



North Carolina  
Department of  
Transportation

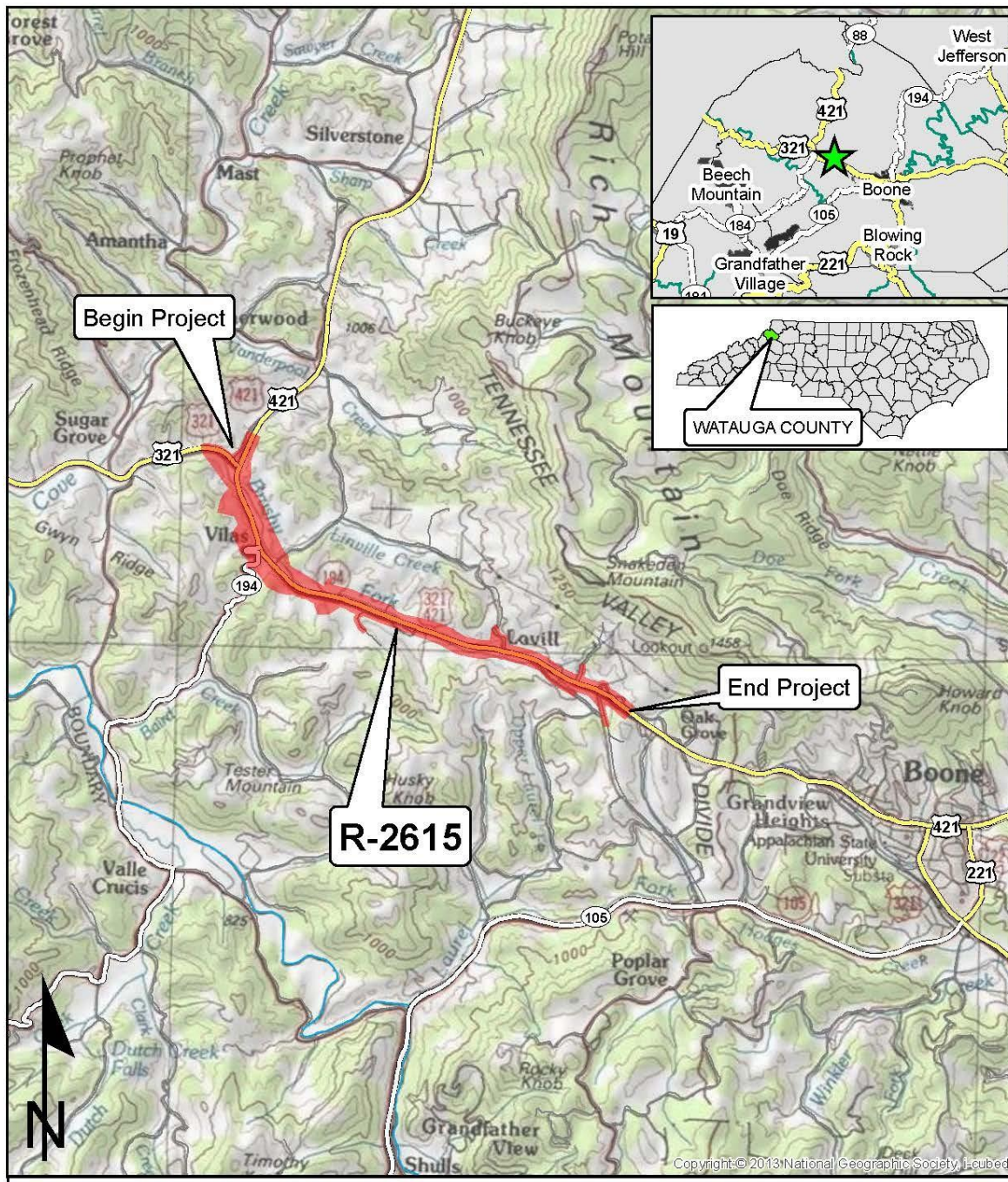
R-2615  
US 421/US 321  
Improvements - Update

Watauga County, NC

# Agenda

- ▶ Introductions
- ▶ Project Description and Location
- ▶ Existing Conditions
- ▶ Project Schedule
- ▶ Project Cost Estimate
- ▶ Adjacent Projects
- ▶ Work Completed in 2018 to 2023
- ▶ Current Technical Reports
- ▶ Natural and Human Environment
- ▶ Proposed Typical Sections
- ▶ Proposed Best-Fit Alignment
- ▶ Avoidance and Minimization
- ▶ Questions and Comments





R-2615 - Improve US 321/US 421 from its junction near Vilas to SR 1107 (NC 105 Bypass) just west of Boone, in Watauga County

Federally Funded

NEPA Categorical Exclusion Type III

Design Year - 2050





# Existing Conditions

- ▶ Approximately 3.5 miles
- ▶ 2-lane with shoulders
- ▶ Other Principal Arterial
- ▶ 60-foot right-of-way (variable)
- ▶ Posted 45 mph to 60 mph
- ▶ Mountainous
- ▶ Follows Brushy Fork Creek
- ▶ Rural
- ▶ Development along road

# Project Schedule

- ▶ Environmental Document: Spring 2027
- ▶ Right-of-Way: TBD
- ▶ Let: 2040+



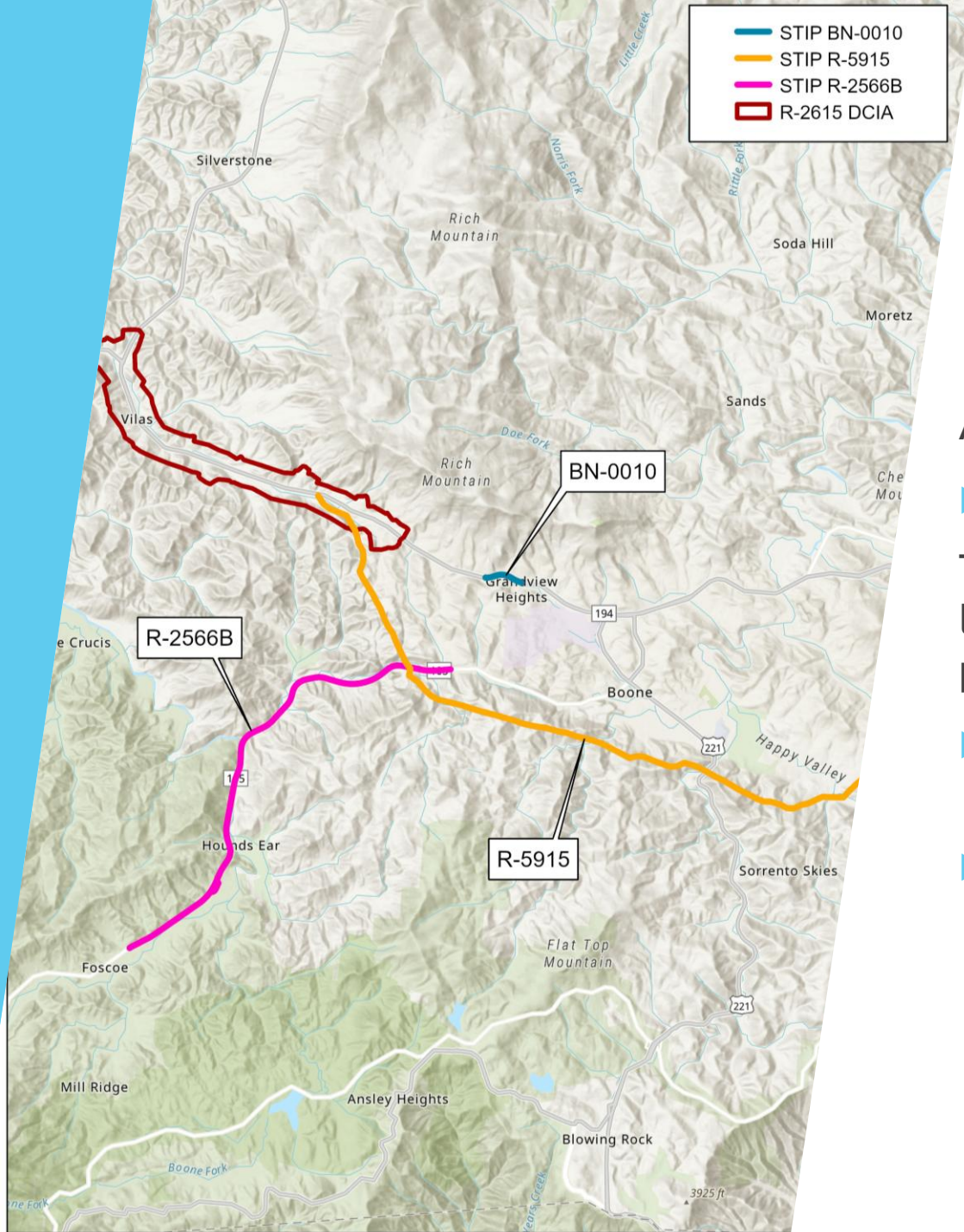
# Cost Estimate

**TIP Estimate (total): \$156,200,000**

- ▶ ROW: \$75,000,000
- ▶ Construction: \$78,300,000
- ▶ Utility: \$2,900,000

*Preliminary, subject to change*





# Adjacent Projects

Adjoining (2026-2035) STIP project:

- ▶ R-5915A - US 421 (Daniel Boone Parkway)

Two other projects listed in the STIP are located within a 3-mile radius of the project area. They include:

- ▶ R-2566B - SR 1136 (Clarks Creek Road) to SR 1107 (NC 105 Bypass) in Boone
- ▶ BN-0010 US 421/US 321 (West King Street) sidewalk

# Work Completed – 2018 to 2023

Crash Analysis - September 12, 2018

GeoEnvironmental Phase I Report - November 1, 2018

Traffic Technical Memo - April 2019

NRTR/Preliminary JD

- draft - April 2019
- revision- July 2022

Hydraulic Planning Report - April 2019

Merger Meeting (CP 1 and CP 2) - May 16, 2019

Complete Streets 1M1 - February 10, 2022

Historic Structures Survey Report - June 2022

Historic Architecture and Landscapes Effects Required Form - August 16, 2022

Public Workshop and Local Officials Meeting - October 13, 2022



# Reports in-Progress

Updated NRTR and PJD Package

Updated Traffic Technical Memo

Capacity Analysis for a RCI Corridor

Hydraulic Modeling

Updated Utility Coordination Report

Traffic Noise Report

Community Impact Analysis

# Waters and Wetlands

- ▶ Watauga River basin
- ▶ Brushy Fork Creek and UTs, George Branch and UTs
- ▶ Designated trout watershed
- ▶ Class C waters
- ▶ No Outstanding Resource Waters (ORW), High Quality Waters (HQW), or water supply watersheds (WS-I or WS-II)
- ▶ No 303(d) waters
- ▶ Wetlands - 3.43 acres





# Federally Protected Species - IPaC

## 9/2/2025

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Glyptemys muhlenbergii</i>	Bog turtle	T(S/A)	No	Not Required
<i>Myotis grisescens</i>	Gray bat	E	No	Unresolved
<i>Myotis sodalis</i>	Indian bat	E	Yes	Unresolved
<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	E	Undetermined	Unresolved
<i>Permyotis subflavus</i>	Tricolored bat	PE	Yes	Unresolved
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern hellbender	PE	Undetermined	Unresolved
<i>Lasmigona subviridis</i>	Green floater	PT	Undetermined	Unresolved
<i>Danaus plexippus</i>	Monarch butterfly	PT	Unknown	Unresolved
<i>Gymnoderma lineare</i>	Rock gnome lichen	E	No	No Effect

- ▶ E - Endangered
- ▶ T - Threatened
- ▶ T(S/A) - Threatened due to similarity of appearance
- ▶ PE - Proposed Endangered
- ▶ PT - Proposed Threatened

## Cultural Resources

- Archaeological resources—additional surveys required
- Three Historic Architecture sites
  - *Grady L. and Ardath R Greene House - Effects Required*
  - Lloyd M. and Crete A. Hodges House - no longer eligible
  - Glenn-Billings House - demolished

## Community Resources

- Six Churches
- Three Cemeteries
- Post Office
- EMS Station
- ~46 Businesses
- ~110 Residences



## Population

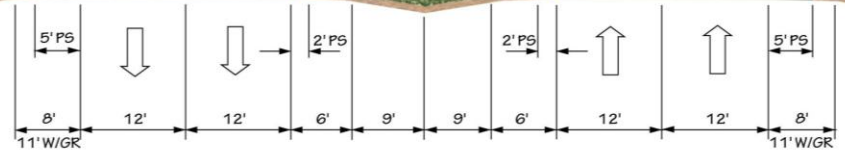
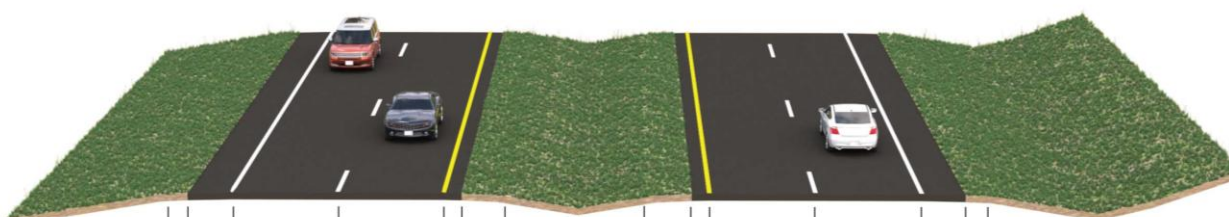
- Minority, low income and limited English Proficiency populations present

## Utilities

- No major utility transmission lines
- Local electricity, telephone and cable (buried and overhead)
- Water/sewer lines possible at southern terminus

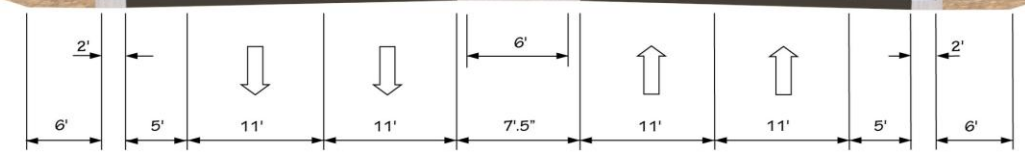
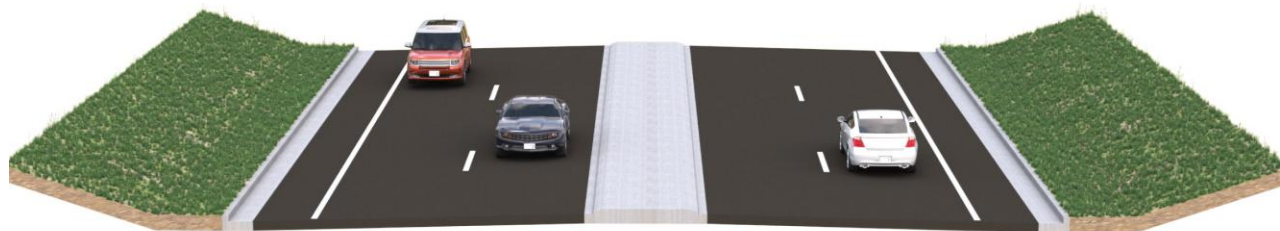
## GeoEnvironmental Hazards

- 14 sites of concern
- Naturally occurring asbestos material observed



TYPICAL SECTION  
-L- US 321 / US 421

Main Line



TYPICAL SECTION  
-L- US 321 / US 421

Main Line Vilas Area

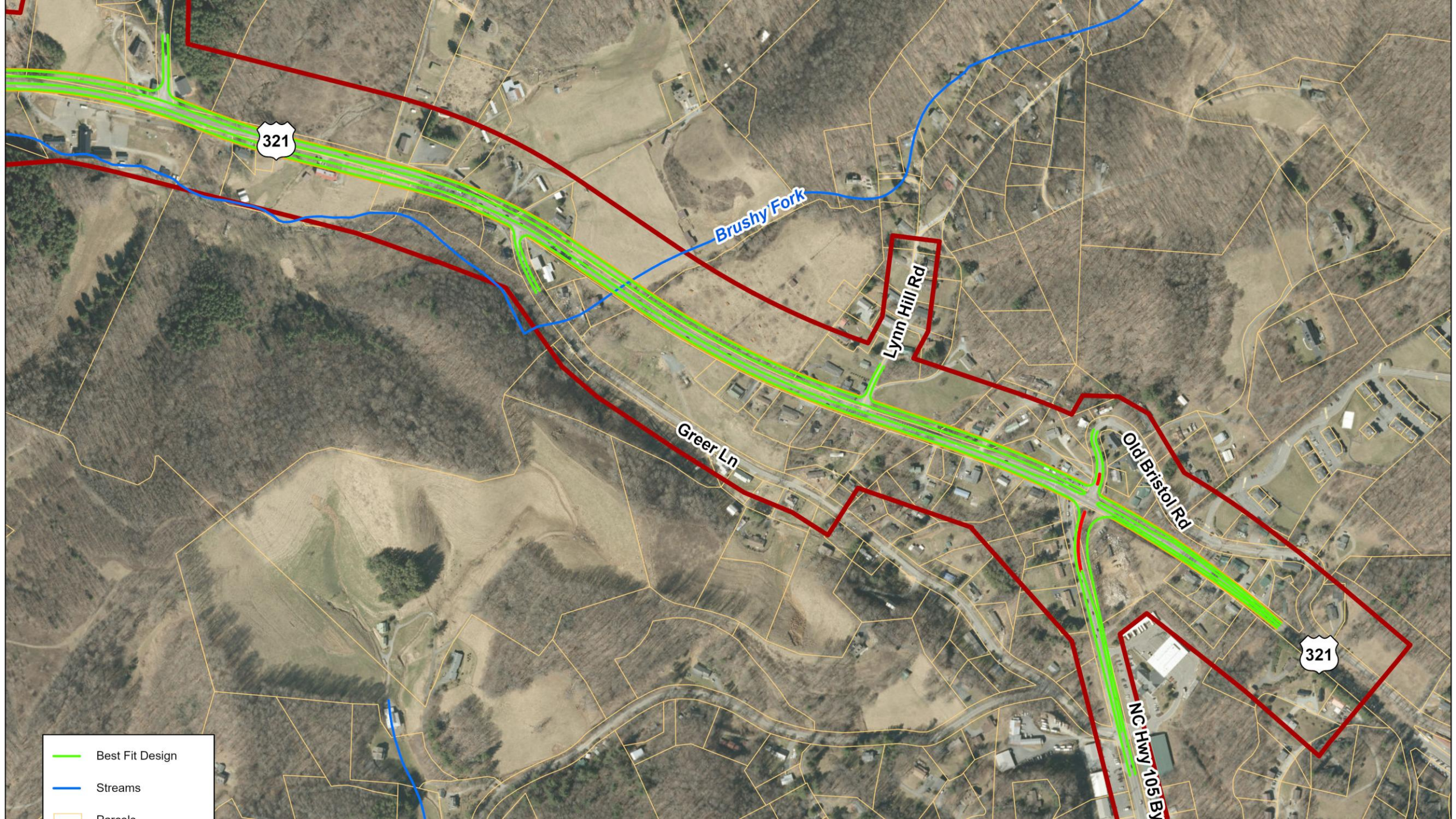
# Proposed Typical Sections





# Best-Fit Widening Alternative





321

Brushy Fork

Lynn Hill Rd

Greer Ln

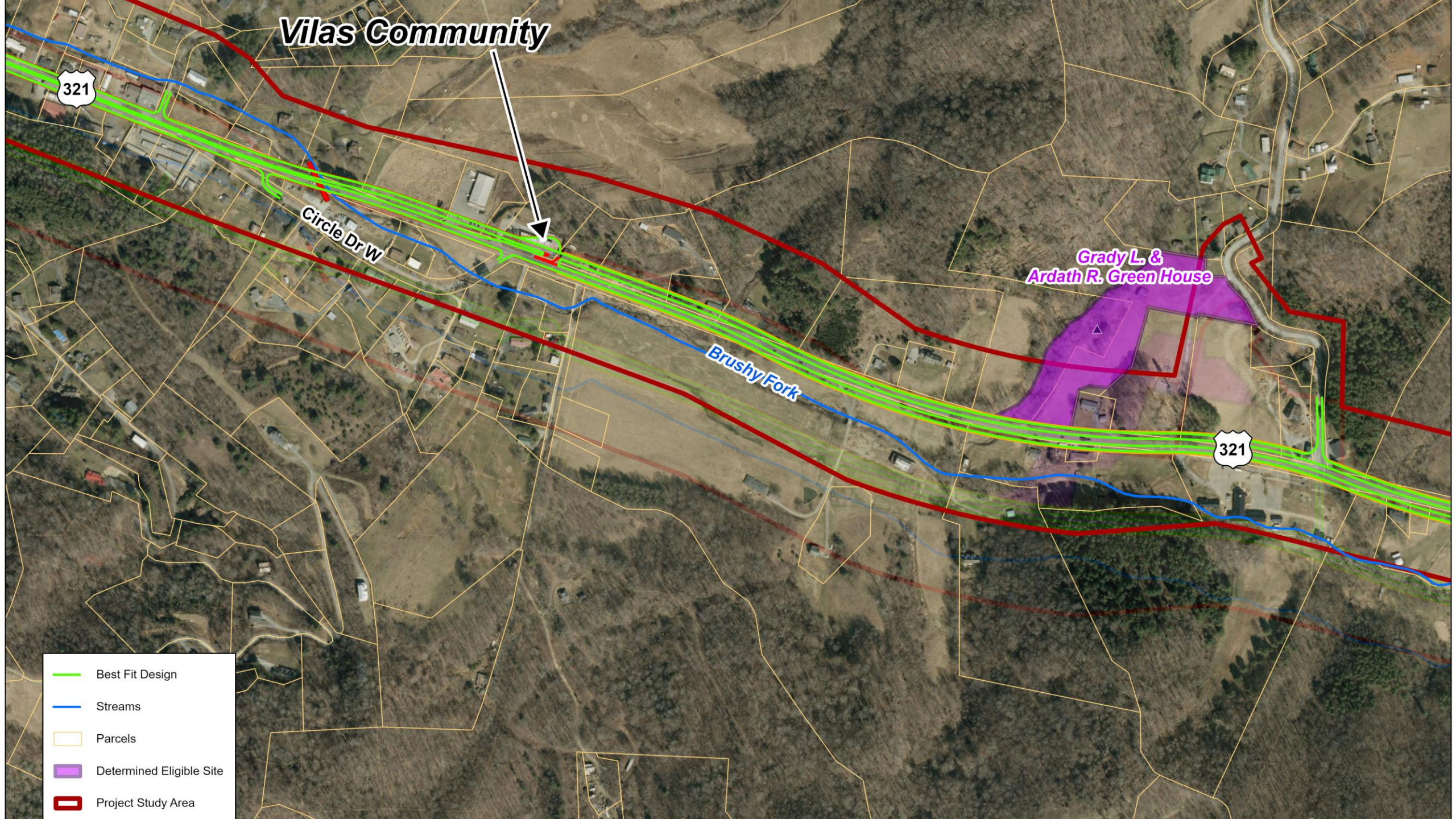
Old Bristol Rd

321

NC Hwy 105 Bypass

- Best Fit Design
- Streams
- Property





Vilas Community

321

Circle Dr W

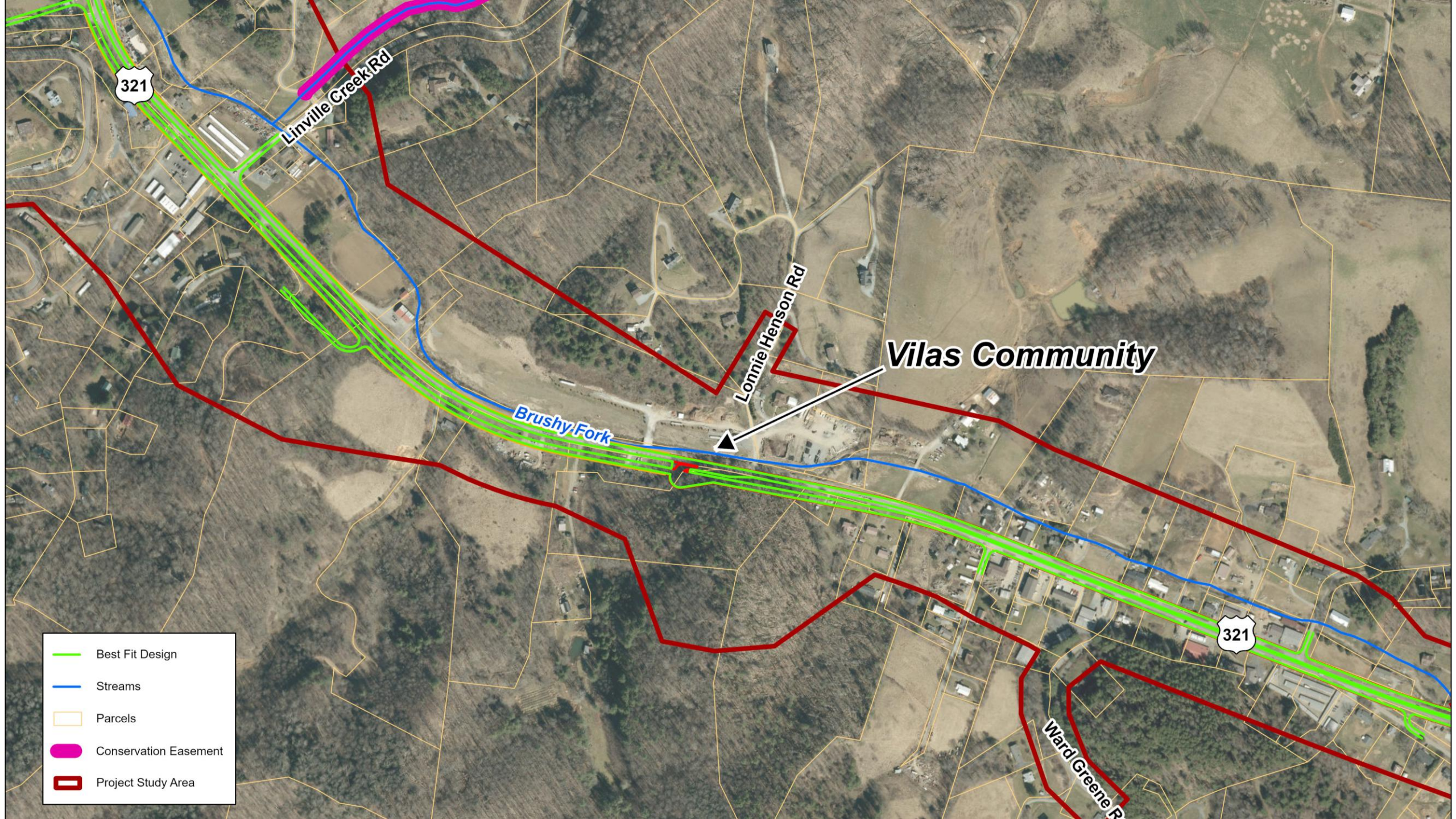
Brushy Fork

Grady L. &  
Ardath R. Green House

321

- Best Fit Design
- Streams
- Parcels
- Determined Eligible Site
- Project Study Area





Linville Creek Rd

Lonnie Henson Rd

Vilas Community

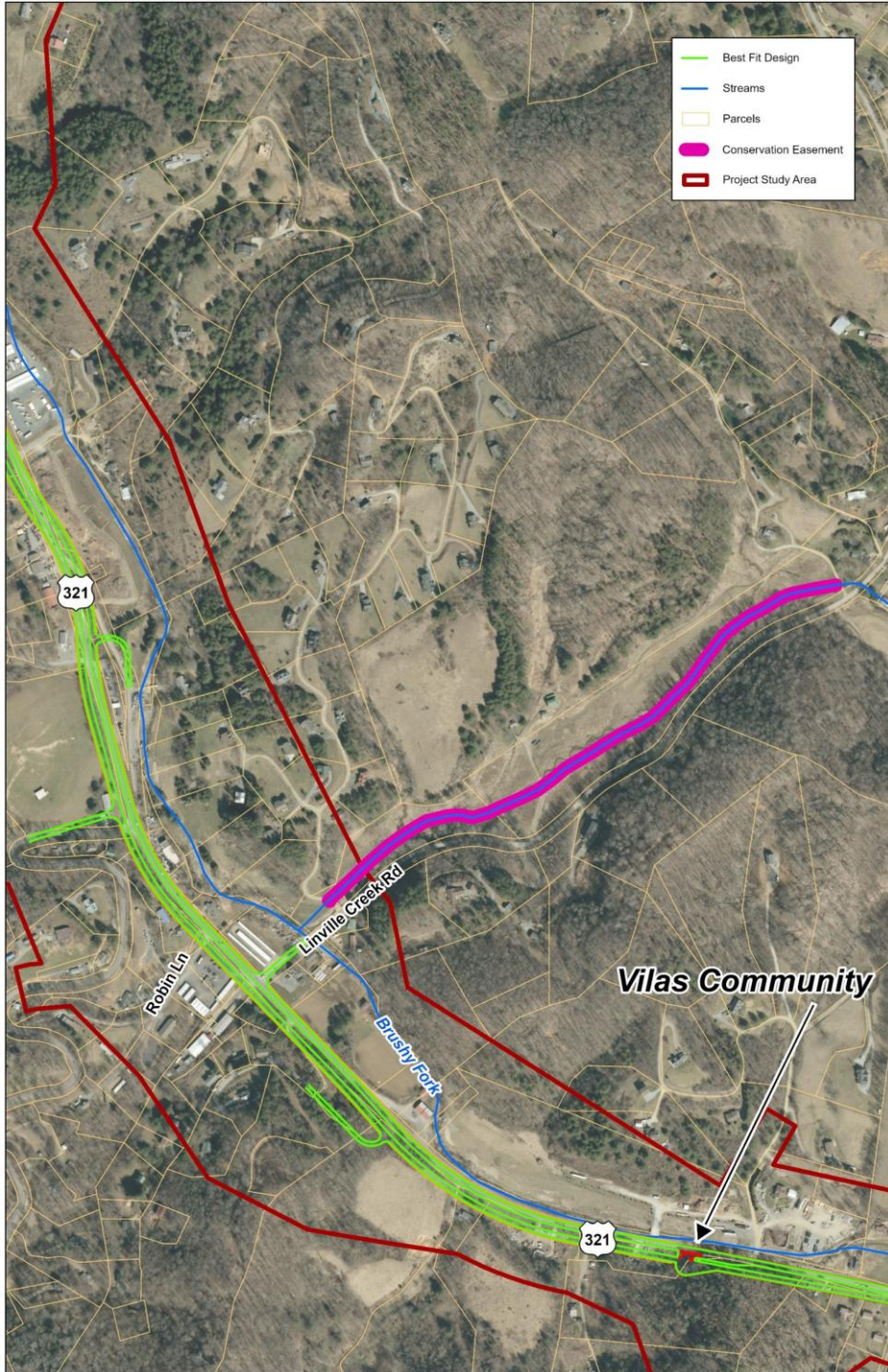
Brushy Fork

321

Ward Greene Rd

- Best Fit Design
- Streams
- Parcels
- Conservation Easement
- Project Study Area









# Avoidance and Minimization

- ▶ Typical section is consistent with NCDOT Design Manual for type of facility and proposed design speed
- ▶ There are no alternative modes of transportation options available for upgrading

Best-Fit Alternative shifts away from resources to avoid and minimize impacts to the natural and human environments

- ▶ Minimize impacts to Willowdale Baptist Church, Brushy Fork Baptist Church and First Christian Church.
- ▶ Minimizing impacts to wetlands and the paralleling Brushy Fork Creek
- ▶ Minimize and balance impacts to competing resources such as through the village of Vilas
- ▶ Avoids impacts to Linville Creek north of Skye Drive at Linville Creek Road (west entrance) - known conservation easement
- ▶ There are no red flags concerning major utilities or rail
- ▶ There are no known parks, greenways or wildlife refuges
- ▶ There are no known FEMA Buy-out properties



Comments/  
Questions?





Thank You!

