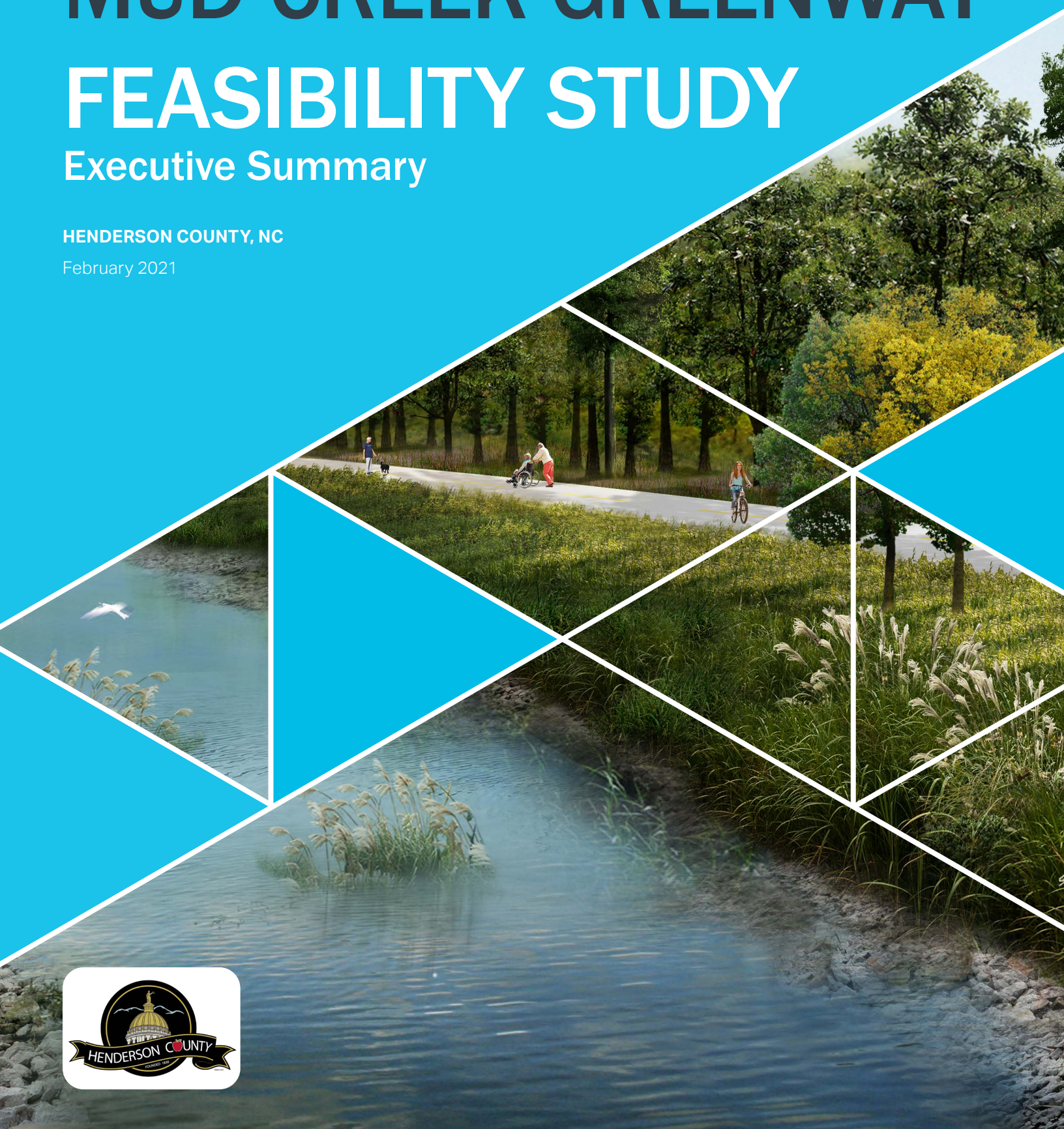


# MUD CREEK GREENWAY FEASIBILITY STUDY

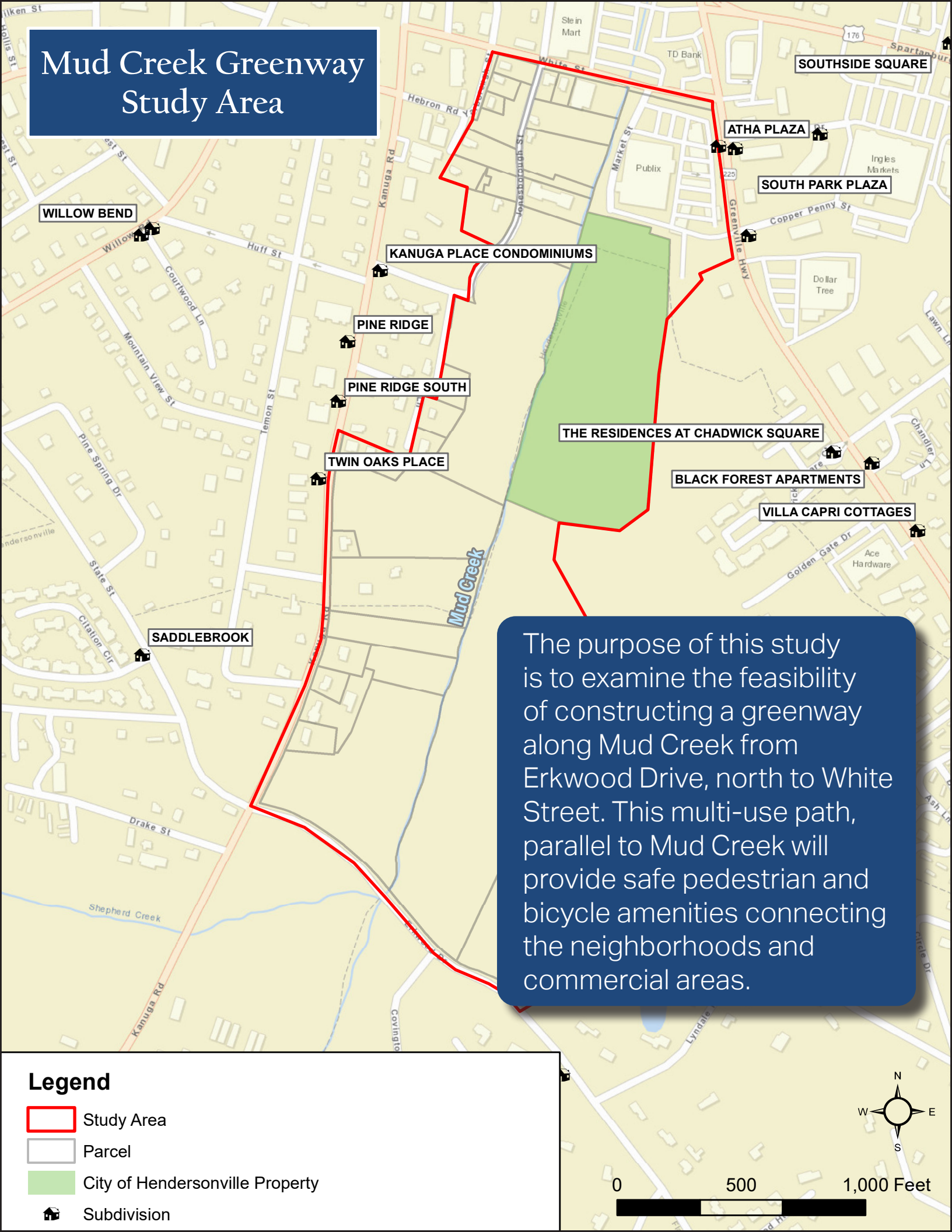
## Executive Summary

HENDERSON COUNTY, NC

February 2021







# Mud Creek Greenway Study Area



The purpose of this study is to examine the feasibility of constructing a greenway along Mud Creek from Erkwod Drive, north to White Street. This multi-use path, parallel to Mud Creek will provide safe pedestrian and bicycle amenities connecting the neighborhoods and commercial areas.

## Legend

-  Study Area
-  Parcel
-  City of Hendersonville Property
-  Subdivision



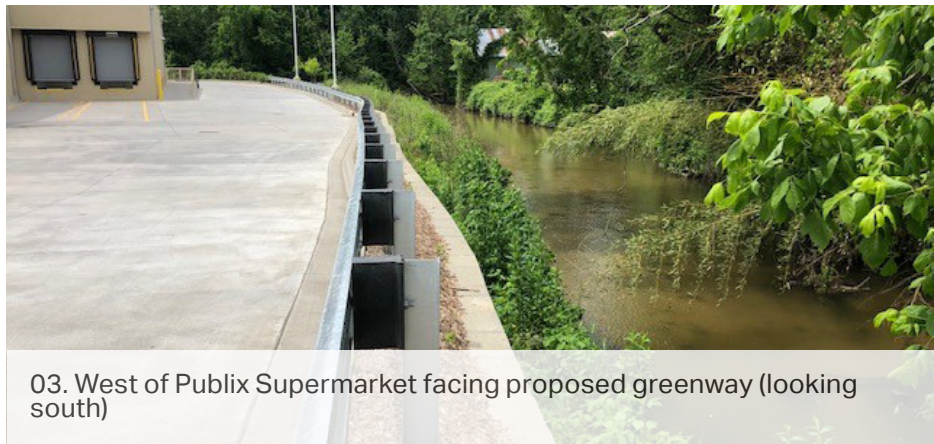
# Existing Conditions



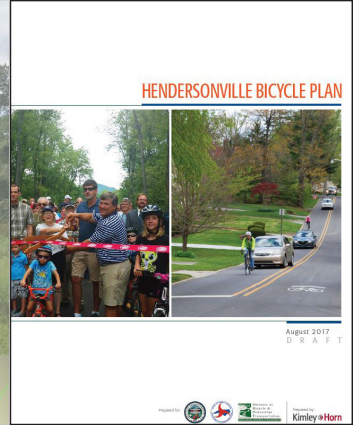
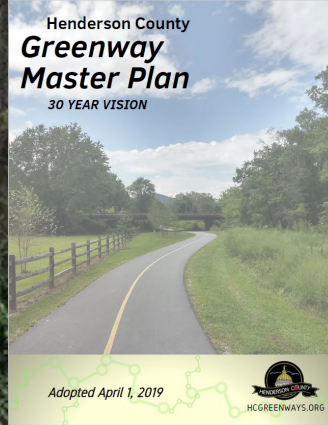
01. Southeast corner of Publix Supermarket parcel (looking south)



02. West of Publix Supermarket (looking west)



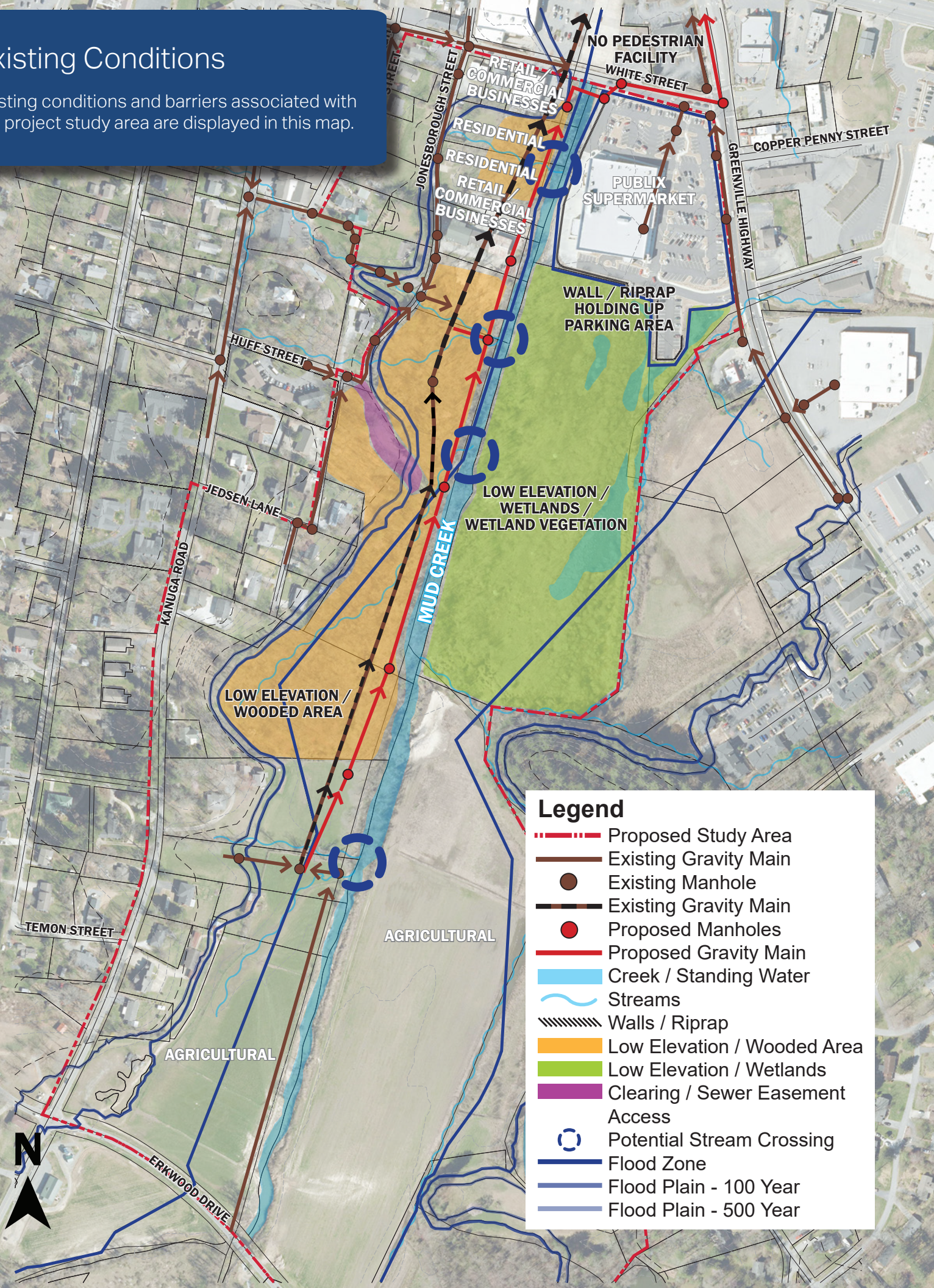
03. West of Publix Supermarket facing proposed greenway (looking south)



This report analyzes both natural and built environmental constraints. Other considerations that were analyzed included connections to existing and planned greenways adjacent to the study area limits and existing conditions. Also, site visits combined with a geographic information systems (GIS) analysis were performed to identify the following: community features, environmental resources, and demographic data. Additionally, existing plans were reviewed to acquire information on the study area's history.

# Existing Conditions

Existing conditions and barriers associated with the project study area are displayed in this map.



### Legend

- Proposed Study Area
- Existing Gravity Main
- Existing Manhole
- Existing Gravity Main
- Proposed Manholes
- Proposed Gravity Main
- Creek / Standing Water
- Streams
- Walls / Riprap
- Low Elevation / Wooded Area
- Low Elevation / Wetlands
- Clearing / Sewer Easement Access
- Potential Stream Crossing
- Flood Zone
- Flood Plain - 100 Year
- Flood Plain - 500 Year

## Opportunities and Barriers

### Opportunities and Barriers Considered:

Connections to destinations and points of interest

Connectivity across the region

Potential economic development opportunities

Environmental protection

Physical and topographic barriers

Constraints associated with the floodplain

Constraints associated with utilities

Impacts to landowners and to the natural and human environment

Challenges associated with right-of-way (ROW)

Funding opportunities

---

## Demographic Analysis

### Demographics Analyzed:

Population and age

Minority and race

Limited English Proficiency and Language Assistance

Income and housing

Car ownership

Commuting patterns

---

## Public Participation

Stakeholders were engaged during three events: Oversight Committee meetings, Property Owner Meetings, and a Virtual Public Meeting.

Online surveys were distributed to both the property owners and the general public. Overall, 6 responses were collected from property owners and 64 responses were collected from the general public. Survey responses were collected between November 2<sup>nd</sup>, 2020, and November 30<sup>th</sup>, 2020.



### Mud Creek Greenway

**83%** of **property owners** would support an attached multi-use path on Jonesborough Street.

**86%** of the **general public** believes that the Mud Creek Greenway is a good alternative for off-road facilities and bicycle and pedestrian connections.

## MUD CREEK GREENWAY FEASIBILITY STUDY

AECOM

**Property Owner Informational Meeting**

**Background**

The Mud Creek Greenway will provide north-south travel between White Street and Erkwood Drive. The proposed greenway will provide an option to safely support cyclist and pedestrian mobility adjacent to Mud Creek. This greenway will promote better health, encourage environmental stewardship and educational opportunities, and support recreational activities for walking, hiking, and bicycling.

**Preliminary Greenway Recommendations**

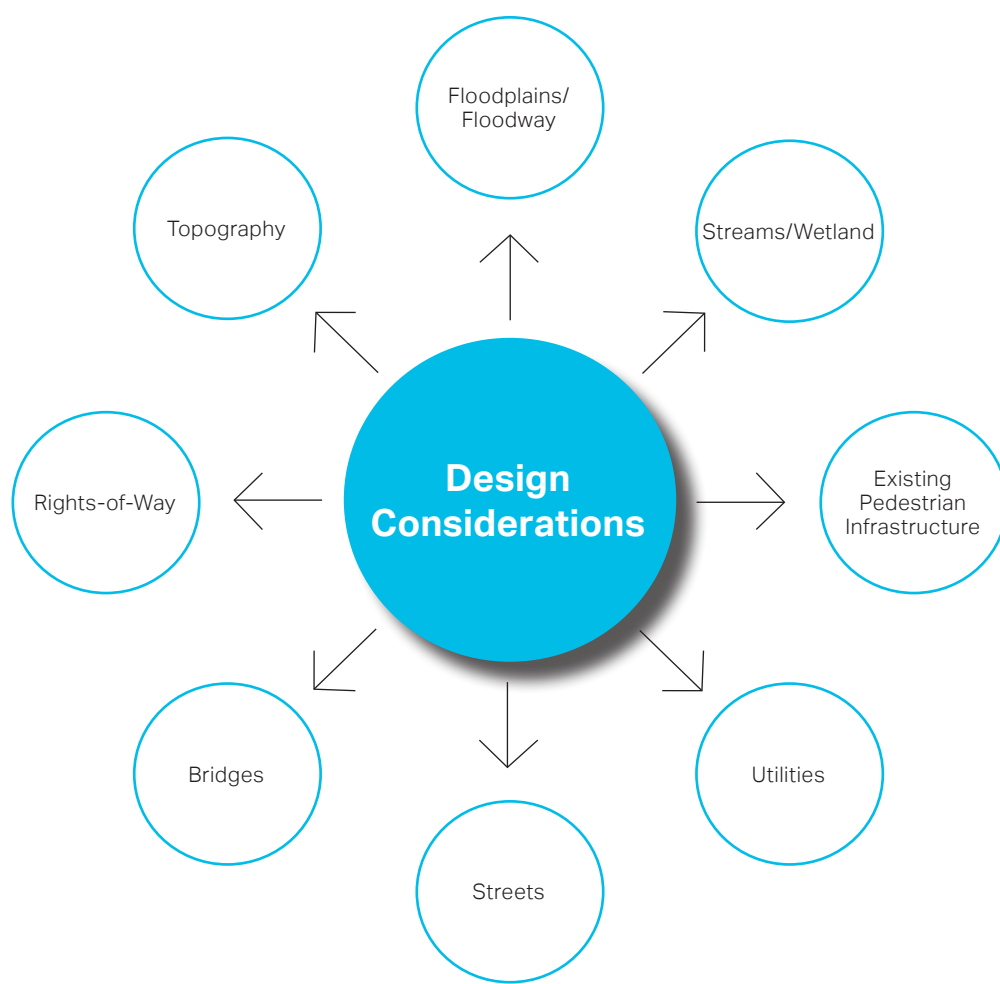
Following a demographic analysis and environmental screening of the study area, three conceptual trail alignments and five trailheads for the Mud Creek Greenway were defined based on the area's opportunities, constraints, and design criteria.

**Trail Alternatives**

1. Jonesborough shared-use path + greenway
1. Mud Creek sewer easement path
2. Educational wetland boardwalk

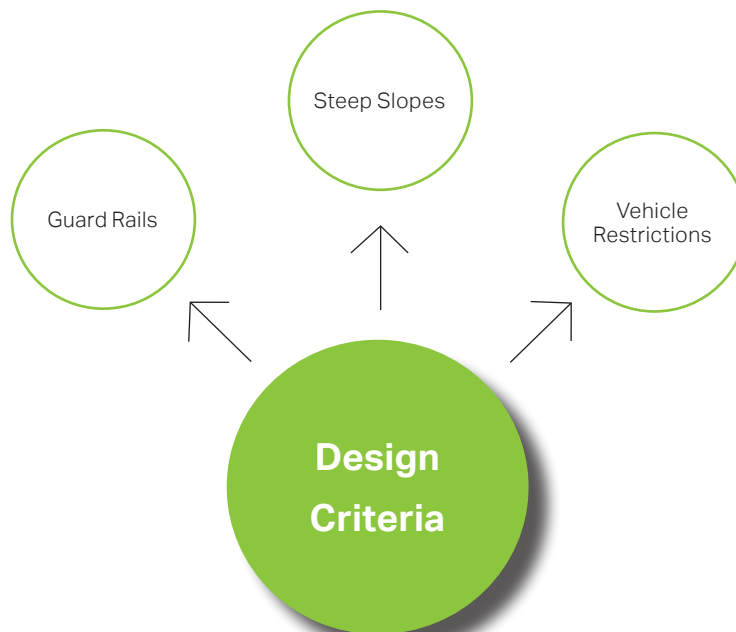
**Trailheads**

1. White Street parking lot over Mud Creek
2. Jonesborough sewer easement access
3. Corner of Kanuga Road and Erkwood Drive
4. Agricultural field southeast of Mud Creek
5. Publix



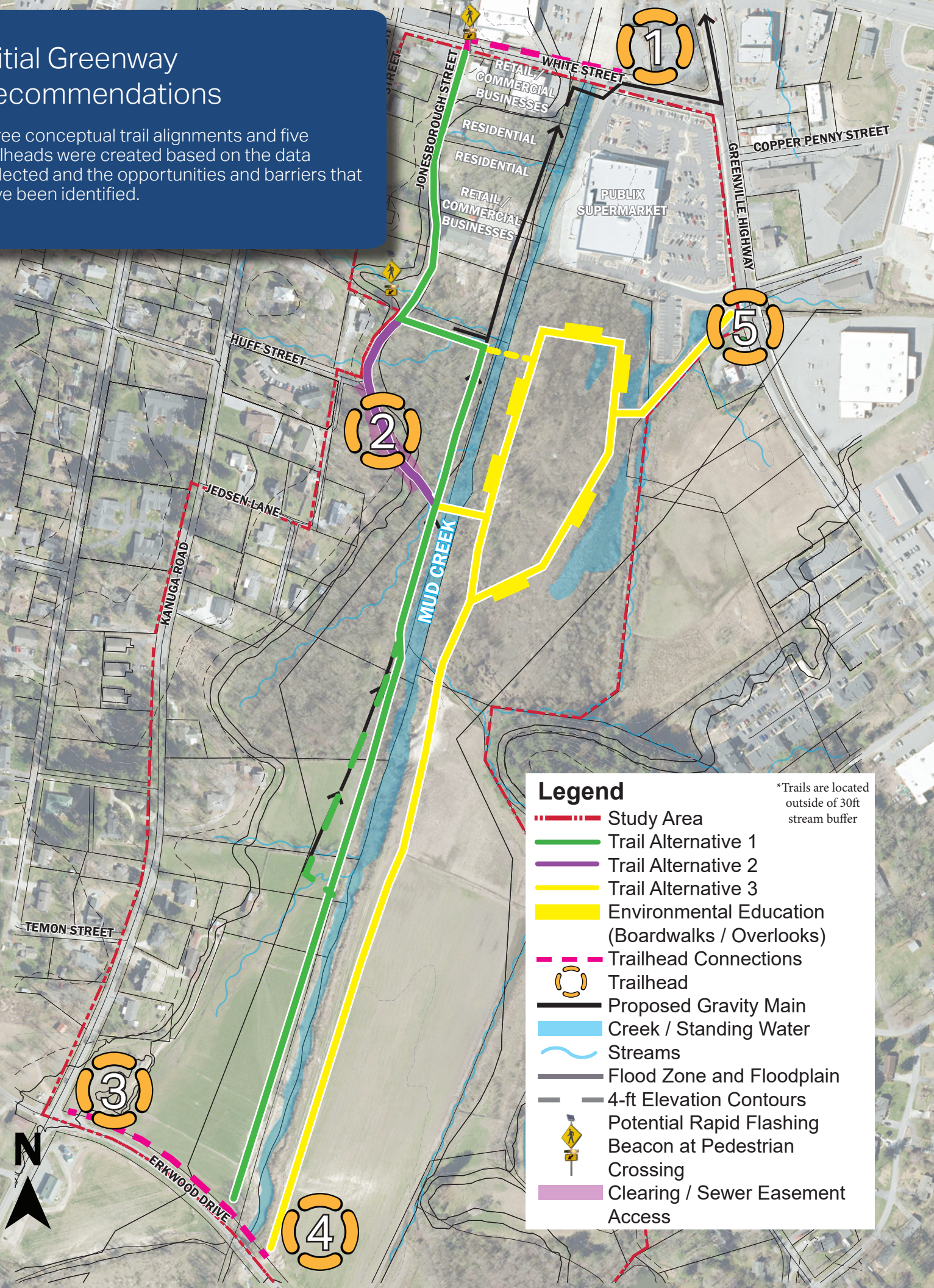
## Recommendations

The alternatives for the Mud Creek Greenway were recommended after careful review of design considerations (human and natural environment) and design criteria. Specifics for each are provided above and below, respectively.



# Initial Greenway Recommendations

Three conceptual trail alignments and five trailheads were created based on the data collected and the opportunities and barriers that have been identified.



## Legend

- - - - Study Area
- Trail Alternative 1
- Trail Alternative 2
- Trail Alternative 3
- Environmental Education (Boardwalks / Overlooks)
- - - - Trailhead Connections
- Trailhead
- Proposed Gravity Main
- Creek / Standing Water
- ~ Streams
- Flood Zone and Floodplain
- 4-ft Elevation Contours
- ⚠  
Potential Rapid Flashing Beacon at Pedestrian Crossing
- Clearing / Sewer Easement Access

\*Trails are located outside of 30ft stream buffer





# Preferred Mud Creek Greenway Alternative

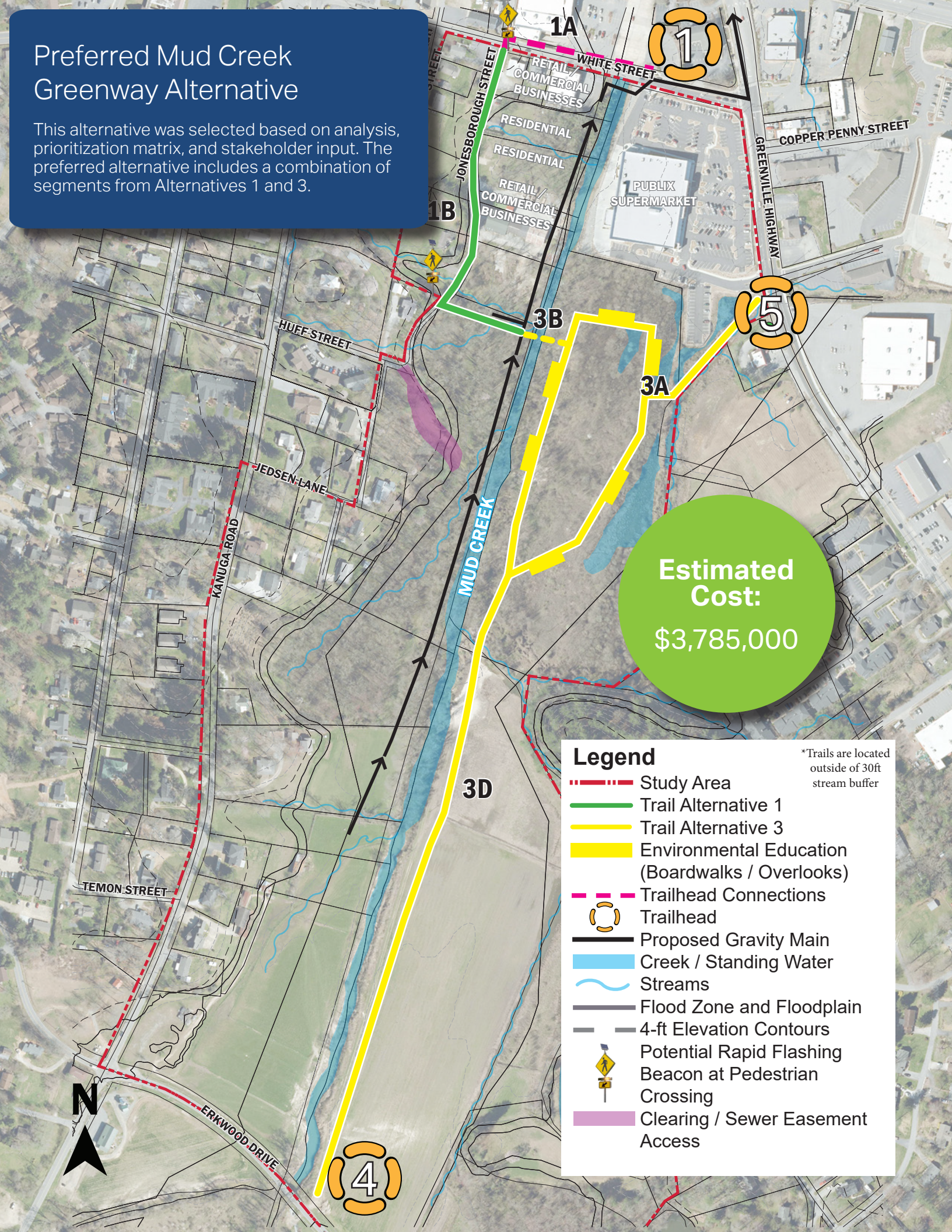
This alternative was selected based on analysis, prioritization matrix, and stakeholder input. The preferred alternative includes a combination of segments from Alternatives 1 and 3.

**Estimated Cost:**  
\$3,785,000

**Legend**

- Study Area
- Trail Alternative 1
- Trail Alternative 3
- Environmental Education (Boardwalks / Overlooks)
- Trailhead Connections
- Trailhead
- Proposed Gravity Main
- Creek / Standing Water
- Streams
- Flood Zone and Floodplain
- 4-ft Elevation Contours
- Potential Rapid Flashing Beacon at Pedestrian Crossing
- Clearing / Sewer Easement Access

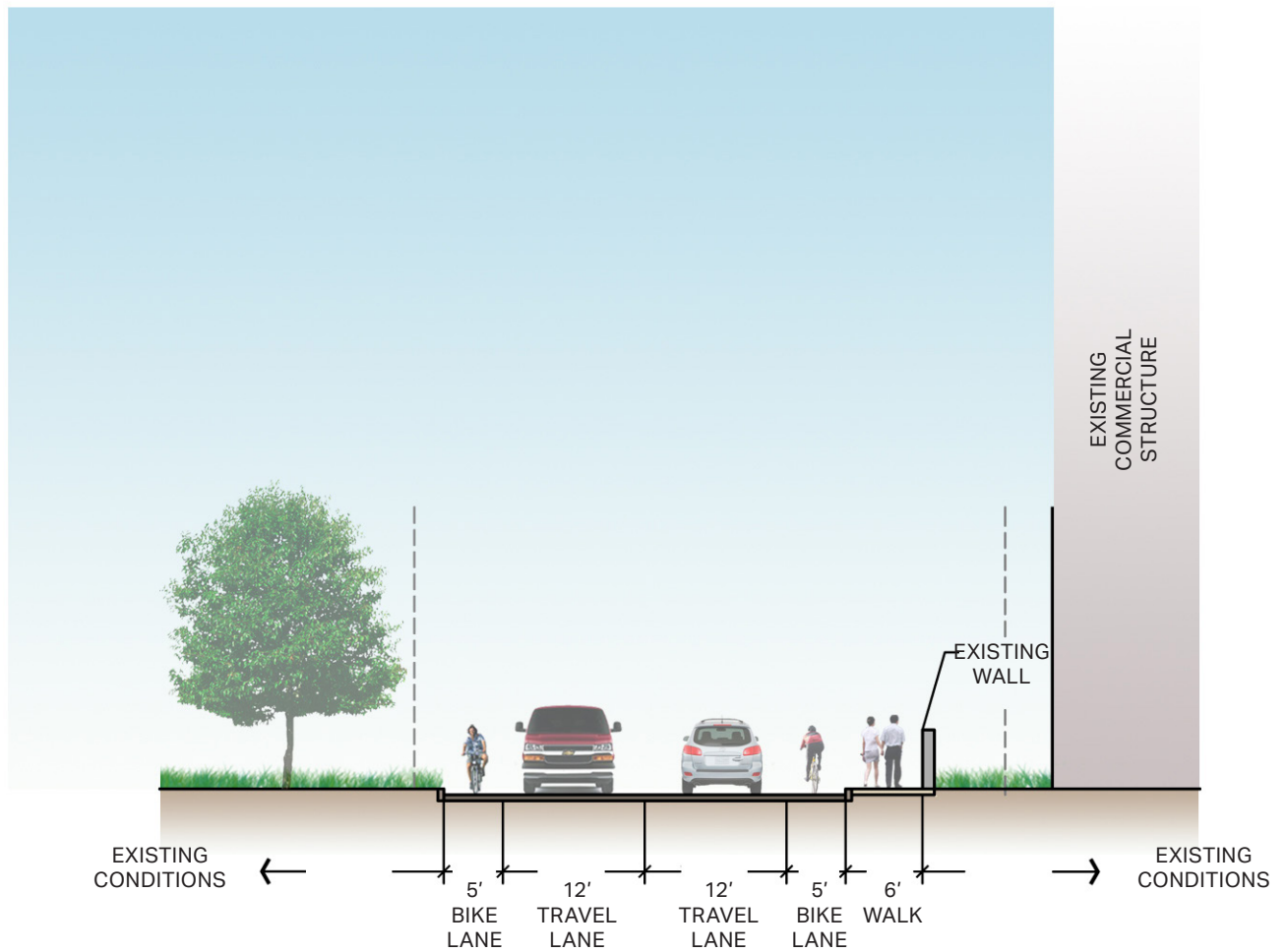
\*Trails are located outside of 30ft stream buffer



# Cross Sections

## White Street Section

2 - 5' Bike lanes, 6' sidewalk, and crosswalks to 12' multi-use path on Jonesborough Street

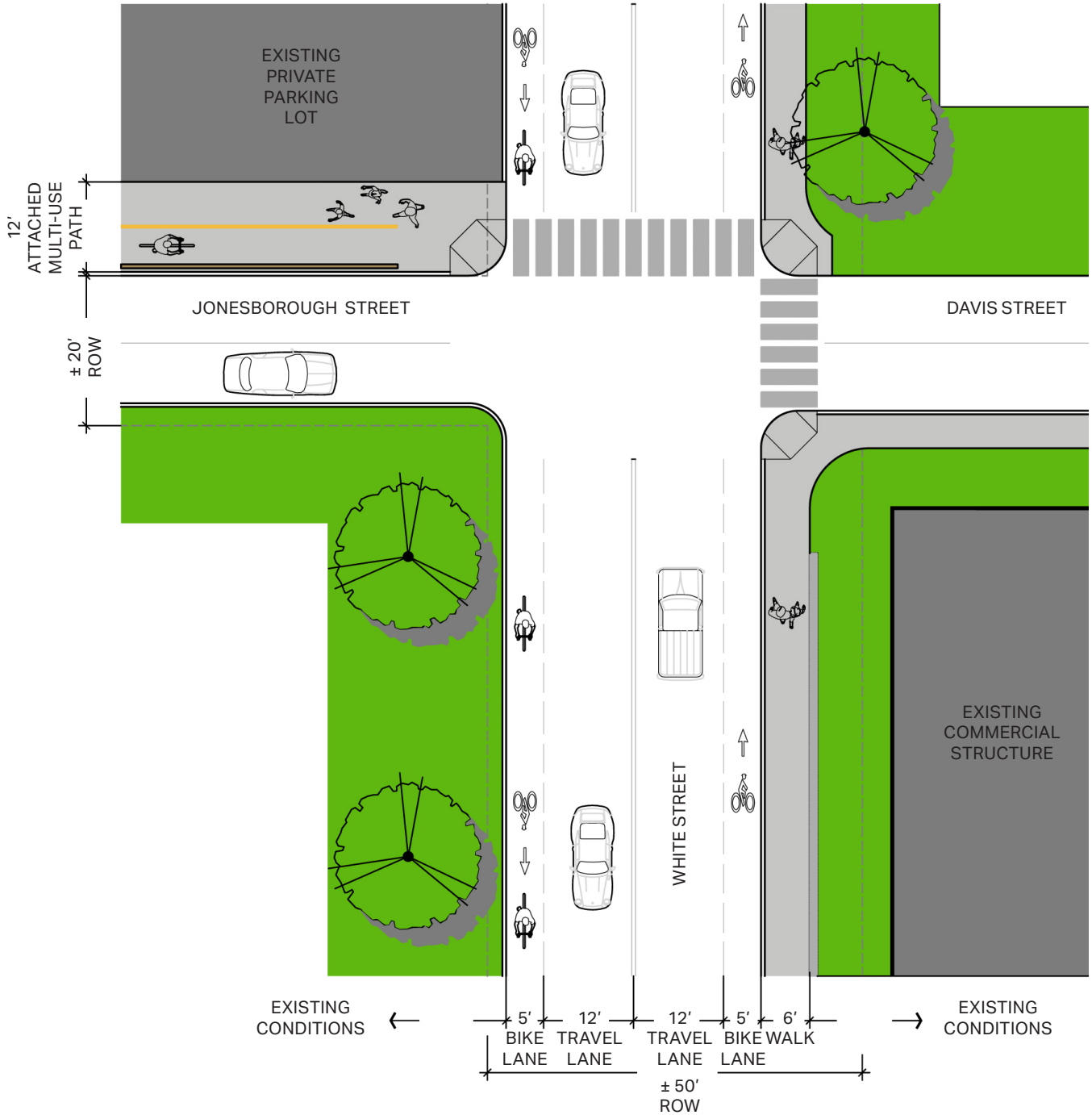


*Not to Scale*

# Cross Sections

## White Street Section

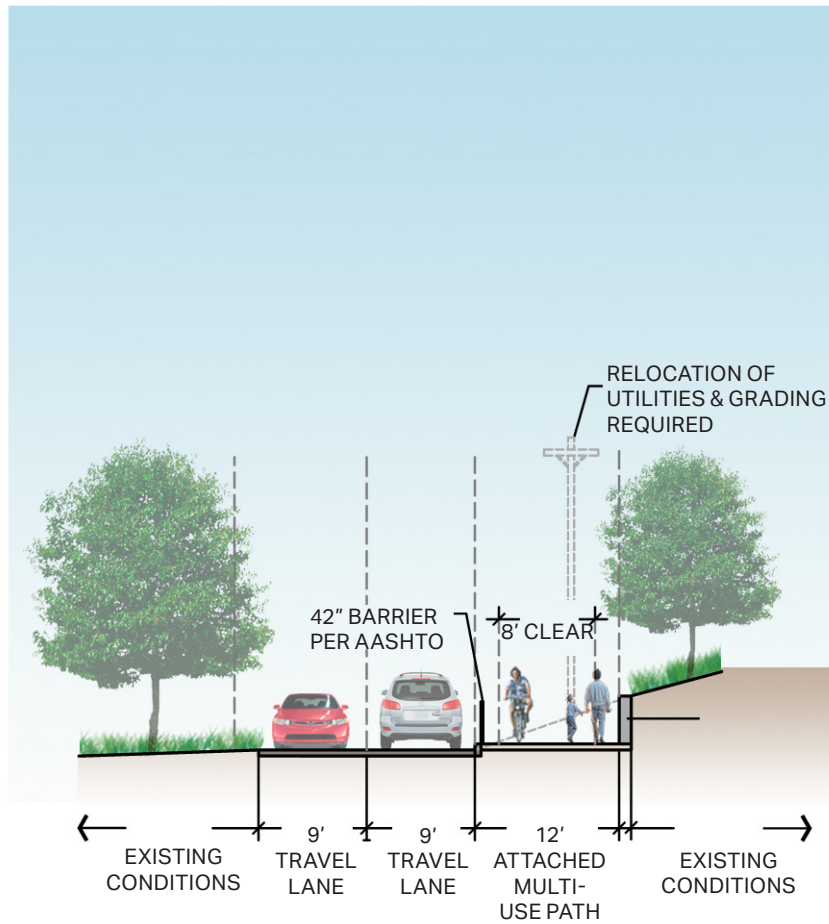
2 - 5' Bike lanes, 6' sidewalk, and crosswalks to 12' multi-use path on Jonesborough Street



Not to Scale

# Cross Sections

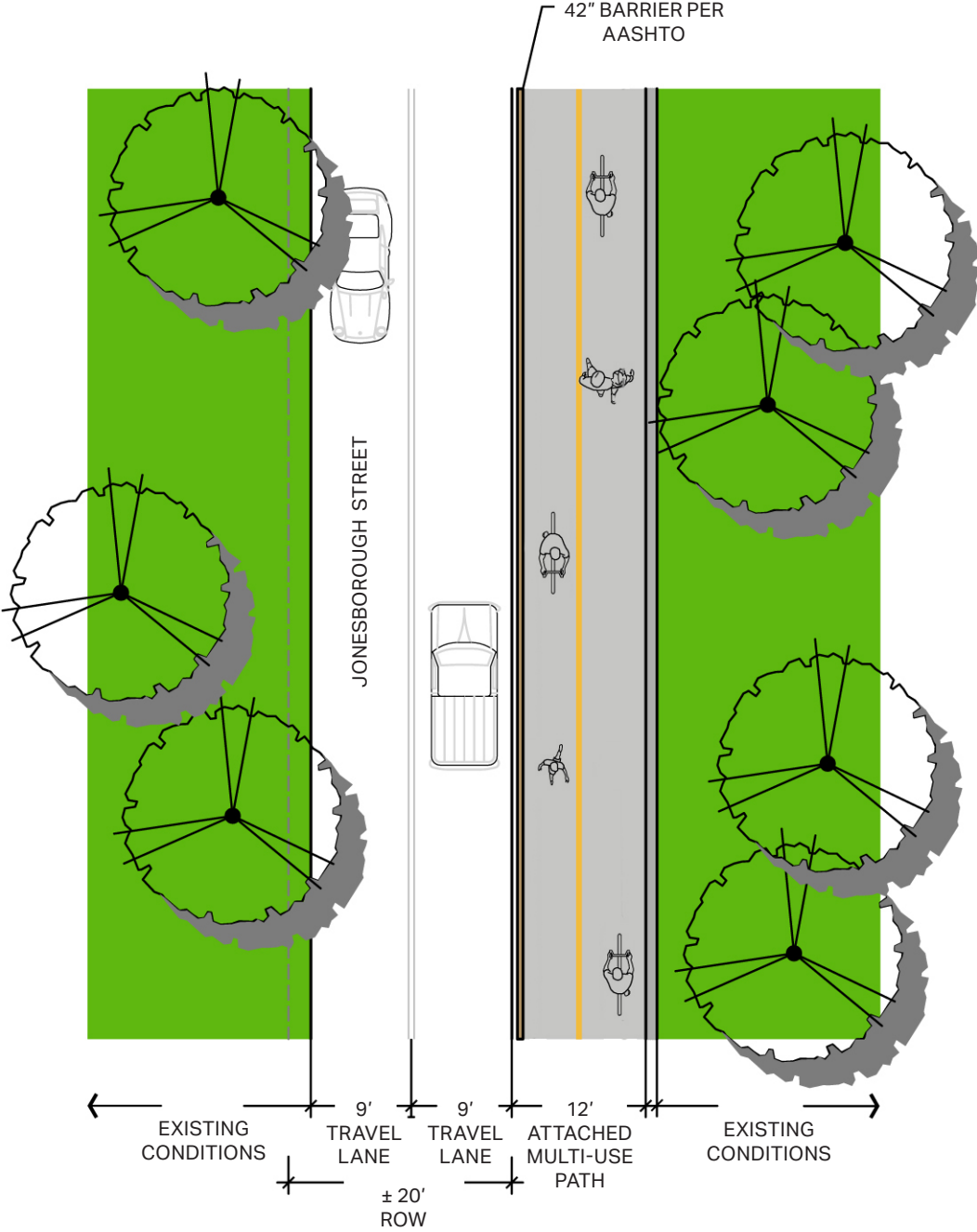
## Jonesborough Street Section 12' Attached multi-use path



*Not to Scale*

# Cross Sections

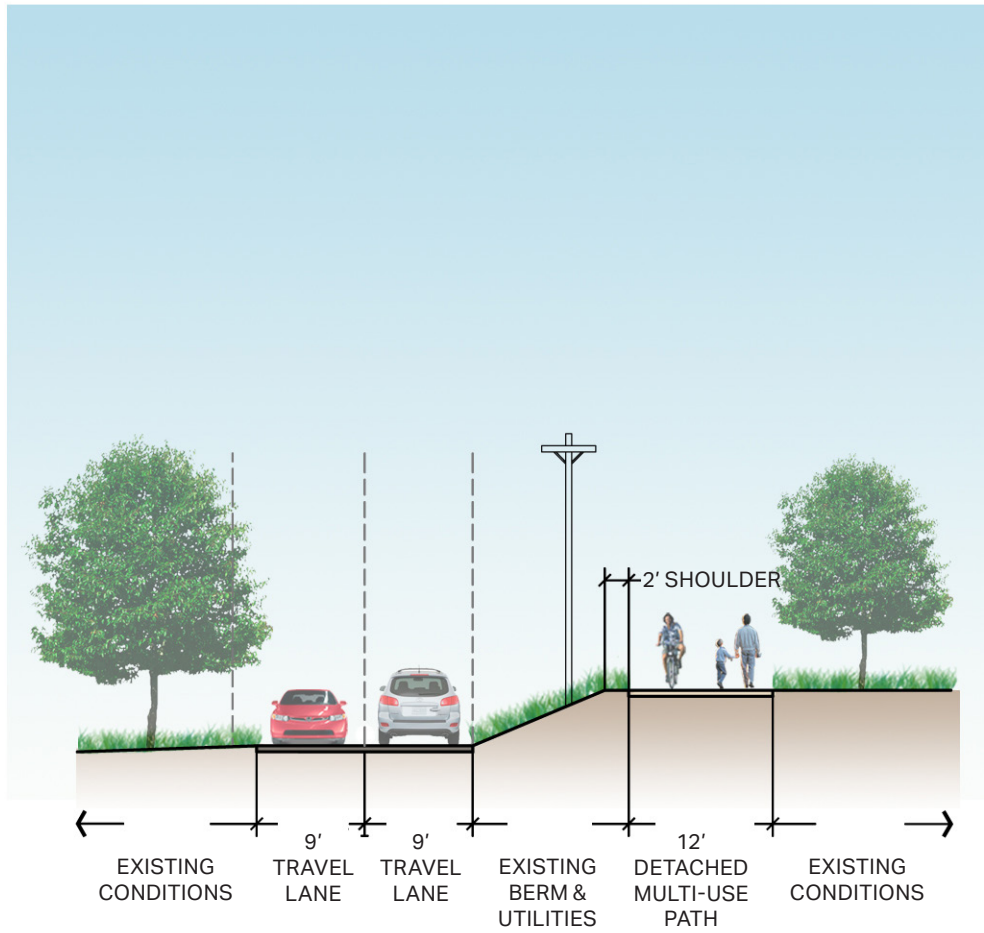
## Jonesborough Street Section 12' Attached multi-use path



Not to Scale

# Cross Sections

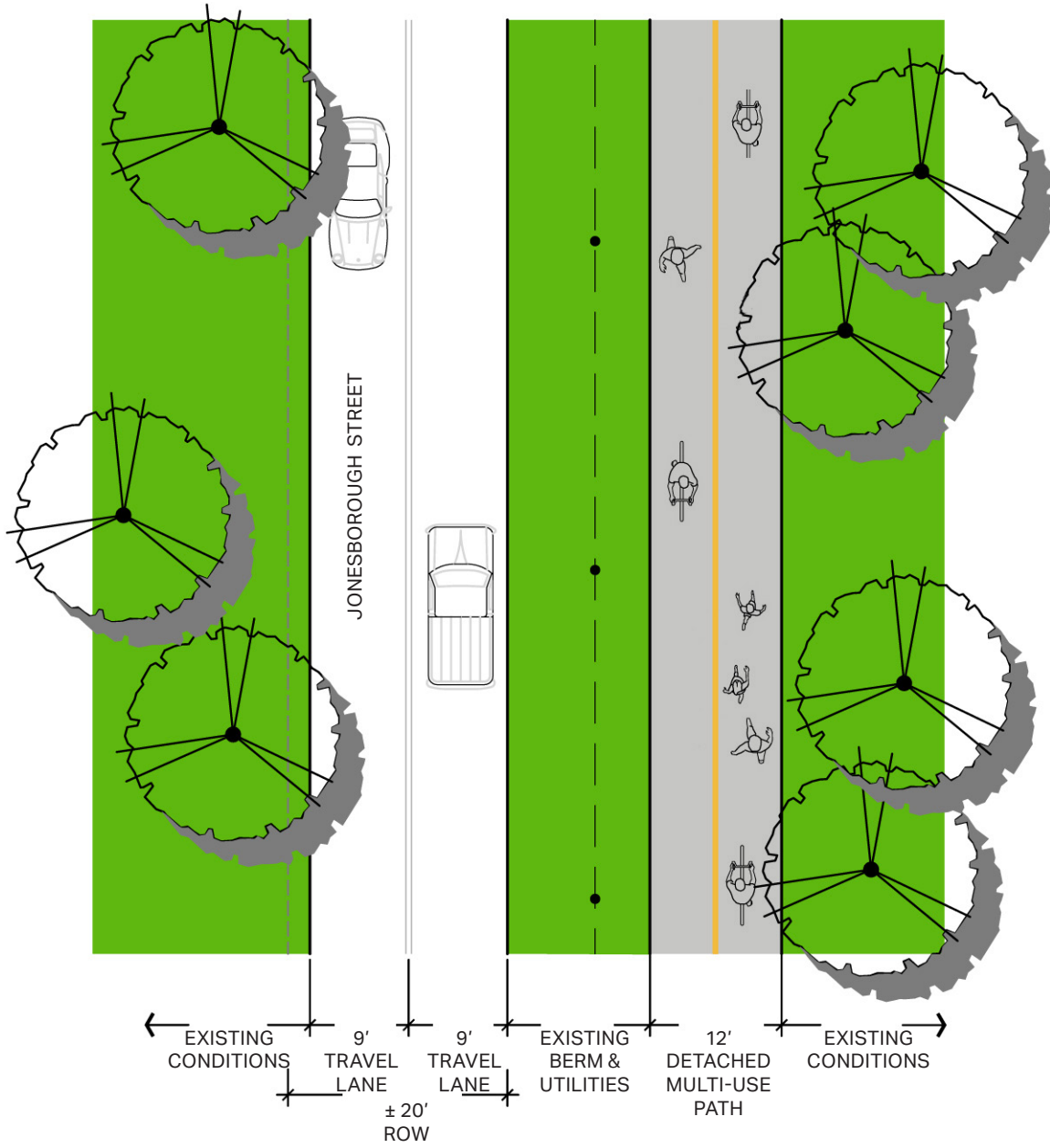
## Jonesborough Street Section 12' Detached multi-use path



*Not to Scale*

# Cross Sections

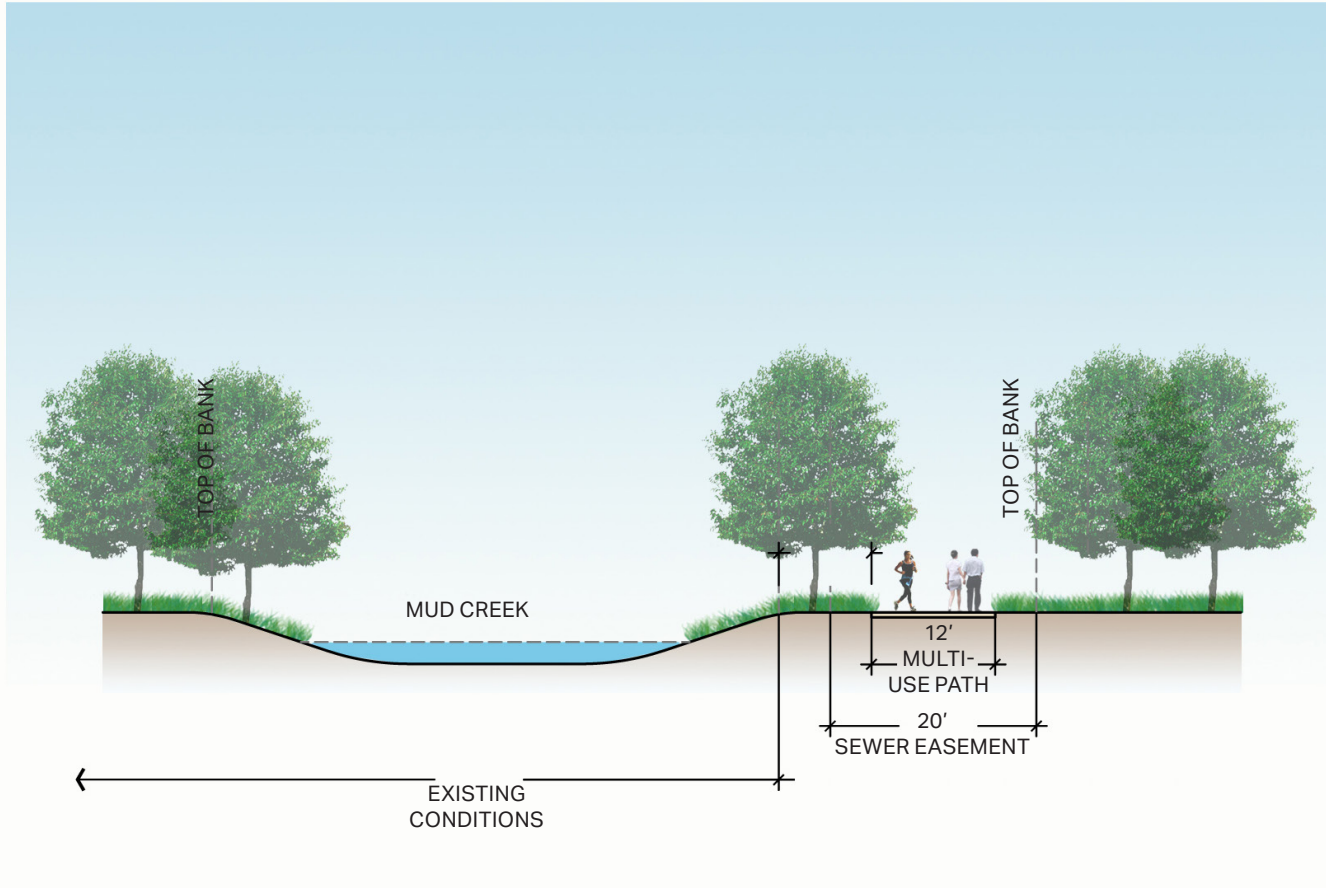
## Jonesborough Street Section 12' Detached multi-use path



Not to Scale

# Cross Sections

## Mud Creek Section 12' Multi-use path



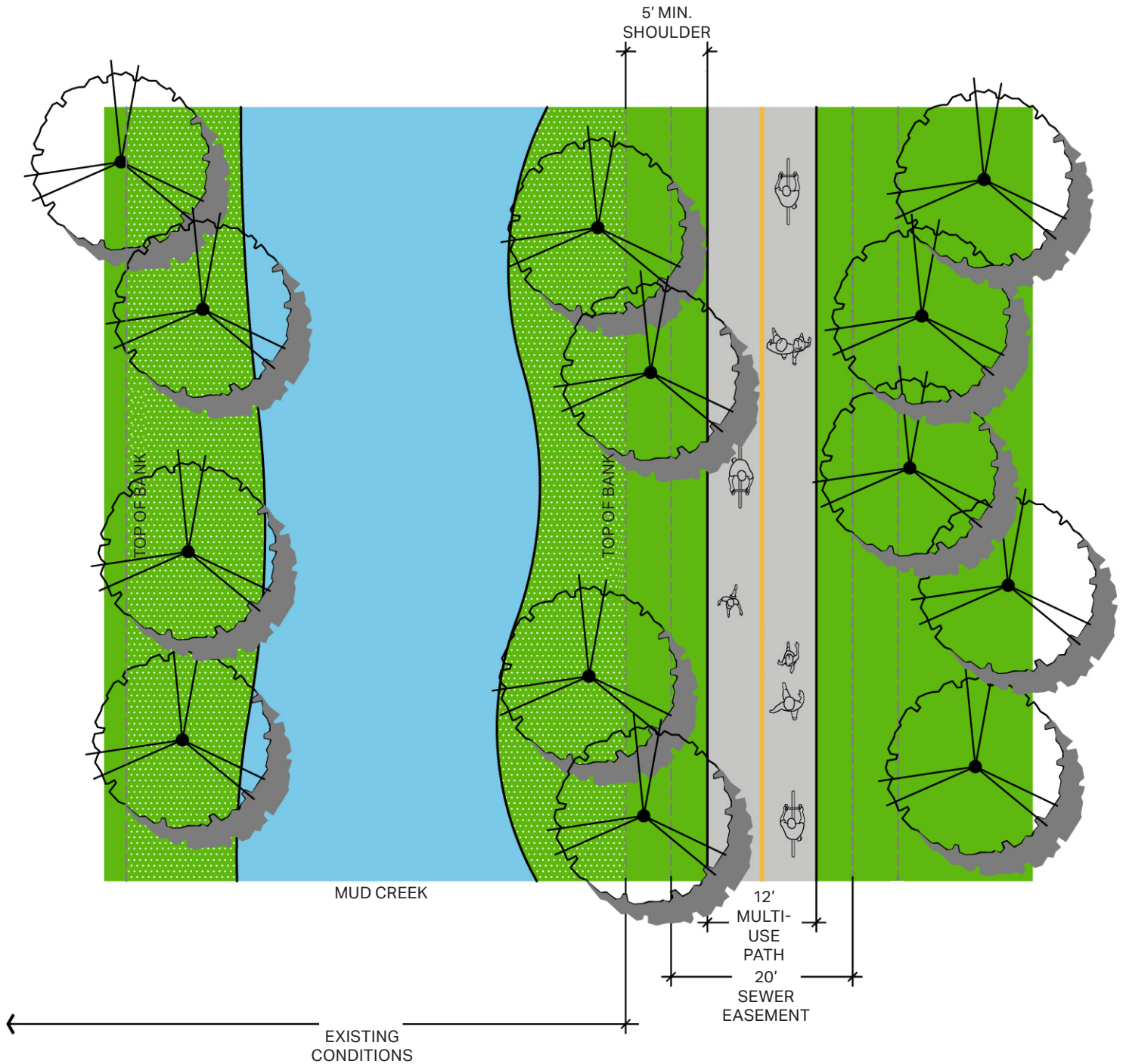
*Final design should place the trail 30 ft from the stream (outside of 30 ft stream buffer) or permits will be required.*

*Not to Scale*



# Cross Sections

## Mud Creek Section 12' Multi-use path

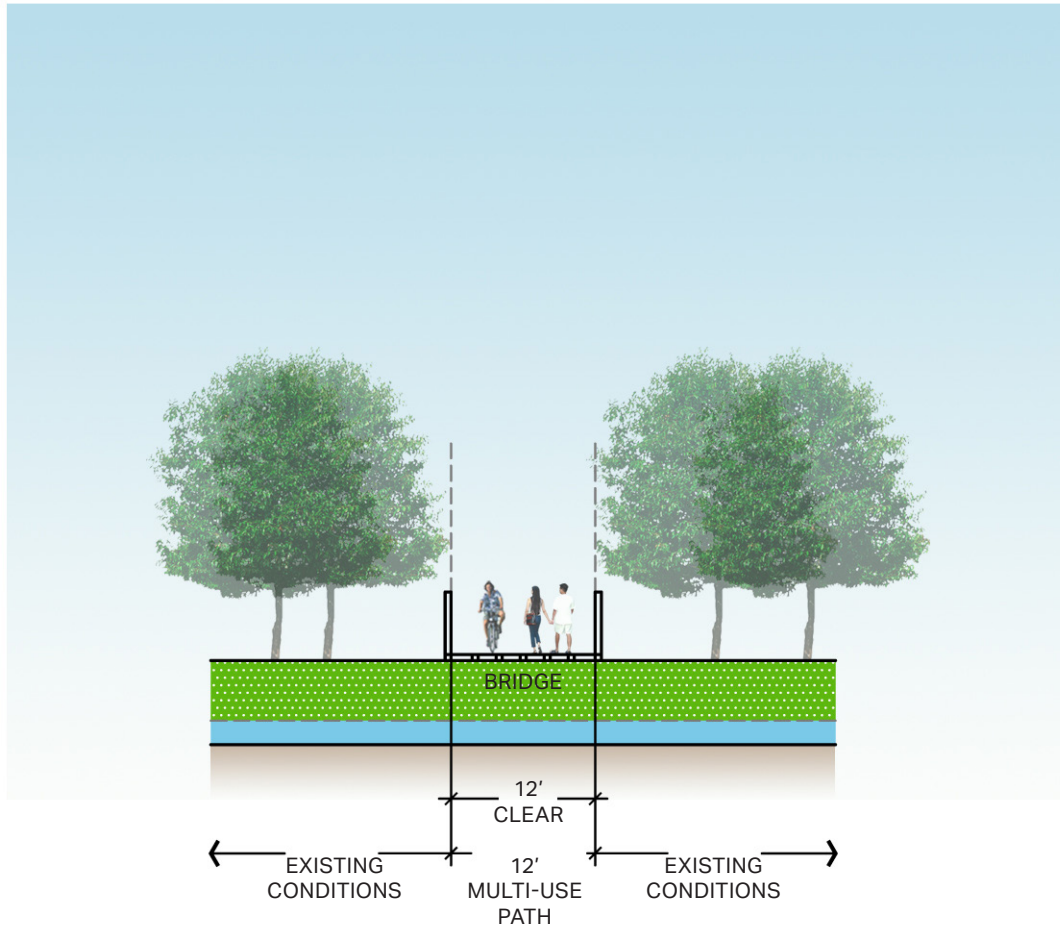


*Final design should place the trail 30 ft from the stream (outside of 30 ft stream buffer) or permits will be required.*

*Not to Scale*

# Cross Sections

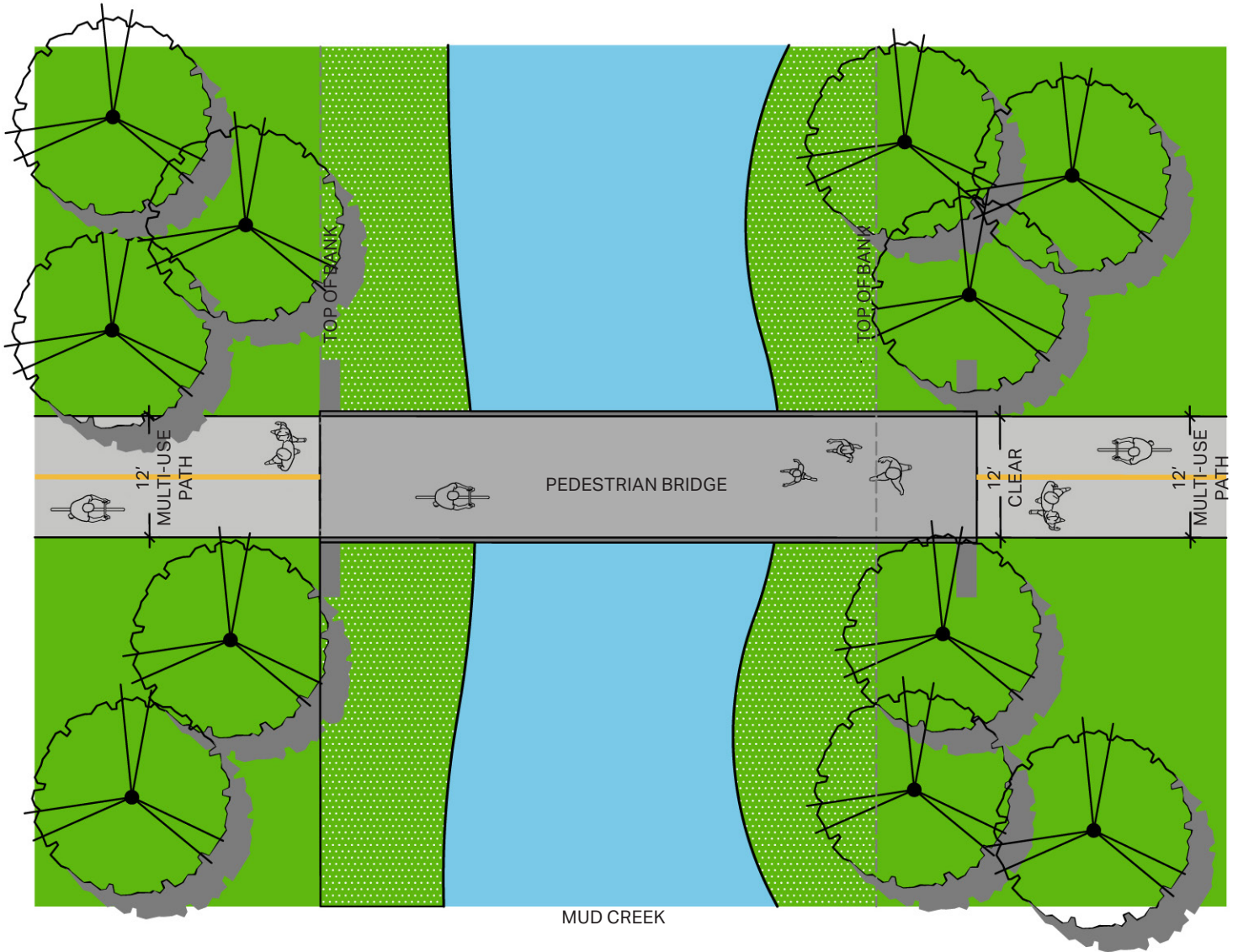
## Mud Creek Section ± 12' Pedestrian bridge



*Not to Scale*

# Cross Sections

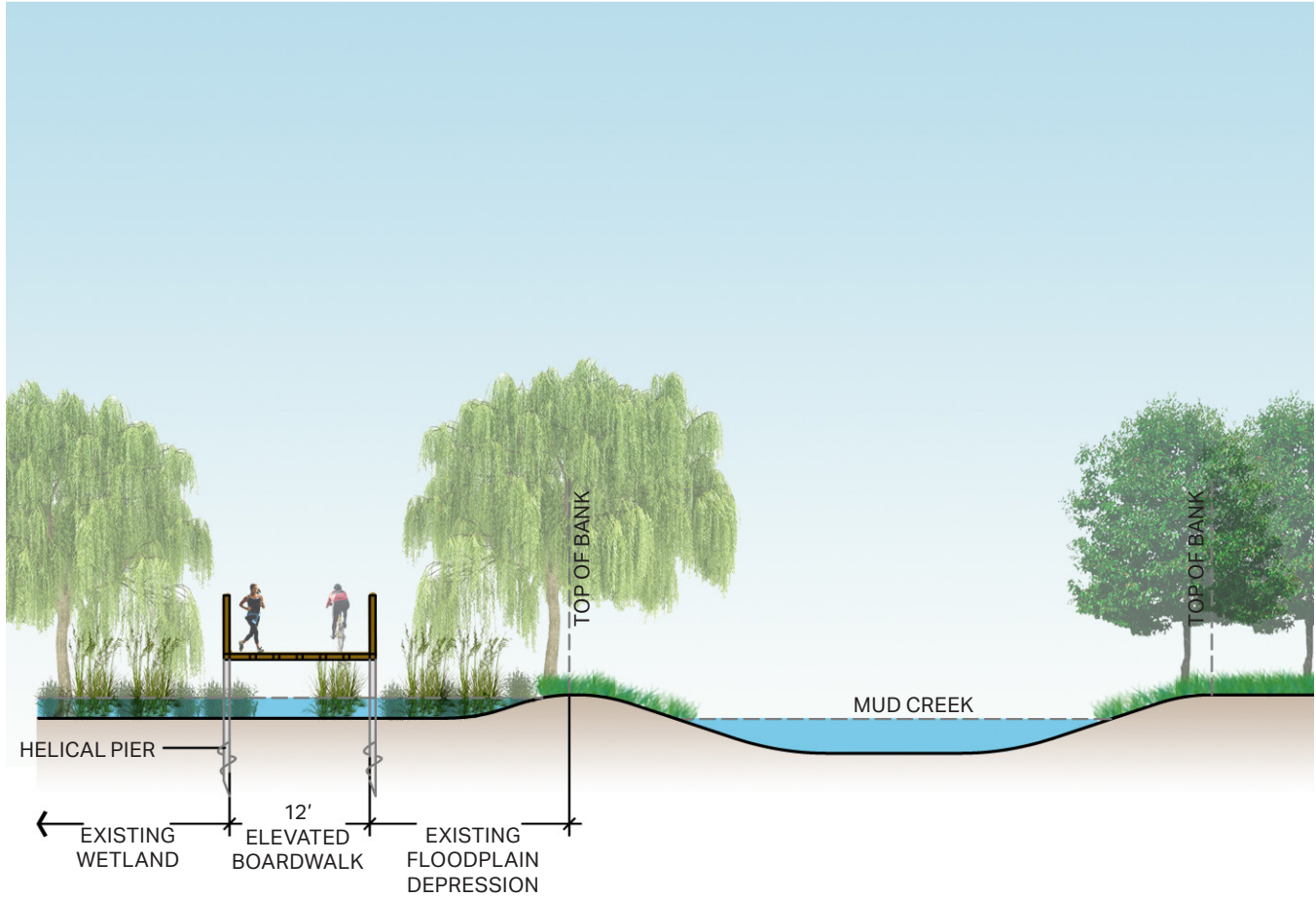
## Mud Creek Section ± 12' Pedestrian bridge



*Not to Scale*

# Cross Sections

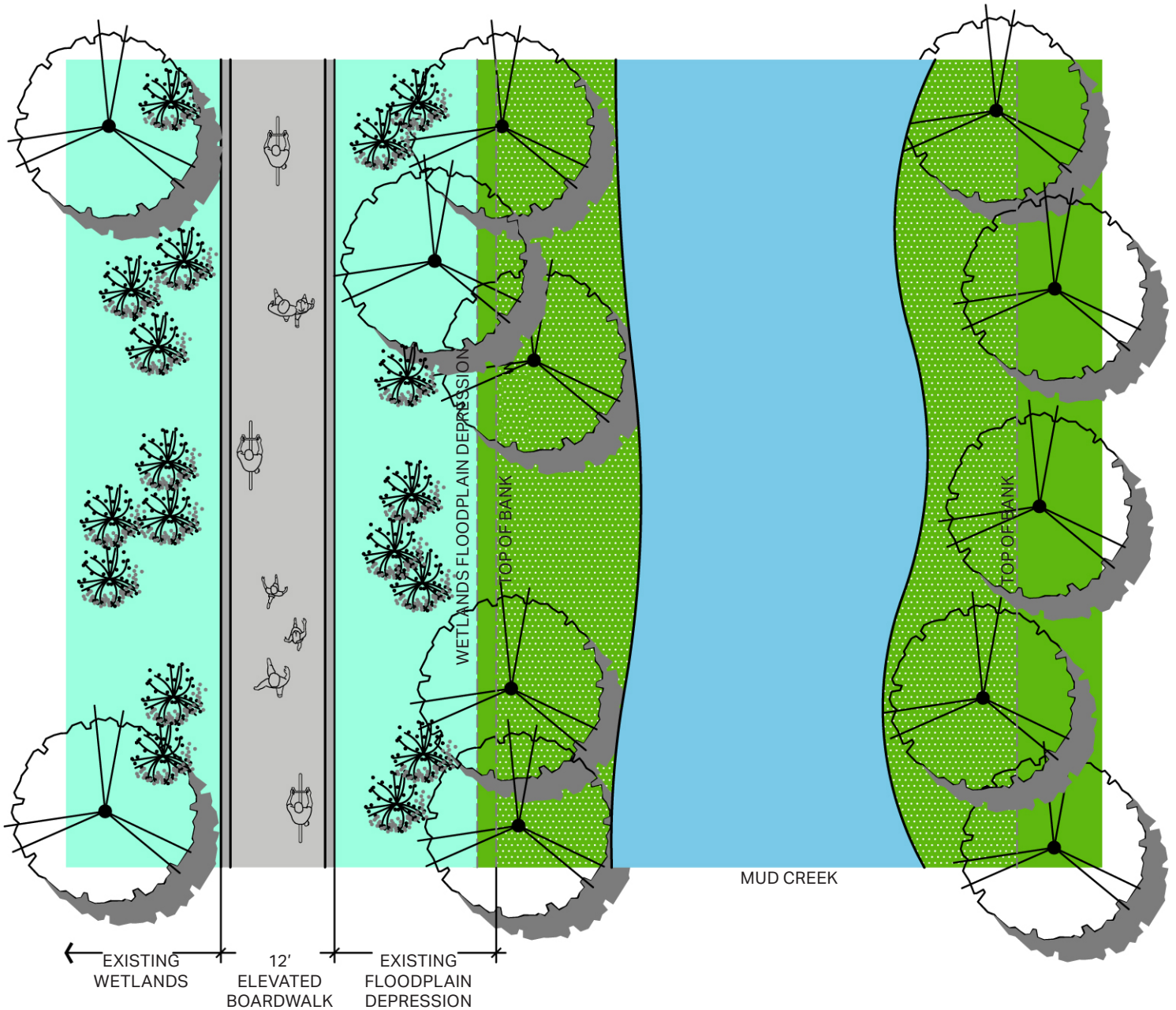
## Mud Creek Section 12' Elevated boardwalk



*Not to Scale*

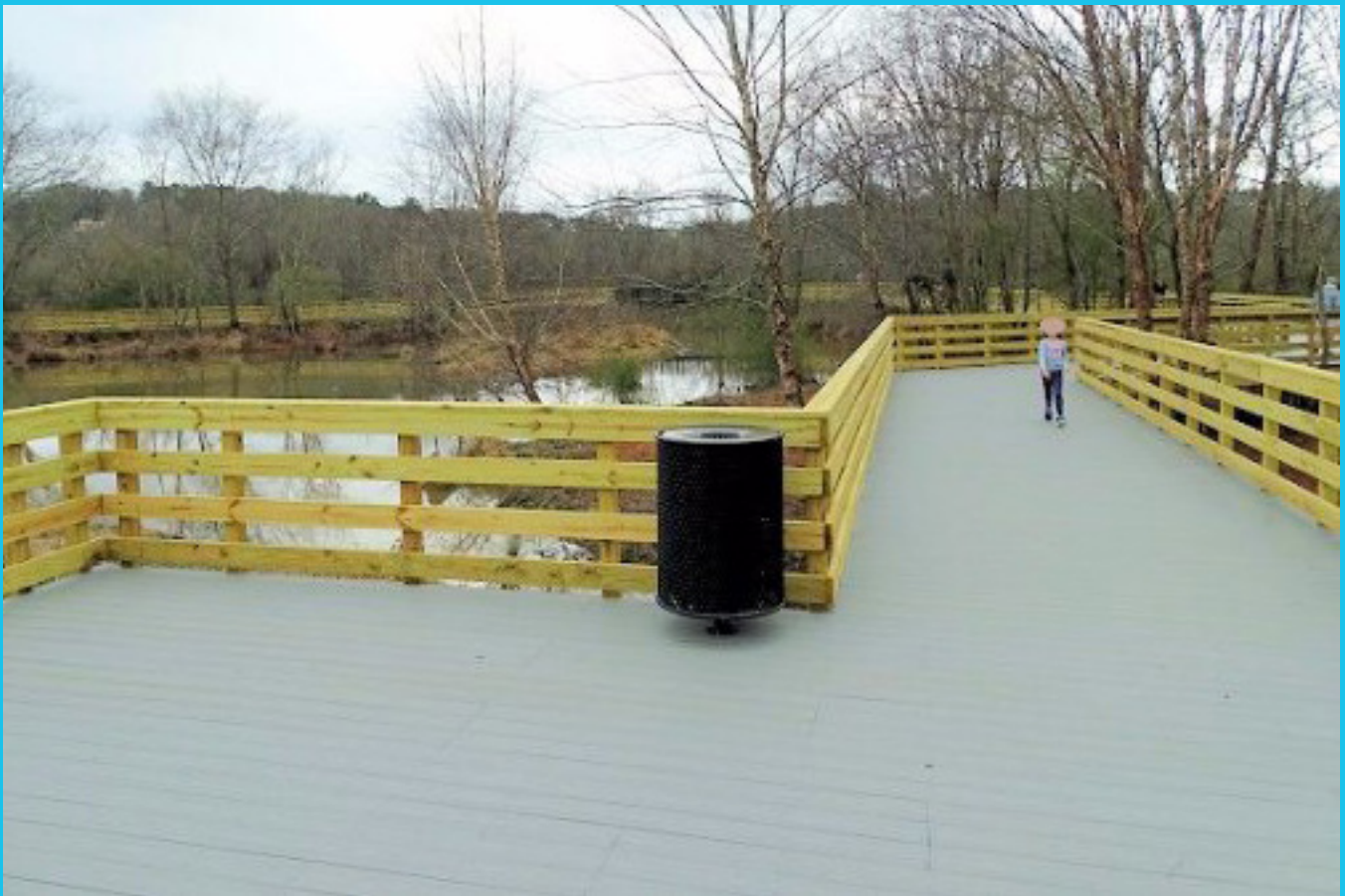
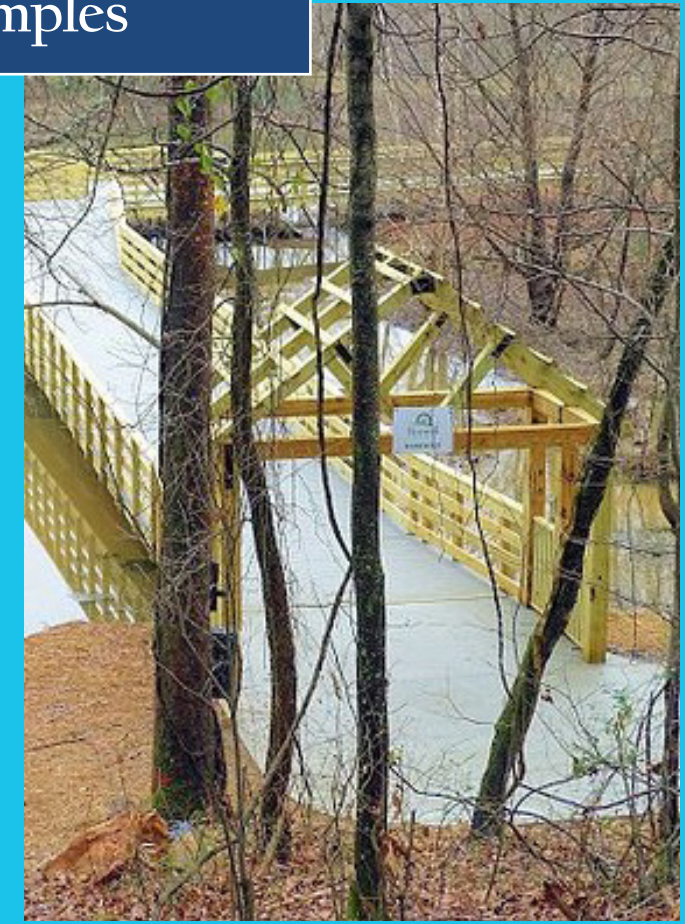
# Cross Sections

## Mud Creek Section 12' Elevated boardwalk



Not to Scale

# Elevated Boardwalk Examples





## MUD CREEK GREENWAY TRAILHEAD CONCEPTUAL RENDERING

**DISCLAIMER:** THIS DISPLAY IS FOR CONCEPTUAL RENDERING ONLY, SUBJECT TO CHANGE BASED ON FINAL SURVEY AND DESIGN. USERS OF THIS INFORMATION SHOULD REVIEW OR CONSULT THE PRIMARY INFORMATION AND DATA SOURCES TO ASCERTAIN THE USABILITY OF THE INFORMATION.

**AECOM**



## MUD CREEK GREENWAY MULTI-MODAL PATH CONCEPTUAL RENDERING I - Jonesborough Street

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**AECOM**

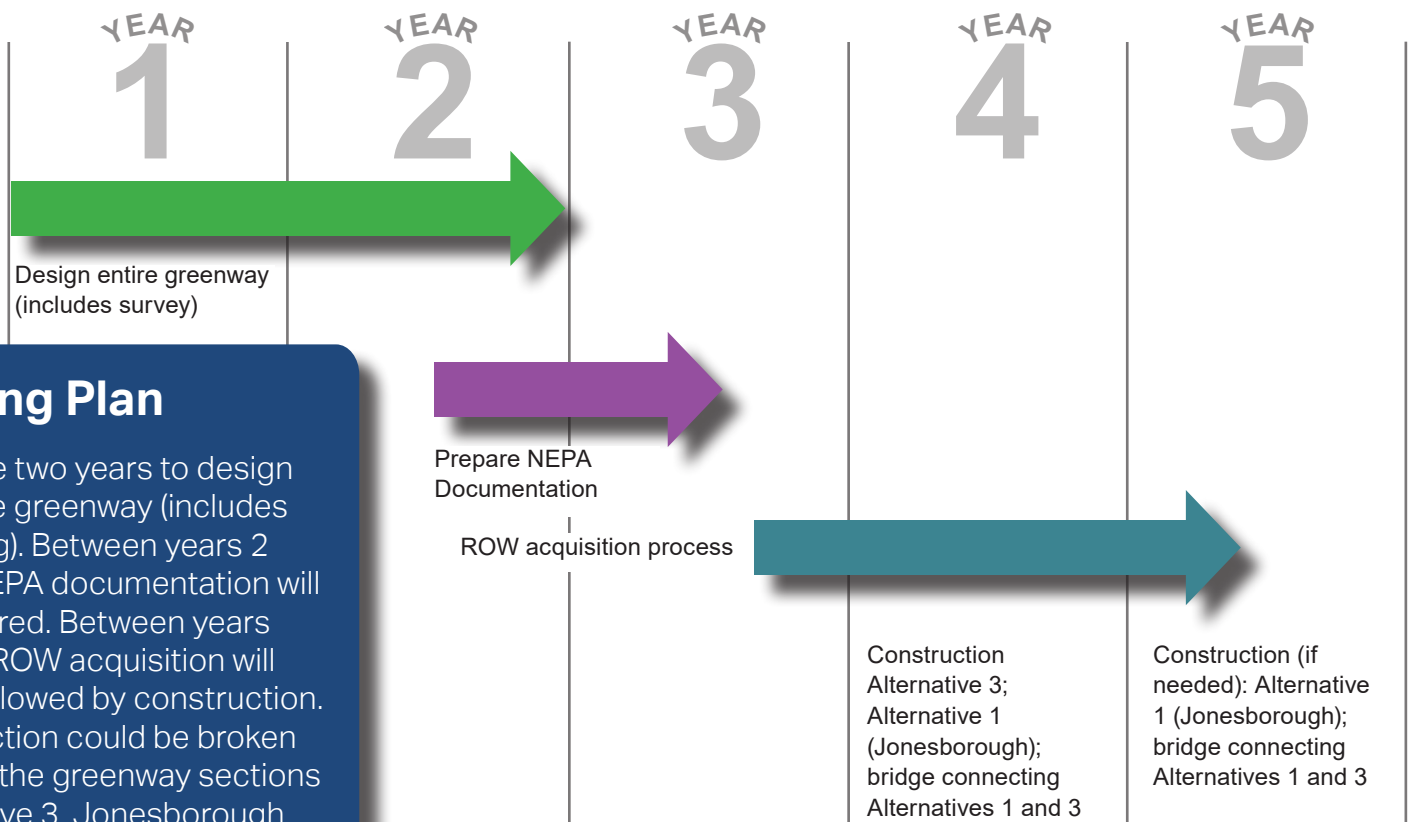




## MUD CREEK GREENWAY MULTI-MODAL PATH CONCEPTUAL RENDERING II

**DISCLAIMER:** THIS DISPLAY IS FOR CONCEPTUAL RENDERING ONLY, SUBJECT TO CHANGE BASED ON FINAL SURVEY AND DESIGN. USERS OF THIS INFORMATION SHOULD REVIEW OR CONSULT THE PRIMARY INFORMATION AND DATA SOURCES TO ASCERTAIN THE USABILITY OF THE INFORMATION.

**AECOM**



## Phasing Plan

It will take two years to design the entire greenway (includes surveying). Between years 2 and 3, NEPA documentation will be prepared. Between years 3 and 5, ROW acquisition will begin, followed by construction. Construction could be broken down by the greenway sections (Alternative 3, Jonesborough Street, and the bridge over Mud Creek) between the two alternatives.

## Potential Funding Sources

- Surface Transportation Block Grant
- Transportation Alternatives Program (TAP)
- Henderson County Tourism Development Authority (TDA)

## Land Acquisition Strategies

- Fee Simple
- Option
- Right of First Refusal
- Easement
- Remainder Interest/Life Estate
- Donation
- Purchase/Lease Back

## Coordination Opportunities

- Blue Ridge Bicycle Club
- Carolina Thread Trail
- City of Hendersonville
- Conserving Carolina
- North Carolina Department of Environmental Quality (NC DEQ)
- North Carolina Department of Transportation
- RiverLink
- MountainTrue
- French Broad River Metropolitan Organization
- United States Army Corps of Engineers (USACE)