



Complete Streets:

A Framework for Northeast Lancaster City

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Project Description

During the Spring of 2011, graduate students from the Department of Community and Regional Planning at Temple University worked with the City of Lancaster in developing a report that identifies current strengths and challenges within the Northeast section of the City of Lancaster. This report offers a series of recommendations in order to apply “complete streets” concepts to this area.

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Section 1: Introduction



Located in southeastern Pennsylvania, the City of Lancaster is a dynamic and ever changing community. Initially inhabited by the Susquehannok, Conestoga, Pequea, and Shawnee tribes, Lancaster saw its first of several radical changes when land was transferred to William Penn during the late seventeenth century. Permanent European inhabitation did not occur until the 1700s when the initial city design was laid out by famed Washington D.C. planner, Andrew Hamilton. From its beginnings as a Native American homeland to its service as a trading post between Philadelphia and Wrights Ferry, Lancaster has transformed into a destination for exquisite cuisine, arts, and entertainment within a beautiful historic setting.

Today the City of Lancaster serves as the political seat for Lancaster County. The City of Lancaster is defined by its progressive attitudes and diversity, while the County as a whole maintains its agricultural heritage characterized by large Amish and Mennonite communities. Lancaster County has focused on farmland and open space preservation while the City has promoted a uniquely urban culture. The dynamics between the City and County complement each other by supporting growth where it is best served.

Lancaster has maintained a strong manufacturing and industrial sector that is centrally located within a short travel distance to major regional cities including Baltimore, Washington DC, Philadelphia, and Harrisburg. Structural changes in manufacturing industries contributed to a decline in jobs in the 1980s and 90s. However, the City and County have diversified and expanded its economy into multiple sectors including the pharmaceutical industry, health care, education, and a variety of specialty fabrication businesses. Meanwhile, both the City of Lancaster and the County have expanded their tourism industries considerably.

Lancaster's infrastructure has largely been shaped by its history. Among the most significant changes was the introduction of an automobile

oriented transportation system. Lancaster's infrastructure was originally designed to accommodate pedestrians, horses and wagons; the city founders could not foresee the advances in transportation that would ensue over the next three centuries. As a result, Lancaster, like many communities across North America, has had to find ways to incorporate high levels of motorized traffic on a pre-automobile infrastructure.

Improvements made to accommodate the automobile have had the effects of reducing multimodal accessibility and limiting the possibilities for households without automobiles. While significant improvements have been made within the City of Lancaster's downtown core, the bulk of the current infrastructure includes excessive cartway widths in certain areas, narrow or absent sidewalks, and a lack of pedestrian oriented enhancements.

Regardless of infrastructure challenges, the City of Lancaster has several existing policies in place that support multimodal transit policies. A strong foundation for continuous infrastructure improvement exists based on existing policies and completed work in the downtown core.

The City of Lancaster has recently unveiled its 2011-2013 Strategic Plan. Key components of this plan include creating an ideal urban experience for its residents and visitors. This will be accomplished with strategic focus on the arts, business development, green & sustainable infrastructure, improvements to neighborhood quality of life, and public safety. Multiple goals may be achieved through moderate, low cost improvements in existing infrastructure.

The following pages describe the concept of "complete streets" and how it can be applied to the City of Lancaster's current infrastructure. The concept of complete streets can not only promote multimodal transit, but can also help the City of Lancaster can reach its strategic goals.

The City of Lancaster is home to nearly 60,000 residents; a number that has been increasing in each of the past three decades. Much of the growth is a result of increases in the City's ethnic and minority populations over the past twenty years.

What are “Complete Streets?”

“Complete streets” is an emerging paradigm in modern community and regional planning. Transportation planning has historically focused on accommodating motorized vehicles—cars, trucks, etc. Conversely, the concept of complete streets focuses on all users, not just those in motor vehicles. A complete street is one that is physically designed to enable safe access for all users, regardless of age, ability, or transportation means. This design allows for bicyclists to ride freely, students to walk safely to school, and for public buses to operate smoothly.

The National Complete Streets Coalition (2011) notes that there is no one single approach for complete streets implementation as they are all built within a local context—whether or not the area is rural, suburban, or urban. A complete street plan may address a combination of infrastructure concerns such as sidewalks, bike lanes, intersections, public transit stops, median islands, curb extensions, travel lane widths, and parking needs.

The underlying thought is if a street is ‘complete’ more individuals will reduce their time spent using the automobile and increase their time walking, biking, or using other transit alternatives. The National Complete Streets Coalition (2011) cites a number of benefits to establishing a complete streets plan or policy, including:

- Pedestrian safety
- Accessibility for individuals with disabilities
- Improved health with increases in physical activity
- Economic development as businesses are easier to access
- A sense of community pride as more individuals will be outdoors
- Lower transportation costs
- Decreased traffic congestion
- Improved air quality

Hundreds of municipalities, cities, and states have established formal policies to promote complete streets. Examples include, but are not limited to, Sacramento, California; Eugene, Oregon; Minnesota; and Maryland. More recently, complete streets plans have sought to integrate environmental management concepts, such as vegetative strips to manage stormwater runoff. Figure 1 shows a retrofitting of Prospect Park in New York City using complete streets principles. The New York City Department of Transportation reports a 16% decrease in crashes and an increase in weekday cycling among commuters.

Many municipalities have integrated several aspects of complete streets into their designs without necessarily referring to it as a complete street plan. The City of Lancaster has adapted many aspects of complete streets within its core business district. Recent improvements include the placement of benches, sidewalk repair and replacement, as well as intersection improvements that support ADA accessibility. Figure 2 shows several examples.

Figure 1: A Complete Street in New York City



Figure 2: Complete Streets in the City of Lancaster's Downtown Core



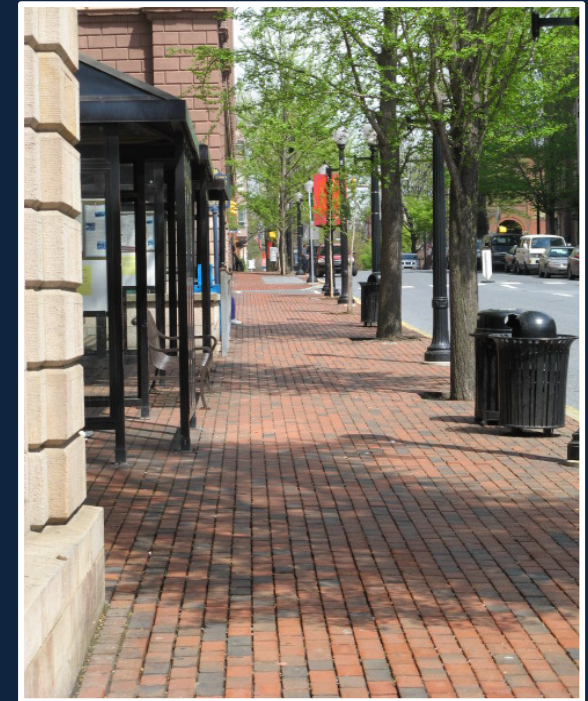
Brick paved crosswalks promote visibility of pedestrians. The extended curbs also help reduce the speed of traffic and reduce the distance that pedestrians have to walk across the street.

The car pictured above is clearly stopped before the pedestrian crosswalk at an intersection.



An electronic pedestrian signal in the downtown area alerts pedestrians and bikers to safely cross the street. A truncated dome allows for ease of access for those in wheel chairs.

The tree lined street also has a reduced cartway width.



An extended sidewalk is pictured above as the City of Lancaster has adopted a policy that sidewalks should be a minimum of four feet in width to allow ease of access.

A bus shelter is pictured on the left as part of the Red Rose Transit Authority public transportation system.

The Northeast Neighborhood: Challenges Outside of Lancaster's Core

The City of Lancaster has completed various revitalization projects, such as Urban Place and the Red Rose Transit Authority. Outlying areas are also in need of several infrastructure improvements. One of six entryways into the core of the downtown area, the northeast neighborhood is no exception. What makes this corridor important is that it contains two high volume roads, Walnut and Chestnut Streets. These streets connect to three nearby highways; US Route 30, US Route 283, and State Route 222.

The northeast neighborhood developed mainly as a result of the City of Lancaster's eastward residential movement in the early twentieth century and significant commercial and industrial development along area transportation corridors. This neighborhood is now characterized by many late-nineteenth and early twentieth century residences, small-scale retail and commercial businesses such as the Giant grocery store and an Advanced Auto Zone. The City's only public high school, JP McCaskey, also lies within the target area. This area is a true mixed-use community.

The fact that major transportation routes align with a neighborhood and a school campus raise many questions regarding the safety and viability of the infrastructure within the target area.

Completed in the spring of 2011, a team of Temple University graduate students in the Community and Regional Planning program engaged in a planning process that examines the current infrastructure and uses of the northeast neighborhood. This report discusses relevant city policies, environmental management practices, and a public engagement process. Each facet of the research behind this report leads to a final discussion on recommendations for improvement and integration of complete streets concepts and implementation.

A public engagement process was used to better understand the community and the need for a range of options in improving overall

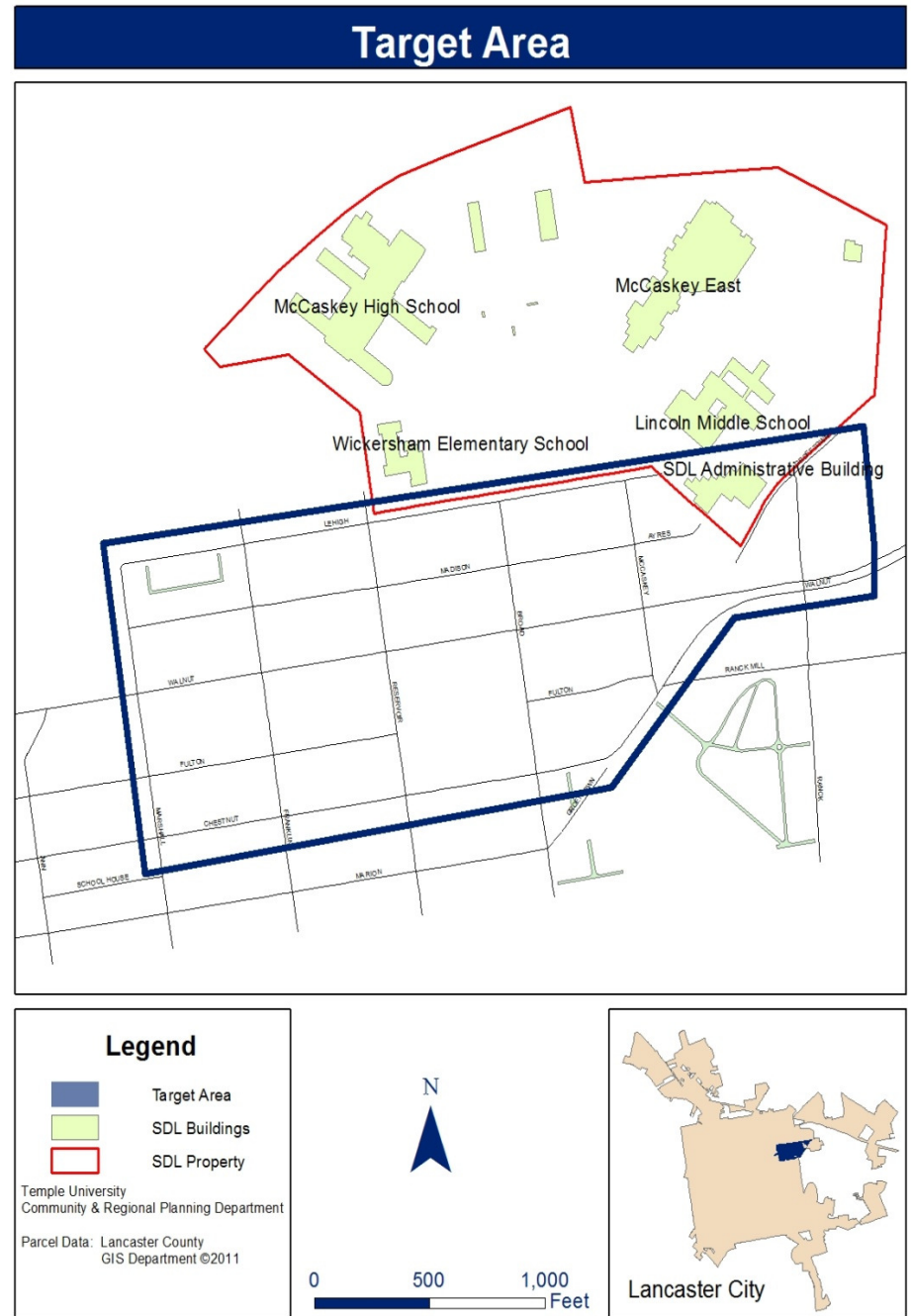
infrastructure. The public engagement (as discussed on page 18) allowed residents to identify complete streets concepts that could be applied to the northeast neighborhood. This approach called for a close working relationship with local community organizations, including the Northeast Neighbors Association, by surveying the local community, researching existing policies, conducting an analysis of existing conditions, and the City of Lancaster's Strategic Plan 2011-2013.

By integrating complete streets concepts into a framework informed by area needs, community input and research analysis, the City of Lancaster can transform the northeast neighborhood into an area that mirrors the revitalization that has been embraced in Lancaster's core.

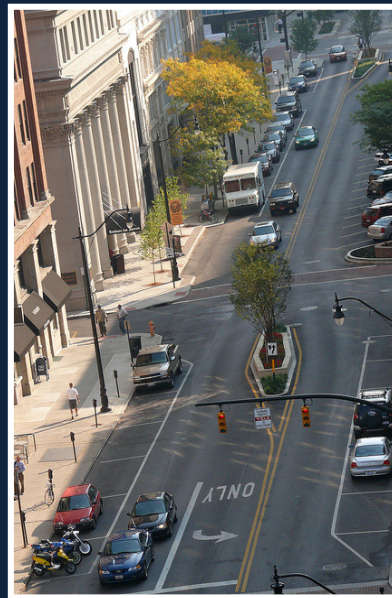
Figure 3 provides a map of the target area highlighting the boundaries of the four schools that make up the McCaskey Campus. The boundaries of the target area consist of Lehigh Avenue and East Chestnut Street bordering the north and south, with Ranck Avenue and North Marshall Streets bordering the east and west respectively.

Figure 3: Map of Target Area Highlighting Schools on the McCaskey Campus

The boundaries of the target area consist of Lehigh Avenue and East Chestnut Street bordering the north and south, while Ranck Avenue and North Marshall Streets border the east and west respectively



Section 2: The Research Process



In order to provide recommendations to improve the infrastructure within the northeast neighborhood, the following was necessary:

- A review of relevant city, county, state, and federal policies
- Research on demographics (social, transportation, etc.)
- Identification of the neighborhood's perspectives on current infrastructure strengths and challenges
- An examination of the target area's infrastructure

Each of these aspects will be discussed in greater length. Throughout this section, an analysis of the research, interviews, and community surveys will identify the needs of the target area.

Research in Policy and Practice

As the overall concept of complete streets continues to be implemented nationwide, the body of literature on complete streets grows accordingly. Readings and discussions focused on complete streets concepts, case studies, policies, coalitions, and implementation. Key documents used throughout the entirety of the project were provided by the National Complete Streets Coalition and its chapters, Transportation for America, the Alliance for Biking and Walking, and many more. A full list of references can be found at the end of this report.

As a base knowledge in complete streets was established through the review of current practices, the team then engaged in a policy analysis. Figure 4 cites the applicable policies reviewed, as well as identifies relevant concepts to complete streets. The city, county, and local policies and plans reviewed are all applicable and enforceable within the target area.

The local policy framework chart in Figure 4 provides an overview of the numerous plans and policies instituted by the City of Lancaster, as well

as local non-profits and the federal government, which incorporate some form of relevant complete street philosophy within their framework. The identification of complete street ideas within the policies and plans used by the City of Lancaster is meant to demonstrate that there are currently policies in place to integrate complete streets throughout the City. This includes street and sidewalk accessibility, stormwater management, and traffic calming measures.

Policies and plans reviewed include:

- City of Lancaster Zoning Ordinances
- City of Lancaster Property Maintenance Code
- City of Lancaster Subdivision and Land Use Ordinance (SALDO)
- City of Lancaster Streetscape Guidelines
- Lancaster County Comprehensive Plan
- City of Lancaster Strategic Plan 2011-2013
- City of Lancaster Green Infrastructure Plan
- City of Lancaster Comprehensive Plan
- Northeast Neighbors: Northeast Revitalization Initiative
- American with Disabilities Act Regulations

Figure 4: Local Policy Framework & Complete Streets Relevance

Policy	Relevance to Complete Streets
<i>City of Lancaster Zoning Ordinances</i>	<ul style="list-style-type: none"> • Identifies requirements for on-site parking at residential, commercial, and other land uses. • Defines signage requirements throughout land use-sensitive contexts.
<i>City of Lancaster Property Maintenance Code</i>	<ul style="list-style-type: none"> • Cites that residents must maintain all vegetation growth (i.e. brush, shrubs, grass, and weeds) to not impede accessibility to sidewalks and aesthetic. • Requires that snow and ice removal from sidewalks is the property owner's responsibility: must allow a min. of a 3 foot path. • Acknowledges tree planting and maintenance is enforced by Bureau of Parks & Public Property. • States that violation of any code will result in fine from the City of Lancaster.
<i>City of Lancaster Subdivision and Land Use Ordinance (SALDO)</i>	<ul style="list-style-type: none"> • Acknowledges that any SALDO plans must take into consideration the movement of people and goods, accommodate any increases in traffic volumes, facilitate turning movements, and ensure safe vehicular and pedestrian movements. • Plans must also promote pedestrian, bicycle, and mass transit accessibility to the site.
<i>City of Lancaster Streetscape Guidelines</i>	<ul style="list-style-type: none"> • Provides guidelines for sidewalks, calling for 3-4' planting zone and minimum 4' pedestrian zone; not including building zones which can accommodate seating and additional mobile plantings. • States that all sidewalks must meet ADA requirements. • States that "addition of crosswalks to be placed at all intersections connecting opposing accessible ramps on street corners." • Specifies uniform sidewalk furnishings, bicycle bollards, bus shelters and signage, and lighting.
<i>Lancaster County Comprehensive Plan</i>	<ul style="list-style-type: none"> • Plan sets forth principles to increase use of public transit, bicycling, and walking daily by 2035. • Fits the transportation infrastructure to meet the needs of the elderly and those with special needs. • Calls for improvement of public transit services by implementing the Red Rose Transit Authority's (RRTA) Transportation Plan. <ul style="list-style-type: none"> ○ Achieved by regulations set forth to permit higher density and mixed use around bus stops and station. • Seeks development of safe and convenient bicycle and pedestrian accommodations for every trip and level of ability.

<i>City of Lancaster Strategic Plan 2011-2013</i>	<ul style="list-style-type: none"> • Goals established to meet economic, environment, and neighborhood needs attempt to prevent conditions that undermine public safety. • Notes that increased pedestrian traffic through commercial areas can create economic viability and that vegetative strips and streetscape improvements throughout residential and commercial districts will create an inviting aesthetic, increased foot traffic, and manages stormwater simultaneously.
<i>City of Lancaster Green Infrastructure Plan</i>	<ul style="list-style-type: none"> • Seeks to meet green stormwater goals through community projects including remediating sidewalks, roads, and alleys. <ul style="list-style-type: none"> ○ Curb extensions, porous pavement, tree trenches, sidewalk planters, and ADA ramp upgrades. • Plan addresses incorporating bike lanes, stormwater planters, street trees, and reduced pedestrian crossing distances among others, as a way to meet numerous city goals at once. • Notes porous sidewalks extend pedestrian accessibility and sustainable infrastructure. • Recognizes enhanced tree canopy would improve aesthetics, and reduce air pollution.
<i>City of Lancaster Comprehensive Plan</i>	<ul style="list-style-type: none"> • Goals to create aesthetically beautiful, safe, and economically viable neighborhoods. • Seeks enhancement of the economic environment through providing adequate infrastructure. • Implementation of land use strategies to protect and enhance built environment are discussed.
<i>Northeast Neighbors: Northeast Revitalization Initiative</i>	<ul style="list-style-type: none"> • Addresses insufficient lighting in public spaces and proposes creation of a Lighting Plan. • Calls for implementation of uniform litter receptacles. • Seeks creation of the Northeast Greenway Corridor to mitigate stormwater runoff and provide areas to walk and bike. • Seeks overall enhancement of urban mobility: <ul style="list-style-type: none"> ○ Traffic calming techniques in the form of curb extensions. ○ Crosswalk and street intersection improvements. ○ Removal of sidewalk hazards and obstructions. ○ Multi-modal transportation promotion- bike lanes, walking. ○ Uniform signage program ○ Additional street trees and vegetative strips for aesthetics and stormwater control.
<i>Americans with Disabilities Act Regulations</i>	<ul style="list-style-type: none"> • Provides construction and design standards for sidewalk and business accessibility. • States curb ramps allow all individuals, including those with a disability, to access sidewalks. • Notes benches/seating infrastructure provides ample space to sit comfortably. • Clarifies that sidewalks without obstructions allow for safe travel of all pedestrians.

Demographics

The following demographic analysis compares trends exhibited within the target area to general trends in the City of Lancaster. The analysis provides an overview of population, household, and transportation trends over the previous decade (2000-2010).

Because Census 2010 data was not readily available at the time of this report, the analysis largely uses American Community Survey data as a basis of comparison to Census 2000 data. The target area falls within Census Tract 2.

Both Census Tract 2 and the City of Lancaster as a whole have seen gains in population. From 2000 to 2010, the population within the

target area has grown approximately 10.4%, from 2,671 to 2,948 residents (see Figure 5). Comparatively, the City of Lancaster grew by 5.3%, to 59,322 people, marking the third consecutive decade of growth after twenty years of population decline. In terms of racial composition, over the same time period, the target area witnessed a 17.3% decline in the white population, while African American, Hispanic/Latino, Asian, and all other populations grew during the same time period (See Figure 6). Of note, the Hispanic/Latino population grew by 10% from 2000 to 2010.

Figure 7 on page 15 provides a map highlighting the boundaries of Census Tract 2 in comparison to the boundaries of the target area.

Figure 5: Total Population Change for the City of Lancaster and Census Tract 2; 2000-2010

	Total Population: 2000	Total Population: 2010	Percent Change
The City of Lancaster	56,348	59,322	5.3%
Census Tract 2	2,671	2,948	10.4%

Source: U.S. Census Bureau, 2000; 2010

Figure 6: Total Population Change of Ethnicity/Race in Census Tract 2; 2000-2010

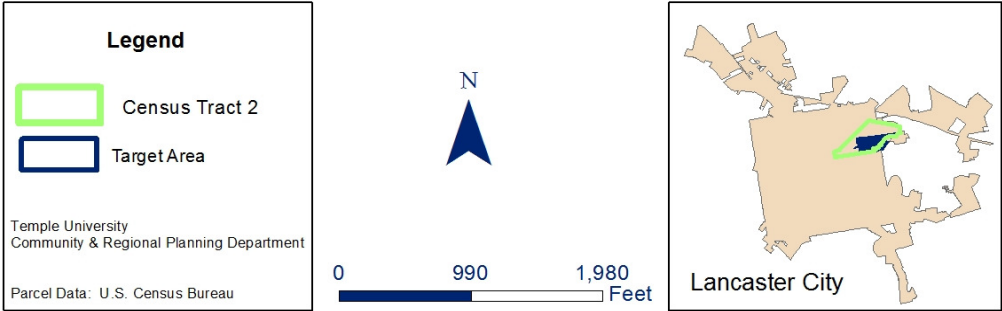
	2000	2010	Percent Change	Percent Total 2000	Percent Total 2010
White	1,425	1,179	-17.3	53.3%	40%
African American	275	324	17.8	10.3%	11%
Hispanic/Latino	651	1,032	58.5	24.4%	35%
Asian	255	295	15.7	9.6%	10%
Other	65	118	81.5	2.4%	4%
Total	2,671	2,948	10.4%		

Source: U.S. Census Bureau, 2000; 2010

Target Area & Census Tract 2

Figure 7: Target Area & Census Tract 2 Boundaries

The map to the right shows that the target area falls within Census Tract 2, with an exception of a few residences.



Housing

Figure 8 shows the housing units within Census Tract 2, while displaying the total number of owner-occupied and renter-occupied units. There are 1,170 housing units within Census Tract 2. As of the 2010 Census, vacant housing units declined 31.3%. Occupied housing units increased 6.2% since 2000 within the target area. Based on 2009 estimates, owner-occupied housing units rose an estimated 17.4%, while rental-occupied housing units decreased 18.7%.

Comparing the City of Lancaster homeownership rates with the target area, it is clear that homeownership rates within the target area are substantially higher than that of the entire City of Lancaster. As of the 2005-2009 American Community Survey, 44% of the units were owner-occupied within the City of Lancaster. However, within the target area, approximately 64% of the total housing was owner-occupied.

Figure 8: Owner-Occupied vs. Renter-Occupied Housing in the Target Area and the City of Lancaster; 2000-2009

	2000	2010	Percent Change
Target Area Housing Units	1131	1170	3.4
Area Owner Occupied Units	637	748*	17.4
Area Renter Occupied Units	411	334*	-18.7
City Housing Units	23,021	23,377	1.5
City Owner-Occupied Units	9,752	8,993	-7.8
City Renter-Occupied Units	11,181	11,468	2.6

Source: U.S. Census Bureau, 2000;
2005-2009 American Community Survey Five-Year Estimates

Transportation

In order to demonstrate the neighborhood's use of the transportation infrastructure, Figure 9 shows the travel changes within the City of Lancaster and the target area. Although the City of Lancaster witnessed slight growth in the number of residents commuting by automobile alone, the target area had a 25.9% increase within the same category. This indicates a clear increase in auto-oriented demand placed on current infrastructure. Furthermore, in all other categories (carpool, public transportation, and walking), residents using these means substantially declined from 2000 to 2009. At the time the 2000 Census and 2009 American Community Survey were completed, no resident within Census Tract 2 stated they used a bicycle as a mean of commuting.

Understanding that more residents within the target area are driving alone for their commute to work within the past decade prompts further discussion into the number of vehicles residents own. From 2000-2009, residents within owner-occupied housing units increased the number of available vehicles to 2 and 3 or more vehicles per household by an estimated 102% and 16.2% respectively. Concurrently, one vehicle availability for renter-occupied housing units increased approximately 28.2% during the same time period. Within the target area, the increase relative to more residents driving alone on their daily commute can be attributed to the increased availability of vehicles for residents.

Figure 9: Mean of Transportation for Commute to Work, 2000-2009

Subject Area	2000	2009	Percent Change
Car, truck, or van, drove alone	1029	1296	25.9%
Car, truck, or van, carpoled	191	172	-9.9%
Public transportation	56	24	-57.1%
Walked	169	92	-45.6%

Source: U.S. Census Bureau, 2000; 2005-2009 ACS Five-Year Estimates

McCaskey Campus Composition

There are a total of four schools on the McCaskey Campus at the northern edge of the target area. They are JP McCaskey High School, McCaskey East High School, Lincoln Middle School, and Wickersham Elementary School. During the 2009-2010 school year, these 4 schools had a combined total of 3,890 students.

The School District of Lancaster's policy on transportation states that elementary-aged students living within 1.5 miles from the school will not be provided transportation. Likewise, those attending JP McCaskey and Lincoln Middle School who live within 2 miles of the campus are also not provided with school transportation. Therefore, these students must provide their own means of getting to school. Students may drive themselves, be dropped off/picked up, use public mass transit, or walk to the campus. Because of this policy, Rose Bland, District Transportation Coordinator, estimates 2,500 students walk to and from school each day. It is unclear how many of these students walk through the target area. Estimates of student transportation provided by the District are shown in Figure 10.

As communicated by the City of Lancaster, there is a concern with the high volume of children walking to and from school every day. Crossing

guards and district officials have discussed the challenges in moving these students with project team members. Reports include, but are not limited to, students not utilizing crosswalks, fighting in local parks, littering throughout the target area, walking in the streets when sidewalks are full, and overall safety with the volume and speed of traffic.

There are a small number of safety strategies in place once these students leave the campus. As reported and observed, a large number of students (estimates in the hundreds) cross through Reservoir Park each day. At this time several residents maintain contact with school officials through handheld radios in order to reduce fighting. There are also eight crossing guards working around the campus, one of whom is located in the target area. More recently, the dismissal time of Wickersham Elementary was changed so that students would not be walking during the same time as the high school students. The District Transportation Coordinator reports this was done to promote safety as students walked in the streets when the middle and high school students were dismissed at the same time.

Figure 11 on the following page shows the JP McCaskey High School.

Figure 10: Estimates in Student Modes of Transportation

Student Mode of Transportation	JP McCaskey High Schools (both schools combined)	Lincoln Middle School	Wickersham Elementary
Bus	935 daily	<50	n/a
Van	40 students maximum	15 daily	35 daily
Drop-off/Pick-up	unknown	unknown	unknown
Drive	100 daily	n/a	n/a
Public Transit	<50	0	0
Walk	1500-1700	400	350-400
Total Number of Students Attending	2806	575	509

Source: Rose Bland, Transportation Coordinator, School District of Lancaster

Public Engagement and the Neighborhood Perspective

Through public engagement, the project team was able to further understand the strengths and challenges within the northeast community and the project's target area. From key in-person interviews to online surveys, Figure 12 describes the different public participation efforts led by the project team. Each stakeholder was particularly sought after for their unique perspectives and experiences in the target area.

A highlight of the public engagement process was the use of surveys, of which a total of 50 completed surveys were collected. The survey asked 50 questions, both yes/no and open ended. Open ended essay style questions provided participants the opportunity to fully explain their answers and priorities. Appendix A provides responses to each close ended survey item.

Interviews were also conducted with a variety of community members, including local business owners, parents, and residents. School staff members were also contacted for comments. Further interviews providing insight into the target area included speaking with John Gouveia, Chair of the Northeast Neighbors Association, and other association members. No interviews were conducted with school students. However, the project team observed the students walking to and from school on several occasions in order to determine what routes students use most as they commute to the McCaskey Campus.

The public engagement piece resulted in contact with a diverse set of stakeholders. A majority of participants described dozens of positive aspects of their neighborhood, such as location and historic charm. However, the outreach initiatives also showed a diverse set of wants and needs within the target area. Some of these needs echo the Northeast Neighbors Northeast Revitalization Plan.

Released in 2007, The Northeast Neighbors plan highlighted community concerns and led to the development of 38 implementation strategies. In its fourth year of a five year plan, a total of 10 of the 38 strategies have been fully implemented. One element of this implementation included the litter receptacles that can be found throughout the northeast neighborhood.

Figure 11: JP McCaskey High School



Figure 12: Methods & Objectives of Public Engagement

Stakeholder/ Persons Involved	Number of Participants/ Contact Method	Objective
1. Target area residents	49 surveys completed; Canvassing target area Use of online survey; Telephone Interviews	<ul style="list-style-type: none"> • Obtain residents perspective on their neighborhood strengths and challenges • Inform residents of the overall project
2. Target area businesses	In-person interviews	<ul style="list-style-type: none"> • Obtain owner understanding of the neighborhood and impact on business
3. Key neighborhood informants	In-person interviews (including NE Neighbors Committee Members) Telephone interviews	<ul style="list-style-type: none"> • Understand role and history of Northeast Neighborhoods • Understand planning & implementation phases of the NE Neighborhood plan • Discuss past public engagement processes
4. School staff	In-person interviews E-mail communication with other school officials	<ul style="list-style-type: none"> • Gather transportation data on student commuter patterns • Understand current safety and transportation initiatives • Assess schools needs to the surrounding environment in terms of promoting safety
5. Parents	Telephone and e-mail contact; Communication with Parent Teacher Organization Reps.	<ul style="list-style-type: none"> • Understand parent perspective on school commute and safety • Inform community of the overall project • Further dissemination of survey instrument • Work with PTO officials to access contact with other school officials
6. Students	Observation	<ul style="list-style-type: none"> • Observe student walking patterns to understand areas of target area used
7. City of Lancaster Staff	Repeated contact with 5 key Staff members; In-person interviews/meetings E-mail/phone contact	<ul style="list-style-type: none"> • Further development of policy framework • Identification of community contacts • Gain understanding of current infrastructure and feasibility of future changes/recommendation

With the final year of phase implementation approaching and a lack of funding available, the Northeast Neighbors Association have refocused their efforts to concentrate on three key priorities: (1) safety and security, (2) relationships between the school and community, and (3) the development of a “greenway” from the McCaskey campus to downtown core. The residents in the neighborhood revealed that not only are these association priorities important, but also several other concerns are present.

Of greatest concern within the target area is a need to address litter in the community. A total of 91% of the residents indicated they were concerned with litter being thrown in the streets. Furthermore, 87% of residents indicate a need for additional litter receptacles.

Directly related to resident concerns with litter, are concerns about the neighborhood’s overall image. Residents indicated that they are generally pleased with their neighborhood. A total of 80% of those surveyed indicate that their neighborhood is “walkable.” The overall physical appearance is not the number one priority among residents, but there is strong support for several improvements in neighborhood image. Specifically, residents and business owners support physically enhancing the appearance of the neighborhood through creating more parks and increasing vegetation. Furthermore, concerns with physical appearance revealed homeowner concerns with the number of those renting homes in the neighborhood (yet, this neighborhood has a higher percentage of homeowners when compared to the city as a whole). Figure 13 describes survey respondents’ thoughts on the physical appearance and wanted changes within the target area.

Safety and crime continues to be another concern indicated by both informants and residents in the Northeast Neighbors plan and by the target area survey respondents. Specifically, a majority of survey respondents would like to see an increased police presence to address crime.

Figure 13: Resident Preferences Surrounding Neighborhood Appearance

Resident Preference	Yes	No	Unsure
Neighborhood would benefit from additional gardens and vegetation	81.8%	13.6%	4.5%
More trees in the neighborhood	76.7%	16.3%	7%
Create pocket parks (vacant lots used as open space and/or parks)	69.8%	23.3%	7%
Increases in open public space	69%	16.7%	14.3%
Park benches or other places for pedestrians to sit	68.2%	20.5%	11.4%
More visible art work in the community, such as street art or murals	67.4%	14%	18.6%
Alleyways are not being maintained	63.6%	25%	11.4%
The neighborhood is committed to street maintenance	40.9%	36.4%	22.7%

Source: Project Survey

The respondents identified a desire for increased lighting is also directly linked to their desire to create a safer neighborhood. Other respondents indicated within recent years there have been an increase of graffiti (often gang-related signs) on buildings and a reported increase in drug dealing within the target area. Through interviewing, two residents indicated there is little awareness of the crime and safety concerns within this area of the neighborhood because many perceive crime to only occur in the southeast portion of the City.

It must be noted that the Northeast Neighborhood has a history of spearheading safety related measures within the City of Lancaster. Citywide security camera initiatives were established as a result of

efforts led by the Northeast Neighbors Association in 2006. While the northeast may have led this initiative, the area maintains fewer security cameras than other areas in the City of Lancaster. Figure 14 further illustrates the target area's preferences in terms of safety and crime as indicated through survey research.

Figure 14: Target Area Preferences Related to Crime

Resident Preference	Yes	No	Unsure
A police bike patrol	86.7%	10.9%	2.2%
Additional street lighting	64.4%	24.4%	11.1%
Concern for safety in terms of crime	60.5%	23.3%	16.3%
More security cameras	60.0%	26.7%	26.7%

Source: Project Survey

A final conclusion that can be drawn through the public engagement process is there is an overall sense of community. It is a great strength within the northeast and the target area that residents and business owners want to feel a sense of connection. One clear indicator of this is the several respondents who acknowledged that the target area must establish open space and areas in which residents can connect. This aligns with the Northeast Neighborhoods key priority of creating a partnership between the residents and the school so that the building can be opened up and used by the neighborhood.

A consideration within this community is that the residents have indicated a lack of communication between the neighborhood and the City of Lancaster. The interviews revealed that several residents were unaware of how to express their concerns or how they can be part of the neighborhood's planning processes. This is evidenced by the fact that several residents and even a School District official e-mailed a project team member with further suggestions in order to connect directly with city officials.

“ The Northeast part of the city is a great place to live as long as residents and those driving through care for it. ”

-Target Area Resident

Section 3: Infrastructure



Streets & Intersections

Thousands of commuters travel through the target area at the same time thousands of students are walking to and from school. Given the large demand on the infrastructure, the target area faces a unique challenge in providing safe access for these users. The following provides a brief analysis on several concerns pertaining to streets and intersections within the target area.

Daily Travel & Traffic Accidents

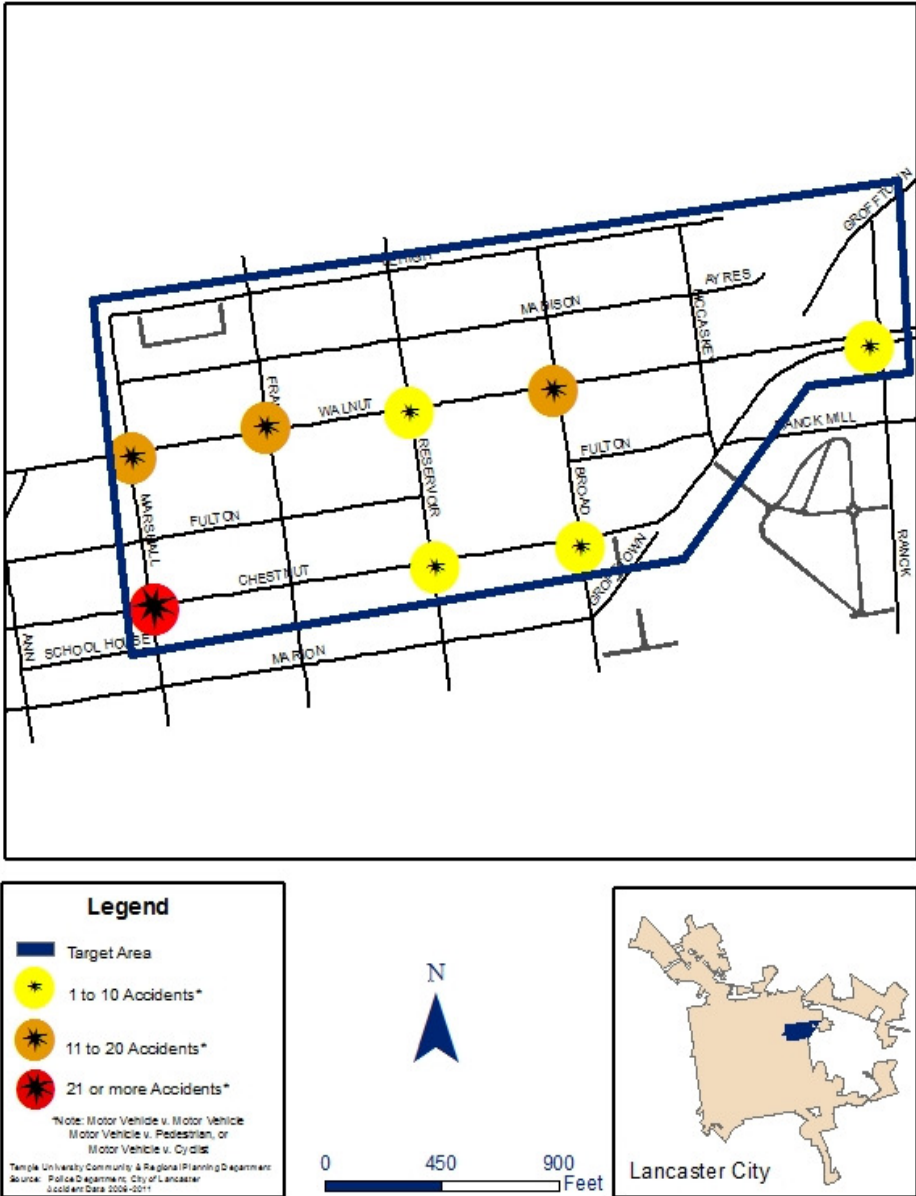
Data provided by the Pennsylvania Department of Transportation shows an Average Annual Daily Travel (AADT) range of 6,319 to 8,359 vehicles on Walnut and Chestnut Streets in early 2011. Along Walnut Street, from Ranck Avenue to South Broad Street, the AADT is highest at 7,558 vehicles. Concurrently, along Chestnut Street, the area from South Broad Street to Ranck Avenue averages approximately 8,359 vehicles.

Accident data collected from the City of Lancaster Police Department from 2006 to 2011 indicates the intersection around North Marshall Street and Chestnut Street had the greatest number of accidents, totaling 28. However, there were zero reported accidents at the intersection of North Franklin and Chestnut Street. Figure 15 represents the intersections which experienced vehicular, bicyclist, and pedestrian accidents involving another motor vehicle.

Rates of Speed

The speed limit within the City of Lancaster is 25 miles per hour. However, opportunities exist for motorists to greatly exceed speed limits along Walnut and Chestnut Streets. This may be due to excessive cartway widths and motorists maintaining high rates of speed as they exit the highway. While there is no available data on rates of speed along Walnut or Chestnut Streets, excessive cartway widths likely contribute to higher rates of speed.

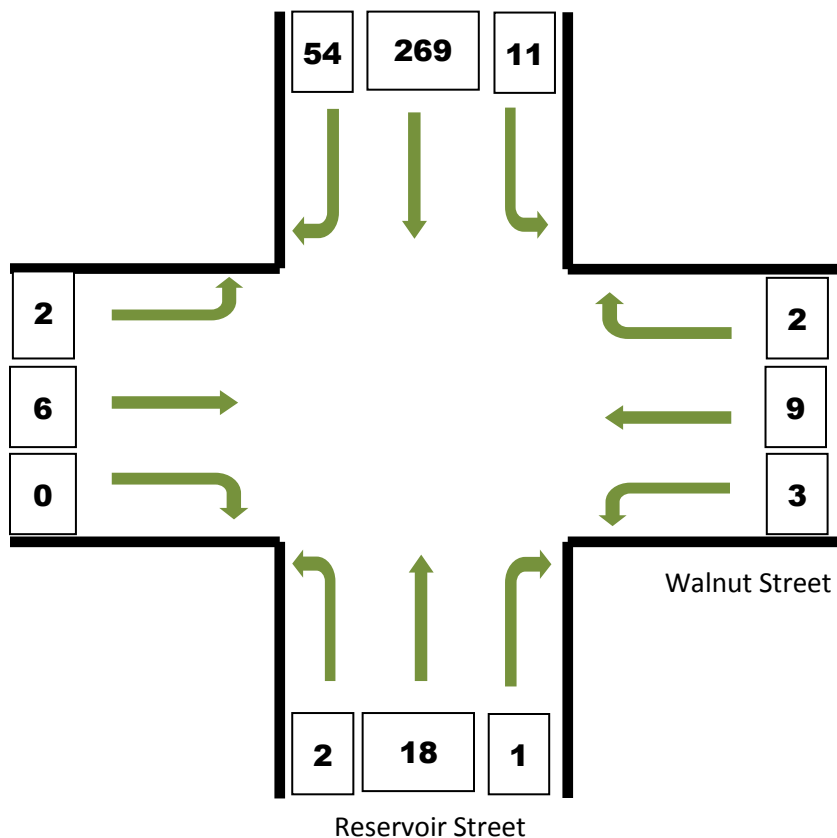
Figure 15: Accidents within the Target Area



Pedestrian Movement

Because of the high volume of people that walk through this area every day, a potentially dangerous situation is present related to the volume of motor vehicles traveling on these streets during peak pedestrian travel times. Data on the volume of pedestrians traveling through the target area was collected for intersections in January, February, and March 2011. As an example of an intersection or “turning movement” count, Figure 16 shows the intersection of Walnut and Reservoir Street. During the afternoon hour, approximately 269 pedestrians traveled south on through the target area. More turning movement data is in Appendix D.

Figure 16: Intersection of Walnut & Reservoir Streets
Recorded March 29, 2011, from 3 p.m. – 3:45 p.m.



Bike Lanes

Infrastructure within the target area does not support bike lanes, partly because of insufficient space based on the existing cartway widths. There is also a lack of bicycle racks or bollards found throughout the target area. Within the framework of complete street ideology, bicycle infrastructure including bike lanes and rack facilities create opportunities for multi-modal transportation. In particular, bike lanes, provide space on existing roadways that accommodate cyclist and promote bicycle awareness.

Public Transit/Bus Usage

There are eight bus stops within the target area, all of which are located on Walnut and Chestnut Streets. One bus stop, located along the Giant grocery store, is designated as a “major route destination” per the Red Rose Transit Authority (RRTA). Each bus stop within the target area consists of a posted sign, with no other infrastructure provided, such as shelters. The target area is served by City Bus Route 4, which provides a critical connection between residents in the target area and Lancaster’s central station. There is no data available from the Red Rose Transit Authority on how many individuals use the stops in the target area.

Inconsistencies in Pedestrian Crosswalks

One significant challenge exhibited within the target area is a lack of uniformity relative to pedestrian crosswalks at street intersections. Considering that 60% of surveyed target area residents indicated that they do not feel motorists yield to pedestrians, the inconsistencies need to be explored.

Throughout the target area there are intersections without painted pedestrian crossings or severely degraded markings; limited signalized pedestrian markings; and a lack of basic pedestrian signage. Without appropriately painted crosswalks or signals to alert pedestrians to motorized traffic, pedestrians form a false sense of safety and motor

vehicles are less aware of the pedestrian traffic. The combination of these issues creates the potential for increased pedestrian and motor vehicle accidents. The intersections along Chestnut Street offer examples of a lack of crosswalk uniformity. Three intersections in particular (Broad Street, Reservoir Street, and Franklin Street) have different types of crosswalks. At the intersection of Chestnut and Broad Street, there are a total of four crosswalks, traffic signals, but no pedestrian crossing signals. Along Chestnut and Reservoir, there are four crosswalks and a pedestrian crossing sign, but no electronic signals to inform pedestrians when to

cross. Finally, at the Chestnut and Franklin intersection, there are crosswalks on each side of Franklin Street, a traffic signal, but no pedestrian signals. Within the target area, there is only one set of electronic pedestrian crossing signals which exist at the intersection of Walnut and Franklin Streets. Furthermore, there is only one overhead school crossing sign, active during school travel hours in the morning and afternoon, at the intersection of Walnut and Reservoir Streets. However, there are no electronic pedestrian signals, only two post signs indicating a school crossing (See Figure 17 for more information).

Figure 17: Intersection Amenities within the Target Area

Intersection	Number of Crosswalks	Traffic Light Signal	Electric Signal Alerting Pedestrians to Cross	Pedestrian Crossing Sign for Drivers
Walnut & Reservoir Sts.	4			X
Walnut & Franklin Sts.	4	X	X	
Walnut & Broad Sts.	4	X		
Lehigh Ave. & Reservoir St.	4			
Lehigh Ave. & Franklin St.	4			
Lehigh & McCaskey Ave.	4			
Chestnut & Reservoir Sts.	4			X
Chestnut & Broad Sts.	4	X		
Lehigh Ave. & Broad St.	3			
Marshall St. & Fulton St.	2			
Franklin & Fulton Sts.	2			
Chestnut & Franklin Sts.	2	X		
Walnut & Marshall Sts.	1			
Reservoir & Fulton Sts.	1			
Madison St. & McCaskey Ave.	1			
Madison & Broad Sts.	1			
Lehigh Ave. & Marshall St.	1			
Franklin & Madison Sts.	1			
Ranck Ave. & Walnut St.	0	X		
McCaskey Ave. & Walnut St.	0			

Sidewalks

Sidewalks are a critical component in improving safety for pedestrians. Given the significant number of pedestrians using the sidewalks throughout the target area, it is imperative sidewalks are addressed relative to complete streets concepts. Observation and key informant interviews suggest the following challenges within the target area:

Obstructive Tree Growth

Approximately 77% of survey respondents in the target area indicated they would like to see more trees in their neighborhood. However, the existing trees in the neighborhood present a persistent challenge in terms of sidewalk functionality. As trees continue to grow and root expansion occurs, the sidewalk suffers from cracking and uplift which compromises its function. Often, the upward lifting by tree trunks fails to fracture the sidewalk at the control joint. This has resulted in sections within the target area where entire sections of sidewalk have been rendered into obstacles to be stepped over. This natural phenomenon creates hazardous conditions for pedestrians, as well as financial burdens for property owners.

Ice & Winter Conditions

The integrity of the sidewalk surface can become compromised due to the wearing effects of a persistent freeze-thaw cycle. When water from melting snow and ice infiltrates the sidewalk, refreezing creates pressure that forces the sidewalk to lift beyond the surface height of the rest of the sidewalk. The downspout from residences and businesses directing storm water flow directly onto the paved surface is another challenge of wintery conditions and sidewalk functionality. As down-spouted water turns to ice on the sidewalks there is an additional safety risk added.

Improperly Placed Signage

Significant investments have been made in recent years on installing wheel chair accessible curbs, truncated domes, as well pedestrian and vehicular signage throughout the target area. Despite these resources, barriers in functional movement remain. There are instances within the target area where a sign has been installed within the sidewalk, shortening its effective width and rendering it less functional.

For example, on Lehigh Avenue there are 4 handicapped parking signs consecutively placed 8 inches into a 32 inch sidewalk. This sign placement narrows the sidewalk to a 24 inch space for passing. While utility poles and signage are necessary and required, this interference obstructs sidewalk usage for both the able-bodied and disabled pedestrian. Figure 18 provides examples of obstructive tree growth, wintery conditions, and sign placement within the target area.

Lack of Sidewalk Enhancements

When compared to the City of Lancaster's downtown core area, the target area has a pronounced lack of sidewalk enhancements; such as decorative lighting, benches, and pedestrian signage. Complete streets research has shown that benches placed at 50 or 60 foot intervals extend the distance people are willing to walk. Aside from providing users opportunity for rest, benches also extend the opportunities for social interaction and informal neighborhood surveillance. A total of 68% of survey respondents in the target area indicated they would like to see more benches in the neighborhood. Decorative lighting contributes to the overall character of a neighborhood, while at the same time increasing visibility and pedestrian safety. There are existing examples of decorative street lighting in the downtown core. 65% of survey respondents indicated they want more lighting in the neighborhood.

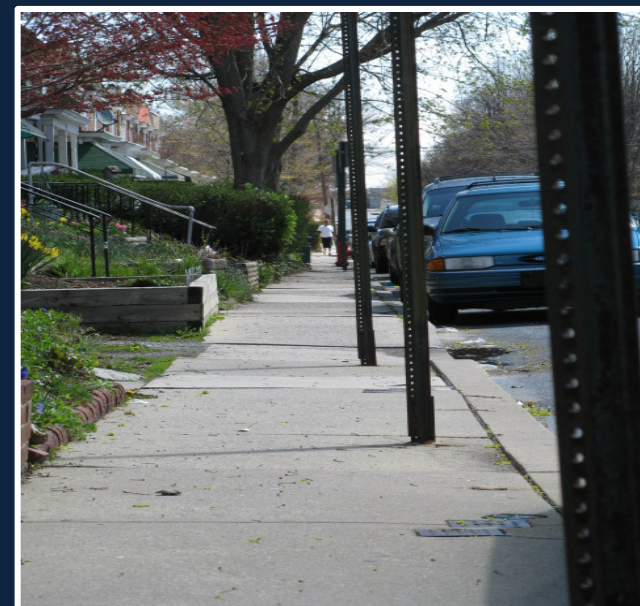
Figure 18: Sidewalks within the Target Area



A sidewalk uplifted by tree roots on Madison Street



Ice formation due to down spouting and refreezing of melted snow



Handicapped parking signs on Lehigh Avenue reducing the sidewalk width to approximately 18 inches

Section 4: Recommendations



Recommendations for Improving Street and Intersection Quality

Recommendations for improving existing street and intersection conditions are intended to promote safety, walkability, and access for all users. Based on available cartway widths, research in traffic accident mitigation and sidewalk infrastructure, as well as observation, the following suggestions address quality street and intersection improvements:

Reduce Traffic Speed by Employing a Small-Scale Road Diet

Seventy percent of target area survey respondents indicated that traffic speed was a paramount concern. In order to provide safer travel for pedestrians, cyclists, and motorists, reducing the cartway width to the minimum allowed by law can effectively provide traffic calming. This is not a solution to be applied throughout the entire target area. Rather, a “road diet” would be employed near the blocks surrounding the Giant grocery store where the cartway widths are excessive.

A road diet involves a reduction of lanes and cartway widths as a way of reducing travel speeds, creating a safer pedestrian environment, and providing space for other uses such as vegetative strips or bike lanes, where preferable. By prescribing a road diet near the Giant on Walnut Street, between Broad and Reservoir Streets, the following would be created:

- Increased sidewalk widths for pedestrians
- Appropriate placement of existing utility poles; traffic calming methods in the form of smaller lanes
- Bulb outs at all intersections or where applicable
- Continued on-street parking

Promote Uniform Pedestrian Accommodations

Based on the large amount of student pedestrians walking to and from the JP McCaskey Campus Monday through Friday during the school year, it is essential to provide a safe route for these students. This can be accomplished by slowing traffic, as well as providing controlled signalized pedestrian crossing signals for all intersections. A uniform set of pedestrian crossing standards would assist in achieving this goal and allow a complete streets framework to be implemented in a greater capacity. It is suggested that all intersections on Walnut and Chestnut Streets become uniform within the next 5 years. In turn, each intersection would have the following:

- Four crosswalks
- Electronic pedestrian crossing signals on at least 2 of the 4 crossings
- At least 2 additional overhead school crossing signs to alert vehicles traveling on Walnut and Chestnut Streets

Complete a Traffic Study on Chestnut Street

The City of Lancaster should conduct a new traffic study along Chestnut Street from North Marshall Street to Ranck Avenue, as funding is made available. This study would explore a potential need for signalized traffic signals, and the possibility of incorporating stop signs at one or more intersections in an effort to reduce travel speeds along this route. Further, the team encourages exploring an “all-pedestrian phase” during peak pedestrian hours (school hours of students) to create safer accessibility to their destination. An “all-pedestrian phase” will use the existing traffic signals to stop traffic during peak pedestrian travel times.

Bike Lanes

Residents in the target area expressed a desire for a police bike patrol similar to the one found in the James Street Improvement District (JSID). A total of 65% of survey respondents have indicated support for bike lanes. In fact, a majority of all the survey respondents indicated this should be a priority. Additional resident support for bike infrastructure such as bicycle lanes and strategically placed racks or bollards, would be facilitated by an ever-increasing desire for active living and a concern for rising fuel costs.

Given the want and need for bike lanes, the City of Lancaster should explore the development of a citywide bicycle plan that would include interconnected bike lane paths, police bike patrol, and uniform bike racks and bollards within the target area, as well as the entire City of Lancaster. While census data indicates residents within the target area do not use bicycles as a means of transportation, survey results from this project offers the idea that bicycle usage would increase if the infrastructure were provided. It is possible that the lack of bicycle riders may be due to the lack of infrastructure within the target area.

Bus Stop Improvements

The Red Rose Transit Authority long range transportation plan describes efforts for bus shelters within the next ten years. Given that the bus stop near the Giant grocery store has been deemed a major route destination, the project team suggests that a bus shelter be placed here. This would mean that the City of Lancaster or the Northeast Neighborhood Association would contact the RRTA with this request.

Each shelter, as described by the RRTA, would include a bench, map, and timetable of the route serving the shelter. Further, given the number of bus stops within the target area, it is suggested that maps and times of services at each stop be provided along with the posted sign. Signage such as this can be found within the Northwest section of the City of Lancaster alongside the Franklin & Marshall College campus.



Bike lanes that extend out of the city & throughout the city would be great and encourage more physical activity.



-Target Area Resident

Recommendations for Improving Sidewalk Quality

Recommendations for improving existing sidewalk conditions are intended to promote safety, walkability, and access for all users. Given the research, observation, and survey of the target area, the following sidewalk improvements should occur:

Alleviate Obstructive Tree Growth

There are a number of solutions to address obstructive tree growth. Options involve shaving the lifted concrete, which the City is actively engaged in doing. Another temporary solution is the application of asphalt to level the uneven surface. A formal policy addressing tree planting within the parking strip of a sidewalk should be created and implemented. Whenever construction or maintenance along the sidewalk requires the removal of existing trees, the new planting should be chosen in consultation with the city arborist to ensure that future tree trunk expansion does not compromise the integrity of the paved surface.

Furthermore, one suggestion offered by a city resident was to establish a program for residents to access low cost loans for sidewalk improvements. This would be a service for residents who are required to maintain sidewalks, but also for those would like to enhance the area in general.

Additional Sidewalk Enhancements

Sidewalks in the target area should be enhanced with additional benches, litter receptacles, pedestrian way-finding maps, and distinctive street lighting as found in the City of Lancaster's downtown core. As the Strategic Plan 2011-2013 discusses the City of Lancaster's trademark look with specially designed lamp posts, maps, and more; it is of significant importance that this trademark be extended to the target area.

Given the high volume of residents and pedestrians that would directly benefit from this, thousands more commuters would see this daily as the target area is a main corridor to and from the City of Lancaster. Similar to how the Northeast Neighbors Association has branded the litter receptacles, individuals and businesses can sponsor benches with the provision of offering name plates for recognition for these area donors. These enhancements would strengthen the overall visual experience of the City.

Manage Down-Spouting and Ice Coverage

To reduce the icing due to runoff in the winter, a solution compatible with complete streets ideology is to bury a conduit under the sidewalk surface leading from the downspout to the street. This would prevent hazardous and excessive ice patches. Lessening the amount of ice will also reduce the amount of chemical ice-melting substances poured onto the concrete further compromising the surface integrity. This could be achieved through establishing a policy that requires the burying of downspouts underneath sidewalks during construction whenever possible.

Adhere to ADA Regulations

When utility pole placement and inconveniently placed signs are blocking the sidewalk for handicapped persons and pedestrians alike, it becomes a priority to provide the effective legal width necessary for normal sidewalk usage. The Americans with Disabilities Act requires 36 inches between the edge of the obstruction and the edge of the sidewalk. The City of Lancaster has created regulations that any new sidewalk widths must be a minimum of 4'. Given there are streets in the target area that the sidewalk cannot fully extend without compromising the width of the road, it is suggested that alternative placement of handicapped parking signs be considered.

Further Recommendations

While this project focuses on integrating complete streets ideology into existing infrastructure, there are additional recommendations for improvement that can be made to promote the safety of pedestrians and quality of life for residents. Through research, and contact with key informants, the following alternative recommendations to further enhance transportation and living within the target area include:

Crossing Guard Placement

There is only one crossing guard employed within the target area. Although fiscal constraints are present, crossing guard staffing is critical in student safety. With 8,000 motor vehicles and an estimated 2,500 students utilizing the target area daily, limited investments in crossing guards must be as effective as possible. Because the City of Lancaster can easily access data on traffic patterns (i.e. AADT, traffic/pedestrian accidents) it is suggested that an ongoing partnership be forged between the City and school district. Software such as ArcGIS (a computer program used for mapping) can be used so that the City and school district can carefully determine crossing guard placement based on demonstrated needs.

Promote Alternative Models in Student Safety

Particularly with elementary and middle school-aged children, several alternative models in safety promotion could be implemented. Safety awareness programs can be designed by school staff in a fun and engaging manner. In fact, the Safe Routes to School Program has a multitude of activities pre-planned that schools can access. Activities for safety promotion often integrate the students directly into safety planning, establishing a sense of ownership and instilling a sense of awareness at a young age. Another concept that could be applied to a younger cohort is

the creation of a “walking school bus.” Led by an adult, a walking school bus allows children to walk in groups whereas students follow the group as it passes by their home or “stop.” This increases visibility and in turn safety as motorists and other commuters are able to clearly see the students in transit.

Expand Existing Alternative Models in Student Safety

Currently, hundreds of students walk through Reservoir Park to and from school. As fighting and violence began to increase among these students, community members established a system with the School District of Lancaster. Local residents were provided with hand-held radios to call school staff if fights broke out.

As reported from local informants, fighting is no longer a concern on park grounds. These local residents report positive interaction and conversation among the students daily. This informal and effective system could be expanded. In order to mitigate violence and promote safety, a “Corner Captain” program should be established. This implies several community members volunteer to work within the park, while other area residents can make their presence known on street corners in the target area. By merely setting up a chair on the corner, safety and security are promoted by adult presence. Employed on sidewalks, this effort may also deter jaywalking. Schools who have engaged in this informal program nationwide have created logo t-shirts and hats to increase visibility.

“ There is so much that can be done for the safety of these kids. ”

-Target Area Resident

Create Public Education Campaigns

The City of Lancaster’s 2011-2013 Strategic Plan indicates that a key priority is to “enlist residents in improving public safety through awareness of programs and increased public education efforts.” There are several public education programs that could further integrate complete streets concepts into the target area. Public education campaigns and initiatives surrounding the following issues would address:

- The City of Lancaster website currently provides a wealth of information on planning activities and public works information. There is room to provide further information to residents and allow for direct communication with City staff. The team suggests establishing a portal with up-to-date plans and improvements scheduled, as well as a dedicated area to communicate concerns with infrastructure or public services. This will promote accountability, increase communication, and expand on needed technological services.
 - Given that litter is a concern within the target area, alternative recommendations should be considered. As stated in the City of Lancaster 2011-2013 Strategic Plan, “litter [should] be the exception not the norm in neighborhoods.” Further, a majority of survey respondents noted that addressing litter should be a priority for the target area. Public education campaigns addressing litter should be established by the City of Lancaster in order to meet the Strategic Plan priority. Materials should be developed for school student programming, as well as signage for residents to display in windows or yards to draw attention to the area litter concerns.
 - The City of Lancaster can employ a public education campaign for drivers in the target area. Visitors or other individuals simply may not know they are in a school zone when exiting the highways into the city. A simple public education strategy through signage or other means may serve as a simple and effective traffic calming measure.
 - Public education materials on appropriate trees to plant within urban areas could be made available and published on www.cityoflanasterpa.com. Appendix B provides an example list.
- LIVE Green and its website provide a wealth of information in promoting environmental projects within the City of Lancaster. However, many residents are unaware of this website. Specific efforts include informing residents how to create green roofing and obtain rain barrels. More recently, LIVE Green has been hosting workshops for residents to learn about planting native trees within the City.

Review the Greenway

The Northeast Neighbors Association has defined one of their three key priorities as establishing a “greenway.” Utilizing an existing linear rail line, the proposed greenway would create an open path from the McCaskey campus to the downtown core. Given fiscal constraints, it is unclear if implementation will occur in the near future. However, the City of Lancaster should keep this proposed plan in mind for future development. A total of 9.3 acres would be opened up as public space, but significant land acquisition would need to occur before any improvements could be made. The greenway would allow area residents to access downtown businesses and allow students a safe area to walk to school without the presence of cars. Further, the greenway would allow for groundwater water recharge and decrease surface runoff. Given the proposed greenway aligns with complete streets concepts; the project team supports its implementation.

Utilize School Buildings after Hours

Another continued goal and focus of the Northeast Neighbors Association is to forge partnerships with the schools on the McCaskey Campus. Given complete streets ideology calls for livable communities, this should be a priority for the City of Lancaster as well. While not all interaction will occur specifically between the school and the Public Works Department, the team suggests utilizing the expansive buildings as they remain vacant when school is not in session. Various non-profit organizations could use the classrooms during the evenings to host classes in English as a Second

Language (ESL) or provide for General Education Development (GED) preparation courses. Other groups could potentially access the library, computer labs, or gymnasium. Additionally, dozens of urban schools in Pennsylvania and nationwide have partnered with community health organizations to provide health clinic services in schools statewide.

Continue Outreach and Marketing of the Northeast Neighbors Association

Through established relationships with the City of Lancaster and residents, the Northeast Neighbors Association is a critical representative group of the target area. This Association has a history in the City for leading the security camera initiatives in the city, as well as providing dozens of litter receptacles throughout the target area. It has been identified as one of the strongest neighborhood associations in the City of Lancaster. A total of 67.5% of survey respondents have indicated they would like to learn more about the Northeast Neighbors Association. Resident willingness to engage and participate with the local association is a strength that must be utilized at its fullest capacity. By strengthening the sense of community and the neighborhood association, the connection between residents and the City of Lancaster will be greatly enhanced.

If a sense of community could be strengthened through the Northeast Neighbors Association or informal block groups, benefits would be felt elsewhere. Crime and safety have been indicated as paramount concerns by both the Northeast Neighbors Association and the project's survey respondents. By connecting community members, community watch groups could be created to increase visibility and reduce potential crimes. Other neighborhood activities, such as mural paintings or block parties could also be organized for community members.

Figure 19 shows the logo that the Northeast Neighbors Association created and consistently display. This logo is part of the Association's branding and visibility campaign.

Figure 19: Northeast Neighbors Association Logo



Environmental Management through Design

The City of Lancaster has undergone an extensive review and analysis of green infrastructure. Components of the Green Infrastructure Plan address, among other things, stormwater management and sustainable practices. This framework addresses a growing concern over stormwater management within the City.

When complete streets policies are being implemented there are a variety of opportunities for green principles to be included in the design. Stormwater management and environmental sustainability need not be afterthoughts but rather key components of the planning, design, and construction process. This report asserts the idea that complete streets need not only serve transit but rather they can support environmental management efforts as well.

The benefits of complete streets and green design are countless. Every aspect of human existence is impacted in some way by transportation issues and environmental degradation. Below are a few examples of how complete streets and green design standards benefit environmental sustainability.

- Improvements to livability and quality of life
- Green design incorporates vegetation that improves carbon sequestration and filtration
- Improves air-quality by offering alternatives to fossil fuel dependent transportation modes
- Reduces the urban heat-island effect
- Creates wild-life habitats
- Reduces energy demands
- Improves human health
- Increases property values

Traditional stormwater management policies focused on removing the greatest volume of runoff as quickly as possible. Often times this requires large and expensive storm sewer systems; many of which are connected to sanitary sewer lines. During large precipitation events the combined storm and sanitary sewer system cannot contain the massive volume of overflow. The resulting impact is a surge of untreated sanitary sewer waste and runoff pollution into the region's waterways. Approximately 45% of the City of Lancaster's stormwater is managed through this traditional combined sewer system. These systems throughout Pennsylvania and surrounding states are one of several causes of the decline in the ecosystem quality of the Chesapeake Bay and its estuaries.

It is very costly and often impractical to address stormwater pollution and sedimentation after it reaches the storm sewer system. In addition, 58% of those who completed the online survey indicated they would like to see better approaches in managing stormwater. There are several opportunities to address these concerns within the target area. While recommendations thus far have largely focused on safety and multi-modal transit, there are a variety of environmentally sustainable practices that can be tied into a complete streets framework.

By implementing green sensitive design features into a complete street, a safer, cost-effective, and aesthetically pleasing environment is created. The project team offers the following additional recommendations to integrate green infrastructure techniques into the established complete streets framework:

Streets

Wide streets create problems for multi-modal transportation users, such as creating obstacles for individuals with disabilities, as well as increasing the amount of non-pervious stormwater runoff area. Equally problematic and less apparent, wider roads lead to significant increases in impermeable surface and the volume of storm water collected. Wide impervious roads necessitate costly storm water management systems. These systems are often overburdened and lack the ability to treat stormwater. One way to address these concerns is to reduce the amount of impervious cover collecting stormwater. Placing a street on a ‘road diet’ can reduce public works expenditures both on paving expenses and stormwater management. The road diet has been recommended earlier as a traffic calming measure (see page 29). Where a road diet is inappropriate, the use of pervious surfaces during and after construction can be utilized so that storm water can infiltrate the roadway, and reach the soil layer underneath. This will serve to recharge ground water deposits and limit stormwater runoff. Given fiscal constraints, the City of Lancaster should consider these recommendations when redevelopment occurs.

Intersections

Intersections create the greatest safety concerns for motorists and pedestrians. While increased cartway width is often necessary where high volumes of traffic are present, this can lead to vehicles driving at excessive speeds. Wider roads ultimately increase the amount of time and distance necessary for pedestrians to cross the street safely. An increasingly common feature for addressing this safety concern and integrating complete streets ideologies is the use of bulb-outs. Bulb-outs are placed at the four corners of an intersection and extend the length of the functional sidewalk in to the street. Many communities are now using vegetative bulb-outs at intersections and at mid-block as a traffic calming device. These vegetative bulb-outs serve the dual purpose of retaining and filtering stormwater runoff from the street while slowing traffic.

Sidewalks

Transportation engineers are often concerned about strength and durability of traditional surfaces including cement and macadam. Recent improvements have demonstrated that they are now as strong and last as long as their non-pervious counterparts. According the National Complete Streets Coalition, pervious surfaces are not restricted from state street design guidelines. Many communities, including Philadelphia, have begun using pervious concrete and pervious pavers in locations around the City. These improvements reduce the volume of water that runs from sidewalks into the storm sewer system. An equally practical method of stormwater sequestration is the placement of wider buffer or planting strips between the street and the sidewalk. These strips serve multiple purposes, including providing a buffer between pedestrians and motorists and traffic calming by reducing sight distances. Street trees, bioswales, planters, and rain gardens along sidewalks serve similar purposes and add an aesthetically pleasing environment for everyone.

Figure 20 provides 3 examples of green streets concepts that can be applied to a complete street. The City of Lancaster currently employs curb extensions/bulb-outs, none of which contain vegetation.

“ I would like to see more trees, gardens, flowers...anything green.”

-Target Area Resident

Figure 20: Examples of Environmental Design



Vegetative bulb-outs



Stormwater retention strip



Vegetative bulb-outs along an intersection extend the sidewalks for pedestrians.

Section 5: Implementation



Policies for Immediate Implementation

It is recommended that the first priority for implementation would be the enforcement of existing Property Maintenance Codes. This will immediately improve sidewalk conditions and remove any obstructions along pedestrian walkways. Enforcement would occur when vegetation encroaches upon sidewalks, snow and ice are not removed during winter months within a specific time frame, and the sidewalks are in need of repair due to tree uplifting or other damages. The Bureau of Parks and Public Property, City Engineer, or another designated city employee would take full responsibility in notifying property owners of the aforementioned issues, as well as implementing violation fees when non-compliance occurs.

Further, as the recommendations would be implemented, intersections throughout the target area need to be redeveloped so that uniformity is established. Crosswalks should all be (re) painted at minimum. The City of Lancaster also has an opportunity to revise current Streetscape Design Guidelines as there is no clear policy on how intersections are to be designed.

Practice for Immediate Implementation

It is recommended that the City of Lancaster set up a demonstration block along either Chestnut or Walnut Street. The demonstration block is meant to use various recommendations set forth within this plan in terms of green stormwater management, sidewalk improvements, and traffic calming measures. This will allow the City to incrementally integrate the aforementioned issues on a small scale within the target area. With enforcement of property maintenance codes from the City of Lancaster, as well as the use of budgeted funding, sidewalk repair would be the first priority for this demonstration block. With the sidewalk improvements, the incorporation of vegetative strips would be the second priority as a way to manage the street aesthetics. Last, the extension of curbs and

installation of signalized pedestrian crossing signals, as well as, highly visible crosswalk lines, be systematically installed to complete the demonstration block.

While a demonstration is implemented, it is suggested that the additional recommendations provided to strengthen the target area are implemented (see “Further Recommendations” on page 32). Many of these recommendations have little to no associated costs. For example, forging partnerships with the area schools in order to develop alternative models in student safety will produce immediate results as infrastructure improvements are underway.

Further Implementation and Sources of Funding

There are existing federal funds which can be used to implement the complete street recommendations set forth within this plan. Non-motorized projects, in this case sidewalk repair and crosswalk remediation for both pedestrians and physically-disabled individuals, are eligible for funding under the Surface Transportation Program (STP), Transportation Enhancements (TE), Safe Routes to School (SRTS), and Congestion Mitigation and Air Quality (CMAQ) programs.

The cities of Boulder, Colorado, Sacramento, and Seattle, have all acquired various federal funds by creating transportation programs aimed at reducing congestion, improving air quality standards, and implementing bicycle and pedestrian improvement plans. These ideas can allow the City of Lancaster to invest federal funds into the existing infrastructure within the target area, allowing the recommendations to take place.

Figure 21 provides the remaining recommendations contained within this document, as well as priority for implementation and potential funding sources.

Figure 21: Priority and Possible Funding for Recommendations

Recommendations for Improving Streets & Intersections	Priority	Who Implements?	Potential Funding
Address Traffic Speed by Employing a Small Scale Road Diet	High	Department of Public Works, Lancaster City Planning Commission, All Lancaster City Transportation Departments	STP, TE, CMAQ, MPO, community block grants, and municipal budgeting
Promote Uniform Pedestrian Accommodations	High	City of Lancaster Zoning Board; Lancaster City Planning Commission; Northeast Neighbors Association	Municipal Budget, “Smart Transportation” funding for PENNDOT
Ensure Continued Observation	On-Going	Lancaster City Planning Commission, Department of Public Works, Other City Officials	Municipal Budget

Recommendations for Improving Sidewalk Quality	Priority	Who Implements?	Potential Funding
Adhere to ADA regulations.	High	Department of Public Works/City Engineer	HUD- Department of Rehabilitative Services, Community Development Block Grants (CDBG) from the DECD (Department of Economic and Community Development)
Alleviate Obstructive Tree Growth	Low	Department of Parks and Public Property, City Arborist	“Smart Transportation” funding for PENNDOT
Manage Down-spouting and Ice Coverage	High	Department of Public Works, Lancaster City Planning Commission	Enforcement of property code violations, municipal budgeting, CDBG
Additional Sidewalk Enhancements	High	Department of Public Works, Lancaster City Planning Commission, Lancaster County Planning Commission	“Smart Transportation” funding for PENNDOT, CDBG funding, STP, TE, MPO, CMAQ

Further Recommendations for Improving the Target Area	Priority	Who Implements?	Potential Funding
Forge Partnerships with the School District of Lancaster	On-Going	City of Lancaster	n/a
Promote Alternative Models in Student Safety	High	City of Lancaster School District	STRS
Expand Existing Alternative Models in Student Safety	On-Going	City of Lancaster School District	City of Lancaster School District
Create Public Education Campaigns	High	Northeast Neighbors Association, City of Lancaster	City of Lancaster School District, STRS
Develop a Plan for Bike Lanes	High	City of Lancaster	CDBG Funding, STP, TE
Review the Greenway	Low	City of Lancaster	DCNR Grants, Pa DEP Grants, EPA
Utilize School Buildings after Hours	Low	School District, Community	n/a
Continue Outreach and Marketing of the Northeast Neighborhood Association	On-Going	City of Lancaster, Northeast Neighbors Association	n/a
Recommendations for Environmental Management	Priority	Who Implements?	Potential Funding
Use Pervious Materials in Sidewalk Maintenance	Low	Department of Public Works	PENNDOT, MPO, DCNR Grants, PA DEP Grants, EPA
Use Pervious Materials in Street Maintenance	Low	Department of Public Works	PENNDOT, MPO, DCNR Grants, PA DEP Grants, EPA
Vegetative Bulb-outs in Intersections	High	Department of Public Works	PENNDOT, MPO, DCNR Grants, PA DEP Grants, EPA, CDBG funding, STP, TE, MPO

Key

STP: Surface Transportation Program	TE: Transportation Enhancements	SRTS: Safe Routes to School	CMAQ: Congestion Mitigation and Air Quality
CDBG: Community Block Development Grants	MPO: Metropolitan Planning Organization	DCNR: Department of Conservation and Natural Resources	PA DEP: Pennsylvania Department of Environmental Protection

Section 6: References



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Section 7: Appendices



Appendix A: Responses to Surveys

A total of 49 surveys were collected during the public engagement process through canvassing and online completion. All responses below are given in percentages.

I would like to see...	Yes	No	Unsure
Additional litter receptacles/trash cans	87	10.9	2.2
A police bike patrol presence in my neighborhood similar to the James St Improvement District	86.7	6.7	6.7
A stronger police presence	80.9	8.5	10.6
More local businesses within walking distance of my home	77.2	14.9	14.9
More trees in my neighborhood	76.7	16.3	7
More off street parking	72.3	17	10.6
Pocket parks (vacant lots used as open space and/or parks) in my neighborhood	69.8	23.3	7
I would like to see the "Northeast Neighbors" logo in more places	69	7.1	23.8
Increases in open public space	69	16.7	14.3
Park benches or other places for pedestrians to sit	68.2	20.5	11.4
More visible art work in my community, such as street art or murals	67.4	14	18.6
Bike lanes designated in the streets	65.1	25.6	9.3
More security cameras	60	26.7	13.3
Better solutions in addressing rain/stormwater	57.8	20	22.2
More speed limit signs in my neighborhood	40	42.2	17.8
Safer accommodations for public bus stops	32.6	23.3	44.2
Curbs extended at crosswalks and intersections in my neighborhood	29.5	45.5	25
More traffic lights	27.3	54.5	18.2
Diagonal street parking as opposed to parallel parking	25	54.5	20.5

I am concerned with/that....	Yes	No	Unsure
The volume of traffic in my neighborhood	47.7	47.7	4.5
The speed of traffic in my neighborhood	68.9	17.8	13.3
Crossing the street in my neighborhood safely	31.8	59.1	9.1
Finding parking in my neighborhood	63.6	29.5	6.8
Motorists do not yield to pedestrians	60	28.9	11.1
Flooding in my area after a thunderstorm	22.7	59.1	18.2
Alleyways are not being maintained	63.6	25	11.4
Walking safely through an alleyway due to vehicle traffic or physical conditions	45.2	38.1	16.7
Litter being thrown in the streets	91.1	8.9	0
There is not enough street lighting in my neighborhood.	64.4	24.4	11.1
There is not enough parking in my neighborhood	56.8	25	18.2
Safety in terms of crime	60.5	23.3	16.3

I think that...	Yes	No	Unsure
Sidewalks need to be fixed on my block	45.5	38.6	15.9
The neighborhood would benefit from resident parking restrictions	38.6	47.7	13.6
My street is "walkable"	80	11.1	8.9
Pedestrian crossings in my neighborhood are safe	63	26.1	10.9
Sidewalks in my neighborhood are accessible	81.8	11.4	6.8
Sidewalks in my neighborhood are in good condition	48.9	33.3	17.8
My neighborhood would benefit from additional gardens and vegetation	81.8	13.6	4.5
My neighborhood is committed to street maintenance	40.9	36.4	22.7
My neighborhood needs crosswalk signs	30.2	48.8	20.9
My neighborhood needs crosswalks painted onto the street	51.3	38.5	10.3
My neighborhood needs yield to pedestrian signs	42.9	35.7	21.4
I am pleased with my neighborhoods physical presence	44.2	32.6	23.3

Final Questions		
Do you walk or drive to the Giant and/or Rite Aide stores?	16.2 walk	83.8 drive
If you walk, is there a clear path to the stores.	100	
Are you active in the Northeast Neighbors group or any other neighborhood association?	48.8	51.2
Would like to learn more about area neighborhood associations?	67.5	32.5

Appendix B: Potential Street Trees for the City of Lancaster

Name	Common Name	Height	Form	Desirable Characteristics
Acer rubrum 'Bowhall' or 'Armstrong'	Columnar Red Maple	50-60'	Columnar	Red flowers, fruit, and fall leaf color; native origin
Acer rubrum 'October Glory'	October Glory Red Maple	50-60'	Pyramidal in youth, irregular at maturity	Red flowers, fruit, and fall leaf color; native origin
Carpinus caroliniana	American Hornbeam	20-30'	Broad, rounded at maturity	Attractive, fluted grey bark; native origin
Crataegus punctata 'Ohio Pioneer'	Ohio Pioneer Hawthorn	20-30'	Broad, rounded at maturity	Persistent red fruits for winter interest; native origin; thorn less
Maackia amurensis	Amur Maackia	20-30'	Broad, rounded at maturity	White summer flowers; amber colored ornamental bark
Ostrya virginiana	American Hophornbeam	25-40'	Pyramidal in youth; broad at maturity	Attractive bark; hop-like fruit structure; native
Prunus x incam 'Okame'	Okame Cherry	20-25'	Upright	Pink spring flowers; polished, reddish-brown bark; orange fall leaf color
Pyrus calleryana 'Chanticleer'	Chanticleer Callery Pear	30-40'	Upright, pyramidal	White spring flowers, red purple fall leaf color; better structure than older cultivars
Quercus imbricaria	Shingle Oak	50-60'	Pyramidal in youth, broad at maturity	Lustrous foliage; easier to transplant than other Oaks; native
Quercus rubra	Red Oak	60-75'	Rounded	Easier to transplant than other Oaks; red fall leaf color; native
Ulmus parvifolia 'Athena'	'Frontier' Hybrid Elm	30-40'	Rounded	Variable Fall leaf color; resistant to Dutch Elm Disease
Zelkova serrata	Green Vase Zelkova	60-80'	Upright, vase shaped	Graceful form; attractive bark; bronze fall leaf color

*Source: City of Lancaster, retrieved from: http://www.co.lancaster.pa.us/lancastercity/lib/lancastercity/streetscape_potential_street_trees.pdf

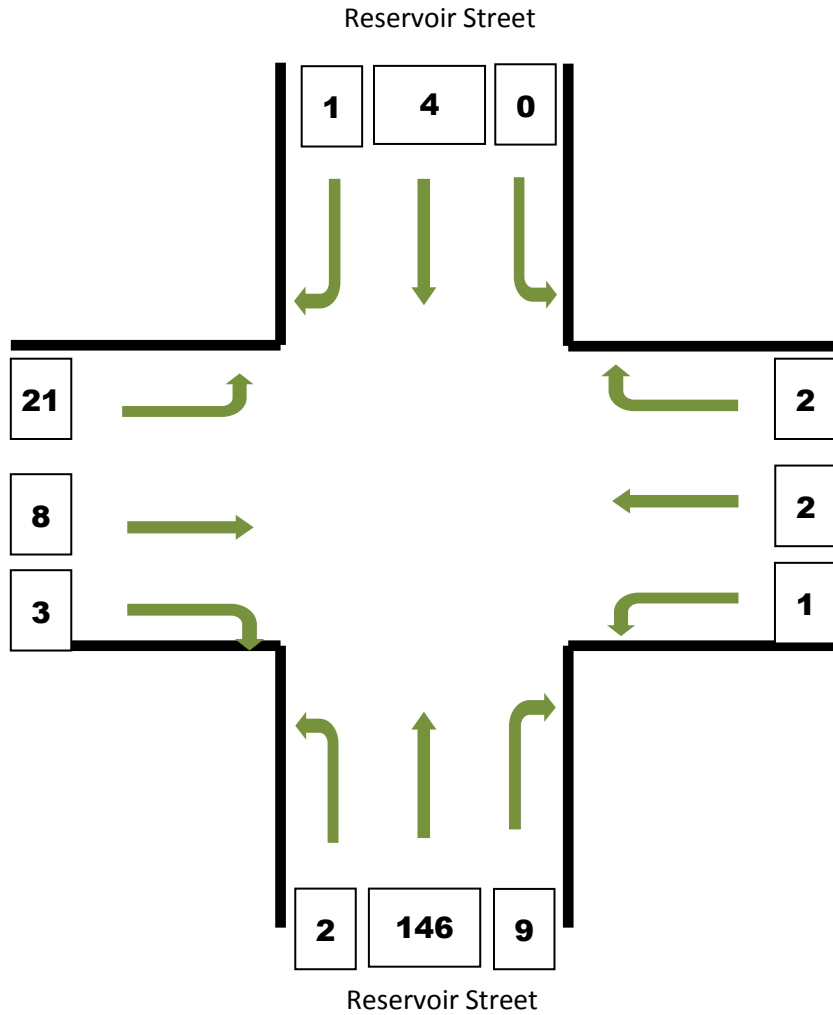
Appendix C:

The Target Area-Intersection and Sidewalk Hazards map displays the locations of non-ADA compliant intersections, as well as locations hazardous or missing sidewalks. The non-ADA compliant intersections not only include arterial and connector road intersections, but also alleyway intersections. In relation to the hazardous or missing sidewalks within the target area, the map demonstrates two separate styles of red line. The small dash line represents a single hazard or obstruction, whereas the long line displays a missing sidewalk section.

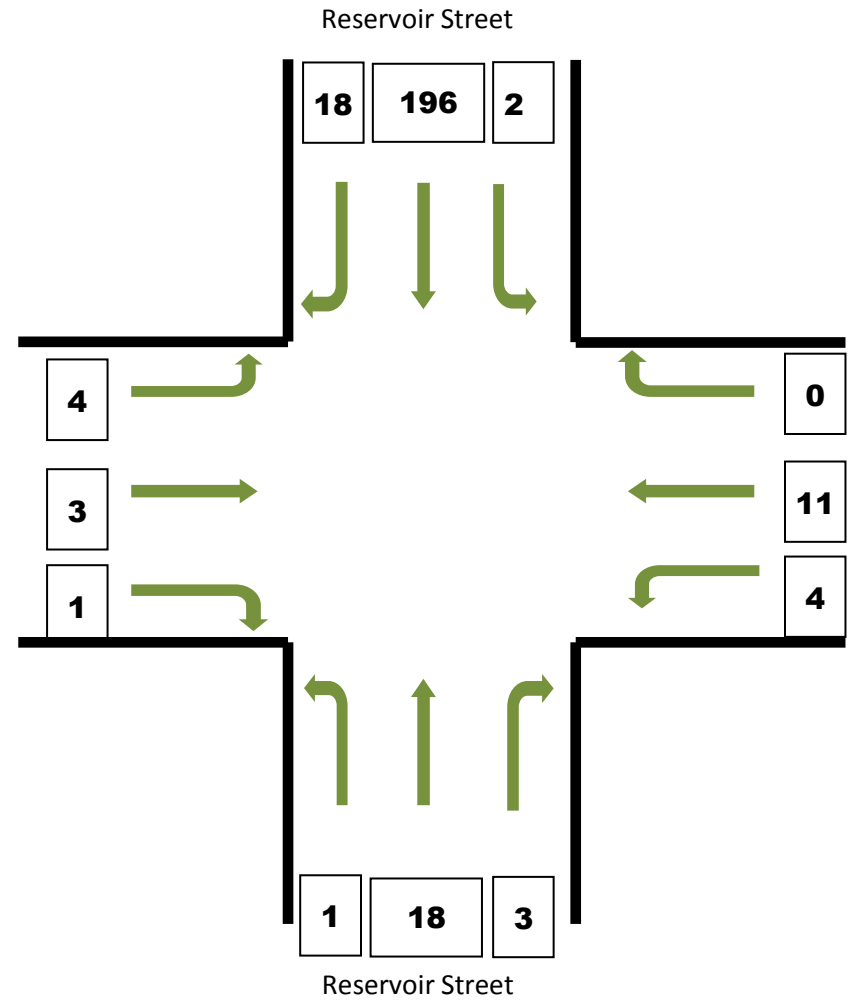


Appendix D: Pedestrian Turning Movements

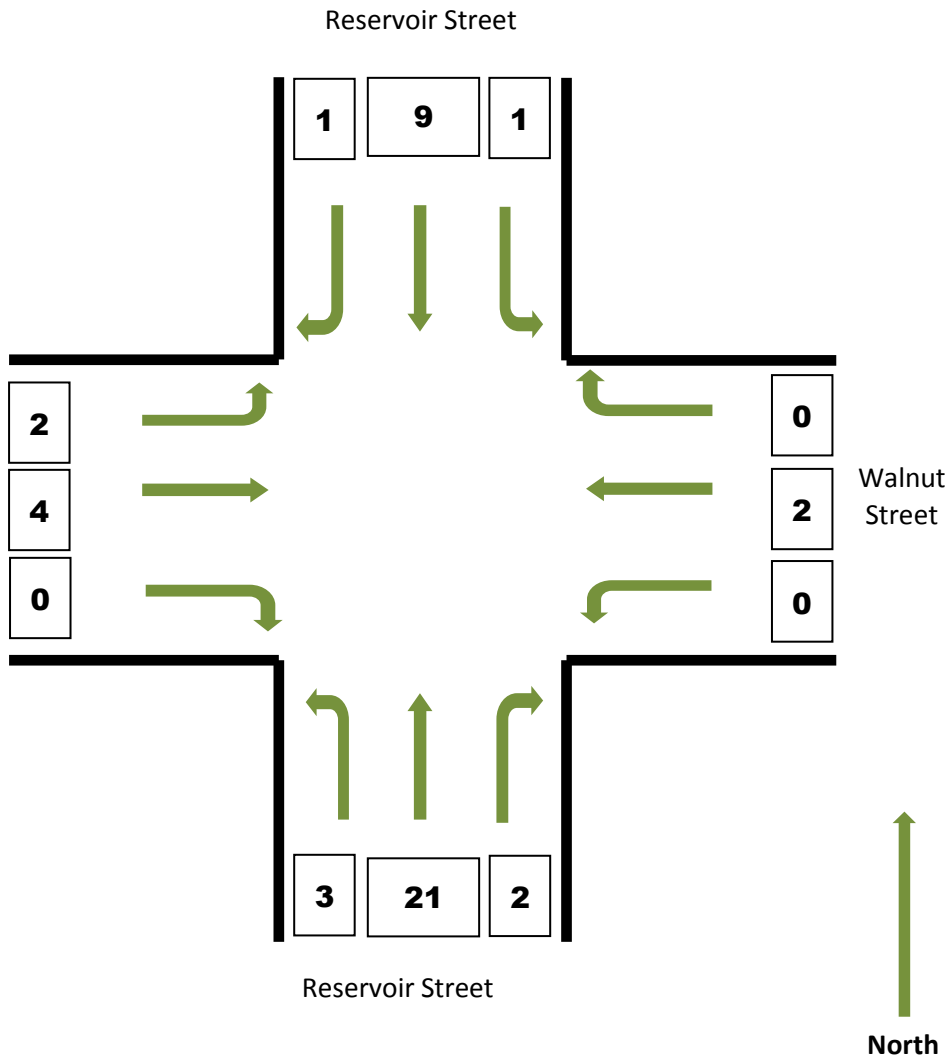
Intersection of Chestnut & Reservoir Streets
Recorded March 29, 2011, from 7 a.m. – 8 a.m.



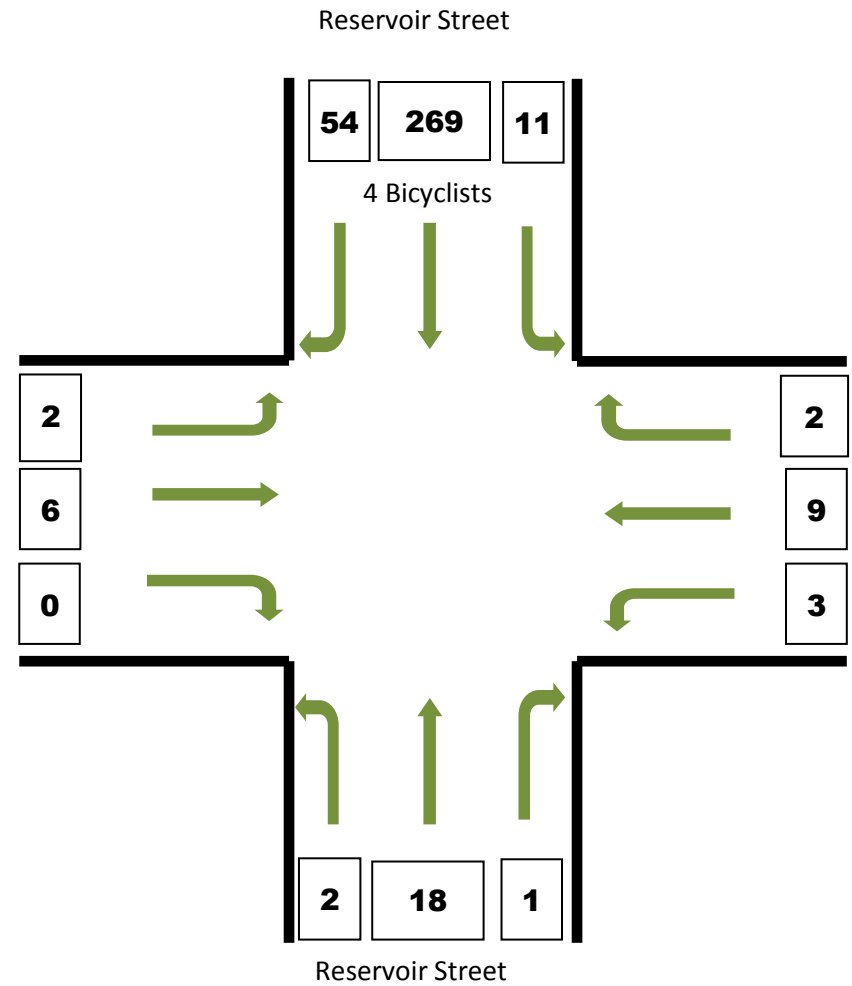
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Recorded March 29, 2011, from 3 p.m. – 3:45 p.m.

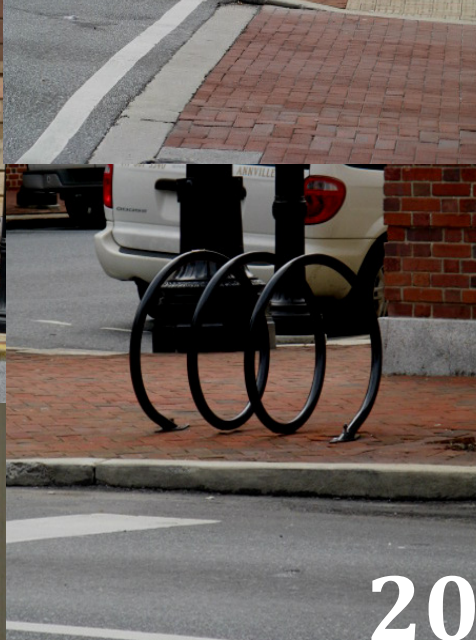


Intersection of Walnut & Reservoir Streets
Recorded March 29, 2011, from 7 a.m. – 8 a.m.



Intersection of Walnut & Reservoir Streets
Recorded March 29, 2011, from 3 p.m. – 3:45 p.m.





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