studio team mainly focused on the accidents that involved pedestrians and bicyclists and developed a map to spatially display this information as shown in Figure 15. Using the crash data points, the studio team assigned the traffic accidents to their nearest street using Geographic Information Systems (GIS), which allowed for the identification of streets that had the highest crash rates. Among these were Smith Street and State Street. Additionally, the studio team identified the most dangerous intersections, finding that the Five Points area is highly prone to incidents (demarcated by the red dots in Figure 15). It is clear that the City should take measures to alleviate these safety issues.

The auto crash data for the City, along with a corresponding map can be found in Figure 16. The data demonstrates that Convery Boulevard and Highway 440 have the highest crash rate. The studio team applauds the City's adoption of a Complete Street policy as a method of alleviating this situation. In this section, suggestions are offered implementing a Complete Streets policy to achieve maximum benefits.

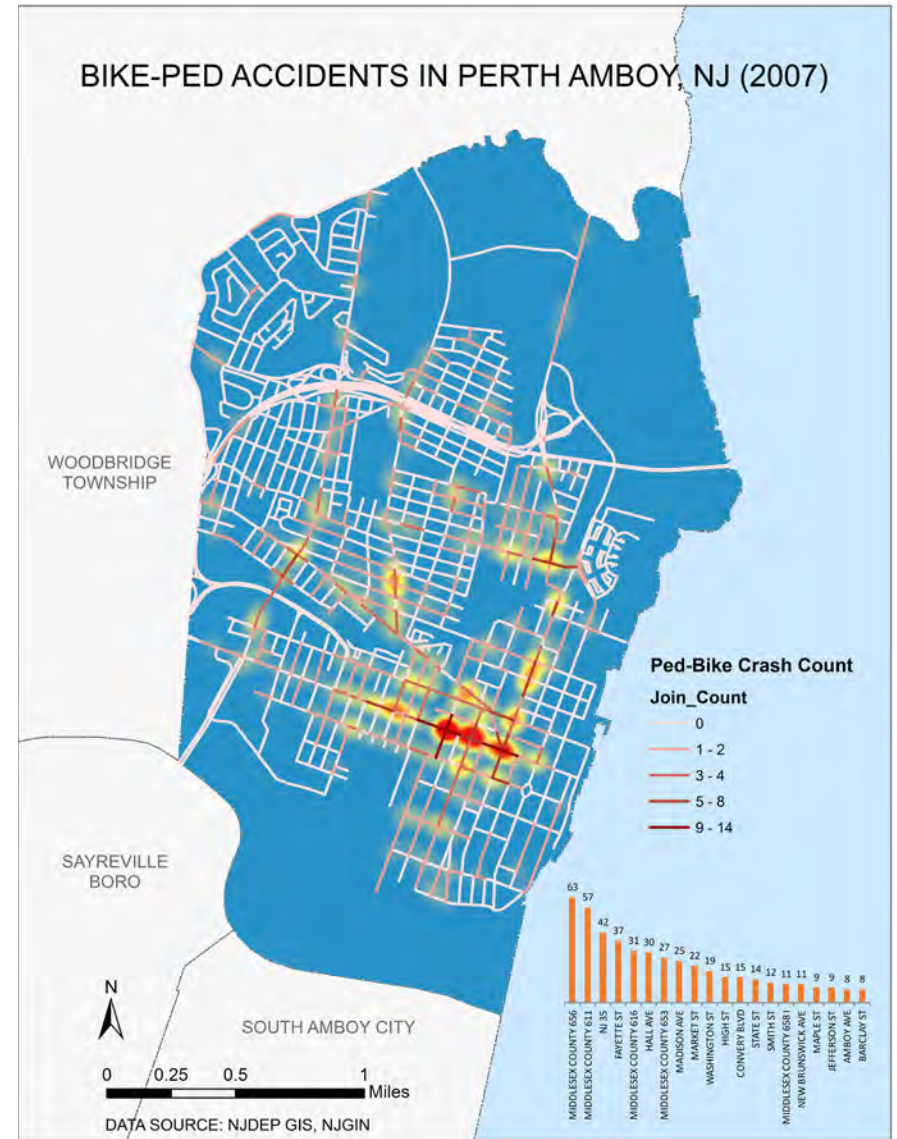


Figure 15: Bicycle and Pedestrian Accidents in Perth Amboy 2003-2012

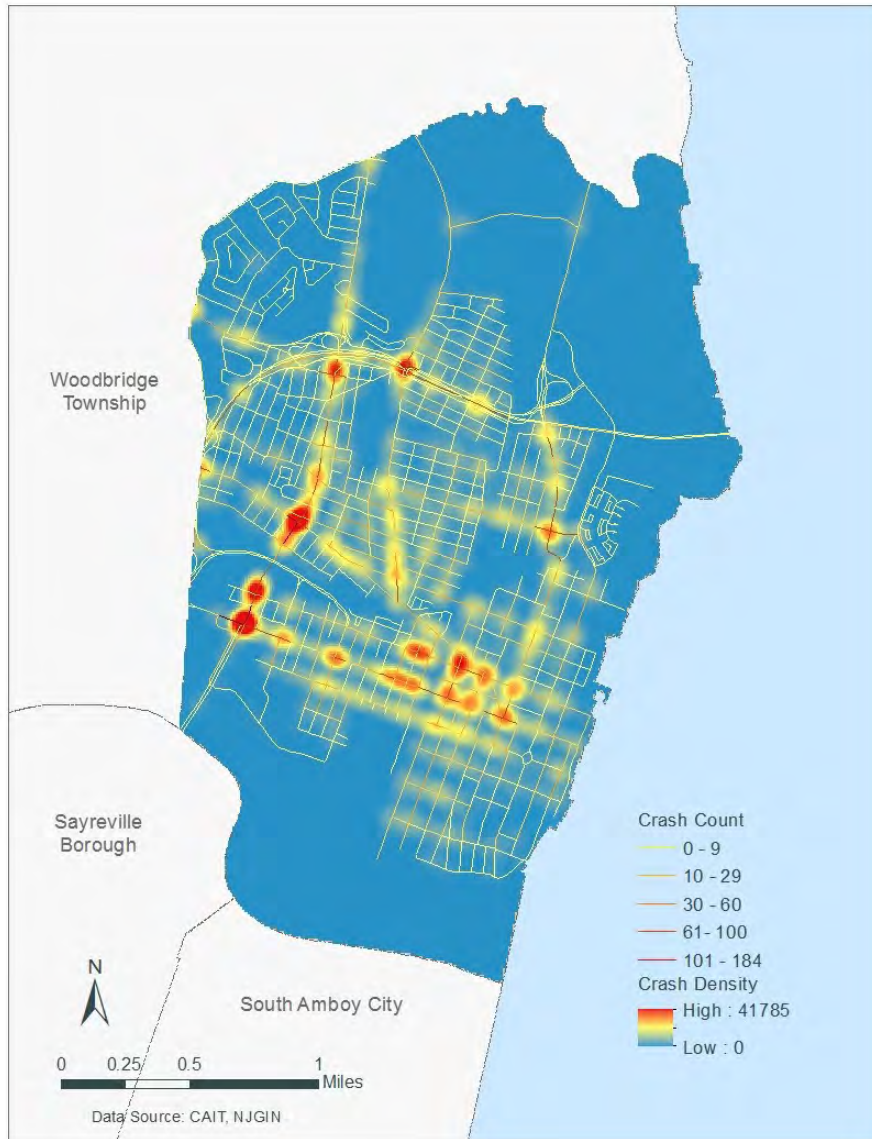


Figure 16: Automobile Accidents in Perth Amboy 2003-2012

In implementing green infrastructure in the public right-of-way, the City should prioritize improvement projects that implement the adopted Complete Streets policy. Complete Streets deals with designing and constructing public right-of-way for the benefit of all users and all modes - automobile drivers, pedestrians, cyclists and public transit riders. The incorporation of green infrastructure will enhance the safety of all users of the streets, as well as provide economic and aesthetic value at a potentially high level.

One of the challenges in implementing both green infrastructure and Complete Streets policies at a City-wide level is public misunderstanding of the impacts and anticipated benefits of both initiatives. A possible method of combatting misconception is to install green infrastructure and multi-modal facilities along one high visibility public right-of-way to serve as a model for the rest of the City. The prime example of such a model would be High Street in the eastern portion of the City.

There are several factors which propel High Street to the top of the list for potential to serve as the first truly Complete Street in the City with the inclusion of green infrastructure. Primarily, High Street has a very wide right-of-way width for a largely residential street, approximately 99 feet along most of the street. There exist two wide lanes of automobile traffic in each direction running North-South along the street, as well as on-street parking on both sides. It is likely that the volume of automobile traffic travelling on this road does not come near the capacity that the street currently facilitates, although this would need to be verified. While the street does not rank near the top in the City in terms of bicycle and pedestrian crash frequency, it does not rank at the bottom either, experiencing 15 bike-ped crashes from 2003 to 2012.

Sustainable Infrastructure

In addition, High Street falls completely under the jurisdiction of the City, as no portion of the street is owned by Middlesex County or the State of New Jersey. This would allow the City to propose its own design without needing to necessarily gain the approval of County or State entities. Several important community assets are also accessed by High Street, including City Hall, the Early Childhood Center, and the Simpson United Methodist Church, as well as a significant amount of commercial uses. High Street is also the thoroughfare nearest to the eastern waterfront that runs nearly the entire North-South span of the City and serves two of the newer major residential developments in the City - Harborside and the Landings. The Market Square park on High Street in front of City Hall already serves as a major landmark and could further act as a centerpiece of the green infrastructure strategy.

It is clear that High Street is the most appropriate choice as the primary selection for priority implementation of Complete Streets and green infrastructure in the City. In prioritizing projects subsequent to High Street, the City should consider those streets with the widest right-of-way, highest crash frequencies, proximity to important community assets such as schools, hospitals and connection to the waterfront and jurisdiction over the roadway. Table 6 presents the studio team recommended priority for implementation of Complete Streets with green incorporated infrastructure based upon the factors discussed above and the importance of the concept as a method of connectivity and accessibility for movement throughout the City.

1. High Street	4. New Brunswick Ave	7. Convery Boulevard	10. Market Street
2. Smith Street	5. Amboy Avenue	8. State Street	11. Second Street
3. Sadowsky Parkway	6. Riverview Drive	9. Washington Street	12. Hall Avenue

Table 6: Complete Streets Priority List

Of course, as routine maintenance interventions occur for all streets within the City, efforts should also be made to incorporate facilities for all roadway users—cars, buses, pedestrians, and cyclists--however temporary or incremental they may be. As funding for various projects becomes available, the City should not hesitate to improve all streets and implement green infrastructure in an opportunistic fashion.

The incorporation of green infrastructure into the public right-of-way can provide enormous benefits from a traffic calming perspective and play a large role in reducing the frequency and severity of crashes. Some of the important tools in the traffic calming toolbox, such as pedestrian refuges in medians and extended curbs are prime spaces for simultaneous integration of BMPs such as bio-swales and rain gardens, respectively. This kind of approach would allow for multi-dimensional benefits to the public and should be incorporated into the design plans for all street improvements in the City. An example of a proposed cross-section for High Street including green infrastructure measures is given in Figure 17 below.



Figure 17: Street Typology Cross-section Example - High Street

Potential Funding Sources

It is understood that the prospective cost of green infrastructure improvements to address flooding abatement is of particular concern to local stakeholders and thus we have provided the following funding ideas and options for the City to consider in helping bring green infrastructure wishes to fruition.

- **Stormwater Fee** – The City could implement a user fee for stormwater runoff and assess stormwater rates on the basis of the amount of stormwater runoff discharged by any given user regardless of type (commercial, industrial or residential). The idea behind implementation of such a fee would be to incentivize users to reduce their respective stormwater discharge and thereby diminishing the need for such large capital improvements to the City’s stormwater management system as whole. The EPA has authored several guidance manuals for municipal stormwater program funding.
- **Water Impact Fee** - The City could restrict landowners’ rights and protect its annual spending towards stormwater management by requiring impact fees to pay for the costs to implement green infrastructure and sewer maintenance and to mitigate impacts from development
- **Tax Increment Financing - (TIF)** is an incentive for redevelopment to designate and benefit blighted areas, create local jobs and improve a local tax base. It allows municipalities to bundle and sell the rights to future property tax revenues from designated parts of the city for particular projects. TIF is a form of policy financialization that enables cities to speculate, or use the expected increase in property taxes of a designated area to finance things like land acquisition, demolition and construction of a project site for example.

- **Stormwater Parcel-based Billing** – This funding option undertaken by the Philadelphia Water Department, charges a utility fee for water based upon ratio of impervious coverage against the area of gross property.²⁷ This is sometimes referred to by EPA as the “pay to pave” method of stormwater management funding.²⁸

- **Grantwriting** – There are numerous sources of grants at both the State and Federal level for implementation of green infrastructure projects.

Policy Recommendations

The City should consider requiring stormwater BMPs in the designated redevelopment areas. These could be tied to incentives, such as allowing greater flexibility with respect to Floor Area Ratios or building height. The City should also consider requiring green roofs for larger floorplate projects in the designated redevelopment areas, typically new commercial and industrial buildings.

The City should also consider adopting the use of porous pavement in all or many municipal road and parking improvement projects. This cost effective product provides stormwater management benefits by promoting increased infiltration, which leads to better water quality. This type of pavement is also known to have a lifespan of up to twenty years while avoiding the same cracking or pothole problems of other asphalt pavements.²⁹

If the City elects to allow new development within the newly identified floodplain areas as shown in the latest Preliminary Flood Insurance

Maps (FIRMs) as issued on January 31, 2014, the City should consider joining the 61 other communities in New Jersey that participate in the Community Rating System (CRS) which is put in place by the National Flood Insurance Program (NFIP) to reward communities that are doing more than meeting the minimum NFIP requirements to help their citizens prevent or reduce flood losses. The CRS also provides an incentive for communities to initiate new flood protection activities. There are well over 1,000 communities that participate in the CRS across the nation.³⁰ By completing the CRS application process and adopting and enforcing the preliminary FIRMs or adopting and enforcing freeboard requirements (building to a level higher than the base flood elevation), this exercise will in turn free up more credit as a result of reduced flood insurance rates and more available capital for businesses and homeowners within these areas throughout the city in order to help pay for implementing the green infrastructure BMPs recommended in this report.

The City could consider instituting a small tax surcharge to fund its own open space trust fund. Open space taxes are common at both the municipal and county level in New Jersey, as a way to fund enhancements to natural amenities to be enjoyed by their respective residents. This approach would allow the City to impose an annual levy for an amount or at a rate deemed appropriate for acquisition, development and maintenance of land for recreation and conservation. This has been done successfully at the County level by many Counties within New Jersey including Middlesex County but it can also be done on the municipal level as in the case for the Township of Franklin, as well as the Borough of Madison, the Borough of Haddenfield, the Borough of Bernardsville and many others.³¹

Finally, the City should revisit its parking requirements, and adopt the lower and more flexible state-of-the-art in parking standards with respect to shared parking, reduced parking rates for mixed-use projects and fee-in-lieu of parking.



IMPROVE INTERNAL CONNECTIVITY WITHIN THE CITY BY REMOVING BARRIERS TO ACCESSIBILITY THROUGH NEW BIKEWAYS, PEDESTRIAN CONNECTIONS AND OPEN SPACE

All residents of Perth Amboy deserve to enjoy the natural and built facilities and amenities that currently exist in the City. As previously stated, however, there exist many physical barriers to connectivity and accessibility that discourage or make it unnecessarily difficult for both visitors and residents to circulate within the City, particularly by bicycle or on foot, but also by motor vehicle. The studio team created a map (shown in Figure 18) to understand the opportunities and constraints for mobility through the City. The frequent and substantial discontinuities and interruptions in the circulation system (see Figure 35 in Appendix D) are compounded by the absence of a clear and comprehensive wayfinding scheme. The inadequate quantity and location of public spaces, parks and active recreational facilities has also been previously discussed (Table 3).

As one traverses the City of Perth Amboy, one cannot help but notice the barriers to connectivity within the built environment. The City is divided north-south and east-west as Route 440 cuts off the northern portion from the southern portion and the railroad right-of-way splits the City near its center. There is also a fragmented feel as one moves from neighborhood to neighborhood, with abrupt transitions. This makes wayfinding around the city very arduous. In fact, for a first-time visitor, finding the downtown, the waterfront, significant historic sites and other points of interest is very difficult. The suggestions laid out in this strategic vision will increase connectivity and the visibility of historical and natural sites around Perth Amboy and help to alleviate this situation. In this section, suggestions are offered for how to overcome these obstacles, including implementation of a Complete Streets policy, which will help to achieve maximum benefits.



Figure 18: Accessibility Opportunities and Constraints

Sustainable Infrastructure

One recommendation to improve connectivity, in addition to the wayfinding that was earlier recommended, is to implement a robust bicycle network throughout the City. Figure 19 illustrates the proposed bicycle routes recommended by the studio team. Points of interest, specifically the location of schools and historic sites, were mapped on the City's grid. This data, along with the opportunities and constraints and roadway right-of-way widths defined previously helped to formulate the most beneficial routes for the bike system. It is believed that priority should be given to the creation of two-way bicycle routes from the train station down Second Street and along the southern and eastern waterfronts. This would provide an amenity which could attract new residents and tourists alike. The rest of the bike lanes should be prioritized on the other major thoroughfares - Smith Street, State Street, New Brunswick Avenue, Amboy Avenue and Washington Street.

Another recommendation for bicycle access deals with the connection of the Middlesex Greenway into Perth Amboy. Middlesex County has been considering alternative routes to bring the Greenway into the City. The studio team believes the best chance would be along the unused Conrail right-of-way, terminating at the waterfront near the Outerbridge. There may be an opportunity near the Harbortown development to establish a small picnic area to mark the end of the Greenway and connect it with a City bicycle route along the waterfront.

NJDOT's Safe Routes to School program would appear to have considerable applicability in Perth Amboy. A more detailed study of school location (both public and parochial), and of how students access each school – on foot, by bus, or driven by parents – would be helpful in informing a strategy for how to proceed and in identifying strategic interventions that would facilitate pedestrian and bicycle access to schools by students, parents, staff and faculty.

Designated floodplain areas - which are subject to frequent flooding and regulated by NJDEP - can also be used to enhance circulation options under normal (non-flooding) conditions. While permanent structures are not permitted under State regulations in these areas, linear connections (which



Figure 19: Proposed Bicycle Network



Figure 20: Five Points Intersection in Perth Amboy with Proposed Active Public Space based on Herald Square in New York City
 Source: Aerial: Google Maps, Image: <http://changelabsolutions.org/childhood-obesity/abundant-seating>



do not displace flood storage capacity) are permitted, and temporary structures (less than six months) are also permitted. A re-evaluation of all areas subject to NJDEP flood hazard regulations is recommended, with a view towards finding temporary uses for these areas, including options for improving circulation connections and temporary uses that will promote economic development objectives.

While Perth Amboy has a significant open space inventory, public space in the Downtown area is scarce. The creation of new downtown public spaces can be coupled with interventions to the circulation system to remedy the discontinuities identified above. The Five Points intersection is a high crash area (see Figures 15, 16). One suggestion would be to close New Brunswick Avenue at Five Points between Smith and Paterson Streets. This public plaza could serve as a center for the City for events, retail, food and general mingling of residents and workers. Figure 20 highlights the street segment of interest and provides a vision of what could replace the vehicle travel lanes.

Policy Recommendations

The City should pursue a mix of funding sources to implement the appropriate green infrastructure/Complete Streets projects, once a comprehensive plan for such has been developed and adopted, preferably as part of the Circulation Element of the Master Plan. There are a variety of County, State and Federal grant programs that can be tapped to pay for these improvements. The Utilities Element of the Master Plan could also be amended to formally endorse a green infrastructure strategy for stormwater and wastewater management planning.

In the short term, green infrastructure requirements should be considered for redevelopment areas, where the City-designated developers can be required to implement the measures in their areas. The City's land development regulations should be amended to incorporate and require green building and green infrastructure provisions, where applicable under state law. Green infrastructure

requirements can be voluntarily adopted for any public or publicly-funded (or subsidized) buildings or projects. Greater flexibility can be allowed in zoning provisions regarding building and impervious coverage for projects that include green infrastructure solutions. Another recommendation is to identify local or regional suppliers for porous pavement materials and promote these in all applicable resurfacing projects for City streets, sidewalks, parking and bicycle lanes. Advocacy and community involvement are important aspects of implementing green infrastructure and Complete Streets efforts. The development of bicycle advocacy organizations and potentially a bike exchange organization can dramatically spur increased bicycle ridership, education and awareness, promoting safe use of the proposed new infrastructure. In the longer term, local codes may be amended to require designated green infrastructure measures in all new development and construction. In addition, the City may consider the establishment of an open space acquisition fund for the creation of more public recreation space.



Appendix A

Demographic Data

	Perth Amboy	Middlesex County
No High School Diploma	31.5%	11.3%
High School Education	33.8%	28.1%
Associate's Degree	4.7%	6.3%
Bachelor's Degree or higher	15.0%	38.9%
Currently Pursuing Bachelor's or Professional Degree	22.6%	No Data
Foreign-Born	26.2%	29.8%
Non-U.S. Citizen	61.2%	49.8%
Unemployment Rate	6.8%	7.9%
Language Spoken at Home (other than English)	74.4%	40.5%
Median Household Income	\$45,369	\$78,622
Families Below Poverty Line	16.5%	4.9%
Residents Below Poverty Line	19.9%	7.5%

Table 7: Statistical comparison of study area within larger region
 Source: U.S. Census Bureau, American Community Survey 2007-2011 5-Year Estimates

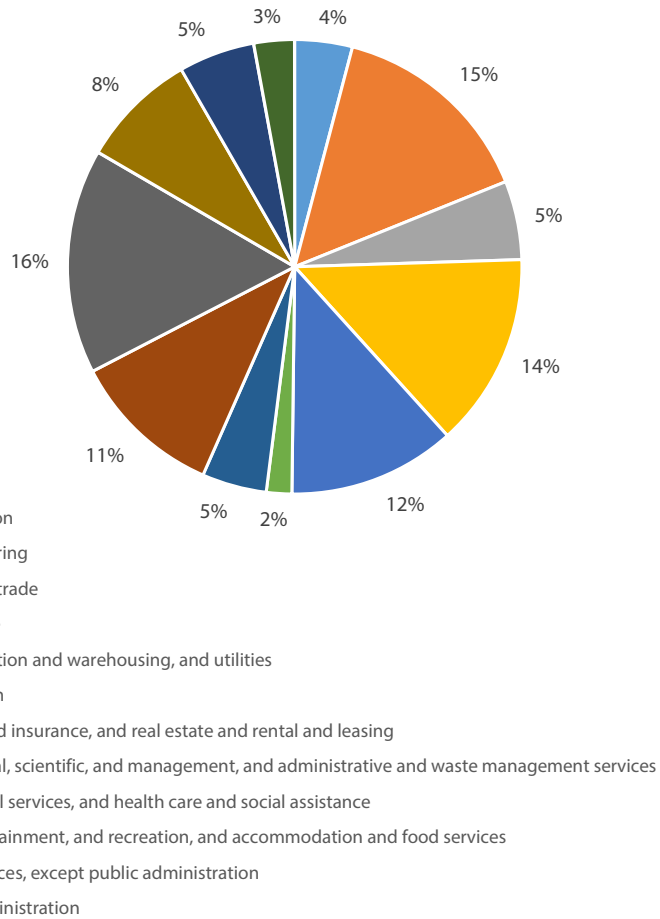


Figure 21: Industries Located in Perth Amboy - Proportion of Paid Employees
 Source: Economic Census Data

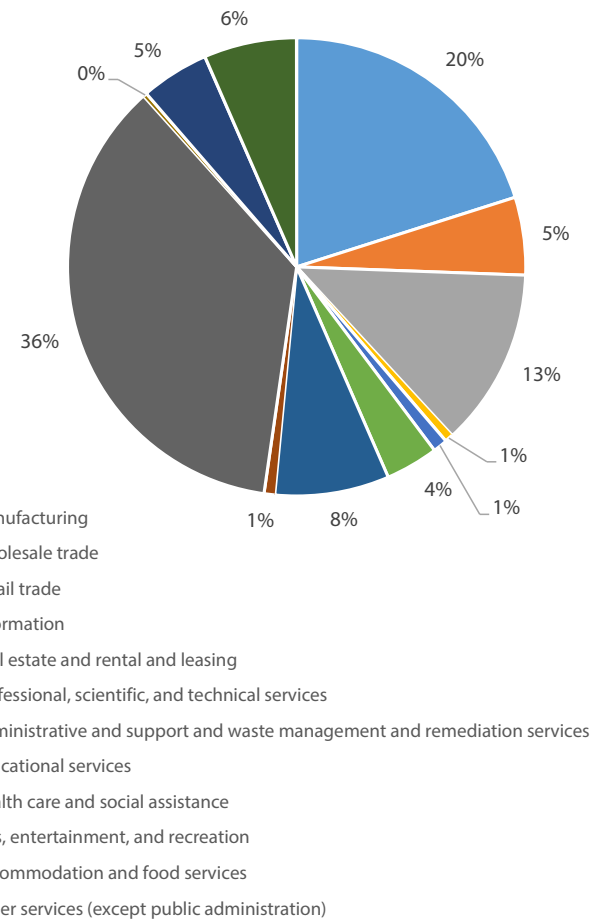


Figure 22: Occupation by Industry of Perth Amboy Residents
 Source: Economic Census Data

Appendix B

Waterfront Redevelopment Visioning

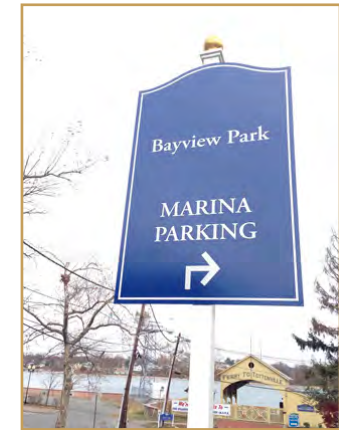


Figure 23: Waterfront Area Existing Conditions
Source: Kelly Bickers, Studio Team



Figure 24: "Pop-up" Dog Park
Source: Better Block Project



Figure 25: Portable Playground
Source: Latreille Dlage



Figure 26: Food Truck
Source: ricardodiaz11, Flickr



Figure 27: Bike Park on Former Industrial Site
Source: Sarah Goodyear



Figure 28: Shipping Container Retail Re-use
Source: allisonmeier, Flickr



Figure 29: Flea Market/Swap Meet
Source: Karen Bleier / AFP / Getty Images

Appendix C

Green Infrastructure Suitability

The map shown in Figure 30 was created by the studio team and depicts the impervious surface coverage by percentage of land use polygons, as provided by the 2007 Land Use/Land Cover dataset from the NJ DEP GIS database. The total impervious surface percentage of the City of Perth Amboy is 51%, as compared to 20% impervious coverage for Middlesex County.

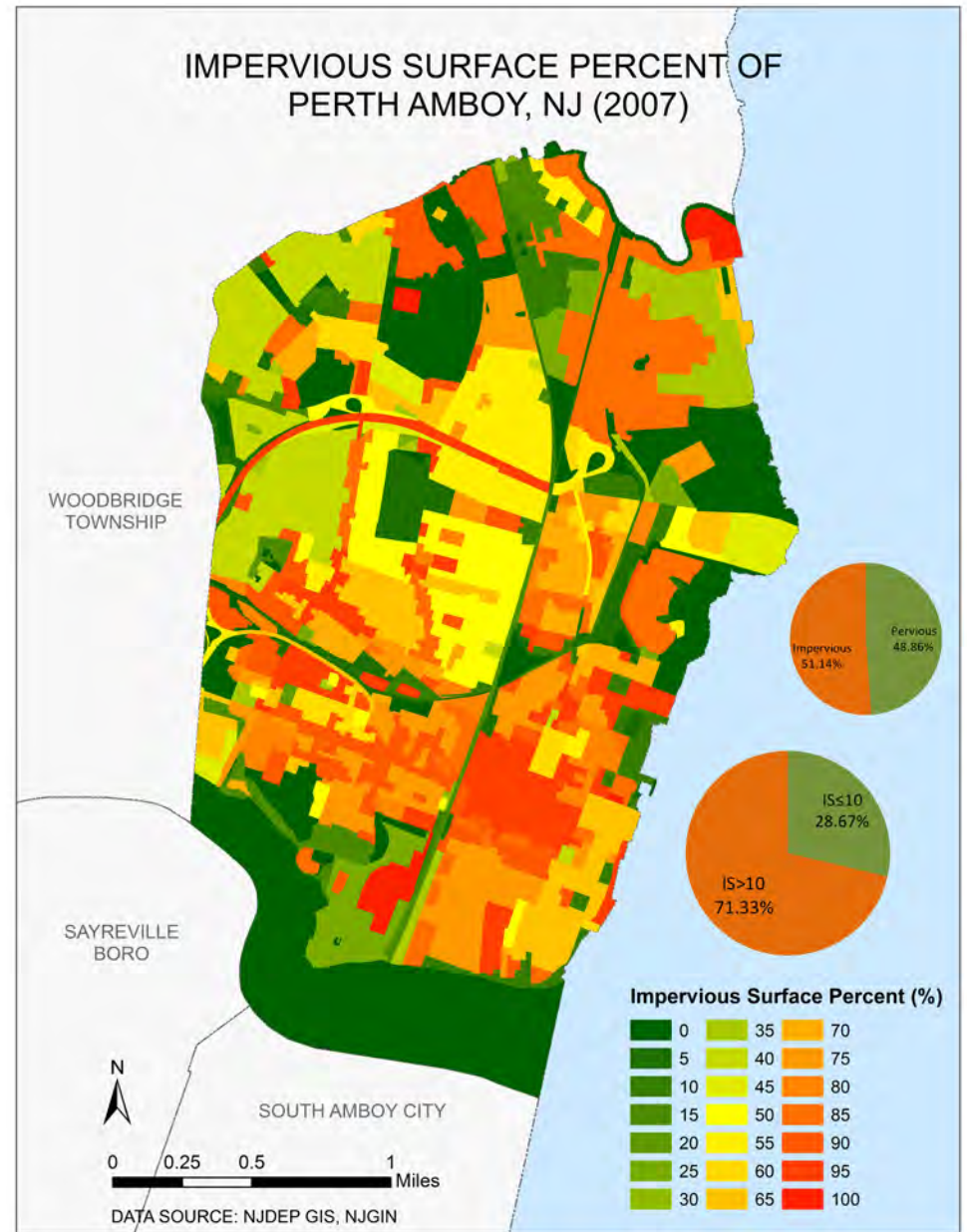


Figure 30: Impervious Surface Coverage

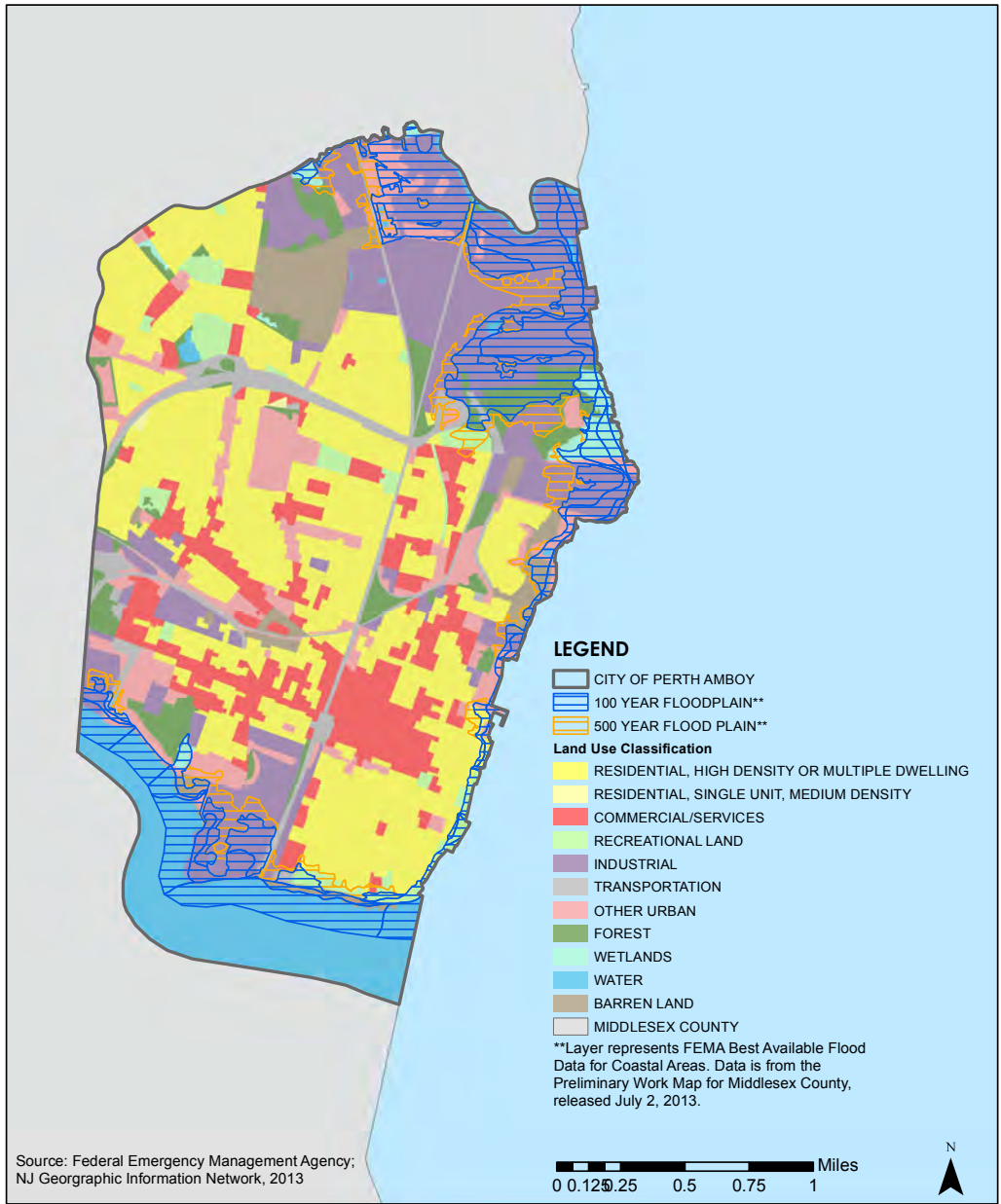


Figure 31: Flood-Prone Land

The map shown in Figure 31 was created by the studio team and depicts the flood-prone land in the City of Perth Amboy. The analysis shows that much of the industrial land which may be targeted for redevelopment and revitalization exist within the 100 or 500-year floodplains. It is the recommendation of this vision plan that these areas be utilized for stormwater management, storm surge protection and passive recreation uses with green infrastructure measures.

The map shown in Figure 32 was created by the studio team and depicts the topology that exists within the City of Perth Amboy and predicts the direction that stormwater runoff would flow along the surface of the land in a rain event. The lighter surfaces indicate higher elevation while the darker surfaces indicate lower elevation. The areas circled indicate the most likely areas for collection of large amounts of surface runoff. This analysis helped guide the type and location of green infrastructure BMP recommendations.

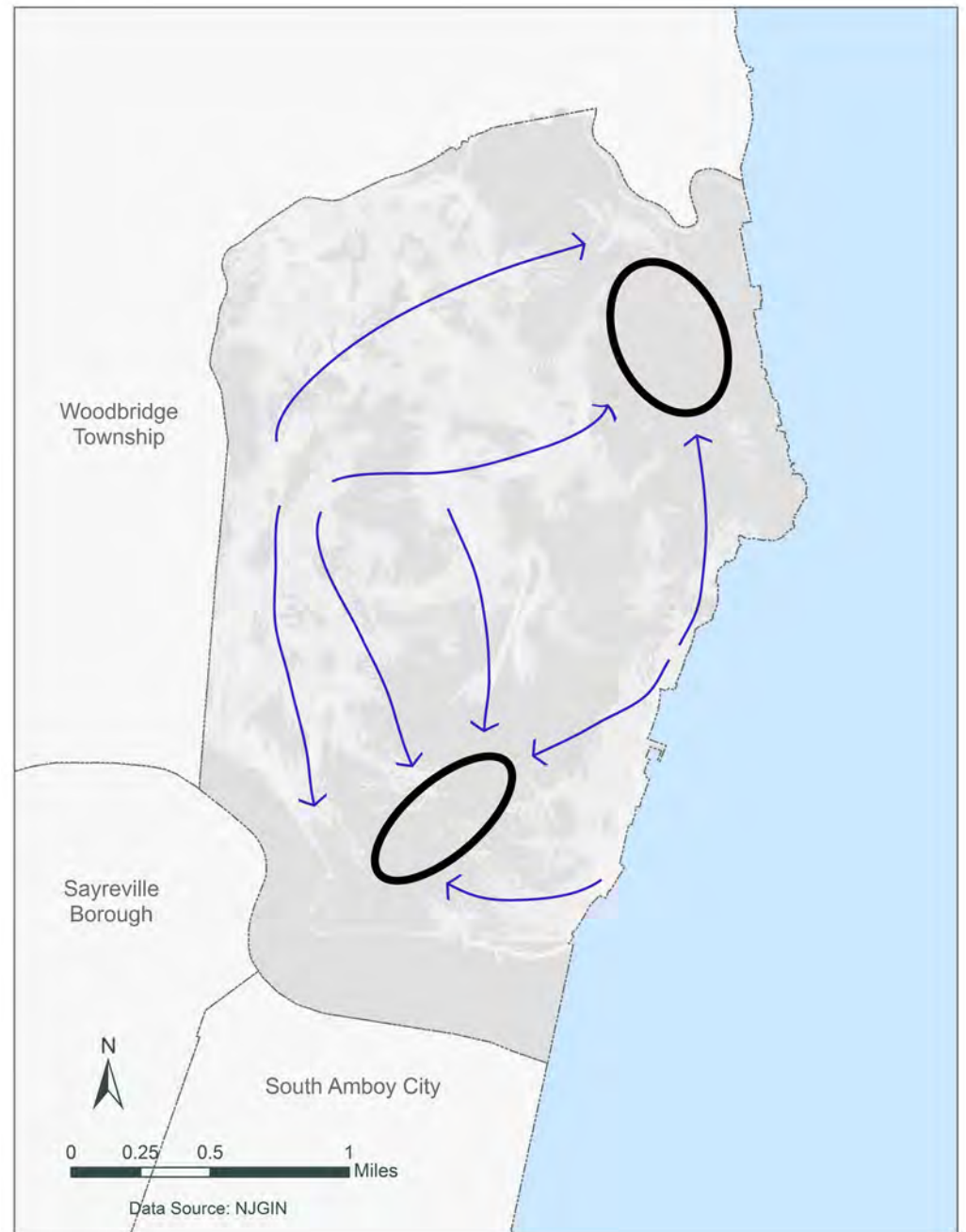


Figure 32: Topology and Surface Runoff Direction



Figure 33: Potential Green Roof Coverage

The map shown in Figure 33 was created by the studio team and depicts the potential maximum coverage of green roofs in the City of Perth Amboy. This analysis was performed by visual inspection of digital orthophotography (from 2012 MrSid files found on NJGIN) for large, flat roofs which may support the installation of green roofs. Many of the suitable buildings exist in the downtown center around the train station, but some of the largest flat roofs sit atop industrial warehouses towards the edge of the City, as well as several public buildings.

Appendix D

Transportation Analyses

The map shown in Figure 34 was created by the studio team and classifies the major roadways within the City of Perth Amboy. The classification typologies were made by measuring the right-of-way width of all roads within the City, identifying key thoroughfares for truck traffic as well as local traffic and identifying County and State roadways. Wide Residential streets have a typical right-of-way width of 60 to 66 feet while Narrow Residential streets are typically 50 feet wide or less.

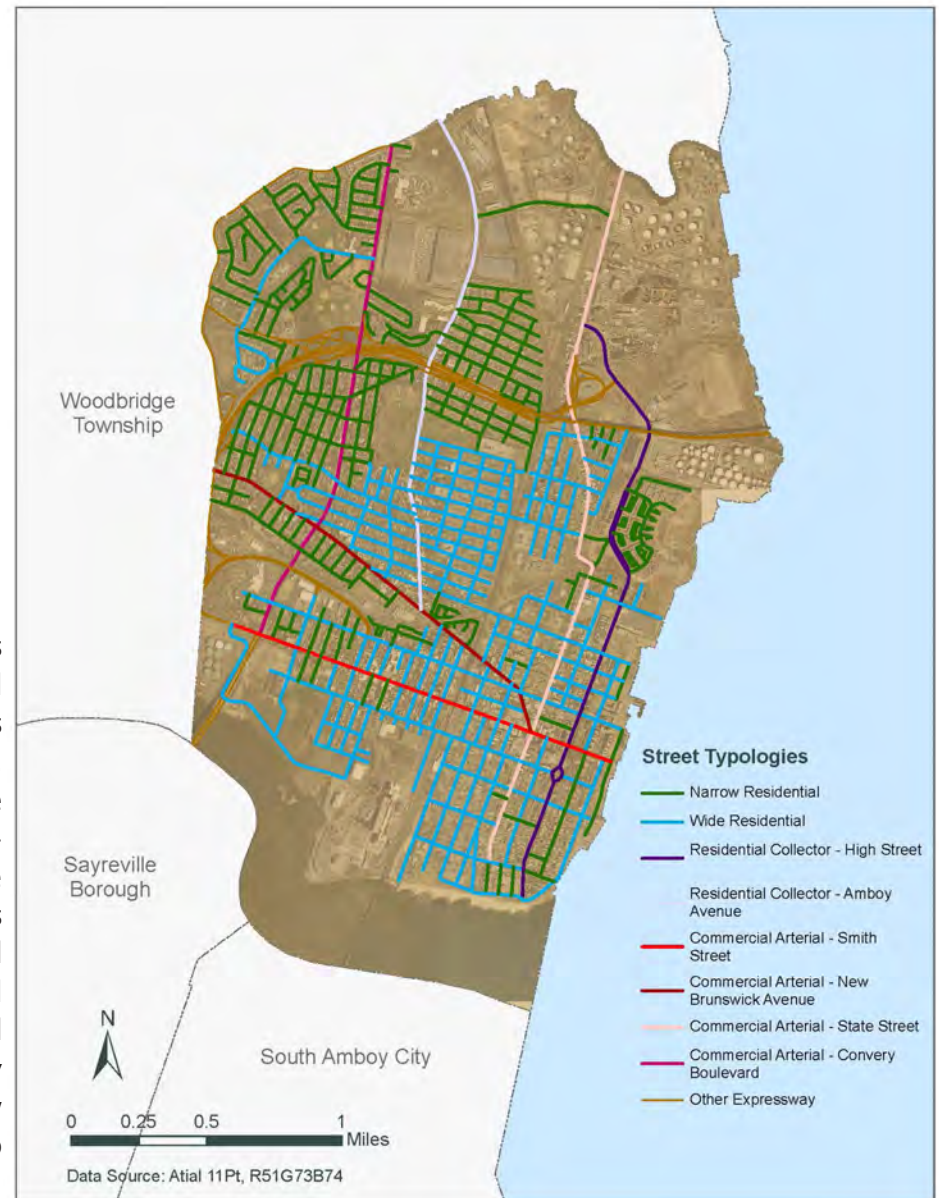


Figure 34: Street Typologies



Figure 35: Dead-End Street Analysis

The diagram shown in Figure 35 was created by Carlos Rodrigues, director of the studio team, and depicts the locations of dead-end streets in the City of Perth. The dead ends are represented by red circles while the street connections across major thoroughfares and rail right-of-way are represented by black double-ended arrows. This analysis was an attempt to further illustrate the lack of connectivity throughout the City and where the constraints on mobility exist. The results were used in the formation of recommendations in Objective 7.

The map shown in Figure 36 was created by the studio team and depicts the accessibility to public transportation by walking in the City of Perth Amboy. The NJTRANSIT bus routes and commuter rail line were mapped over the City's street network. A five-minute walking buffer was applied to the train station, as well as each of the bus stops in the City. The results show that a large majority of the City lies within a five-minute walk to a public transit stop. The only major residential areas outside of the buffer area exist in the northwest-most and southeast-most corners of the City. For the southeast edge of the City, adequate bicycle access should be considered as a priority to better connect car-less households to public transit.

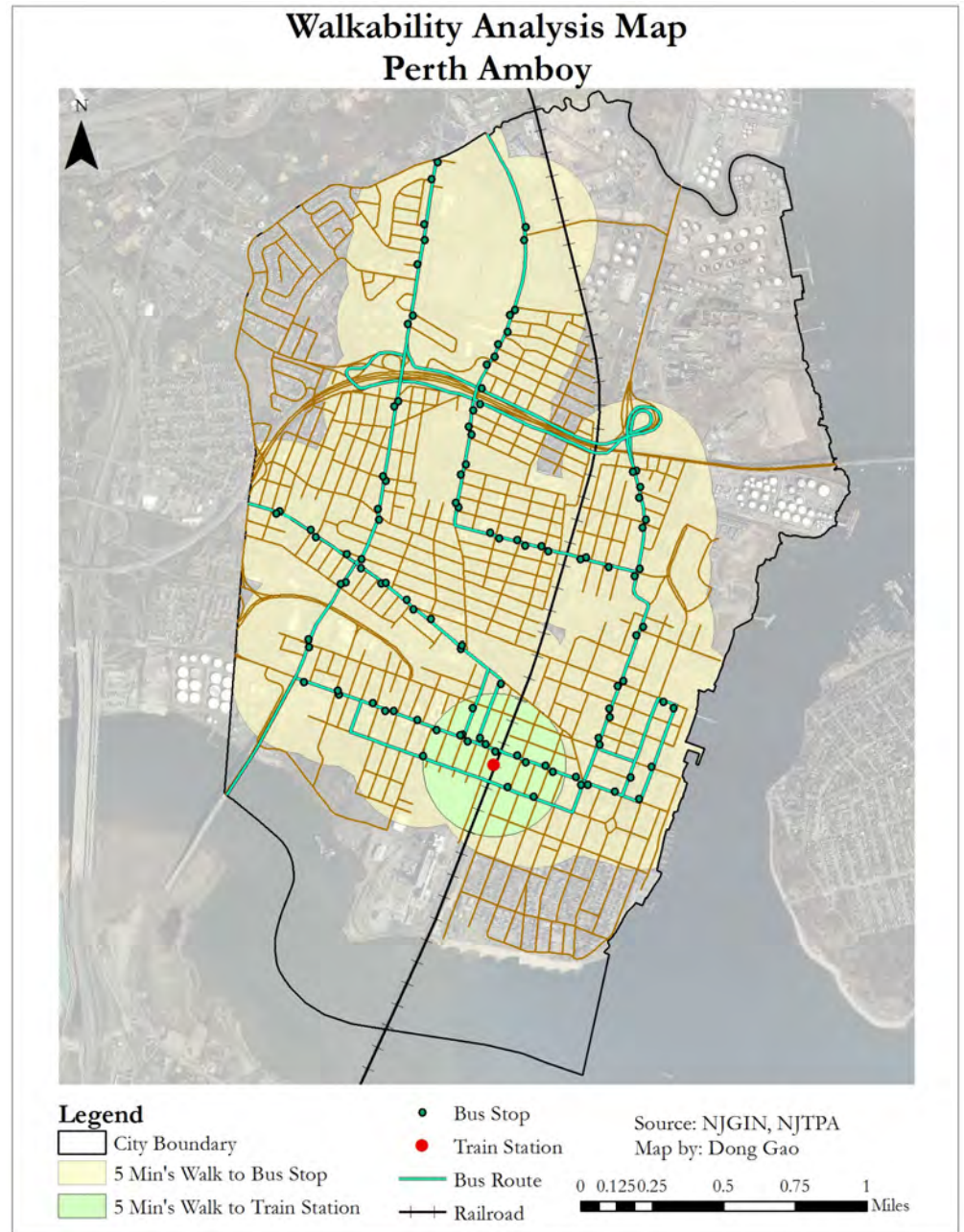


Figure 36: Walkability Analysis

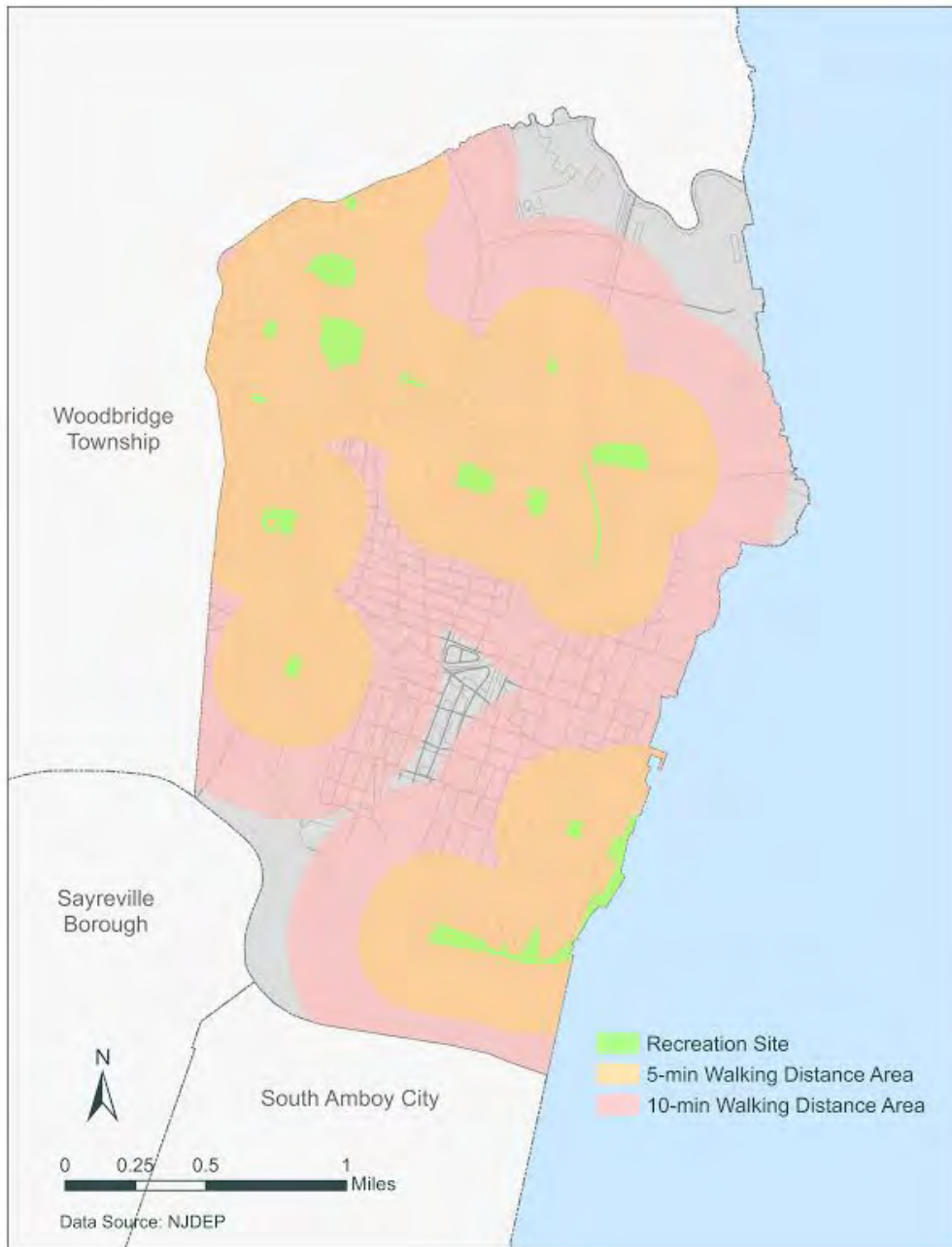


Figure 37: Walking Distance to Recreational Sites

The diagram shown in Figure 37 was created by the studio team and depicts the accessibility by walking of the existing recreation sites in the City of Perth Amboy. The recreation sites, represented in green, were buffered with five-minute and ten-minute walking distance buffers. The result was a near complete coverage of the entire City of access to recreation within a ten-minute walk. The only major area outside of the area is in the dead center of downtown. This resulted in a recommendation in Objective 7 to create an area of open space downtown by closing a portion of New Brunswick Avenue for passive recreation.

Appendix E

Proposed Street Cross-Section Options

Figure 38: Amboy Avenue Cross-Section Option 1
 Right-of-Way: 75 feet
 Cartway: 50 feet
 Parking on both sides of street with one dual-direction protected bike lane

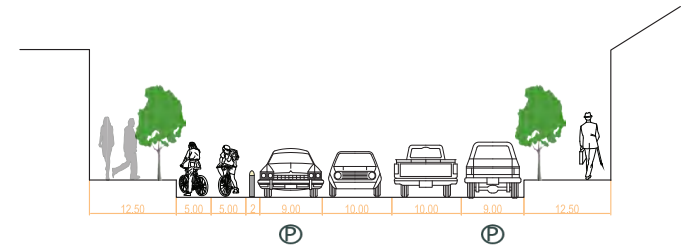
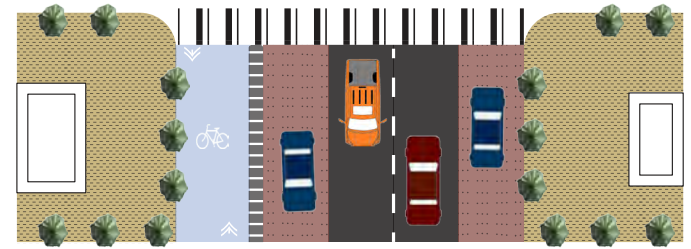
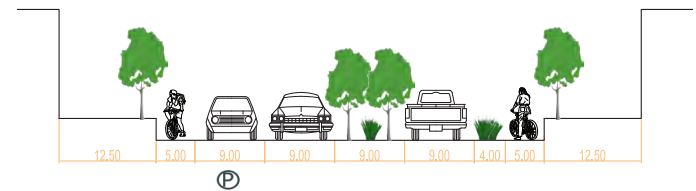
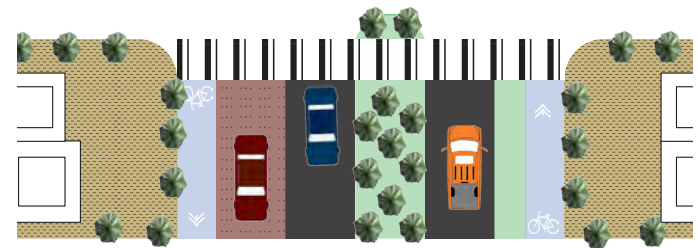


Figure 39: Amboy Avenue Cross-Section Option 2
 Right-of-Way: 75 feet
 Cartway: 50 feet
 Parking on one side of street with two bike lanes



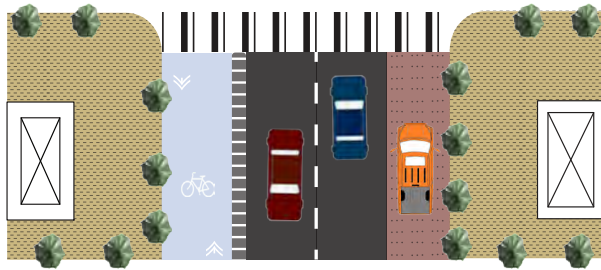


Figure 40: Convery Boulevard Cross-Section Option 1
 Right-of-Way: 66 feet
 Cartway: 41 feet
 Parking on one side of street with one dual-direction protected bike lane

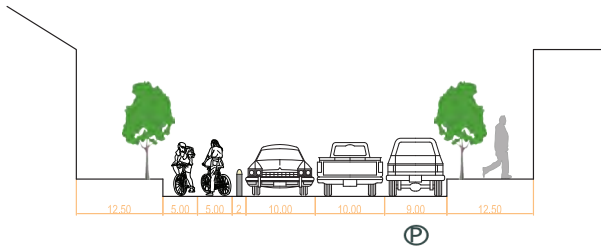


Figure 41: Convery Boulevard Cross-Section Option 2
 Right-of-Way: 66 feet
 Cartway: 41 feet
 Parking on both sides of street with one bike lane

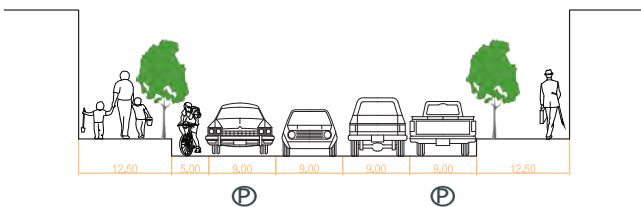
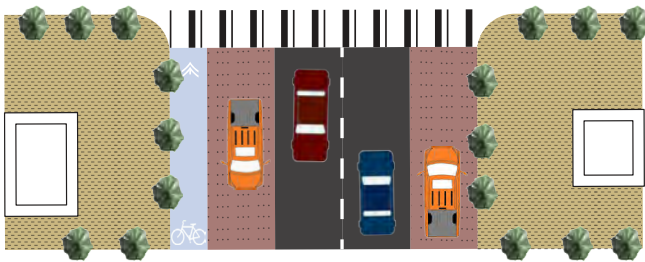


Figure 42: High Street Cross-Section Option 1
 Right-of-Way: 99 feet
 Cartway: 67 feet
 Parking on both sides of street with two protected bike lanes

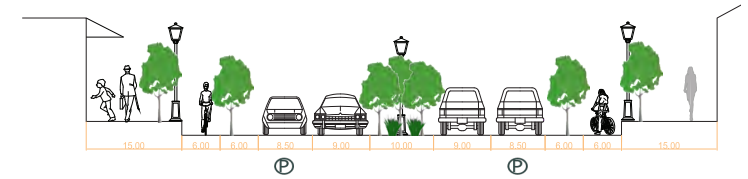
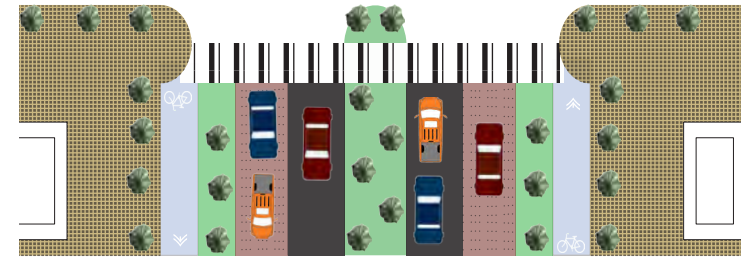
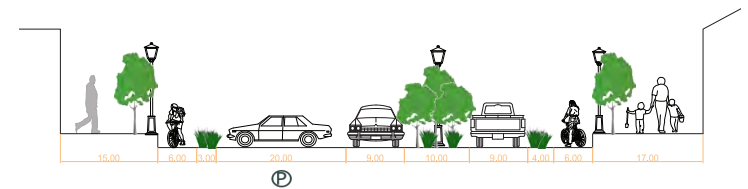
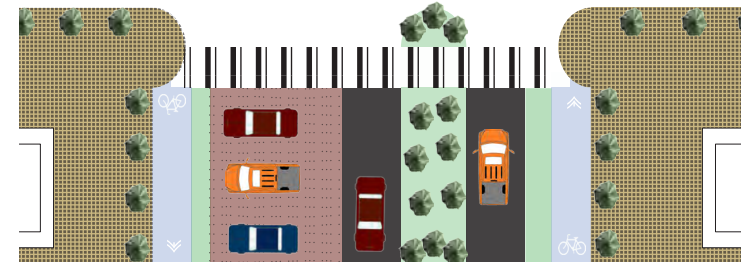


Figure 43: High Street Cross-Section Option 2
 Right-of-Way: 99 feet
 Cartway: 67 feet
 Parking on one side of street with two bike lanes



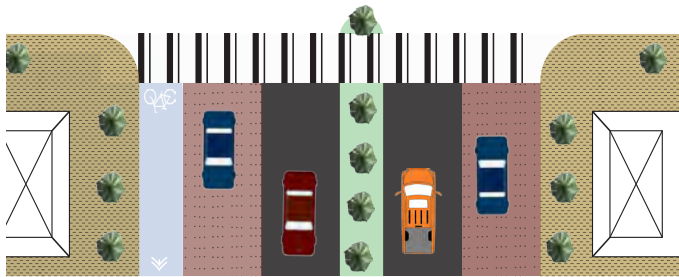


Figure 44: Medium Residential Street Cross-Section Option 1
 Right-of-Way: 60 feet
 Cartway: 46 feet
 Parking on both sides of street with one bike lane

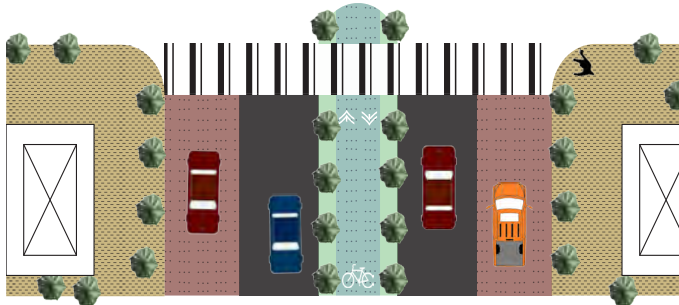
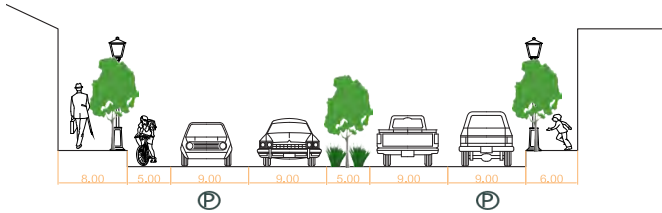


Figure 45: Medium Residential Street Cross-Section Option 2
 Right-of-Way: 60 feet
 Cartway: 44 feet
 Parking on both sides of street with one bike lane in median



Figure 46: New Brunswick Avenue Cross-Section Option 1
 Right-of-Way: 66 feet
 Cartway: 41 feet
 Parking on both sides of street with one bike lane

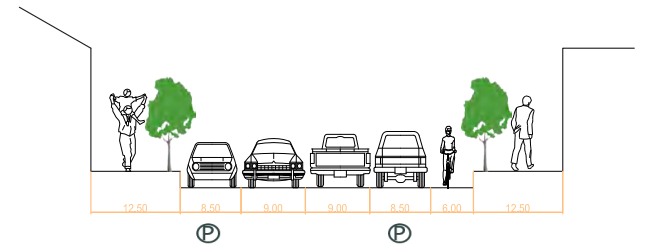
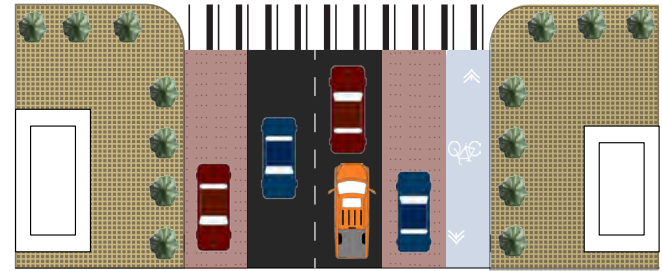
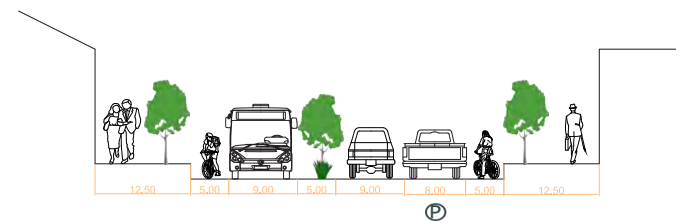
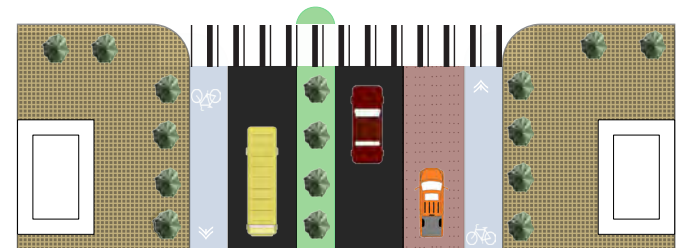


Figure 47: New Brunswick Avenue Cross-Section Option 2
 Right-of-Way: 66 feet
 Cartway: 41 feet
 Parking on one side of street with two bike lanes



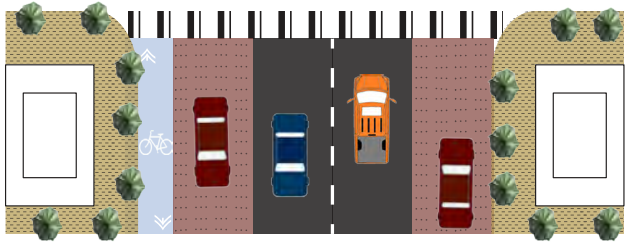


Figure 48: Small Residential Street Cross-Section Option 1

Right-of-Way: 50 feet

Cartway: 40 feet

Parking on both sides of street with one dual-direction bike lane

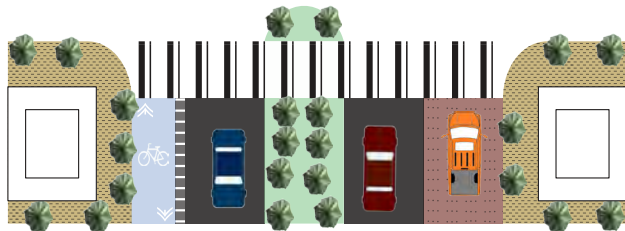
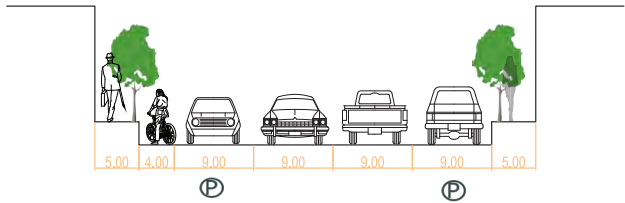


Figure 49: Small Residential Street Cross-Section Option 2

Right-of-Way: 50 feet

Cartway: 40 feet

Parking on one side of street with one dual-direction bike lane

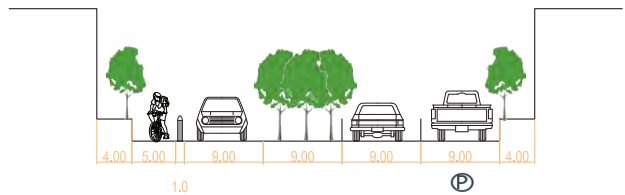


Figure 50: Smith Street Cross-Section Option 1

Right-of-Way: 66 feet

Cartway: 41 feet

Parking on both sides of street with one bike lane

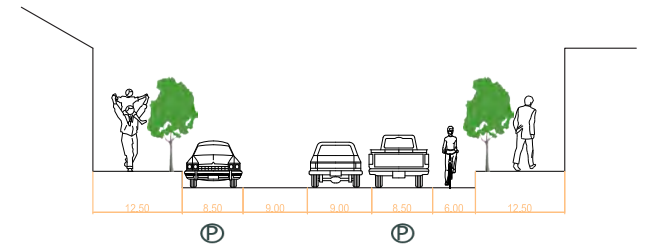
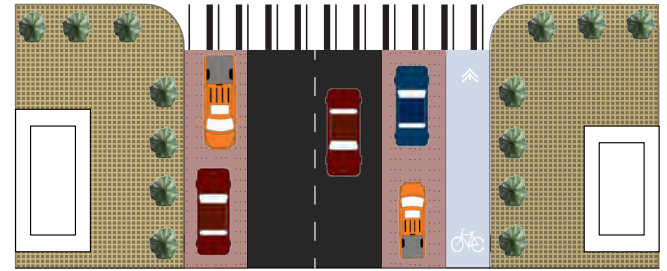
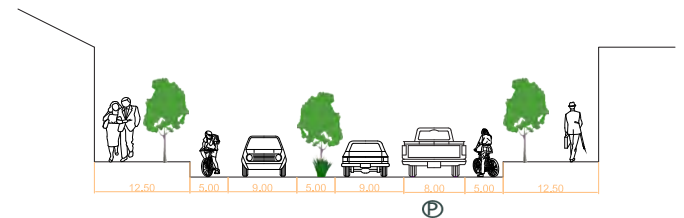
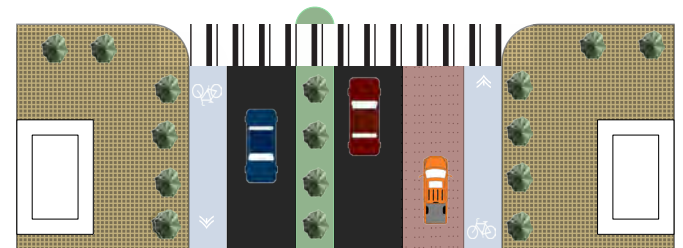


Figure 51: Smith Street Cross-Section Option 2

Right-of-Way: 66 feet

Cartway: 41 feet

Parking on one side of street with two bike lanes



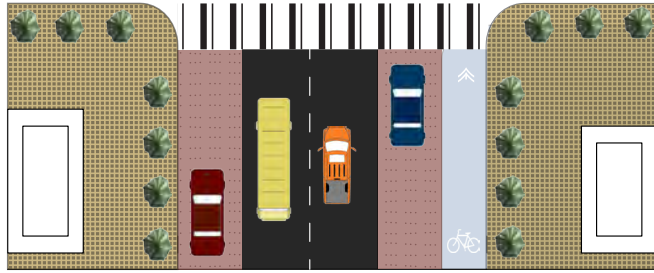


Figure 52: State Street Cross-Section Option 1
 Right-of-Way: 66 feet
 Cartway: 41 feet
 Parking on both sides of street with one bike lane

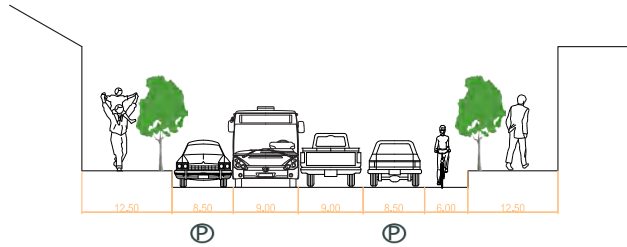
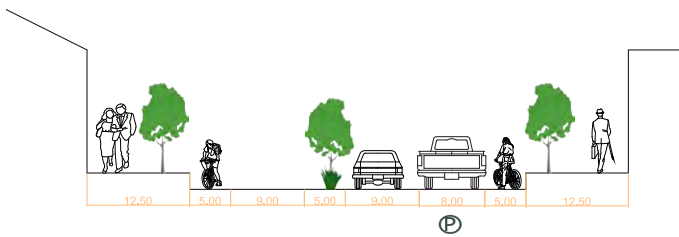
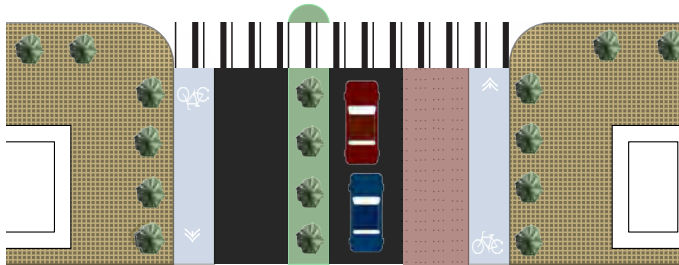


Figure 53: State Street Cross-Section Option 2
 Right-of-Way: 66 feet
 Cartway: 41 feet
 Parking on one side of street with two bike lanes



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