

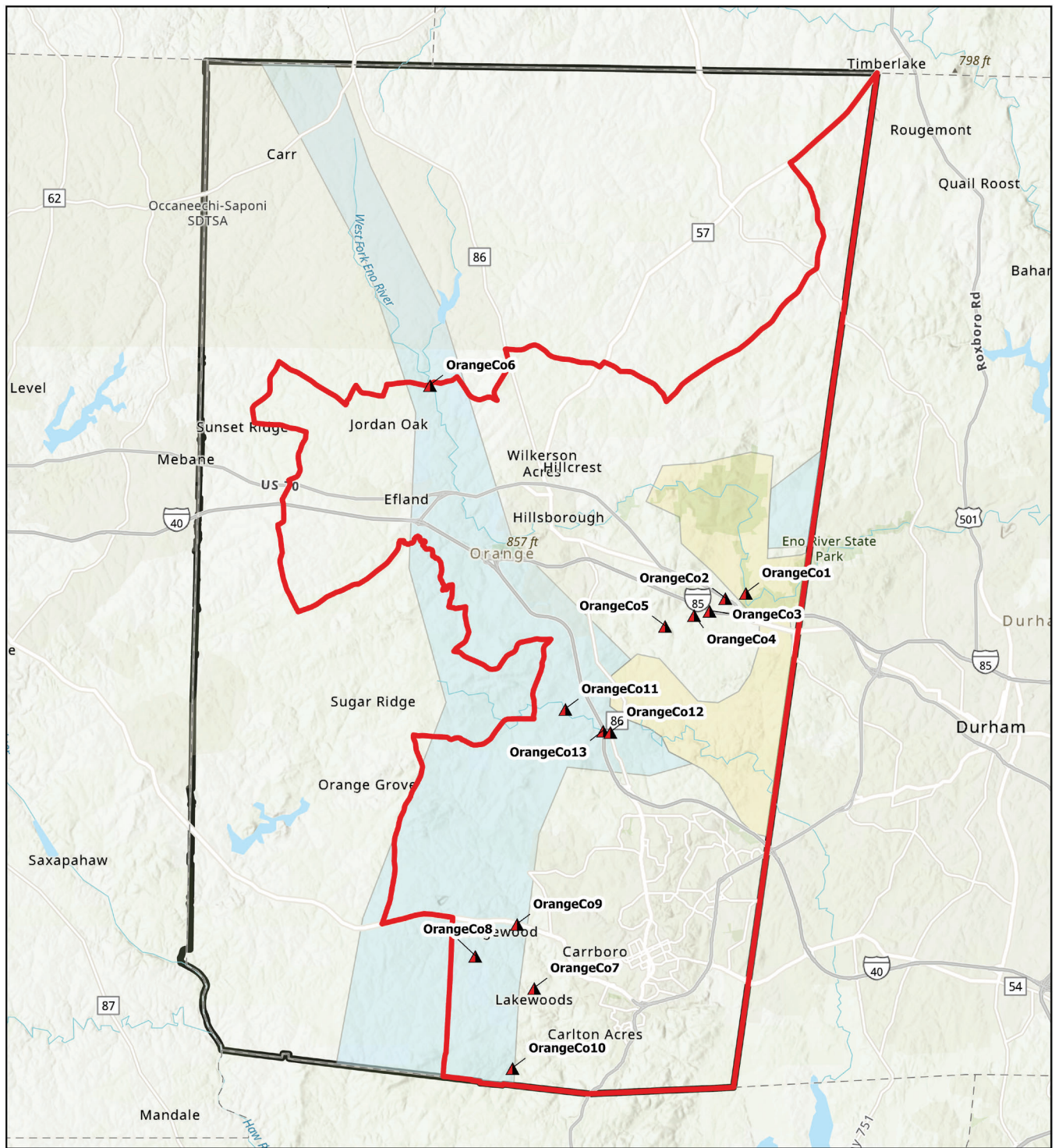
## Section 3.3

# ORANGE COUNTY RECOMMENDATIONS

The DCHC MPO is recommending thirteen (13) projects for Orange County as part of this plan. The list of projects can be found below in Table 3.3, and a map showing these sites are found in Figure 3.3: Map of complete list of wildlife crossing project recommendations in Orange County.

| Project ID | Project Name                                   | Jurisdiction  |
|------------|--|---------------|
| OrangeCo1  | Pleasant Green Road over Eno River             | Orange County |
| OrangeCo2  | US 70 over Stony Creek                         | Orange County |
| OrangeCo3  | I-85 over Stony Creek                          | Orange County |
| OrangeCo4  | University Station Road over Stony Creek       | Orange County |
| OrangeCo5  | Old NC Highway 10 over Stony Creek             | Orange County |
| OrangeCo6  | Halls Mill Road over Eno River                 | Orange County |
| OrangeCo7  | Jones Ferry Road over Neville Creek            | Orange County |
| OrangeCo8  | Neville Road over Phil's Creek                 | Orange County |
| OrangeCo9  | NC 54 over Morgan Creek                        | Orange County |
| OrangeCo10 | Damascus Church Road over Pritchard Mill Creek | Orange County |
| OrangeCo11 | New Hope Church Road over New Hope Creek       | Orange County |
| OrangeCo12 | NC 86 over New Hope Creek                      | Orange County |
| OrangeCo13 | I-40 Culvert over New Hope Creek               | Orange County |

Table 3.3: Complete list of wildlife crossing project recommendations in Orange County.



## Legend

- ▲ Orange County Sites
- Wildlife Corridors
- Wildlife Cores
- Orange County Boundary
- MPO Boundary



0 2 5 Miles



Figure 3.3: Map of complete list of wildlife crossing project recommendations in Orange County.



Orange County

# Pleasant Green Road over Eno River





# Summary and Problem Statement

Pleasant Green Road over the Eno River has been identified as a priority wildlife crossing. This crossing resides within a wildlife core identified by the Wildlands Network, and eleven WVCs have been reported within a one-mile buffer of this site. Additionally, the two-lane undivided bridge is expected to be replaced (Bridge Replacement: [BP7-R007](#)), with a current let date of September 5, 2030. This site has no bicycle and pedestrian facilities, has a speed limit of 45 mph, and garners 3,400 vehicles per day (2021 AADT).

This site is adjacent to several managed and natural lands. The NC Department of Natural & Cultural Resources Division of Parks & Recreation maintains the Eno River State Park along both sides of the road, the Mountains-to-Sea Trail (MST) is in the vicinity of the crossing site, and the Eno River Aquatic Habitat. The US Fish and Wildlife Service has also identified this site as a critical habitat for the Atlantic Pigtoe, Neuse River Waterdog, and Carolina Madtom.

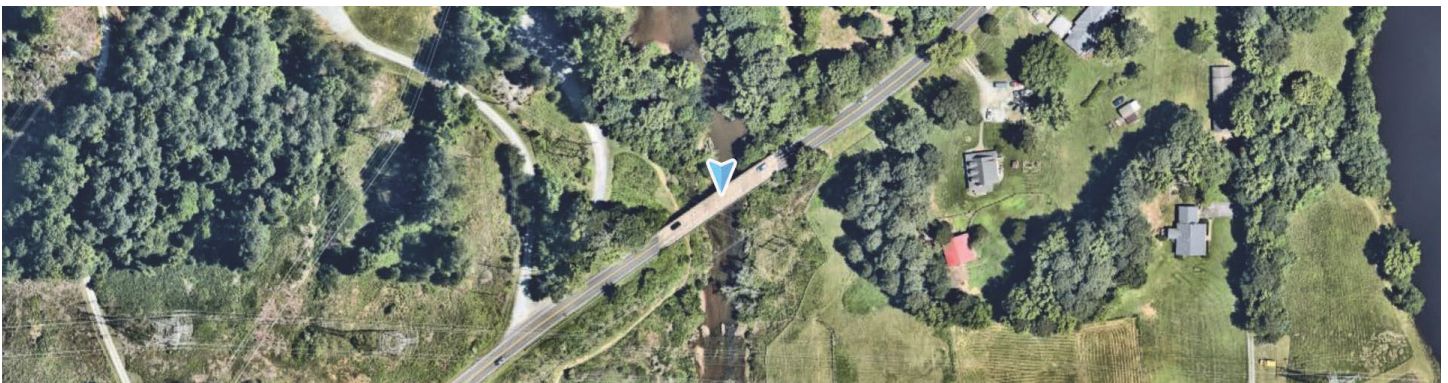
Barriers to wildlife travel within this core and under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. Current site conditions show that while the bench on the west side is serving as both wildlife passage and the MST alignment, the east side of the bridge is not conducive to wildlife movement due to the steep concrete slope and moderately steep natural surface embankment with no functional bench. Note that the master plan for continuation of the MST to the north (upstream) has the MST crossing the Eno River on or adjacent to the Pleasant Green Road bridge. As such, the new bridge must include enough new bend on the river's east side to accommodate wildlife passage and trail passage needed once the MST is open on the east side. The east side is presently used by fisherfolk to access bank fishing, which is likely to continue.



Pleasant Green Road bridge over Eno River facing East. DCHC MPO.



Pleasant Green Road bridge over Eno River looking southwest. DCHC MPO.



Aerial photograph of Pleasant Green Road bridge over Eno River. Nearmap.

# Site Facts

|   |   |
|---|---|
| Location ID   | OrangeCo1   |
| Date of Site Visit  | April 12, 2024  |
| Jurisdiction  | Orange County   |
| Coordinates   | <a href="#">36°02'47.9"N 79°00'38.6"W</a>   |
| NCDOT Crossing/Structure Code   | 670063  |
| Existing Structure Type   | Bridge  |
| Property Owner Type   | Public, private   |
| Existing Plan Alignment   | Bridge Replacement: <a href="#">BP7-R007</a><br>CTP Pedestrian: Pleasant Green Rd<br>CTP Highway: Pleasant Green Rd                           |
| Managed and Natural Lands   | NC DNCR Division of Parks and Recreation, US Fish and Wildlife Service  |
| Average Annual Daily Traffic (AADT) (2019)  | 4,100   |
| Average Annual Daily Traffic (AADT) (2021)  | 3,400   |
| Projected Average Weekday Traffic (AWDT)  | 4,767   |
| Speed Limit   | 45 mph  |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 23 (\$575,000)<br>Type C injury crash: 2 (\$214,000)<br><b>Total crashes and cost estimate: 25 (\$789,000)</b>              |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 195.5 (\$4,887,500)<br>Type C injury crash: 17 (\$1,819,000)<br><b>Total crashes and cost estimate: 212.5 (\$6,706,500)</b> |





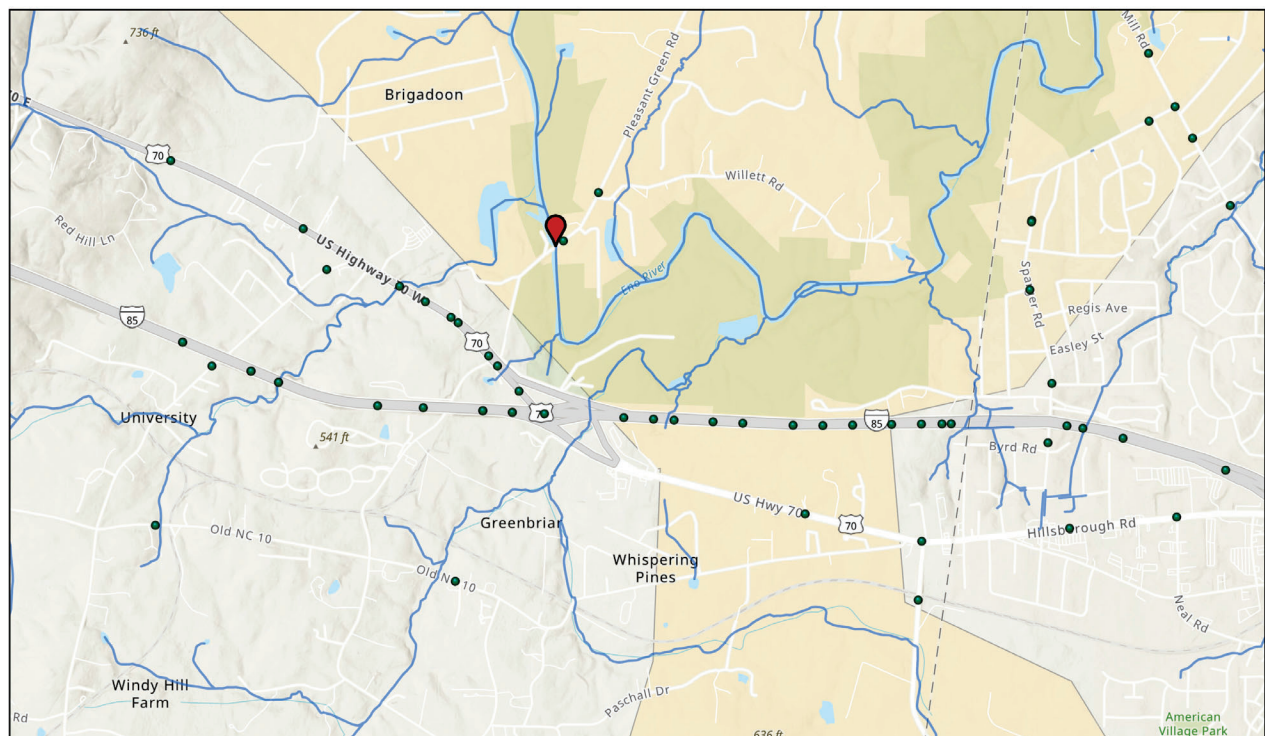


## Preferred Scenario

Provide a replacement bridge that maintains or extends the dry wildlife passage and MST footprint on natural benches on both sides of the river/ends of the bridge. Provide safe pedestrian crossing of the Eno River for the MST, either on the new bridge (preferably both sides) with connecting trails down to the benches below. Alternatively, pedestrian river crossing may be provided by a standalone pedestrian bridge upstream of the existing bridge if bridge sidewalks are not provided..

## Alternate Scenario

Until the new bridge is constructed, install a natural surface wildlife passage bench under the east side of the bridge in the 2nd bay from the abutment, including tie-ins to habitat up and downstream.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- 📍 Location ID: OrangeCo1

0.00 0.50 1.00 Miles





Orange County

# US 70 over Stony Creek





# Summary and Problem Statement

US 70 over Stony Creek (a tributary of the Eno River) has been identified as a priority wildlife crossing. This crossing resides within a wildlife core identified by the Wildlands Network, and thirty WVCs have been reported within a one-mile buffer of this site. Providing wildlife crossing countermeasures at all crossings along Stony Creek will extend the network where wildlife can travel safely while reducing the amount of WVCs along this riparian corridor. This site has no bicycle and pedestrian facilities, has a speed limit of 45 mph, and garners 14,000 vehicles per day (2021 AADT).

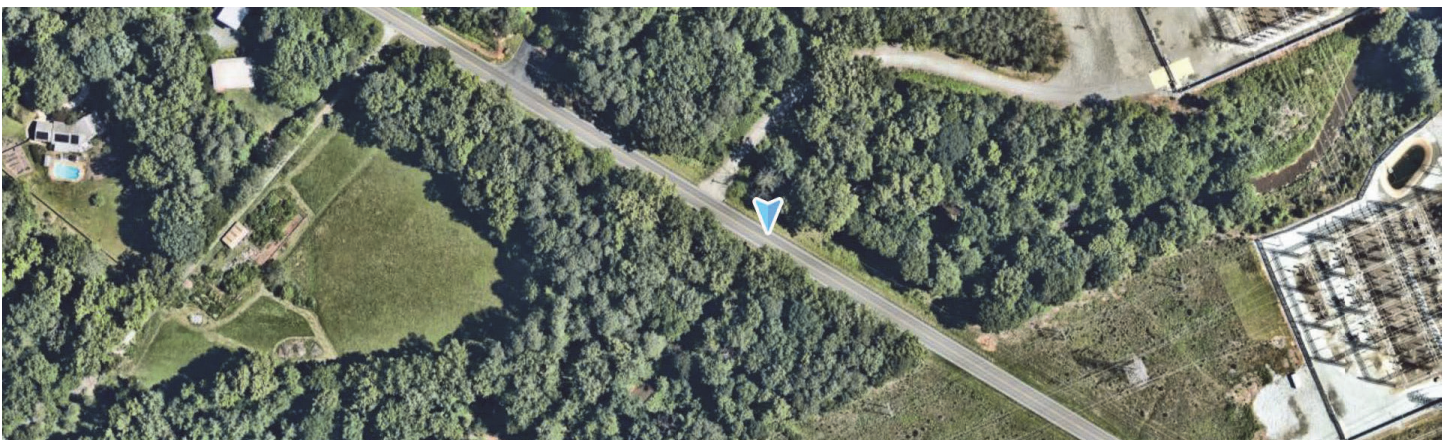
The structure at this site is a bottomless, single-cell culvert. The Stony Creek bed generally consists of sound bedrock, with varying depths, which continues through the culvert, providing a solid natural creek bottom within the culvert. Barriers to wildlife travel through the culvert exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The barriers include standing water in the channel, lack of continuous dry bank on one side, narrow and ephemeral dry banks on side, diminishing height of culvert at banks (sloping culvert walls), and steep embankments. The roadway has standard guardrail along both sides, which is porous to terrestrial wildlife.



US 70 culvert over Stony Creek, facing southwest upstream. DCHC MPO.



US 70 culvert over Stony Creek, facing southwest upstream. Pete Schubert.



Aerial photograph of US 70 culvert over Stony Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo2  |
| Date of Site Visit  | March 15, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">36°02'41.0"N 79°01'12.4"W</a>  |
| NCDOT Crossing/Structure Code   | 670056   |
| Existing Structure Type   | Pipe (bottomless culvert)  |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | CTP Highway: US 70A  |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | 15,500   |
| Average Annual Daily Traffic (AADT) (2021)  | 14,000   |
| Projected Average Weekday Traffic (AWDT)  | 20,285   |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 30 (\$750,000)<br><b>Total crashes and cost estimate: 30 (\$750,000)</b>       |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 255 (\$6,375,000)<br><b>Total crashes and cost estimate: 255 (\$6,375,000)</b> |



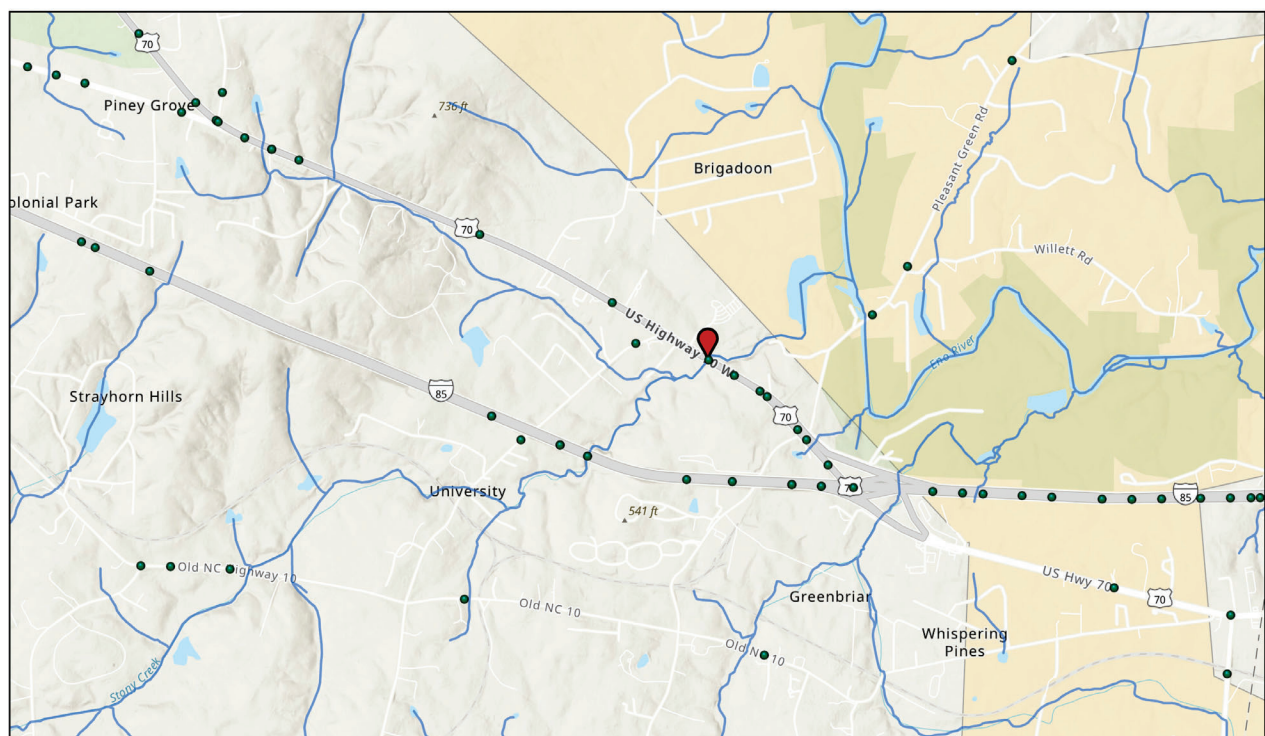


## Preferred Scenario

Provide a replacement bridge that maintains or extends the dry wildlife passage and MST footprint on natural benches on both sides of the river/ends of the bridge. Provide safe pedestrian crossing of the Eno River for the MST, either on the new bridge (preferably both sides) with connecting trails down to the benches below. Alternatively, pedestrian river crossing may be provided by a standalone pedestrian bridge upstream of the existing bridge if bridge sidewalks are not provided.

## Alternate Scenario

Until the new bridge is constructed, install a natural surface wildlife passage bench under the east side of the bridge in the 2nd bay from the abutment, including tie-ins to habitat up and downstream.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- 📍 Location ID: OrangeCo2

0.00 0.50 1.00 Miles





Orange County

# I-85 over Stony Creek





## Summary and Problem Statement

The bottomless pipe culvert at I-85 over Stony Creek (a tributary of the Eno River) has been identified as a priority wildlife crossing. This site has garnered twenty-eight reported wildlife-vehicle crashes within a one-mile buffer in this identified wildlife corridor. While this specific crossing does not reside within a wildlife corridor or core identified by the Wildlands Network, the northeast portion of Stony Creek does reside within a wildlife core. Providing wildlife crossing countermeasures at all crossings along Stony Creek will extend the network where wildlife can travel safely while reducing the amount of WVCs along this riparian corridor. The roadway has two lanes going both north- and southbound divided by a 20-foot grass median, and steel guardrails (with gap underneath the rail between the posts) extend along top of I-85 road embankment mostly ahead of the culvert on both sides of the 65 MPH divided highway. This site has no bicycle and pedestrian facilities, has a posted speed limit of 65 mph, and garners 56,000 vehicles per day (2019 AADT).

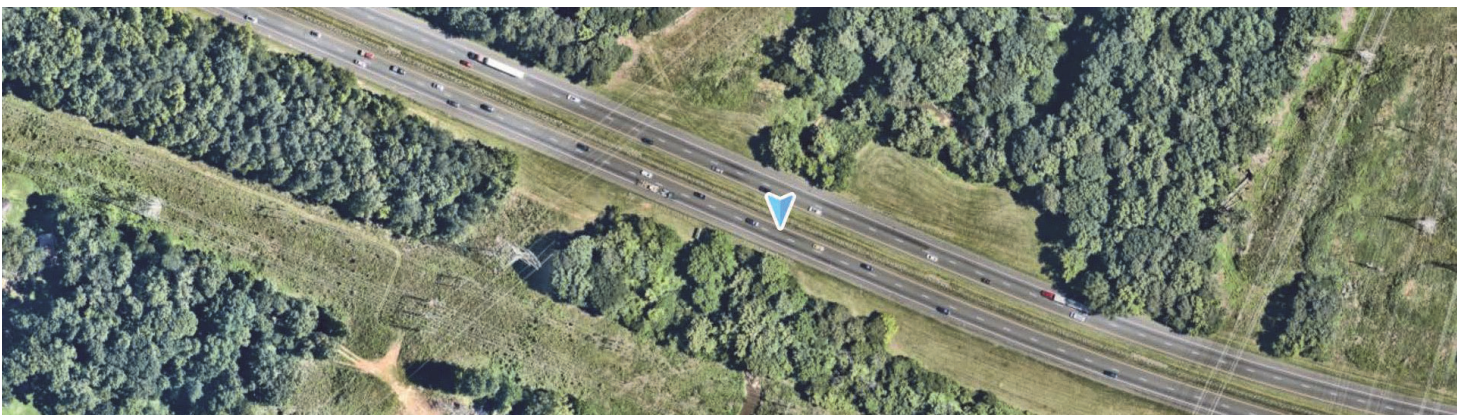
Barriers to wildlife travel through the culvert exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. This site does provide dry passage (approximately 25 feet) on the east side of the stream during low water conditions. However, there is no dry passage on the west side of stream, and the stream bank leading up to the culvert on the west side is extremely steep. As a result, wildlife will be forced around the steep stream bank (and the concrete wingwall extending from the culvert inlet) and up the road embankment to the roadway. However, the stream channel itself is narrow, shallow, and slow enough (at least during the low water conditions) that many wildlife species would be able to cross the stream to dry passage on the east side. During times of high and fast water flow, wildlife would be prevented from crossing the stream and could attempt to cross on the roadway.



I-85 culvert over Stony Creek, facing north, downstream. Pete Schubert.



I-85 culvert over Stony Creek, facing north, downstream. Pete Schubert.



Aerial photograph of I-85 culvert over Stony Creek. Nearmap.

# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo3  |
| Date of Site Visit  | April 26, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">36°02'24.0"N 79°01'38.3"W</a>  |
| NCDOT Crossing/Structure Code   | 670097   |
| Existing Structure Type   | Pipe culvert   |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | 2024-2033 STIP: # I-0305<br>2050 MTP: I-85, MTP ID: 48<br>CTP Highway: I-85                      |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | 56,000   |
| Average Annual Daily Traffic (AADT) (2021)  | Unavailable  |
| Projected Average Weekday Traffic (AWDT)  | 56,467   |
| Speed Limit   | 65 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 28 (\$700,000)<br><b>Total crashes and cost estimate: 28 (\$700,000)</b>       |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 238 (\$5,950,000)<br><b>Total crashes and cost estimate: 238 (\$5,950,000)</b> |





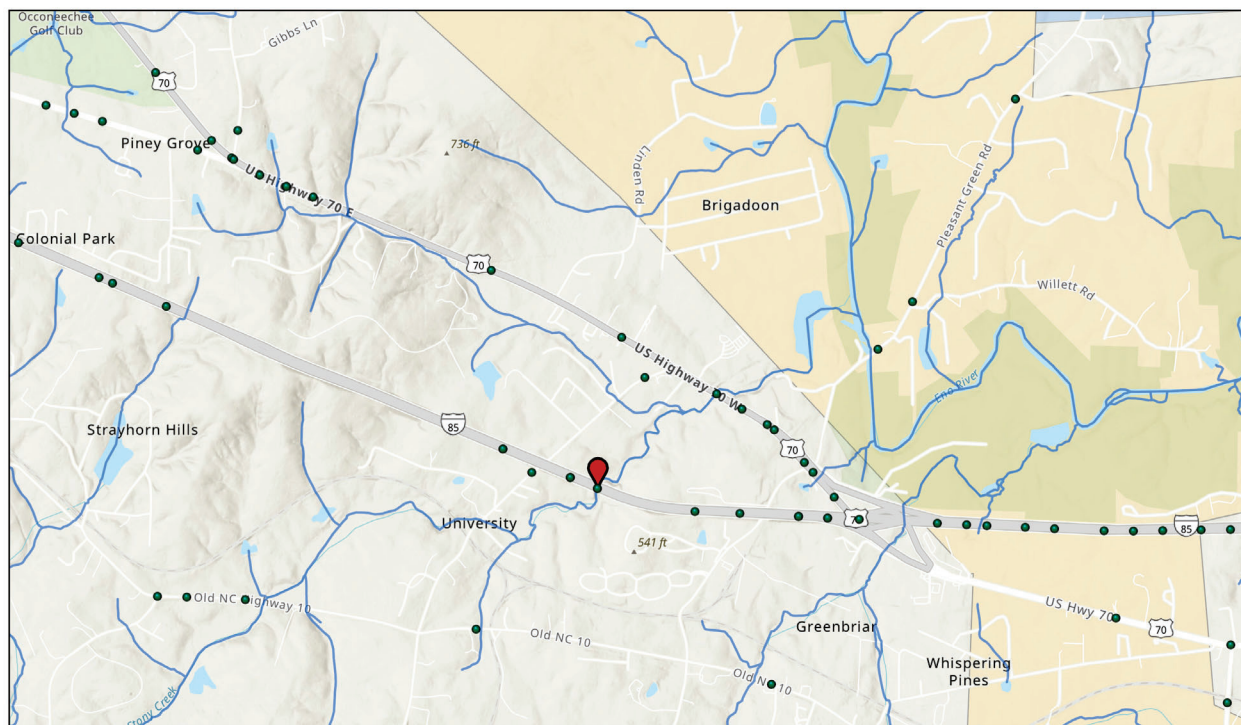


## Preferred Scenario

Replace the culvert with a bridge of sufficient span length to provide dry passage for wildlife on natural surfaces on atop both east and west stream banks, with such passage constructed continuous with habitat up and down stream. Provide two separate spans (eastbound and westbound) with a median gap to allow daylight to penetrate to the stream and banks below the bridge. Install fencing along the roadway ROW / toes of the embankment (both sides) of sufficient length to guide large wildlife through the culvert.

## Alternate Scenario

If hydraulic and hydrologic analyses allow, construct a permanent dry passage within the culvert on the west side, tied into the stream banks up and downstream.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- 📍 Location ID: OrangeCo3

0.00 0.50 1.00 Miles





Orange County

# University Station Road over Stony Creek





# Summary and Problem Statement

University Station Road over Stony Creek (a tributary of the Eno River) has been identified as a priority wildlife crossing. While this specific crossing does not reside within a wildlife corridor or core identified by the Wildlands Network, the northeast portion of Stony Creek does reside within a wildlife core. Providing wildlife crossing countermeasures at all crossings along Stony Creek will extend the network where wildlife can travel safely while reducing the amount of WVCs along this riparian corridor. This site has no bicycle and pedestrian facilities, has a posted speed limit of 45 mph, and seventeen WVCs have been reported within a one-mile buffer.

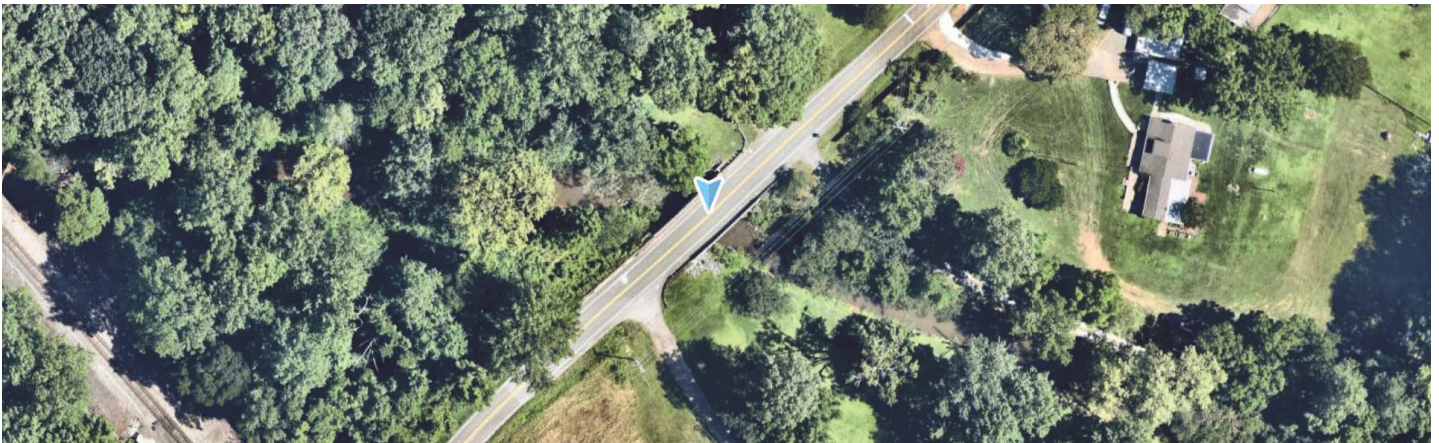
Barriers to wildlife travel under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. Identified barriers include concrete walls and steep, exposed riprap slopes that cover the entire area under the bridge. There is also a steep riprap slope on the northeast side extending from the streambank/underpass area up to the road. Stream fills the channel between concrete walls with no dry passage. Remnants of wooden piers are embedded in what are likely concrete footings for former bridge piers, now abandoned in place and confining the channel under the current bridge. Because these old structures confine the channel, the adjacent riprapped slopes could be benched / terraced and choked with fines to provide stabilized natural surface dry passages under the bridge. These could easily be connected to dry banks up and down stream. Due to the close proximity of driveways and private parcels, wildlife fencing may not be appropriate.



East side of University Road bridge over Stony Creek, facing northwest. Pete Schubert.



Underneath University Road bridge over Stony Creek, facing northwest. Pete Schubert.



Aerial photograph of University Station Road. Nearmap.



# Site Facts

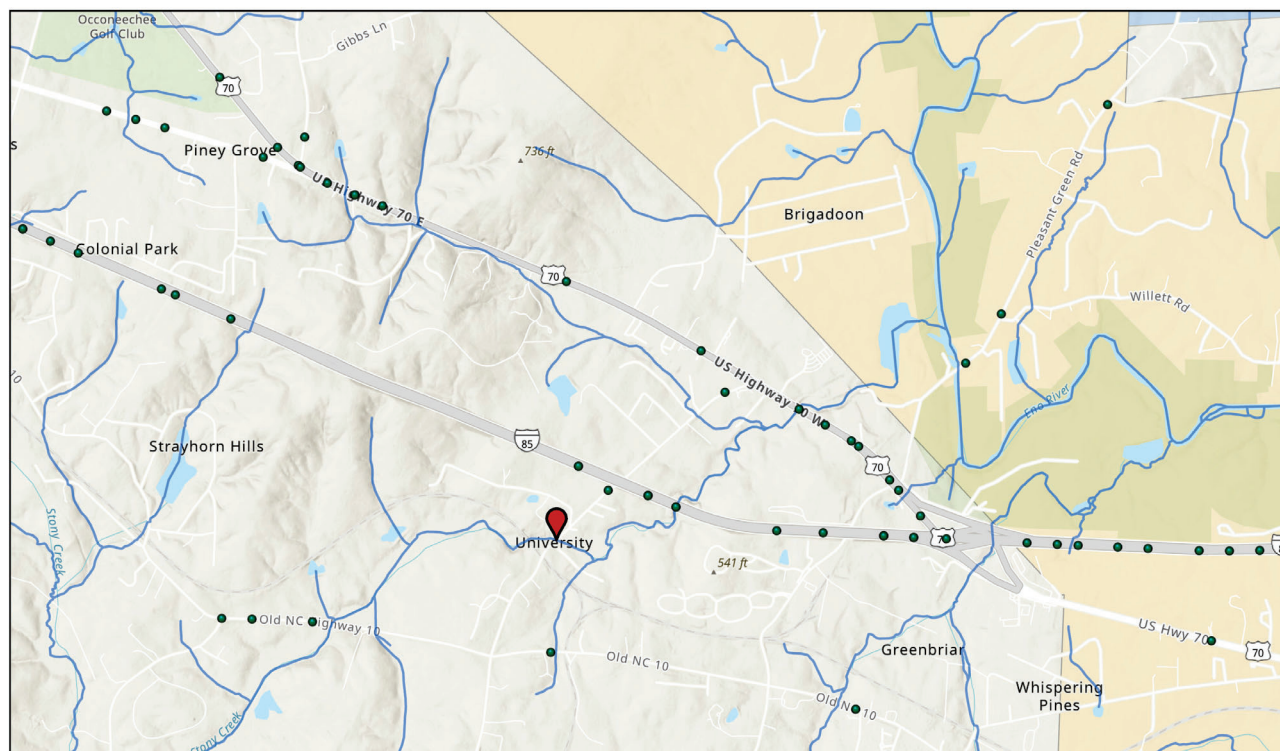
|   |  |
|---|--|
| Location ID   | OrangeCo4  |
| Date of Site Visit  | April 26, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">36°02'18.4"N 79°02'03.7"W</a>  |
| NCDOT Crossing/Structure Code   | 670104   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | CTP Pedestrian: University Station Rd  |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | Unavailable  |
| Average Annual Daily Traffic (AADT) (2021)  | Unavailable  |
| Projected Average Weekday Traffic (AWDT)  | 928  |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 17 (\$425,000)<br><b>Total crashes and cost estimate: 17 (\$425,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 144.5 (\$3,612,500)<br><b>Total crashes and cost estimate: 144.5 (\$3,612,500)</b> |





## Preferred Scenario

Create a bench in the existing riprap slope protection on each side of the creek under the bridge, and use small stones to fill the voids to create a natural surface wildlife passage that is connected upstream and downstream to existing habitat areas.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- 📍 Location ID: OrangeCo4

0.00 0.50 1.00 Miles





Orange County

# Old NC Highway 10 over Stony Creek



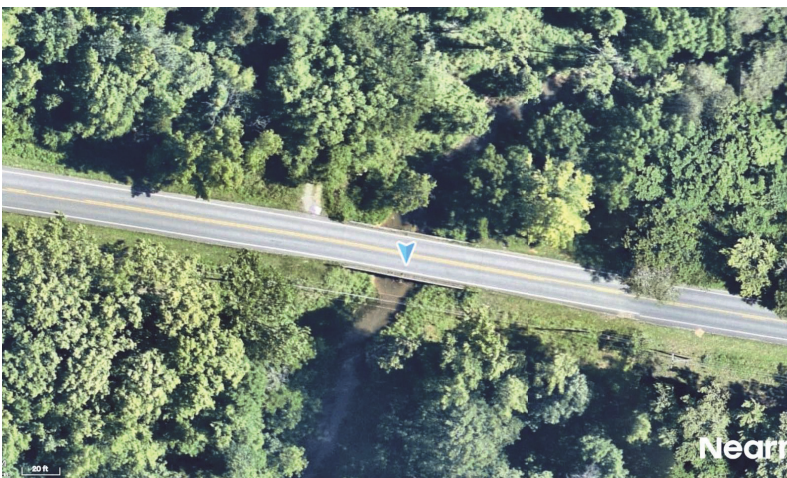


# Summary and Problem Statement

Old NC Highway 10 over Stony Creek (a tributary of the Eno River) has been identified as a priority wildlife crossing. While this specific crossing does not reside within a wildlife corridor or core identified by the Wildlands Network, the northeast portion of Stony Creek does reside within a wildlife core. Providing wildlife crossing countermeasures at all crossings along Stony Creek will extend the network where wildlife can travel safely while reducing the amount of WVCs along this riparian corridor. This site has no bicycle and pedestrian facilities, has a posted speed limit of 45 mph, and seven WVCs have been reported within a one-mile buffer.

This site is adjacent to several managed and natural lands. The Eno River Association maintains a conservation area on both sides of the site. The NC Department of Natural and Cultural Resources Land and Water Fund maintains a conservation easement along the waterway and table. The Triangle Land Conservancy maintains a conservation area covering 606.75 acres of land on both sides of roadway, covers all other overlapping conservations. Orange County government maintains an easement covering 163 acres along the northern side of the roadway, which aligns with the plot as the Triangle Land Conservancy land north of roadway.

Barriers to wildlife travel under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The barriers include riprap on abutment slopes under the bridge, on both sides; lack of natural surface dry passage benches on either side; and marginally sufficient vertical clearance under the bridge for high water passage for large mammals. There is no ROW fencing or guardrail along the roadway except as railing for the bridge itself. At a minimum, the riprap slope protections should be benched and choked with gravel or alluvial material to create dry passages on both sides. However, as these will need to be partway up the abutment slopes, they will have less than five feet of vertical clearance. Consideration should be given to replacing this bridge with a single span at least double the current span length, to both remove the bent from the channel and to provide width for dry wildlife passage on both sides. Ideally, the road profile should be raised at least two feet to provide adequate vertical clearance for larger mammals under the bridge. Fencing should also be considered along the roadway at the base of the causeway to funnel wildlife under the bridge after it has been improved and if AADT warrants.



Aerial photograph of Old NC Highway 10 bridge over Stony Creek. Nearmap.



Underneath Old NC Highway 10 bridge over Stony Creek, facing west. Pete Schubert.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo5  |
| Date of Site Visit  | April 18, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">36°02'03.8"N 79°02'51.4"W</a>  |
| NCDOT Crossing/Structure Code   | 670102   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Private, public  |
| Existing Plan Alignment   | CTP Pedestrian: Old NC 10<br>CTP Highway: Old NC 10  |
| Managed and Natural Lands   | Eno River Association, NC DNCR Land and Water Fund, Orange County, Triangle Land Conservancy       |
| Average Annual Daily Traffic (AADT) (2019)  | 3,300  |
| Average Annual Daily Traffic (AADT) (2021)  | 2,500  |
| Projected Average Weekday Traffic (AWDT)  | 2,301  |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 7 (\$175,000)<br><b>Total crashes and cost estimate: 7 (\$175,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 59.5 (\$1,487,500)<br><b>Total crashes and cost estimate: 59.5 (\$1,487,500)</b> |



**7**

Reported  
WVCs within  
1-mile buffer  
(2018-2022)

**\$175,000**

Reported  
WVCs cost  
estimate

**2,500**

Annual  
average daily  
traffic (2021)

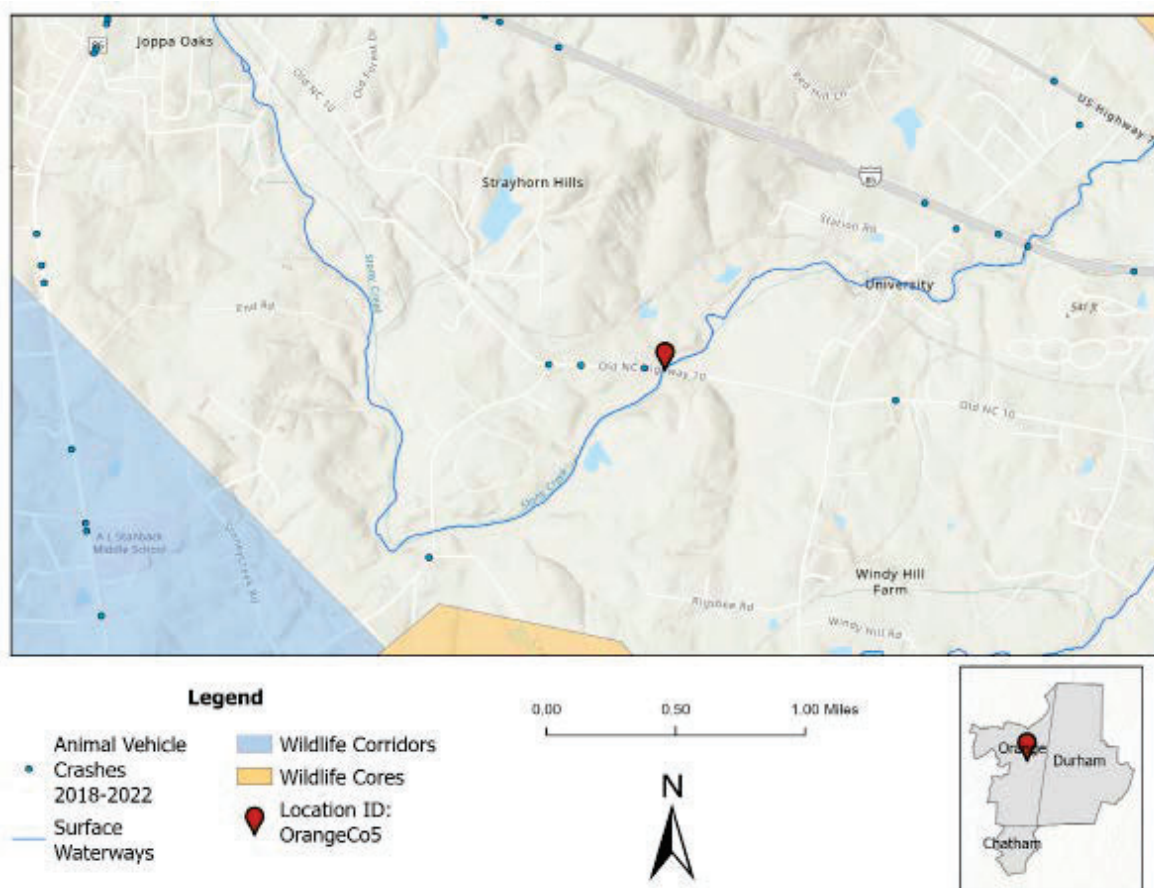
Adjacent  
managed  
natural land

## Preferred Scenario

Raise the road and causeway profile and replace the existing narrow bridge with a single or multiple span of adequate length to provide for dry passage of wildlife on both sides of the creek and a minimum of eight feet vertical clearance. Install fencing of adequate length on both sides and approaches to channel wildlife movement under the improved bridge.

## Alternate Scenario

Construct benches in the existing riprap slope protection for each abutment including choking the riprap with fine aggregate to provide a natural surface for wildlife passage. Benches shall be tied into habitat up and down stream.





Orange County

# Halls Mill Road over Eno River





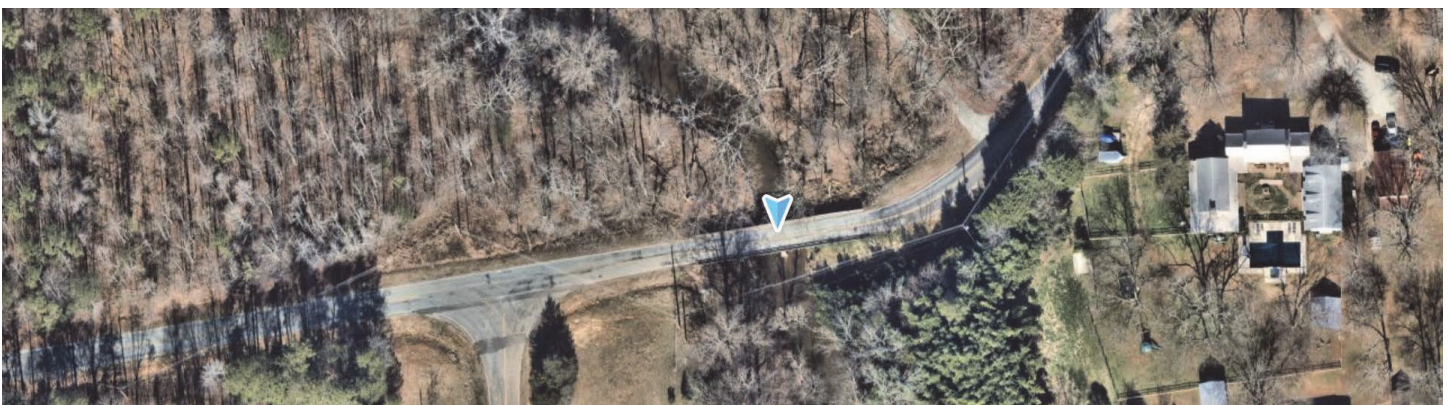
# Summary and Problem Statement

The bridge at Halls Mill Road (SR 1336) over the Eno River has been identified as a priority wildlife crossing as it resides within a wildlife corridor identified by the Wildlands Network, and the bridge is currently scheduled to be replaced. The existing two-lane bridge (Br# 670011) is 125 feet long and 18 feet wide. Located in rural Elfland, Orange County, Halls Mill Road has no bicycle and pedestrian facilities, and has a posted speed limit of 55 mph. The closest 2021 AADT station data is located at Elfland Cedar Grove Road approximately one-mile to the west of the site, is a major collector which counted 4,500 vehicles per day.

This site serves as an important corridor for wildlife, including rare and threatened species. The bridge crosses a section of the Eno River identified by the U.S. Fish and Wildlife Service as Critical Habitat for the Federally Threatened Neuse River Waterdog. The N.C. Natural Heritage Program has identified this section of the river as aquatic habitat of national significance – Eno River Aquatic Habitat. At this location, the Eno River contains a significant number of rare aquatic species, including the federally threatened and state endangered Atlantic pigtoe, and the federally threatened and state special concern Neuse River waterdog. Several other rare species have been identified downstream such as state endangered green floater and yellow lampmussel, state threatened eastern lampmussel and triangle floater, state species of concern Carolina darter, and state significantly rare Roanoke bass. In addition, the Orange County Future Land Use Map (Orange County 2030 Comprehensive Plan), the 2004 Inventory of Natural Areas and Wildlife Habitat for Orange County, NC (NC Natural Heritage Program), and A Landscape Plan for Wildlife Habitat Connectivity in the Eno River and New Hope Creek Watersheds, North Carolina (2019) identifies this segment of the Eno River, and more specifically under this bridge, as a highly important wildlife corridor.

The following are wildlife crossing improvements to this site based on review of the new bridge's plans:

- Replacement bridge span has an increase of approximately 20 feet. This bridge lengthening allows greater opportunity to create dry passage underneath and along the embankments for wildlife to travel.
- Details for the shoulder berm gutter shows a mountable curb inside of a standard steel guardrail set on posts. This can contribute to adequate passage for smaller wildlife.
- The bridge profile depicts an increase in clear span height from a 13-foot average (existing) to 21.5-foot average (new/replacement), providing a clear span at the toe of the Class II Riprap slope protection of 13 feet on west end and 14 feet on east end. This increase can help create dry wildlife passage at low flow/discharge.



Aerial photograph of Halls Mill Road bridge over Eno River. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo6  |
| Date of Site Visit  | May 16, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">36°07'25.1"N 79°09'18.3"W</a>  |
| NCDOT Crossing/Structure Code   | 670011   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | WBS No. <a href="#">BP7.R009.1</a>   |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | Unavailable  |
| Average Annual Daily Traffic (AADT) (2021)  | Unavailable  |
| Projected Average Weekday Traffic (AWDT)  | Unavailable  |
| Speed Limit   | 55 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 1 (\$25,000)<br><b>Total crashes and cost estimate: 1 (\$25,000)</b>       |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 8.5 (\$212,500)<br><b>Total crashes and cost estimate: 8.5 (\$212,500)</b> |





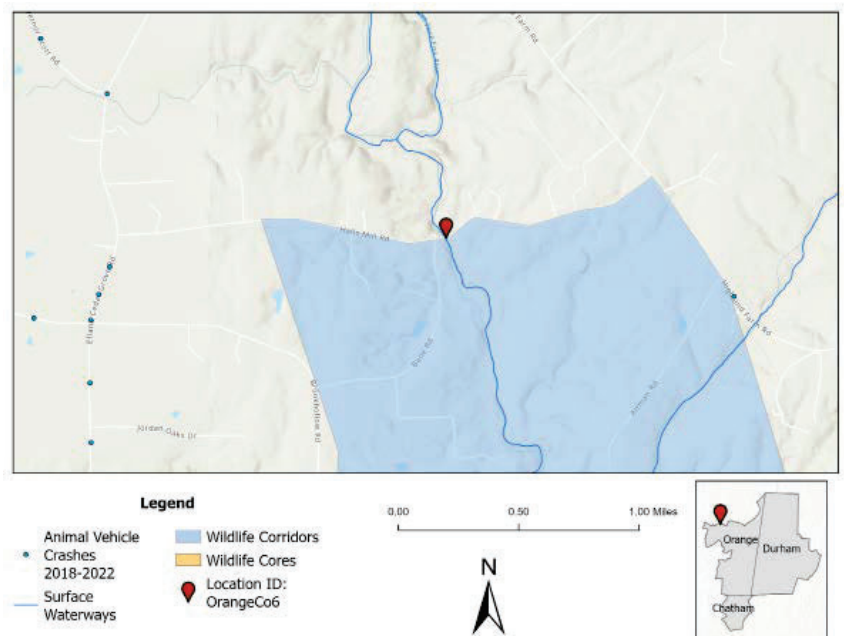
## Preferred Scenario

As the planning and design for this project moves forward, the following elements are recommended to be considered to promote wildlife connectivity in the identified wildlife corridor and eliminate fatalities and serious injuries as a result of WVCs in the project's location:

- Avoid installing riprap slope protection under the span. Riprap should not be placed within the area of wildlife passage as it creates a barrier for wildlife movement. Instead, provide full height full wall end bents as are currently in place, which would eliminate the need for slope protection under the span.
- The replacement bridge should have a span at least as long as the current span; longer if there will be a slope up to the abutments instead of a vertical end bent. The replacement bridge should provide no less capacity for wildlife to cross as is presently afforded, consisting of a range of elevations of dry passage on both sides of the bridge, tied into the habitat up and down stream.
- Once the bridge replacement has been completed, perform annual vegetation management in accordance with the NCDOT Vegetation Management Manual and standard practices to eradicate invasive bamboo, selectively clear other dense woody vegetation, and allow wildlife full access to the dry passages under the span.

## Alternate Scenario

If new riprap slope protection is incorporated, then natural surface (i.e., choked riprap) benches at least 6 feet below the new bridge deck are recommended. Until the bridge is replaced, perform annual vegetation management in accordance with the NCDOT Vegetation Management Manual and standard practices to eradicate invasive bamboo, selectively clear other dense woody vegetation, and allow wildlife full access to the dry passages under the span.





Orange County

# Jones Ferry Road over Neville Creek





## Summary and Problem Statement

Jones Ferry Road over Neville Creek has been identified as a priority wildlife crossing. This site has garnered thirteen reported wildlife-vehicle crashes within a one-mile buffer in this identified wildlife corridor, and is located just outside of a wildlife corridor identified by the Wildlands Network. The bridge is a two-lane undivided with a speed limit of 45 mph. This site has no bicycle and pedestrian facilities, and garners 8,300 vehicles per day (2021 AADT). This site is adjacent to the University of North Carolina's managed natural lands of University Lake and McCauley Mountain Slopes.

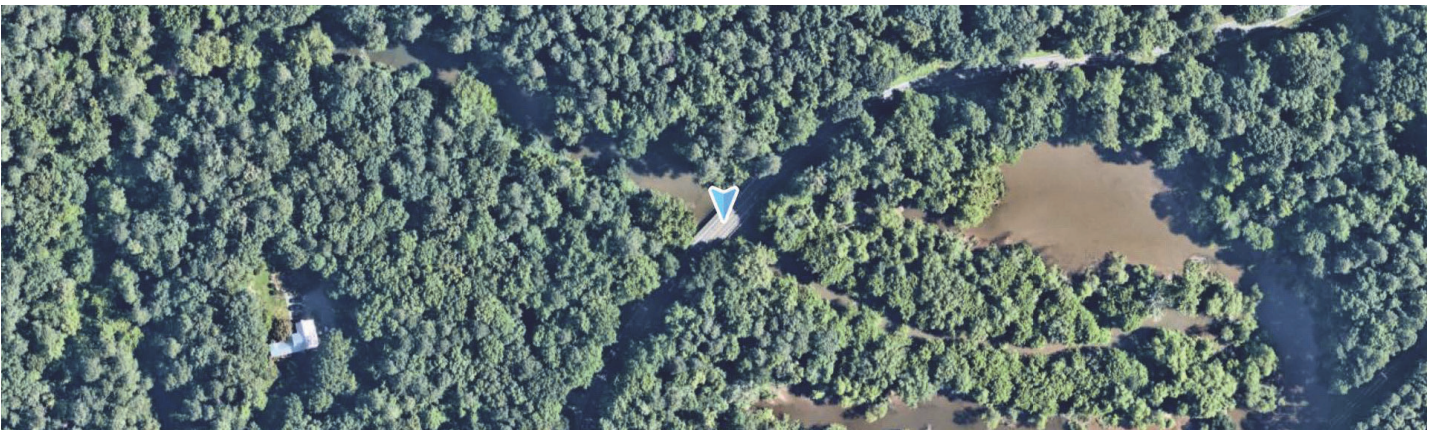
Barriers to wildlife travel along this corridor and under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The barriers include standing water, riprap, and low visibility. Standing water is present just outside of the bridge underpass area and extends into habitat areas that are in the direct path for wildlife toward the dry underpass. The low visibility of the passage area under the bridge is caused by dense vegetation near openings and (possibly) the metal wings extending from the ends of bridge.



East side of Jones Ferry Road bridge over Neville Creek. Pete Schubert.



Underneath Jones Ferry Road bridge over Neville Creek, facing Northeast. Pete Schubert.



Aerial photograph of Jones Ferry Road bridge over Neville Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo7  |
| Date of Site Visit  | May 31, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">35°54'00.3"N 79°06'25.8"W</a>  |
| NCDOT Crossing/Structure Code   | 670092   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Public   |
| Existing Plan Alignment   | CTP Pedestrian: Jones Ferry Rd.<br>CTP Highway: Jones Ferry Rd.                                      |
| Managed and Natural Lands   | UNC Chapel Hill  |
| Average Annual Daily Traffic (AADT) (2019)  | 9,800  |
| Average Annual Daily Traffic (AADT) (2021)  | 8,300  |
| Projected Average Weekday Traffic (AWDT)  | 5,692  |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 13 (\$325,000)<br><b>Total crashes and cost estimate: 13 (\$325,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 110.5 (\$2,762,500)<br><b>Total crashes and cost estimate: 110.5 (\$2,762,500)</b> |



**13**

Reported  
WVCs within  
1-mile buffer  
(2018-2022)

**\$325,000**

Reported  
WVCs cost  
estimate

**8,300**

Annual  
average daily  
traffic (2021)

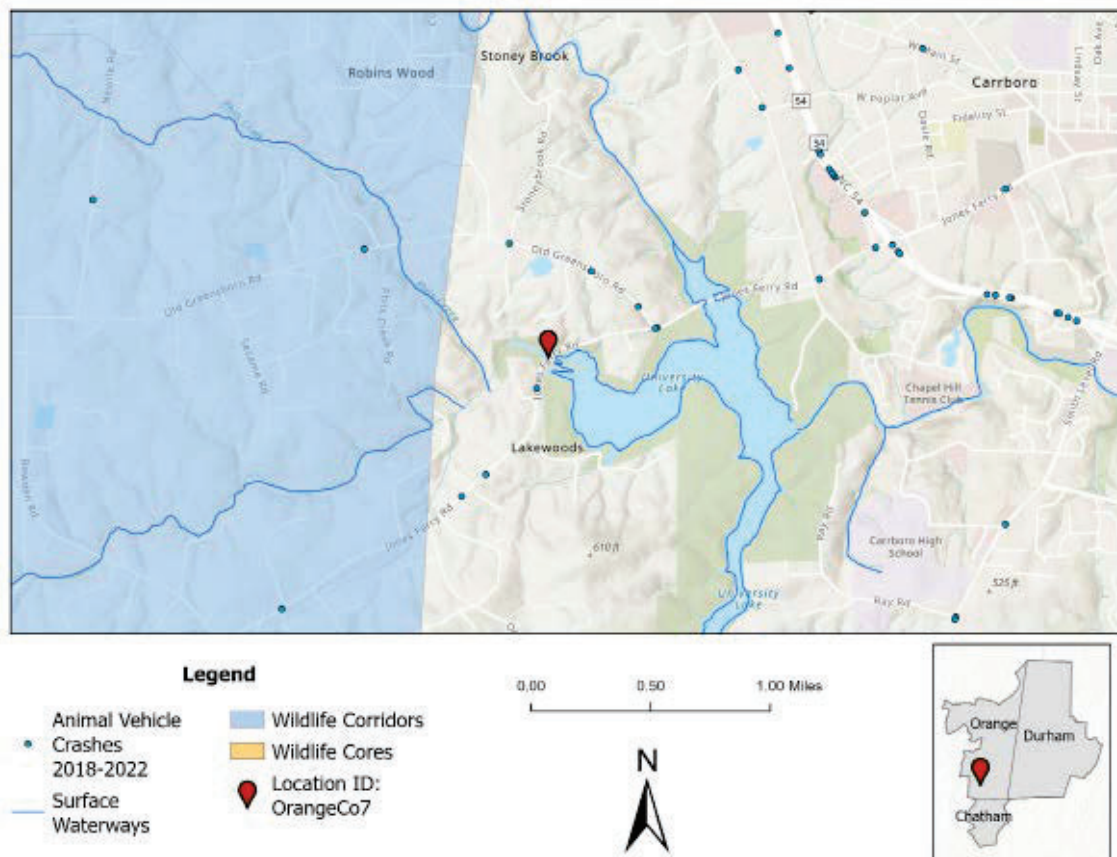
Adjacent  
managed  
natural land

## Preferred Scenario

Replace the existing bridge and raise the road's approach to it to increase the height clearance for the dry passage areas. The bridge span should be long enough, and above flood level, to allow for dry passage on both sides of the creek. Fencing to guide wildlife into the underpass should then be installed.

## Alternate Scenario

A temporary solution to consider is to excavate down in the earthen areas on each streambank and leave an earthen "table", to get an additional 2-3 feet of height (with about 4 feet of width). Perform vegetation management in accordance with the NCDOT Vegetation Management Manual and standard practices to ensure visibility of the existing dry opening for wildlife.





Orange County

# Neville Road over Phil's Creek





# Summary and Problem Statement

Neville Road over Phil's Creek has been identified as a priority wildlife crossing. This crossing resides within a wildlife corridor identified by the Wildlands Network, and six WVCs have been reported within a one-mile buffer of this site. This site has no bicycle and pedestrian facilities and has a posted speed limit of 55 mph. The Triangle Land Conservancy manages a short stretch of the creek on the east side of the road.

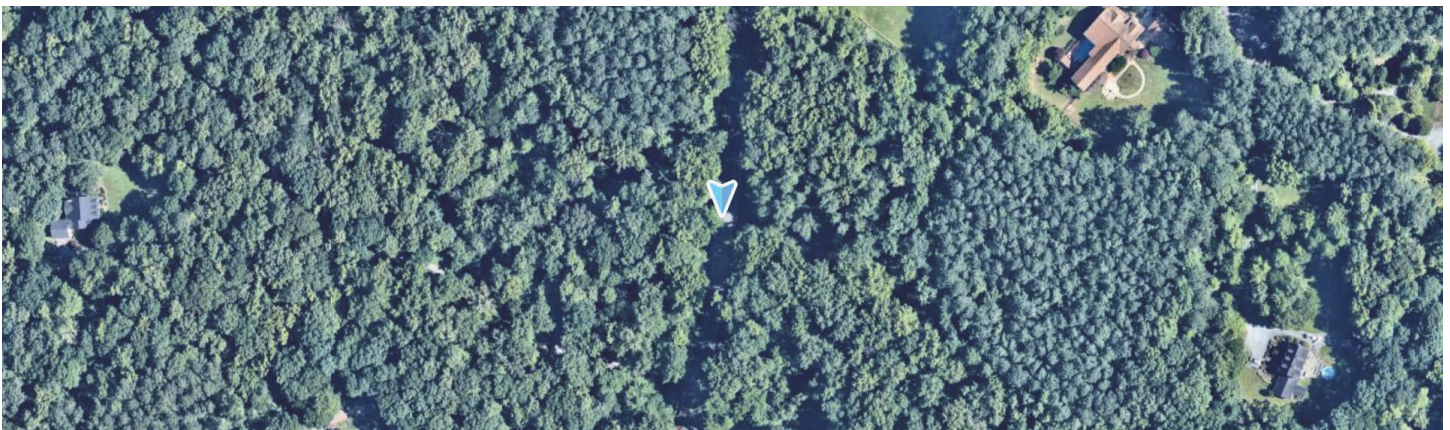
Barriers to wildlife travel along this corridor and under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The bridge at this site was replaced within the past few years. While the footings for the previous bridge were left in place to minimize disturbance to the creek channel, they are constraining the flow and some wildlife access to the creek under the bridge. However, the outer footings stabilize the low-slope abutment embankment toes, providing considerable space for dry wildlife passage. But such passage is not possible due to the placement of exposed, oversize riprap. Given the low slope, the riprap could be removed, but the sheer size of the riprap and the low overhead clearance makes heavy equipment access difficult. If the riprap can be relocated or removed to expose a natural surface, it can be left in place with the voids filled with fine aggregate and alluvial materials to create a natural surface at all points with at least 4-feet of vertical clearance to the deck bottom above. Under the bridge, there is ephemeral dry passage through only the north channel, and only at low flow. At higher flows, both channels have standing water and there is no dry passage due to the riprap slope lining on both sides, except on the narrow (one-foot wide) flat footing tops.



Under Neville Road bridge over Phil's Creek, facing East. Pete Schubert.



Under Neville Road bridge over Phil's Creek, facing South. Pete Schubert.



Aerial photograph of Neville Road bridge over Phil's Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo8  |
| Date of Site Visit  | May 31, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">35°54'43.1"N 79°08'02.5"W</a>  |
| NCDOT Crossing/Structure Code   | 670232   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Public, private  |
| Existing Plan Alignment   | CTP Multiuse Path: Phils Creek Trail   |
| Managed and Natural Lands   | Triangle Land Conservancy  |
| Average Annual Daily Traffic (AADT) (2019)  | Unavailable  |
| Average Annual Daily Traffic (AADT) (2021)  | Unavailable  |
| Projected Average Weekday Traffic (AWDT)  | 920  |
| Speed Limit   | 55 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 5 (\$125,000)<br>Type C injury crash: 1 (\$107,000)<br><b>Total crashes and cost estimate: 6 (\$232,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 42.5 (\$1,062,500)<br>Type C injury crash: 8.5 (\$909,500)<br><b>Total crashes and cost estimate: 51 (\$1,972,000)</b> |



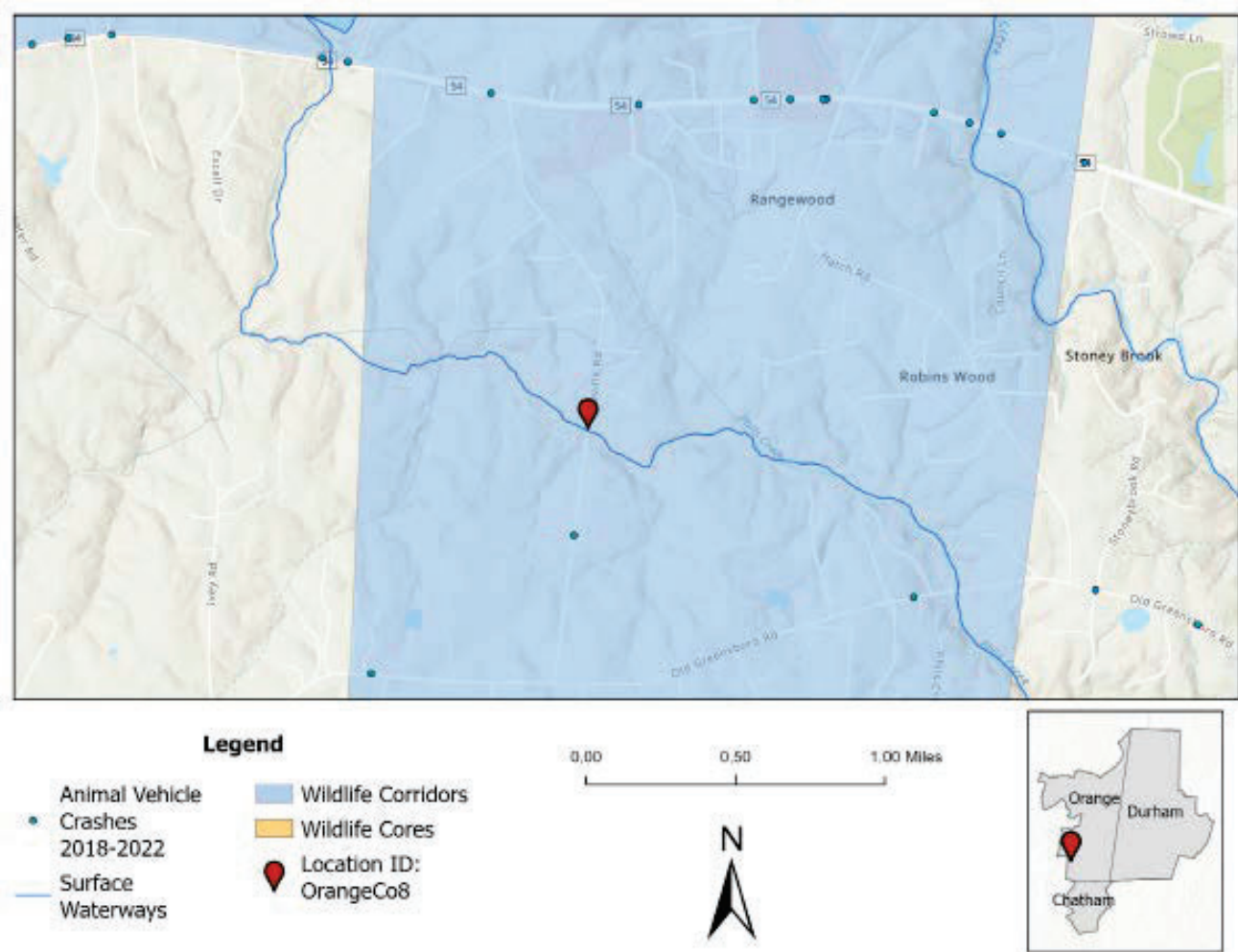


## Preferred Scenario

Remove the riprap slope protection under the bridge on both sides up to within 4 feet of the underside of the deck, leaving a low-slope natural surface dry passage for wildlife on both sides of the creek.

## Alternate Scenario

Use small stones to choke/fill the voids in all riprap slope protection up to within 4 feet of the underside of the deck to create a low-slope natural surface dry passage for wildlife on both sides of the creek.





Orange County

# NC 54 over Morgan Creek





# Summary and Problem Statement

NC 54 over Morgan Creek has been identified as a priority wildlife crossing. This crossing resides within a wildlife corridor identified by the Wildlands Network, and fourteen WVCs have been reported within a one-mile buffer of this site. This site has no bicycle and pedestrian facilities and has a posted speed limit of 55 mph. The culvert at this site is set to be replaced (BR-0091), which presents an opportunity to enhance wildlife connectivity and create a safer roadway for wildlife and drivers alike. While this site is not currently adjacent to natural managed land, the Triangle Land Conservancy owns conservation land upstream to the north of the crossing site, and University Lake land is owned by the University of North Carolina along with an NC Land and Water Fund Conservation Agreement downstream to the south of the crossing site.

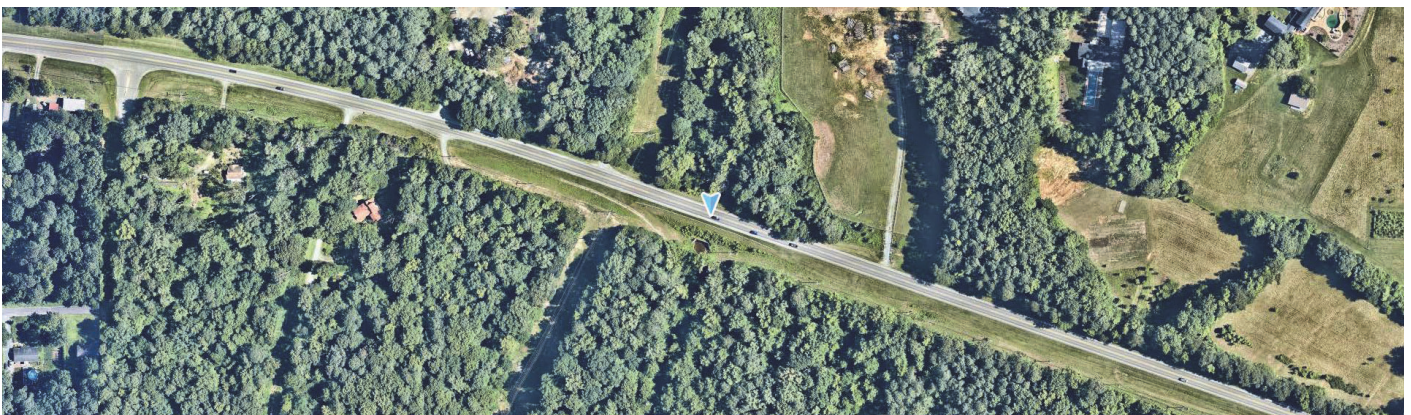
Barriers to wildlife travel along this corridor and through the culvert exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The two-bay box culvert has standing water in both cells, which provides no dry and safe passage for wildlife. Wildlife that encounters this flooded culvert may move up the slope and onto NC 54 to cross the roadway. Additionally, dense vegetation on the north side of the road (such as dense non-native wisteria extending from the road bank down to the stream on the northeast side) poses an additional barrier and obstacle for wildlife to travel through the natural habitat.



North side of NC 54 culvert, facing South.  
Pete Schubert.



South side of NC 54 culvert, facing North.  
Pete Schubert.



Aerial photograph of NC 54 culvert over Morgan Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo9  |
| Date of Site Visit  | July 26, 2024  |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">35°55'25.6"N 79°06'54.0"W</a>  |
| NCDOT Crossing/Structure Code   | 670036   |
| Existing Structure Type   | Culvert  |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | Bridge Replacement: <a href="#">BR-0091</a><br>2050 MTP Highway: NC 54<br>CTP Highway: NC 54<br>CTP Pedestrian: NC 54                      |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | 15,500   |
| Average Annual Daily Traffic (AADT) (2021)  | 12,500   |
| Projected Average Weekday Traffic (AWDT)  | 21,211   |
| Speed Limit   | 55 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 13 (\$325,000)<br>Type C injury crash: 1 (\$107,000)<br><b>Total crashes and cost estimate: 14 (\$432,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 110.5 (\$2,762,500)<br>Type C injury crash: 8.5 (\$909,500)<br><b>Total crashes and cost estimate: 119 (\$3,672,000)</b> |



**14**

Reported  
WVCs within  
1-mile buffer  
(2018-2022)

**\$432,000**

Reported  
WVCs cost  
estimate

Bridge  
replacement  
in progress

**12,500**

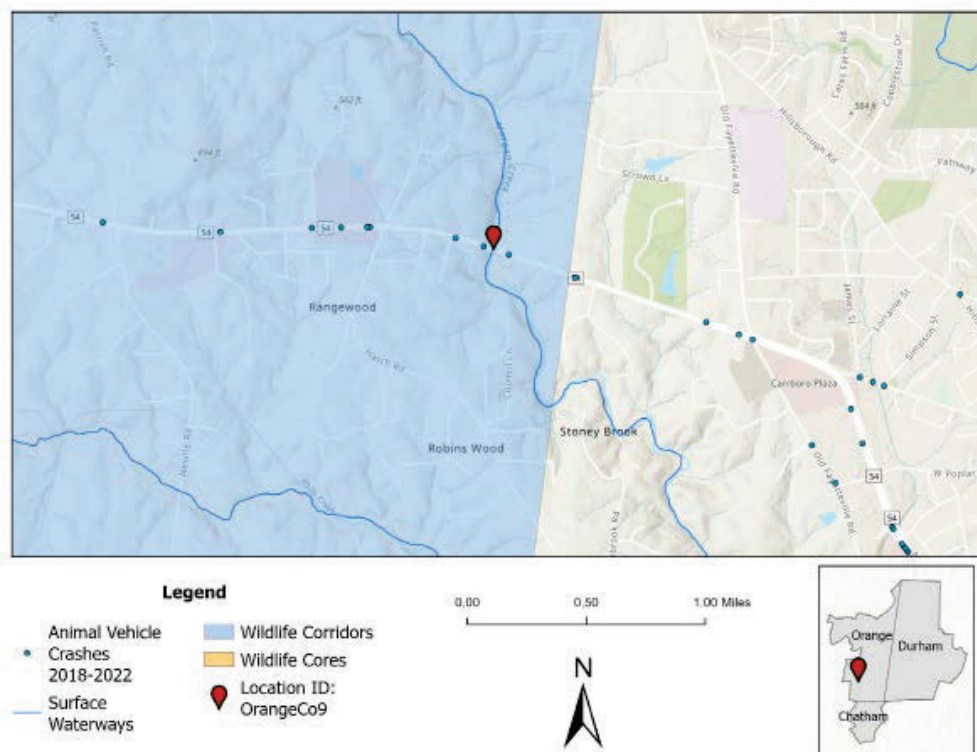
Annual  
average daily  
traffic (2021)

## Preferred Scenario

Replace the flooded bottom box culvert with a single span bridge of adequate span length and height to provide dry passage for wildlife on both sides of the creek under the structure. Connect new dry passages to adjacent habitat up and downstream on both sides of the stream. Install fencing along the ROW approaching the bridge to guide wildlife into the dry crossings under the new bridge and deter crossing NC 54. Perform annual vegetation management in accordance with the NCDOT Vegetation Management Manual and standard practices.

## Alternate Scenario

Install new higher bottom elevation culverts away from the existing culverts to provide dry passage for wildlife away from the creek entering the flooded culverts. Culverts shall be at a location to provide a minimum height of 8 feet and minimum width of 12 feet, and a bottom elevation that ties into adjacent habitats' elevations up and downstream. Install fencing along the ROW approaching the new dry culverts to guide wildlife into the crossings and deter crossing the busy NC 54. Perform annual vegetation management in accordance with the NCDOT Vegetation Management Manual and standard practices.





Orange County

# Damascus Church Road over Pritchard Mill Creek





# Summary and Problem Statement

Damascus Church Road over Pritchard Mill Creek has been identified as a priority wildlife crossing. This crossing resides within a wildlife corridor identified by the Wildlands Network, and one WVC has been reported within a one-mile buffer of this site. This site has no bicycle and pedestrian facilities and has a posted speed limit of 45 mph. The bridge at this site is set to be replaced (BP7-R013), which presents an opportunity to enhance wildlife connectivity and create a safer roadway for wildlife and drivers alike. While this site is not currently adjacent to natural managed land, the Triangle Land Conservancy owns conservation land upstream to the north of the crossing site, and University Lake land is owned by the University of North Carolina along with an NC Land and Water Fund Conservation Agreement downstream to the south of the crossing site.

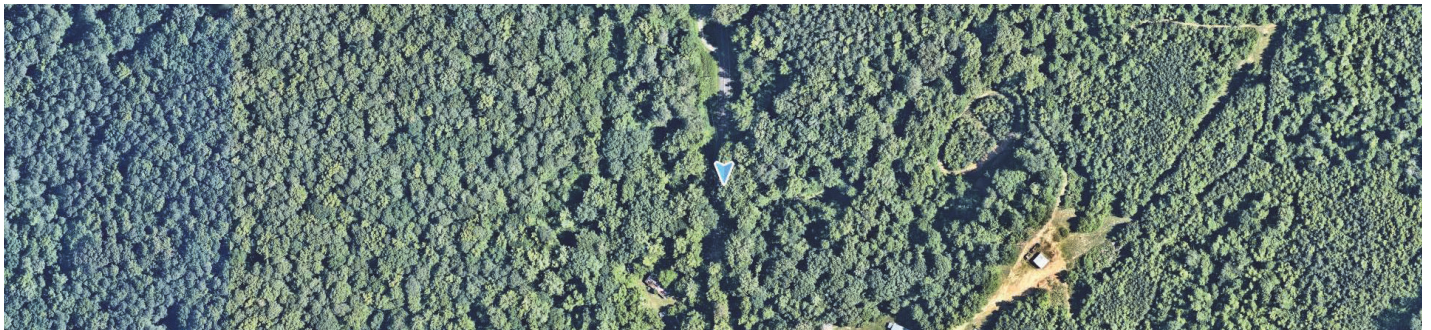
Barriers to wildlife travel along this corridor under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The creek channel has migrated to the south vertical abutment and scoured/exposed the concrete abutment wall footing, leaving no dry passage, and no dry connection to upstream or downstream habitat on that side. Scattered rocks and debris (wooden boards) do not seem to represent significant barriers.



West side of Damascus Church Road bridge over Pritchard Mill Creek, facing east. DCHC MPO.



East side of Damascus Church Road bridge over Pritchard Mill Creek, facing west. DCHC MPO.



Aerial photograph of Damascus Church Road bridge over Pritchard Mill Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo10   |
| Date of Site Visit  | July 26, 2024  |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">35°52'13.4"N 79°07'01.2"W</a>  |
| NCDOT Crossing/Structure Code   | 670090   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | Bridge Replacement: <a href="#">BP7-R013</a>   |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | Unavailable  |
| Average Annual Daily Traffic (AADT) (2021)  | Unavailable  |
| Projected Average Weekday Traffic (AWDT)  | 1,636  |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 1 (\$25,000)<br><b>Total crashes and cost estimate: 1 (\$25,000)</b>       |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 8.5 (\$212,500)<br><b>Total crashes and cost estimate: 8.5 (\$212,500)</b> |

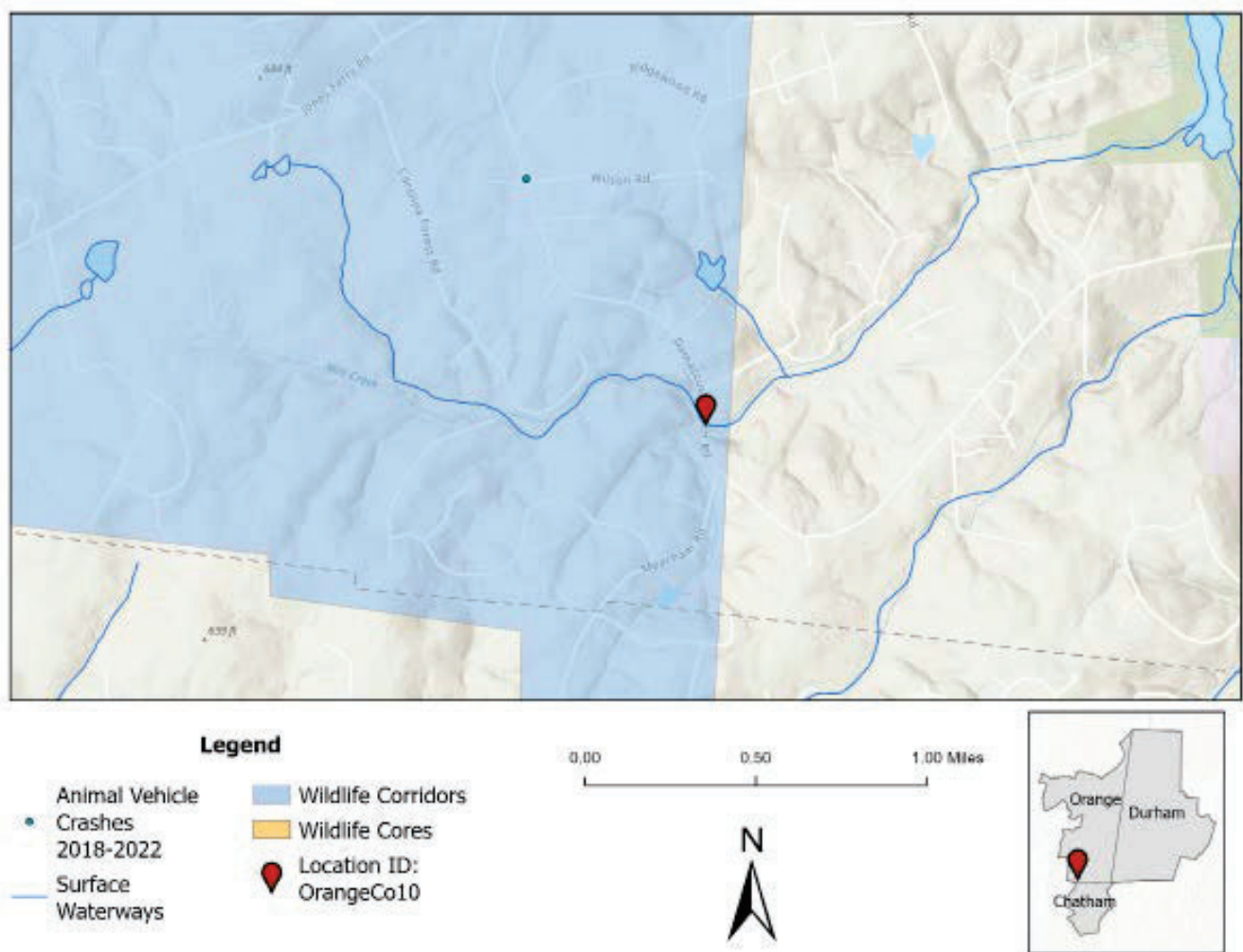






## Preferred Scenario

As part of this bridge replacement, ensure the replacement bridge is high and long enough to allow for dry passage on both sides of the creek, especially during times of high flood. It is recommended that the span be lengthened, especially to the south where there is currently no dry passage, and the creek channel is against the footing of the abutment wall. Connect new natural surface dry passages to up and downstream habitat on both sides of the creek.





Orange County

# New Hope Church Road over New Hope Creek





# Summary and Problem Statement

New Hope Church Road over New Hope Creek has been identified as a priority wildlife crossing. This crossing resides within a wildlife corridor identified by the Wildlands Network, and fourteen WVCs have been reported within a one-mile buffer of this site. This site has no bicycle and pedestrian facilities and has a posted speed limit of 45 mph. The 13.2-acre parcel to the north of the bridge is the former Girl Scout Camp Pipsissewa that is actively managed as natural habitat land by private owners, which elevates this site as a good candidate for permanent protection. Additionally, smaller upstream and downstream parcels contain an average of at least 100 feet of wide floodplain, which are also good candidates for permanent habitat protection.

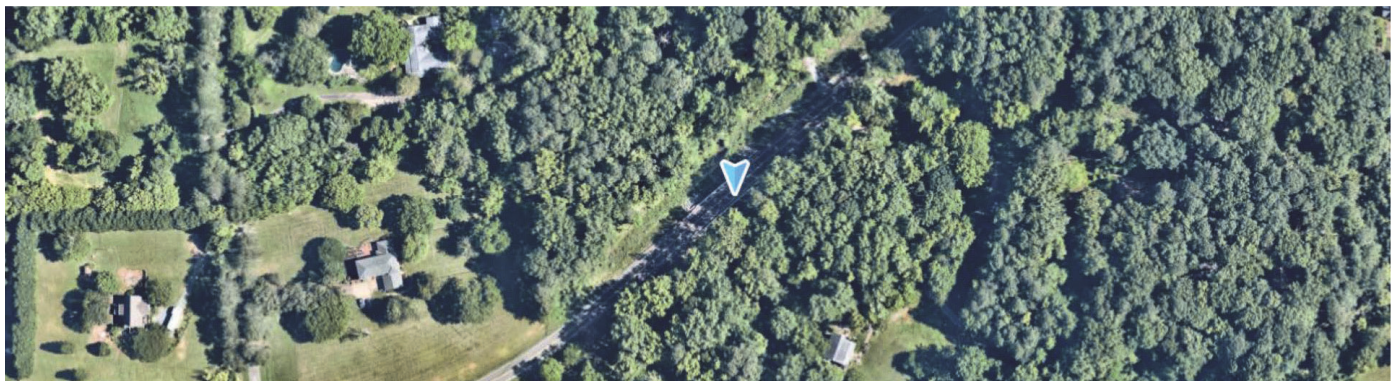
Barriers to wildlife travel along this corridor and under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. The east bank slope is completely covered with gently sloping riprap from the abutment 2 feet below the deck to the bottom of the bank, interfering with dry passage on this side only. However, the west bank has a level dry passage, but will not function at high water due to riprap covering the balance of the slope up to the 2 feet abutment under the deck. The bridge span is of adequate distance and has gentle dry slopes underneath to accommodate wildlife passage if the riprap placed above the top of the bank is choked with small stone to provide a natural surface to within 2 feet vertically of the underside of the bridge deck.



View of west bank, under New Hope Church Road bridge over New Hope Creek. Pete Schubert.



East bank, under New Hope Church Road bridge over New Hope Creek. Pete Schubert.



Aerial photograph of New Hope Church Road bridge over New Hope Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeColl   |
| Date of Site Visit  | May 22, 2024   |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">36°00'12.8"N 79°05'35.1"W</a>  |
| NCDOT Crossing/Structure Code   | 670099   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | CTP Highway: New Hope Church Rd.<br>CTP Pedestrian: New Hope Church Rd   |
| Managed and Natural Lands   | N/A  |
| Average Annual Daily Traffic (AADT) (2019)  | 3,900  |
| Average Annual Daily Traffic (AADT) (2021)  | 3,200  |
| Projected Average Weekday Traffic (AWDT)  | 4,966  |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 13 (\$325,000)<br>Type B injury crash: 1 (\$187,000)<br><b>Total crashes and cost estimate: 14 (\$512,000)</b>             |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 110.5 (\$2,762,500)<br>Type B injury crash: 8.5 (\$1,589,500)<br><b>Total crashes and cost estimate: 119 (\$4,352,000)</b> |

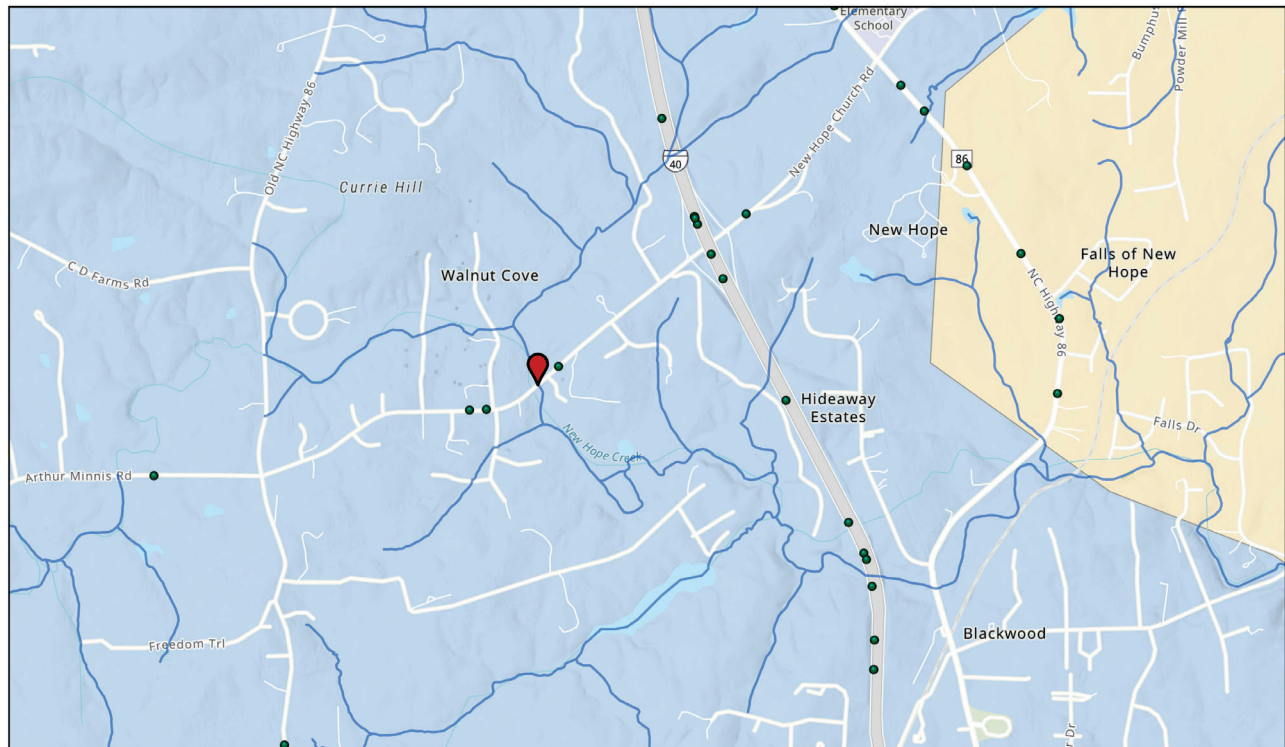






## Preferred Scenario

Create a natural, dry surface for wildlife passage by using small stones to choke/fill the voids within the portions of the existing riprap slope that is below 2 feet from the underside of the deck to the top of the creek bank.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- Location ID: OrangeCo11

0.00 0.50 1.00 Miles





Orange County

# NC 86 over New Hope Creek





# Summary and Problem Statement

NC 86 over New Hope Creek has been identified as a priority wildlife crossing. This crossing resides within a wildlife corridor identified by the Wildlands Network, and thirteen WVCs have been reported within a one-mile buffer of this site. This site has no bicycle and pedestrian facilities and has a posted speed limit of 45 mph. The bridge at this site is set to be replaced (Bridge Replacement: [BR-0092](#)), which presents an opportunity to enhance wildlife connectivity and create a safer roadway for wildlife and drivers alike. Upstream and downstream along New Hope Creek and Mountain Creek are conservation lands owned by Duke Forest and Triangle Land Conservancy.

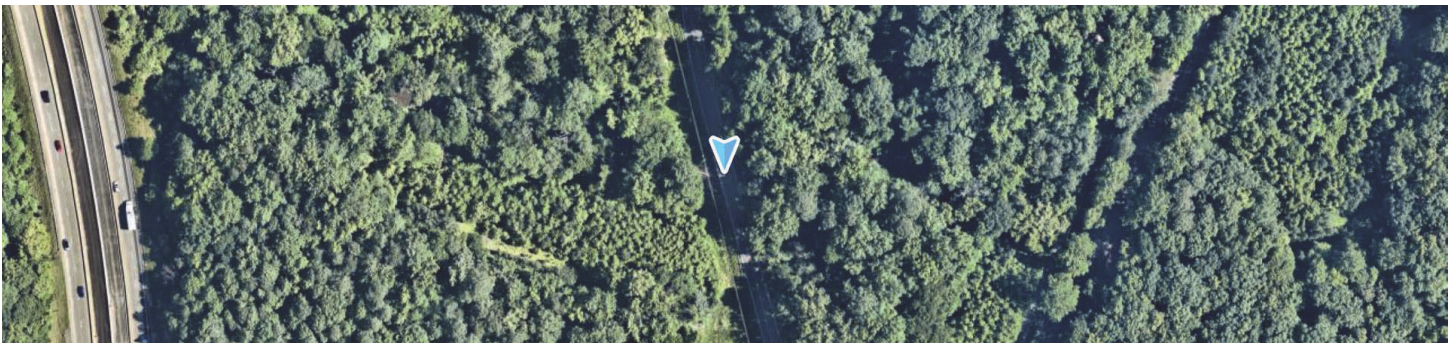
Barriers to wildlife travel along this corridor under the bridge exist, which encourages wildlife travel on the roadway and results in conflicts with motorists. Barriers include riprap on the entire south abutment slope, and old construction debris in the lower portion of the north slope and bank. The existing bridge span is of insufficient length to fully accommodate dry passage on both banks at high creek levels, as evidenced by stranded woody debris and flotsam. The existing bridge is low and narrow and appears to have been structurally repaired and augmented many times over the years, and a replacement bridge provides the opportunity to improve dry wildlife passage along both creek banks. Lengthening the bridge span as part of the replacement is the most critical, combined with replacing the multiple bents with a single span across the entire crossing.



West side of NC 86 bridge over New Hope Creek, facing east. DCHC MPO.



East side of NC 86 bridge over New Hope Creek, facing west. DCHC MPO.



Aerial photograph of NC 86 bridge over New Hope Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo12   |
| Date of Site Visit  | July 26, 2024  |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">35°59'42.1"N 79°04'21.1"W</a>  |
| NCDOT Crossing/Structure Code   | 670037   |
| Existing Structure Type   | Bridge   |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | Bridge Replacement: <a href="#">BR-0092</a><br>CTP Highway: NC 86<br>CTP Pedestrian: NC 86<br>CTP Multiuse Paths: New Hope Creek Trail     |
| Managed and Natural Lands   | Duke Forest, Triangle Land Conservancy   |
| Average Annual Daily Traffic (AADT) (2019)  | 5,900  |
| Average Annual Daily Traffic (AADT) (2021)  | 5,200  |
| Projected Average Weekday Traffic (AWDT)  | 1,949  |
| Speed Limit   | 45 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 12 (\$300,000)<br>Type C injury crash: 1 (\$107,000)<br><b>Total crashes and cost estimate: 13 (\$407,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 102 (\$2,550,000)<br>Type C injury crash: 8.5 (\$909,500)<br><b>Total crashes and cost estimate: 110.5 (\$3,459,500)</b> |

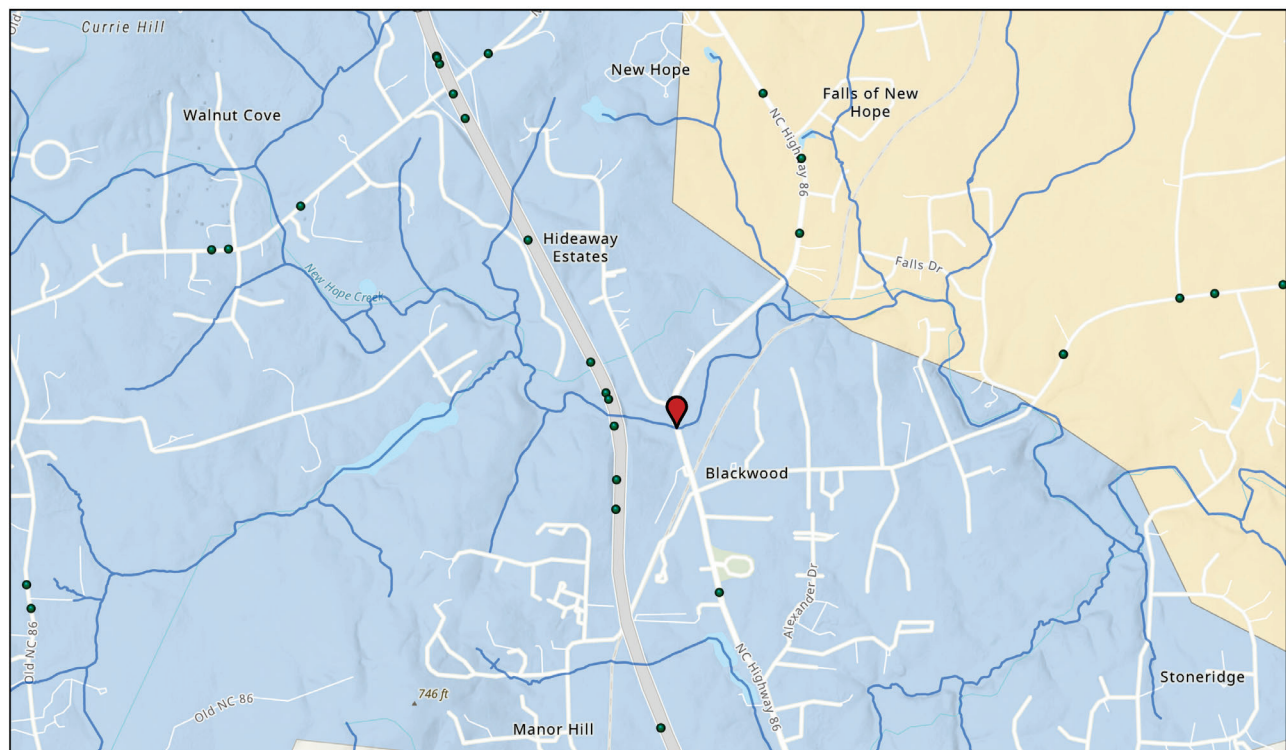






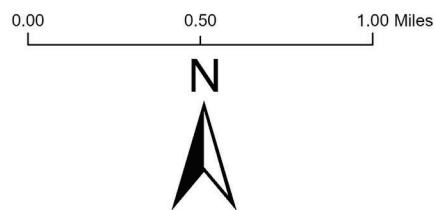
## Preferred Scenario

As part of the bridge replacement project, raise the NC 86 causeway profile through the entire New Hope Creek floodplain and install a replacement bridge with a span high and long enough to create a passage bench for wildlife on both sides of the creek, which must remain dry during times of high flood. Avoid placing riprap slope protection on abutment slopes, and provide dry connection to adjacent habitat up and downstream on both banks.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- Location ID: OrangeCo12





Orange County

# I-40 Culvert over New Hope Creek





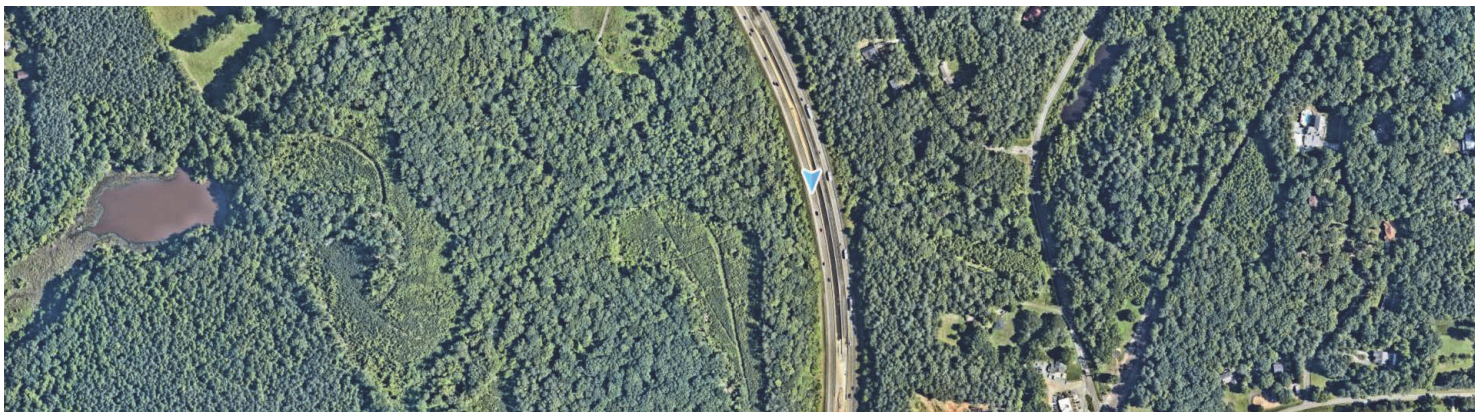
## Summary and Problem Statement

The I-40 culvert over New Hope Creek has been identified as a priority wildlife crossing. This crossing resides within a wildlife corridor identified by the Wildlands Network, and fourteen WVCs have been reported within a one-mile buffer of this site. This site has no bicycle and pedestrian facilities, has a posted speed limit of 65 mph, and garners 74,000 vehicles per day (2019 AADT). Upstream and downstream along New Hope Creek and Mountain Creek are conservation lands owned by Duke Forest and Triangle Land Conservancy.

Barriers to wildlife travel along this corridor through the culvert exist. No dry passage for wildlife exists at this site due to continued standing water in the culvert. Combined with ROW fencing that was installed on both sides of the creek, this site creates an ecological dead end for wildlife. However, white-tailed deer have navigated through the existing ROW fence and onto the roadway as indicated by the reported WVCs.



East side of I-40 culvert over New Hope Creek, facing west. DCHC MPO.



Aerial photograph of I-40 culvert over New Hope Creek. Nearmap.



# Site Facts

|   |  |
|---|--|
| Location ID   | OrangeCo13   |
| Date of Site Visit  | July 26, 2024  |
| Jurisdiction  | Orange County  |
| Coordinates   | <a href="#">35°59'43.9"N 79°04'33.0"W</a>  |
| NCDOT Crossing/Structure Code   | 670263   |
| Existing Structure Type   | Culvert  |
| Property Owner Type   | Private  |
| Existing Plan Alignment   | 2050 MTP Highway: I-40<br>CTP Highway: I-40<br>CTP Multiuse Paths: New Hope Creek Trail  |
| Managed and Natural Lands   | Duke Forest, Triangle Land Conservancy   |
| Average Annual Daily Traffic (AADT) (2019)  | 74,000   |
| Average Annual Daily Traffic (AADT) (2021)  | Unavailable  |
| Projected Average Weekday Traffic (AWDT)  | 58,239   |
| Speed Limit   | 65 mph   |
| Reported Wildlife-vehicle collisions (WVCs) within 1-mile Buffer (2018-2022) and Comprehensive Crash Cost Estimate  | Non-injury crash: 13 (\$325,000)<br>Type C injury crash: 1 (\$107,000)<br><b>Total crashes and cost estimate: 14 (\$432,000)</b>           |
| Likely Wildlife-vehicle collisions (WVCs) within 1-mile buffer (based on VDOT study revealing 8.5 times more WVCs are occurring than what DOT reports show) | Non-injury crash: 110.5 (\$2,762,500)<br>Type C injury crash: 8.5 (\$909,500)<br><b>Total crashes and cost estimate: 119 (\$3,672,000)</b> |





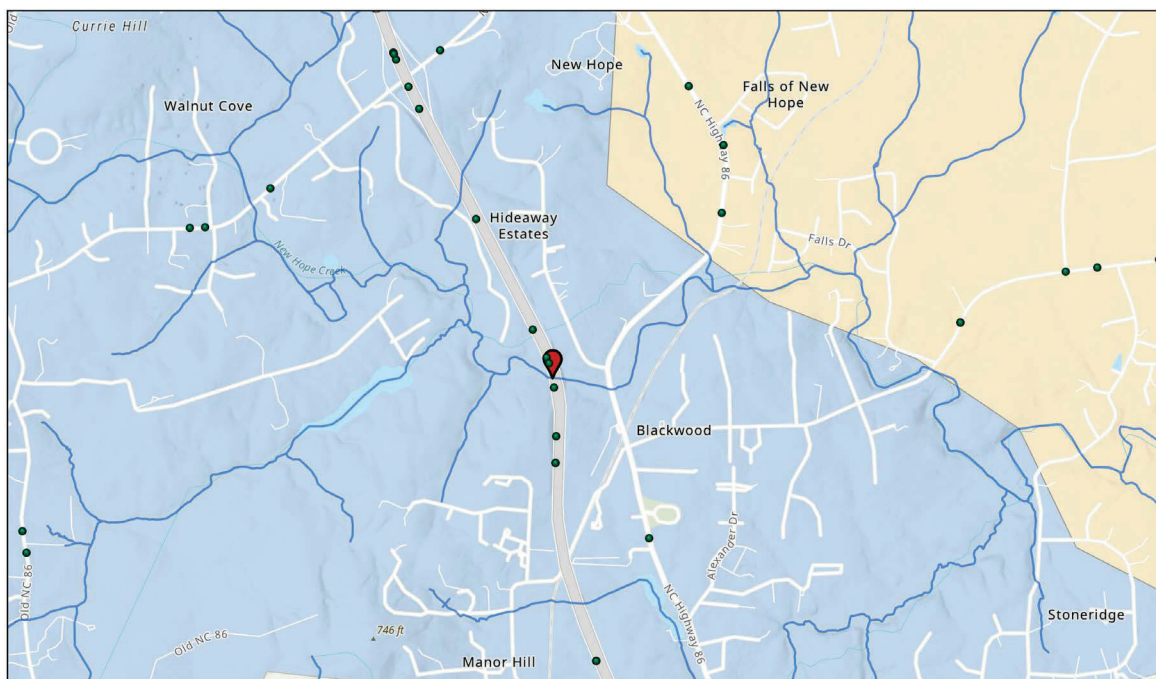


## Preferred Scenario

Replace the existing 4-cell culvert with a multicell culvert which includes additional outer raised bottom elevation culverts to accommodate dry passage for both creek banks. Construct these new dry passage culverts with natural surface floors. Connect these new dry passages to adjacent habitat up and downstream.

## Alternate Scenario

Construct separate, new dry culverts through the I-40 embankment out from the existing flooded culvert to accommodate dry passage for both creek banks. These two new culverts should be at least 8 feet high and 12 feet wide, with a natural surface floor and be straight with no offset or skew. Replace existing ROW fencing with taller fencing to guide wildlife into the dry passes from the adjacent habitat areas and deter wildlife climbing the embankment to attempt to cross I-40.



### Legend

- Animal Vehicle Crashes 2018-2022
- Surface Waterways
- Wildlife Corridors
- Wildlife Cores
- Location ID: OrangeCo13

0.00 0.50 1.00 Miles

