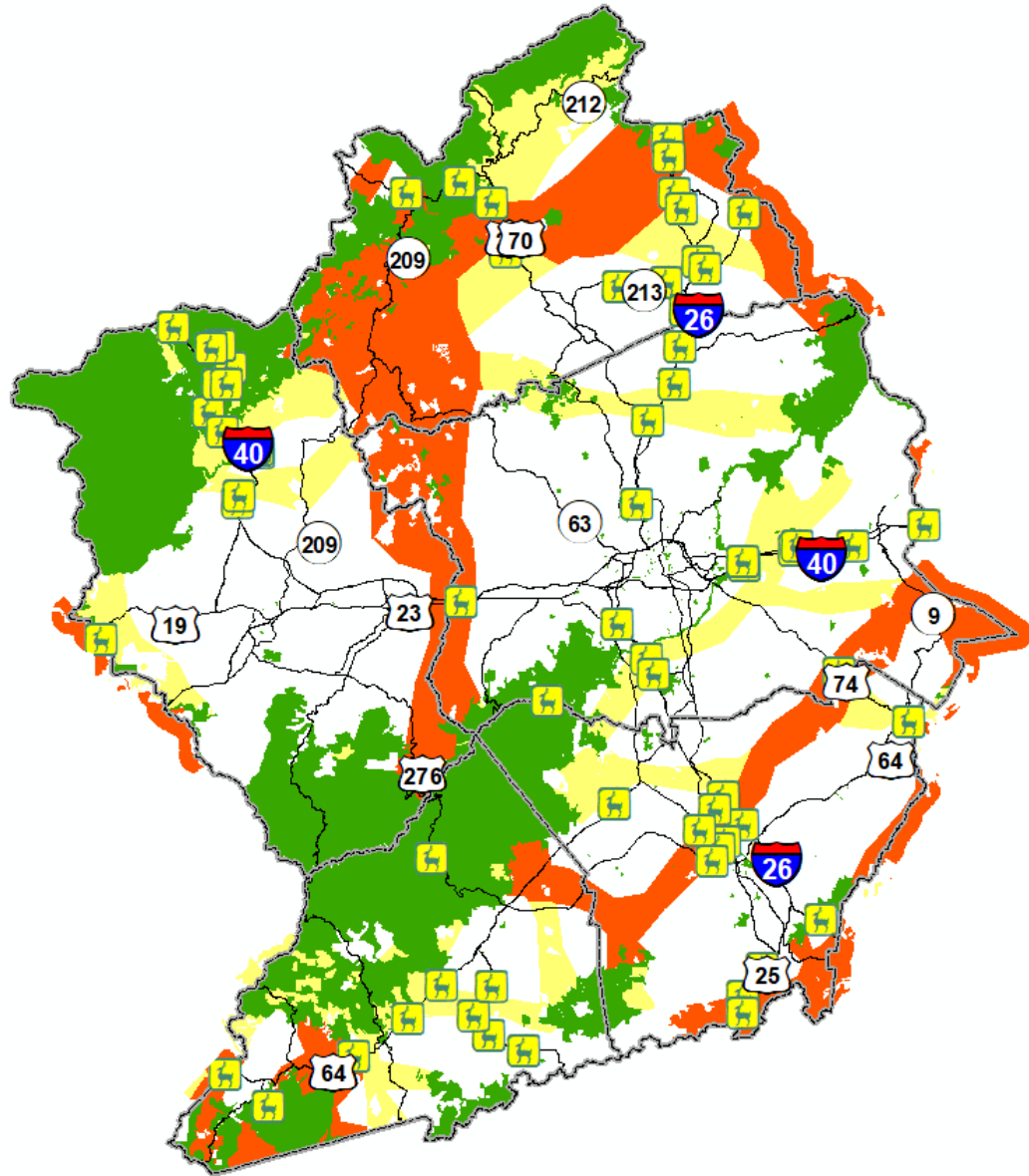


Potential Wildlife Crossings for the French Broad River MPO & Land of Sky RPO Planning Areas



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Transportation Planner
French Broad River MPO

September 22, 2023

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Abbreviations and Terms Used in the Report

Blue Ridge Forever (BRF)	Blue Ridge Forever, a coalition of WNC land trusts that worked with Wildlands Network (WN) to create a connectivity value index for all of Western North Carolina by stacking up a large set of connectivity models for various species.
BRF / WN Priority Corridors	Blue Ridge Forever / Wildlands Priority Corridors 1 and 2
Level Bench Path	A level path surface constructed within a culvert or under pass from concrete or small aggregate gravel as smoother alternative to rip-rip.
National Parks Conservation Association (NPCA)	National Parks Conservation Association is an independent, nonpartisan membership organization focused on advocacy on behalf of the National Parks System.
Strategic Prioritization Office of Transportation (SPOT)	SPOT is the North Carolina Department of Transportation's (NCDOT) program focused on scoring and prioritizing transportation projects via the state's Strategic Transportation Investments (STI) law.
Strategic Transportation Investments (STI) law	This became law in 2013 and established the Strategic Mobility Formula, which allocates available revenues based on data-driven scoring and local input. It is used to develop the State Transportation Improvement Program (STIP), which identifies the projects that will receive funding during a 10-year period.
Transportation Improvement Programs (TIP)	A 10 year State and Federal-mandated plan that identifies the construction funding for and scheduling of transportation projects throughout the state. The State Transportation Improvement Program (STIP) corresponds with local TIPs across the state.
WVC	Wildlife Vehicle Crash
I-40 PRG Study	I-40 Pigeon River Gorge study (Wildlands Network, June 2022)
Wildlands Network (WN)	Wildlands Network is a non-governmental organization focused on mitigating and preventing wildlife habitat fragmentation, with a key focus on wildlife corridors supporting connectivity for healthy and stable wildlife populations.
WN Top 20 Sites in NC Study	North Carolina statewide study, included Top 20 Sites; 155 sites total (Wildlands Network, September 2022)

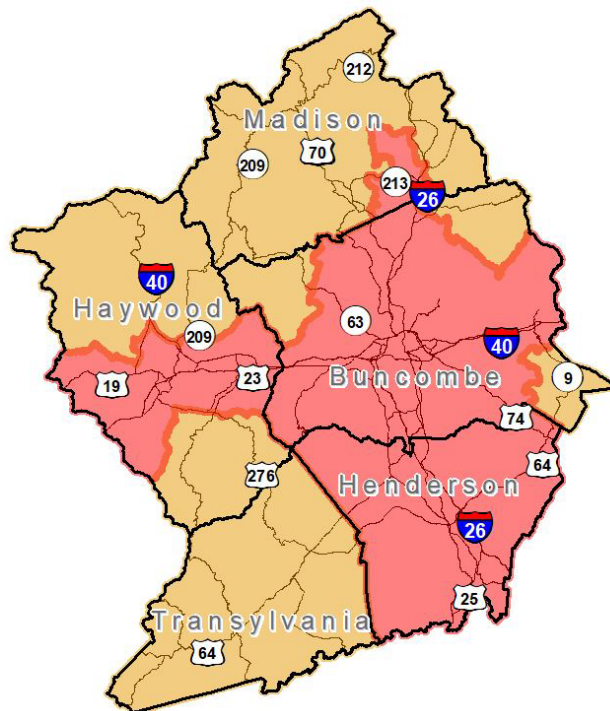
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This report reflects an initial review of the French Broad River Metropolitan Planning Organization (MPO) and Land of Sky Rural Planning Organization (RPO) planning areas for potential wildlife crossing locations along area roads and highways. The MPO/RPO's primary goals of this report are to begin identifying specific geographic areas and wildlife crossing typologies (eg. Deflection Fencing) that can be incorporated into the larger transportation planning process, notably the state's **Strategic Prioritization Office of Transportation (SPOT)** project scoring process, which then leads local and statewide **Transportation Improvement Programs (TIP)**.

These two processes identify specific projects, so the early identification of wildlife crossing needs, in addition to other design factors like bicycle/pedestrian accommodation and climate resilience, can reduce project scope and cost revisions later on. This effort stems from the French Broad River MPO's initial contact in December 2022 with members of Safe Passage: The I-40 Pigeon River Gorge Wildlife Crossing Project. This project is an outgrowth of a June 2022 study (see Previous Studies and Research, next page) by Wildlands Network and the National Parks Conservation Association. The Pigeon River study and some early pilot projects stemming from it (eg. A new replacement bridge at I-40, Exit 7 [Harmon Den] designed with flat wildlife paths underneath it.) may provide a template for future projects across the region and state. MPO/RPO staff reviewed this report with WN and NPCA staff in September 2023 for their initial thoughts (see MadCo1 and MadCo9).

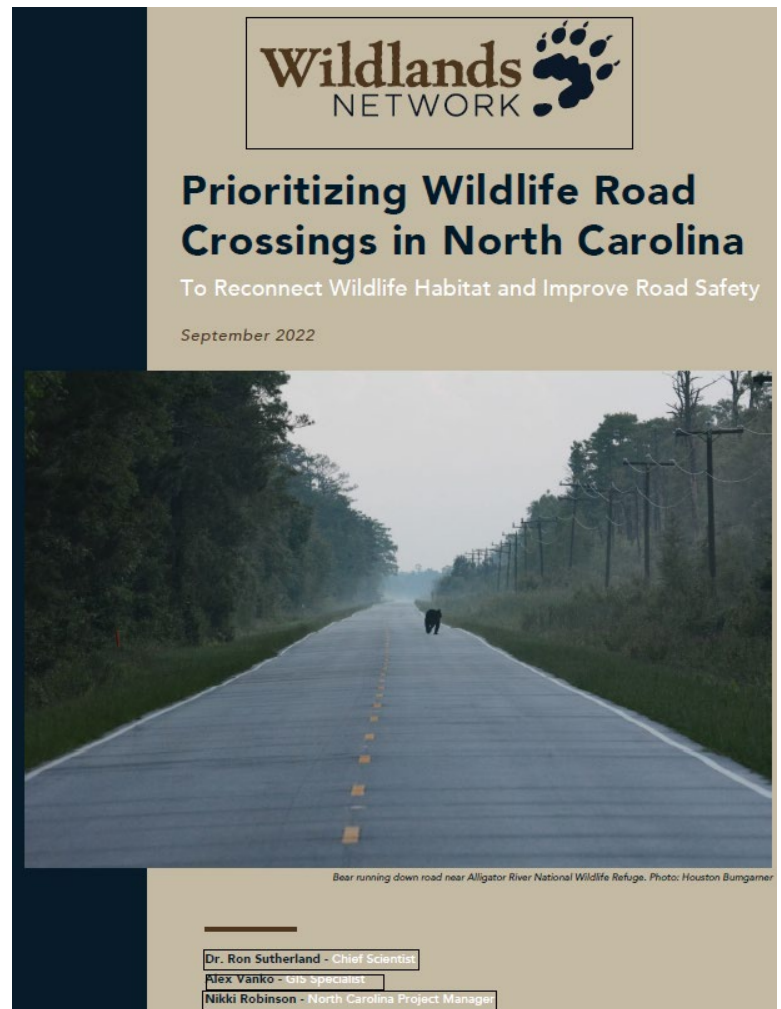
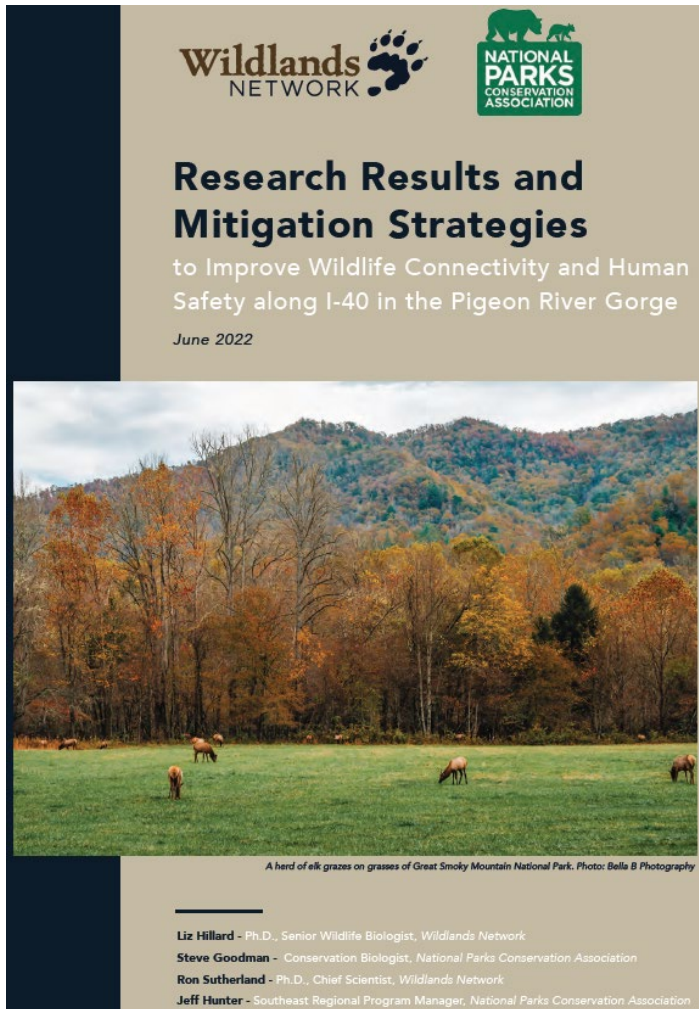
MPO/RPO Planning Area Overview

The MPO's planning area encompasses US Census-designated Urbanized Areas, plus land areas anticipated to urbanize within the next 20 years (light red, below) and the RPO's planning area (light orange, below) encompasses non-urbanized areas in the remainder of the 5-county region of Western North Carolina shown below.



Previous Studies and Research

This report builds upon two key studies published in 2022 (see below), *Research Results and Mitigation Strategies to Improve Wildlife Connectivity and Human Safety along I-40 in the Pigeon River Gorge* (Wildlands Network and National Parks Conservation Association, June 2022) and *Prioritizing Wildlife Road Crossings in North Carolina To Reconnect Wildlife Habitat and Improve Road Safety* (Wildlands Network, September 2022). The I-40 Pigeon River Gorge study covered both North Carolina and Tennessee.



Additionally, French Broad River MPO staff have consulted additional sources for research including the National Cooperative Highway Research Program (NCHRP), a program of the Transportation Research Board (TRB), part of the Federal National Academies of Sciences, Engineering, and Medicine. Other sources of background research included the Federal Highway Administration (FHWA), and Animal Road Crossing (ARC) Solutions, a coalition of conservation organizations and transportation research organizations including the Center for Large Landscape Conservation and the Western Transportation Institute – Montana State University.

Methodology Overview

Methodology

In addition to existing studies and research by wildlife crossing experts, French Broad River MPO staff also used the following GIS data sources to guide recommendations on location and typologies of potential wildlife crossings:

GIS Data Sources, by type

- **NCDOT Structure Locations** (Inventory of bridges, culverts, etc.), point
- **NCDOT Animal Crash Locations by Severity** (Inventory of crash sites; NOTE: Type of animal is not available in the data), point
- **BRF / WN Priority Corridors** (Priority 1 [highest importance] and Priority 2 [next highest importance] for habitat connectivity and migration corridors), polygon
- **NCDOT Traffic Segments 2021 AADT** (Annual Average Daily Traffic [AADT] volumes), line
- **TDM Output 2045** (French Broad River MPO, Travel Demand Model Output 2045, with projected 2045 AADT traffic volumes where available; NOTE: Some rural road segments do not have 2045 AADT traffic volumes available in the attribute table.), line
- **CTP Composite** (French Broad River MPO, Comprehensive Transportation Plan, showing planned, but unfunded transportation projects over a 20-35 year span), line and point
- **NCDOT 2024-2033 STIP** (State Transportation Improvement Plan, showing planned and funded over a 10 year span), line and point
- **NCDEQ Surface Water Classifications** (File includes water body designations for Trout Waters and High Quality Water, both useful indicators for aquatic life in water bodies and terrestrial wildlife corridors along the water bodies), line
- **NC One Map Latest Orthoimagery** (State-supported aerial imagery service, useful for investigating current land use), raster
- **Open Street Map** (ESRI base map service, useful for investigating current land use), vector

Wildlife Crossing Inventory shapefile, point

MPO staff created a file to identify and inventory potential wildlife crossing locations, with brief descriptions of each field below, including an example site's attribute table. Blank fields indicate a lack of available data.

- **Location ID:** Locations were given a short ID based on their county location and the number of locations within the a county. For example, the location highlighted below is the 14th location mapped in Haywood County.
- **Reason:** The Wildlands Network studies (Pigeon River Gorge or Statewide Top 20 Sites) are cited where applicable, and French Broad River MPO staff-recommended sites are also noted with "FBRMPO".
- **Existing Conditions:** This field either has the site name used in Wildlands Network studies or a short description from MPO staff.
- **Alternatives Scenarios:** This field cites BRF / Wildlands Network Priority Corridors, where applicable, and notes proposed wildlife crossing typologies (eg. underpass, signage, etc.)
- **Short Alternative Type:** This field provides a short description of proposed wildlife crossing.
- **Key Species:** This field denotes key animal species identified at a given crossing location.

- **Public Lands:** When present, this field notes the proximity of publicly-owned lands, an important factor to NCDOT in siting and installing wildlife crossings.
- **CTP:** This field cites a Comprehensive Transportation Plan (CTP) project where applicable on a given roadway segment.
- **STIP:** This field cites a local/State Transportation Improvement Program (STIP) project where applicable on a given roadway segment.
- **2021 AADT:** This field cites existing traffic volumes where available.
- **2045 AADT:** This field cites projected traffic volumes for the year 2045 where available.
- **Priority Ranking:** This field assigns a priority ranking as determined by MPO staff. Rankings were ordered as follows in order to reflect Wildlands Networks' studies highest rankings (i.e. Highest), and then recognizing other Wildlands Networks' and MPO staff findings ranging between High, Medium, and Low.

- Highest
- High
- Medium
- Low

NOTE: These are preliminary rankings based on assumptions from MPO Staff and are open to changes based on the expertise of wildlife and transportation staff.

Wildlife Crossing Types

MPO staff researched the following types of wildlife crossings:

- Signs (static), Interactive Signs
- Round Culverts, Box Culverts
- Deflection Fencing (recommended installation every 3-5 km (1.86-3.10 mi.)¹)
- Multi-Plate Arches
- Open-Span Bridges, Bridge Extensions
- Wildlife Underpasses/Overpasses

For purposes of inventorying potential wildlife crossing types, MPO staff used the following classes:

- Deflection Fencing
- Deflection Fencing, Bridge Retrofit
- Deflection Fencing, Land Protection
- Deflection Fencing, Level Bench Path
- Deflection Fencing, New Culvert (or New Overpass)
- Deflection Fencing, Overpass
- Deflection Fencing, Signage
- Deflection Fencing, Underpass
- Level Bench Path, Solar Lighting
- New Culverts
- Signage

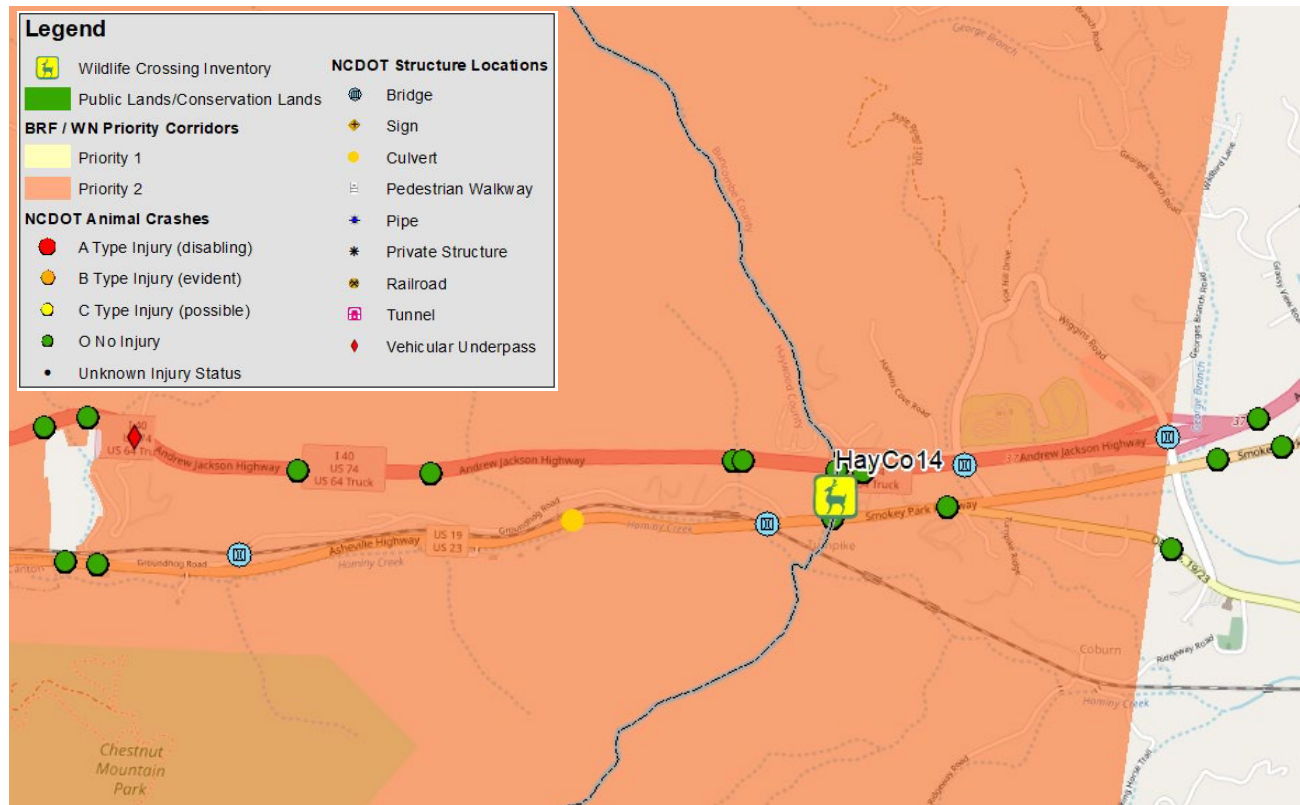
¹ Mitigated road sections for large mammals should be at least 3-5 km long if the goal is to keep average cost per km/mile to a minimum. Shorter mitigated road sections have relatively high costs per km/mile because of costs associated with fence-end treatments (i.e. posts or tension post/cables).

Source: *Construction Guidelines for Wildlife Fencing and Associated Escape and Lateral Access Control Measures* (Western Transportation Institute – Montana State University, April 2015, pg. 12-13).

See the examples below for an attribute table for site HayCo14, I-40 east of Canton, and a map of the site. **Blank fields indicate a lack of available information.**

NOTE: The legend in the example can be referenced for all report maps.

Location ID	HayCo14
Reason	WN Top 20 Sites in NC Study, high WVC
Existing Conditions	I-40 east of Canton
Alternative Scenarios	WN Priority 2 Corridor; Install dry culvert underpasses under I-40 and US 19/23, as county line runs along a natural valley and connects with Hominy Creek (immediately south); install Deflection Fencing.
Key Species	Bear, deer, elk
Short Alternative Type	Deflection Fencing, New Culvert
Public Lands	Sandy Mush conservation easement (north), Pisgah N.F. and Chestnut Mountain (SAHC), Mt. Pisgah (south)
CTP	I-40, CTP ID B-1, widen to 6 lanes
STIP	U-6048, US 19/23 upgrade, 2029; I-6054C, I-40 widening, 2029
2021 AADT	56,500
2045 AADT	78,800
Priority Ranking	Highest



Top Recommendations

As of August 2023, French Broad River MPO staff have identified 67 potential wildlife crossing locations in Madison, Buncombe, Henderson, Transylvania, and Haywood County via Geographic Information Systems (GIS) analysis and mapping.

Of these sites, 13 North Carolina sites from the **I-40 Pigeon River Gorge study** are noted, including the Top Priority Recommendations as follows:

1. **Wilkins Creek Overpass:** Construct an overpass over I-40 between Wilkins Creek Box Culvert A (i.e. north) and the NCDOT Rest Area. Pursue land acquisition or conservation easements to stabilize the area for wildlife.
2. **Single Tunnel Overpass:** Construct an overpass extending the existing Single Tunnel land bridge across the rest of I-40.
3. **Cold Springs Creek Exit Culverts:** Replace the existing culverts on both the entrance and exit ramps with larger structures to facilitate better terrestrial and aquatic wildlife passage.
4. **Groundhog Creek:** Replace the three small existing culverts with a larger structure suitable for all target species.

In comparison to the I-40 Pigeon River Gorge's specific recommendations for wildlife crossing locations and typologies, the **statewide study's**² geographic locations are not as specific and recommendations for specific wildlife crossing typologies are not listed. Still, the study's information provided a useful starting point for the French Broad River MPO to recommend possible locations and crossing typologies. Of the statewide study's 155 sites, 17 are located in the MPO/RPO planning area. These 17 sites include five of the study's Top 20 Priority Wildlife Crossing Sites as follows:

1. **I-40 Through the Pigeon River Gorge** (Recommendations covered by I-40 PRG study)
2. **I-26 at the Appalachian Trail:** WN Priority 2 Corridor; Retrofit north side of Flag Pond Rd. bridge with Level Bench Path for wildlife passage; install Deflection Fencing to guide wildlife to bridge underpass. Existing culverts 2 mi. south.
3. **I-40 at Kitsuma Peak:** WN Priority 1 Corridor connecting Pisgah N.F. (north) to Hickory Nut Gorge, South Mountains/Box Creek Wilderness Area (south); Consider new overpass at Eastern Cont. Divide or new culverts underpass at Kitsuma Peak Trailhead. Rockslide fencing exists.
4. **I-40 East of Canton:** WN Priority 2 Corridor; Install dry culvert underpasses under I-40 and US 19/23, as county line runs along a natural valley and connects with Hominy Creek (immediately south); install Deflection Fencing.
5. **US 19 at the Blue Ridge Parkway:** High elk WVC area. WN Priority 1 Corridor connecting Pisgah N.F., part of Eastern Wildway corridor. Install 24x24 MUTCD warning signs on US 19 and BRP in proximity to the roads' junction.

²*Prioritizing Wildlife Road Crossings in North Carolina To Reconnect Wildlife Habitat and Improve Road Safety* (Wildlands Network, September 2022)

Report Overview

This report reflects an initial review of the French Broad River Metropolitan Planning Organization (MPO) and Land of Sky Rural Planning Organization (RPO) planning areas for potential wildlife crossing locations along area roads and highways. The MPO/RPO's primary goals of this report are to begin identifying specific geographic areas and wildlife crossing typologies (eg. Deflection Fencing) that can be incorporated into the larger transportation planning process, notably the state's **Strategic Prioritization Office of Transportation (SPOT)** project scoring process, which then leads local and statewide **Transportation Improvement Programs (TIP)**.

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The MPO's planning area encompasses US Census-designated Urbanized Areas, plus land areas anticipated to urbanize within the next 20 years (light red, below) and the RPO's planning area (light orange, below) encompasses non-urbanized areas in the remainder of the 5-county region of Western North Carolina shown below.

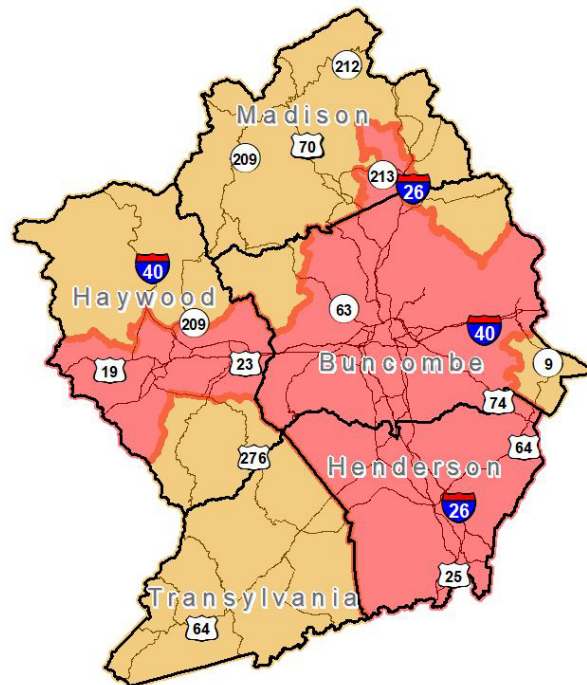
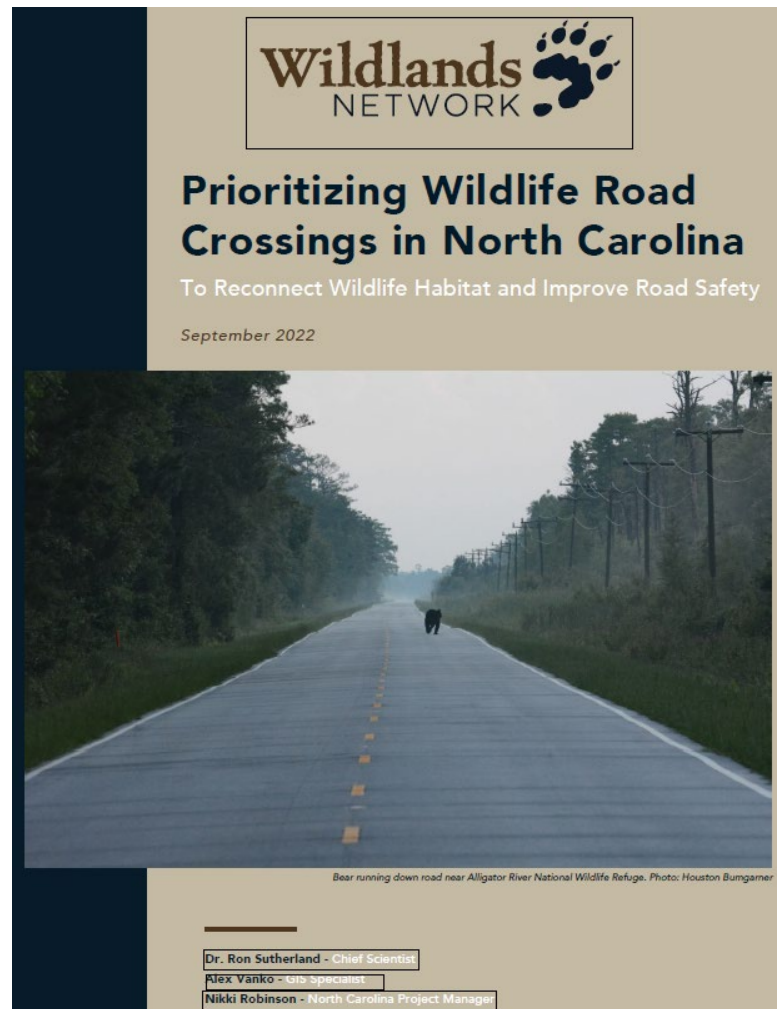
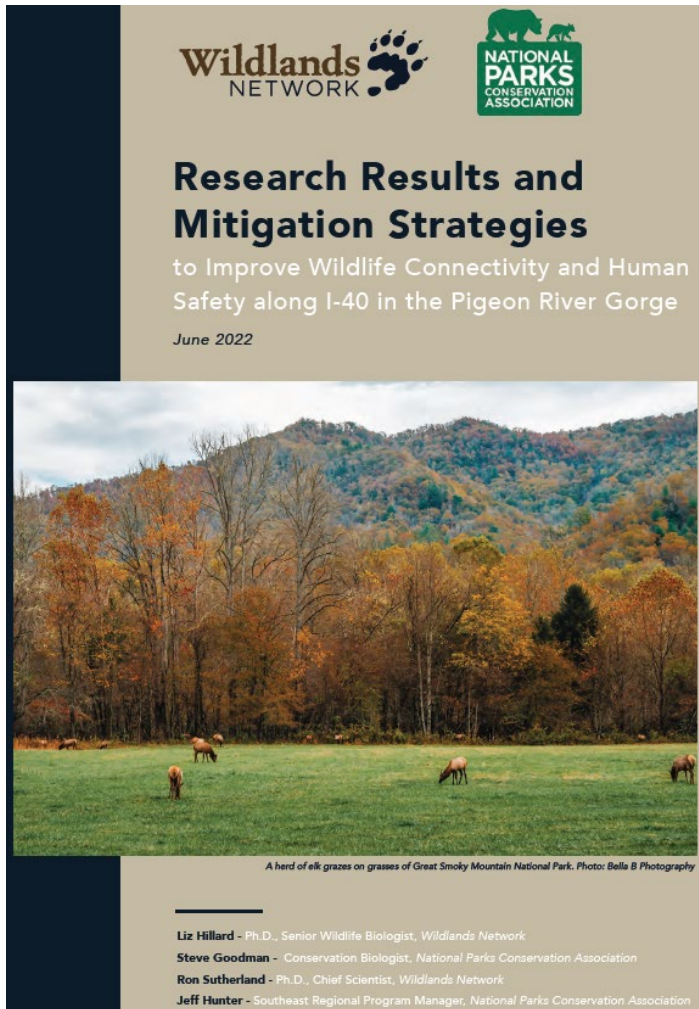


Figure 1: Map of French Broad River MPO and Land of Sky RPO Planning Areas

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 - Highest
 - High
 - Medium
 - Low
- NOTE:** These are preliminary rankings based on assumptions from MPO Staff and are open to amendments based on the expertise of wildlife and transportation officials.

Wildlife Crossing Types

MPO staff researched the following types of wildlife crossings:

- Signs (static), Interactive Signs
- Round Culverts, Box Culverts
- Deflection Fencing (recommended installation every 3-5 km (1.86-3.10 mi.)³)
- Multi-Plate Arches
- Open-Span Bridges, Bridge Extensions
- Wildlife Underpasses/Overpasses

For purposes of inventorying potential wildlife crossing types, MPO staff used the following classes:

- Deflection Fencing
- Deflection Fencing, Bridge Retrofit
- Deflection Fencing, Land Protection
- Deflection Fencing, Level Bench Path
- Deflection Fencing, New Culvert (or New Overpass)
- Deflection Fencing, Overpass
- Deflection Fencing, Signage
- Deflection Fencing, Underpass
- Level Bench Path, Solar Lighting
- New Culverts
- Signage (**see following page for brief discussion of Wildlife Crossing signage**)

³ Mitigated road sections for large mammals should be at least 3-5 km long if the goal is to keep average cost per km/mile to a minimum. Shorter mitigated road sections have relatively high costs per km/mile because of costs associated with fence-end treatments (i.e. posts or tension post/cables).

Source: *Construction Guidelines for Wildlife Fencing and Associated Escape and Lateral Access Control Measures* (Western Transportation Institute – Montana State University, April 2015, pg. 12-13).

Wildlife Crossing Signage

Throughout this report, the attribute field **Alternatives Scenarios** may note “Install 24x24 MUTCD warning signs”. This indicates a recommendation for installation of 24” x 24” yellow and black warning signs per the Manual on Uniform Traffic Control Devices (MUTCD), the Federal Highway Administration’s (FHWA) manual of national standards for all traffic control devices.

Interestingly, the MUTCD currently only has animal-specific warning signs (eg. deer, bear, moose) as noted by a recent MUTCD addendum request by the San Bernardino County [California] Department of Public Works.⁴ The county requested a pilot evaluation of a general Wildlife Crossing sign (see highlighted excerpts below) for consideration in California’s state MUTCD starting in March 2022 and results will be evaluated in September 2023. This may provide a useful template to NCDOT if it wishes to consider a similar general Wildlife Crossing sign.

1. PROBLEM STATEMENT

Wild animals make frequent appearances on the public roadway across San Bernardino County mountain area. The current CA MUTCD Section 2C.50 approved non-vehicle warning signs include 9 types of animal crossing signages (W11-3, W11-4, W11-16, W11-17, W11-18, W11-19, W11-20, W11-21 and W11-22) to be used to alert road users in advance of locations where unexpected entries into the roadway might occur or where shared use of roadway by animals. See non-vehicle warning signs below for reference:

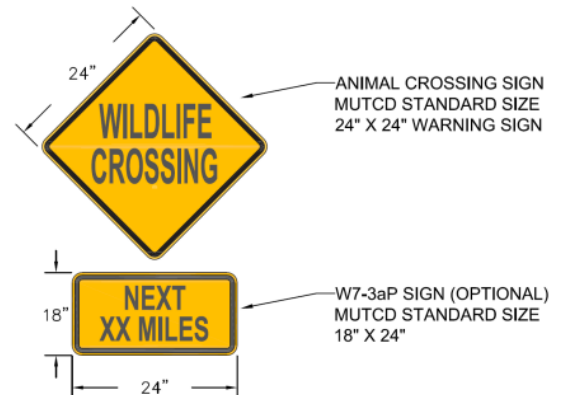


Figure 2. Proposed Sample Wildlife Crossing Sign by County

The main concern with the current standard is the animal crossing warning signs incorporated in MUTCD are too specific, there are certain types of wild animals/species not listed in the approved signs which include but not limited to coyote, fox, snake and other additional smaller size animals.

⁴ San Bernadino County Department of Public Works, request to amend state MUTCD https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ctcdc/22-4_wildlife_crossing_warning_sign_sbd-co-a11y.pdf

Top Recommendations

As of August 2023, French Broad River MPO staff have identified 67 potential wildlife crossing locations in Madison, Buncombe, Henderson, Transylvania, and Haywood County via Geographic Information Systems (GIS) analysis and mapping.

Of these sites, 13 North Carolina sites from the **I-40 Pigeon River Gorge study** are noted, including the Top Priority Recommendations as follows:

1. **Wilkins Creek Overpass:** Construct an overpass over I-40 between Wilkins Creek Box Culvert A (i.e. north) and the NCDOT Rest Area. Pursue land acquisition or conservation easements to stabilize the area for wildlife.
2. **Single Tunnel Overpass:** Construct an overpass extending the existing Single Tunnel land bridge across the rest of I-40.
3. **Cold Springs Creek Exit Culverts:** Replace the existing culverts on both the entrance and exit ramps with larger structures to facilitate better terrestrial and aquatic wildlife passage.
4. **Groundhog Creek:** Replace the three small existing culverts with a larger structure suitable for all target species.

In comparison to the I-40 Pigeon River Gorge's specific recommendations for wildlife crossing locations and typologies, the **statewide study's**⁵ geographic locations are not as specific and recommendations for specific wildlife crossing typologies are not listed. Still, the study's information provided a useful starting point for the French Broad River MPO to recommend possible locations and crossing typologies. Of the statewide study's 155 sites, 17 are located in the MPO/RPO planning area. These 17 sites include five of the study's Top 20 Priority Wildlife Crossing Sites as follows:

1. **I-40 Through the Pigeon River Gorge** (Recommendations covered by I-40 PRG study)
2. **I-26 at the Appalachian Trail:** WN Priority 2 Corridor; Retrofit north side of Flag Pond Rd. bridge with Level Bench Path for wildlife passage; install Deflection Fencing to guide wildlife to bridge underpass. Existing culverts 2 mi. south.
3. **I-40 at Kitsuma Peak:** WN Priority 1 Corridor connecting Pisgah N.F. (north) to Hickory Nut Gorge, South Mountains/Box Creek Wilderness Area (south); Consider new overpass at Eastern Cont. Divide or new culverts underpass at Kitsuma Peak Trailhead. Rockslide fencing exists.
4. **I-40 East of Canton:** WN Priority 2 Corridor; Install dry culvert underpasses under I-40 and US 19/23, as county line runs along a natural valley and connects with Hominy Creek (immediately south); install Deflection Fencing.
5. **US 19 at the Blue Ridge Parkway:** High elk WVC area. WN Priority 1 Corridor connecting Pisgah N.F., part of Eastern Wildway corridor. Install 24x24 MUTCD warning signs on US 19 and BRP in proximity to the roads' junction.

⁵*Prioritizing Wildlife Road Crossings in North Carolina To Reconnect Wildlife Habitat and Improve Road Safety* (Wildlands Network, September 2022)

Additional Recommendations

In addition to the Top Recommendations identified Wildlands Networks' studies from 2022 (I-40 Pigeon River Gorge study and North Carolina Statewide study), these studies contain several additional sites recommended for wildlife crossings.

Nine sites from the I-40 Pigeon River Gorge study are denoted in the following county-based lists with Wildlands Network and National Parks Conservation Association (NPCA) logos as follows:



12 sites from the North Carolina Statewide study are noted with Wildlands Network logos as follows:



The remaining 27 sites are initial recommendations from the French Broad River Metropolitan Planning Organization (FBRMPO), denoted with the acronym FBRMPO and as follows:



Each site in the report has a **Summary**, **Attribute Table**, and **Map** as follows:

Example Summary

This site is currently under active study (i.e. monitoring cameras in place) by Wildlands Network since it's located between Sandy Mush Conservation easement (north) and Chestnut Mountain Nature Park (a partnership between City of Canton and Southern Appalachian Highlands Conservancy, a WNC-based land conservation organization). A combination of deflection fencing along I-40 and US 19/23, coupled with new dry box culverts underneath the roadways, could complement the existing wildlife corridor running along the Haywood County/Buncombe County border and identified by a WN/BRF Priority 2 Corridor.

Report continued on next page

See Figure 2 for an example attribute table for site HayCo14, I-40 east of Canton, and Figure 3 for a map of the site (below). **Blank fields indicate a lack of available information.**

NOTE: The legend in the example can be referenced for all report maps.

Location ID	HayCo14
Reason	WN Top 20 Sites in NC Study, high WVC
Existing Conditions	I-40 east of Canton
Alternative Scenarios	WN Priority 2 Corridor; Install dry culvert underpasses under I-40 and US 19/23, as county line runs along a natural valley and connects with Hominy Creek (immediately south); install Deflection Fencing.
Short Alternative Type	Deflection Fencing, New Culvert
Key Species	Bear, deer, elk
Public Lands	Sandy Mush conservation easement (north), Pisgah N.F. and Chestnut Mountain (SAHC), Mt. Pisgah (south)
CTP	I-40, CTP ID B-1, widen to 6 lanes
STIP	U-6048, US 19/23 upgrade, 2029; I-6054C, I-40 widening, 2029
2021 AADT	56,500
2045 AADT	78,800
Priority Ranking	Highest

Figure 2: Example attribute table for site HayCo14, I-40 east of Canton

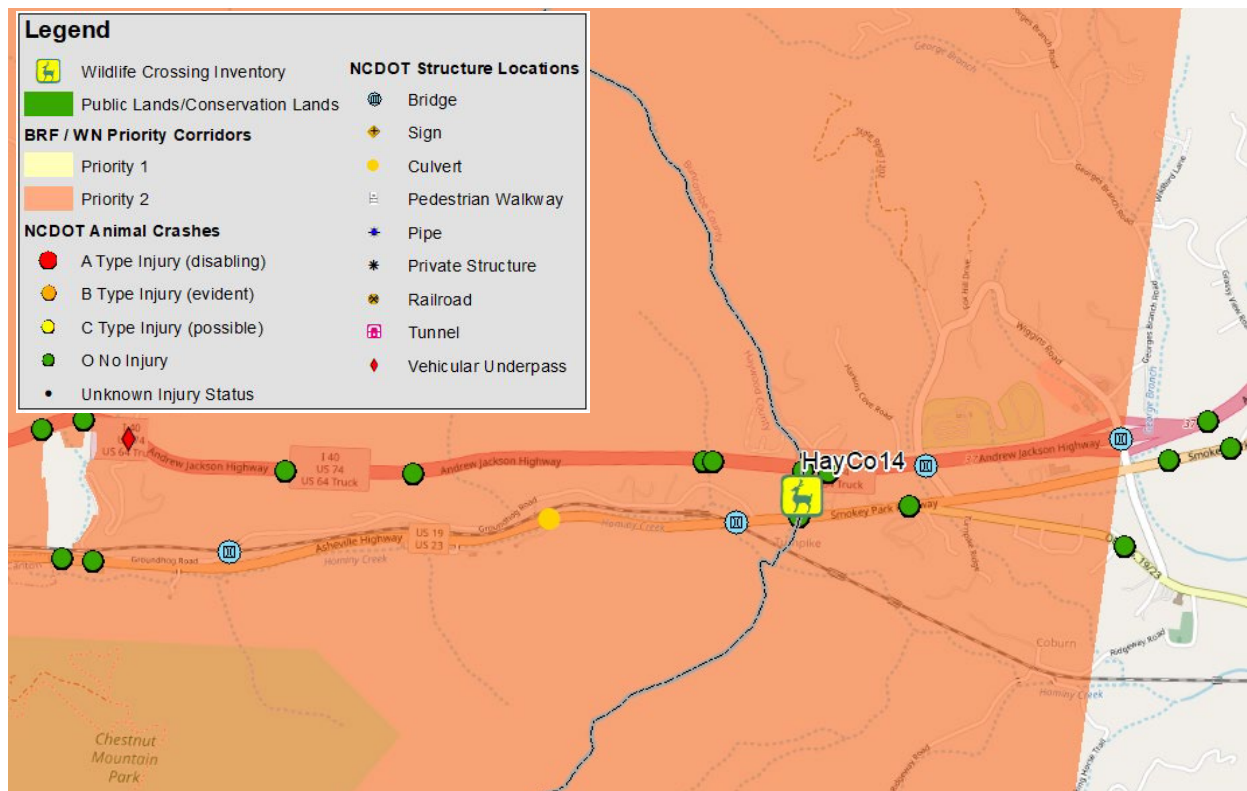


Figure 3: Example map of potential Wildlife Crossing, site HayCo14, I-40 east of Canton


Buncombe County Recommendations

BunCo1 / I-40 at Kitsuma Peak

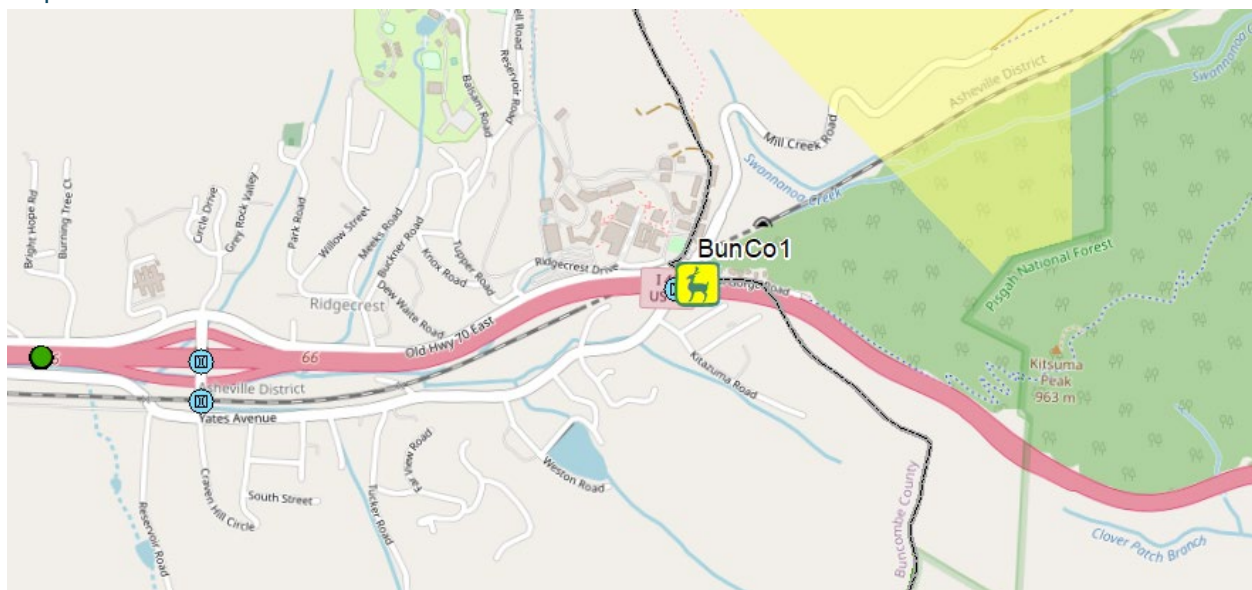
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of either an overpass at the Eastern Continental Divide, given existing high rock walls, or new box culvert underpass under I-40 near the Kitsuma Peak Trailhead.

Attribute Table

Location ID	BunCo1
Reason	WN Top 20 Sites in NC Study
Existing Conditions	I-40 at Kitsuma Peak
Alternative Scenarios	WN Priority 1 Corridor connecting Pisgah N.F. (north) to Hickory Nut Gorge, South Mountains/Box Creek Wilderness Area (south); Consider new overpass at Eastern Cont. Divide or new culverts underpass at Kitsuma Peak Trailhead. Rockslide fencing exists.
	
Short Alternative Type	Deflection Fencing, New Culverts or New Overpass
Key Species	Bear, many Appalachian species
Public Lands	Pisgah N.F. immediately north and south of site
CTP	
STIP	I-5890, I-40 pavement rehab, 2019
2021 AADT	33,500
2045 AADT	54,200
Priority Ranking	Highest

Map




BunCo2 / I-40 bear crossing site

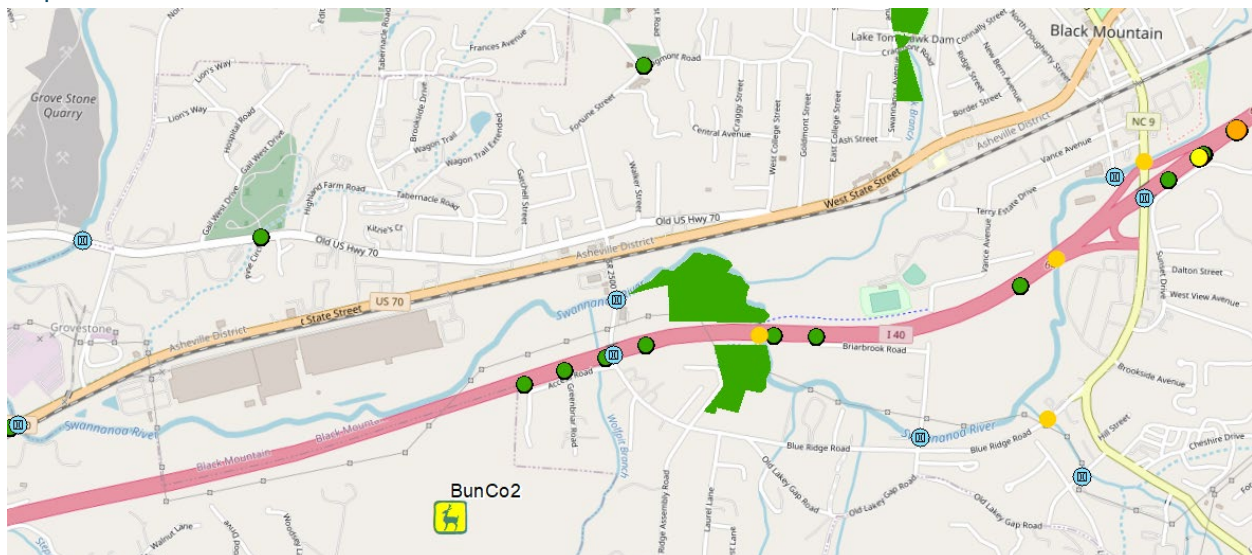
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing to encourage animal crossings at existing bridge underpasses.

Attribute Table

Location ID	BunCo2
Reason	WN Top 20 Sites in NC Study, popular bear crossing
Existing Conditions	I-40 bear crossing site cited by Kendrick Weeks, NCWRC (North Carolina Wildlife Resources Commission)
Alternative Scenarios	WN Priority 1 Corridors 3 mi. west, 4 mi. east of site; Deflection Fencing to Lyle Cove Rd. or Blue Ridge Rd. underpasses; wildlife path for STIP I-4409?
	
Short Alternative Type	Deflection Fencing, Bridge Retrofit
Key Species	Bear
Public Lands	1,600 ac. Blue Ridge Assembly, etc 0.6 mi. south of site; 13,000 ac. Asheville Watershed 4 mi. north
CTP	New frontage road from Blue Ridge Rd. to Patton Cove Rd., CTP ID A71
STIP	I-4409, new I-40/Blue Ridge Rd. interchange, 2025
2021 AADT	40,000
2045 AADT	64,600
Priority Ranking	Highest

Map




BunCo3 / Blue Ridge Parkway at I-26

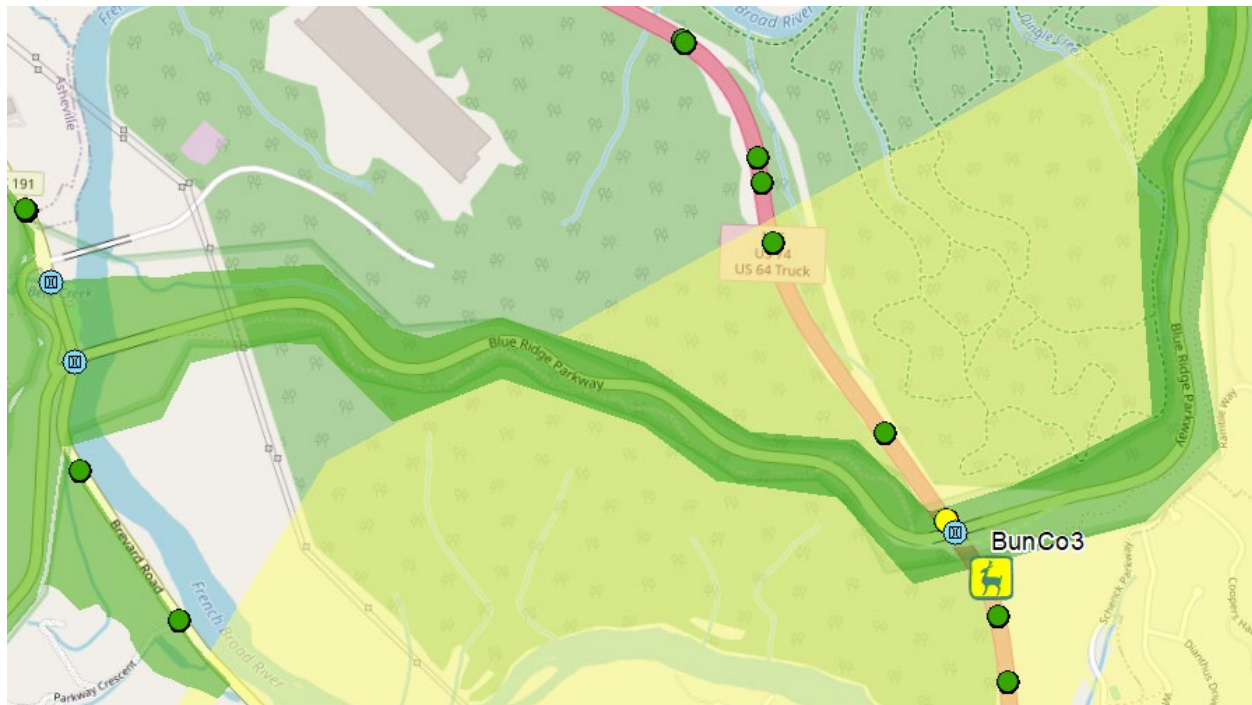
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing to encourage animal crossings at the new Blue Ridge Parkway (BRP) bridge.

Attribute Table

Location ID	BunCo3
Reason	WN Top 20 Sites in NC Study
Existing Conditions	New BRP bridge being built in 2023 at I-26
Alternative Scenarios	WN Priority 1 Corridor; Deflection Fencing to guide wildlife to new BRP bridge.
	
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	Blue Ridge Parkway provides linear protected corridor.
CTP	
STIP	I-4700, I-26 widening, 2024 completion
2021 AADT	83,000
2045 AADT	128,000
Priority Ranking	Highest

Map



BunCo4 / Future I-26 (US 19/23) near Buncombe/Madison County border

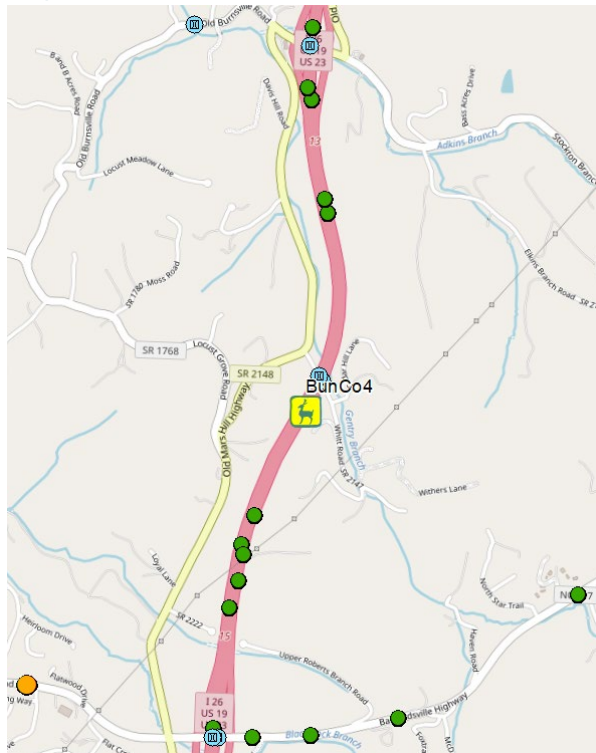
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses.

Attribute Table

Location ID	BunCo4
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install Deflection Fencing 1 mi. north to Stockton Bridge Rd. and 1 mi. south to Jupiter Rd., guiding crossings to existing bridge underpasses
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	
CTP	Future I-26 (upgrade US 19/23 to interstate standard), CTP ID A 3ac
STIP	
2021 AADT	27,000
2045 AADT	43,000
Priority Ranking	High

Map



BunCo6 / Future I-26 (US 19/23) at Weaverville

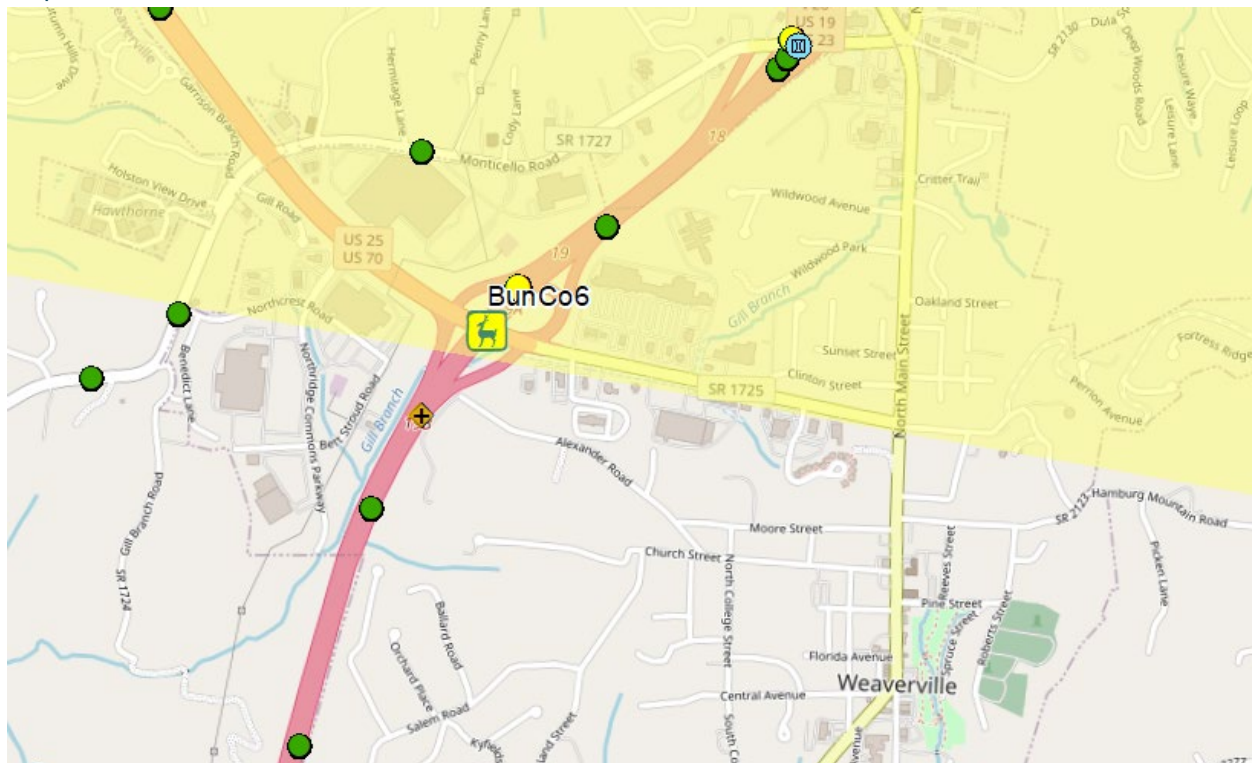
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses.

Attribute Table

Location ID	BunCo6
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	WN Priority 1 Corridor in northern section; 4.4-mile corridor with cluster of crashes
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install Deflection Fencing 1.8 mi. north to Old Mars Hill Hwy., 2.24 mi. south to New Stock Rd.; guide crossings to existing bridge over/underpasses
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	
CTP	
STIP	A-0010AA, Future I-26 (upgrade US 19/23 to interstate standard), 2031
2021 AADT	48,000
2045 AADT	59,000
Priority Ranking	High

Map



BunCo7 / Future I-26 (US 19/23) at Woodfin

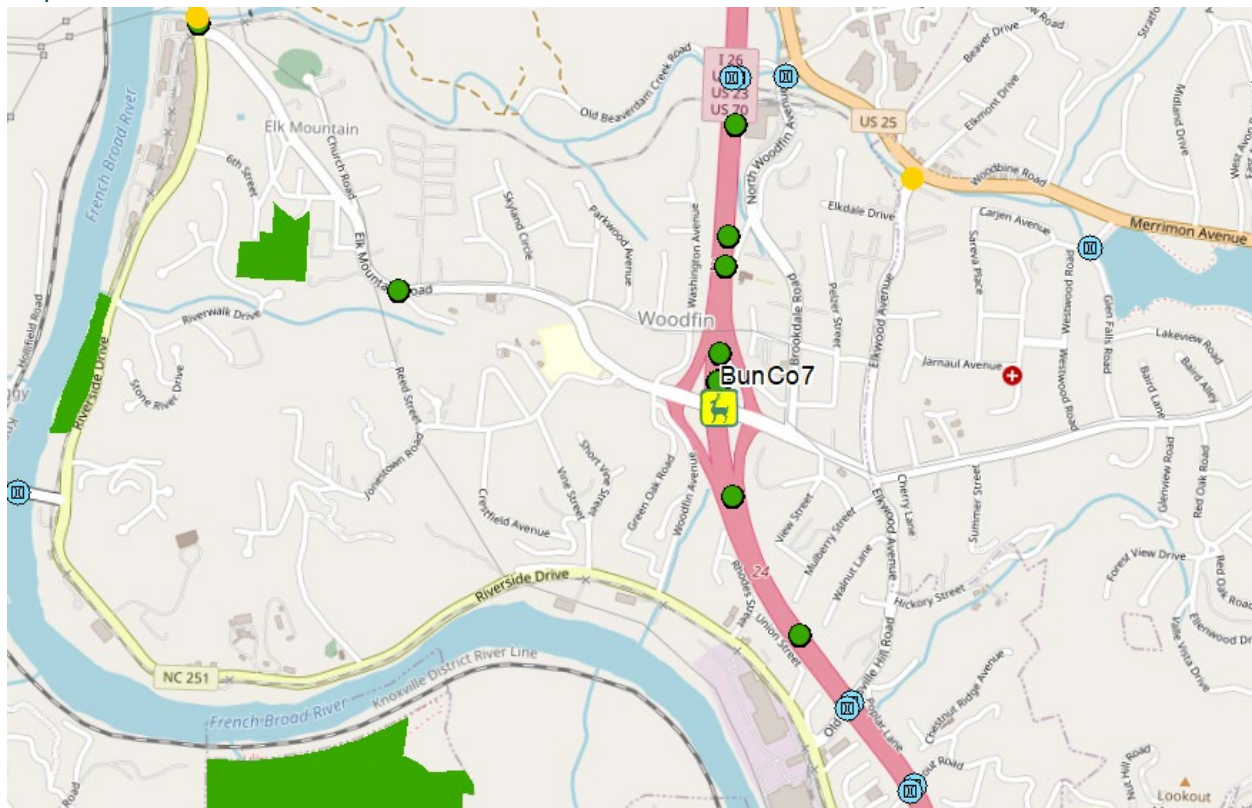
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses.

Attribute Table

Location ID	BunCo7
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	2.75-mi. corridor with cluster of crashes
Alternative Scenarios	Install Deflection Fencing 1 mi. north to Bus US 19/Merrimon Ave, 1.75 mi. to Pearson Bridge Rd.; guide crossings to existing bridge over/underpasses
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	
CTP	
STIP	A-0010AA, Future I-26 (upgrade US 19/23 to interstate standard), 2031
2021 AADT	63,500
2045 AADT	95,200
Priority Ranking	High

Map



BunCo8 / I-40 at Swannanoa

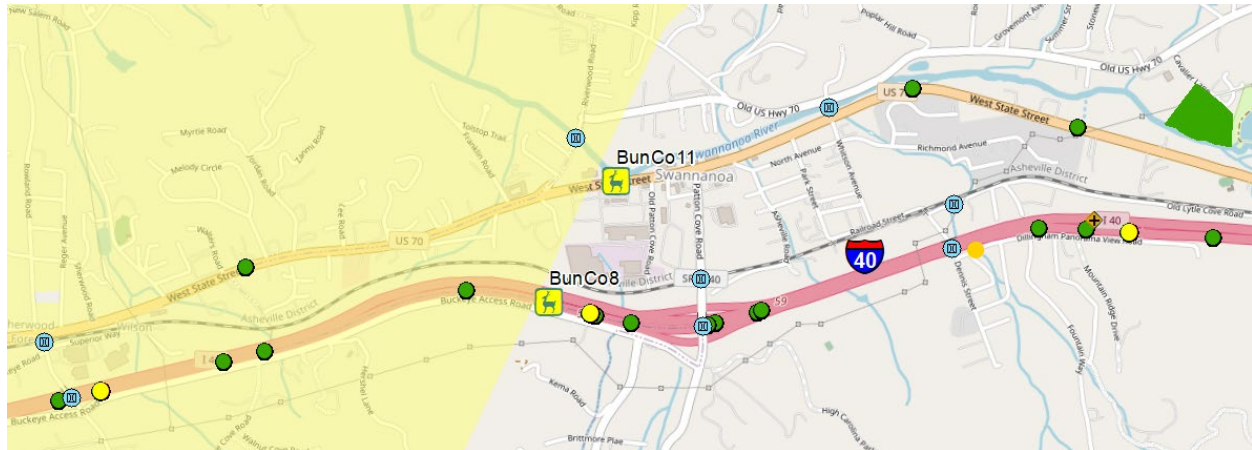
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses. This site is paired with BunCo 9.

Attribute Table

Location ID	BunCo8
Reason	Cluster of crash sites, headed west, FBRMPO
Existing Conditions	WN Priority 1 Corridor; 3.27-mi. corridor with cluster of crashes
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 3.27-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-5890, I-40 pavement rehab, 2019
2021 AADT	52,000
2045 AADT	75,800
Priority Ranking	High

Map



BunCo9 / I-40 east of Blue Ridge Parkway (Asheville)

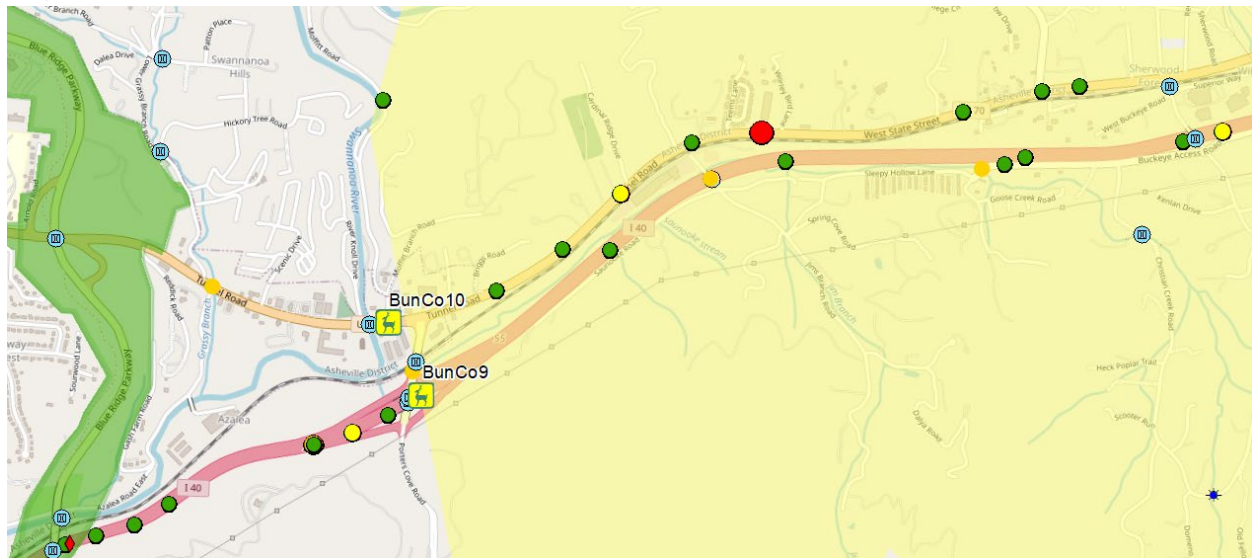
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses. This site is paired with site BunCo8.

Attribute Table

Location ID	BunCo9
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	WN Priority 1 Corridor; 3.27-mi. corridor with cluster of crashes
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 3.27-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-5890, I-40 pavement rehab, 2019
2021 AADT	52,000
2045 AADT	75,800
Priority Ranking	High

Map



BunCo10 / US 70 east of Blue Ridge Parkway (Asheville)

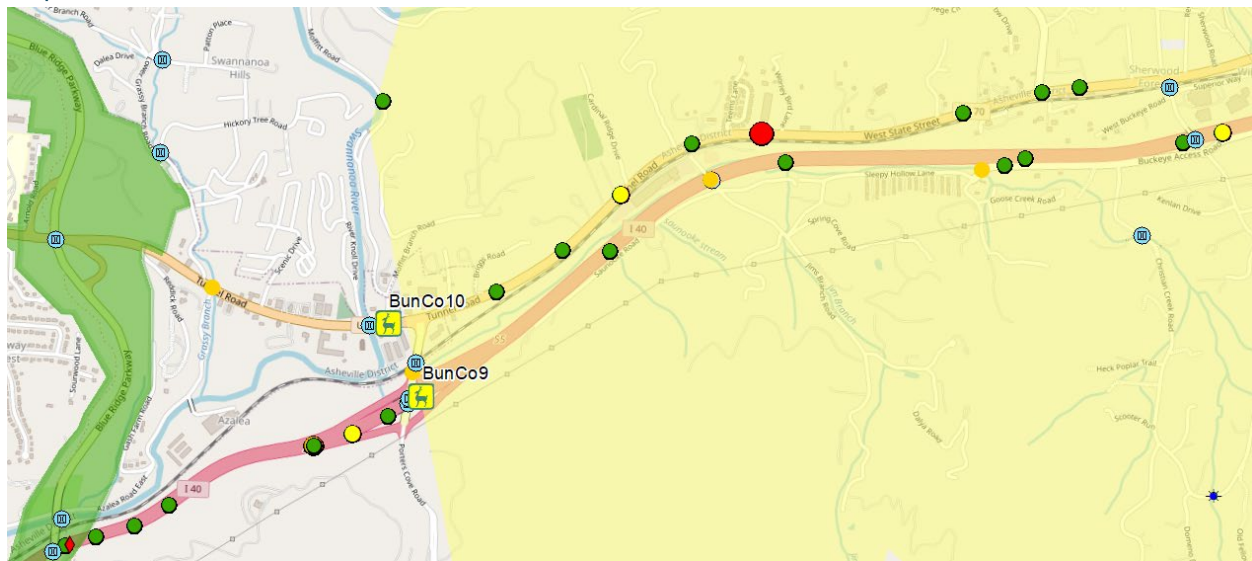
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses. This site is paired with site BunCo11.

Attribute Table

Location ID	BunCo10
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	WN Priority 1 Corridor; 3.3-mi. corridor with cluster of crashes
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 3.3-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	CTP ID A34, US 70, Access Management and Spot Intersection Improvements
STIP	
2021 AADT	13,000
2045 AADT	19,300
Priority Ranking	High

Map



BunCo11 / US 70 at Swannanoa

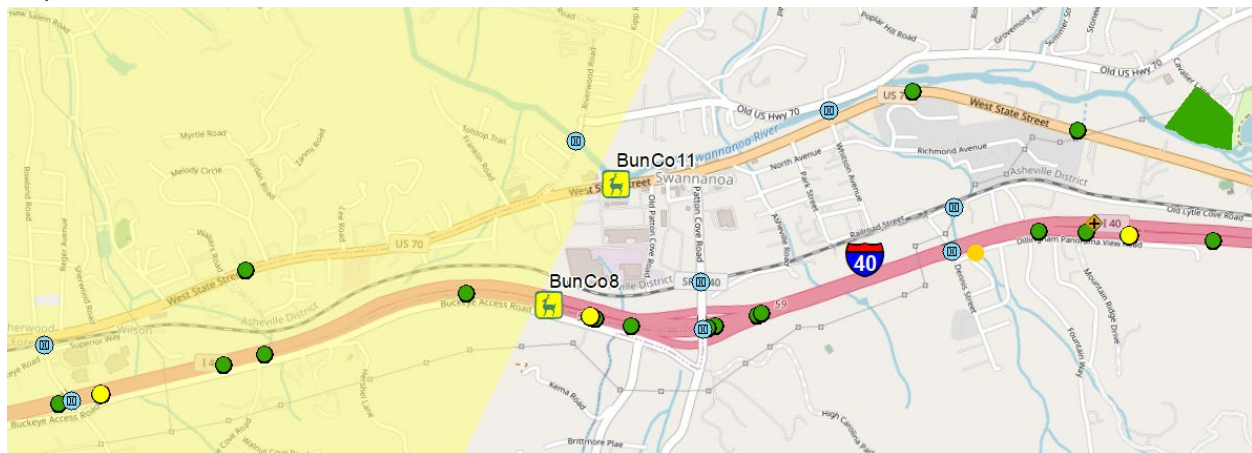
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses. This site is paired with site BunCo10.

Attribute Table

Location ID	BunCo11
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	WN Priority 1 Corridor; 3.3-mi. corridor with cluster of crashes
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 3.3-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	CTP ID A34, US 70, Access Management and Spot Intersection Improvements
STIP	
2021 AADT	13,000
2045 AADT	19,300
Priority Ranking	High

Map



BunCo12 / I-26 at Asheville Outlets

Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses.

Attribute Table

Location ID	BunCo12
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	11' wide x 9' tall vehicle culvert 0.5 mi. north, 14' x 14' vehicle culvert 0.5 mi. south
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install Deflection Fencing to guide animals north or south to existing culverts (Westerly Rd. north; Ferry Rd., south)
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-4700, I-26 widening, 2019
2021 AADT	13,000
2045 AADT	19,300
Priority Ranking	High

Map




BunCo13 / I-26 at Long Shoals Rd-Biltmore Park

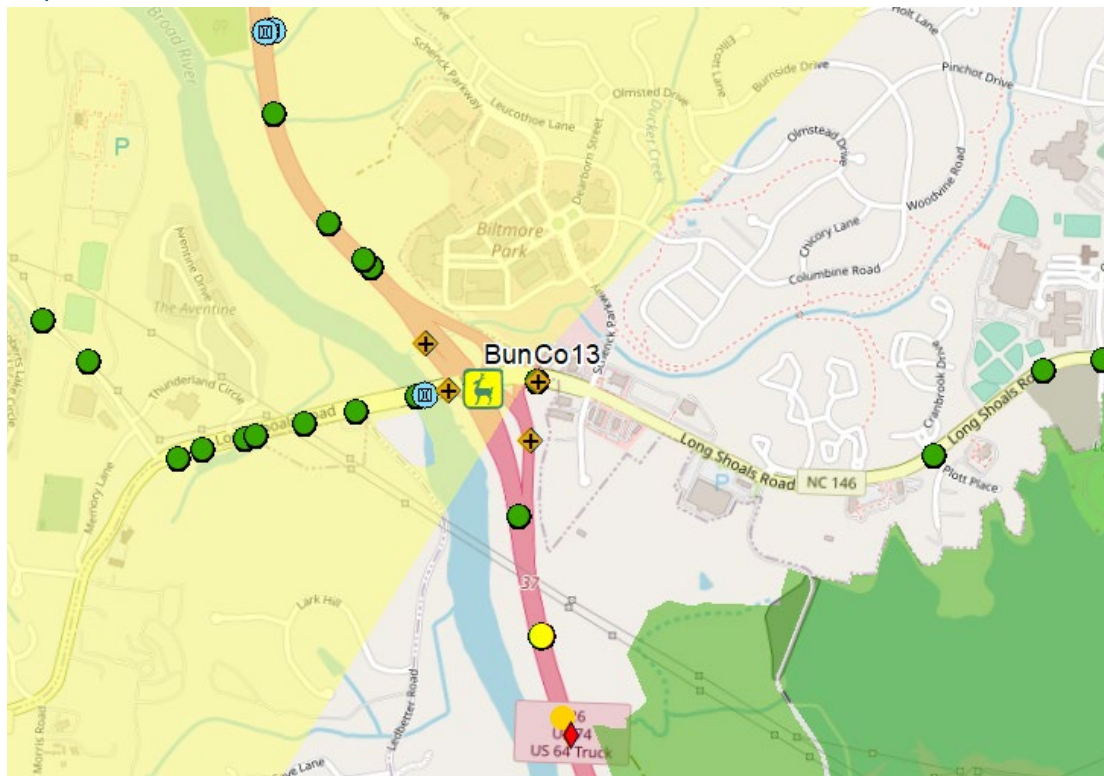
Summary

MPO staff identified this site with a cluster of crashes and recommends deflection fencing to guide animal crossings to existing bridge underpasses.

Attribute Table

Location ID	BunCo13
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	11' wide x 9' tall vehicle culvert 0.5 mi. north, 14' x 14' vehicle culvert 0.5 mi. south
Alternative Scenarios	Vehicle underpass 0.5 mi. north, vehicle underpass 0.5 mi. south of Long Shoals Rd.
	
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	Lake Julian Park, 0.5 mi. south (additional land owned by Duke Energy)
CTP	
STIP	I-4700, I-26 widening, 2019
2021 AADT	83,000
2045 AADT	128,000
Priority Ranking	High

Map





Haywood County Recommendations

HayCo1 / Wilkins Creek Box Culvert A (I-40 at NC Welcome Center)

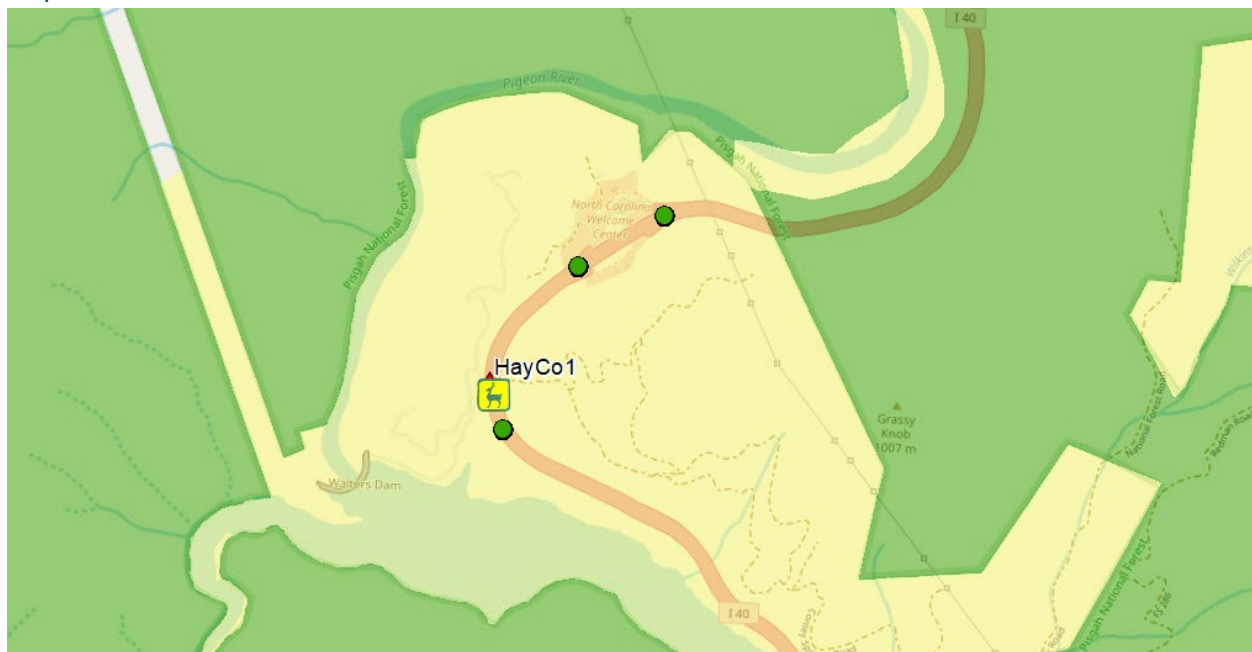
Summary

WN monitored the highest number of WVCs (nine) in this study area at this location. A short ridge on the west side of I-40 could tie into an overpass. The NC Welcome Center could provide a staging area during construction and then be a good long-term location public education information signs.

Attribute Table

Location ID	HayCo1
Reason	WN I-40 PRG Study, high WVC area
Existing Conditions	Wilkins Creek Box Culvert A
Alternative Scenarios	Build wildlife overpass, ideally 30 m / 98 ft wide; Deflection Fencing to guide crossings
 	
Short Alternative Type	Deflection Fencing, Overpass
Key Species	Bear, deer, elk
Public Lands	Pisgah N.F. immediately east and west of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Highest

Map




HayCo2 / Single Tunnel (I-40)

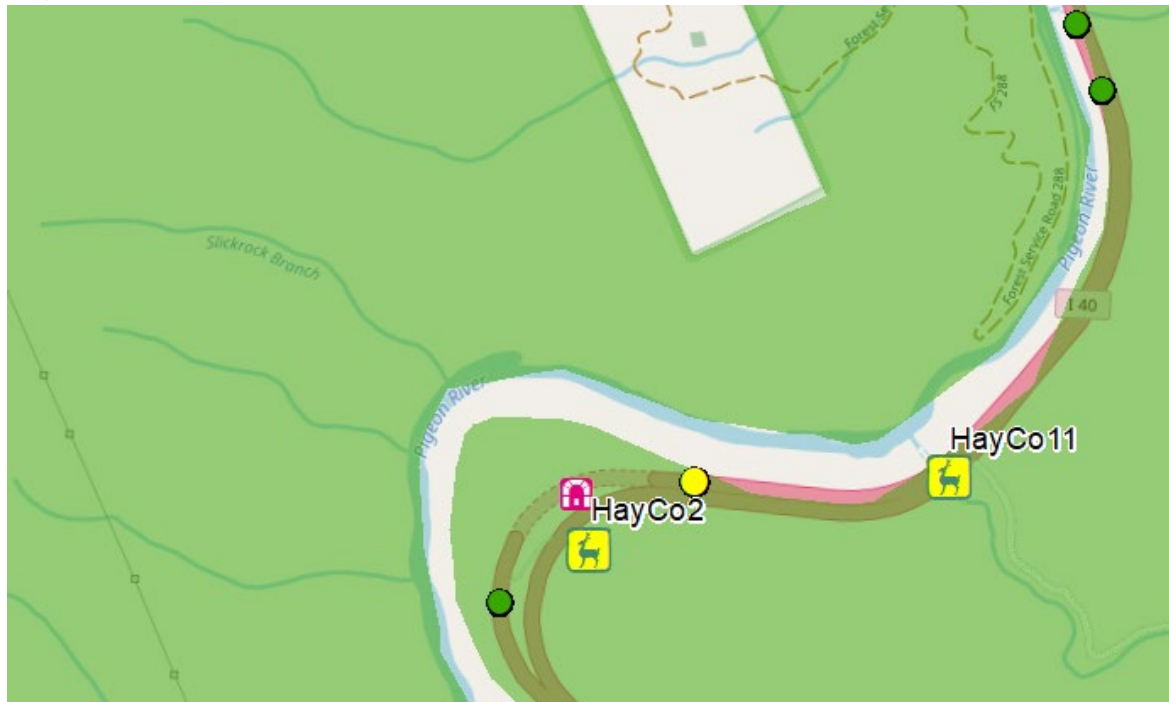
Summary

WN noted that this location provides the easiest and likely least expensive option for a wildlife overpass in the Pigeon River Gorge. Monitoring cameras recorded very high wildlife use, including 15 species of mammals. A major spur ridge from Hurricane Mountain serves as an important wildlife funneling landscape feature down to the Pigeon River. An overpass here could also be an alternative to replacing the nearby Hurricane Creek Culvert.

Attribute Table

Location ID	HayCo2
Reason	WN I-40 PRG Study
Existing Conditions	Single Tunnel
Alternative Scenarios	Build wildlife overpass, ideally 30 m / 98 ft wide; Deflection Fencing to guide crossings, 1-2 m / 3-6 ft wide smooth path from overpass to river
	
Short Alternative Type	Deflection Fencing, Overpass
Key Species	Bear, deer, elk
Public Lands	Pisgah N.F. immediately east and west of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Highest

Map



HayCo3 / Cold Springs Bridge and Culverts (I-40)

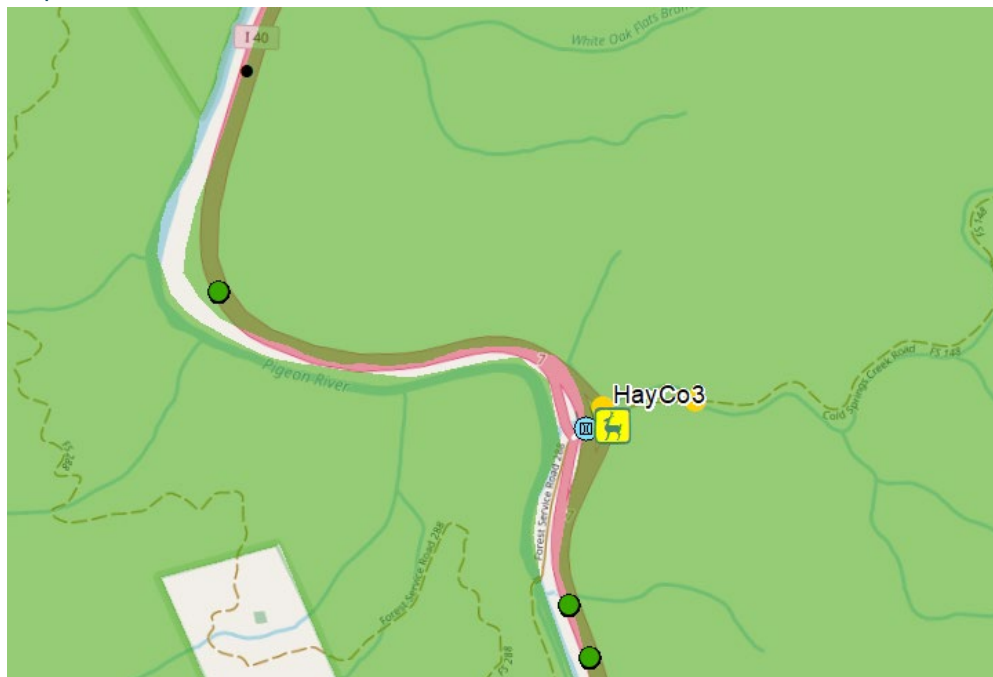
Summary

WN noted that wildlife are being funneled to this location by topography and attempting to cross the interstate at grade. The PRG study divided up I-40 into uniquely identified segments, with nearby Segment 62 having five Wildlife Vehicle Crashes (WVC) including four bears and one unspecified animal. Another nearby location, Segment 64, had six WVC including two bears, one deer, and three unspecified animals. Roadside cameras at Segment 63 recorded bear and deer activity.

Attribute Table

Location ID	HayCo3
Reason	WN I-40 PRG Study
Existing Conditions	Cold Springs Creek Rd Culverts on on/off ramps
Alternative Scenarios	Replace existing culverts on on/off ramps with larger culverts, ideal min. height 7-10 m / 22 - 32 ft , width 4 m / 13 ft; 4 m dry passage needed
Short Alternative Type	Deflection Fencing, New Culvert
Key Species	Bear, deer, elk, aquatic life
Public Lands	Pisgah N.F. immediately east and west of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Highest

Map





HayCo4 / Groundhog Creek (I-40)

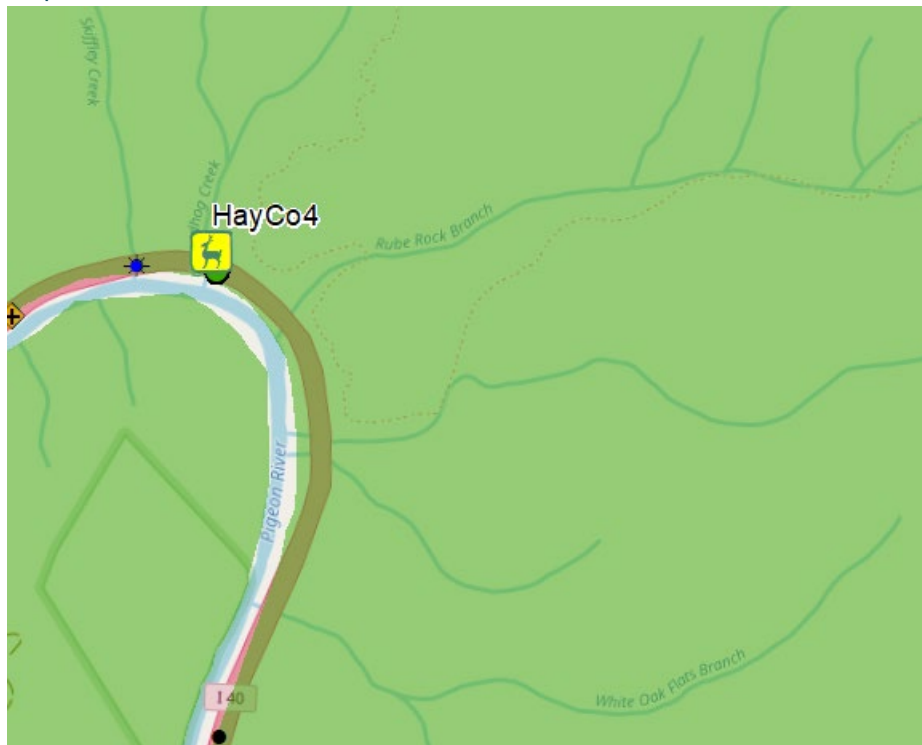
Summary

WN noted that this area is strategically important for bear connectivity, with bears frequently using the existing culverts despite their small size. WN also recorded deer approaching the culverts, but not using them for safe passage. Larger culverts could better support both deer and elk, in addition to bears.

Attribute Table

Location ID	HayCo4
Reason	WN I-40 PRG Study, high WVC area
Existing Conditions	Groundhog Creek, 3 existing small culverts
Alternative Scenarios	Replace with larger culverts, culverts, ideal min. height 7-10 m / 22-32 ft , width 4 m / 13 ft; 4 m dry passage needed
 	
Short Alternative Type	Deflection Fencing, New Culvert
Key Species	Bear, deer, elk, aquatic life
Public Lands	Pisgah N.F. immediately north and south of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Highest

Map





HayCo5 / High Bridge (I-40)

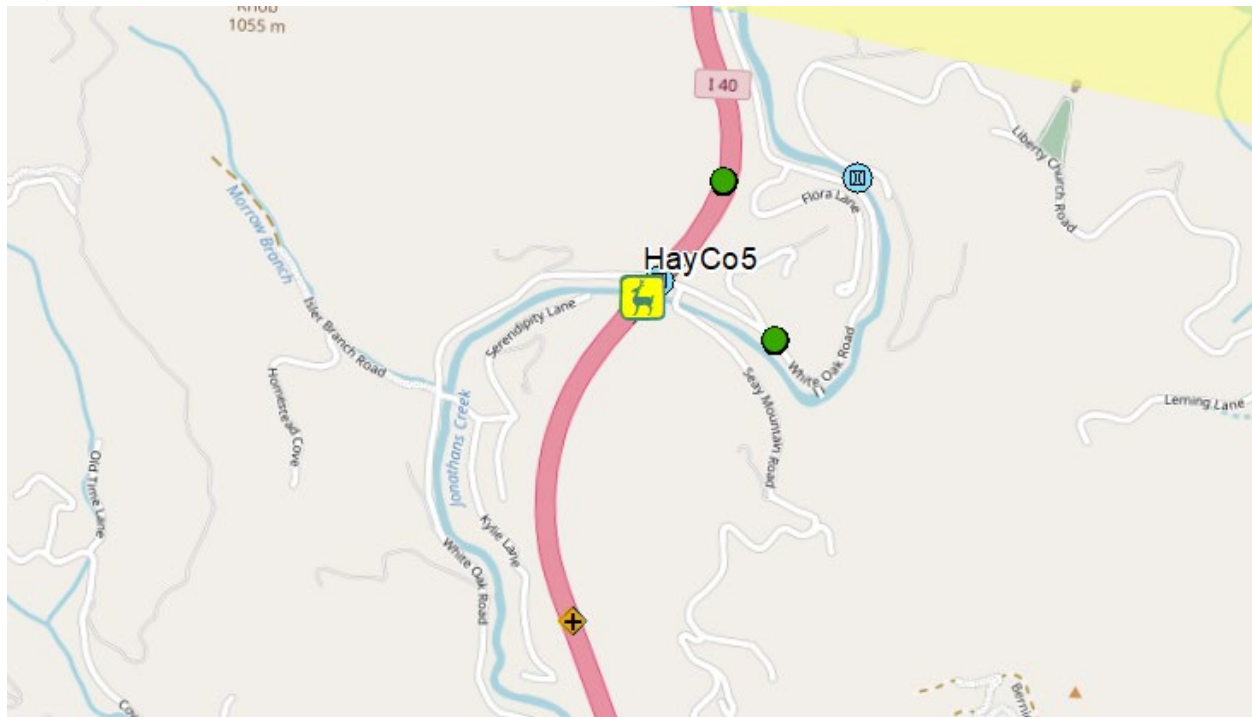
Summary

WN monitoring cameras noted high deer and elk usage of the existing bridge’s underpass, with elk foraging just east of the bridge. WN recommends creating a level path on the north end of the bridge (currently a steep slope) to better support elk and other species. Removal of ROW fencing and replacing it with properly aligned deflection fencing would also enhance this location.

Attribute Table

Location ID	HayCo5
Reason	WN I-40 PRG Study
Existing Conditions	High Bridge
Alternative Scenarios	Install level path (2-3 m / 6-10 ft wide) on north end of bridge; replace ROW fencing with deflection fencing
 	
Short Alternative Type	Deflection Fencing, Level Bench Path
Key Species	Bear, deer, elk
Public Lands	Pisgah N.F. public lands 2 miles west of site
CTP	
STIP	B-6054C, replace bridge over White Oak Rd and Jonathan Creek, 2022
2021 AADT	27,500
2045 AADT	42,000
Priority Ranking	High

Map




HayCo6 / Low Bridge (I-40)

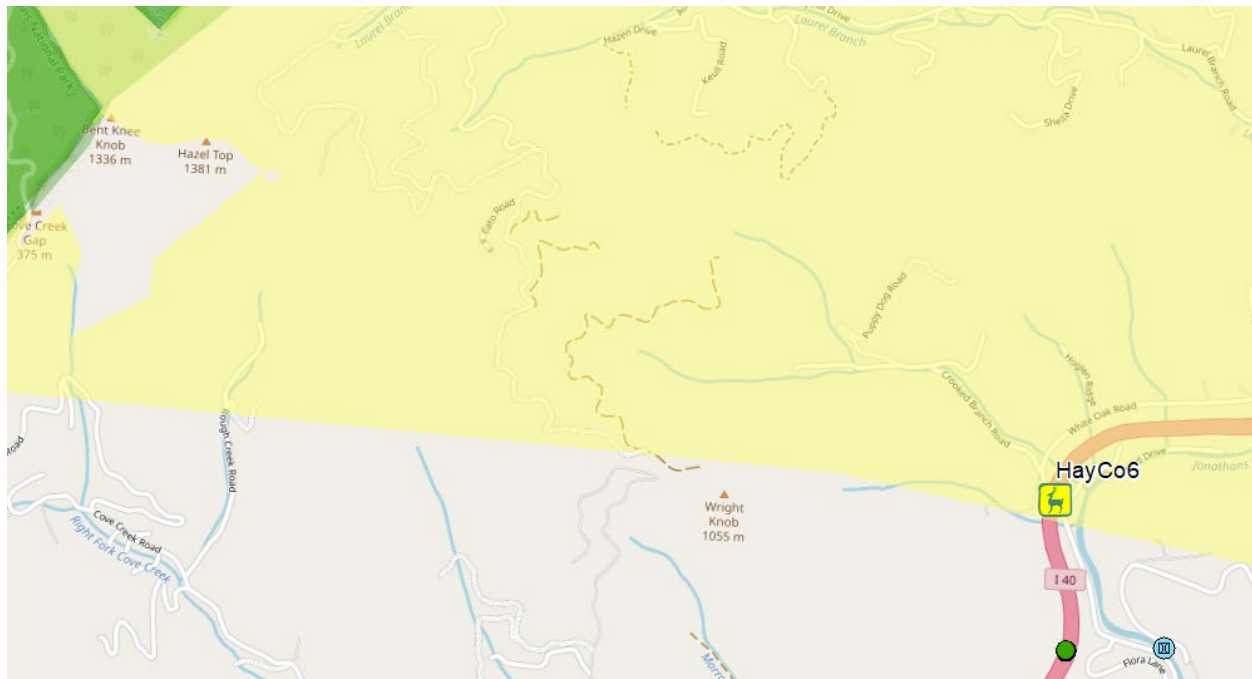
Summary

WN noted that the current bridge design has narrow, steep embankments, discouraging use by wildlife. With high elk and deer activity in the area, a level bench path could support these species, in addition to bears.

Attribute Table

Location ID	HayCo6
Reason	WN I-40 PRG Study
Existing Conditions	Low Bridge
Alternative Scenarios	Extend length of bridge to allow 7-10 m / 22-32 ft wide by 4 m / 13 ft tall wildlife passage area under bridge; replace ROW fencing with Deflection Fencing
	
Short Alternative Type	Deflection Fencing, Level Bench Path
Key Species	Bear, deer, elk
Public Lands	Pisgah N.F. public lands 2 miles west of site
CTP	
STIP	B-6054C, replace bridge over White Oak Rd and Jonathan Creek, 2022
2021 AADT	27,500
2045 AADT	42,000
Priority Ranking	High

Map





HayCo7 / Pigeon River Bridge (I-40)

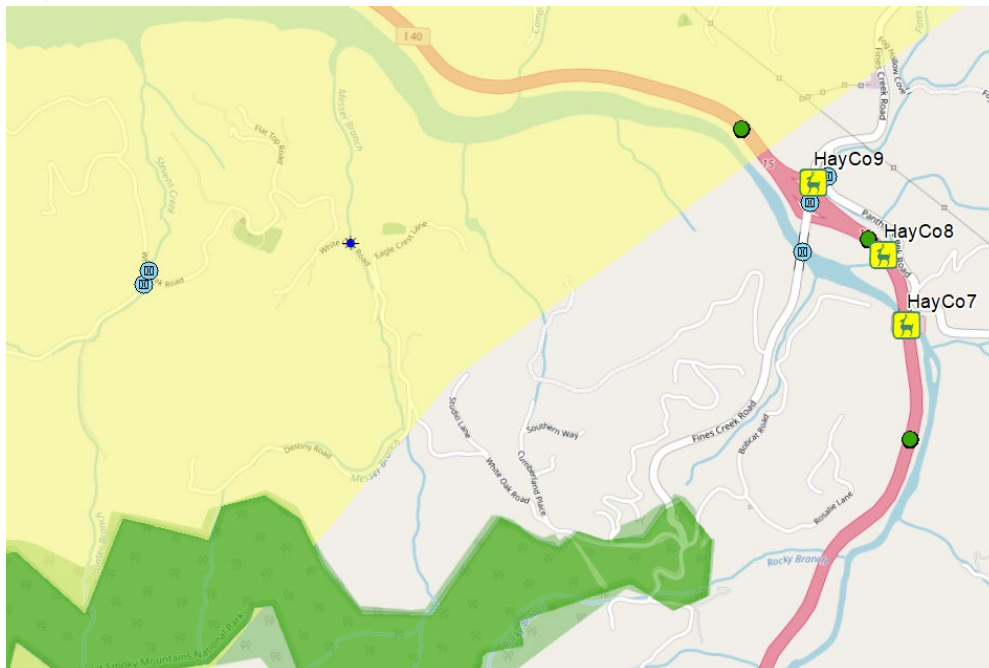
Summary

WN noted that excavating a wider, taller level bench path on the north end of the bridge would allow easier access for target animal species (elk, deer, bear). On the south end of the bridge, NCDOT has indicated an access road would be constructed during bridge replacement; leaving the road in place for wildlife use would enhance connectivity under the interstate at this location.

Attribute Table

Location ID	HayCo7
Reason	WN I-40 PRG Study
Existing Conditions	Pigeon River Bridge
Alternative Scenarios	After bridge replacement, maintain access road on south side 2-3 m / 7-10 ft wide; construct new 13 ft tall x 24 ft wide elk passage on north side
 	
Short Alternative Type	Deflection Fencing, Level Bench Path
Key Species	Bear, deer, elk
Public Lands	Pisgah N.F. public lands 1 mile south of site; land purchase or conservation easements needed
CTP	
STIP	B-6054E, replace bridge over Pigeon River, 2023
2021 AADT	27,500
2045 AADT	42,000
Priority Ranking	High

Map




HayCo8 / Fines Creek Large Culvert (I-40)

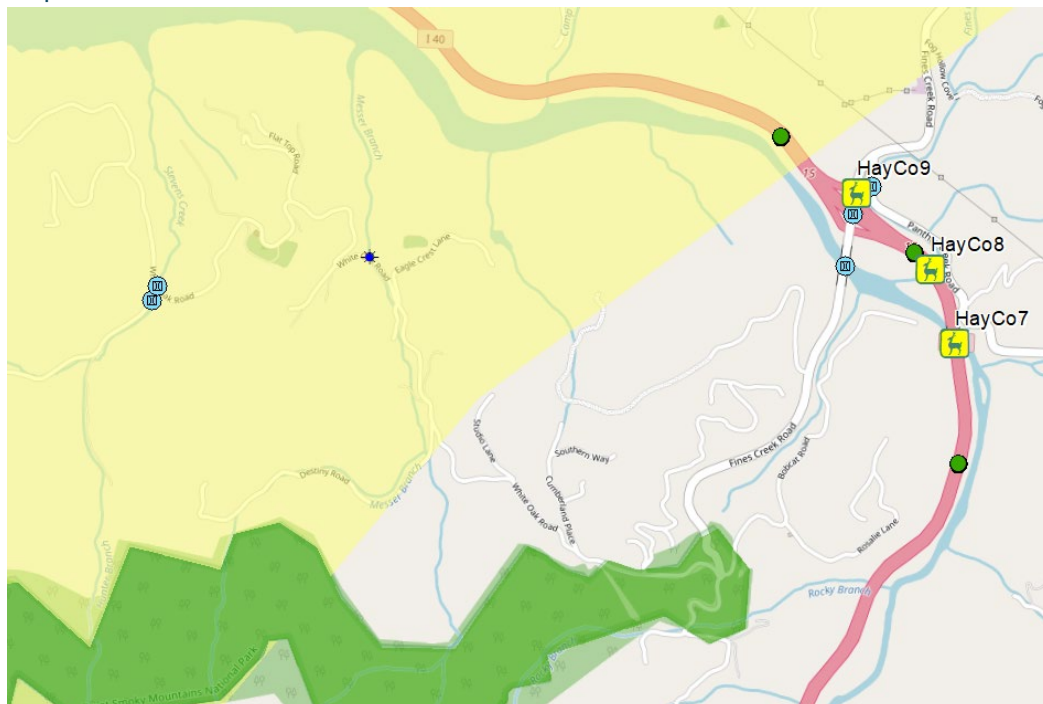
Summary

WN noted that the current bridge design has narrow, steep embankments, discouraging use by wildlife. With high elk and deer activity in the area, a level bench path could support these species, in addition to bears.

Attribute Table

Location ID	HayCo8
Reason	WN I-40 PRG Study
Existing Conditions	Fines Creek Large Culvert
Alternative Scenarios	Add 1-2 m / 3-7 ft wide dry passage shelves on one or both sides of culvert; install Deflection Fencing
	
Short Alternative Type	Deflection Fencing, Level Bench Path
Key Species	Bear, deer, racoon, bobcat, aquatic life
Public Lands	Pisgah N.F. public lands 1 mile south of site; land purchase or conservation easements needed
CTP	
STIP	B-6054E, replace bridge over Pigeon River, 2023
2021 AADT	27,500
2045 AADT	42,000
Priority Ranking	High

Map




HayCo9 / Fines Creek Bridge (I-40)

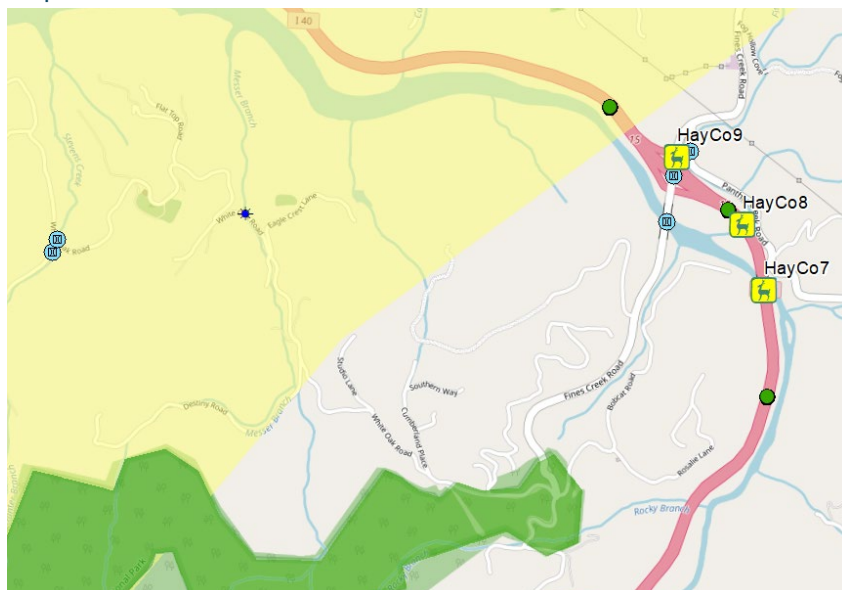
Summary

WN noted that the best solution for wildlife connectivity would be to extend the length of the bridge and install a 4m / 13 ft tall x 7-10 m (23-34 ft) wide wildlife passage during bridge replacement. Although land around the bridge is in private ownership, WN notes that existing fields, pastures, and lawns provide excellent foraging habitat for elk and deer. Additionally, this location is adjacent to a WN / BRF Priority 1 Corridor for wildlife movement between Great Smoky Mountains National Park to the south and the Sandy Mush conservation area north of Canton, NC.

Attribute Table

Location ID	HayCo9
Reason	WN I-40 PRG Study
Existing Conditions	Fines Creek Bridge
Alternative Scenarios	With bridge replacement, or new culvert, extend bridge length to include 4 m / 13 ft tall x 7-10 m / 23-32 ft wide wildlife passage under bridge; install Deflection Fencing
	
Short Alternative Type	Deflection Fencing, Underpass
Key Species	Bear, deer, elk, turtles, snakes, salamanders
Public Lands	Pisgah N.F. public lands 1 mile south of site; land purchase or conservation easements needed
CTP	
STIP	HB-0027, replace bridge over Fines Creek, 2025
2021 AADT	27,500
2045 AADT	42,000
Priority Ranking	High

Map





HayCo10 / Wilkins Creek Box Culvert B (I-40)

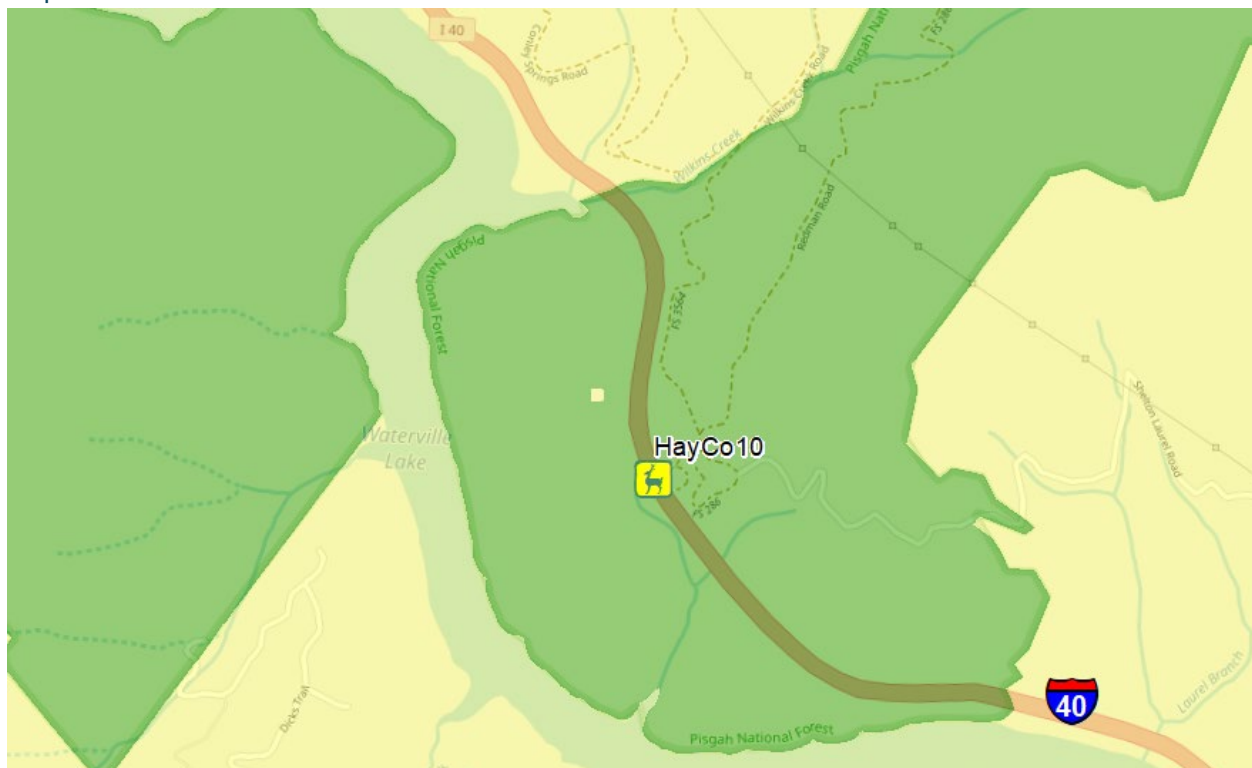
Summary

WN noted that this location could provide a good wildlife crossing, but the area experiences high human use, and the lake on the west side of the highway constrains wildlife movement. WN recommend leaving the box culvert as is, albeit with added deflection fencing as part of the overall fencing network in the PRG.

Attribute Table

Location ID	HayCo10
Reason	WN I-40 PRG Study
Existing Conditions	Wilkins Creek Box Culvert B
Alternative Scenarios	Enhance existing culvert with Deflection Fencing
 	
Short Alternative Type	Deflection Fencing
Key Species	Bear, deer
Public Lands	Pisgah N.F. immediately east and west of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Low

Map




HayCo11 / Hurricane Creek Culvert (I-40)

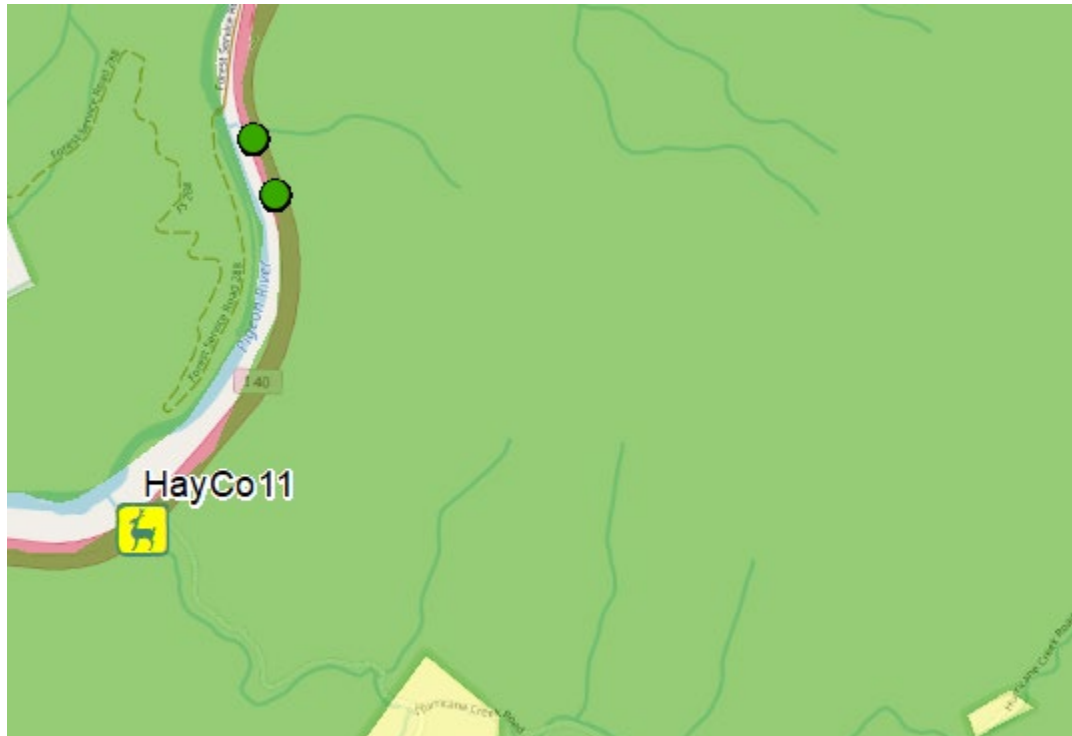
Summary

WN noted that this location is WVC hotspot, with five bear collisions on nearby road Segment 67 and three bear collisions on Segment 68, and monitoring cameras at the site recorded deer using the culvert. WN recommended adding solar-powered lighting in the middle of the exceptionally long and dark culvert, plus a dry level bench path, to support additional species such as bobcat, raccoon, and possibly bear.

Attribute Table

Location ID	HayCo11
Reason	WN I-40 PRG Study, high WVC area
Existing Conditions	Hurricane Creek Culvert
Alternative Scenarios	Add 1-2 m / 3-7 ft wide dry passage shelves, add solar-powered lights in middle of culvert for animal sight visibility.
	
Short Alternative Type	Level Bench Path, Solar Lighting
Key Species	Bear, deer
Public Lands	Pisgah N.F. immediately east and west of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Medium

Map




HayCo12 / Double Tunnel (I-40)

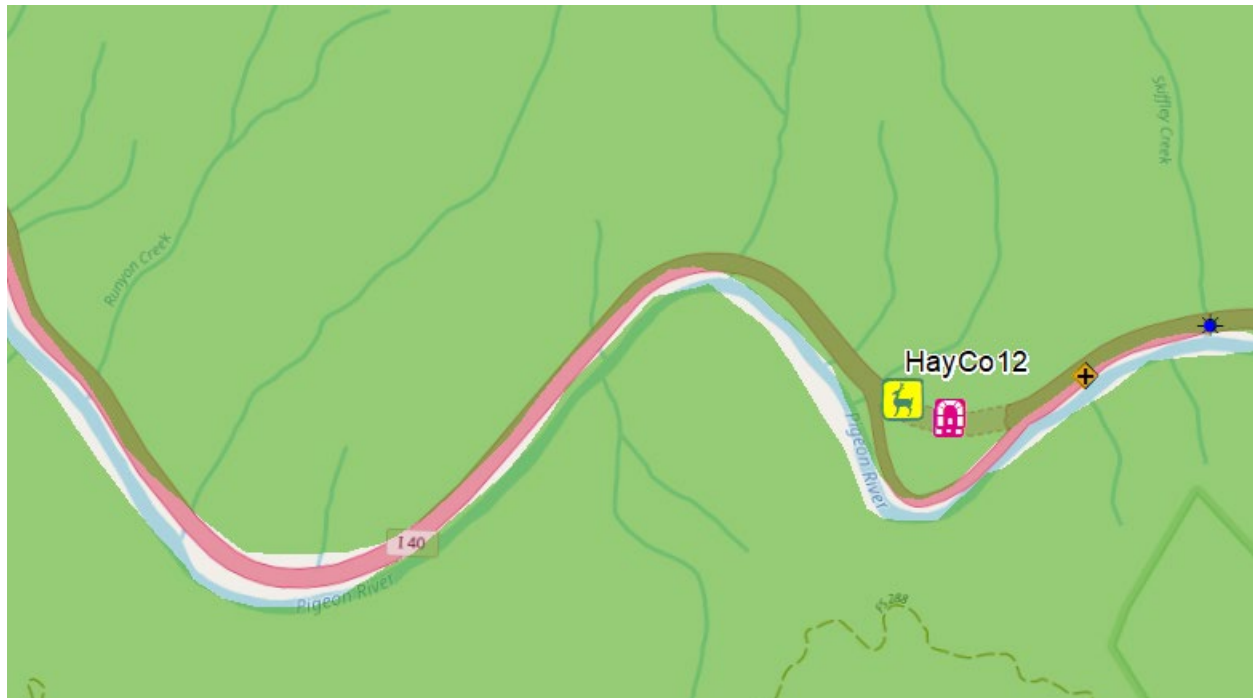
Summary

WN noted that this location already has a land-bridge funneling effect and relatively low levels of WVCs, with high deer and bear activity in the area. Still, the main obstacle to large animal passage is due to steep terrain on the river side of the land bridge, so WN recommends construction of a dirt-surfaced path through the river’s rip-rap bank.

Attribute Table

Location ID	HayCo12
Reason	WN I-40 PRG Study
Existing Conditions	Double Tunnel
Alternative Scenarios	Obtain Special Designation Status from Pisgah N.F. for this land bridge; build 1-2 m / 3-7 ft wide dirt trail through land bridge, down over rip-rap to river's edge for wildlife passage; install Deflection Fencing.
	
Short Alternative Type	Deflection Fencing, Land Protection
Key Species	Bear, deer, small mammals, turtles
Public Lands	Pisgah N.F. immediately north and south of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	Medium

Map





HayCo13 / Snowbird Creek Culvert (I-40)

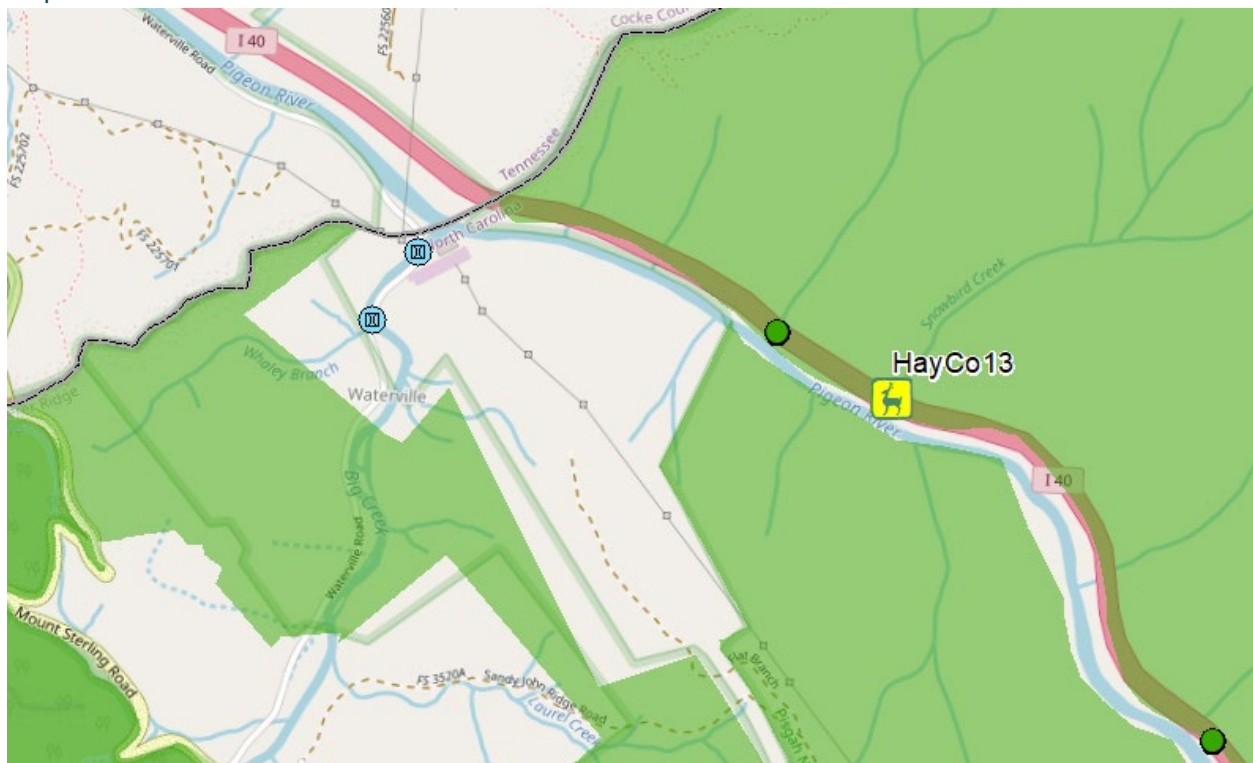
Summary

WN noted that this location already has a land-bridge funneling effect and relatively low levels of WVCs, with high deer and bear activity in the area. Still, the main obstacle to large animal passage is due to steep terrain on the river side of the land bridge, so WN recommends construction of a dirt-surfaced path through the river’s rip-rap bank.

Attribute Table

Location ID	HayCo13
Reason	WN I-40 PRG Study
Existing Conditions	Snowbird Creek Culvert
Alternative Scenarios	Replace existing culvert with a new 7-10 m / 22-32 ft wide culvert incl. level bench and natural substrate bottom; install Deflection Fencing.
 	
Short Alternative Type	Deflection Fencing, New Culvert
Key Species	Bear, deer
Public Lands	Pisgah N.F. immediately north and south of site
CTP	
STIP	I-5923, I-40 pavement rehab, 2020
2021 AADT	26,500
2045 AADT	42,000
Priority Ranking	High

Map




HayCo14 / I-40 east of Canton (I-40, Haywood/Buncombe County border)

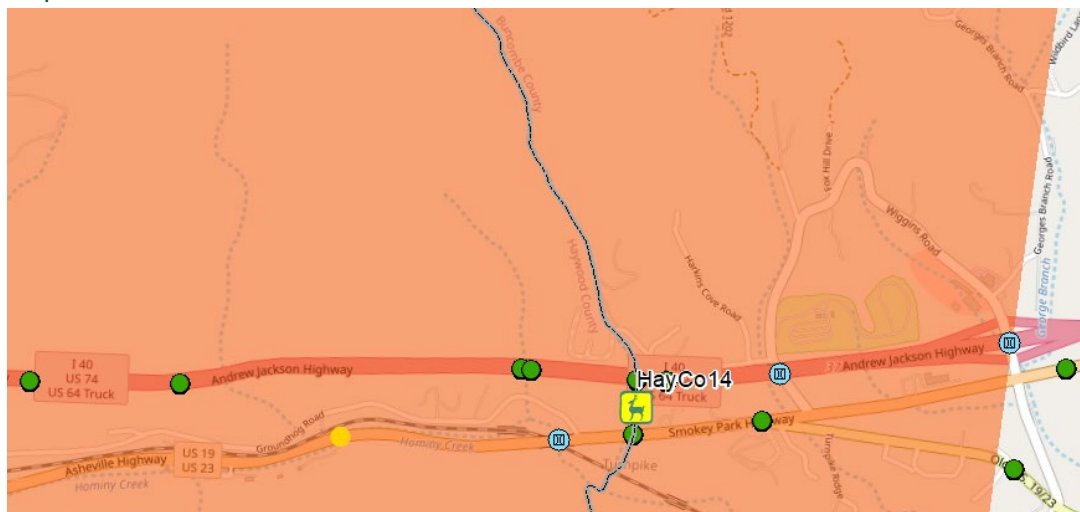
Summary

This site is currently under active study (i.e. monitoring cameras in place) by Wildlands Network since it's located between Sandy Mush Conservation easement (north) and Chestnut Mountain Nature Park (a partnership between City of Canton and Southern Appalachian Highlands Conservancy, a WNC-based land conservation organization). A combination of deflection fencing along I-40 and US 19/23, coupled with new dry box culverts underneath the roadways, could complement the existing wildlife corridor running along the Haywood County/Buncombe County border and identified by a WN/BRF Priority 2 Corridor.

Attribute Table

Location ID	HayCo14
Reason	WN Top 20 Sites in NC Study, high WVC
Existing Conditions	I-40 east of Canton
Alternative Scenarios	WN Priority 2 Corridor; Install dry culvert underpasses under I-40 and US 19/23, as county line runs along a natural valley and connects with Hominy Creek (immediately south); install Deflection Fencing.
	
Short Alternative Type	Deflection Fencing, New Culvert
Key Species	Bear, deer, elk
Public Lands	Sandy Mush conservation easement (north), Pisgah N.F. and Chestnut Mountain (SAHC), Mt. Pisgah (south)
CTP	I-40, CTP ID B-1, widen to 6 lanes
STIP	U-6048, US 19/23 upgrade, 2029; I-6054C, I-40 widening, 2029
2021 AADT	56,500
2045 AADT	78,800
Priority Ranking	Highest

Map




HayCo15 / US 19 at Blue Ridge Parkway

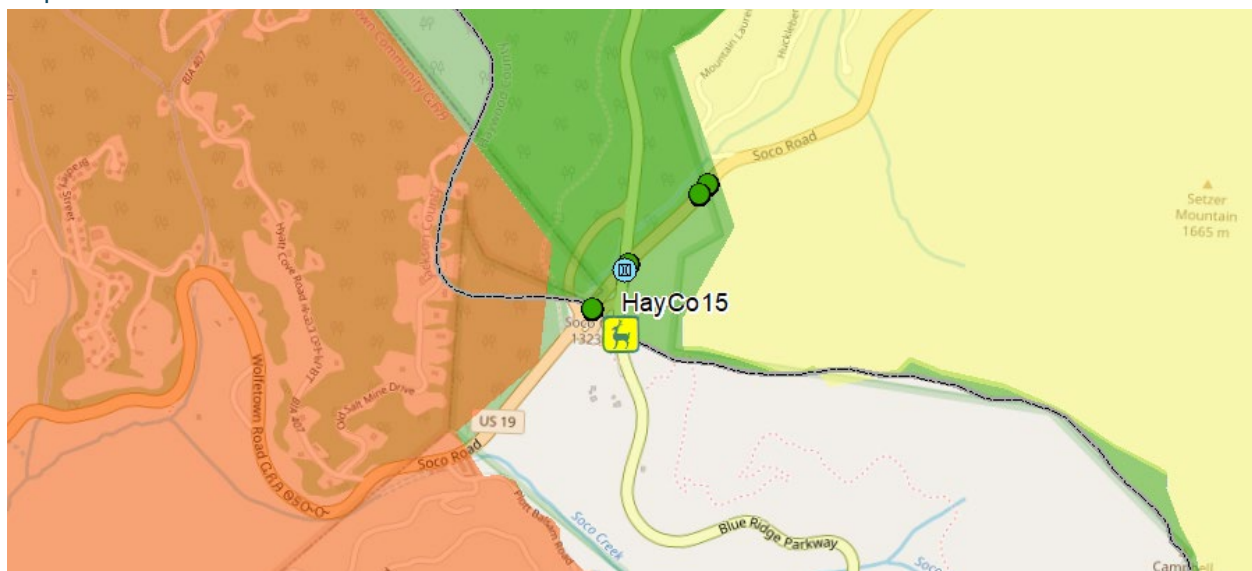
Summary

This site is currently under active study (i.e. monitoring cameras in place) by Wildlands Network since it's located between Sandy Mush Conservation easement (north) and Chestnut Mountain Nature Park (a partnership between City of Canton and Southern Appalachian Highlands Conservancy, a WNC-based land conservation organization). A combination of deflection fencing along I-40 and US 19/23, coupled with new dry box culverts underneath the roadways, could complement the existing wildlife corridor running along the Haywood County/Buncombe County border and identified by a WN/BRF Priority 2 Corridor.

Attribute Table

Location ID	HayCo15
Reason	WN Top 20 Sites in NC Study, high WVC (elk) area
Existing Conditions	US 19 at Blue Ridge Parkway
Alternative Scenarios	WN Priority 1 Corridor connecting Pisgah N.F., part of Eastern Wildway corridor. Install 24x24 MUTCD warning signs on US 19 and BRP in proximity to the roads' junction.
	
Short Alternative Type	Signage
Key Species	Bear, deer, elk
Public Lands	Blue Ridge Parkway
CTP	
STIP	
2021 AADT	
2045 AADT	
Priority Ranking	Highest

Map




Henderson County Recommendations

HenCo1 / US 25 at Green River

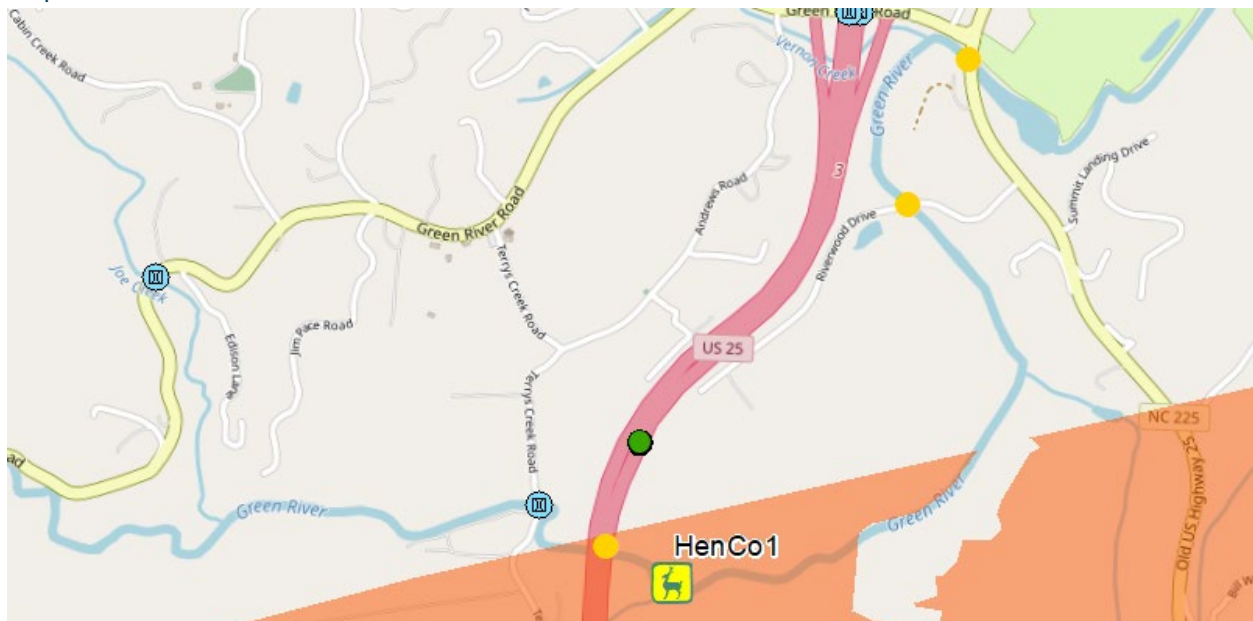
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing a level bench path in one of the existing large culverts next to the riverbank, north or south side to be determined by wildlife and transportation experts.

Attribute Table

Location ID	HenCo1
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 25 at Green River; Brdg Number 440080, triple 15'x15' RC box culvert
Alternative Scenarios	WN Priority 2 Corridor; install Level Bench Path in culvert near riverbank, Deflection Fencing
	
Short Alternative Type	Deflection Fencing, Level Bench Path
Key Species	
Public Lands	Greenville, SC watershed properties and The Nature Conservancy's Blue Wall Preserve 2 mi. south
CTP	
STIP	
2021 AADT	16,000
2045 AADT	21,600
Priority Ranking	High

Map




HenCo2 / Peter Guice Memorial Bridge (I-26)

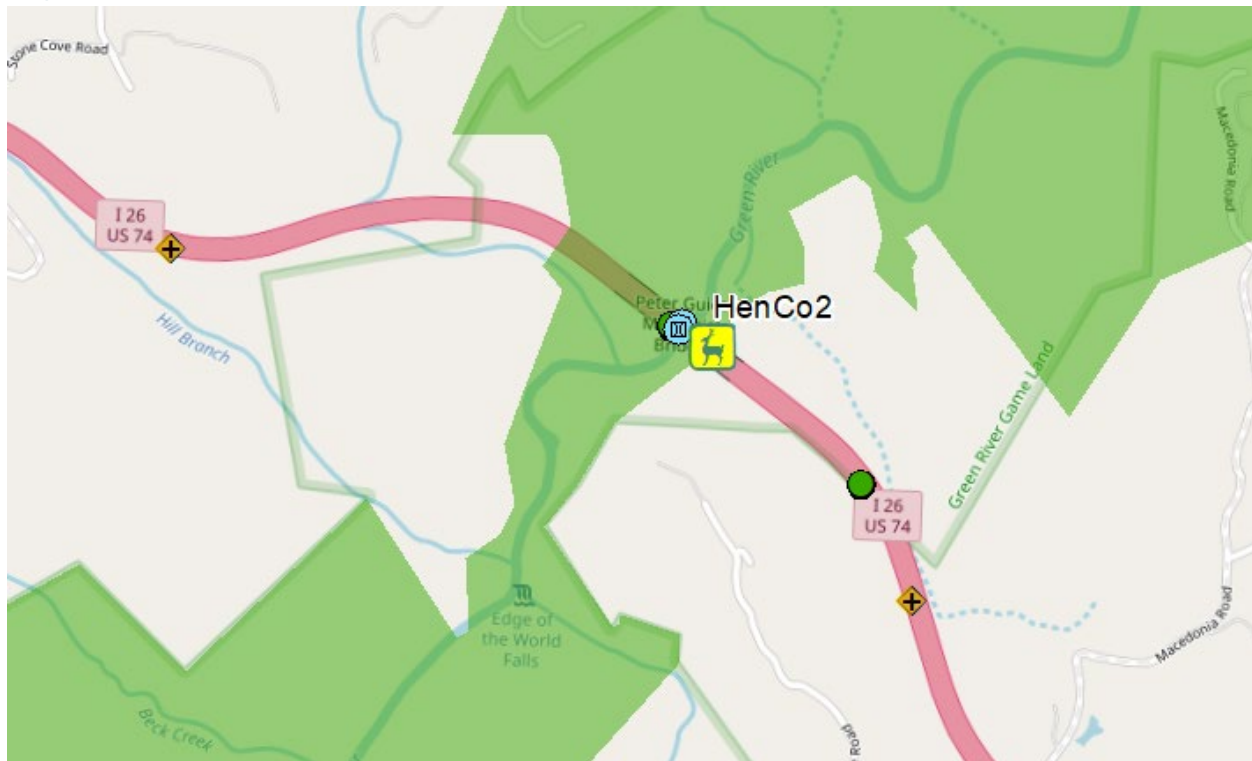
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing on both sides of the bridge approaches to direct animal crossings in the river gorge below and to discourage animal crossings on the bridge.

Attribute Table

Location ID	HenCo2
Reason	WN Top 20 Sites in NC Study
Existing Conditions	Peter Guice Memorial Bridge (I-26)
Alternative Scenarios	Green River Game Land corridor, 1 mi. north of WN Priority 2 Corridor; Deflection Fencing
	
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	Green River Game Land corridor
CTP	
STIP	I-5925, pavement rehab, MM 50 to Polk Co. line, 2025
2021 AADT	43,500
2045 AADT	54,000
Priority Ranking	High

Map




HenCo3 / US 64 via Hickory Nut Gorge

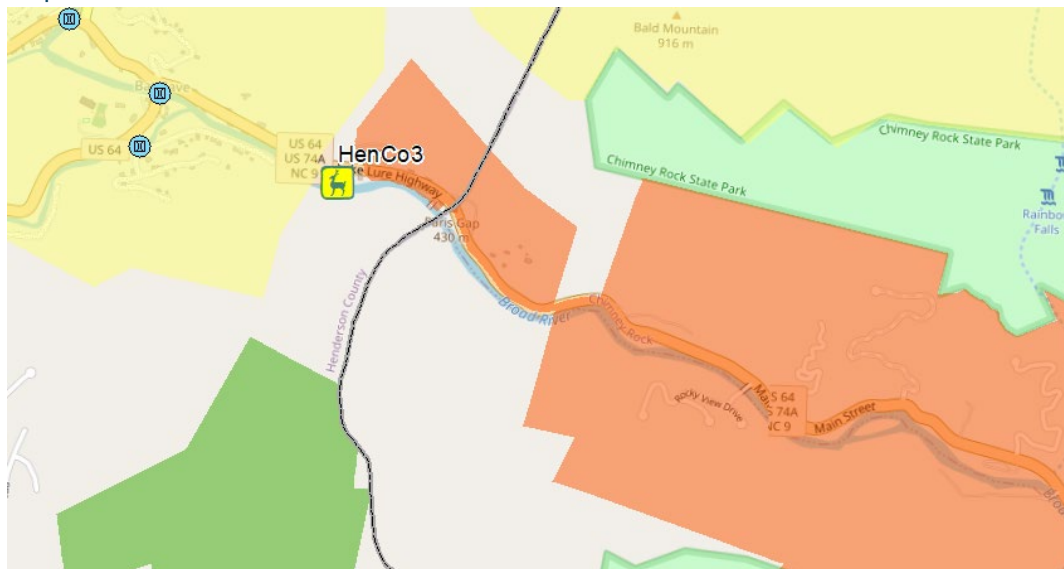
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing on both sides US 64/74 to encourage animal crossings at limited locations, paired with MUTCD 24"x24" warning signs.

Attribute Table

Location ID	HenCo3
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 64 thru Hickory Nut Gorge
Alternative Scenarios	hwy. crosses between blocks of TNC ⁶ Hickory Nut Gorge Preserve, Priority1 Corridor (west) and Priority 2 Corridor (east); Install Wildlife Crossing signage and Deflection Fencing for better sight distance of crossing opening.
	
Short Alternative Type	Deflection Fencing, Signage
Key Species	
Public Lands	Conserving Carolina, 470 ac. protected, 750' north of US 64; TNC easement & Chimney Rock S.P., south
CTP	US 74A, modernization, Bunc. Co. line to Ruth. Co. line
STIP	
2021 AADT	4,200
2045 AADT	
Priority Ranking	High

Map




⁶ TNC = The Nature Conservancy

HenCo4 / US 64 at Tater Knob [US 74A]

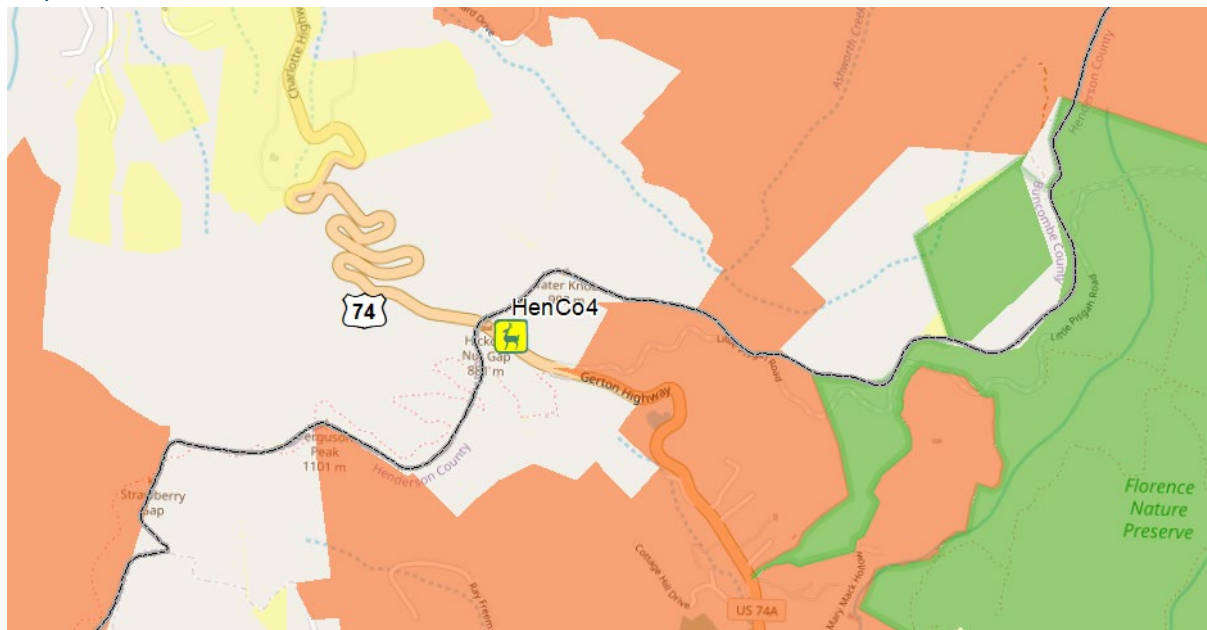
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing on both sides US 74A to encourage animal crossings at limited locations, paired with MUTCD 24"x24" warning signs.

Attribute Table

Location ID	HenCo4
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 64 at Tater Knob [NOTE: The original WN report denotes this as US 64, but this section of roadway is actually US 74A.]
Alternative Scenarios	hwy. crosses Priority 2 Corridor; Install Wildlife Crossing signage and Deflection Fencing for better sight distance of crossing opening(s).
	
Short Alternative Type	Deflection Fencing, Signage
Key Species	
Public Lands	SAHC conservation easement at ridge; Carolina Mtn. Land Conservancy prop., 0.5 mi. east
CTP	US 74A, modernization, Bunc. Co. line to Ruth. Co. line
STIP	
2021 AADT	1,900
2045 AADT	
Priority Ranking	High

Map




HenCo5 / NC 280 southwest of Mills River

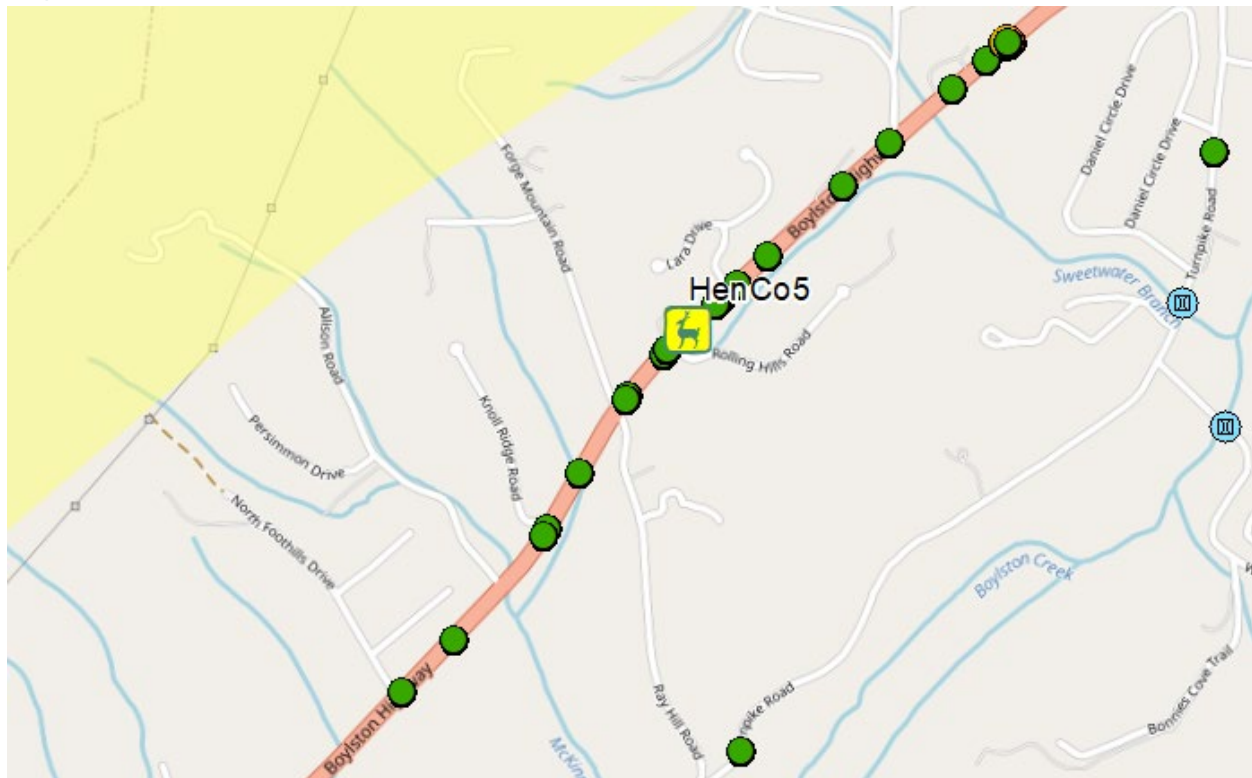
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing on both sides of NC 280 for animal crossings at limited locations on sections with greater sight distance, paired with MUTCD 24"x24" warning signs.

Attribute Table

Location ID	HenCo5
Reason	WN Top 20 Sites in NC Study
Existing Conditions	NC 280 SW of Mills River
Alternative Scenarios	17 deer crashes 500m radius 2016-2020; Install Deer Crossing signage and Deflection Fencing for better sight distance of crossing opening(s).
	
Short Alternative Type	Deflection Fencing, Signage
Key Species	Deer
Public Lands	Pisgah N.F. 2 mi. west of site; private land south of site (Rolling Hills Rd.)
CTP	
STIP	
2021 AADT	19,000
2045 AADT	29,300
Priority Ranking	High

Map




HenCo6 / Blue Ridge Parkway between Ferrin Knob Tunnels 1 & 2

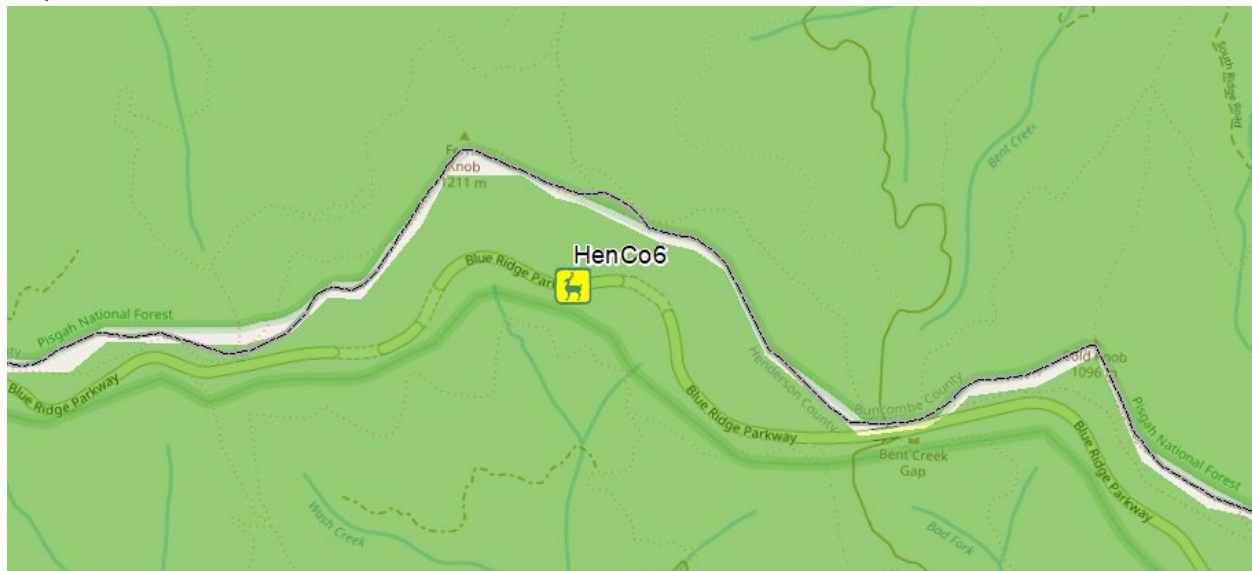
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing new small-diameter culverts underneath the Blue Ridge Parkway to provide safe crossings for small reptile species. This recommendation is based on the experience of another reptile mortality hotspot in Gorges State Park in Transylvania County (see site TranCo4). At that site, three concrete culverts were installed in 2009, expressly for dry culvert wildlife crossings, and WN has camera-monitored several small mammal and reptile species using the culverts for safe crossings of a park road.

Attribute Table

Location ID	HenCo6
Reason	WN Top 20 Sites in NC Study
Existing Conditions	BRP, between Ferrin Knob Tunnels 1 & 2; Reptile mortality hotspot, noted by anon wildlife expert
Alternative Scenarios	Install new culverts at identified crossing sites (TBD).
	
Short Alternative Type	New Culverts
Key Species	Reptiles
Public Lands	Pisgah N.F. surrounding all sides
CTP	
STIP	
2021 AADT	2,100
2045 AADT	
Priority Ranking	High

Map



HenCo7 / I-26 at Brookside Camp Rd.

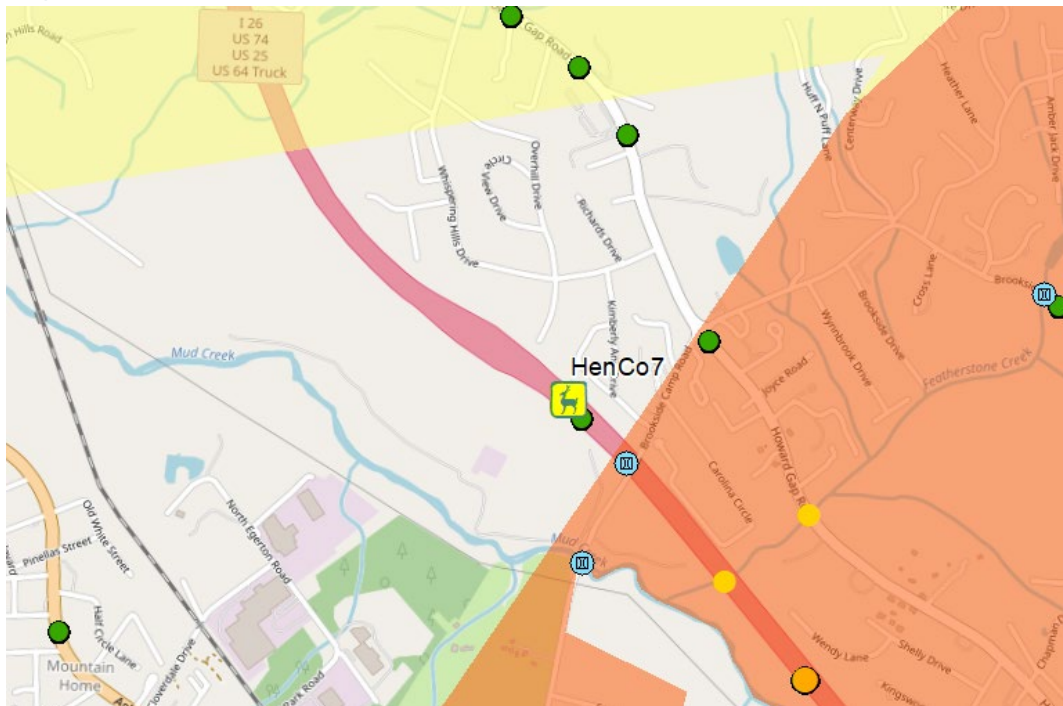
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor where I-26 passes through a WN Priority 2 Corridor. This site is paired with site HenCo8.

Attribute Table

Location ID	HenCo7
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-4400BB, I-26 widening, 2019
2021 AADT	62,500
2045 AADT	94,000
Priority Ranking	High

Map



HenCo8 / I-26 at Clear Creek Rd.

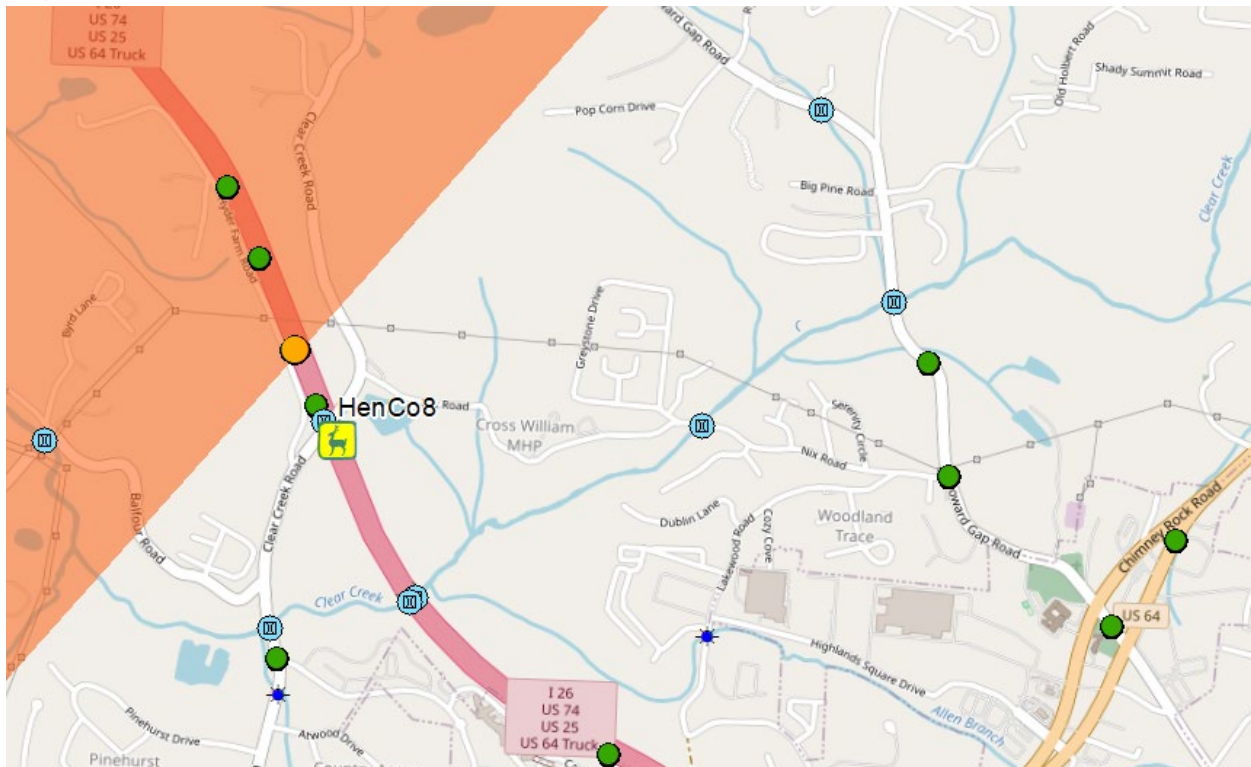
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor where I-26 passes through a WN Priority 2 Corridor. This site is paired with site HenCo7.

Attribute Table

Location ID	HenCo8
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-4400BB, I-26 widening, 2019
2021 AADT	62,500
2045 AADT	94,000
Priority Ranking	High

Map



HenCo9 / US 25/Asheville Hwy. at Stoney Mountain Rd.

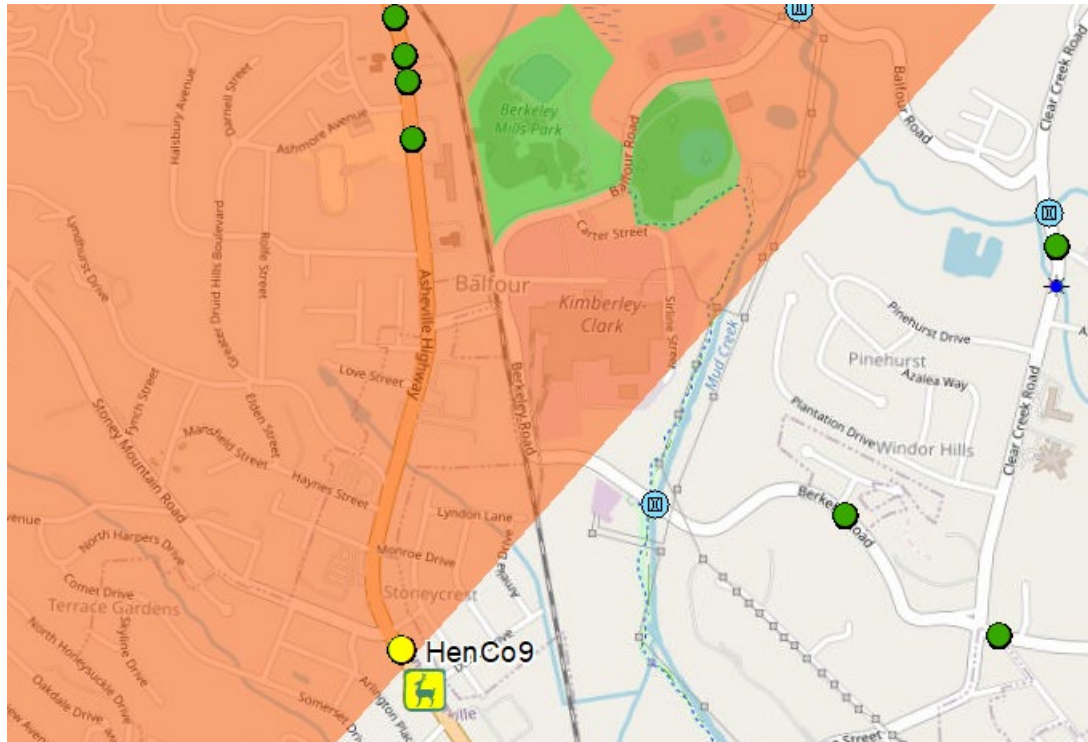
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor where US 25/Asheville Hwy. passes through a WN Priority 2 Corridor. This site is paired with site HenCo10.

Attribute Table

Location ID	HenCo9
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	Asheville Hwy. Access Mgmt., US 25 to I-26
STIP	HS-2014I, Highway Safety, install rumble strips and long-life pavement markings, 2023
2021 AADT	24,000
2045 AADT	32,000
Priority Ranking	Medium

Map



HenCo10 / US 25/Asheville Hwy. at Old Roper Rd.

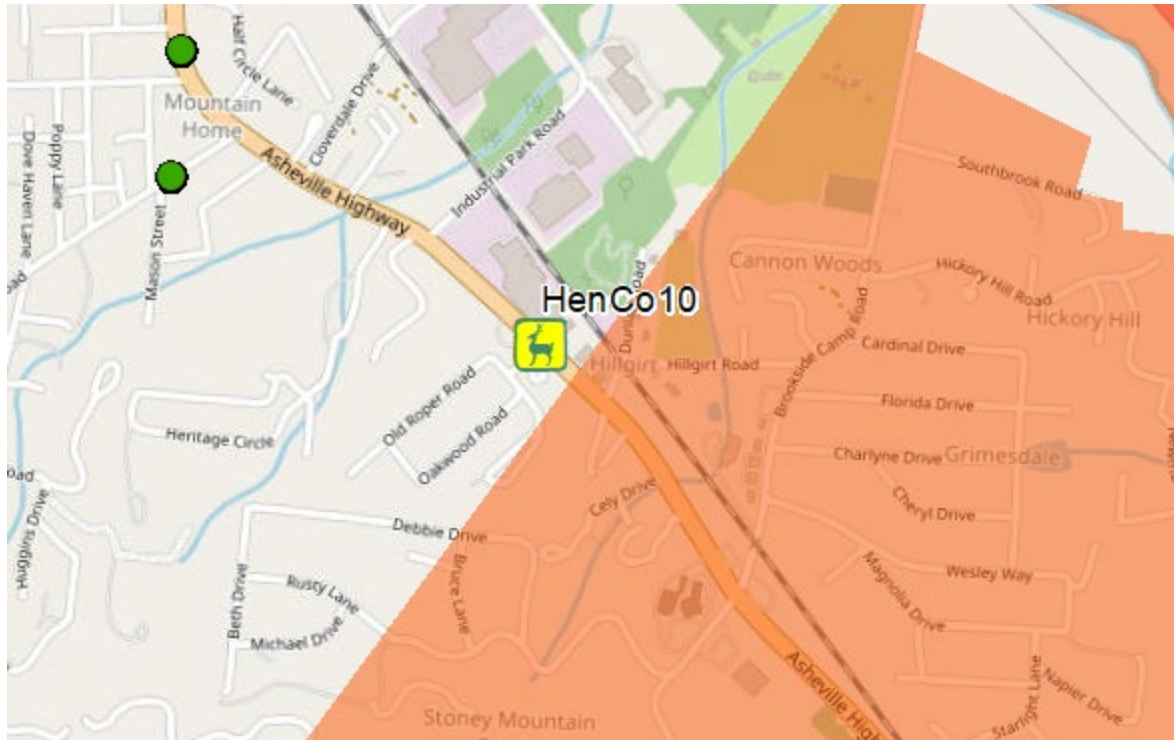
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor where US 25/Asheville Hwy. passes through a WN Priority 2 Corridor. This site is paired with site HenCo9.

Attribute Table

Location ID	HenCo10
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	Asheville Hwy. Access Mgmt., US 25 to I-26
STIP	HS-2014I, Highway Safety, install rumble strips and long-life pavement markings, 2023
2021 AADT	24,000
2045 AADT	32,000
Priority Ranking	Medium

Map



HenCo11 / NC 191/Haywood Rd. at Blythe St.

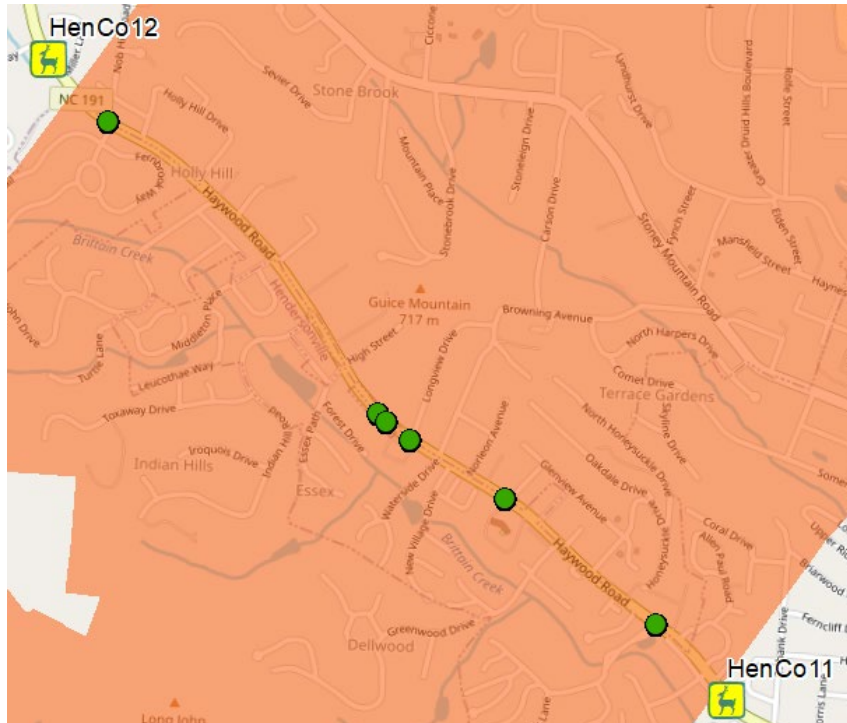
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor where NC 191/Haywood Rd. passes through a WN Priority 2 Corridor. This site is paired with site HenCo12.

Attribute Table

Location ID	HenCo11
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	CTP ID C14, NC 191, widen to multi-lanes from NC 280 (Mills River) to US 25 (Hendersonville)
STIP	R-2588B, NC 191 widening, 2025
2021 AADT	10,500
2045 AADT	13,000
Priority Ranking	Medium

Map



HenCo12 / NC 191/Haywood Rd. at Carriage Park Way

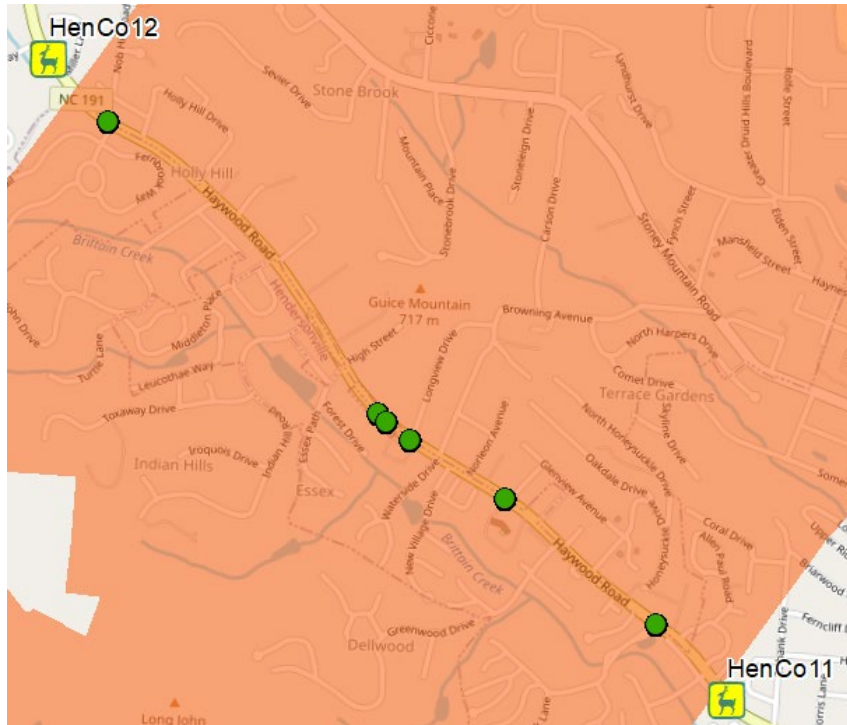
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor where NC 191/Haywood Rd. passes through a WN Priority 2 Corridor. This site is paired with site HenCo11.

Attribute Table

Location ID	HenCo12
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	CTP ID C14, NC 191, widen to multi-lanes from NC 280 (Mills River) to US 25 (Hendersonville)
STIP	R-2588B, NC 191 widening, 2025
2021 AADT	10,500
2045 AADT	13,000
Priority Ranking	Medium

Map



HenCo13 / US 64/Brevard Rd. at Glasgow Lane

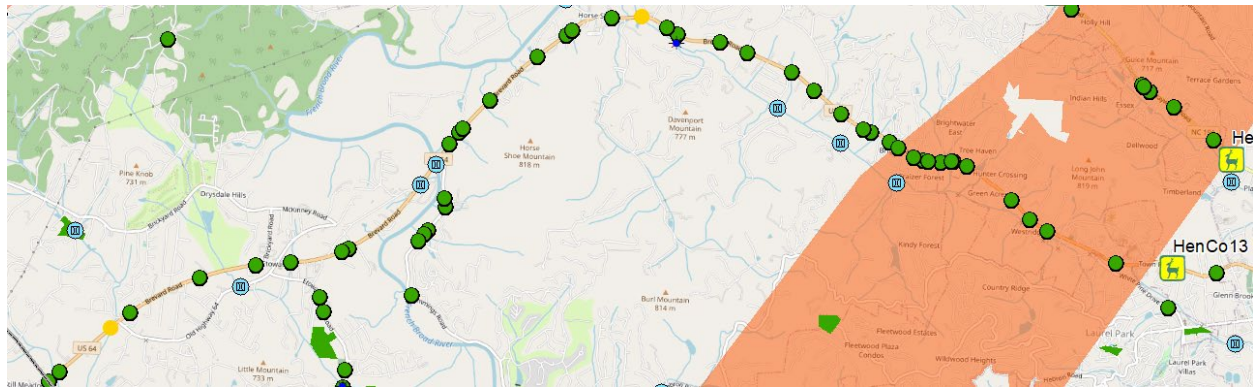
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs at intervals on the 16.5-mile corridor where US 64 passes through a WN Priority 2 Corridor.

Attribute Table

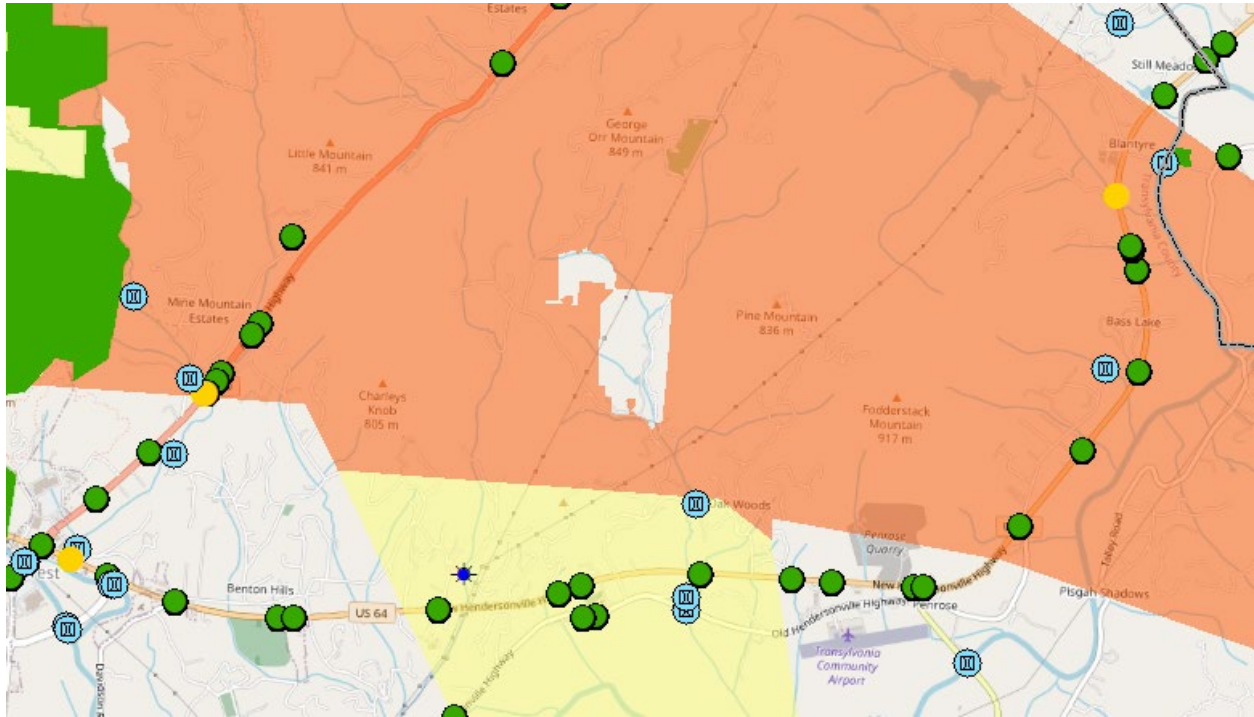
Location ID	HenCo13
Reason	Cluster of crash sites, headed west, FBRMPO
Existing Conditions	16.5-mile corridor (to Pisgah Forest) with cluster of crashes on US 64, FBRMPO; US 64 passes through WN Priority 1 and 2 Corridors
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs along 16.5-mile corridor at MUTCD recommended spacing
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	CTP ID C13c, US 64, Add center turn-lane, possible multiple lanes
STIP	US 64 closely follows EB-6037B, Ecusta Trail (multi-use path), opportunity for wildlife corridor?
2021 AADT	11,500
2045 AADT	15,500
Priority Ranking	Medium

Map (Henderson County portion of US 64)



See following page for map of Transylvania County portion of US 64

Map (Henderson County portion of US 64) re: site HenCo13



Report continued on following page

HenCo14 / US 25 near NC/SC border

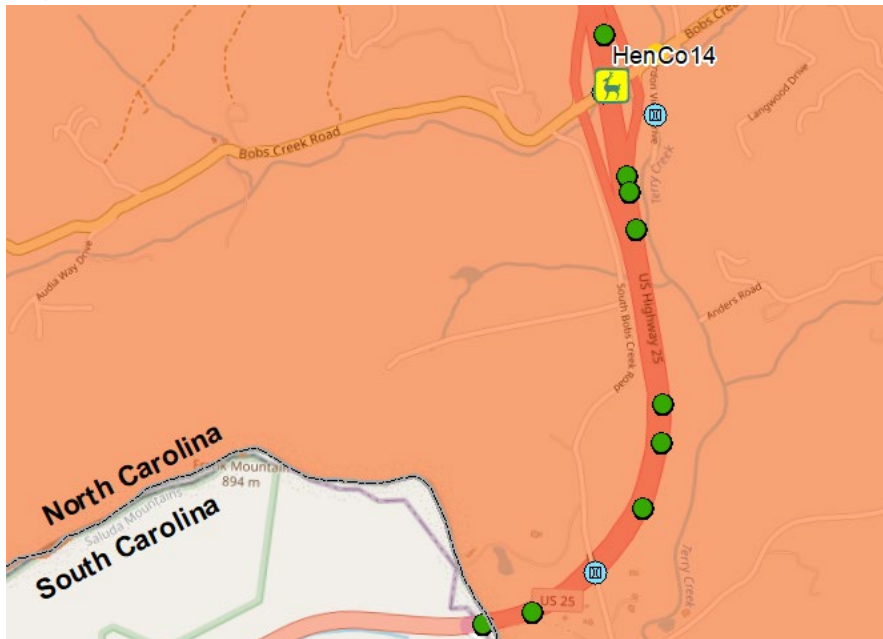
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of deflection fencing to guide animal crossings to the existing bridge underpasses along the corridor.

Attribute Table

Location ID	HenCo14
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 2 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install Deflection Fencing 1 mi. north to Green River, 1 mi. south to SC state line; guide crossings to existing bridge under/overpasses at Terrys Creek Rd., Bobs Creek Rd
Short Alternative Type	Deflection Fencing, Underpass
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	14,500
2045 AADT	22,500
Priority Ranking	High

Map



HenCo15 / US 25 near Lake Summit/Tuxedo

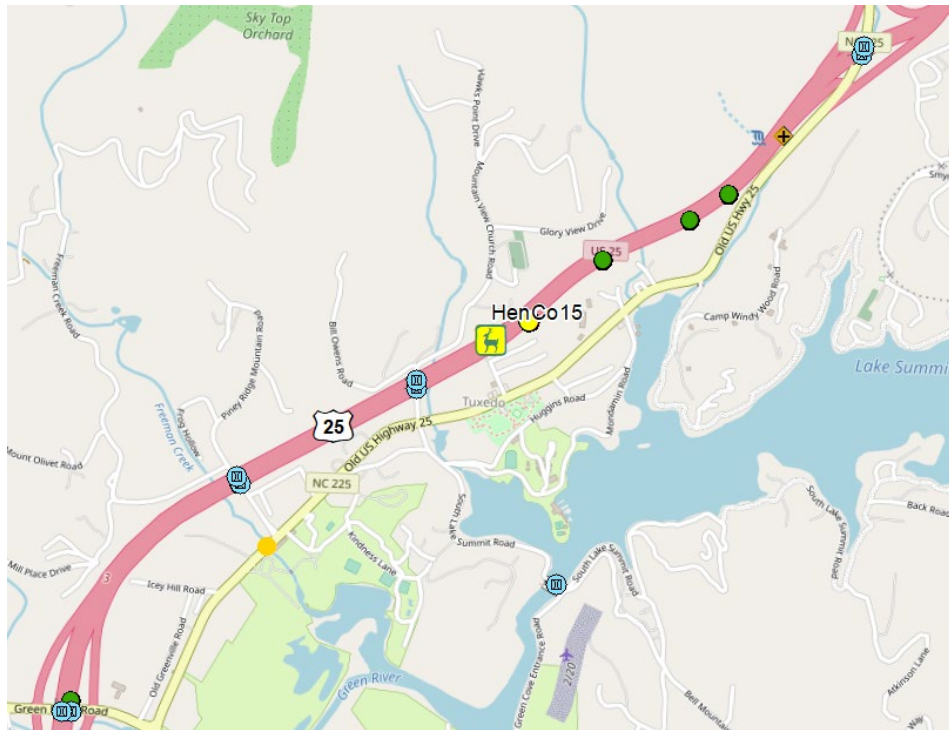
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of deflection fencing to guide animal crossings to the existing bridge underpasses along the corridor.

Attribute Table

Location ID	HenCo15
Reason	Cluster of crash sites, FBRMPO
Existing Conditions	2.2-mile corridor with cluster of crashes; WN Priority 2 Corridor 1 mi. south
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install Deflection Fencing between NC 225 and Green River Rd. underpasses; guide crossings to existing bridge underpasses
Short Alternative Type	Deflection Fencing, Underpass
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	16,500
2045 AADT	24,000
Priority Ranking	High

Map



Madison County Recommendations


MadCo1 / I-26 at Appalachian Trail

Summary

9/21/22 Comment from Steve Goodman, Conservation Biologist, National Parks Conservation Association (NPCA): Remove the concrete ditch swale on one or both sides and truncate the abutment slope by introducing a vertical retaining wall just in front of the piers. Consider standalone combined wildlife and AT structure.

MPO staff comment: There are existing culverts 2 miles south of the site, but these are likely too far away to provide a viable crossing alternative.

Attribute Table

Location ID	MadCo1
Reason	WN Top 20 Sites in NC Study; Steve Goodman, NPCA
Existing Conditions	I-26 at Appalachian Trail
Alternative Scenarios	WN Priority 2 Corridor; Remove concrete ditch swale on one or both sides, truncate abutment slope by building a vertical retaining wall in front of piers. Consider standalone combined wildlife and AT structure.
	
Short Alternative Type	Deflection Fencing, Bridge Retrofit
Key Species	Bear, many Appalachian species
Public Lands	Pisgah N.F. immediately east and west of site
CTP	
STIP	I-5831B, I-26 pavement rehab, 2025
2021 AADT	10,000
2045 AADT	
Priority Ranking	Highest

Map




MadCo2 / US 25 at Appalachian Trail (Mill Ridge Rd.)

Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of retrofitting the north side of the Mill Ridge Rd. bridge overpass with a wider side path and deflection fencing along the highway to guide crossings to this point.

Attribute Table

Location ID	MadCo2
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 25 at Appalachian Trail
Alternative Scenarios	WN Priority 1 Corridor 1 mi. east, part of WN crossing prioritization model; Consider retrofit of existing Mill Ridge Rd. bridge, Deflection Fencing. Alt.: crossing at Big Laurel Creek
	
Short Alternative Type	Deflection Fencing, Bridge Retrofit
Key Species	
Public Lands	Pisgah N.F. immediately north and south of site
CTP	
STIP	
2021 AADT	2,800
2045 AADT	
Priority Ranking	Highest

Map



MadCo3 / US 25/70 west of Hot Springs

Summary

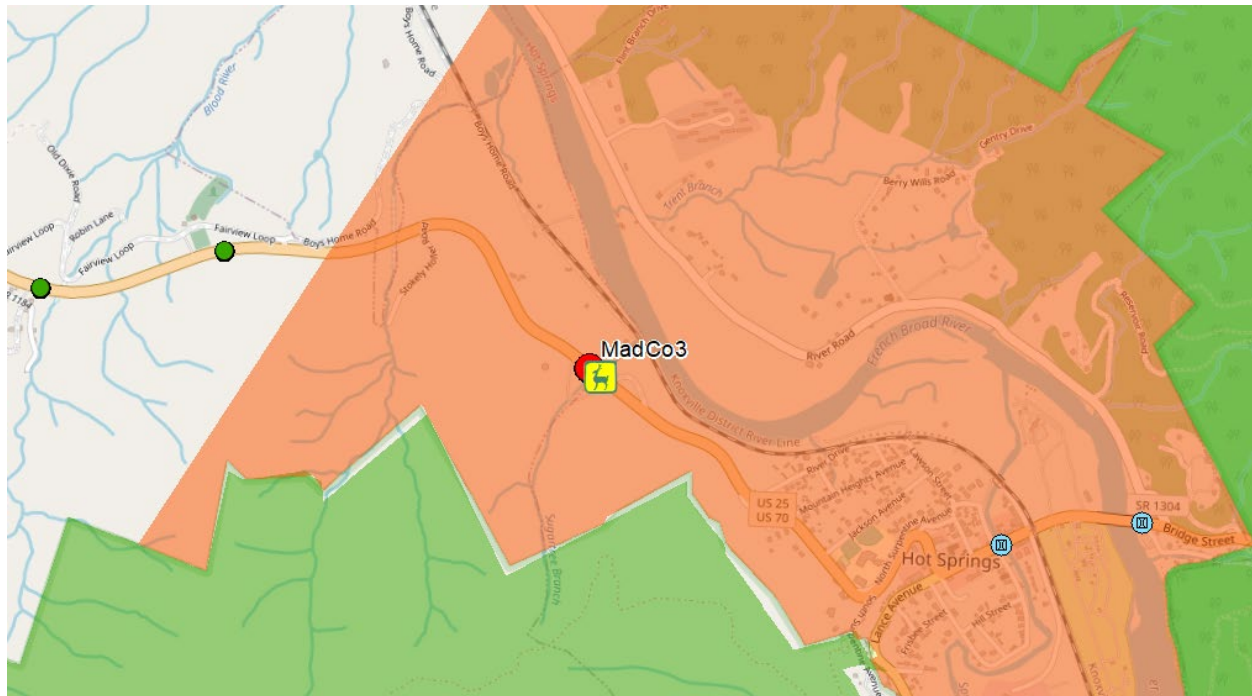
WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing to guide crossings to sections with greater sight distance. If a culvert exists and is large enough for large mammal passage, consider installing a level bench path.

Attribute Table

Location ID	MadCo3
Reason	Disabling injury site, FBRMPO
Existing Conditions	US 25/70 west of Hot Springs
Alternative Scenarios	WN Priority 2 Corridor connecting Pisgah N.F. 0.5 mi. north/south of site; check Sugartree Branch for possible culvert; if culvert exists, consider level bench and fencing
Short Alternative Type	Deflection Fencing, Level Bench Path
Key Species	
Public Lands	Pisgah N.F. 0.5 mi. north and south of site; AT connects with Sugartree Branch, habitat link?
CTP	
STIP	
2021 AADT	2,300
2045 AADT	
Priority Ranking	Medium



Map




MadCo4 / US 25/70 at NC 213/Walnut Dr.

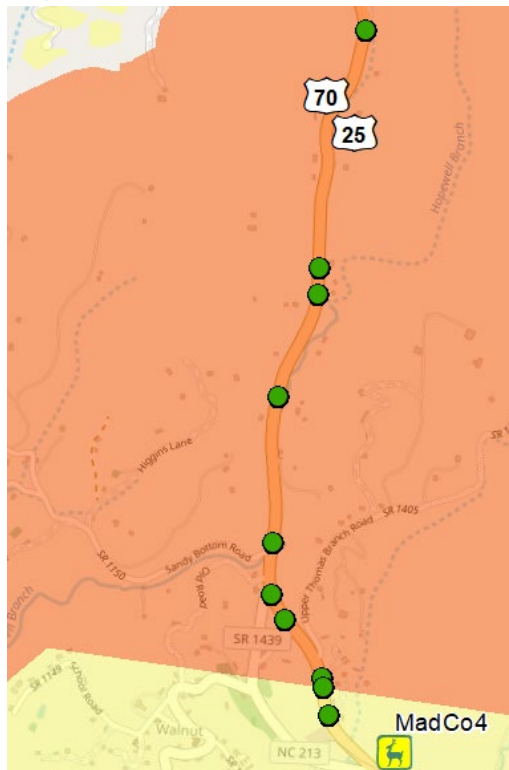
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 3-mile corridor where US 25/70 passes through a WN Priority 2 Corridor. This site is paired with site MadCo5.

Attribute Table

Location ID	MadCo4
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	WN Priority 2 Corridor
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 3-mile corridor
	
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	4,300
2045 AADT	
Priority Ranking	Low

Map




MadCo5 / US 25/70 at Stackhouse Rd. (SR 1139)

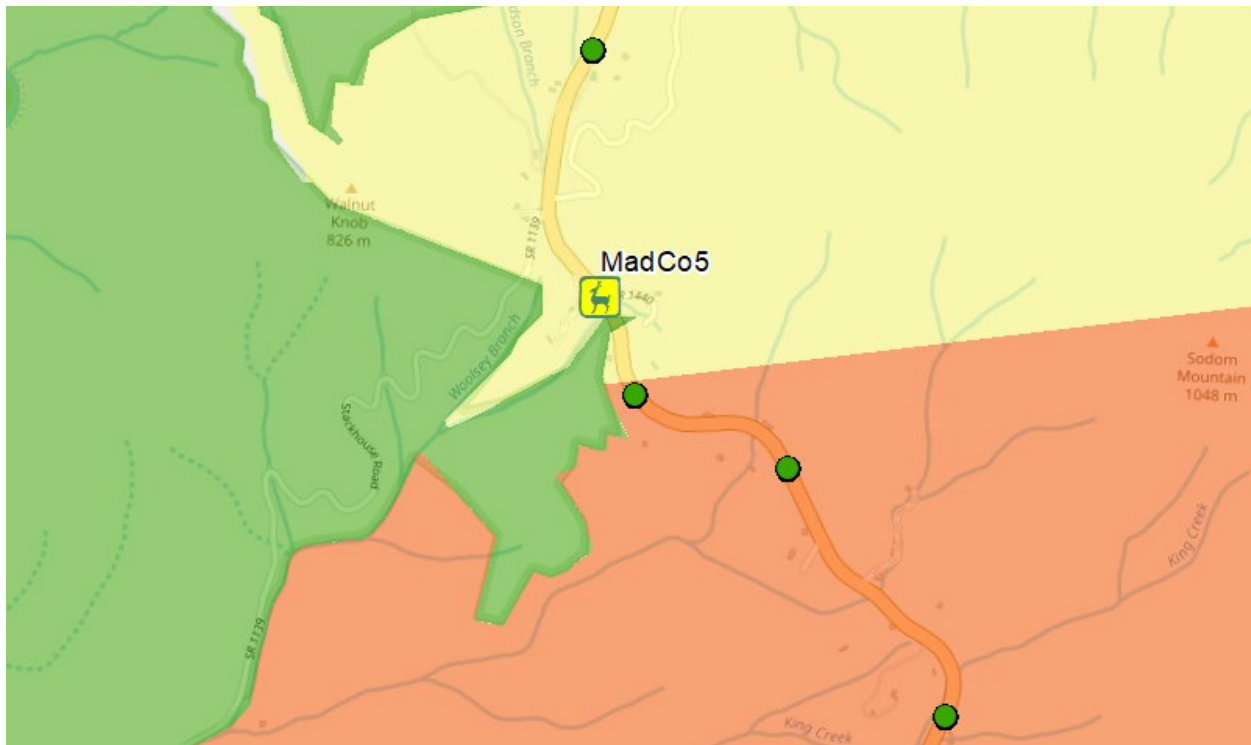
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 3-mile corridor where US 25/70 passes through a WN Priority 2 Corridor. This site is paired with site MadCo4.

Attribute Table

Location ID	MadCo5
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	WN Priority 2 Corridor
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 3-mile corridor
	
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	4,300
2045 AADT	
Priority Ranking	Low

Map




MadCo6 / NC 213 just west of Mars Hill

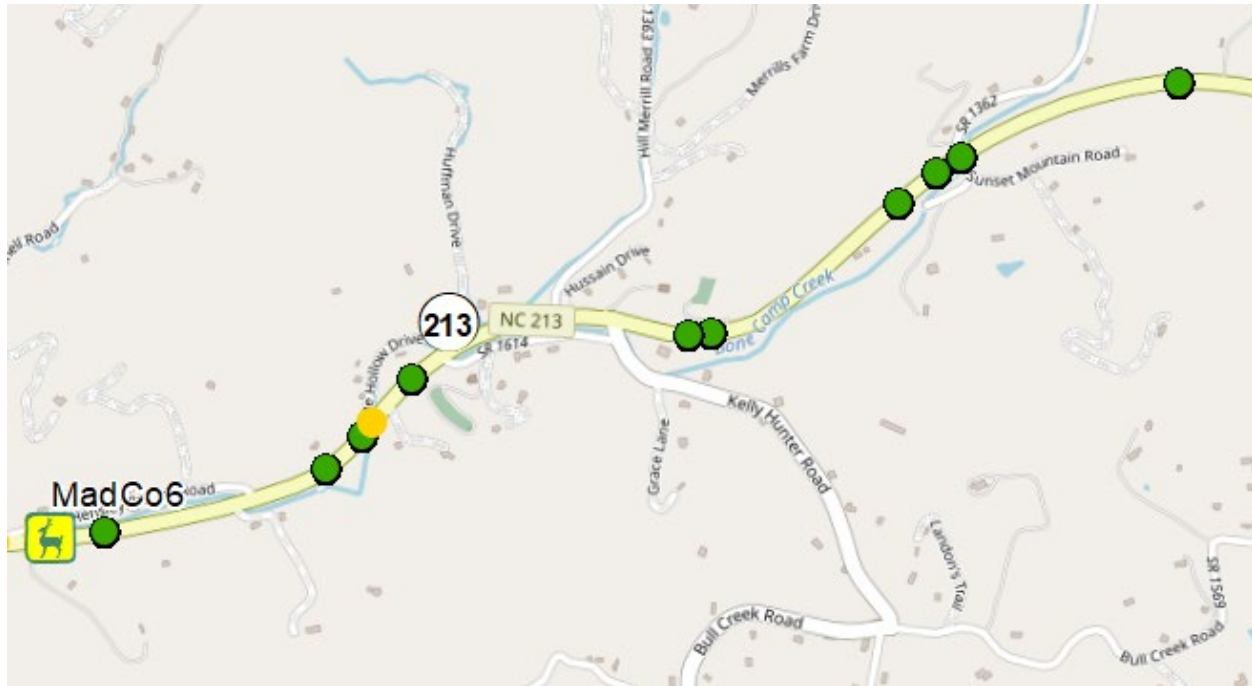
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 3-mile corridor of NC 213 just west of Mars Hill. This site is paired with site MadCo7.

Attribute Table

Location ID	MadCo6
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	3-mile corridor with cluster of crashes
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 3-mile corridor
	
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	NC 213 Modernization, I-26 to US 25/70
STIP	
2021 AADT	5,500
2045 AADT	8,900
Priority Ranking	Low

Map




MadCo7 / NC 213 just west of Mars Hill

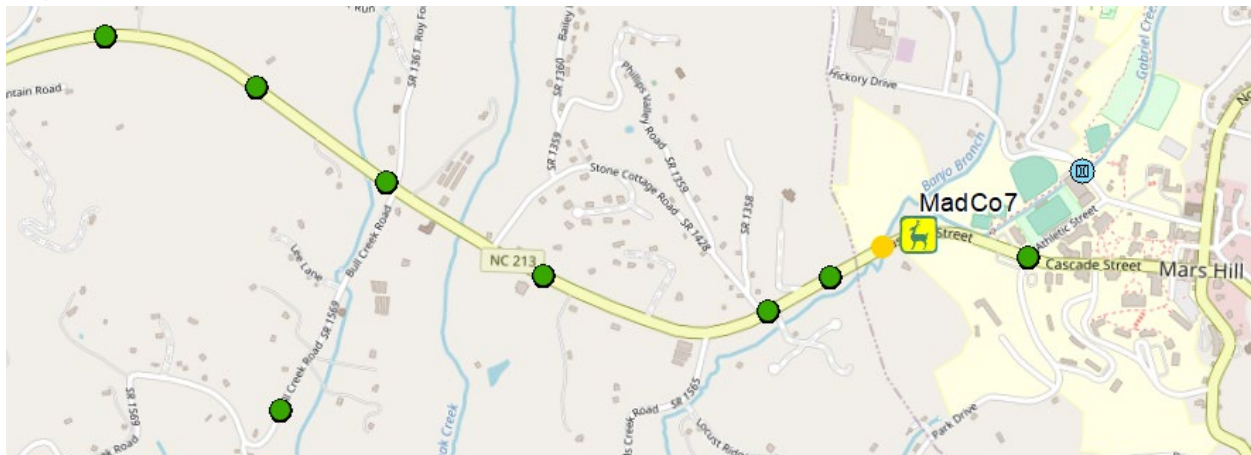
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 3-mile corridor of NC 213 just west of Mars Hill. This site is paired with site MadCo6.

Attribute Table

Location ID	MadCo7
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	3-mile corridor with cluster of crashes
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 3-mile corridor
	
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	NC 213 Modernization, I-26 to US 25/70
STIP	
2021 AADT	5,500
2045 AADT	8,900
Priority Ranking	Low

Map



MadCo8 / I-26 just north of Madison/Buncombe County line

Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of deflection fencing 0.5 miles north and south of the existing bridge overpass at South Main Street/Forks of Ivy Rd. to encourage crossings there.

Attribute Table

Location ID	MadCo8
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	1-mile corridor with cluster of crashes
Alternative Scenarios	Install Deflection Fencing 0.5 mi. north/south of bridge to encourage crossing via bridge (S. Main St./Forks of Ivy Rd.)
Short Alternative Type	Deflection Fencing
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	26,000
2045 AADT	39,400
Priority Ranking	High



Map



MadCo9 / I-26 near Bear Branch Rd.

Summary

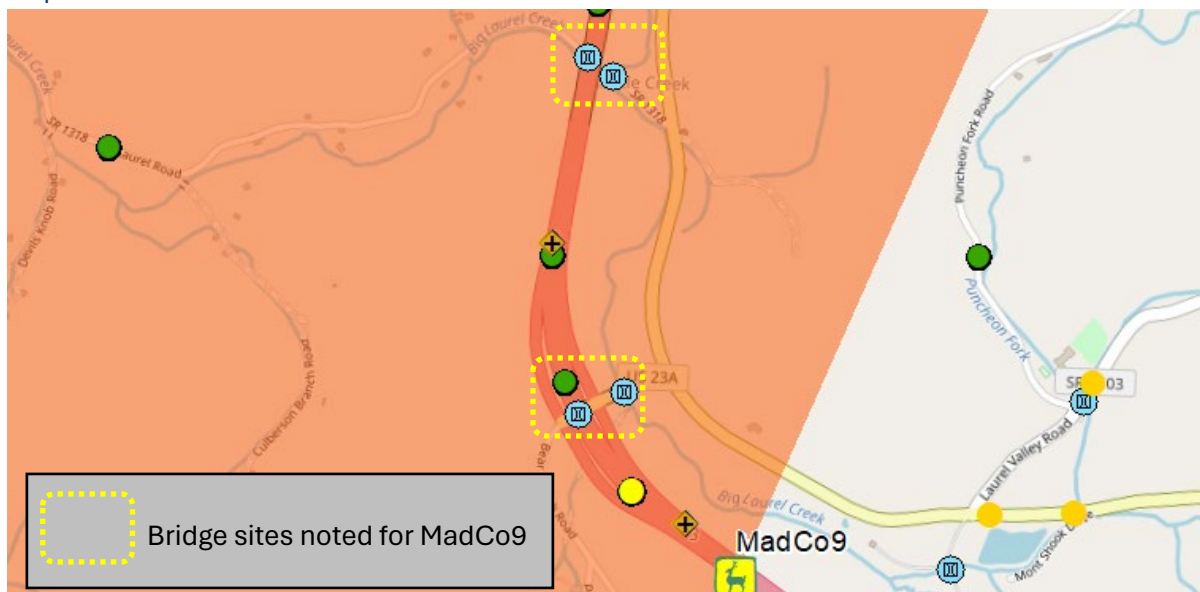
9/21/22 Comment from Steve Goodman, Conservation Biologist, National Parks Conservation Association (NPCA): Wolf Laurel Exit Bridge: Truncate the abutment slope by introducing a vertical retaining wall just in front of the piers. Big Laurel Bridge: add level bench paths.

MPO staff comment: Wolf Laurel exit bridge has no piers, so only the existing concrete slope would need a vertical retaining wall placed in front of it. In addition to bridge retrofits, installation of 24”x24” MUTCD warning signs on the ends of this 2-mile corridor could be considered. This site is paired with site MadCo10.

Attribute Table

Location ID	MadCo9
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes
Alternative Scenarios	Wolf Laurel Exit Bridge: Truncate abutment slope by introducing a vertical retaining wall in front of the piers. Big Laurel Bridge: add level bench paths. Optional: Install 24x24 MUTCD warning signs on ends of 2-mile corridor.
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-5831B, I-26 pavement rehab, 2025
2021 AADT	10,000
2045 AADT	
Priority Ranking	High

Map




MadCo10 / I-26 near Mile Marker 1

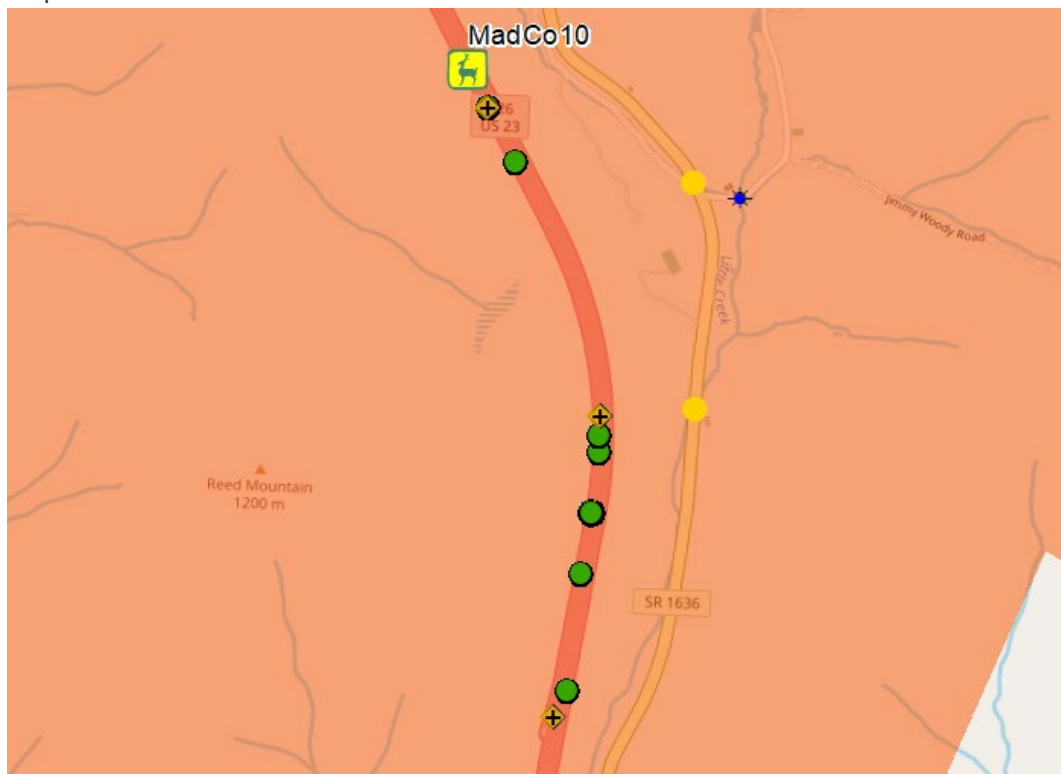
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 2-mile corridor This site is paired with site MadCo9.

Attribute Table

Location ID	MadCo10
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
	
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-5831B, I-26 pavement rehab, 2025
2021 AADT	10,000
2045 AADT	
Priority Ranking	High

Map



MadCo11 / I-26 near Higgins Branch Rd. (SR 1352)

Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 3.5-mile corridor This site is paired with site MadCo12.

Attribute Table

Location ID	MadCo11
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	3.5 mile corridor with cluster of crashes, WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-5831B, I-26 pavement rehab, 2025
2021 AADT	10,000
2045 AADT	23,000
Priority Ranking	High

Map



MadCo12 / I-26 near Mile Marker 5/Buckner Gap

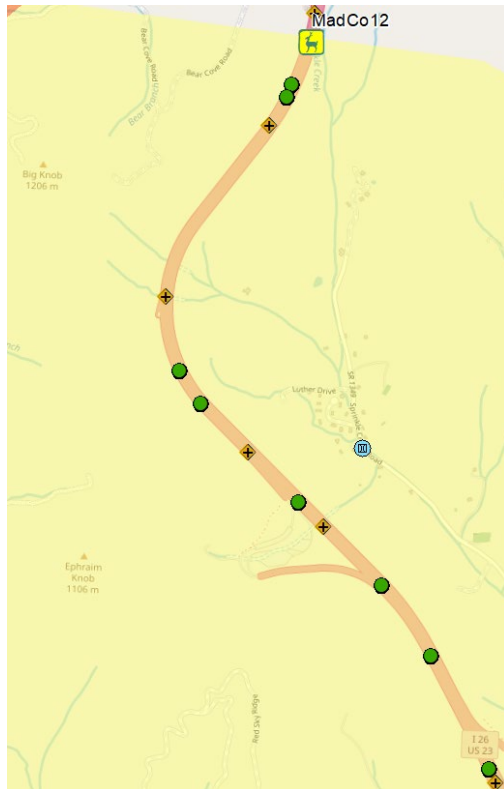
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 3.5-mile corridor This site is paired with site MadCo11.

Attribute Table

Location ID	MadCo12
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	3.5 mile corridor with cluster of crashes, WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	I-5831B, I-26 pavement rehab, 2025
2021 AADT	10,000
2045 AADT	23,000
Priority Ranking	High

Map



MadCo13 / US 19 at California Creek Rd.

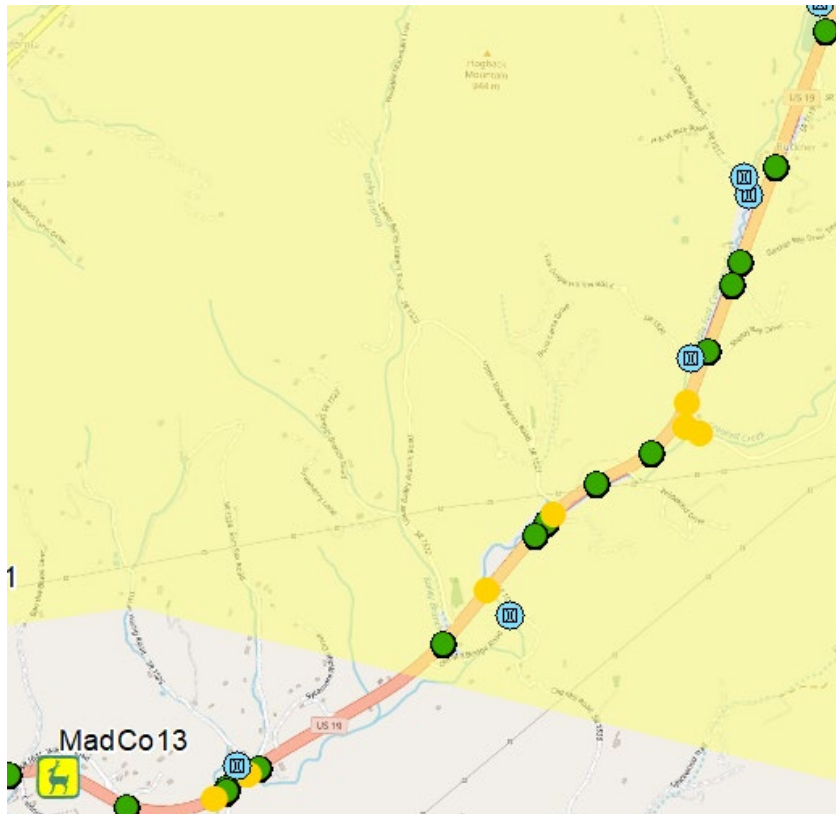
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 5-mile corridor This site is paired with site MadCo14.

Attribute Table

Location ID	MadCo13
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	5 mile corridor with cluster of crashes, WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 5-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	10,500
2045 AADT	29,000
Priority Ranking	High

Map



MadCo14 / US 19 at California Creek Rd.

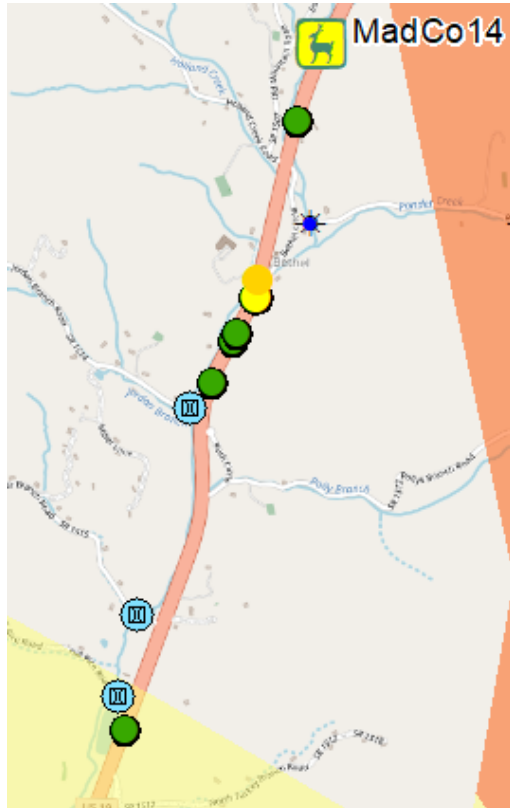
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of a 5-mile corridor This site is paired with site MadCo13.

Attribute Table

Location ID	MadCo14
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	5 mile corridor with cluster of crashes, WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 5-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	10,500
2045 AADT	29,000
Priority Ranking	High

Map




Transylvania County Recommendations

TranCo1 / US 64 at Panther Mountain

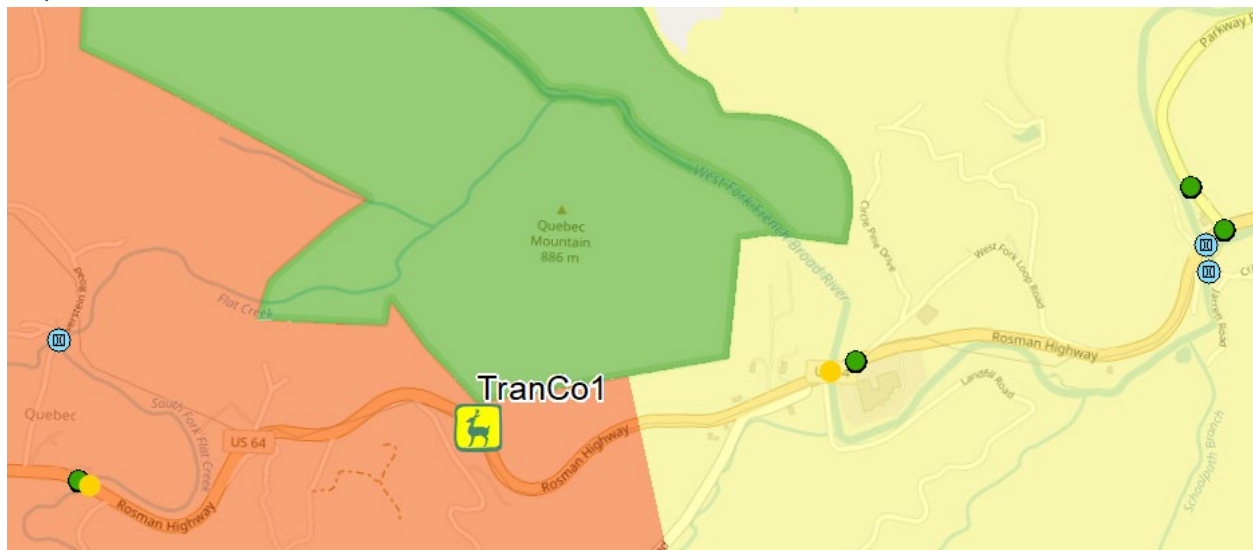
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing on both sides US 64 to encourage animal crossings at limited locations on sections with greater sight distance, paired with MUTCD 24”x24” warning signs.

Attribute Table

Location ID	TranCo1
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 64 at Panther Mountain
Alternative Scenarios	hwy. crosses jct. of Priority 2 and Priority 1 Corridors; Install Wildlife Crossing signage and Deflection Fencing for better sight distance of crossing opening(s).
	
Short Alternative Type	Deflection Fencing, Signage
Key Species	
Public Lands	Pisgah N.F., immediately north, Nantahala N.F. and Gorges S.P., south
CTP	
STIP	
2021 AADT	7,300
2045 AADT	13,600
Priority Ranking	High

Map




TranCo2 / US 64 at Sapphire

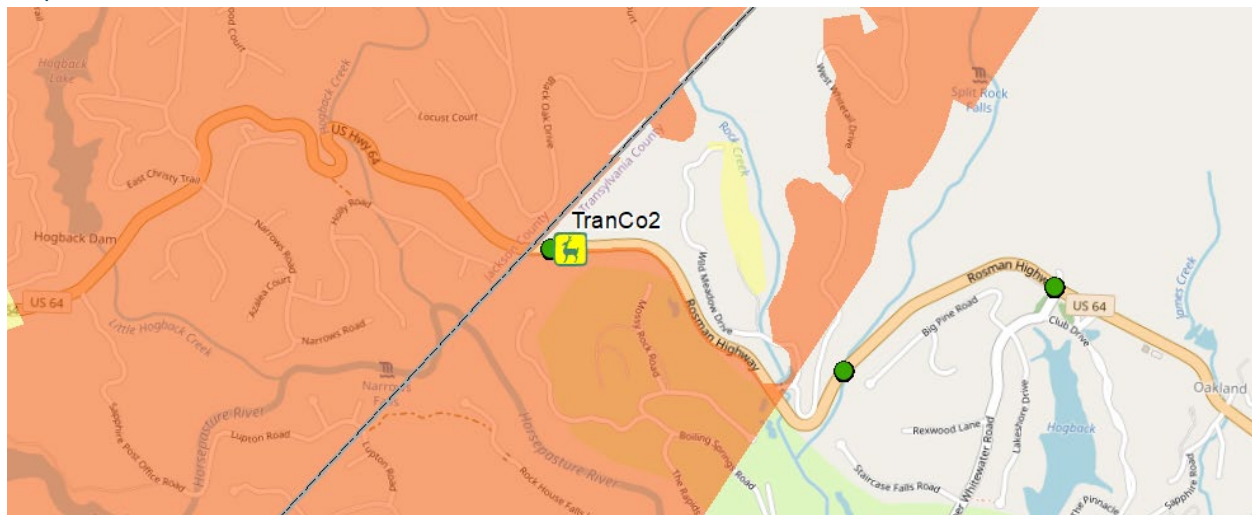
Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing deflection fencing on both sides US 64 to encourage animal crossings at limited locations on sections with greater sight distance, paired with MUTCD 24”x24” warning signs.

Attribute Table

Location ID	TranCo2
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 64 at Sapphire
Alternative Scenarios	hwy. crosses jct. of Priority 2 and Priority 1 Corridors; Install Wildlife Crossing signage and Deflection Fencing for better sight distance of crossing opening(s).
	
Short Alternative Type	Deflection Fencing, Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	6,000
2045 AADT	10,000
Priority Ranking	High

Map




TranCo3 / US 276 in Pisgah N.F.

Summary

WN identified this site without a specific wildlife crossing type, so MPO staff suggest exploring the concept of installing 24"x24" MUTCD warning signs at MUTCD-recommended intervals on US 276.

Attribute Table

Location ID	TranCo3
Reason	WN Top 20 Sites in NC Study
Existing Conditions	US 276 in Pisgah N.F.
Alternative Scenarios	many crossing opportunities; Sycamore Cove trail crossing at Davidson River? (WVC area) Others?
	
Short Alternative Type	Signage
Key Species	
Public Lands	Pisgah N.F. surrounding all sides; part of Eastern Wildway Corridor
CTP	
STIP	HF-0004, Sliding Rock sidewalk/guardrail, 2024; R-5865, 3-In./bike ln. to Avery Cr. trail, 2034
2021 AADT	3,800
2045 AADT	6,200
Priority Ranking	High

Map



TranCo4 / Gorges State Park (Grassy Ridge Rd.)

Summary

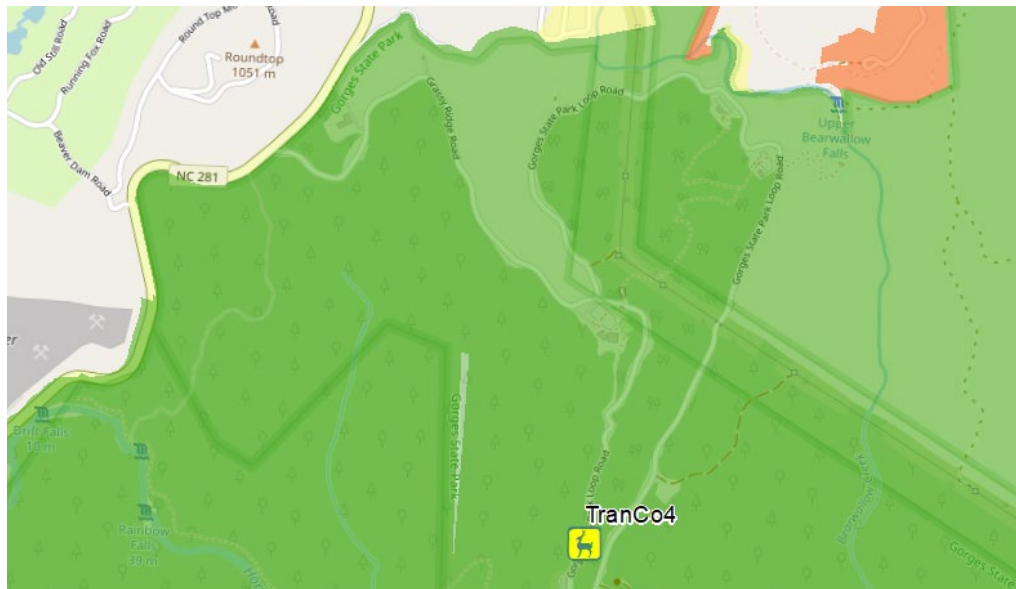
WN identified this site noting that three concrete culverts were installed in 2009, expressly for dry culvert wildlife crossings, and WN has camera-monitored several small mammal and reptile species using the culverts for safe crossings of a park road. MPO staff recommend installing deflection fencing to guide crossings to these culverts, and exploring the need for any additional/larger culverts for larger mammal crossings.

Attribute Table

Location ID	TranCo4
Reason	WN Top 20 Sites in NC Study
Existing Conditions	Reptile mortality hotspot; 3 existing culverts installed 2009, noted by anon wildlife expert
Alternative Scenarios	WN monitored the culverts in 2022, found several species crossing; Install Deflection Fencing to guide animals to existing and new culverts.
Short Alternative Type	Deflection Fencing, New Culvert
Key Species	Timber rattlesnake, bobcat, armadillo, weasels, foxes, wood rats
Public Lands	Gorges S.P. surrounding all sides
CTP	
STIP	
2021 AADT	
2045 AADT	
Priority Ranking	High



Map




TranCo5 / US 276 at Sherwood Ridge Rd. (1 mi. north of SC state line)

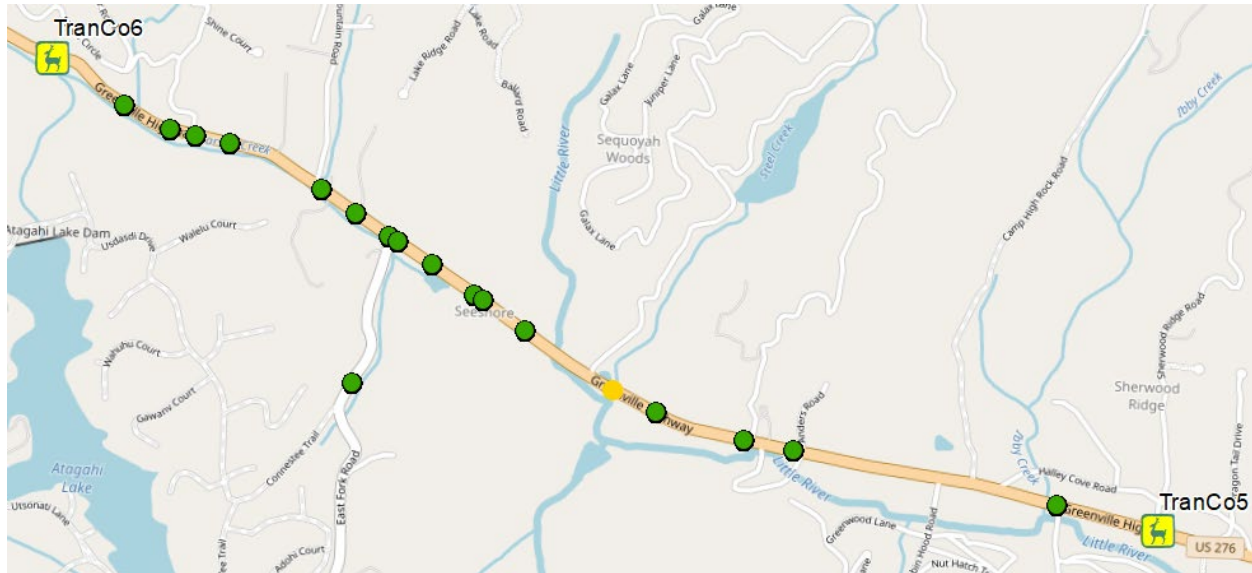
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of the 2.85-mile corridor This site is paired with site TranCo6.

Attribute Table

Location ID	TranCo5
Reason	Cluster of crash sites, headed west, FBRMPO
Existing Conditions	2.85-mile corridor with cluster of crashes
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 2.85-mile corridor
	
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	5,200
2045 AADT	6,600
Priority Ranking	Low

Map



TranCo6 / US 276 at Thunder Rd.

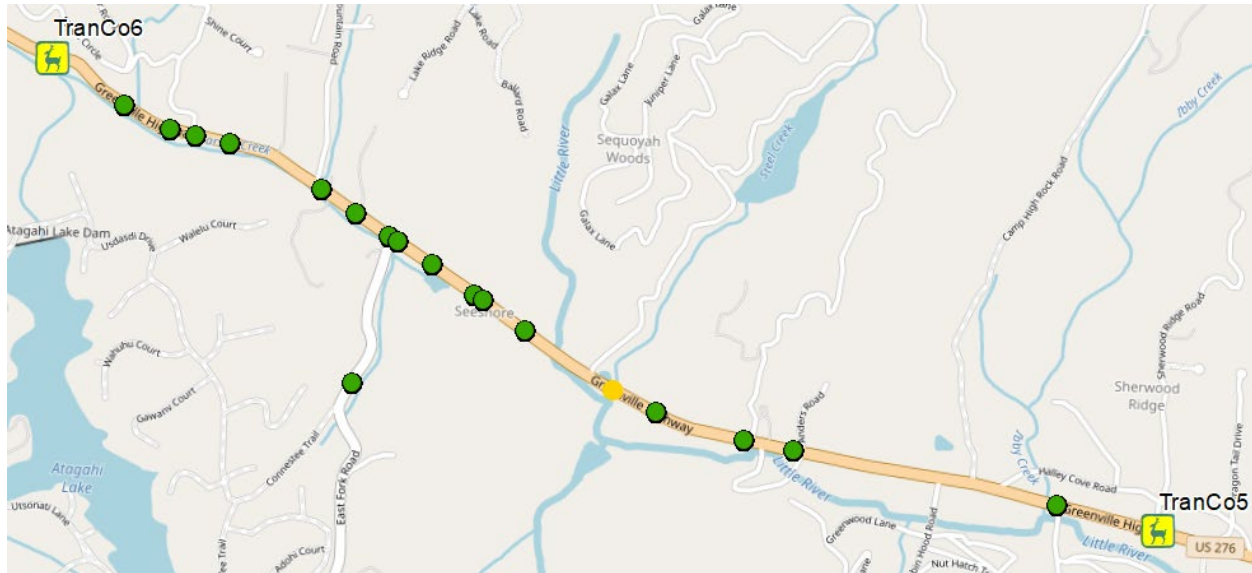
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of the 2.85-mile corridor This site is paired with site TranCo5.

Attribute Table

Location ID	TranCo6
Reason	Cluster of crash sites, headed east, FBRMPO
Existing Conditions	2.85-mile corridor with cluster of crashes
Alternative Scenarios	Install 24x24 MUTCD warning signs on ends of 2.85-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	5,200
2045 AADT	6,600
Priority Ranking	Low

Map



TranCo7 / US 276 at Connestee Rd.

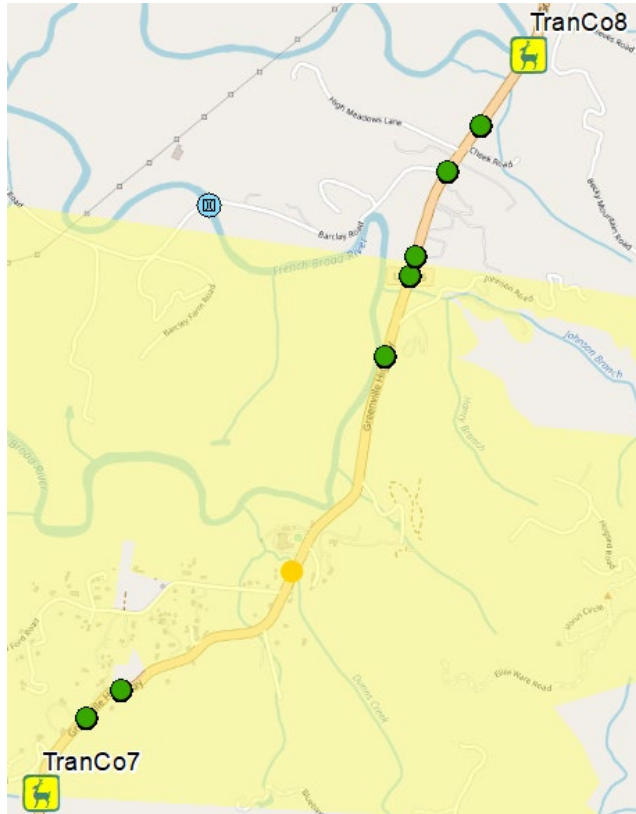
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of the 2-mile corridor This site is paired with site TranCo8.

Attribute Table

Location ID	TranCo7
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	5,000
2045 AADT	8,100
Priority Ranking	High

Map



TranCo8 / US 276 at Becky Mountain Rd.

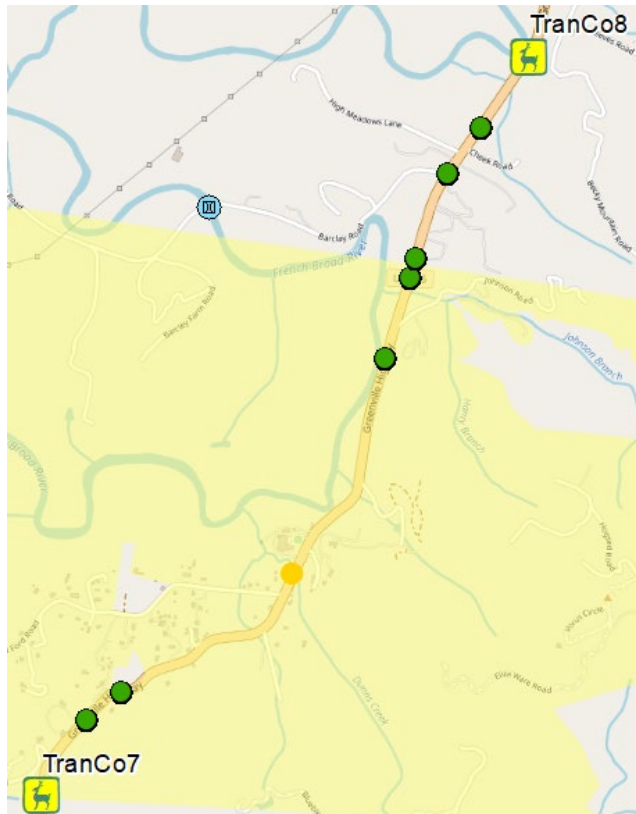
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of the 2-mile corridor This site is paired with site TranCo7.

Attribute Table

Location ID	TranCo8
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	2-mile corridor with cluster of crashes; WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 2-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	5,000
2045 AADT	8,100
Priority Ranking	High

Map



TranCo9 / US 64 at Morgan Mill Rd. (north of Rosman)

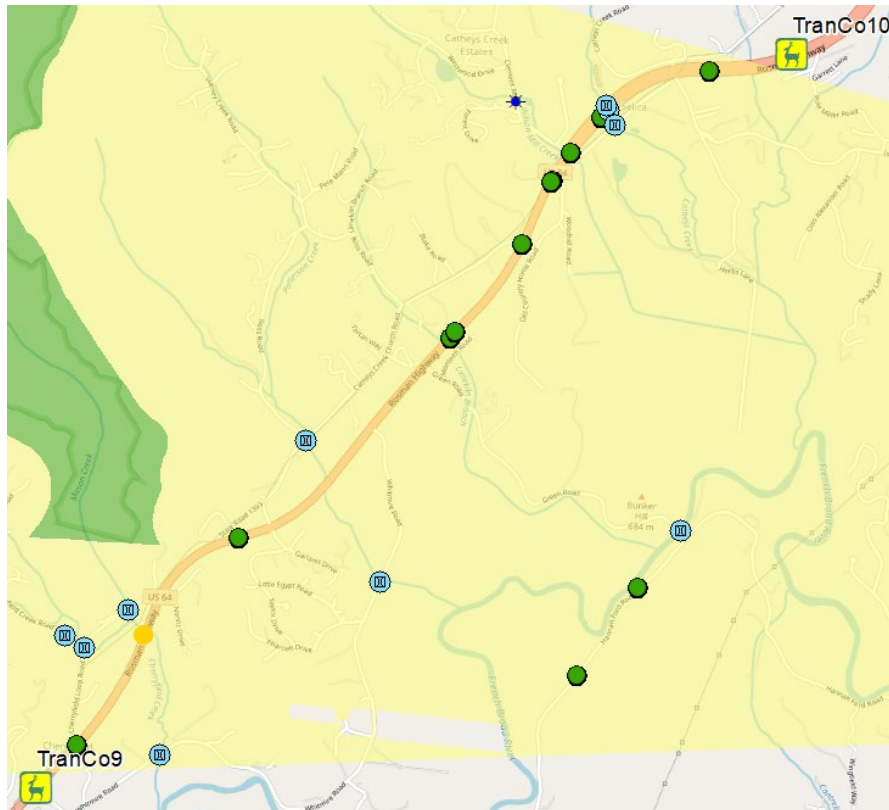
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of the 3-mile corridor. This site is paired with TranCo10.

Attribute Table

Location ID	TranCo9
Reason	Cluster of crash sites, headed north, FBRMPO
Existing Conditions	3-mile corridor with cluster of crashes; WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 3-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	12,000
2045 AADT	28,000
Priority Ranking	High

Map



TranCo10 / US 64 at Pole Miller Rd. (north of Rosman)

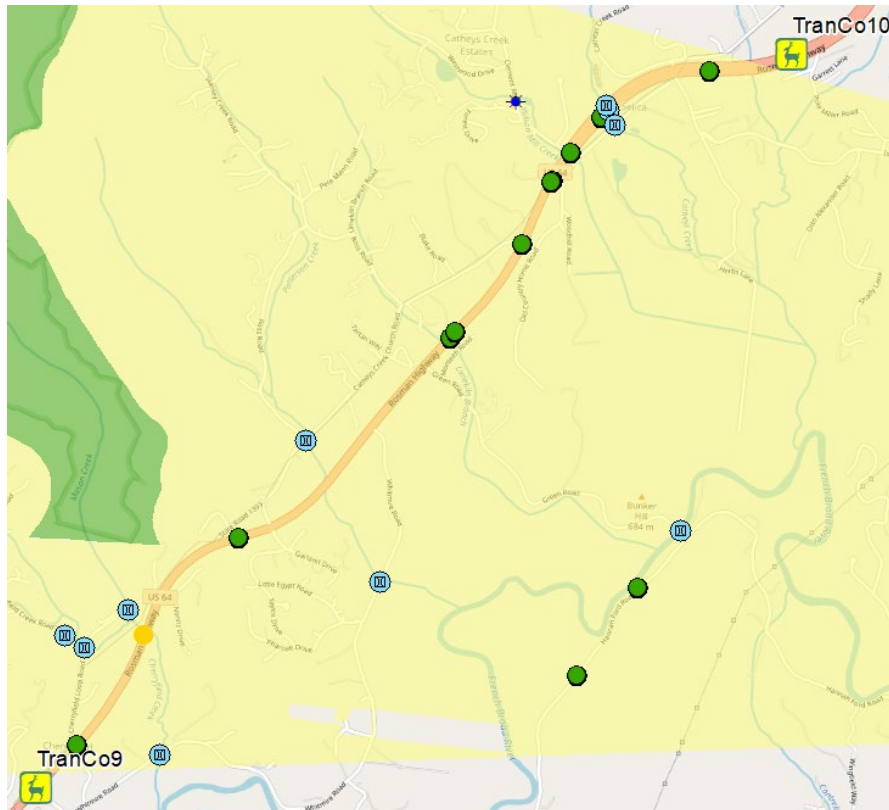
Summary

MPO staff identified this corridor with a cluster of crashes and recommends installation of 24”x24” MUTCD warning signs on the ends of the 3-mile corridor. This site is paired with TranCo9.

Attribute Table

Location ID	TranCo10
Reason	Cluster of crash sites, headed south, FBRMPO
Existing Conditions	3-mile corridor with cluster of crashes; WN Priority 1 Corridor
Alternative Scenarios <small>a program of Land of Sky</small> FRENCH BROAD RIVER <small>METROPOLITAN PLANNING ORGANIZATION</small>	Install 24x24 MUTCD warning signs on ends of 3-mile corridor
Short Alternative Type	Signage
Key Species	
Public Lands	
CTP	
STIP	
2021 AADT	12,000
2045 AADT	28,000
Priority Ranking	High

Map



Conclusion and Next Steps

Smart and proactive planning best occurs when data, stakeholders, and site conditions are consulted early and often. As such, locations identified in this report should be studied further for possible incorporation into the larger transportation planning process, notably the state's **Strategic Prioritization Office of Transportation (SPOT)** project scoring process, which then leads local and statewide **Transportation Improvement Programs (TIP)**.

These two processes identify specific projects, so the early identification of wildlife crossing needs, in addition to other design factors like bicycle/pedestrian accommodation and climate resilience, can reduce project scope and cost revisions later on.

The French Broad River MPO and Land of Sky RPO can act as convening entities between wildlife crossing experts (eg. Wildlands Network, National Parks Conservation Association, N.C. Wildlife Resources Commission, and local land trusts) and transportation experts (eg. staff from NCDOT Divisions 13 and 14, plus other construction and maintenance experts).

In addition to the existing Top Recommendations (noted previously in report and on next page), stakeholders should look for “right time, right place” opportunities for the incorporation of wildlife crossing features as part of the transportation network. NCDOT's existing Complete Streets Policy looks for opportunities for “routine accommodation” in both new construction and maintenance projects, so with the incorporation of data like Wildlife Vehicle Collision (WVC) counts and severity, plus asset management and maintenance/replacement schedules for transportation infrastructure, a similar approach can be taken for wildlife crossings.

Top Recommendations

As of August 2023, French Broad River MPO staff have identified 67 potential wildlife crossing locations in Madison, Buncombe, Henderson, Transylvania, and Haywood County via Geographic Information Systems (GIS) analysis and mapping.

Of these sites, 13 North Carolina sites from the **I-40 Pigeon River Gorge study** are noted, including the Top Priority Recommendations as follows:

1. **Wilkins Creek Overpass:** Construct an overpass over I-40 between Wilkins Creek Box Culvert A (i.e. north) and the NCDOT Rest Area. Pursue land acquisition or conservation easements to stabilize the area for wildlife.
2. **Single Tunnel Overpass:** Construct an overpass extending the existing Single Tunnel land bridge across the rest of I-40.
3. **Cold Springs Creek Exit Culverts:** Replace the existing culverts on both the entrance and exit ramps with larger structures to facilitate better terrestrial and aquatic wildlife passage.
4. **Groundhog Creek:** Replace the three small existing culverts with a larger structure suitable for all target species.

In comparison to the I-40 Pigeon River Gorge's specific recommendations for wildlife crossing locations and typologies, the **statewide study's**⁷ geographic locations are not as specific and recommendations for specific wildlife crossing typologies are not listed. Still, the study's information provided a useful starting point for the French Broad River MPO to recommend possible locations and crossing typologies. Of the statewide study's 155 sites, 17 are located in the MPO/RPO planning area. These 17 sites include five of the study's Top 20 Priority Wildlife Crossing Sites as follows:

1. **I-40 Through the Pigeon River Gorge** (Recommendations covered by I-40 PRG study)
2. **I-26 at the Appalachian Trail:** WN Priority 2 Corridor; Retrofit north side of Flag Pond Rd. bridge with Level Bench Path for wildlife passage; install Deflection Fencing to guide wildlife to bridge underpass. Existing culverts 2 mi. south.
3. **I-40 at Kitsuma Peak:** WN Priority 1 Corridor connecting Pisgah N.F. (north) to Hickory Nut Gorge, South Mountains/Box Creek Wilderness Area (south); Consider new overpass at Eastern Cont. Divide or new culverts underpass at Kitsuma Peak Trailhead. Rockslide fencing exists.
4. **I-40 East of Canton:** WN Priority 2 Corridor; Install dry culvert underpasses under I-40 and US 19/23, as county line runs along a natural valley and connects with Hominy Creek (immediately south); install Deflection Fencing.
5. **US 19 at the Blue Ridge Parkway:** High elk WVC area. WN Priority 1 Corridor connecting Pisgah N.F., part of Eastern Wildway corridor. Install 24x24 MUTCD warning signs on US 19 and BRP in proximity to the roads' junction.

⁷*Prioritizing Wildlife Road Crossings in North Carolina To Reconnect Wildlife Habitat and Improve Road Safety* (Wildlands Network, September 2022)