



PEDESTRIAN PLAN

JULY 2018

Produced by:



Produced for:



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ACKNOWLEDGEMENTS

THANK YOU UNION.

PUBLIC PARTICIPANTS

Thank you to the residents of Union for their participation in this planning process and their passion for improving the place they call home.

STEERING COMMITTEE

Thank you to the engaged leaders of the Union community for their continued participation throughout the planning process and for their commitment to furthering the efforts of this Plan.

STAKEHOLDERS AND PARTNERS

Thank you to the South Carolina Department of Health and Environmental Control (DHEC) for support and involvement in the planning process and the South Carolina Department of Transportation (SCDOT), as well as other local, regional, and state stakeholders including:

- Union Chamber of Commerce
- Main Street Junction
- Union County School District
- Union County Library System
- Union County YMCA
- City of Union
- Local Union businesses

EXECUTIVE SUMMARY

The recommendations of the Walkable Union Pedestrian Plan, as well as the planning process behind the Plan, are guided by three key tenets intended to **promote healthy eating and active living, particularly for the community's most vulnerable populations**. The three tenets are **equity-based planning, access to healthy foods, and inclusive community engagement**. The Union Pedestrian Plan focuses on recommendations for the pedestrian and bicycle network, including key crossing connections at US-176, north-south and east-west connectors, and programmatic recommendations for improving walkability throughout Union.

1 DEVELOPMENT OF PEDESTRIAN NETWORK RECOMMENDATIONS

The pedestrian network analysis, which incorporates traditional and new treatments from the FHWA's *Small Town and Rural Multimodal Networks Guide* and other state and national guidance, takes a practical and innovative approach to network development. Recommendations are made for roadways in Union that currently lack pedestrian facilities, with an **emphasis on connectivity to healthy food destinations, community parks, and schools**. Catalyst projects for the plan are described in the Recommendations chapter of the report (see page 36). Design guidance and implementation details are included in the plan appendix.

2 PROPOSED PEDESTRIAN NETWORK

FOR FULL MAPS, SEE PART 2
RECOMMENDATIONS & APPENDIX



Proposed Network Elements

| | |
|-------------------------|----------|
| New Sidewalks | 6.98 mi |
| Advisory Shoulder | 1.18 mi |
| On-Street Bike Facility | 1.31 mi |
| New Shared-Use Path | 2.12 mi |
| Total Priority Network | 11.59 mi |
| Crossing Improvements | 9 |

RECOMMENDATIONS

- Crossing Improvement
- Sidewalk - proposed
- Sidewalk - existing
- Advisory Shoulder - proposed
- On-Street Bike Facility - proposed
- Shared-Use Path - proposed
- Shared-Use Path - existing
- Rail Trail - Future

EXISTING CONDITIONS

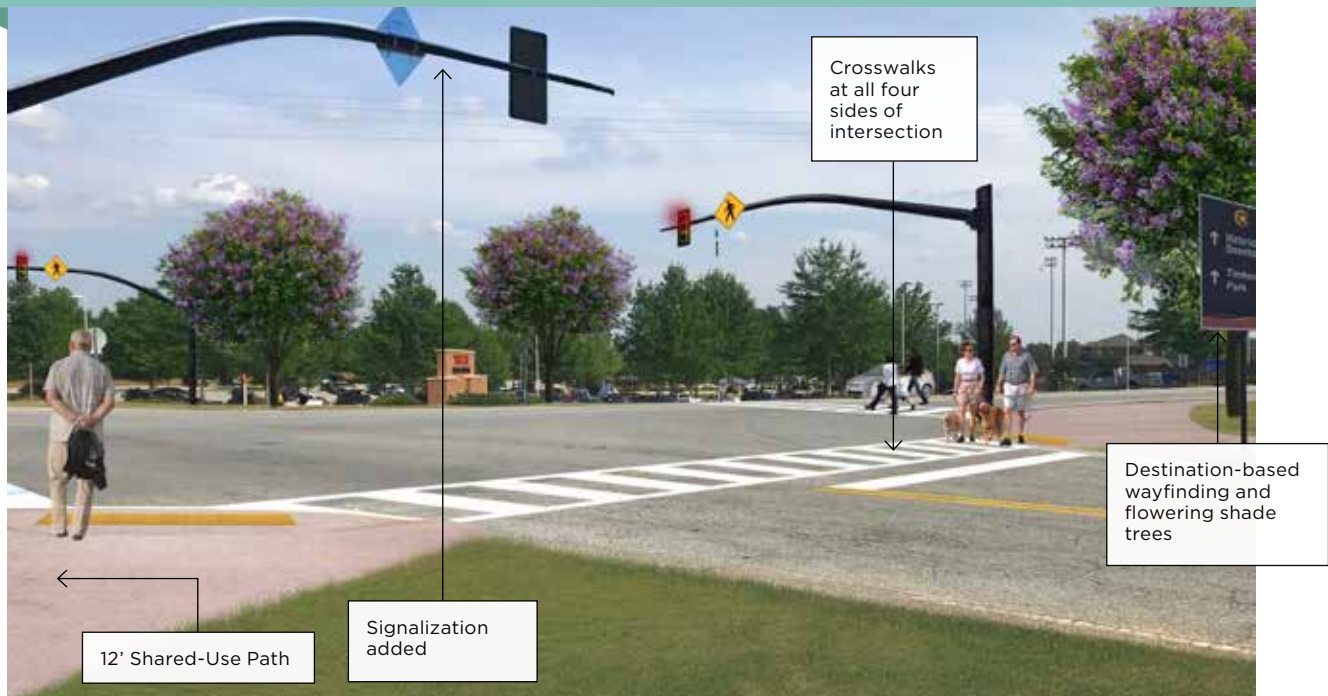


INFRASTRUCTURE RECOMMENDATIONS

3 catalyst projects are identified in this plan, with information on existing conditions and proposed improvements.

The **intersection adjacent to Timken Park** is one of the three priority areas; the park is a primary community asset within walking distance of Buffalo Elementary School. Crossing improvements and new facilities will improve safe pedestrian access to the park, as well as provide traffic-calming for vehicles.

Catalyst Project: Timken Park Intersection



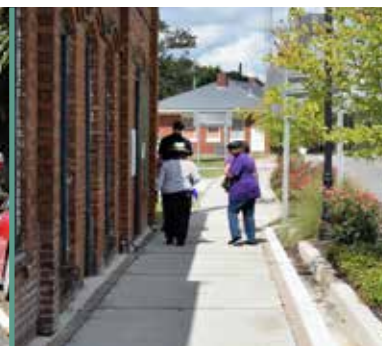
RECOMMENDED FACILITY TYPES



ADVISORY SHOULDER



ON-STREET BIKE FACILITY



NEW SIDEWALKS



SHARED-USE PATH

01

INTRODUCTION

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THREE KEY TENETS

The recommendations of the Walkable Union Pedestrian Plan, as well as the planning process behind the Plan, are guided by three key tenets intended to promote healthy eating and active living, particularly for the community's most vulnerable populations.



EQUITY-BASED PLANNING

Equity-based planning involves trying to understand and give people what they need to enjoy full healthy lives. Safe, healthy, affordable and convenient transportation options are not always available to the vulnerable populations that need them the most. **This document defines vulnerable populations as seniors, children, non-white populations, low-income households, households without vehicle access, non-English speaking populations, and SNAP recipients.**

Engaging these residents and understanding their needs is a starting point for pedestrian planning.



ACCESS TO HEALTHY FOODS

Improving walking access to healthy foods makes it easier for people, especially those in low-income communities and communities of color, to reduce their risk of health disparities and diet-related chronic diseases like obesity and diabetes. By understanding the local food access situation, we can uncover how walking infrastructure and programs will have the largest effect on accessibility to healthy food outlets.



COMMUNITY ENGAGEMENT

Engagement opportunities should take place in safe, central locations accessible by foot, bike, and transit. They should occur at convenient times or be tacked onto other local events to encourage community participation. Engagement should provide a variety of outreach opportunities to **give space for all community members to be heard**, to mold the outcomes of the plan, and to champion those recommendations.

PROJECT GOALS

The project goals and vision are listed here and are based on public input, feedback from the Steering Committee, and the Walkable Union Design Workshop, held May 14-16, 2018. The vision helps to ground the plan with an overarching statement, and the goals represent specific strategies to help achieve this vision.

GOALS and OBJECTIVES

- Improve **sidewalk connectivity** by filling in gaps in the sidewalk network
- Increase **pedestrian safety** by improving crossing conditions, especially on major roads near schools
- Increase **pedestrian activity** at and around community destinations, such as Timken Park and local schools
- Increase the number of events that **promote walking** as a fun and rewarding activity
- Identify local champions and to work with the Steering Committee on **moving recommendations to implementation**
- Create synergy through low-cost, easy-to-implement **demonstration projects**
- Increase the percentage of trips that are made by walking



VISION

Union will be a place where a **connected network** of comfortable pedestrian facilities are provided to **all residents**; where residents can easily **access healthy food**, recreational areas, and other destinations on foot; and where **pedestrian-friendly design** is prioritized in all future roadway, recreation, and development projects.

COMMUNITY PROFILE

The study area is located on the west side of the City of Union, which is within Union County and part of the Catawba Regional Council of Governments. The study area is defined by US-176 on the east, Highway 215 on the north, Lukesville Road on the west, and the Norfolk Southern railroad to the south.

The west side has historically been home to industrial and agricultural land uses; although a shift in the last few decades has brought more residential, commercial, and institutional uses to the area, planning efforts and development have not evolved to prioritize pedestrian-scale design or facilities. The study area is home to approximately 349 residents (according to the 2010 US Census), about 4% of the city's total population. The city's total population in 2010 was 8,250.

Although this project focuses on a specific area of Union, it includes connections to and implications for the entire community. First, the plan area is likely to be the site of future job and services growth in the City. Second, because of the park, the stadium, the school, and shopping in the study area, the area is a major destination for residents and visitors. Third, because of its location, the study area is a likely area for future growth in jobs and housing and services for Union and the surrounding communities. Finally, the plan includes recommendations for connecting the west side of Union to downtown and provides model treatments that can be applied in other parts of the city.

DEMOGRAPHICS

The racial make-up of the City of Union is approximately half White (50%), and half Black or African-American (47.3%). For comparison, Union County is 66.3% White (30.8% Black or African-American), and South Carolina as a whole is 67.3% White (27.4% Black or African-American).

The median income for households in the City of Union is \$26,858, which is below the median income of the county (\$34,953) and the median income for all of South Carolina (\$46,898). For reference, numbers are based on the American Community Survey estimate for 5 years (2012-2016). **Over a quarter of individuals (26.6%) in the City of Union receive SNAP benefits, with 26.9% of all Union residents living below the poverty level.** For comparison, this is higher than the county SNAP-recipient rate (19.9%), and the statewide SNAP-recipient rate (14.8%). This is also higher than the county poverty rates (17.1%) and statewide poverty rates (12.8%).

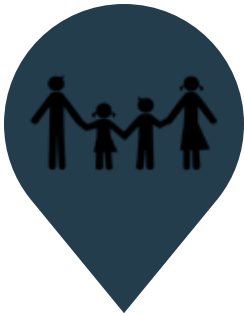


GETTING TO WORK

About **1.4% of the working population walk to work in Union**, which is twice the county percentage (0.7%) and about half of the state rate (2.2%). The data from the American Community Survey (2016) excludes walking trips other than to and from work, which account for approximately 80% of all other walking trips.

8.1% of residents living in the City of Union do not have access to a vehicle, compared to only 3.5% and 2.4% in the county and state, respectively.

BENEFITS OF WALKABILITY



IMPROVES SAFETY FOR ALL ROAD USERS

Streets that are designed for pedestrians create safety benefits for all users of the road.



INCREASES HOUSING VALUES

Walkable communities have higher housing values and greater stability than auto-dependent communities during an economic downturn.



PRESERVES OPEN SPACE AND GREENSPACE

Compact, walkable places allow for more green space, water sources, and wildlife habitats.



IMPROVES MENTAL HEALTH

Walking reduces symptoms of depression and anxiety, and prevents the onset of cognitive decline while improving mental function.



PUBLIC INFRASTRUCTURE SAVINGS

Compact, walkable places save construction and maintenance costs on roadway and other public infrastructure investments.



ATTRACTS BUSINESSES

Walkable commercial districts have lower vacancy rates and offer convenient commutes for residents and visitors.



IMPROVES ECONOMIC MOBILITY

Concentrated jobs that are easily accessible on foot provide residents with more opportunities.



ATTRACTS VISITORS

Walkable communities with lively streets and storefronts, short lengths between attractions, and a unique sense of place attract tourist dollars.



ATTRACTS RECREATION SPENDING

Outdoor recreation culture loves walkable places. Trails and safe streets attract events and people who pump money into the local economy.



IMPROVES AIR QUALITY

Replacing short vehicle trips with walking reduces emissions and our reliance on fossil fuels.



REDUCES INDIVIDUAL TRANSPORTATION COSTS

Residents save money on costs associated with transportation, including vehicle ownership and operating costs, and parking costs.



IMPROVES PHYSICAL HEALTH

Residents of walkable places have lower rates of chronic disease related to physical inactivity, and are two times more likely to get enough physical exercise.



MAGNET FOR MILLENNIALS AND BABY BOOMERS

Demand for walkable places is growing, especially among millennials and boomers who wish to drive less and easily reach destinations on foot.

DATA COLLECTION + ANALYSIS

The Walkable Union Pedestrian Plan is shaped by data collected from previous plans and the feedback received from the public. The public input process was crucial for understanding Union's primary needs and identifying specific programs, projects, and policies that address those needs.

This chapter provides an overview of the major data collection and public input components that shaped the recommendations of this document. Each section describes the information gained and the critical outcomes of that process. This includes:

- Plan Review
- Safety Analysis
- Equity Analysis
- Access Analysis
- Public Input Overview

PREVIOUS PLAN REVIEW

A 2016 survey was created to evaluate a bike loan program in Union; the results may assist in forming a bike loan program for the region in the future. To date, there are no pedestrian plans completed for the study area. This plan will essentially be the first of its kind in order to help connect the west side of Union to the more developed pedestrian network in downtown.

SAFETY ANALYSIS

Pedestrian safety is a primary concern in South Carolina. South Carolina ranks 45th in the nation for levels of walking mode share, and ranks 7th in the nation on the Pedestrian Danger Index, which measures the rate of pedestrian fatalities relative to the number of people by commute on foot. Additionally, pedestrian fatalities in South Carolina have increased 19% between 2010 and 2014.

EQUITY ANALYSIS

An equity analysis provides insight about the areas of Union that have higher concentrations of **seven vulnerable populations** (and therefore have a high need for access and infrastructure improvements):

- Seniors
- Children
- Non-white populations
- Low-income households
- Limited vehicle access households
- Linguistically isolated populations
- SNAP recipients

ACCESS ANALYSIS

The access analysis combines the equity analysis with two primary factors impacting health and well-being in Union: **access to healthy food and access to active spaces**. Providing quality pedestrian infrastructure to healthy food and active spaces boosts not only the city's physical activity level, but also increases mobility, accessibility, and quality of life for all citizens.

PUBLIC INPUT OVERVIEW

The public input analysis synthesizes feedback collected from the steering committee, focus groups, and public meetings.

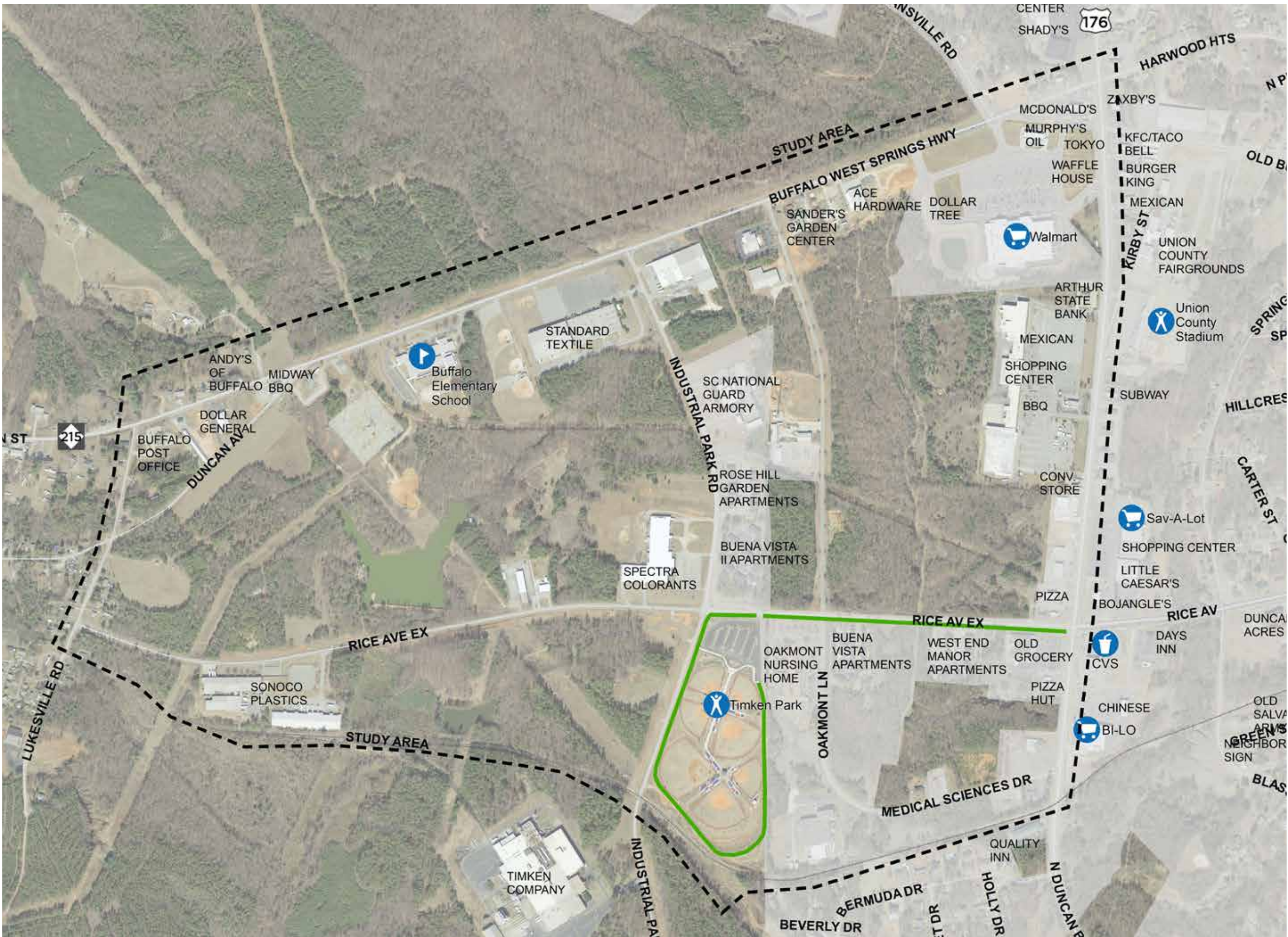
STUDY AREA –
UNION'S WEST
SIDE

- Sidewalk - proposed
- Sidewalk - existing
- Advisory Shoulder - proposed
- On-Street Bike Facility - propose
- Shared-Use Path - proposed
- Shared-Use Path - existing
- Rail Trail - Future
- Pedestrian Connection - future

OVERLAYS

- RAILROAD
- INTERSTATE
- US HIGHWAY
- STATE HIGHWAY
- LOCAL ROAD
- UNION CITY BOUNDARY

FEET
0 300
MILES
0 0.1



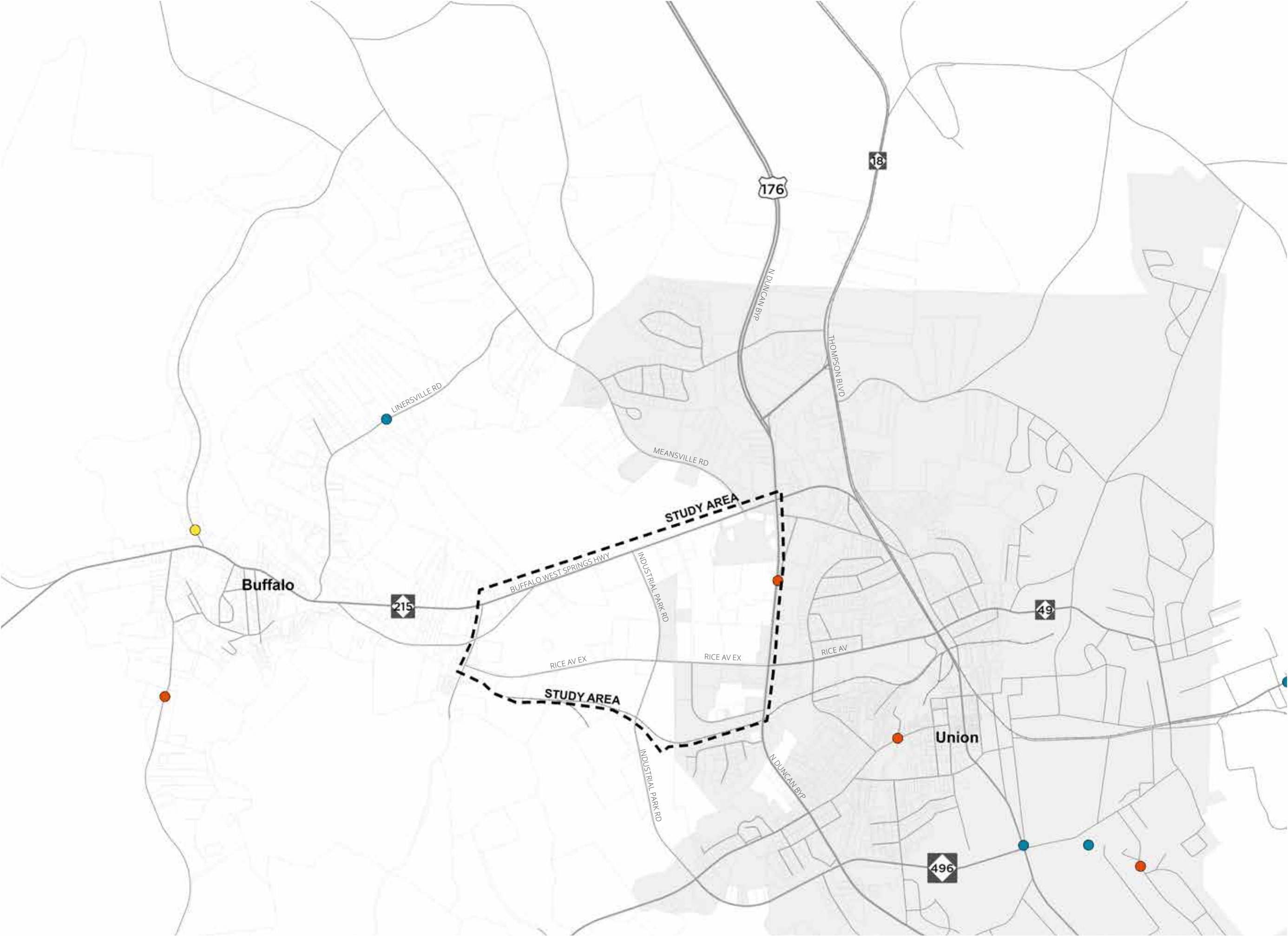
SAFETY ANALYSIS
MAP

- OVERLAYS
- RAILROAD
 - INTERSTATE
 - US HIGHWAY
 - STATE HIGHWAY
 - LOCAL ROAD
 - UNION CITY BOUNDARY

- PEDESTRIAN CRASHES
(2014-2017)
- NON-INCAPACITATING INJURY
 - INCAPACITATING INJURY
 - POSSIBLE INJURY

FEET
0 300

MILES
0 0.1



SAFETY ANALYSIS

PEDESTRIAN FATALITIES are RISING in the U.S.

Between 2005 and 2014, 46,149 pedestrians were killed walking on streets in the U.S. In 2014 alone, 4,884 pedestrians died, the most in more than 10 years. Meanwhile, the number of vehicle drivers and passengers who died in traffic crashes declined by a third during this period. The rise in pedestrian fatalities while overall traffic fatalities declined means pedestrians now account for more than 15% of all traffic fatalities.

A number of factors impact pedestrian safety. Visibility, driver behavior, time of day/year, access to safe crossings, and traffic volume all play a role. However, **key factors such as speed, the number of traffic lanes, and roadway design disproportionately affect safety for vulnerable roadway users.**

SOUTH CAROLINA is the 7th MOST DANGEROUS STATE for WALKING

Pedestrian safety is a primary concern in South Carolina. South Carolina ranks 45th in the nation for levels of walking mode share, and ranks 7th in the nation on the Pedestrian Danger Index, which measures the rate of pedestrian fatalities relative to the number of people by commute on foot. Additionally, pedestrian fatalities in South Carolina have increased 19% between 2010 and 2014.

According to Fatality Analysis Reporting System data, 58.8% of all pedestrian deaths in South Carolina were on arterials — wide, high speed roads rarely built with pedestrian safety in mind. Similarly, **78.8% of South Carolina's pedestrian fatalities occurred on roads with a speed limit of 40 mph or higher.**

THE PEDESTRIAN CRASH RATE in UNION COUNTY is 7X LESS THAN the SOUTH CAROLINA RATE

Union County has a pedestrian fatality rate of .34 deaths per 100,000 people, which is significantly lower than the state rate of 2.3 deaths per 100,000 people.¹

Pedestrian-involved collisions reported between 2014 and 2017 in the region are shown at right.

One pedestrian collision occurred in the study area along US-176 (N Duncan Bypass), resulting in possible injury. Two other collisions occurred outside of the study area on state roads in the Union/Buffalo area.

One pedestrian fatality occurred in Union County between 2003-2012. The fatality occurred on an arterial road with a speed limit of 40 mph or over. There have been no pedestrian crashes resulting in fatalities recorded between 2014-2017.

1 Dangerous by Design - South Carolina

EQUITY ANALYSIS

OVERVIEW

An equity analysis provides insight about the areas of Union that have higher concentrations of vulnerable populations. This information, coupled with an overlay of healthy food outlet locations and active space locations, can also distinguish which neighborhoods may need pedestrian improvements the most.

This quantitative analysis provides the project team a starting point for identifying priority areas. Ultimately, recommendations are based on a synthesis of factors, including the equity analysis results, current best practices, public input, existing conditions analysis, and the pedestrian collision analysis.

METHODOLOGY

The equity analysis incorporates the following seven socio-economic criteria:

1. Seniors

Metric: senior citizens are defined as those who are 65 years old and older. This follows the 2010 Census Brief - The Older Population.

2. Children

Metric: children are defined as individuals 14 years old and younger.

3. Non-White Populations

Metric: non-white is measured as the percentage of all races, excluding those that identified as white.

4. Low-Income Households

Metric: low-income is measured as the percent of the population living below two times the federal poverty level.

5. Limited Vehicle Access Households

Metric: Vehicle access is measured from a question on the American Community Survey about whether a household has access to a car, truck, or van of 1-ton capacity or less.

6. Linguistically Isolated Populations

Metric: Linguistic isolation is measured as percentage of households in which those over the age of 5 speak English “not well” or “not at all.”

7. SNAP Recipients

Metric: SNAP (Supplemental Nutrition Assistance Program) recipients measures the percentage of households who have received SNAP assistance in the past 12 months.

SUMMARY

The adjacent map reflects the areas of the west side of Union with greater than average concentrations of the seven vulnerable populations.

The red equity tier represents areas with the highest concentration of vulnerable populations.

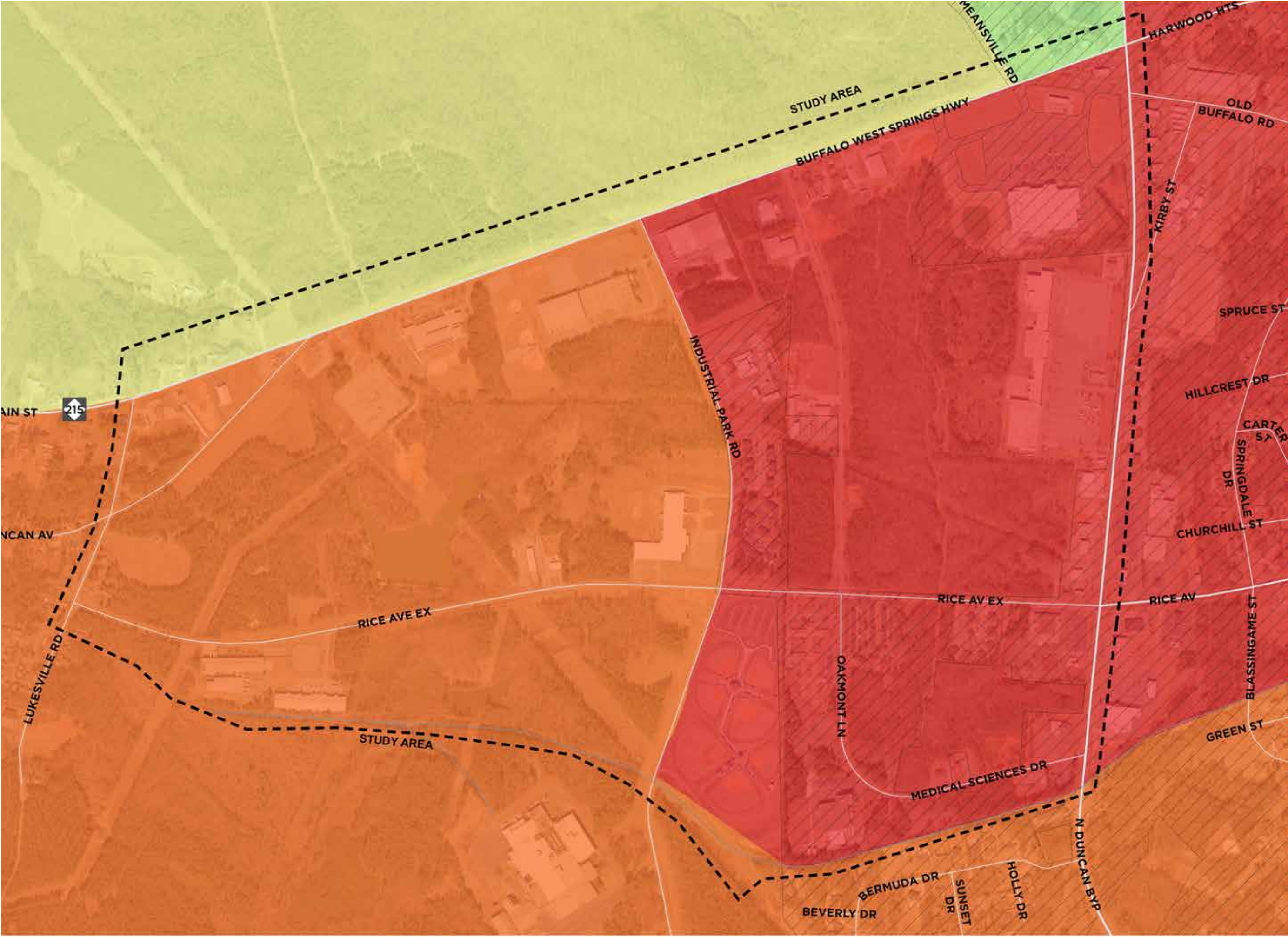
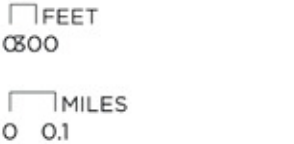
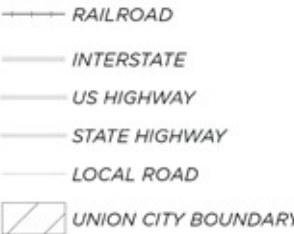
These areas have the highest need and are priorities for pedestrian infrastructure improvements. This analysis reveals that the highest red equity tier comprises the entire eastern half of the study area, reaching Industrial Park Road. The western half of the study area shows a moderate concentration of vulnerable populations extending past the western and southern borders of the site.

COMPOSITE EQUITY ANALYSIS MAP

CONCENTRATION OF VULNERABLE POPULATIONS

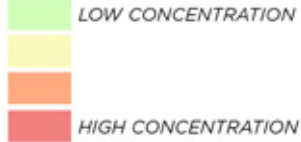


OVERLAYS



FOOD ACCESS ANALYSIS MAP

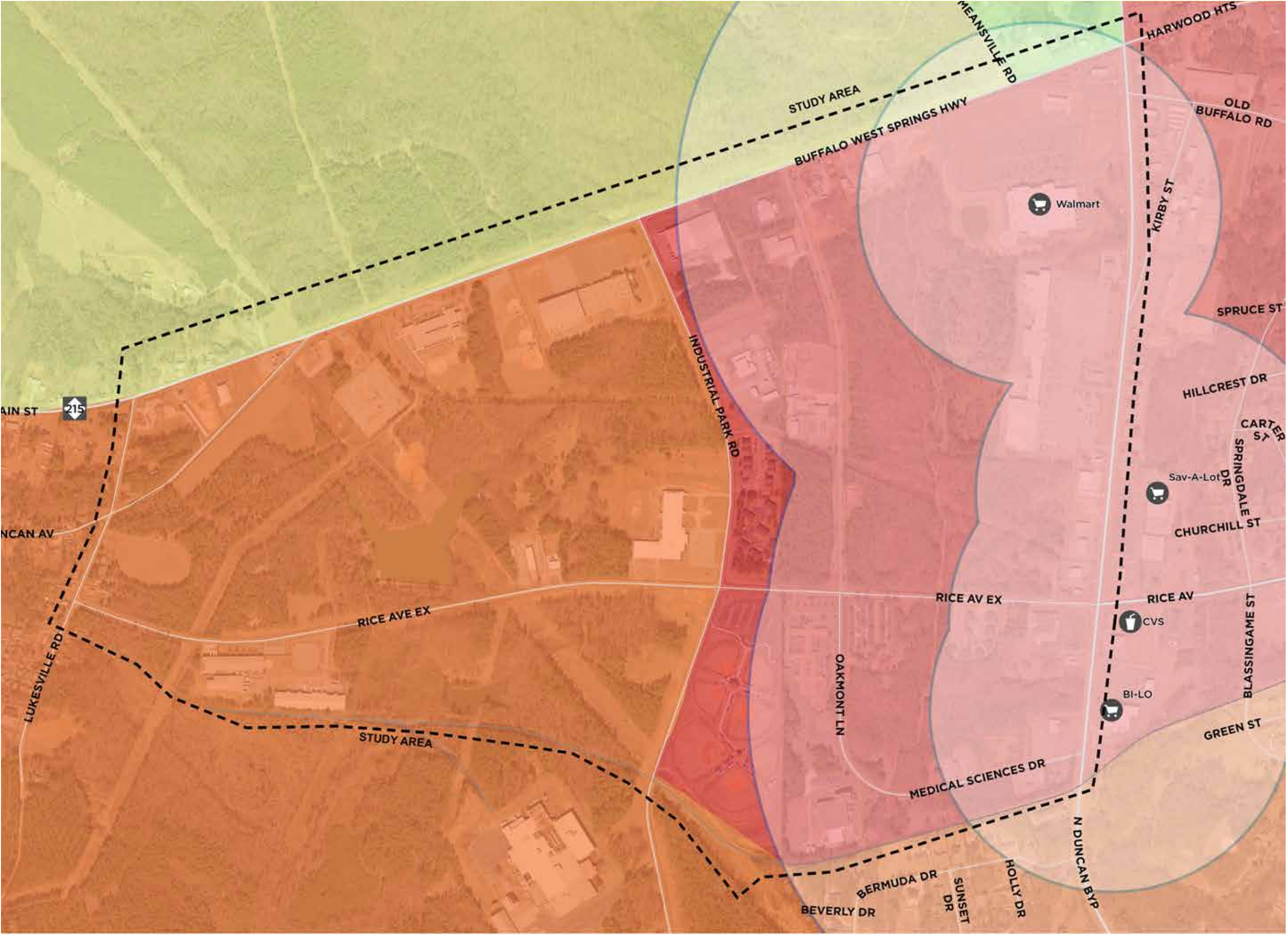
CONCENTRATION OF VULNERABLE POPULATIONS



OVERLAYS



POINTS OF INTEREST



FOOD ACCESS ANALYSIS

OVERVIEW

The results of the Composite Equity Analysis are combined with a mapping study of the locations and walkability of healthy food outlets. Healthy food outlets are defined to include all grocery stores, farmers markets, community gardens, and informal food sources.

Food outlets are overlayed with a quarter-mile and half-mile buffer – about a 5 and 10-minute walk from each destination. A half-mile walkshed is a widely accepted catchment area for pedestrian analyses. This distance also serves as the Federal Transit Authority’s (FTA’s) designated catchment area for pedestrian improvements that are eligible for transit enhancement funds. This diameter presumes that, barring barriers to mobility and accessibility, individuals within the catchment area would be willing to walk to these activities and destinations. Walksheds, in combination with equity data, assess the connectivity and reveal opportunities where infrastructure improvements may have the greatest impact.

UNION’S FOOD RETAIL ENVIRONMENT

| | |
|--|-------|
| Study area population (2010 census) | 349 |
| Study area square miles | 1.16 |
| Number of food retail establishments (FRE) | 4 |
| Study area population/FRE | 87.25 |
| Study area square miles/FRE | 0.29 |
| Number of grocery stores | 3 |
| Study area population/number of grocery stores | 116.3 |
| Study area square miles/number of grocery stores | 0.39 |
| Healthy food outlet density (number of FREs per square mile) | 3.45 |

HEALTHY FOOD OPTIONS are LIMITED in UNION’S WEST SIDE

The healthy food outlets in Union are concentrated in the eastern part of the study area along US-176. Although the half-mile catchment circle indicates that food options are concentrated near the more vulnerable populations, the majority of residents in the moderately vulnerable areas do not have comfortable or safe walking access to healthy food options.

The Food Retail Environment table, see below, looks at healthy food opportunities in the study area by calculating the density of grocery stores and food retail outlets available. These outlets are referred to as Food Retail Establishments, or FREs. **A minimum healthy food outlet density of 0.2 is desirable.**

By this measure, the study area has numerous opportunities for residents to access healthy foods in Union; however, the few existing food outlets are located primarily along a high-volume, high-speed thoroughfare designed to prioritize automobile access. **Pedestrian facilities and street crossings along US-176 are sparse and disjointed, and so easy access on foot is a challenge even for adjacent residents.**

ACTIVE SPACE ACCESS ANALYSIS

OVERVIEW

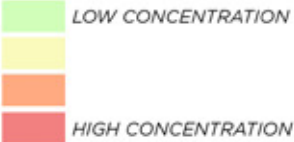
The results of the Composite Equity Analysis were also combined with a mapping study of the locations and walkability of active spaces. Active spaces are defined to include all existing parks and green space, as well as local schools that have active space facilities open to the public. In communities where more resources exist, trails, YMCA's, or community recreation centers are typically included.

This analysis again uses a quarter-mile and half-mile walkshed, a 5 and 10 minute walk for most pedestrians. The resulting map is a starting point for understanding how to link areas in need to active space destinations through pedestrian infrastructure improvements.

Overall, the west side of Union has three active spaces spread out across the study area – two of which are located within walking distance of the city's most vulnerable populations. While the majority of residents living in the study area are ostensibly able to walk to at least one of the facilities in 10 minutes or less, it should be noted that **the lack of safe and continuous pedestrian facilities may deter residents from actually walking to the active space locations.**

ACTIVE SPACE ACCESS ANALYSIS MAP

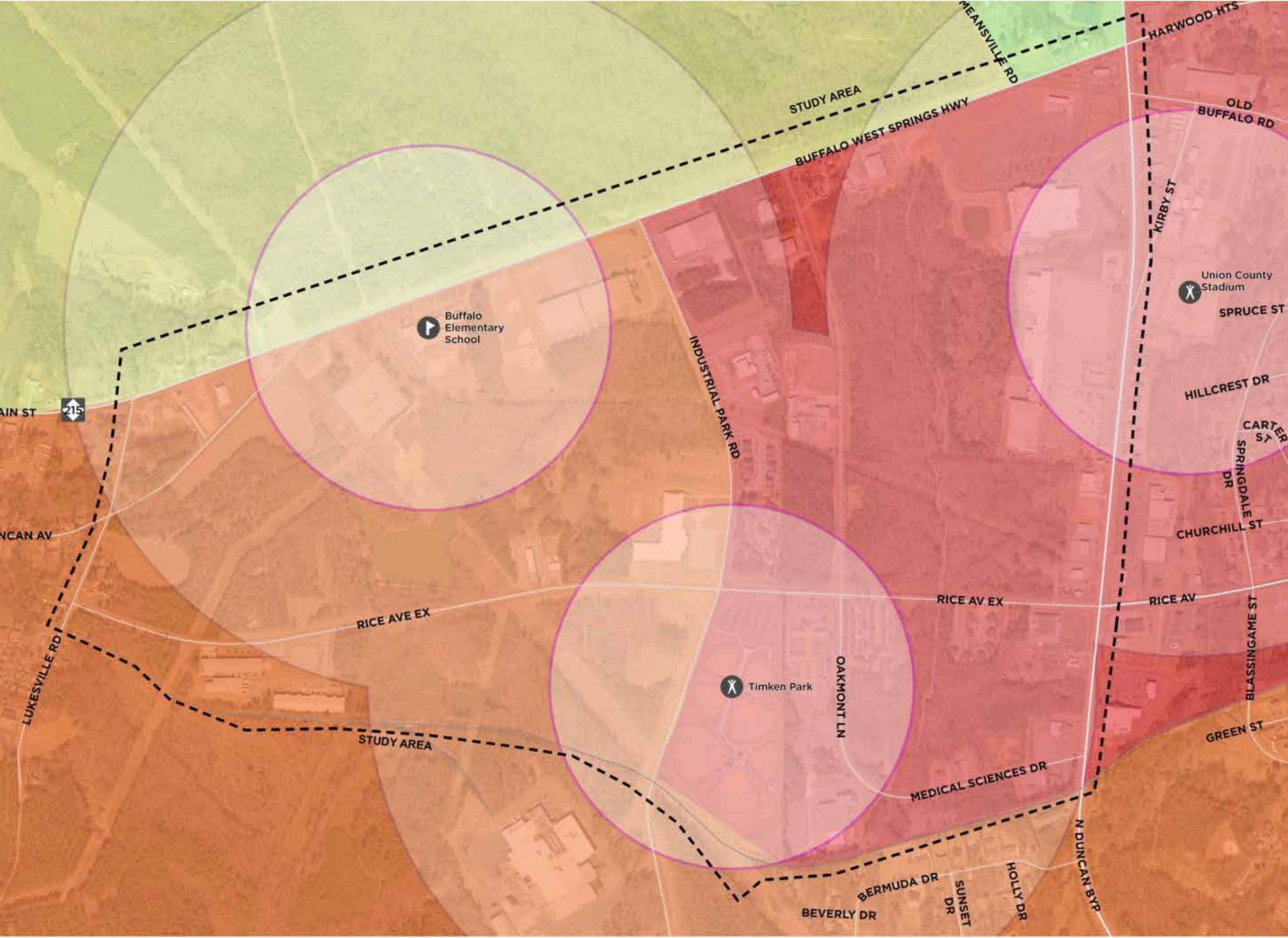
CONCENTRATION OF VULNERABLE POPULATIONS



OVERLAYS



POINTS OF INTEREST





Local community leaders and residents discuss walkability in Union during the 3-day community charrette.



PUBLIC INPUT

The Walkable Union Pedestrian Plan gathered feedback through the project Steering Committee, school focus groups, and a community charrette held May 2018.

MAIN TAKEAWAYS

The Steering Committee, focus groups, and charrette indicated that the town has strong momentum and a passion for improvements. **The need for traffic calming, crossing improvements and bridging sidewalk gaps emerged as priorities** in each discussion, and provided clear guidance for turning feedback into design recommendations.

STEERING COMMITTEE

Two steering committee meetings were held during the plan process - May 14 and 16. The kickoff meeting on May 14 gathered feedback on broad community needs and specific issues impacting walkability in Union's west side. This input informed the direction of draft infrastructure recommendations; a follow up meeting on May 16 included a presentation on updated recommendations. Feedback from the second meeting was incorporated from the committee into the final plan.

FOCUS GROUPS and PUBLIC INPUT

Throughout the 3-day charrette, a diverse group of stakeholders and residents from Union provided information on challenges and opportunities facing the community. After a lively discussion discussing community needs, attendees were asked to respond to a series of preference boards related to pedestrian and bicycle facilities and amenities (see appendix for full boards). Questions and answers for the focus group members included:

When do you no longer feel safe walking?

Attendees were shown a scale of pedestrian facilities ranging from most to least separated from vehicular traffic. The majority of attendees felt that a **pedestrian lane** was their limit of comfort

when walking, indicating that they would not feel comfortable walking along a paved shoulder or in a yield roadway.

When do you no longer feel safe biking?

Attendees were shown a scale of bicycle facilities ranging from most to least separated from vehicular traffic. Attendees largely agreed that a **paved shoulder** was their limit of comfort when bicycling, although some voted that a bike lane was their limit. Respondents did not feel comfortable biking along a bike boulevard/shared street.

What type of streetscape and greenway amenities do you prefer?

Stakeholders and residents were shown a selection of bicycle and pedestrian amenities and asked to vote on the elements they would like to see integrated into Union's west side improvements. The top 3 responses are as follows: **Pedestrian-scale lighting, water fountains, and emergency phones**. Other popular answers included shade trees and trash receptacles.

At the end of the discussion, **participants were asked to share one word to describe future walkability in Union. The most common answer: OPPORTUNITY.**

Based on the feedback received throughout the 3-day charrette, the consultant team produced a set of draft infrastructure, policy, and program recommendations. 28 people attended the charrette over the course of 3 days, which was held at the Main Street Junction in downtown Union.

Other notable comments:

- YMCA's 5k run happens every year on the west side; along 215, Times, through Timken parking lot, and down Rice Ave Ext.
- Timken 4-way intersection used to be a 2-way stop but there were vehicular fatalities
- Times Blvd has student driver training on it often

PUBLIC INPUT + STUDY AREA

PHOTO GLOSSARY



Unsignalized midblock crossing across 5 lanes of traffic (US-176); sidewalk gaps on both sides



Path leading from lower parking lot to Buffalo Elementary, underutilized



Limited sidewalk connections and crossings at Buffalo Elementary School



Opportunity to convert existing utility corridor into community asset/east-west connector



Highway 215 identified as needing pedestrian improvements, many people walk to work along road



Wide right-of-way along Industrial Park Rd can be adapted for pedestrians and bicyclists



Recreational walking loop at Timken Park used often, but people generally drive there rather than walk or bike



4-way stop by Timken Park identified as uncomfortable/unsafe for pedestrians crossing; lacks facilities



A lane diet on Times Blvd could leave space for bicycle-friendly advisory shoulders

How would you describe Union's **EXISTING** bike and pedestrian infrastructure?

1. Non-existent

- 2. Limited
- 3. Unsafe
- 4. Disconnected
- 5. Inconsistent

How would you describe Union's **FUTURE** bike and pedestrian infrastructure?

1. Opportunity

- 2. Reality
- 3. Safe
- 4. Improved quality of life
- 5. Huge difference
- 6. Lots of activities

02

RECOMMENDATIONS

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RECOMMENDATIONS OVERVIEW

BE OPPORTUNISTIC

The following sections detail priority recommendations for Union's west side. **The intent of these recommendations is to present a framework for walkability priorities, ensuring accessibility and mobility for pedestrians of all ages and abilities.** Improvements focus on making walking safer and a more enjoyable experience for residents and visitors. To achieve such a vision, the recommendations are organized as follows:

INFRASTRUCTURE RECOMMENDATIONS

CORRIDOR TREATMENTS

A general explanation of network improvements and facility improvement types corresponding to a map showing where those treatments can be applied.

CROSSING IMPROVEMENTS

Intersections have been recognized as the biggest barrier to walkability in Union. Difficult crossings are identified on the network map as well as recommendations for design guidance to improve the comfortability and safety of crossing busy streets.

CATALYST PROJECTS

These spreads are intended to convey what improvements can look like to residents and stakeholders, as well as assist in applying for implementation funds. The project cutsheets identify corridors that are crucial catalysts for economic development and quality of life enhancement in Union.

PROGRAMMATIC RECOMMENDATIONS

PROGRAM CUTSHEETS

These spreads provide program ideas that can be championed and implemented by the Steering Committee and citizens of Union. Program cutsheets list examples, specific applications, and cost estimates.

While the recommendations herein are considered community priorities, this should not preclude Union from remaining opportunistic and flexible.

New developments, roadway reconstruction projects, and regularly programmed maintenance should not prevent other improvements from occurring.

The recommended facility types described herein are based on national best practices for pedestrian and bicycle design and are compliant with state and national design guidelines.

INFRASTRUCTURE RECOMMENDATIONS

CORRIDOR TREATMENTS

The corridor recommendations show where Union should prioritize safer walking routes. Recommended facility types in Union are modeled on FHWA's Small Town and Rural Design Guide. These include traditional treatments such as sidewalks, bike lanes, and shared-use paths, as well as innovative treatments such as advisory shoulders, and rail trails.

Facility Types

The specific facility types were selected based on the roadway characteristics - primarily traffic volumes and speeds.

- **Sidewalks** are prioritized for higher traffic roads where people walking in the roadway would be a safety issue, such as along US-176 or Highway 215.
- **A 12-foot, shared-use path** is recommended where a higher volume of non-motorized users is anticipated, such as along Industrial Park Road, a section of Highway 215, and the existing utility corridor. Industrial Park Road is a crucial north-south connector for people accessing Timken Park from Highway 215. A path along the existing utility corridor would serve as a direct east-west route from Buffalo Elementary to US-176 and would intersect Industrial Park Road, further strengthening the active transportation network.
- **On-street bike facilities**, including advisory shoulders and buffered bike lanes are recommended along roads with lower traffic volumes.
- **Future greenway facilities**, possibly along the existing Norfolk Southern railroad, could function as a valuable transit and recreational amenity for residents and a link to downtown Union.
- **Regional connections** to communities north and south of Union along US-176 should be explored as longer term connectivity projects.

CROSSING IMPROVEMENTS

A walking trip is only as comfortable as the least comfortable segment a person encounters along the entire trip. Therefore, intersections need to maintain a high level of safety and comfort for people walking.

Some of the major intersections in the study area have basic pedestrian accommodations but there is an opportunity to improve the crossing experience at both existing busy intersections and at high-demand midblock locations.

Midblock crossing recommendations include pedestrian-actuated beacons such as a Pedestrian Hybrid Beacons (PHBs, or HAWK signal). Improvements at end-of-block crossings include high-visibility striping for crosswalks, wayfinding signage, Rectangular Rapid Flashing Beacons (RRFBs), and intersection signalization.

9 crossings have been identified in the study area to be improved, two of which were identified as catalyst projects (see pages 32-35 for descriptions). Crossing improvements should be implemented concurrently with the implementation of new facilities and corridor treatments.

CATALYST PROJECTS

The map on the opposite page highlights priority locations for corridor treatments and crossing improvements. Of these recommendations, three catalyst projects have been identified. Catalyst project descriptions can be found later in this chapter, as well as visualizations and high-level cost estimates for implementation.

Design guidance for sidewalks, on-street facilities, and shared-use paths are also included in the appendix.



RECOMMENDATIONS

- Crossing Improvement
- Sidewalk - proposed
- Sidewalk - existing
- Advisory Shoulder - proposed
- On-Street Bike Facility - proposed
- Shared-Use Path - proposed
- Shared-Use Path - existing
- Rail Trail - Future
- Pedestrian Connection - future

OVERLAYS

- RAILROAD
- INTERSTATE
- US HIGHWAY
- STATE HIGHWAY
- LOCAL ROAD
- UNION CITY BOUNDARY

POINTS OF INTEREST

- SCHOOLS
- SPORTS & RECREATION
- GROCERY STORE
- INFORMAL FOOD OUTLET



STUDY AREA RECOMMENDATIONS

Corridor recommendations in the study area focus on strengthening the existing network with crucial east-west and north-south connectors in order to reach destinations that were previously unreachable by foot or bike. Repurposing underutilized rights-of-way and filling network gaps improves the pedestrian and bicyclist experience and enhances the overall comfort, safety, and accessibility of walking and biking throughout the west side.

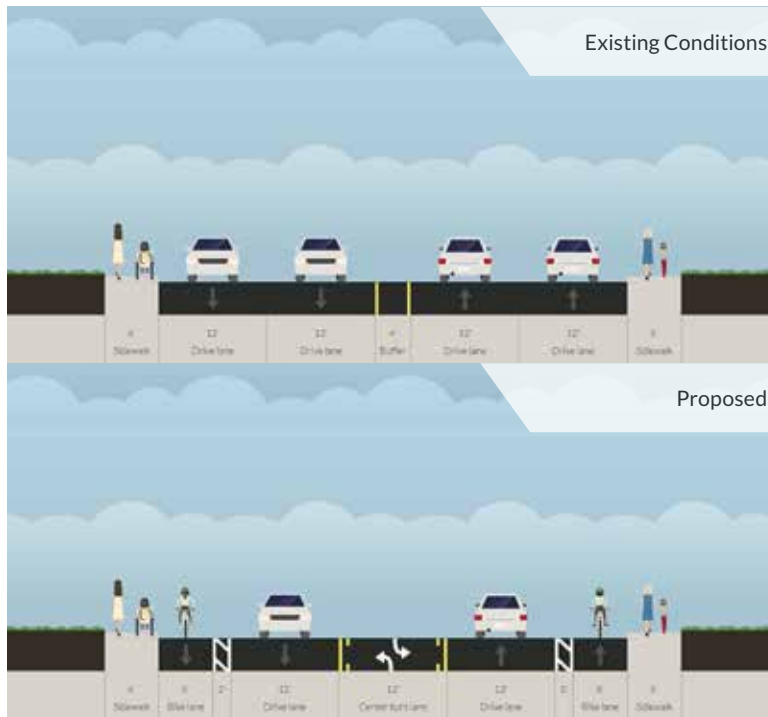
RECOMMENDATIONS

- Crossing Improvement
- Sidewalk - proposed
- Sidewalk - existing
- Advisory Shoulder - proposed
- On-Street Bike Facility - proposed
- Shared-Use Path - proposed
- Shared-Use Path - existing
- Rail Trail - Future
- Pedestrian Connection - future

POINTS OF INTEREST

- SCHOOLS
- SPORTS & RECREATION
- GROCERY STORE
- INFORMAL FOOD OUTLET

PRIMARY EAST-WEST CONNECTORS



RICE AVE

EXISTING CONDITIONS

- 4 travel lanes, 12' width
- 4' of extra space in center of roadway
- 6' sidewalks on both sides

RECOMMENDATIONS

- 4-to-3 lane reconfiguration
- Maintain 12' lane width and add 12' center turn lane
- On street bike lanes (2' buffer, 6' lane)
- Maintain 6' sidewalks



215 CORRIDOR

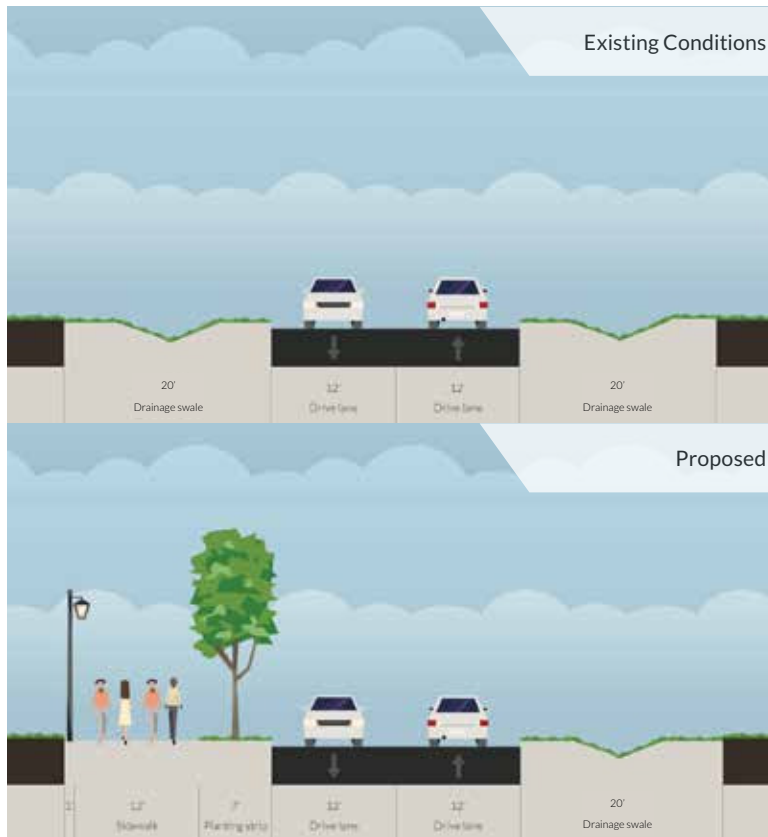
EXISTING CONDITIONS

- 2 travel lanes (13' width) and center turn lane (14' width)
- Lacks pedestrian facilities

RECOMMENDATIONS

- 12' buffered, shared-use path on the eastern side of Hwy 215
- Enhance shade tree coverage
- Maintain 13' travel lanes
- Phase 2 - replace center turn lane with landscaped median and street trees with turn pockets at key areas

PRIMARY NORTH-SOUTH CONNECTORS



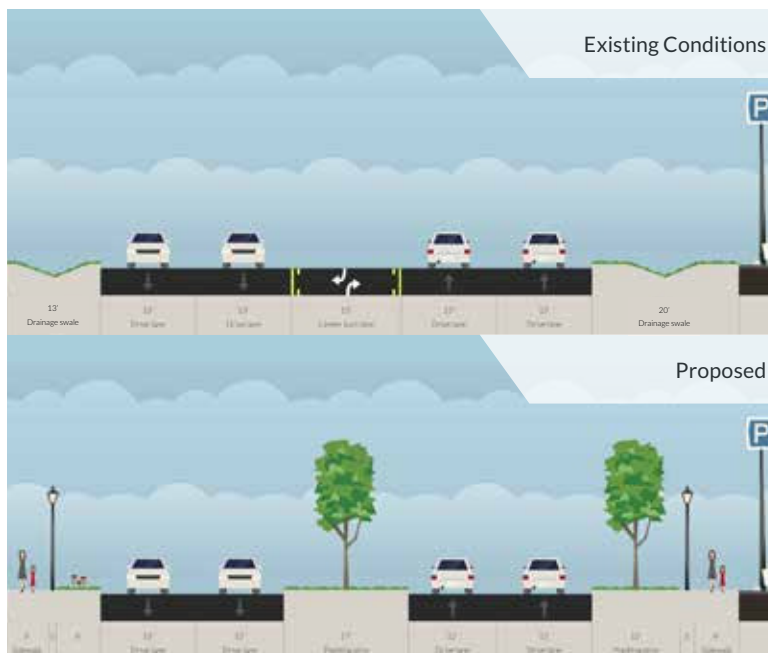
INDUSTRIAL PARK RD

EXISTING CONDITIONS

- 2 travel lanes, 12' width
- Lacks pedestrian facilities
- 20' planting strip on the western side, underutilized right-of-way

RECOMMENDATIONS

- Maintain 12' lane width
- Repurpose planting strip, 12' shared-use path and 7' landscaped buffer
- Add pedestrian-scale lighting



HIGHWAY 176

EXISTING CONDITIONS

- 4 travel lanes (13' width) and center turn lane (15' width)
- 13' planting strip on western side of US-176, 20' planting strip on eastern side
- Midblock crossing at stadium lacks pedestrian facilities

RECOMMENDATIONS

- Maintain 13' width on outside lanes, reduce to 12' on inner travel lanes
- Replace center turn lane with landscaped median and street trees with turn pockets
- Add pedestrian lighting and 6' buffered sidewalks on both sides

Shared-Use Path to Buffalo Elementary (Secondary E/W Connector)

EXISTING CONDITIONS



Repurposing the existing and underutilized center turn lane into a landscaped median with shade trees calms traffic.

Wayfinding signage

Travel lanes more narrow but do not decrease in width in order to maintain access for large trucks.

12' shared-use path that connects to adjacent baseball fields and Timken Park.

Sidewalk and curb ramps allow parents and students to reach school without impeding bus traffic patterns.

Times Blvd Corridor Treatment (Secondary N/S Connector)

EXISTING CONDITIONS



Motorists can enter advisory shoulder when no bicyclists/pedestrians are present

Two-way center travel lane, cars may encroach into shoulder when passing each other

Destination-based wayfinding



CROSSING IMPROVEMENTS

Ten locations have been identified within the study area that need crossing improvements, particularly for pedestrians. Many locations are currently lacking the basic facilities that make crossing busy roads safe for those on foot or bike, such as sidewalks, ADA-accessible curb ramps, crosswalks, and signalization or signage.

Enhancements can stand alone as independent projects in response to availability of funding, but form a more effective pedestrian network when implemented together. Should improvements be implemented in phases, **crossings along US-176 should be prioritized because they offer the most direct connectivity to healthy food outlets, active spaces, and downtown Union.** Crossing number 1, at the intersection of US-176 and Highway 215 is identified as a priority for improvement, but a design is not included, as SCDOT is already designing a treatment for the intersection.

RECOMMENDATIONS



Crossing Improvement

POINTS OF INTEREST



SCHOOLS



SPORTS & RECREATION



GROCERY STORE



INFORMAL FOOD OUTLET

CROSSING IMPROVEMENT LOCATIONS INCLUDE*:

1. Highway 215 / US-176**
2. Midblock crossing at US-176**
3. Rice Avenue / US-176**
4. Highway 215 / Times Boulevard
5. Utility corridor / Times Boulevard
6. Rice Avenue Extension / Times Boulevard
7. Highway 215 / Industrial Park Road
8. Utility corridor / Industrial Park Road
9. Rice Avenue Extension / Industrial Park Road**
10. Highway 215 / Lukesville Road

*Note: Crossings are listed in order of east to west

Note: **Bold text denotes priority project or catalyst project and corresponds to yellow circle  around icon on map

3. PLAN VIEW of RICE AVE / US-176 CROSSING IMPROVEMENTS



EXISTING CONDITIONS

Timken Park Intersection

Intersection signalization, new sidewalk facilities, and other pedestrian improvements prioritizes pedestrian access to Timken Park and slows approaching vehicular traffic.

About this Project

- Signalization, sidewalks, and high-visibility crosswalks at this location formalizes an existing crossing point. Improvements increase visibility so vehicles can anticipate the presence of pedestrians while also making it a more attractive and comfortable environment for those crossing.
- Features:
 - 4-way traffic signal
 - High-visibility crosswalk
 - Signage
 - Shade trees
 - Sidewalks and curb ramps

EXISTING CONDITIONS



PLAN VIEW



EXISTING CONDITIONS

PROPOSED CROSSING



Signalization slows vehicular traffic and allows pedestrians to cross more safely.

Add wide crosswalks and curb ramps at all 4 sides of intersection.

Flowering shade trees create a more pedestrian-friendly environment and provides beautification for the park. Vertical elements slow traffic and alert drivers of approaching signal.

Continue sidewalks along all 4 sides of intersection.

COST ESTIMATE

| | COST |
|--------------------------------------|---------------------|
| Construction Cost (+30% contingency) | \$432,650.00 |
| Right-of-Way Acquisition (30k/acre) | \$0.00 |
| Engineering/Design Administration | \$65,000.00 |
| OPINION OF TOTAL PROJECT COST | \$497,650.00 |

Note: A complete breakdown of priority project cost estimates can be found in the appendices (see page 78).

Midblock Crossing at US-176

Improvements to an existing midblock crossing with pedestrian-activated signalization, medians, and sidewalks formalizes the crossing and bridges the gap that currently exists between the east and west sides of US-176.

About this Project

- A median and HAWK signal makes crossing the 5-lane roadway a more comfortable and safe experience and enhances the connection to destinations on either side of the road.
- Features:
 - HAWK signal/pedestrian hybrid beacon (PHB)
 - Landscaped median/pedestrian refuge
 - High-visibility crosswalk
 - Pedestrian-scale lighting
 - Shade trees
 - New sidewalks

EXISTING CONDITIONS



PRECEDENT IMAGES



PROPOSED CROSSING



Pedestrian-scale lighting

Fill in sidewalk gaps along US-176 and implement ADA-compliant curb ramps to crossings.

HAWK signal activates when pressed by a pedestrian; traffic comes to a full stop and pedestrians can safely cross the road.

Median provides opportunity for shade trees, beautification, and left-turn lanes at key areas.

COST ESTIMATE

| | COST |
|--------------------------------------|---------------------|
| Construction Cost (+30% contingency) | \$154,550.00 |
| Right-of-Way Acquisition (30k/acre) | \$0.00 |
| Engineering/Design Administration | \$23,000.00 |
| OPINION OF TOTAL PROJECT COST | \$177,550.00 |

Note: A complete breakdown of priority project cost estimates can be found in the appendices (see page 78).

Utility Corridor Shared-Use Path

Encourage residents to walk to school and other destinations by improving access to safe, separated, shared-use facilities.

About this Project

- A shared-use path along the utility corridor makes use out of valuable open green space that is otherwise undeveloped and inaccessible by pedestrians and bicyclists. Acquiring right-of-way generally requires fewer stakeholders and easements than a traditional greenway.
- Features:
 - 12' shared-use path
 - Wayfinding signage
 - Public art
 - Pedestrian-scale lighting
 - Native meadow/landscaping

EXISTING CONDITIONS



PRECEDENT IMAGES



PROPOSED SHARED-USE PATH



Public art, pedestrian lighting, and landscaped meadow beautifies corridor, creates valuable community asset for Union.

12' paved greenway along utility corridor from US-176 to Buffalo Elementary School

Destination-based wayfinding

Maintain existing meadow but mow buffer adjacent to shared-use path.

COST ESTIMATE

| | COST |
|--------------------------------------|-----------------------|
| Construction Cost (+30% contingency) | \$1,073,290.00 |
| Right-of-Way Acquisition (30k/acre) | \$89,000.00 |
| Engineering/Design Administration | \$161,000.00 |
| OPINION OF TOTAL PROJECT COST | \$1,323,290.00 |

Note: A complete breakdown of priority project cost estimates can be found in the appendices (see page 78).



Union residents using the walking trail loop at Timken Park.

PROGRAMMATIC RECOMMENDATIONS

OVERVIEW

Research has shown that a comprehensive approach to walk- and bicycle-friendliness is more effective than a singular approach that would address infrastructure issues only. Programs can leverage Union's creativity, existing resources, leadership, and community spirit to build interest in walking. These ideas can be implemented quickly and with minimal investment, while providing a clear direction for the Union Steering Committee to generate immediate progress and short-term goals.

While the city and its agency and jurisdictional partners (namely SCDOT and the County) are responsible for infrastructure projects and policy development, community programs can and should be supported and championed by outside partners such as nonprofit organizations, advocacy groups, foundations, private sector businesses, and interested citizens.

The national the Walk Friendly Community program, administered by the National Center for Walking and Bicycling, recommends a multi-faceted approach to programs based on the following five 'E's: Engineering, Education, Encouragement, Enforcement, and Evaluation. A sixth 'E', Equity, is often included in order to ensure equal consideration for those whom pedestrian improvements may benefit the most. The programmatic recommendations outlined here incorporate the education, encouragement, enforcement, and equity components of this multi-faceted approach. Infrastructure recommendations, described in the previous chapter, represent the majority of the "engineering" element.

Programs can ensure that residents will know about new and improved facilities, learn about the many benefits of walking, and receive positive reinforcement about why and how to integrate walking into an active and healthy lifestyle. In essence, programs can help to provide the maximum "return on investment" in the form of more people walking and a higher degree of safety and awareness around walking and pedestrians in Union.

Education and encouragement programs are designed to raise awareness of walking; connect users to existing and future resources; and to encourage residents to walk more often. These program recommendations will give the City and County, and their neighborhood and community partners, the tools they need to address travel choices, public health, and increase community-wide physical activity.

Education and Awareness

PEDESTRIAN SAFETY CAMPAIGN

A high-profile marketing campaign is an effective strategy for highlighting the importance of respect and shared responsibility on the road between bicyclists, motorists, and pedestrians. This type of campaign is particularly effective when launched in conjunction with other events such as Walk to School Day (described later in this chapter).

A well-produced safety campaign will be memorable and effective. One good example is the Florida Safety “Alert Today, Alive Tomorrow” campaign. It combines compelling ads with visible education efforts to improve awareness of pedestrian safety laws. The safety and awareness messages should be displayed near high-traffic corridors (e.g., on billboards), printed in local publications, and broadcast as radio and/or television ads.

Action Steps

As the pedestrian network is developed and activity increases, create a safety campaign to encourage safe driver behavior. Develop a series of safety tips and safety messages that can be incorporated into printed brochures, postcards, TV and radio ads, and billboards. Seek a media sponsor who can provide local coverage of the campaign and provide air time for public service announcements. The campaign should last one month. Consider giving away safety items at community events during that month, such as reflective materials and pamphlets that visualize pedestrian safety laws.

RESOURCES

- [National Pedestrian Safety Campaign, FHWA](#)
- [Spartanburg “Reflect for Safety” Campaign, SC](#)
- [LOOK Campaign](#)
- [Watch for Me NC](#)
- [Safe School Zone, Pasadena, CA](#)

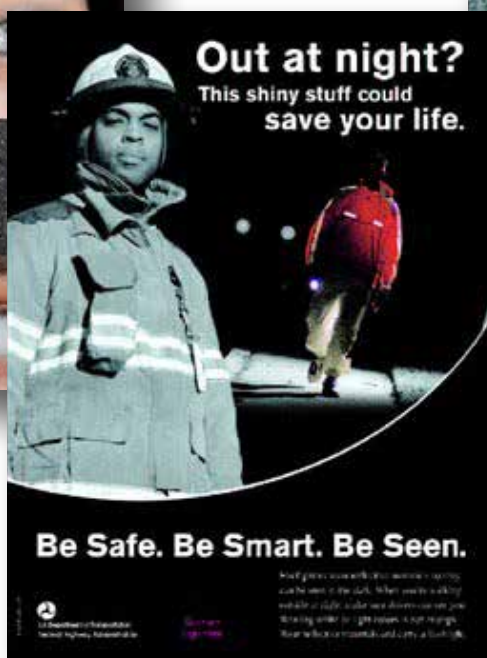
Pedestrian campaigns can promote a variety of messages to improve the behaviors of all road users. A high-profile marketing campaign can highlight active living, promoting new and future sidewalk infrastructure and improvements, encouraging support for investments in sidewalks, and can encourage mutual respect and improve safety for pedestrians and drivers. Pedestrian safety as it relates to traffic concerns was cited as a major barrier to walking. The findings pointed to the need to slow traffic and increase visibility of pedestrians. While a campaign will not directly effect the needed infrastructure improvements slow traffic, a campaign can influence how drivers perceive and interact with pedestrians. By promoting walking and encouraging drivers to recognize and respect pedestrians, especially along barrier roads like US-176 and Highway 215, the number of walkers on neighborhood streets could increase. By increasing the number of users on the street, the perceptions of pedestrian safety and comfortability could be improved.

Before launching a campaign, it is recommended

that the City, with the guidance of Union residents, develop a set of campaign goals that identify the problem behavior(s), desired outcomes, and the target audience. This will inform the campaign messaging and imagery. A stakeholder or focus group should be convened with individuals familiar with the community to ensure that the campaign messages and graphics will resonate with the target audience. The audience will also determine what types of media are utilized, but it is recommended that a variety of outlets be used to ensure coverage, reach, and repetition.

CAMPAIGN GOALS that SUPPORT WALKING could include the following:

- Raise the general awareness of pedestrians
- Encourage better etiquette among drivers and/or pedestrians
- Encourage pedestrians to “be seen” through bright colored clothes, lights, etc.
- Promote walking as a benefit to personal health, the environment, or as a way to save money
- Target specific demographics or groups such as children, older adults, men, women, or specific ethnic groups



Encouragement

WEEKEND WALKABOUTS

Weekend Walkabouts are regularly occurring events that promote walking while also bringing attention to pedestrian infrastructure. They can be held either monthly from May to October or quarterly to include one walk per season, depending on staff availability and marketing opportunities. The events' walking routes should highlight safe and inviting places to walk in the public realm (rather than private or enclosed facilities such as cemeteries or walking tracks) and should be 3 miles or less in length. These events are ideal for families and seniors.

Weekend Walkabouts may be organized based on themes for each walk, such as an architectural tour, a "Steeple Chase" tour (visiting historic churches), or a tour of parks. To generate added marketing potential, community leaders or local celebrities could be chosen to lead each walk. For each event, at least one volunteer or staff member should be positioned at both the front and the rear of the walking group to accommodate different walking speeds. In the spring, a Weekend Walkabout may be planned in conjunction

with the annual event known as "Jane's Walk." Inspired by the "people's planner" Jane Jacobs, Jane's Walk events occur in early May and involve free neighborhood walking tours developed and delivered by citizens as a way to put people in touch with their environment and each other. Union could follow the

2016 Hog Jog 5k in Union, SC



Action Steps

Work with the Union Police department and neighborhoods to determine best streets to close and identify 10-12 key destinations along route. Contact community partners, local schools, businesses, or interested citizens to host activities (like a bike safety rodeo or dance party) as part of the Open Streets event. Promote the event through social media, websites, and campus communications. Seek donations.

RESOURCES

- [Durham, NC Play Streets](#)
- [Jane's Walk](#)
- [Sunday Parkways Videos](#)
- [OpenStreetsProject.org](#)
- [WalkYourCity.org](#)

same route as the annual Hog Jog 5k put on by the YMCA in Union's west side, beginning at Buffalo Elementary and looping around to Timken Park, ending at Midway BBQ.

OPEN STREETS

Open Streets Events are periodic street festivals (typically held on the weekend) that create a temporary park open to the public for walking, bicycling, dancing, hula hooping, roller skating, and other forms of human-

powered activity. These programs are known by many names: Open Streets, Ciclovias, Sunday Parkways, Summer Streets, and Sunday Streets. They promote health by creating a safe and attractive space for physical activity and social interaction, and are cost-effective compared to the cost of building new parks for the same purpose. These events can be weekly, monthly, or annual events, and are generally very popular and well-attended.

Open Streets in Santa Monica, CA, 2016



Open Streets events lend themselves to innovative partnerships and public-private funding. The City of Union should partner with health care providers, healthy lifestyle organizations, and local health and fitness groups to hold periodic open streets events throughout the study area. Health care providers whose mission includes facilitating physical activity are often major sponsors. Businesses may also help sponsor the event if it brings customers to their location.

Action Steps

Register to become a South Carolina SRTS Partner to receive free technical assistance from the SRTS Resource Center. The Resource Center offers four partnership stages – bronze, silver, gold, platinum – with corresponding goals and levels of assistance.

RESOURCES

- [South Carolina SRTS Resource Center](#)
- [SRTS Walking School Bus Training Guide, Santa Clarita, CA](#)
- [Maine Walking School Bus Toolkit](#)
- [Golden Sneaker Contest Resources, SRTS Alameda County](#)
- [Safe Passage Policy, Langston Hughes Elementary, Lawrence, KS](#)

SAFE ROUTES to SCHOOL

Safe Routes to School Programs (SRTS) provide funding for school based programs which encourage walking to school. This typically involves examining conditions around public schools and providing programs to improve bicycle/pedestrian safety, accessibility and use. SRTS efforts include developing and sending flyers with safety information to students' homes, classroom bicycle and pedestrian safety education, organizing a "walking school bus", and school public address announcements that educate students on pedestrian safety. Teachers may conduct periodic in-class tallies to record how students are traveling to and from school, which can help to track trends in student walking rates over time. Communities can also increase their police presence around schools during morning arrival and afternoon dismissal times to enforce school zone speed limits.

Many project recommendations are focused adjacent to schools and can build on existing Safe Routes to School programs to improve access to neighborhoods. SCDOT offer Safe Routes to School Resource Centers



to specific regions throughout the state.

Public input revealed indicated that parents and school staff had traffic-related concerns, including congestion on Highway 215 at Buffalo Elementary during pick-up and drop-off times. Observing Buffalo Elementary after dismissal on a typical day, traffic would persist for over an hour as parents lined up to pick up their children, often leaving their vehicle to walk into the school and physically get their child.

Safe Routes to Schools programs directly

benefit schoolchildren, parents and teachers by creating a safer and more efficient travel environment near schools and by reducing motor vehicle congestion at school drop-off and pick-up zones. Students that choose to bike or walk to school are rewarded with the health benefits of a more active lifestyle, with the responsibility and independence that comes from being in charge of the way they travel, and learn at an early age that biking and walking can be safe, enjoyable and good for the environment.

The following are potential programs that can be used to help reduce congestion near schools:

- 1 **Walking School Bus:** Walking school buses let students walk to school as a group, often with an adult volunteer (see picture below). They may be daily, weekly, or monthly events. They can originate in specific neighborhoods, local parks, at places of worship, or another central location for children and parents to meet.
- 2 **Golden Sneaker Competition:** classrooms keep track of how many students get to school by walking, biking, taking the bus, or carpooling. Classrooms with the highest level of participation receive a Golden Sneaker trophy.
- 3 **Suggested Routes to School Maps:** Suggested route maps show existing sidewalks, trails, bikeways, crossing guards, and traffic control to help parents find the best walking and biking routes to school.
- 4 **Early/Late Dismissal Policies:** Early dismissal for walkers and bikers can serve as an incentive for more participation, while at the same time increasing safety by reducing or eliminating the interaction between pedestrians and bikers with carpool lines and buses. Conversely, late dismissal policies for walkers and bikers discourage active transport modes and should thus be reviewed and revised where possible.

It is recommended that Buffalo Elementary work with the City of Union, the Union County School District, teachers, parents, students, and neighbors to promote and encourage walking and bicycling as a way to reduce congestion, encourage healthy behaviors, and to help fuel momentum in order to secure future sidewalk and infrastructure improvements along Highway 215.

Engagement at Timken Park

Parks are essential to creating an active neighborhood, providing recreational opportunities, and supporting a neighborhood's identity. Activating this rich resource can encourage residents and visitors to enjoy nature and be active. Below are a list of potential events that will help to support physical activity, neighborhood cohesion, and access to healthy foods.

FITNESS IN THE PARK

Regular physical activity has been shown to have considerable health benefits, such as helping to maintain a healthy weight and reduce the risk of heart disease, high blood pressure, and Type 2 diabetes. Reaching out to residents to encourage walking and other physical activities can help to improve personal health and strengthen ties within the community. Many areas of Timken Park may be suitable for frequent free exercise classes led by volunteers or park staff. This may include a range of classes that target specific age groups and that involve various levels of intensity. By partnering with course instructors from the YMCA, the park can host multiple outdoor activities to include:

- Yoga classes
- Meditation classes
- Tai chi classes
- Nature walks
- Boot camp
- Zumba classes
- Fitness walks or runs to/around the park

Action Steps

RESOURCES

- [Fitness in the Park, St. Paul, MN](#)
- [Free Outdoor Fitness, Johns Creek, GA](#)

Tai Chi Class in the Park



Zumba Class in the Park



SPECIAL EVENTS

Community Concerts: A summer concert series or open mic nights can draw more families out to use the park through programming and events, outside of the park’s normal sports schedule. To hold concerts and attract musical talent, a temporary or permanent stage may be designed in a prominent and accessible location within Timken park. Additionally, opportunities for people to interact with music and/or instruments along the trail can provide a fun environment.

National Night Out: This annual community-building national campaign promotes police-community partnerships and neighborhood camaraderie to make neighborhoods safer. This event would give the neighborhood, city, and public health organizations the opportunity to promote safety awareness with a special emphasis on pedestrian safety, answer questions from citizens, and provide fun activities and materials for children that help support walking and physical activity.

Community Picnics: Picnics can be organized by the neighborhood association and local health and fresh food organizations. These events provide a low-key opportunity for residents to meet with members of City Council and various City boards and commissions, along with staff of different departments. Representatives of the Library, Parks and Recreation, Planning, along with local Public Safety attend with informational displays and booths. City and community leaders can look forward to opportunities to answer questions, share information and hear feedback from the community. An event like this could be altered to focus on locally sourced foods, showcase delicious and healthy foods, and provide an opportunity for the neighborhood to learn about the City and County’s future investments in pedestrian infrastructure.

National Night Out in Aliso Viejo, CA



Summer Concert Series in Milwaukie, OR



Action Steps

Identify existing programs and where there are gaps to narrow down a list of park programs that will enhance walkability and public health. Start with a couple of park program ideas, and implement them through a program champion and community outreach.

RESOURCES

- [Summer Concert Series, Milwaukie, OR](#)

Engineering

WAYFINDING

The connectivity of a pedestrian network is contingent upon physically linking pedestrian infrastructure, as well as communicating to network users the connections available. Wayfinding signs direct users along the network and to community destinations. These signs can also include mileage, estimated walk and bike time, and even calories burned.

The signs also provide an opportunity for recognition of trail partners and sponsors, where applicable. A “sponsor-a-sign” program may be one avenue for funding the program. Commercial businesses along US-176 and industry near Timken Park presents numerous opportunities to create wayfinding programs that encourage using shared-use paths as both a destination and for recreation.

Union has already integrated a wayfinding system along major roads throughout the city that direct drivers around the city and into downtown. A pedestrian-focused wayfinding program can connect to the existing wayfinding system by using similar design and layout. This will create a unified system and improve connectivity between downtown and surrounding neighborhoods as well as walkable destinations.

Bellingham, WA wayfinding system



Union wayfinding, designed by Frazier Associates



Action Steps

Determine an appropriate strategy for branding the signage so that the signs reflect the downtown wayfinding and provide a consistent, community-wide user experience. Start by implementing the signage along established walking routes through neighborhoods, in pedestrian-friendly areas, and along Safe Routes to School preferred routes. Expand the signage application as new pedestrian networks and destinations arise.

RESOURCES

- [City of Alexandria, VA Wayfinding Program](#)
- [Arlington County, VA Wayfinding Program](#)
- [Louisville, KY Loop Signage and Wayfinding Master Plan](#)

03

STEPS FOR MOVING FORWARD

CONTENTS

53 NEXT STEPS

56 FUNDING SOURCES

WHAT NEXT?

The implementation of the Walkable Union Pedestrian Plan recommendations will require a comprehensive approach that includes multiple sources of funding, partnerships, design, construction, and management. It will also require the dedication of city staff and a commitment to the vision established by the steering committee and this plan.

Communities across the country that have successfully implemented pedestrian programs have relied on multiple funding sources to achieve their goals. No single source of funding will meet the recommendations identified in this plan.

Stakeholders will need to work cooperatively across a range of private sector, municipality, state, and federal partners to generate funds sufficient to implement this network. A descriptive list of potential funding sources can be found in this section.

The resources provided herein — the pedestrian safety analysis, the access to healthy foods assessment, program and infrastructure recommendations, coupled with the following appendices resources — can serve as a daily reference material for Union and its implementing partners.

Union should strive to follow the priority recommendations, as each program, project, and policy was selected based on public input, need, and potential impact. However, the city should also look for opportunities to coordinate pedestrian enhancements with regularly-programmed maintenance activities, new developments, and large roadway construction projects, regardless of whether enhancements occur on priority corridors or intersections.



NEXT STEPS

1. Continue the Steering Committee
2. Prioritize funding for infrastructure
3. Develop and implement one program at a time
4. Build on existing events
5. Share the plan
6. Keep collaborating

STEPS FOR MOVING FORWARD

1

CONTINUE the STAKEHOLDER COMMITTEE

A team effort is required to move the plan forward. The stakeholder committee process includes citizens and community leaders that can partner to make programs and projects a reality. Capitalize on this momentum, and formalize the committee as a Union Walkability Commission that meets quarterly, at a minimum.

2

PRIORITIZE FUNDING for INFRASTRUCTURE

To kickstart the funding conversation, partner with government agencies to identify eligible Transportation Alternative Program (TAP) projects and matching funds. Continue the plan's momentum by sharing project priorities directly with the region's funding partners. This includes but is not limited to: SCDOT, City and County Councils, and private sector partners. The funding analysis included in this section provides a resource for matching grants with programs and projects.

3

DEVELOP and IMPLEMENT ONE PROGRAM at a TIME

Programs have a big impact on walkability and are easy to accomplish without a major investment. A variety of community partners can assist by funding efforts or volunteering their time. Convene "Program Champions" as part a steering committee meeting to develop a list of communications strategies to promote each program and attract volunteers. Make a goal to implement each program within six months of announcing the program.

STEPS FOR MOVING FORWARD

4

BUILD on EXISTING EVENTS

Events like the annual YMCA 5k and the Union County Fair present excellent opportunities to build community interest and showcase plan and demonstration projects. This is also a great time to gather public feedback and register volunteers due to the large and diverse audience at community events.

5

SHARE the PLAN

Continue to share the Plan with Union residents and affiliated groups and organizations. Spread the word about proposed improvements and program opportunities that directly respond to residents' concerns and ideas for improving their community.

6

KEEP COLLABORATING

A multi-jurisdictional effort will ensure projects are implemented. The City, County, and local schools have forged a strong working relationship through this project and other cross-jurisdictional efforts. Continue this collaboration and information-sharing to ensure an efficient use of time and resources for both entities.



FEDERAL FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|-----------------------------|---|---|
| FAST ACT | <p>In South Carolina, federal monies are administered through the South Carolina Department of Transportation (SCDOT) and Council of Governments (COG's) or Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.</p> <p>There are a number of programs identified within the FAST Act that are applicable to pedestrian and bicycle projects. These programs are discussed below.</p> | http://www.fhwa.dot.gov/map21/summary-info.cfm |
| TRANSPORTATION ALTERNATIVES | <p>Transportation Alternatives as defined by Section 1103 (a)(29). This category includes the construction, planning, and design of a range of pedestrian and bicycle infrastructure including “on-road and off-road trail facilities for pedestrians, bicyclists, and other active forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990.” Infrastructure projects and systems that provide “Safe Routes for Non-Drivers” is a new eligible activity.</p> | <p>For the complete list of eligible activities, visit: http://www.fhwa.dot.gov/environment/transportation-enhancements/legislation/map21.cfm</p> |



FEDERAL FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|------------------------------------|--|--|
| RECREATIONAL TRAILS | <p>TA funds may be used to develop and maintain recreational trails and trail-related facilities for both active and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other active and motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.</p> <p>Recreational Trails Program funds may be used for:</p> <ul style="list-style-type: none"> Maintenance and restoration of existing trails Purchase and lease of trail construction and maintenance equipment Construction of new trails, including unpaved trails Acquisition or easements of property for trails <p>State administrative costs related to this program (limited to seven percent of a state's funds)</p> <p>Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state's funds)</p> <p>Grant applications are typically due in April each year.</p> | <p>More info on administration of the Recreational Trails Program in South Carolina can be found through the following site: http://www.scpvt.com/our-partners/grants/trails.aspx</p> |
| SOUTH CAROLINA C FUNDS | <p>South Carolina has a long-established program that provides funding to counties to administer projects on state and local roads. Funding for this program comes from a portion of state fuel tax revenues. Up to 75% of these funds may be used for projects on local-jurisdiction roadways, with the remainder being utilized on State-jurisdiction roadways. Bikeway and sidewalk improvements as a part of repaving or reconstruction are eligible project types.</p> | <p>More information on the C-fund program can be found at: http://www.scdot.org/doing/cprogram.aspx</p> |
| HIGHWAY SAFETY IMPROVEMENT PROGRAM | <p>HSIP provides \$2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Infrastructure and non-infrastructure projects are eligible for HSIP funds. Pedestrian and bicycle safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state's Strategic Highway Safety Plan.</p> <p>Pedestrian and bicycle strategies identified in the 2015 SHSP include engineering bike lanes, sidewalks and shared-use paths, especially where supported by crash data, educational programs and targeted enforcement.</p> | <p>Last updated in 2015, the SCDOT SHSP is located here: http://www.scdps.gov/docs/Target%20Zero_Final_w_Signatures_15APR15.pdf</p> |



FEDERAL FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|---|---|--|
| CMAQ | The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. States with no nonattainment areas such as South Carolina may use their CMAQ funds for any CMAQ or STP eligible project. These federal dollars can be used to build pedestrian and bicycle facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. | More info on administration of the Recreational Trails Program in South Carolina can be found through the following site: http://www.scpvt.com/our-partners/grants/trails.aspx |
| RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM | The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation monies available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in the region indirectly through technical assistance, particularly for community organizations, but should not be considered a future capital funding source. | More information: https://www.nps.gov/orgs/rtca/apply.htm |
| COMMUNITY DEVELOPMENT BLOCK GRANTS (CDBG) | The Community Development Block Grants (CDBG) program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may “use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.” Trails and greenway projects that enhance accessibility are the best fit for this funding source. CDBG funds could also be used to create an ADA Transition Plan. States designate CDBG funds to “entitlement communities” – generally major cities with more than 50,000 people – and “non-entitlement communities”, whereby DHEC communities may be eligible for funding. | More information: https://www.hud.gov/program_offices/comm_planning/community-development/programs https://www.cdbgsc.com/ |



FEDERAL FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|--|--|---|
| LAND AND WATER CONSERVATION FUND | The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. The program is administered by the South Carolina Department of Parks, Recreation & Tourism as a grant program. Any projects located in future parks could benefit from planning and land acquisition funding through the LWCF. Funding is also available for new parks, and trail corridor acquisition can be funded with LWCF grants as well. This program requires a 50-50 match – applications are due in the spring. | More information: http://www.scprrt.com/our-partners/grants/lwcf.aspx |
| EPA GREEN INFRASTRUCTURE GRANTS | The EPA offers a number of grant resources that serve to improve clean water in communities such as the EPA Clean Water State Revolving Fund, EPA Clean Water Act Nonpoint Source Grant and EPA Community Action for a Renewed Environment (CARE) Grants. | More information on these, and other funding sources can be found through the EPA's website: https://www.epa.gov/green-infrastructure/green-infrastructure-funding-opportunities |
| ENHANCED MOBILITY OF SENIORS & INDIVIDUALS WITH DISABILITIES | Section 5310 of the FAST ACT – Enhanced Mobility of Seniors and Individuals with Disabilities provides capital and operating costs to provide transportation services and facility improvements that exceed those required by the Americans with Disabilities Act. Examples of pedestrian/accessibility projects funded in other rural communities include installing Accessible Pedestrian Signals (APS), enhancing transit stops to improve accessibility, and establishing regional one-click systems. | More information: https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310 |
| CDC GRANTS | The CDC provides funding opportunities for several different organization and jurisdiction types that can potentially support pedestrian and bicycle infrastructure, planning or other support programs. | An overview of these different programs and funding cycles can be found here: https://www.cdc.gov/healthyplaces/healthtopics/transportation/planning.htm |
| ADDITIONAL FEDERAL FUNDING | The landscape of federal funding opportunities for pedestrian and bicycle programs and projects is always changing. A number of Federal agencies, including the Bureau of Land Management, the Department of Health and Human Services, the Department of Energy, and the Environmental Protection Agency have offered grant programs amenable to pedestrian and bicycle planning and implementation, and may do so again in the future. | For up-to-date information about grant programs through all federal agencies, see: http://www.grants.gov/ |



STATE FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|--|--|---|
| SOUTH CAROLINA MAIN STREET PROGRAM | The South Carolina Main Street program is coordinated through the Municipal Association of South Carolina. The South Carolina branch is accredited by the National Main Street Center, which is affiliated with the National Trust for Historic Preservation. Communities of any size may apply for Main Street funding and assistance. The program follows the National Four Point model; organization, promotion, design, and economic restructuring. Benefits to becoming a Main Street program include developing a work plan, customized workshops, design services, and training for staff committees. | For more information: http://www.masc.sc/programs/main-street-south-carolina |
| SOUTH CAROLINA TRANSPORTATION INFRASTRUCTURE BANK | The South Carolina Transportation Infrastructure Bank (SCTIB) is a statewide revolving loan fund designed in 1997 to assist major transportation projects in excess of \$100 million in value. The SCTIB has since approved more than \$4.5 billion in financial assistance and is arguably the largest and most active State Infrastructure Bank in the country. SCTIB funded development of the Palmetto Parkway in Aiken County, which included development of a roughly five mile multi-use trail within the parkway's right of way. | More information: http://sctib.sc.gov/Pages/default.aspx |
| SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION - CAPITAL PROJECTS | Municipalities should work closely with SCDOT to include pedestrian and bicycle improvements as part of major projects. The two groups should cooperate on a regular basis to identify opportunities for implementation of the Pedestrian Master Plan. | |
| SOUTH CAROLINA PARKS AND RECREATION DEVELOPMENT FUND | <p>The PARD grant program is a state funded non-competitive reimbursable grant program for eligible local governments or special purposes district entities within each county which provide recreational opportunities. The fund requires a 20% cash or in-kind match.</p> <p>The following bullets highlight characteristics of the grant program.</p> <ul style="list-style-type: none"> • Monthly grant cycle. • Non-competitive program available to eligible local governmental entities within each county area for development of new public recreation facilities or enhancement/renovations to existing facilities. • Projects need endorsement of majority weighted vote factor of County Legislative Delegation Members. • This is an 80-20 match program. • Application Deadline is the 10th of each month. • PARD funding is allocated on a county-by-county basis and comes from a portion of the State's bingo revenues. | More information: https://www.scprt.com/our-partners/grants/pard.aspx |



STATE FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|--|--|--|
| STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM | <p>The Statewide Transportation Improvement Program (STIP) is SCDOT's short-term capital improvement program, providing project funding and scheduling information for the department and South Carolina's metropolitan planning organizations. The program provides guidance for the next six years and is updated every three years. The South Carolina Department of Transportation Commission, as well as the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), approve the STIP.</p> <p>In developing this funding program, SCDOT must verify that the identified projects comply with existing transportation and comprehensive plans. The STIP must fulfill federal planning requirements for a staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on Federal planning requirements and the specific State plans.</p> | <p>More information: https://www.scdot.org/inside/pdf/planning/STIP_DDR_2017.pdf</p> |



LOCAL FUNDING SOURCES

| SOURCE | SUMMARY |
|-----------------------|---|
| CATAWBA REGIONAL COG | <p>Councils of Governments (COGs) are rural-regional transportation planning organizations that cover the entire State of South Carolina. COGs produce Long-range Transportation Planning documents which allocate funding and program transportation projects throughout the region.</p> <p>COGs are a partnership between local and state government that makes decisions about transportation planning in rural areas and meets planning requirements established by federally authorizing legislation for transportation funding. The regional COG works cooperatively with SCDOT to develop transportation plans, travel models, transit plans, and pedestrian and bicycle plans. They work with the state on funding issues for transportation improvements, project planning issues, and other issues such as environmental and air quality concerns. Finally, they also works with local governments to coordinate land use and transportation planning.</p> <p>COGs maintain a long-range transportation plan (LRTP) and develop a transportation improvement program (TIP) to develop a fiscally constrained program based on the long-range transportation plan and designed to serve the region's goals while using spending, regulating, operating, management, and financial tools. This Plan recommends that the City and its partners continue to work closely with the COG to ensure pedestrian, bikeways and transit improvement projects recommended in this Plan are programmed in the TIP.</p> |
| GENERAL FUND | <p>The General Fund is often used to pay for maintenance expenses and limited capital improvement projects. Projects identified for reconstruction or re-pavement as part of the Capital Improvements list should also incorporate recommendations for bicycle or pedestrian improvements in order to reduce additional costs.</p> |
| LOCAL BOND MEASURES | <p>Local bond measures, or levies, are usually general obligation bonds for specific projects. Bond measures are typically limited by time based on the debt load of the local government or the project under focus. Funding from bond measures can be used for engineering, design and construction of trails, greenways, and pedestrian and bicycle facilities.</p> |
| STREET USER FEES | <p>Many cities administer street user fees through residents' monthly water or other utility bills. The revenue generated by the fee can be used for operations and maintenance of the street system, and priorities would be established by the Public Works Department. Revenue from this fund can be used to maintain pedestrian facilities such as sidewalks.</p> |
| UTILITY LEASE REVENUE | <p>A method to generate revenues from land leased to utilities for locating utility infrastructure on municipally owned parcels. This can improve capital budgets and support financial interest in property that would not otherwise create revenue for the government.</p> |



LOCAL FUNDING SOURCES

| SOURCE | SUMMARY |
|---------------------------------------|---|
| LOCAL IMPROVEMENT DISTRICTS | <p>Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation. Based on South Carolina's Municipal Improvements Act of 1999, LIDs can include a Municipal Improvement District (MID), a County Public Works Improvement District (CPWID) or a Residential Improvement District (RID).</p> <p>Several cities have successfully used LID funds to make improvements on residential streets and for large scale arterial projects. LIDs formed to finance commercial street development can be "full cost," in which the property assessments are entirely borne by the property owners.</p> |
| BUSINESS IMPROVEMENT AREA OR DISTRICT | <p>Trail development and pedestrian and bicycle improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Areas collect levies on businesses in order to fund area wide improvements that benefit businesses and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, including as wider sidewalks, landscaping and ADA compliance.</p> |
| SALES TAX | <p>Local governments that choose to exercise a local option sales tax can use the tax revenues to provide funding for a wide variety of projects and activities.</p> |
| EXCISE TAXES | <p>Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation-related activities.</p> |



PRIVATE FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|--|--|--|
| THE ROBERT WOOD JOHNSON FOUNDATION | <p>The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:</p> <ul style="list-style-type: none"> • To assure that all Americans have access to basic health care at a reasonable cost • To improve care and support for people with chronic health conditions • To promote healthy communities and lifestyles • To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs | <p>More information: http://www.rwjf.org/en/how-we-work/grants/funding-opportunities.html</p> |
| BANK OF AMERICA CHARITABLE FOUNDATION, INC | <p>The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.</p> | <p>More information: http://www.bankofamerica.com/foundation</p> |
| THE WALMART FOUNDATION | <p>The Walmart Foundation offers a Local, State, and National Giving Program. The Local Giving Program awards grants of \$250 to \$5,000 through local Walmart and Sam's Club Stores. Application opportunities are announced annually in February with a final deadline for applications in December. The State Giving Program provides grants of \$25,000 to \$250,000 to 501c3 nonprofits working within one of five focus areas: Hunger Relief & Nutrition, Education, Environmental Sustainability, Women's Economic Empowerment, or Workforce Development. The program has two application cycles per year: January through March and June through August. The Walmart Foundation's National Giving Program awards grants of \$250,000 and more, but does not accept unsolicited applications.</p> | <p>More information: http://foundation.walmart.com/apply-for-grants</p> |
| DUKE ENERGY FOUNDATION | <p>Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have an internal Duke Energy business "sponsor" and a clear business reason for making the contribution.</p> <p>The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training and research around environmental and energy efficiency initiatives.</p> | <p>More information: https://www.duke-energy.com/community/duke-energy-foundation/funding-guidelines</p> |



PRIVATE FUNDING SOURCES

| SOURCE | SUMMARY | MORE INFORMATION |
|---|--|---|
| THE CONSERVATION FUND'S SUSTAINABLE COMMUNITY PROGRAM | The Conservation Fund's Sustainable Community Development Program awards community grants to provide social, economic, and environmental benefits. These grants can be used for activities such as eco-tourism, asset mapping, youth development, access to healthy food, and rural economic development. | More information: https://www.conservationfund.org/our-work/sustainable-community-development |
| THE TRUST FOR PUBLIC LAND | <p>Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and wellbeing. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities. Also, TPL is the leading organization helping agencies and communities identify and create funds for conservation from federal, state, local, and philanthropic sources.</p> <p>Since 1996, TPL has helped states and communities craft and pass over 382 successful ballot measures, generating \$34 billion in new conservation-related funding.</p> | More information: http://www.tpl.org/services/conservation-finance |



OTHER FUNDING SOURCES

| SOURCE | SUMMARY |
|--|---|
| VOLUNTEER WORK AND PUBLIC-PRIVATE PARTNERSHIPS | <p>Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fundraising, maintenance, and programming needs. Local schools or community groups may use the bikeway projects as a project for the year, possibly working with a local designer or engineer.</p> <p>Work parties may be formed to help clear the right-of-way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations ‘adopt’ a bikeway and help construct and maintain the facility.</p> |
| PRIVATE INDIVIDUAL DONATIONS | <p>Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Municipalities typically create funds to facilitate and simplify a transaction from an individual’s donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.</p> |
| INNOVATIVE FUNDING SOURCES | <p>Increasingly, non-profits organizations, municipalities, and individual advocates are using crowdsourcing to fund innovative pedestrian and bicycle projects. Crowdsourcing uses a large audience for fundraising, typically with the help of internet donation websites such as lobby.org and kickstarter.com.</p> |
| DEMONSTRATION PROJECTS | <p>Temporary pop-up or “demonstration projects” can demonstrate the success of walking and biking infrastructure without a long-term commitment and a big budget. Pop-up projects include temporary protected bike lanes, painted sidewalks, parklets, pedestrian plazas in formerly vacant spaces, and traffic calming techniques.</p> <p>A “Space Activation” program can identify the best candidates for pop-up projects in local communities within the river region. Pop-up projects should reflect community needs and should be easy to implement. Ideas for transforming spaces and projects may emerge from community conversations or neighborhood association meetings. Typically, the most effective demonstration projects are grassroots efforts by passionate citizens that know what problems exist but don’t have the resources for permanent solutions. While demonstration projects may be led by citizens, they should be supported by the City and County. This enables increased communication and allows for neighborhoods and the city or county to test the effectiveness of a proposed project. While Demonstration projects rely primarily on volunteer time, for larger efforts innovative funding sources and private donations are often used to purchase materials.</p> |
| FUNDRAISING | <p>Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Oftentimes fundraising satisfies the need for public awareness, public education, and financial support.</p> |

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04

APPENDIX

CONTENTS

- 69 DESIGN GUIDANCE
- 75 PUBLIC INPUT BOARDS
- 78 COST ESTIMATES

Small Town *and* Rural Multimodal Networks



The *Small Town and Rural Multimodal Networks* guide is a design resource and idea book to help small towns and rural communities support safe, accessible, comfortable, and active travel for people of all ages and abilities. While rural places vary considerably in geographic scale and character, **common issues** prevail:



Longer Non-local Trip Distances

Rural trip distances have been increasing.



Health Disparities

Rural areas have higher rates of physical inactivity and chronic disease than urbanized areas.



Higher Crash Rates

While only 19 percent of the population lives in rural areas, 58 percent of all fatal crashes and 60 percent of traffic fatalities were recorded in rural regions.



Income Disparities

Urban households earn 32 percent more in yearly income than rural households.

The guide is intended to:

1. Provide a bridge between existing guidance on bicycle and pedestrian design and rural practice.
2. Encourage innovation in the development of safe and appealing networks for bicycling and walking in small towns and rural areas.
3. Provide examples of peer communities and project implementation that is appropriate for rural communities.



Partners:

Small Urban and Rural Livability Center – Western Transportation Institute

National Association of Counties

Center for Prevention at Blue Cross and Blue Shield of Minnesota



U.S. Department of Transportation
Federal Highway Administration

Example Guidance from Small Town and Rural Multimodal Networks

MIXED TRAFFIC



Yield Roadway



Bicycle Boulevard



Advisory Shoulder

VISUALLY SEPARATED



Paved Shoulder



Bike Lane



Pedestrian Lane

PHYSICALLY SEPARATED



Shared Use Path



Sidepath



Sidewalk



Separated Bike Lane

Facility Design

This section provides design guidance for the facilities included in the infrastructure recommendations.

SIDEWALKS on COLLECTOR and ARTERIAL STREETS

Because of higher traffic volumes and vehicle speeds, sidewalks on collectors and arterials will ideally be wider than the 5 ft minimum, and have a wider buffer space with shrubs and/or shade trees. Streets in the study area such as Industrial Park Road, Medical Sciences Drive, Lukesville Road, and US-176 can be retrofitted with wider sidewalks, sidewalks on both sides of the street, and lanes narrowed to 11-12 feet (if they are not already) to calm traffic.

DESIGN

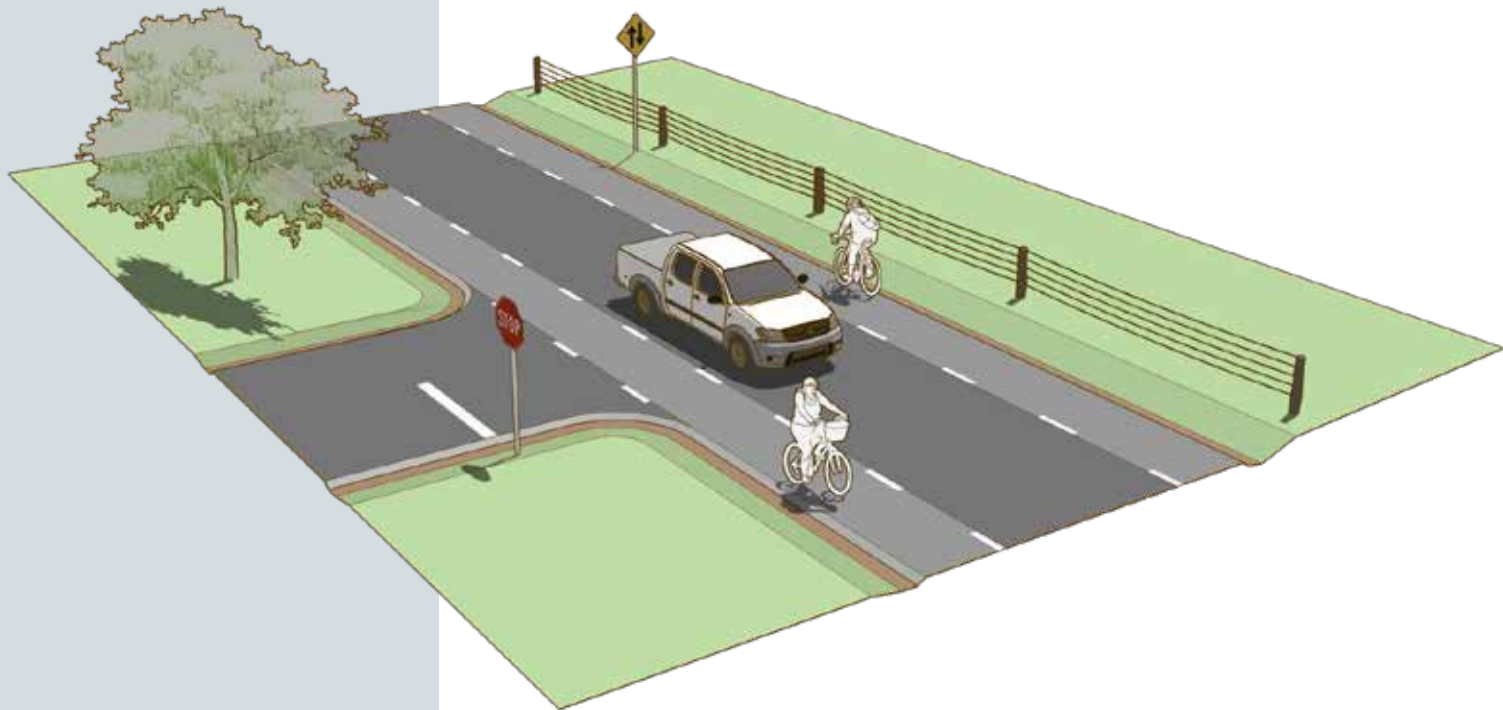




DESIGN

ADVISORY SHOULDER

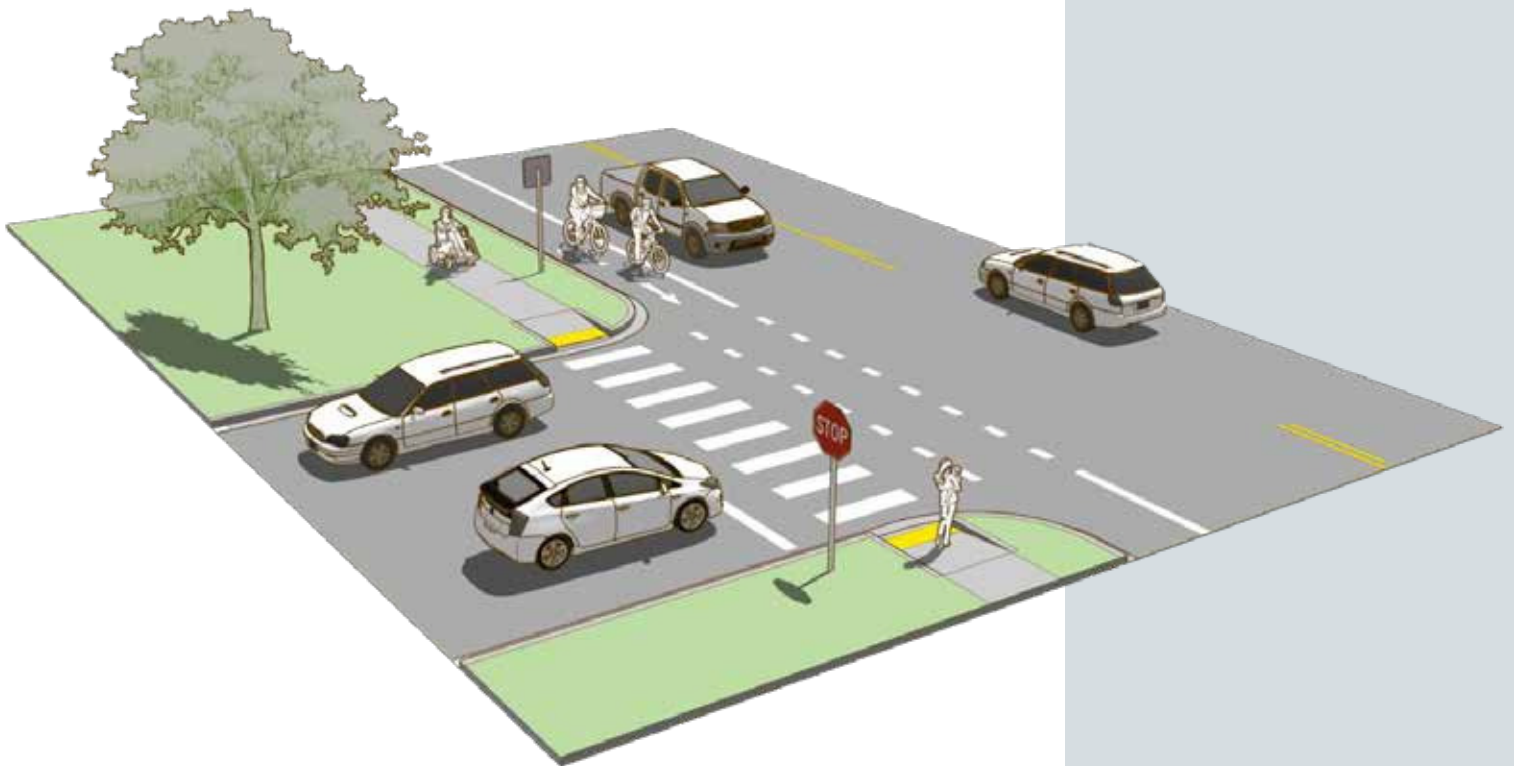
Advisory shoulders create dedicated, usable space for bicyclists and occasional pedestrians that is otherwise too narrow for buffered or separated lanes. The center lane functions as a two-way travel lane; vehicles may enter the advisory shoulders when no bicyclists are present and when passing oncoming traffic. The shoulders should be paved in contrasting materials and have dashed white lines along the edge. This treatment is cost-efficient and can be applied to Times Boulevard without needing to widen the road.



BIKE LANE

On-street bike facilities should be clearly marked with a bike lane symbol to alert drivers that the lane is exclusively for bicyclists. A wide solid white line delineates the lane from the roadway and dotted lines at street crossings maintain a clear path for cyclists. Ideally, bike lanes will be a 6 ft minimum, with an optional buffer of 1.5-4 ft or wider. Additionally, signage should identify the bike lane and prohibit street parking. Reference MUTCD standards for additional design guidance.

DESIGN

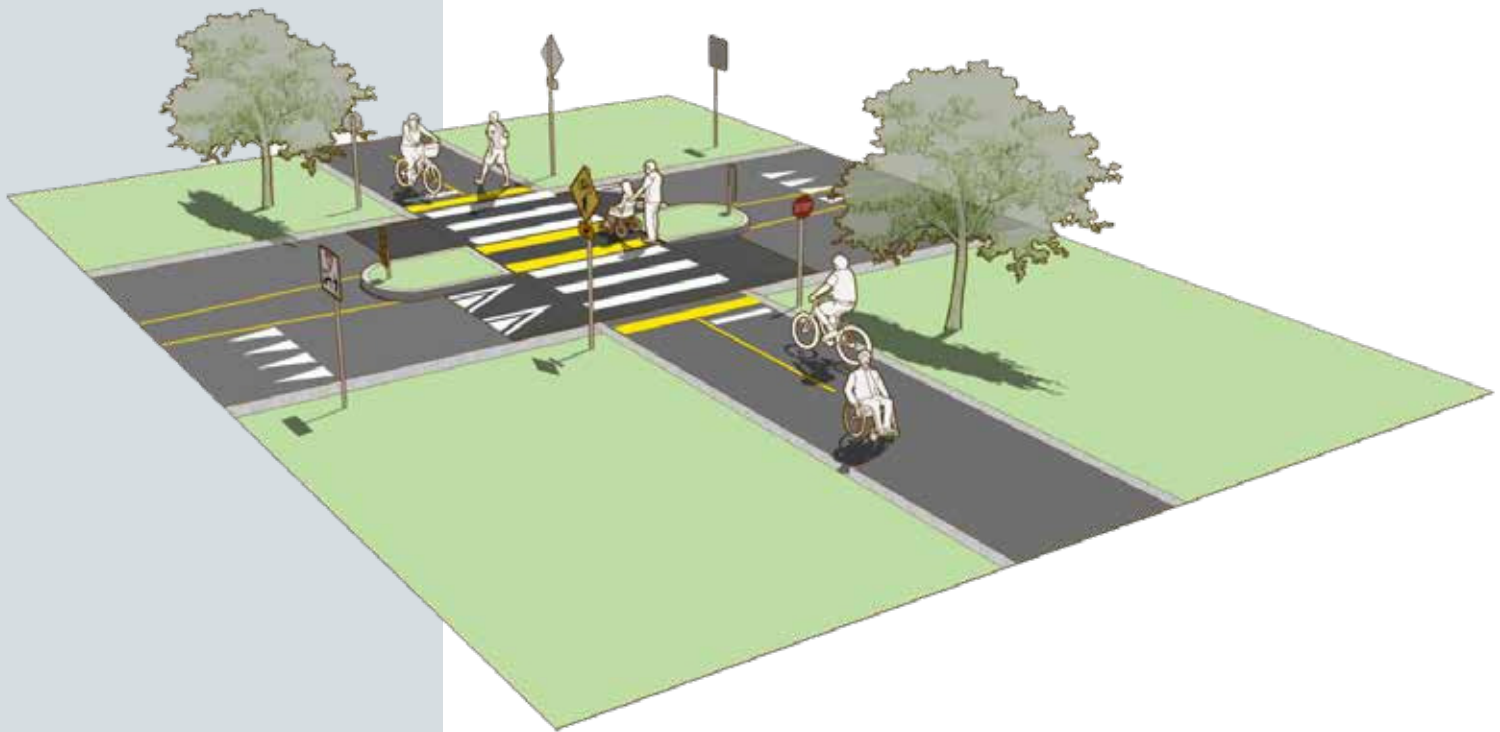




DESIGN

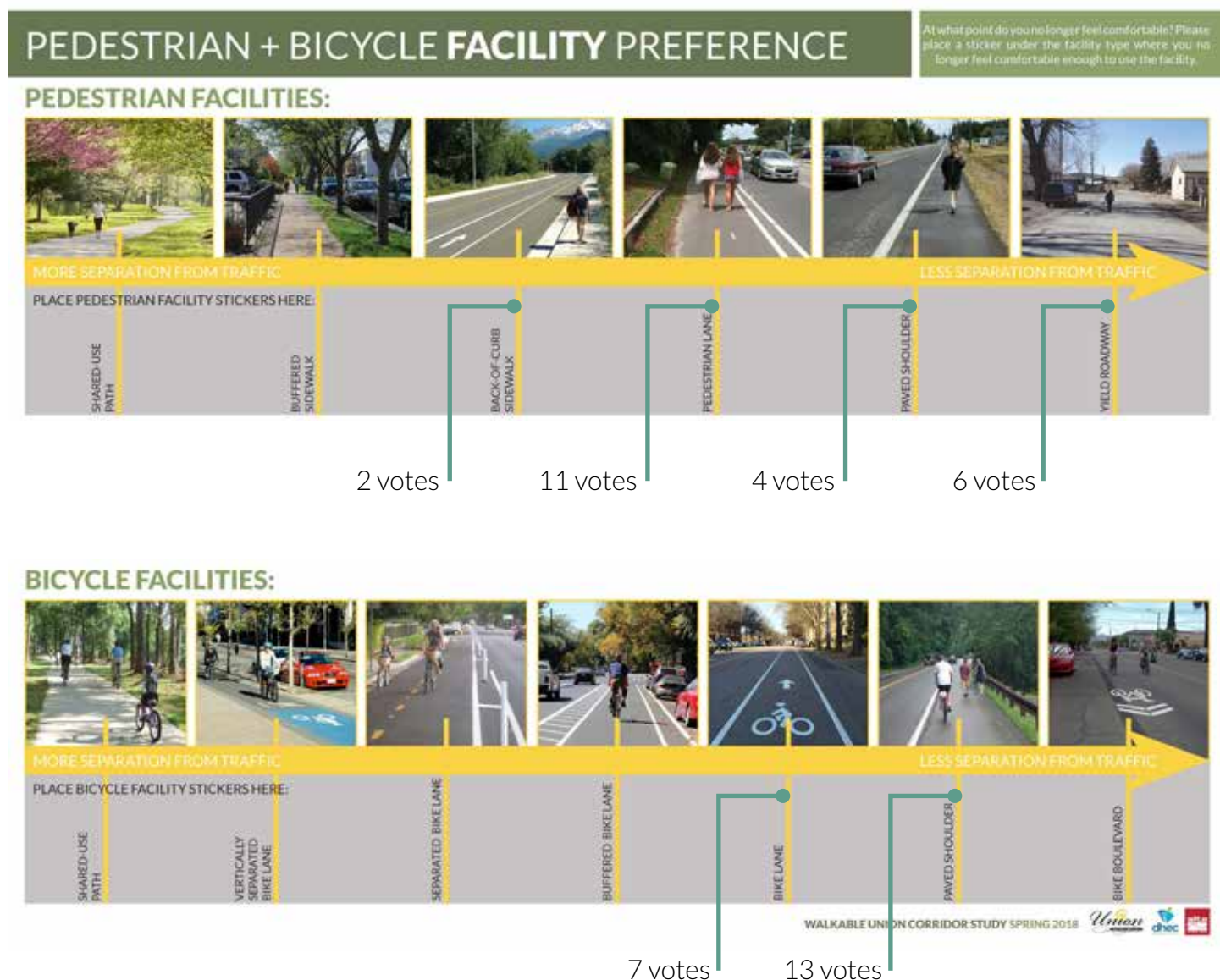
SHARED-USE PATH

The shared-use path serves users independently of the street network, and functions as a low-stress alternative to on-street connections. The Walkable Union Pedestrian Plan recommends approximately 2.12 miles of shared-use paths to enhance the active transportation network, intersecting roads a total of 4 times. At these roadway crossings, enhancements such as median refuge islands, proper signage, RRFBs, and high-visibility pavement markings can increase the comfort and safety of path users. This plan recommends a 12 ft shared-use path with a 2 ft shoulder on either side.



PUBLIC INPUT BOARDS

These exhibits were presented as is at the three-day charrette held May 14-16, 2018. Attendees were encouraged to respond to the prompts and vote on preferences. The results of the input, tallied here but detailed in Part 1: Introduction (see page 22) were used as guidance for infrastructure recommendations and incorporated into the final plan.



WHAT IS **ONE WORD OR PHRASE** YOU WOULD USE TO DESCRIBE UNION'S EXISTING BIKE + PEDESTRIAN INFRASTRUCTURE?

NonExistent
Unsafe
Limited

Table 1. Demographic Data

WHAT IS **ONE WORD OR PHRASE** YOU WOULD USE TO UNION'S **FUTURE BIKE + PEDESTRIAN INFRASTRUCTURE**?

Word cloud visualization of the top 100 terms from the dataset. The most prominent words are 'opportunistic' and 'Reality' in large green and brown fonts respectively. Other visible words include 'safe', 'QualityOfLife', 'ExtraCurricularActivities', 'PlanForFuture', and 'AcademicPerformance'.

WALKABLE UNION

IRIDOR STUDY SPRING 2018



STREETSCAPE + GREENWAY AMENITY PREFERENCE

Vote on the top THREE elements you would like to see integrated into Union's West Side using the provided stickers.



BENCHES

3 votes



BIKE RACKS

4 votes



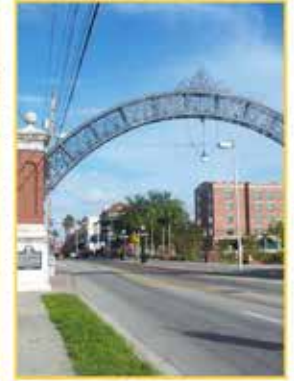
EMERGENCY PHONES

7 votes



BIKE FIX-IT STATIONS

0 votes



GATEWAYS

4 votes



SHADE STRUCTURES

0 votes



SHADE TREES

6 votes



SWINGS

4 votes



TRASH RECEPTACLES

5 votes



WATER FOUNTAINS

10 votes



LANDSCAPING

4 votes



LIGHTING

17 votes



PET PICKUP STATIONS

1 vote



WAYFINDING SIGNAGE

4 votes

OTHERS?

Bathrooms
2 votes

COST ESTIMATES



PLANNING ESTIMATE FOR WALKABLE UNION PEDESTRIAN PLAN 2018

FEATURE: **MIDBLOCK CROSSING AT US-176**

DESCRIPTION: **INDUSTRIAL PARK DRIVE AND RICE AVE EXT. INTERSECTION IMPROVEMENTS**
NEW HAWK SIGNAL, CURB RAMPS, REFUGE ISLAND, HIGH-VIZ CROSSWALK MARKINGS

*Cost for Intersection Crossing Only, excludes sidewalk work along US-176

| | |
|--------------------|-----------|
| TOTAL LENGTH: | NA |
| EST. PROJECT COST: | \$180,000 |

COUNTIES: UNION

TOWN/CITY UNION, SC

DISTRICT(S): 4

ESTIMATE BY: CJA

DATE: 7/20/2018

REVISED:

CHECKED BY: MT

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | AMOUNT |
|-----------------------------------|---|------|----------|-------------|---------------------|
| 1031000 | MOBILIZATION | LS | 1 | \$7,500.00 | \$7,500.00 |
| 1032010 | BONDS AND INSURANCE | LS | 1 | \$1,900.00 | \$1,900.00 |
| 1050800 | CONSTRUCTION STAKES, LINES AND GRADES | EA | 1 | \$2,800.00 | \$2,800.00 |
| 1071000 | TRAFFIC CONTROL | LS | 1 | \$9,300.00 | \$9,300.00 |
| 2031000 | UNCLASSIFIED EXCAVATION | CY | 20 | \$40.00 | \$800.00 |
| 6271025 | 24" WHITE SOLID LINES (STOP/DIAGONAL LINES) - THERMOPLASTIC - 125 MIL | LF | 140 | \$12.00 | \$1,680.00 |
| 7204100 | CONCRETE SIDEWALK(4" UNIFORM) | SY | 20 | \$50.00 | \$1,000.00 |
| 7206000 | CONCRETE MEDIAN | SY | 50 | \$70.00 | \$3,500.00 |
| 7209000 | PEDESTRIAN RAMP CONSTRUCTION | SY | 27 | \$150.00 | \$4,000.00 |
| | HAWK SIGNAL | EA | 1 | \$80,000.00 | \$80,000.00 |
| | MINOR ITEMS (SIGNS, ADDL. MARKINGS, ETC.) | LS | 1 | \$2,000.00 | \$2,000.00 |
| CONSTRUCTION COST SUBTOTAL | | | | | \$114,480.00 |

CONSTRUCTION CONTINGENCY (30%) \$40,070.00

OPINION OF PROBABLE CONSTRUCTION COST \$154,550.00

ENGINEERING DESIGN (15%) \$23,000.00

RIGHT-OF-WAY ACQUISITION (@ \$30K PER ACRE) \$0.00

OPINION OF TOTAL PROJECT COST \$177,550.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

ASSUMES NO RIGHT-OF-WAY ACQUISITION WILL BE NEEDED.

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PLANNING ESTIMATE FOR WALKABLE UNION PEDESTRIAN PLAN 2018

FEATURE: **TIMKEN PARK INTERSECTION**

DESCRIPTION: **INDUSTRIAL PARK DRIVE AND RICE AVE EXT. INTERSECTION IMPROVEMENTS**

4-WAY TRAFFIC SIGNAL, HIGH VISIBILITY CROSSWALKS, SIGNAGE, SHADE TREES, SIDEWALK AT CORNERS

*Cost for Intersection Only, Excludes sidewalk work planned along Rice Ave and Industrial Park Rd

| | |
|--------------------|-----------|
| TOTAL LENGTH: | NA |
| EST. PROJECT COST: | \$500,000 |

COUNTIES: UNION

TOWN/CITY UNION, SC

DISTRICT(S): 4

ESTIMATE BY: CJA

DATE: 7/20/2018

REVISED:

CHECKED BY: MT

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | AMOUNT |
|-----------------------------------|---|------|----------|--------------|---------------------|
| 1031000 | MOBILIZATION | LS | 1 | \$21,600.00 | \$21,600.00 |
| 1032010 | BONDS AND INSURANCE | LS | 1 | \$5,400.00 | \$5,400.00 |
| 1050800 | CONSTRUCTION STAKES, LINES AND GRADES | EA | 1 | \$8,100.00 | \$8,100.00 |
| 1071000 | TRAFFIC CONTROL | LS | 1 | \$13,500.00 | \$13,500.00 |
| 2012000 | CLEARING AND GRUBBING WITHIN ROADWAY | LS | 1 | \$2,700.00 | \$2,700.00 |
| 2031000 | UNCLASSIFIED EXCAVATION | CY | 20 | \$40.00 | \$800.00 |
| 2081001 | FINE GRADING | SY | 110 | \$5.00 | \$550.00 |
| 6271025 | 24" WHITE SOLID LINES (STOP/DIAGONAL LINES) - THERMOPLASTIC - 125 MIL | LF | 290 | \$12.00 | \$3,480.00 |
| 7204100 | CONCRETE SIDEWALK(4" UNIFORM) | SY | 110 | \$35.00 | \$3,850.00 |
| | TRAFFIC SIGNAL (4-WAY - FULL INSTALL) | EA | 1 | \$250,000.00 | \$250,000.00 |
| | DRAINAGE ALLOWANCE | LS | 1 | \$2,000.00 | \$2,000.00 |
| | EROSION CONTROL ALLOWANCE | *LF | 700 | \$5.00 | \$3,500.00 |
| | MINOR ITEMS (SIGNS, GRASS, TREES, ETC.) | LS | 1 | \$5,000.00 | \$5,000.00 |
| CONSTRUCTION COST SUBTOTAL | | | | | \$320,480.00 |

| | |
|---|---------------------|
| CONSTRUCTION CONTINGENCY (30%) | \$112,170.00 |
| OPINION OF PROBABLE CONSTRUCTION COST | \$432,650.00 |
| ENGINEERING DESIGN (15%) | \$65,000.00 |
| RIGHT-OF-WAY ACQUISITION (@ \$30K PER ACRE) | \$0.00 |
| OPINION OF TOTAL PROJECT COST | \$497,650.00 |

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

ASSUMES NO RIGHT-OF-WAY ACQUISITION WILL BE NEEDED.

*LF - REFERS TO LINEAR FEET OF PROJECT LENGTH.

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PLANNING ESTIMATE FOR WALKABLE UNION PEDESTRIAN PLAN 2018

FEATURE: **UTILITY CORRIDOR SHARED-USE PATH**

DESCRIPTION: **1.2 MILE 12' WIDE ASPHALT GREENWAY**
ALONG UTILITY CORRIDOR FROM US-176 (AT KC MART) TO BUFFALO-WEST SPRING HWY (AT BUFFALO ELEMENTARY SCHOOL)
 *Potential public art, lighting, and landscaping Not Included

| | |
|---------------------------|--------------------|
| TOTAL LENGTH: | 1.2 MILE |
| EST. PROJECT COST: | \$1,320,000 |

COUNTIES: UNION
 DISTRICT(S): 4

TOWN/CITY UNION, SC

ESTIMATE BY: CJA

DATE: 7/20/2018

REVISED:

CHECKED BY: MT

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | AMOUNT |
|-----------------------------------|--|------|----------|-------------|---------------------|
| 1031000 | MOBILIZATION | LS | 1 | \$54,900.00 | \$54,900.00 |
| 1032010 | BONDS AND INSURANCE | LS | 1 | \$13,800.00 | \$13,800.00 |
| 1050800 | CONSTRUCTION STAKES, LINES AND GRADES | EA | 1 | \$20,600.00 | \$20,600.00 |
| 1071000 | TRAFFIC CONTROL | LS | 1 | \$13,800.00 | \$13,800.00 |
| 2012000 | CLEARING AND GRUBBING WITHIN ROADWAY | LS | 1 | \$6,900.00 | \$6,900.00 |
| 2031000 | UNCLASSIFIED EXCAVATION | CY | 5770 | \$40.00 | \$230,800.00 |
| 2081001 | FINE GRADING | SY | 8660 | \$5.00 | \$43,300.00 |
| 3050106 | GRADED AGGREGATE BASE COURSE (6" UNIFORM) | SY | 9380 | \$10.00 | \$93,800.00 |
| 4010005 | PRIME COAT | GAL | 2533 | \$10.00 | \$25,330.00 |
| 4011004 | LIQUID ASPHALT BINDER PG64-22 | TON | 57 | \$450.00 | \$25,650.00 |
| 4030350 | HOT MIX ASPHALT SURFACE COURSE TYPE D | TON | 910 | \$70.00 | \$63,700.00 |
| 8100100 | PERMANENT COVER | ACRE | 1.8 | \$4,000.00 | \$7,200.00 |
| | DRAINAGE ALLOWANCE | *LF | 6490 | \$15.00 | \$97,350.00 |
| | EROSION CONTROL ALLOWANCE | *LF | 6490 | \$10.00 | \$64,900.00 |
| | MINOR ITEMS (SIGNS, PAVEMENT MARKINGS, ETC.) | LS | 1 | \$33,000.00 | \$33,000.00 |
| CONSTRUCTION COST SUBTOTAL | | | | | \$795,030.00 |

CONSTRUCTION CONTINGENCY (30%) **\$278,260.00**

OPINION OF PROBABLE CONSTRUCTION COST **\$1,073,290.00**

ENGINEERING DESIGN (15%) **\$161,000.00**

RIGHT-OF-WAY ACQUISITION (@ \$30K PER ACRE) **\$89,000.00**

OPINION OF TOTAL PROJECT COST \$1,323,290.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

*LF - REFERS TO LINEAR FEET OF PROJECT LENGTH.

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