

Neighborhood Infrastructure Bond Project Updates Neighborhood Presidents' Luncheon

[What is it?]

- In the FY22 recommended budget presented in April 2021, City Council approved the inclusion of debt financing for a major investment in citywide infrastructure.
- The goal of the Neighborhood Infrastructure Bond (NIB) program was to accelerate the pace of investments in streets, sidewalks, parks and traffic management.
- Council was presented with a high-level breakdown of project categories and funding allocation in Spring/Summer 2021, received a preliminary project list in Fall 2021, established a list of focused projects at the council retreat in February 2022 and approved the final project list in March 2022.
- This funding will be paid for partially by redirecting recurring General Fund CIP money, and partially through new revenues provided by City growth. The annual debt payments for the program, estimated at \$2.5 million, will not require any tax increases to fund.
- The project list represents over a decade of normal funding for street and sidewalk projects, and the first large scale investment in traffic management technology for the City.

[Summary of Projects and Capacity]

- Approximately \$36,000,000 in bonds will be issued in 2 tranches (FY22 and FY24)
- Pre-Authorized Projects:
 - C-Fund Resurfacing Match \$3 million
 - Public Safety Campus TMC \$4 million
 - Augusta Street Safety Improvements \$250 thousand
 - Cleveland Park and Gower Park Court Improvement Design \$40 thousand
- Available Capacity \$28,710,000

Project Category	Cost of Recommended Projects
Roads, Streets, Bridges	\$10,450,000
Traffic Management	\$4,000,000
Sidewalks	\$6,699,240
Parks and Community Centers	\$4,840,000
Contingency/Project Management	\$2,720,760 (8.3%)
Total Project List	\$28,710,000



[Roads, Streets and Bridges Projects]

• Category Description: Investments in road/street resurfacing, intersection/traffic improvements, bridge replacement and new construction projects

Project Category	Description	Cost Estimate	Timeline
Resurfacing	Citywide Street resurfacing	\$6,000,000	Q2 2022
Road Improvements	Citywide Concrete Medians	\$500,000	Q3 2022
Road Improvements	Citywide Restriping	\$500,000	Q3 2022
Road Improvements	Mohawk/Wade Hampton Improvements	\$900,000	Q2 2023
Bridge Replacement	Williard Street Bridge	\$800,000	Q4 2023
Road Improvements	Pendleton/Vardry/Main Intersection	\$400,000	Q3 2023
Road Improvements	W. Antrim Road Diet	\$450,000	Q1 2023
Road Improvements	PHB Signals	\$900,000	Q4 2022
		\$10,450,000	

[Mohawk/Wade Hampton Improvements]

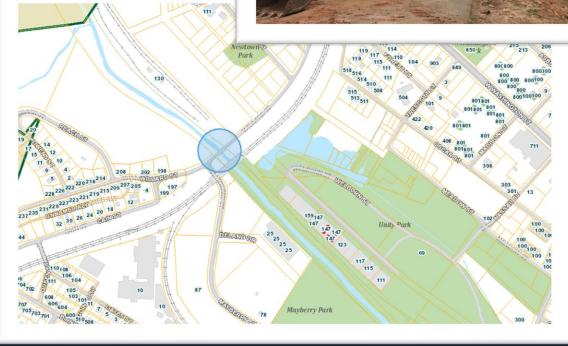
- Project Description: Streetscape at Mohawk/Wade Hampton including sidewalks, lighting, and landscaping.
- Identification Source: Wade Hampton Strategic Plan
- Estimated Cost: \$900,000
- ROW Needed (Y/N)?: No
- Estimated Timeline to Begin Construction: Q2 2023



[Willard Street Bridge Replacement]

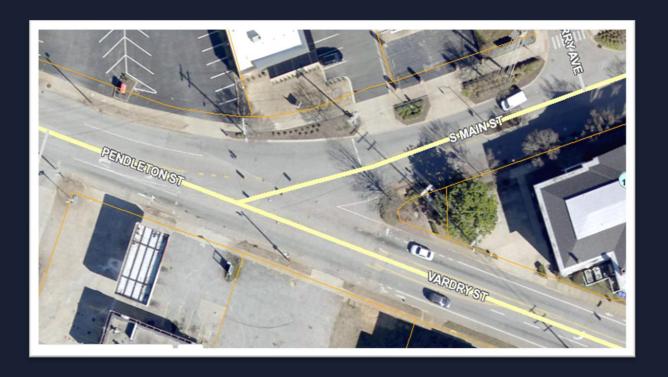
- Project Description: Replace the bridge on Willard Street and explore the feasibility of relocating the trail crossing under the bridge.
- Identification Source: Bridge Assessments
- Estimated Cost: \$800,000
- ROW Needed (Y/N)?: Yes
- Estimated Timeline to Begin Construction: Q4 2023





[Pendleton/Vardry/S. Main Intersection Improvements]

- Project Description: Enhance pedestrian safety at the intersection of Pendleton/Vardry/S. Main Street
- Identification Source: Project Request
- Estimated Cost: \$400,000
- ROW Needed (Y/N)?: Yes
- Estimated Timeline to Begin Construction: Q3 2023



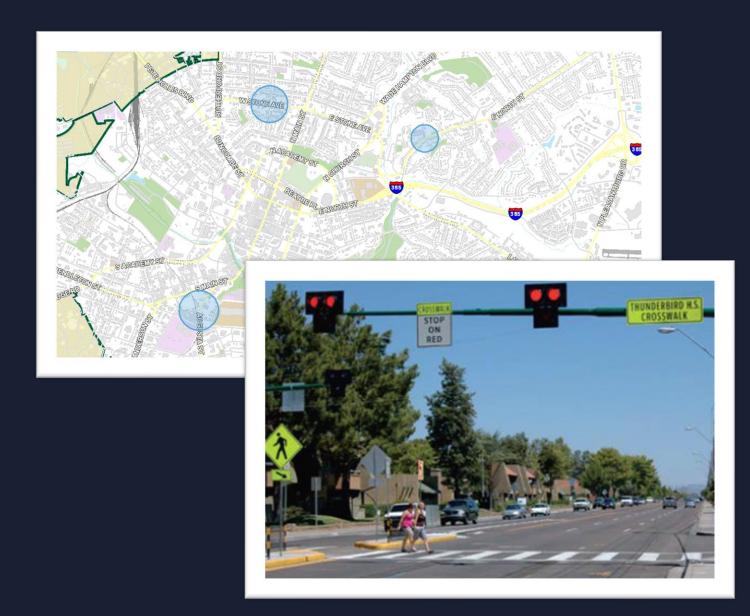
[W. Antrim Road Diet]

- Project Description: Remove one lane of travel and install a sidewalk with a curb lawn along the west side of W. Antrim between Laurens Road and Greenacre.
- Identification Source: Project Request
- Estimated Cost: \$450,000 (Includes \$200k for irrigation/landscaping/lighting)
- ROW Needed (Y/N)?: No
- Estimated Timeline to Begin Construction: Q1 2023



[PHB Signal Installation]

- Project Description: Pedestrian Hybrid
 Signal Installations at E.North near Chestnut
 Street, Stone Avenue near Wilton, and
 Augusta Street near Field Street.
- Identification Source: Project Request
- Estimated Cost: \$900,000 (\$300,000 each location)
- ROW Needed (Y/N)?: Yes
- Estimated Timeline to Begin Construction:
 Q4 2022





[Traffic Management Projects]

 Category Description: Investments in equipment and technology to better manage traffic throughout the City

Project Category	Description	Cost Estimate	Timeline
Equipment	Traffic Count Stations	\$250,000	Q3 2022
Equipment	Video Monitoring Cameras	\$200,000	Q2 2022
Technology	Travel Time Monitoring	\$500,000	Q2 2022
Equipment	Signal Detection	\$200,000	Q2 2022
Plan/Design	ITS Master Plan	\$150,000	Q4 2022
Technology	Emergency Signal Preemption	\$1,200,000	Q3 2022
Equipment	Uninterruptible Power Supply	\$1,500,000	Q2 2022
Total		\$4,000,000	

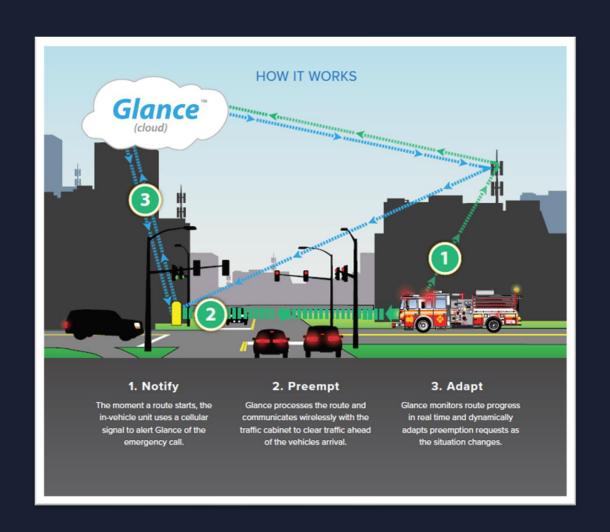
[ITS Master Plan]

- Project Description: ITS Master Plan to guide implementation of smart infrastructure and the design and construction of a city Traffic Management Center
- Identification Source: Project Request
- Estimated Cost: \$150,000
- ROW Needed (Y/N)?: No
- Estimated Timeline to Begin Construction: Q4 2022



[Emergency Signal Preemption]

- Project Description: Equip all signal cabinets with emergency preemption units
- Identification Source: Project Request
- Estimated Cost: \$1,200,000
- ROW Needed (Y/N)?: No
- Estimated Timeline to Begin Construction: Q3 2022



[Uninterruptible Power Supply]

- Project Description: Contract to furnish and install signal cabinets with uninterruptible power supply units
- Identification Source: Project Request
- Estimated Cost: \$1,500,000
- ROW Needed (Y/N)?: No
- Estimated Timeline to Begin Construction: Q2 2022





[Sidewalk Projects]

- Project Description: Sidewalk project on various City streets.
- Identification Source: Sidewalk Rankings/Project Request
- Estimated Cost: \$8,700,000 (includes \$2m from FY23/FY24 NSTEP)
- ROW Needed (Y/N)?: Yes
- Estimated Timeline to Begin Construction: Q3 2022

Street	Cross Streets	Total Cost	Timeline
LONG HILL STREET	RICE STREET TO END	\$448,800.00	Q3 2022
POTOMAC AVENUE	PANAMA AVENUE TO PRINCE AVENUE	\$785,400.00	Q3 2022
DOE STREET	ENDEL STREET TO EXISTING SIDEWALK	\$93,500.00	Q3 2022
CHICK SPRINGS RD	LOTUS COURT TO MOHAWK DRIVE	\$690,030.00	Q2 2023
MOHAWK DR	CHICK SPRINGS TO WADE HAMPTON	\$645,150.00	Q2 2023
GALLIVAN STREET	MOHAWK DRIVE TO PARKWOOD DRIVE	\$112,200.00	Q2 2023
ALGONQUIN TRAIL	NORTH SIDE BETWEEN 10 AND 18	\$136,510.00	Q2 2023
HENDERSON ROAD	LAURENS ROAD TO ANNACEY PLACE, HIGHCROFT COURT SUBDIVISION TO WEMBLEY ROAD	\$867,680.00	Q2 2023
WEMBLEY ROAD	HENDERSON ROAD TO SHELBURNE ROAD	\$570,350.00	Q3 2023
KEITH DR	PERRIN STREET TO LOWNDES HILL, WOODLARK TO PLEASANTBURG	\$1,368,840.00	Q3 2023
LOWNDES HILL RD/OVERBROOK RD	E NORTH STREET TO KEITH DRIVE	\$1,858,780.00	Q3 2023
WEBSTER RD.	WARREN CT TO ALLENDALE LN	\$1,122,000.00	Q3 2023



[Proposed Projects]

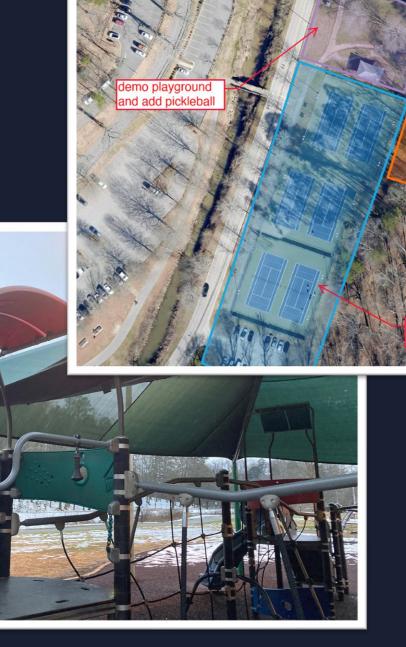
Cleveland	Court Reconstruction	\$1,300,000	reconstruct courts and add pickleball
David Hellams	Court Reconstruction	\$90,000	resurface court
Gower Park			
	Court Reconstruction	\$700,000	reconstruct courts and add pickleball
	Parking Lot Renovation	\$250,000	reconstruct parking lot (LWCF grant)
Holmes Park			
	Court Reconstruction	\$85,000	
	Parking Lot Renovation	\$250,000	reconstruct parking lot
	Park Shelter Replacement	\$25,000	replace with aluminum shelter
McPherson Park			
	Court Reconstruction	\$100,000	tennis only
Newtown Park			
	Court Reconstruction	\$25,000	basketball court
Nicholtown	Center Renovation	\$1,800,000	reconstruction on current footprint
	Add Walking Track	\$15,000	to be installed behind basketball court
	Replace Park Shelter	\$25,000	replace with aluminum shelter
North Main Rotary Park			
	Field Improvements	\$150,000	renovate field, improve stormwater drainage
Pinckney Fludd Park			
	Court Reconstruction	\$25,000	basketball court

[Cleveland Park Improvements]

 Project Description: rehabilitate the courts to add dedicated pickleball and improve efficiency,

• Estimated Cost: \$1,300,000

Estimated Timeline to Begin Design:
 Q3 2022



[Gower Park Court / Parking Lot Improvements]

- Project Description: rehabilitate the courts to add dedicated pickleball and improve efficiency of space, new parking lot with landscaping
- Estimated Cost: \$1,500,000
- Estimated Timeline to Begin Construction: Q3 2022
- Suggested Fund: NIB and LWCF Grant (application in progress, due March 1)



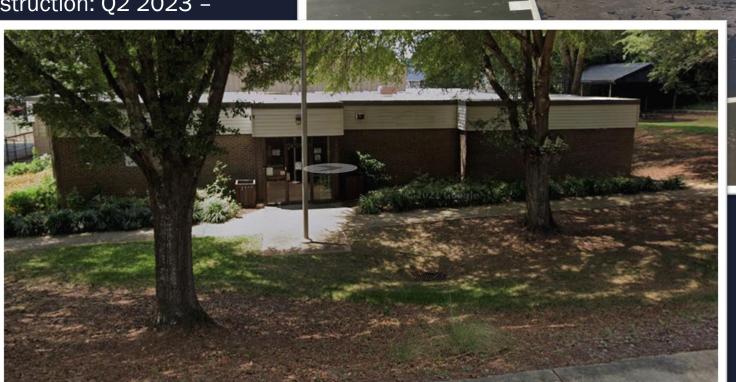
[Nicholtown Community Center Improvements]

 Project Description: complete facility renovation, to include new basketball court, updated facility, addition of walking track, new park shelter, improved drainage

Estimated Cost: \$1.8 million

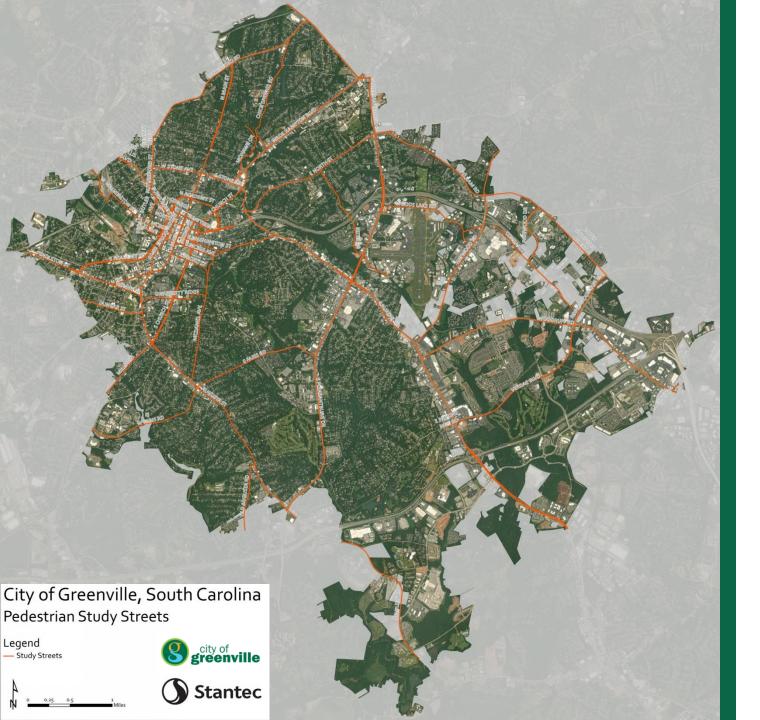
Estimated Timeline to Begin Construction: Q2 2023 –

following feasibility study











Project Overview

Goal – increase pedestrian safety by reducing the rate and number of fatal and injury crashes involving pedestrians in the City. The study is to be complementary to SCDOT's statewide Pedestrian Safety Plan.

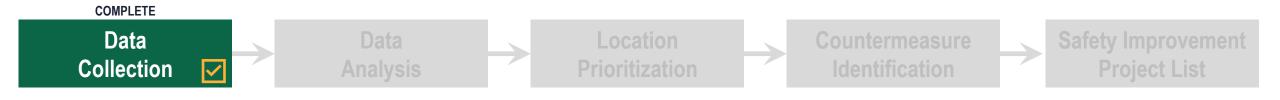
Study Area – 64 Total Corridors:

- Highest traffic volume
- High pedestrian crash experience
- > At/near school zones



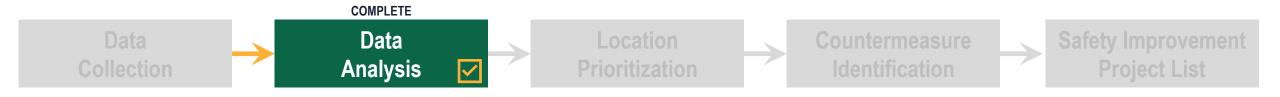






Crash Data GIS Data **City of Greenville | SCDOT | Census Tracts Pedestrian Collisions from 2016 through 2021** Average Annual Daily Traffic Location Posted Speed Limit **Direction of Travel** Number of Travel Lanes Date/Time Road Surface Condition Functional Classification Lighting Condition Demographics Weather Condition **School Locations** Contributing Factor(s) Public Park Locations Traffic Control Type/Crosswalk Available Transit Stop Locations

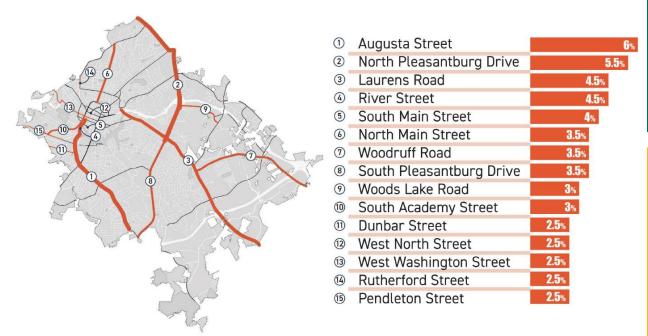




High Crash Locations

APPROXIMATELY 53% OF ALL PEDESTRIAN COLLISIONS IN

THE PAST 6 YEARS HAPPENED ON THESE 15 STREETS



High Risk Locations

Roadway Characteristics

- Functional Classification
- Number of Lanes
- Speed Limit

Proximity to City Services/Other

- School Zones
- Parks
- Alcohol Sales
- > Shelters

Demographics

- Percentage of Poverty
- Transit Stops/Mile
- Percentage of Households without a Vehicle

Crash Risk

- Population Density
- Crash History
- Average Annual Daily Traffic





Prioritize Each Factor

Assign Score for Each Study Corridor

l		

Local	-	Principal Arterial	
Two	-	Six	
25 MPH	-	45 MPH	
> 1 Mile	1	< 1 Mile	
> 1 Mile	-	< 1 Mile	
> 1 Mile	-	< 1 Mile	
> 1 Mile	1	< 1 Mile	
0 – 5%	-	> 20 %	
>8	-	<4	
0 – 5%	-	> 25 %	
< 100/mile ²	-	>2000/mile ²	
0/mile	-	>20/mile	
<5000	_	>45000	

Weighted Score For Each Corridor **Enabling for Ranking of Corridor Priorities**

	Functional Class
Roadway Characteristics	Number of Lanes
	Speed Limit
	School Zones
Proximity to City	Parks
Services/Other	Alcohol Sales
	Shelters
	% of Poverty
Demographics	Transit Stops/Mile
	% Households w/o Veh.
	Population Density
Crash Risk	Crash History
	AADT

%
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RAISED MEDIAN & PEDESTRIAN REFUGE ISLAND

ONGOING

Countermeasure Identification 🕥

Safety Improvement Project List

LIGHTING AND ILLUMINATION

WHAT DOES IT DO?

Better lighting helps motorists see pedestrians better and objects in the

HOW CAN IT HELP?

Intersection lighting can reduce pedestrian crashes up to 42%



HIGH-VISIBILITY CROSSWALKS

WHAT DOES IT DO?

Makes crosswalks easier to see

HOW CAN IT HELP?

High-visibility crosswalks can reduce pedestrian injury crashes up to 40%



SIDEWALKS, WALKING PATHS, & PAVED SHOULDERS

WHAT DOES IT DO?

Provides dedicated space, separate from the road and public right-of-way for people to walk, run, skate, bike, et-

HOW CAN IT HELP?

- Sidewalks create a 65-89% reduc in crashes involving pedestrians
- walking along roadways Paved shoulders create a 71%
- reduction in crashes involving pedestrians walking along roadway



HOW CAN IT HELP?

- 56% reduction in pedestrian crashes at intersections with pedestrian refuge islands



ADVANCE YIELD/STOP PAVEMENT MARKINGS

WHAT DOES IT DO?

Makes it easier for drivers to see people by giving them warning of a

HOW CAN IT HELP?

Advance yield or stop parkings and signs can reduce pedestrian crashes up to 25%



IN-STREET PEDESTRIAN CROSSING SIGN (R1-6)

WHAT DOES IT DO?

Reminds roadway users of laws regarding right-of-way



WHAT DOES IT DO?

Changes the sign to say "walk" before vehicles get the signal to enter the intersection.

HOW CAN IT HELP?

13% reduction in pedestrian-vel crashes at intersections.



WHAT DOES IT DO?

Tells you how long you have to cross the street safely.

IOW CAN IT HELP?

Reduce pedestrian crashes by up



allows pedestrians to focus on one direction vehicles are moving in at a

WHAT DOES IT DO?

directions

46% reduction in pedestrian crashes

Separates vehicles moving in differer

Provides space for pedestrians to sto

while crossing the road and can hav

lighting and/or landscaping

Breaks up walking distance and

at medians with marked crosswalks



SPEED HUMPS/SPEED TABLES

WHAT DOES IT DO?

Reduces vehicle speeds and enhances pedestrian environment at pedestria



YIELD/STOP HERE TO PEDESTRIAN SIGN (R1-5)

WHAT DOES IT DO?

Provides advance warning to drivers of a marked crosswalk



WHAT DOES IT DO?

Creates a light/signal cycle that's for pedestrians only instead of both pedestrians and cars.



IMPROVE RIGHT-TURN SLIP LANE DESIGN

WHAT DOES IT DO?

Better slip lane design can slow down turning vehicles to help pedestrians and vehicles see each other. It also means less time a pedestrian is in the road, and can simplify the intersectio



PEDESTRIAN HYBRID BEACONS (PHB)

 Helps pedestrians cross at mid-block or uncontrolled intersection locations by stopping vehicles.





RECTANGULAR RAPID FLASHING BEACONS (RRFB)

WHAT DOES IT DO?

Flashes bright lights to let drivers know a crosswalk is there. For use at uncontrolled pedestrian and school crosswalk locations

HOW CAN IT HELP?

Reduce pedestrian crashes by up to



WHAT DOES IT DO?

Makes vehicles have to turn more sharply, which can make them move more slowly.



CURB EXTENSIONS

WHAT DOES IT DO?

Makes a separate place for pedestrians, helps pedestrians and vehicles see each other better, can encourage vehicles to move more slowly and makes pedestrian crossings shorter.



RAISED PEDESTRIAN CROSSINGS

WHAT DOES IT DO?

Holps drivers see nedestrians better and encourages them to drive slower.

HOW CAN IT HELP?

Reduce pedestrian crashes by 45%



ACCESS MANAGEMENT

WHAT DOES IT DO?

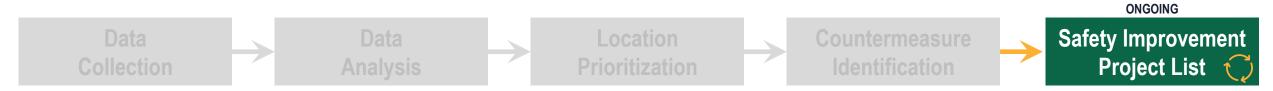
Reduces the number of places where vehicles can null out and hit pedestrians while walking.

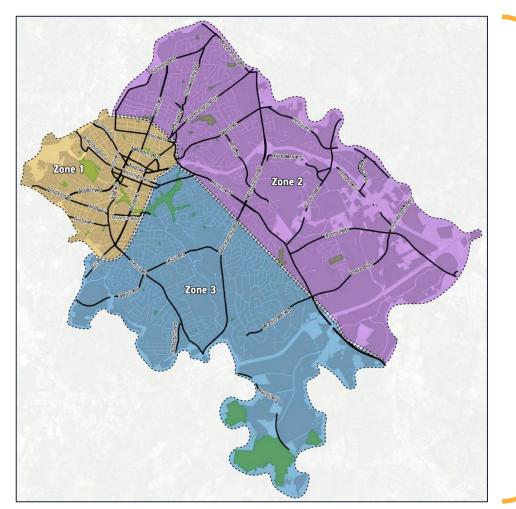
HOW CAN IT HELP?

Up to 25-31% reduction in tatal and injury crashes along urban/suburban







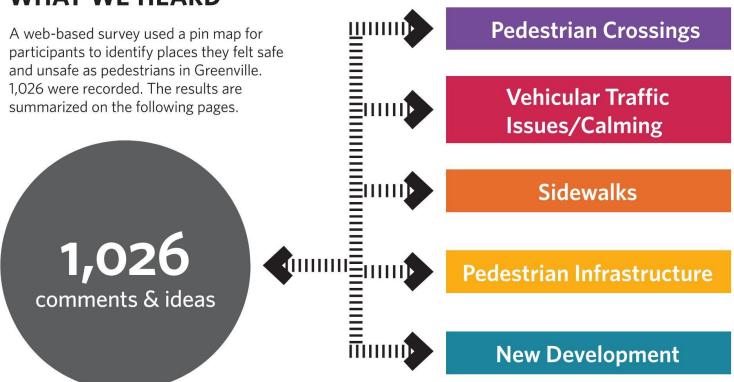


Prioritization of Corridors + Countermeasure Identification =

List of Specific, High Priority Safety Improvement Projects to be Implemented in the Study Area Zones





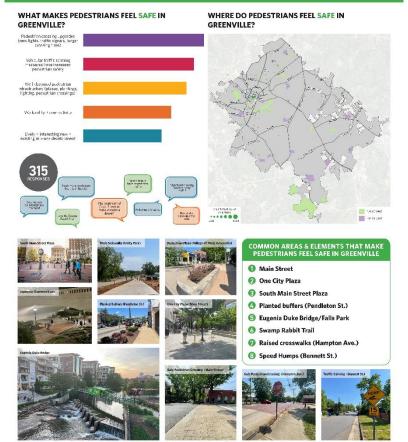




Public Involvement

City of Greenville | Pedestrian Safety Study WHAT WE HEARD WHAT MAKES PEDESTRIANS FEEL UNSAFE IN WHERE DO PEDESTRIANS FEEL UNSAFE IN **GREENVILLE?** GREENVILLE? Crossing issues (faced or missing prosawalks, crossing counts own too short, etc.) Vehicu ar traffic issues OMMON AREAS PEDESTRIANS DO NOT FEEL Academy Street North Main Street Augusta Street 6 S. Academy & Pendleton St. (intersection) Augusta & Vardry St. (intersection) Buncombe St. & Butler Ave./Atwood St.

City of Greenville | Pedestrian Safety Study



City of Greenville | Pedestrian Safety Study | HOW CAN SAFETY BE IMPROVED?

MOST PREFERRED CHARACTER OF WALKABLE STREETS





HOW CAN IT HELP?

High-visibility crosswalks Curb extensions Sidewalks, walking paths, & paved shoulders Pedestrian hybrid beacons (PHB) Raised pedestrian crossings

OMMUNITY'S PREFERRED PEDESTRIAN SAFETY

- 6 Lighting & illumination
- Rectangular rapid flashing beacons (RRFB)
- 8 Exclusive pedestrian phases
- In-street pedestrian crossing sign (R1-6)

HOW CAN IT HELP?



PACTURE PEDESTRIAN FRANCS

9 IN-STREET PEDESTRIAN CROSSING SIGN

T DO?

WHAT DOES IT DO?

Fair of invidence relians

we described a relians

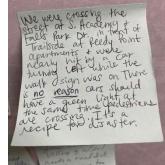




Public Involvement



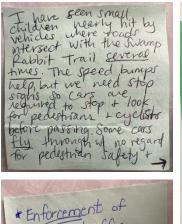
I am extremely proud of the work Greenite has done to put people before cars Density + walkability translates to economic growth, and Greenille has realized that building Pleasest, carefree environments where people actually ment to be is a winning strategy, C.g. nobody goods egists walking alongstoke polluted stronds like Haynord !!



The intersection of







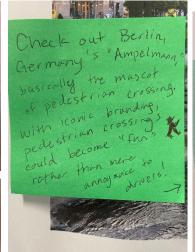
parking + traffic

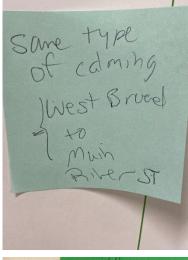
laws/ordinances

(streets ± neighborhad)

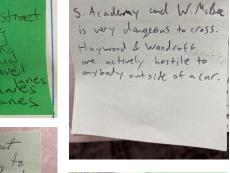
streets i.e. Alta Vista

area esp. w/in blocks of parks)

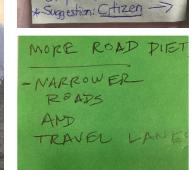


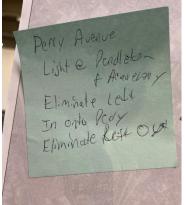


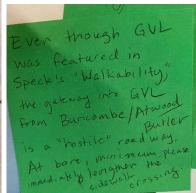












Pendleton Street Grom Vardrey to Village of W. GV/ needs a road det. Wehreles morse too fast - do not look for pedestrians when funny - Needs to petiting sedestrials





Next Steps

- ☐ Finalize Corridor Prioritization
- ☐ Finalize Countermeasure Identification
- ☐ Develop List of Safety Projects

