



638 East Washington Street  
 Greenville, SC 29601  
 (864) 605-3980  
 www.altaplanning.com

# MEMORANDUM

To: John Gardner - City of Mauldin  
 From: Blake Sanders, PLA – Alta Planning and Design  
 Calin Owens – Alta Planning and Design

Date: September 28, 2015

## Re: Mauldin, SC – Swamp Rabbit Trail Extension Study Design Narrative

### Overview

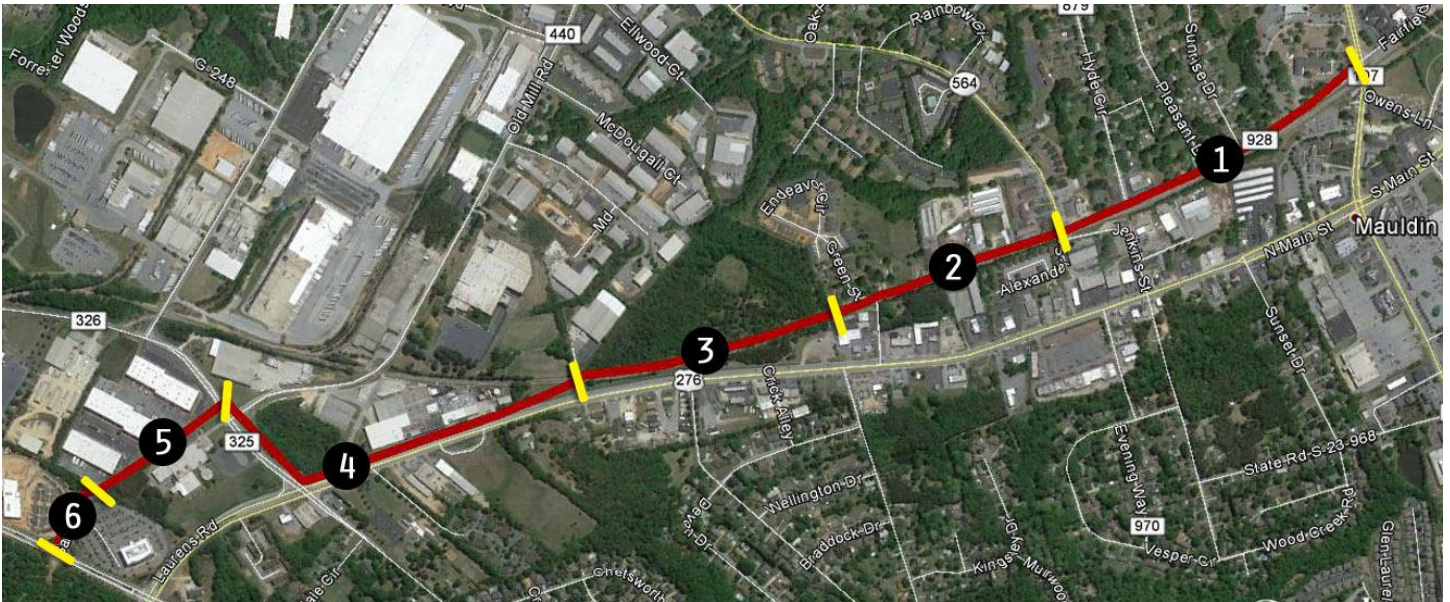
The Swamp Rabbit Trail has provided economic revitalization throughout Greenville County. As part of Greenville County's Greenways Master Plan to connect every resident to within ¼ mile of a greenway facility, neighboring municipalities, communities, and non-profits are looking at potential extensions and side paths to extend the current greenway network. A 2-mile Swamp Rabbit Southern Extension would connect Mauldin's Cultural Center to CUICAR, providing City of Mauldin residents a safe, healthy, and reliable means of enjoying the entire greenway system for both recreation and transportation. The City of Greenville, in partnership with Greenville County, has immediate plans to connect Cleveland Park to CUICAR along the recently abandoned GCEDC Corridor. The proposed routing of the Swamp Rabbit Southern Extensions works within the constraints of SCDOT rights-of-way and existing property land uses and improves signalized crossings and storm water drainage.

The table below outlines the location and approximate lengths of the proposed greenway route:

\*Map # corresponds to the map on the following page.

Map #	Location	Proposed Greenway Facility	Greenway Length	Approximate Cost
1	Cultural Center to Miller Rd (along Murray Dr.)	Widen Sidewalk to 10'	2,400 LF	\$533,544
2	Miller Rd to Green & Murray	New 10' Greenway	1,450 LF	\$268,033
-	Lot @ Green & Murray	Future Development Site	23.9 Acres	-
3	Green & Murray to RR Crossing	New 12' Greenway	2,220 LF	\$471,330
-	RR Crossing @ Heafner Tire	Improved RR Crossing	N/A	\$20,000+
-	Lot Along North Main St.	Potential Park	3.7 Acres	\$200,000+
-	CompX Property	Potential Park	1.1 Acres	\$150,000+
4	RR Crossing to Forrester Park Complex Entrance	New 12' Greenway	2,900 LF	\$744,285
5	Forrester Park Complex Entrance to Roundabout @ St. Francis Property	New 12' Greenway	1,250 LF	\$273,503
6	Roundabout to CUICAR	Improve & Widen Sidewalk	400 LF	\$93,434

Overview Map



The Swamp Rabbit Trail will begin at Mauldin’s Cultural Center and follows Murray Drive for approximately 0.7 miles. Once at the intersection of Green Street & Murray Drive, the path shifts to a new 12’ greenway until it crosses an improved at-grade railroad crossing, at Heafner Tire, meeting North Main Street. At North Main Street, the greenway will transition into a 12’ side path with varying landscape verge width, continuing for 0.4 miles until the intersection of Forrester Drive. The greenway will turn east along Forrester Drive, crossing Old Mill Road and Forrester Drive at the signalized intersection at the entrance to Forrester Park Business Complex. The Greenway will follow the left side of the current entrance drive to the Forrester Park Business Complex, crossing rear of the St. Francis Medical Office Building C - Millennium Campus. At the roundabout within the St. Francis Millennium Campus the greenway will continue until it terminates at the intersection of Sara Lane and Innovation Drive. An existing network of bicycle lanes and sidewalks provide direct connections to the proposed Swamp Rabbit Trail extension along the GCEDC Corridor.

Murray Drive: Cultural Center to Miller Road



**Existing Conditions**

This section of Murray Drive is two lanes of traffic with a speed limit of 25mph. It is bordered by the Carolina Piedmont Rail line on to the west, and both commercial and residential properties to the east. There is an existing 4' sidewalk that has a 3' setback. A 5-10' storm water drainage swale is located along the rail line on the west side of the Murray Drive. There are multiple residential and commercial driveway crossings and 3 road crossings (Sunrise Drive, Pleasant Drive, and Hyde Circle).

**Recommendations**

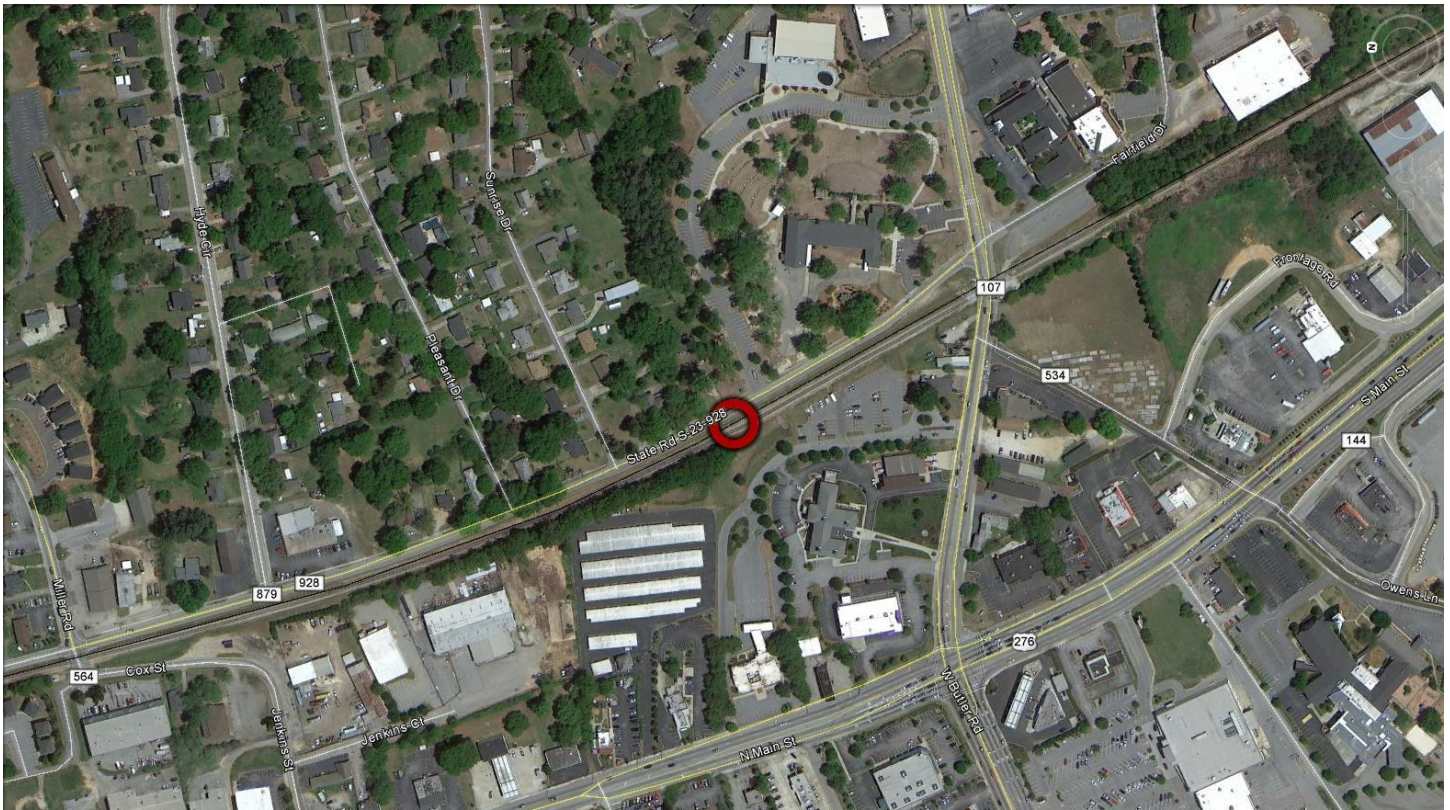
1. Expand and repair sidewalk to minimum of 10' width
2. Enhance landscaping along the existing grassed verge
3. Incorporate MUTCD and SCDOT approved crossings at commercial driveways and named intersections.

**Roadway Crossings**

should be designed to meet SCDOT specifications for visibility and signage. The image to the right shows a typical crossing that could be used as a base for any roadway crossings [AASHTO 2012: *Guide for the Development of Bicycle Facilities*].



Additional Carolina Piedmont Rail Line Crossing



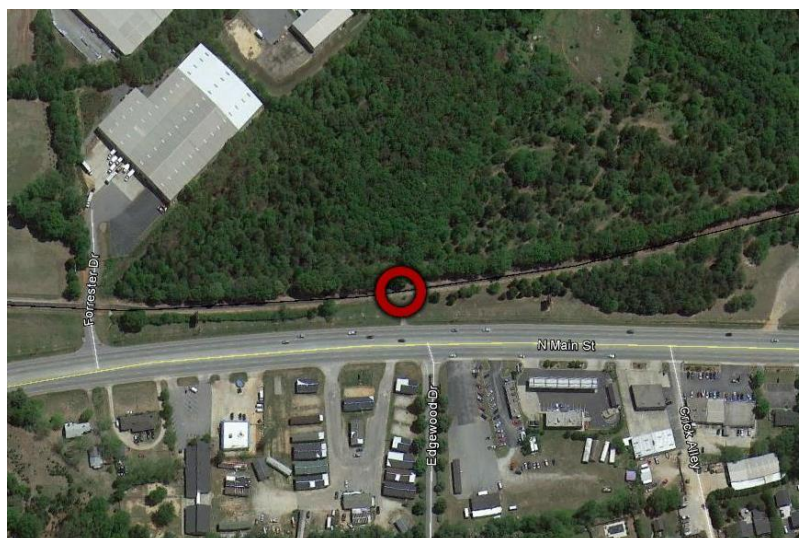
**Existing Conditions**

An additional Carolina Piedmont Rail Line crossing opportunity is available that will allow direct access to the greenway from the parking area of Mauldin’s Police and Fire Departments. This crossing is currently a worn footpath used primarily by residents looking for a more direct connection from the surrounding neighborhoods.

**Recommendations**

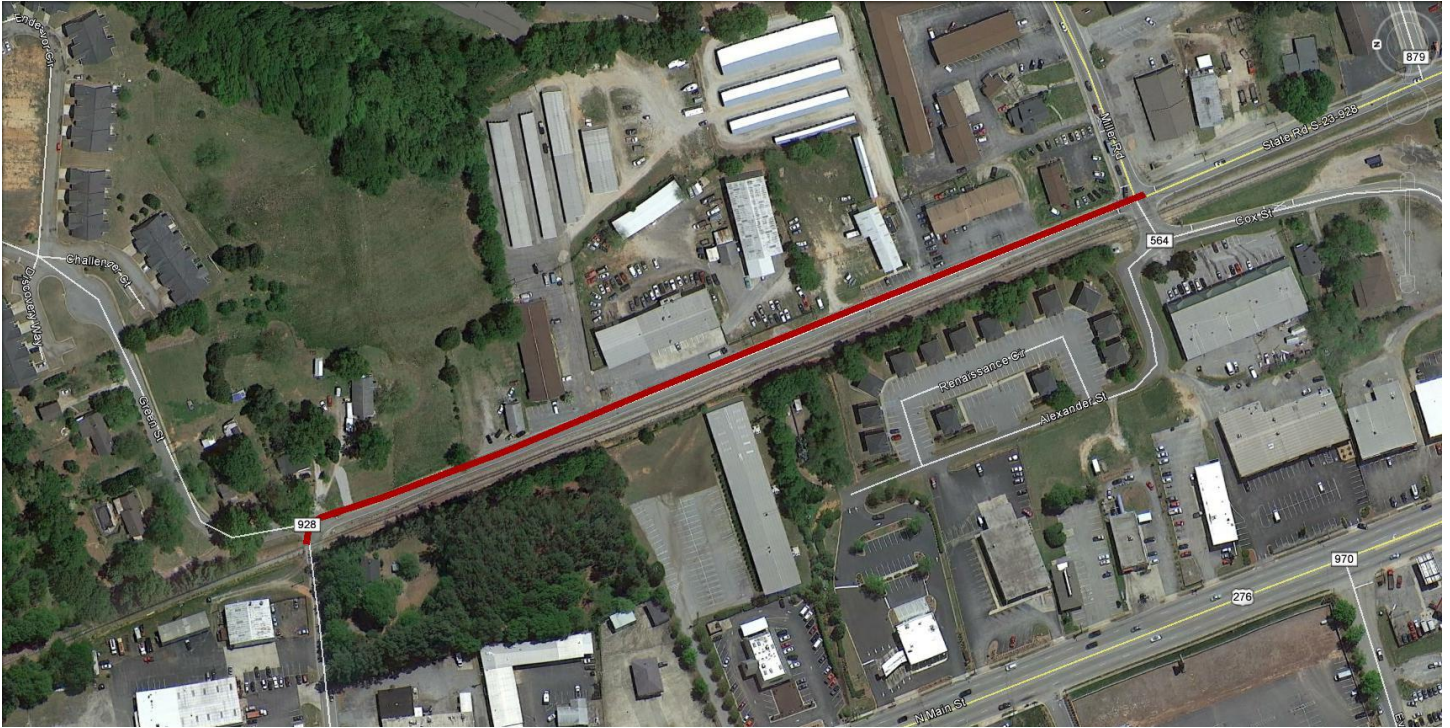
This crossing should be improved to an official pedestrian and bicycle only rail line crossing, and will require Carolina Piedmont Rail Line approval. A mid-block MUTCD-compliant and SCDOT-approved pedestrian crossing should be implemented for crossing Murray Drive at this location.

An existing, but unused, ROW for a rail way crossing exists adjacent to the intersection of North Main Street and Edgewood Drive. Working with Carolina Piedmont Railroad, this existing ROW will be transferred to the proposed location near the Police and Fire Departments. This crossing is to be an “either or” with the rail crossing at Heafner Tire.



**Existing ROW Crossing**  
will be relocated to new  
location near City Center

Murray Drive: Miller Road to Green Street & Murray Drive



**Existing Conditions**

This section of the proposed route continues from Miller Road until Murray Drive turns west toward North Main Street. Murray Drive continues north, still bordered by the Carolina Piedmont Railway and commercial and residential properties. There are no sidewalks along this section of Murray Drive, and the grass median between the railroad and Murray Drive narrows to 2'. There are multiple residential and commercial driveways and two road crossings (Miller Road and Green Street / Murray Drive).

**Recommendations**

1. Implement new 10' sidewalk with landscape verge on east side of road
2. Incorporate MUTCD and SCDOT approved crossings at commercial driveways and named intersections.

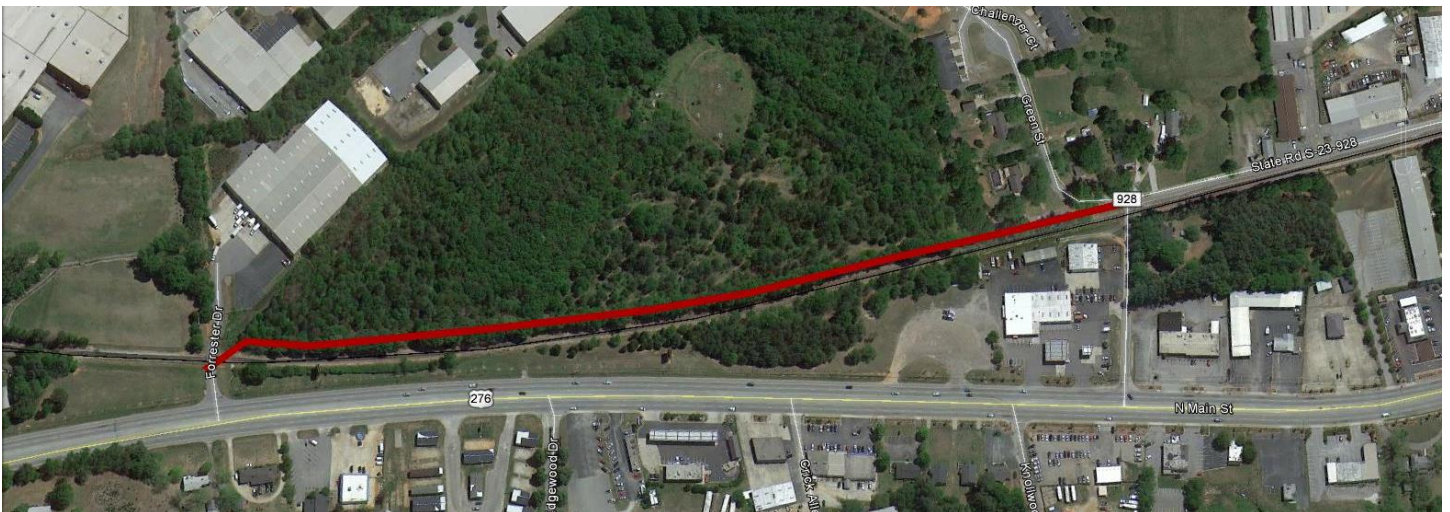
## Development

### Development of Existing Tract of Land



An existing large tract of land lies just beyond the proposed greenway route at the intersection of Green Street and Murray Drive. This 24 acre tract has an excellent potential for future development to enhance both the Swamp Rabbit Trail and the City of Mauldin.

### Green Street & Murray to Railroad Crossing at Heafner Tire



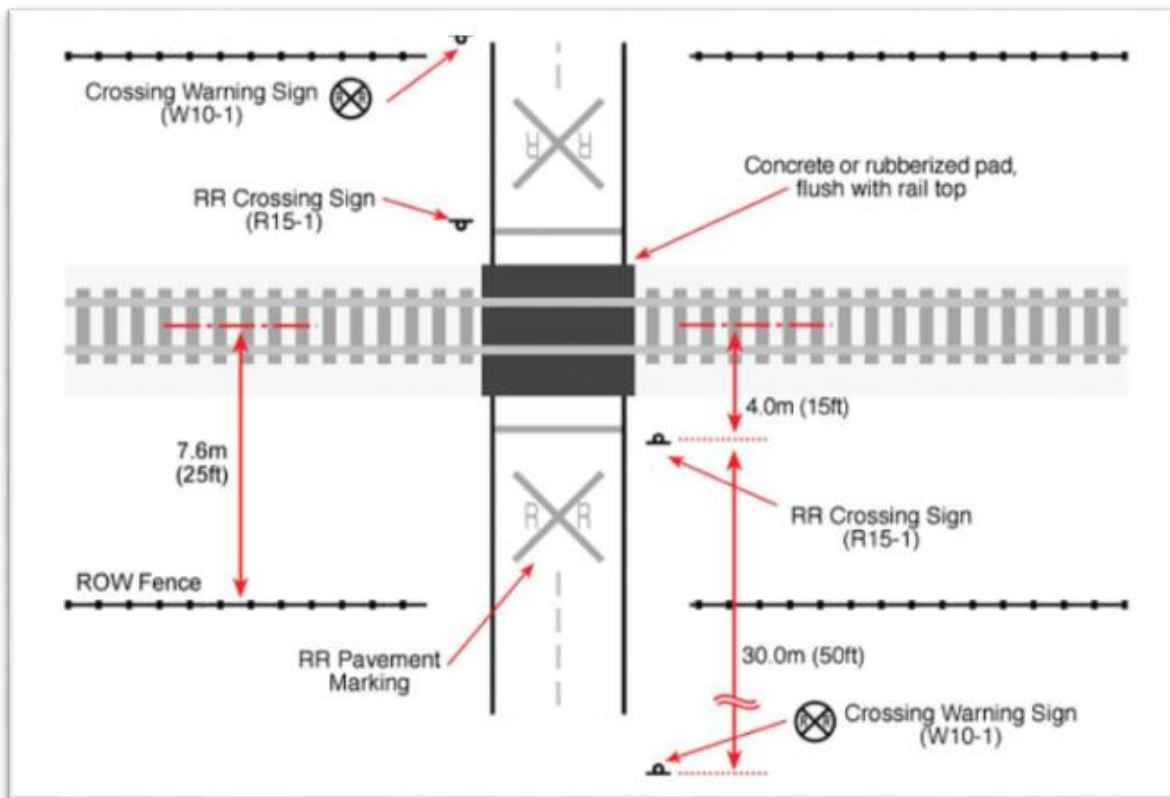
With the development of the large tract comes an exceptional opportunity to route the proposed greenway through this site therefore extending the direct connection from Mauldin’s Cultural Center. This route will minimize the side path greenway along North Main Street, allowing for separation from existing roadways. Existing conditions of this property will need to be assessed for feasibility, and relationship to the adjacent Carolina Piedmont Railway. Acquisition of the tract of land mentioned above, or permanent Right of Way will need to be obtained.

### Rail Line Crossing

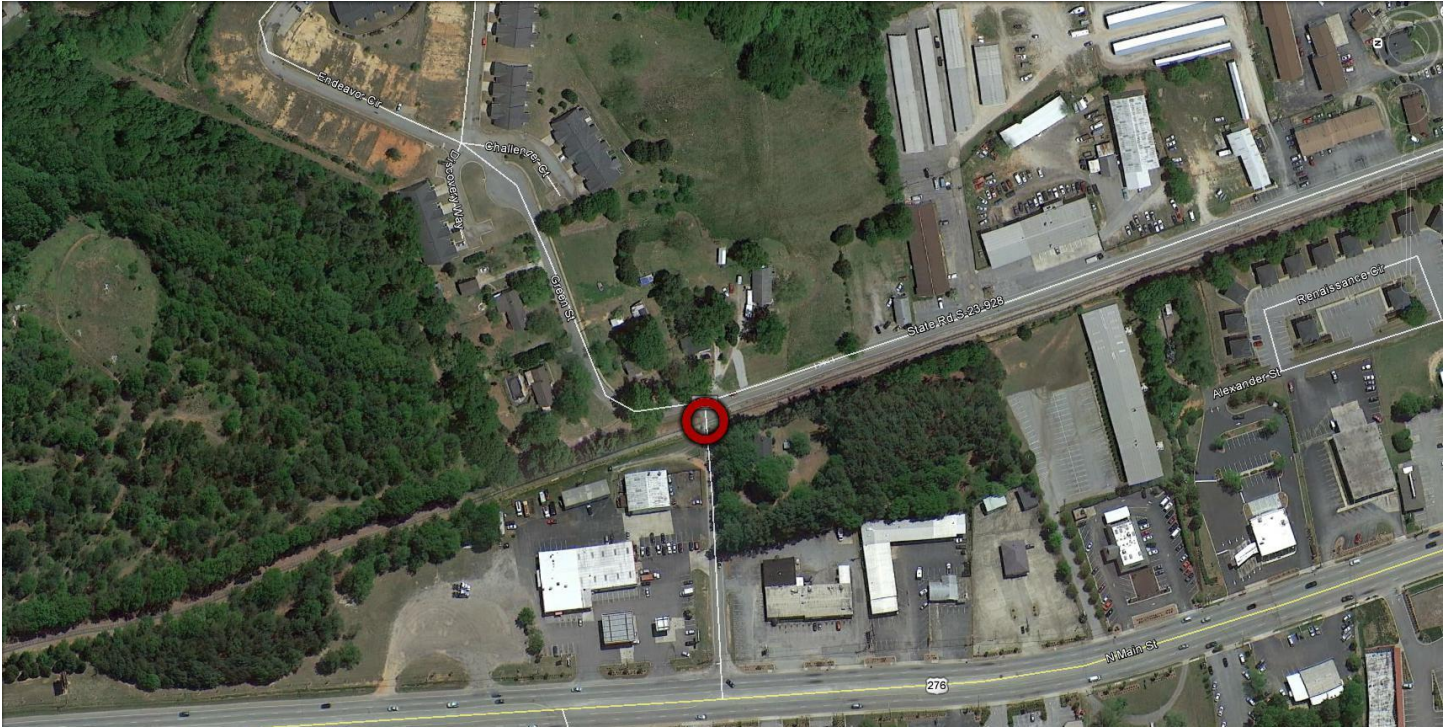
#### Improve Existing Rail Line Crossing at Heafner Tire Entrance



An existing vehicular rail line crossing at the entrance to the Heafner Tire gives an alternative to the pedestrian only crossing at the existing ROW, as shown above. This crossing will need to be improved for bicycle and pedestrian use, and approved by Carolina Piedmont Rail. The graphic below shows a typical railway crossing for a multi-use trail allowing for safe bicycle/pedestrian crossings (AASHTO 2012: *Guide for the Development of Bicycle Facilities*).



City of Mauldin, SC – Swamp Rabbit Trail Southern Extension Study  
Alternate 1a: Improved Railroad Crossing at Green Street and Murray Drive



**Existing Conditions & Recommendations**

The current railway crossing is primarily vehicular and has no separated pedestrian crossing. The graphic below shows a typical railway crossing for a multi-use trail allowing for safe bicycle/pedestrian crossings (AASHTO 2012: *Guide for the Development of Bicycle Facilities*). Carolina Piedmont Railroad approval will be required.



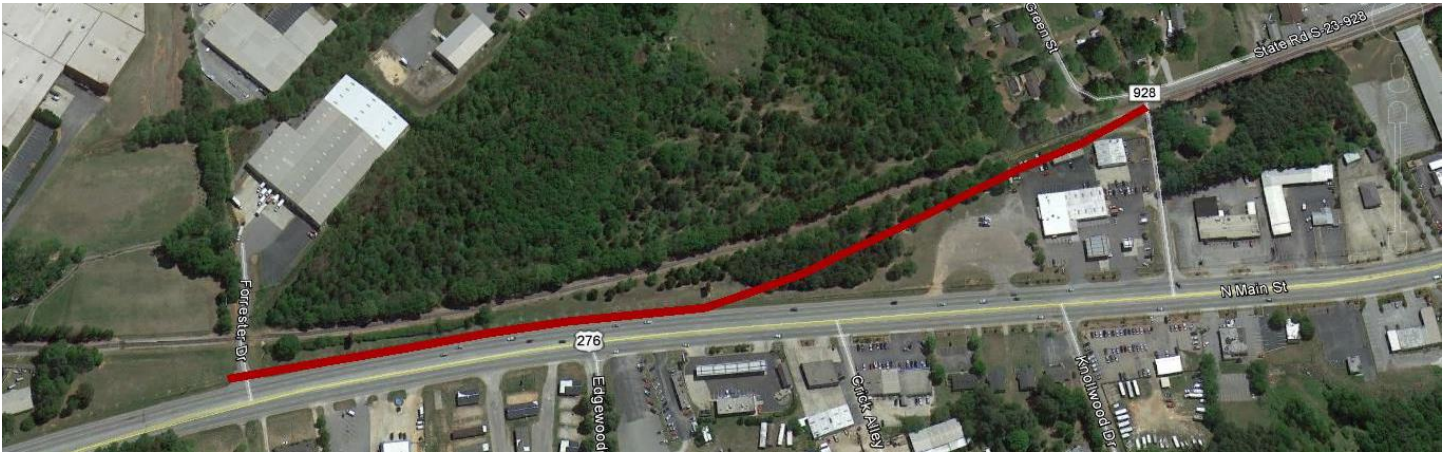
Alternate 1b: Railroad Crossing @ Green Street & Murray Drive to Heafner Tire



**Existing Conditions**

This alternative route implements an improved railroad crossing at the intersection of Green Street and Murray Drive. It will continue down Murray Drive until it meets North Main Street. Here it will parallel North Main Street, as a side path, before continuing on North Main Street after crossing the entry drive to Heafner Tire.

Alternate 1c: Railroad Crossing @ Green Street & Murray Drive to Heafner Tire via Park



Existing Conditions

This alternative route also implements an improved railroad crossing at the intersection of Green Street and Murray Drive. It will cut behind existing commercial properties adjacent to the Carolina Piedmont Railway, meandering through a tract of undeveloped property that buffers North Main Street from the Carolina Piedmont Railroad, before tying into North Main Street after crossing the entry drive to Heafner Tire.

Pocket Park Adjacent to North Main Street



Existing Conditions & Recommendations

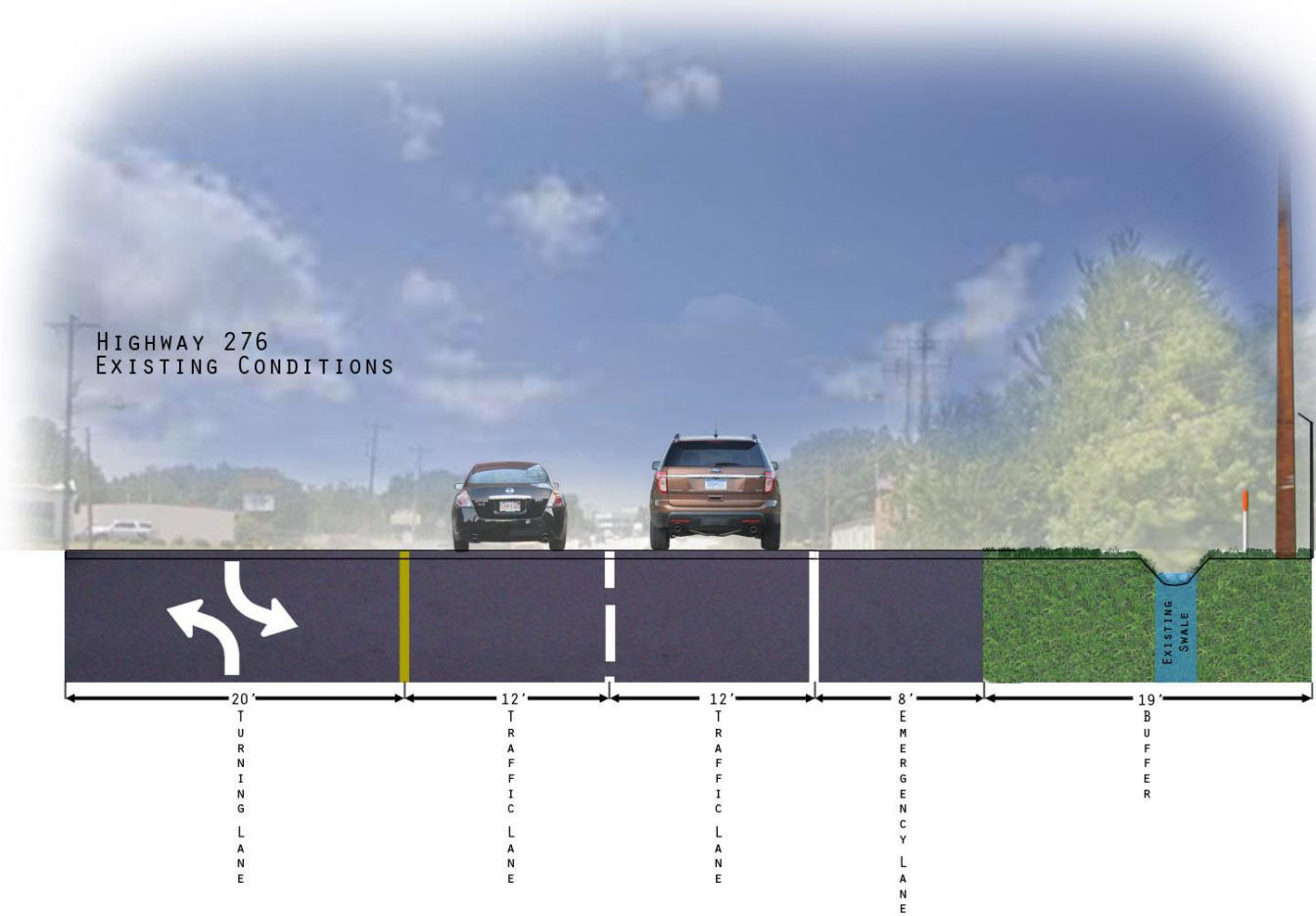
A narrow tract of land between Carolina Piedmont Rail Line and North Main Street provides an excellent opportunity for a park adjacent to the proposed greenway. This roughly 4 acre site could provide additional separation for this section of greenway, as well as potential park space. Implementation of *Alternate 1* would solidify the need for this property. Coordination with both SCDOT and Carolina Piedmont Rail will be necessary, as well as acquisition from the existing land owner. Site procurement or ROW from property owner would be necessary.

Carolina Piedmont Railway Crossing to Mauldin Sign



**Existing Conditions & Recommendations**

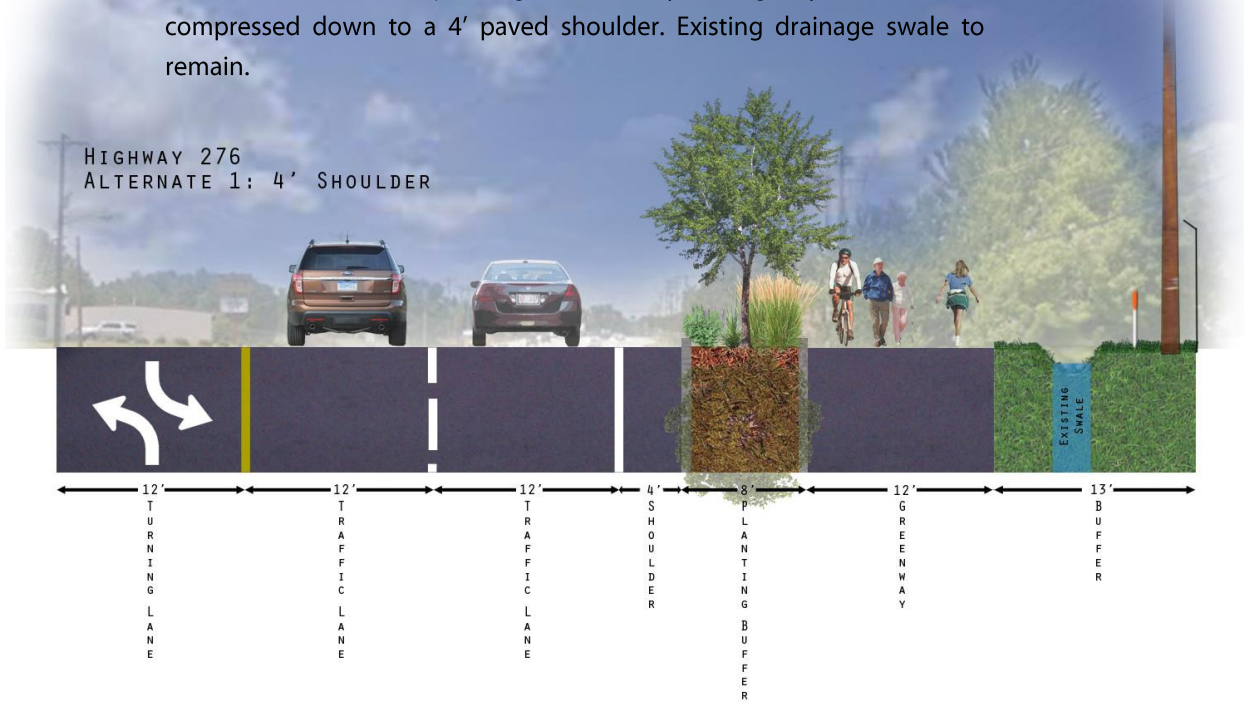
North Main Street's existing cross section, as seen below, allows for multiple greenway connection alternatives. The grass buffer between North Main Street and adjacent commercial properties is approximately 17 feet wide with overhead utilities, gas easement, and storm water drainage swales. Commercial properties have an existing security fence along the property line. There are multiple commercial driveway crossings.



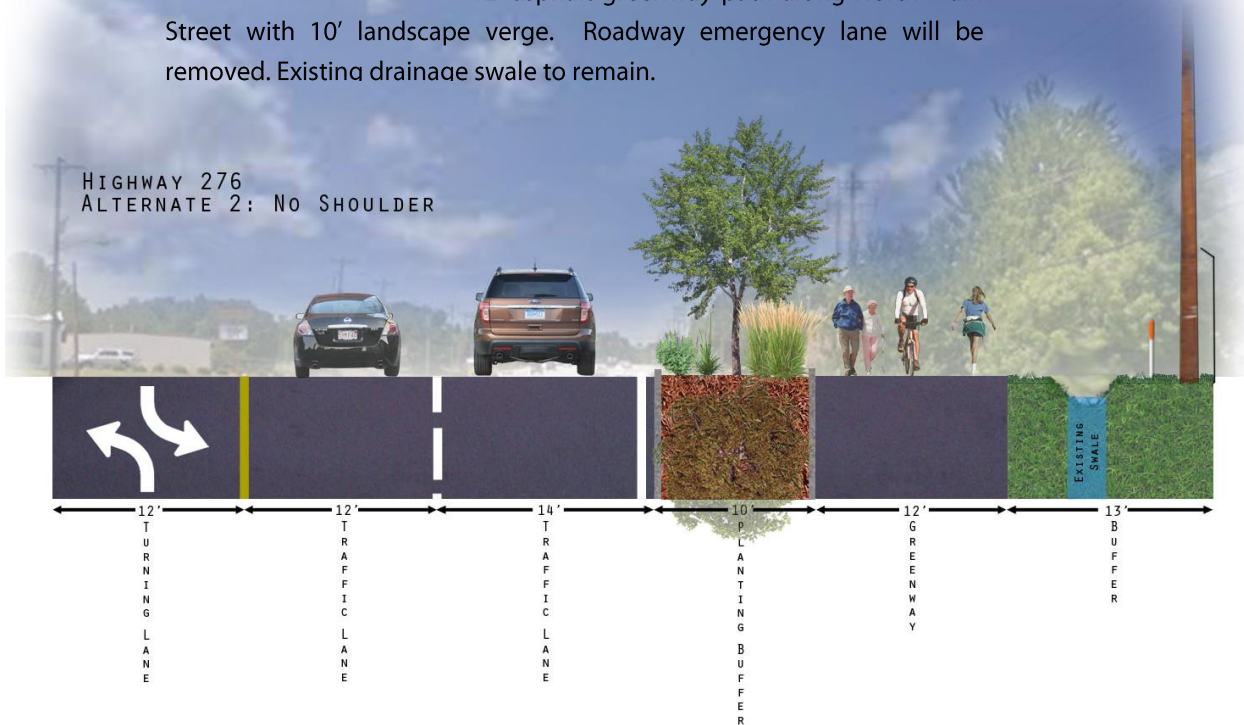
**Recommendations**

- 1. Restripe North Main Street to provide required space for a side path. Provide a vertical curb for varying width landscaped verge. *(Alternates shown on following page)*
- 2. Incorporate MUTCD and SCDOT approved crossings at commercial driveways and named intersections.

**Side-Path Alternate 1:** 12' asphalt greenway path along North Main Street with 8' landscape verge. Roadway emergency lane will be compressed down to a 4' paved shoulder. Existing drainage swale to remain.



**Side-Path Alternate 2:** 12' asphalt greenway path along North Main Street with 10' landscape verge. Roadway emergency lane will be removed. Existing drainage swale to remain.



CompX Property Pocket Park



**Existing Conditions & Recommendations**

CompX, the current land owner, has shown interest in providing this parcel of unused space for the benefit of the City of Mauldin. This give an exceptional opportunity to route the proposed greenway through this site. In addition, the prospect of implementing a park will allow for much needed trail amenities along this stretch of side path greenway. Acquisition of the property, or ROW, will need to be obtained from CompX. SCDOT and Carolina Piedmont Railroad approval will be required, as their ROW's border both the west and east sides of this parcel.

Forrester Drive to Entrance of Forrester Park Business Complex



**Existing Conditions & Recommendations**

Forrester Drive is a 4 lane arterial road with undeveloped adjacent properties. The proposed greenway route will traverse behind the existing City of Mauldin monument sign and parallel Forrester Drive to the signalized intersection of Old Mill Road. Property owner coordination will allow the greenway to be separated from Forrester Drive and eliminate the constraint of overhead utilities. High visibility crosswalks and pedestrian signalization per MUTCD and SCDOT will be incorporated at the signalized intersection.

## Alternative 2 | Greenway Route

## Continuation of North Main Street Route



Crossing Forrester Drive at the intersection of North Main Street will allow for more continuity for greenway users travelling to and from Mauldin’s Cultural Center. This signalized intersection would require the crossing of 5 lanes of vehicular traffic, including one turning lane. A MUTCD and SCDOT approved crossing will be incorporated, with special attention given to high visibility and sight distances for oncoming vehicular traffic. The greenway will continue to parallel North Main Street before meeting the southwest corner of St. Francis’ Medical Office Building C - Millennium Campus. An existing 4’ sidewalk borders a steep grade sloping toward the St. Francis facility, preventing improvement and widening. A new ROW will need to be obtained along the south property line to allow a direct connection to the existing roundabout within the Millennium Campus. The unused property adjacent to North Main Street at this location, currently owned by Spinx, will need to provide a ROW large enough for the pathway, at minimum, to allow for this route alternative.



Entrance of Forrester Park Business Complex to St. Francis Millennium Campus



**Existing Conditions & Recommendations**

After crossing Forrester Drive, the proposed greenway route enters the Forrester Park Business Complex, following the entrance drive along a 4' berm. The proposed greenway follows along the berm and vegetated buffer to the rear of the St. Francis Millennium Campus, tying into the existing sidewalks at the internal roundabout.

City of Mauldin, SC – Swamp Rabbit Trail Southern Extension Study  
St. Francis Millennium Campus (Sara Lane) to Innovation Boulevard (CUICAR)



**Existing Conditions & Recommendations**

The existing sidewalks connecting to Innovation Drive will need to be widened to 10' to allow for multi-modal use. Additional pedestrian crossing improvements will be required along Sara Lane at the existing internal roundabout.