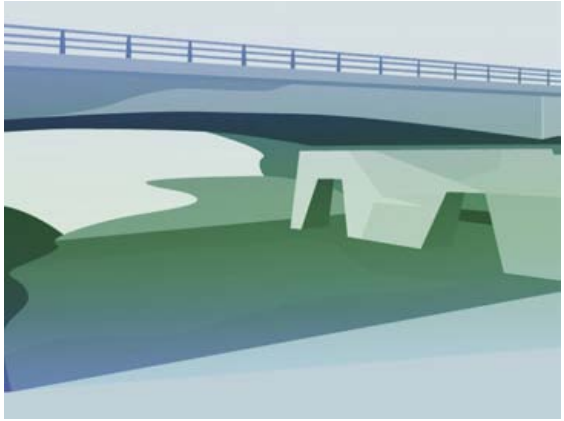
CA-MPO Eco-Logical HB2 Project Evaluations



Charlottesville Albemarle MPO

Thomas Jefferson Planning District Commission

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House Bill 2 Summary

In 2014, Governor McAuliffe signed into law a new approach to assessing funding decisions for transportation projects in Virginia. This legislation and subsequent effort was in response to challenges that the State continued to face with how it selected transportation investments. Particularly in recent years, there were high profile instances where the State's transportation officials did not have an effective way to prioritize projects. Consequently, either the wrong investments went forward or projects received funding before they were ripe enough for the Six Year Improvement program (SYIP). The law is also intended to address the political realities of Virginia, where Governor's cannot serve consecutive terms. With constant changeover in the State's administration, there was instability with transportation funding decisions and programing.

The new law (§ 33.1-23.5:5), also known as House Bill 2, directed the Commonwealth Transportation Board (CTB) and Secretary of Transportation to develop and implement a prioritization process for funding decisions in the SYIP. The process scores projects based on five weighed factors: safety, congestion mitigation, accessibility, economic development and environmental quality. Some areas of the State have a sixth factor that measures consistency with local land use policies. The following is a more detailed description of how the factors are scored:

Factor	Percentage of Total Factor Score
Safety	• Number of fatal and severe injury crashes (50%) • Rate of fatal and severe injury crashes (50%)
Congestion Mitigation	• Person throughput (50%) • Person hours of delay (50%)
Accessibility	• Access to jobs (60%) • Access to jobs for disadvantaged populations (20%) • Access to multimodal Choices (20%)
Economic Development	• Project support for economic development (60%) • Intermodal access and efficiency (20%) • Travel time reliability (20%)
Environmental	• Reduce pollutant emissions and energy consumption (50%); and, • Minimize the impact on natural and cultural resources (50%).

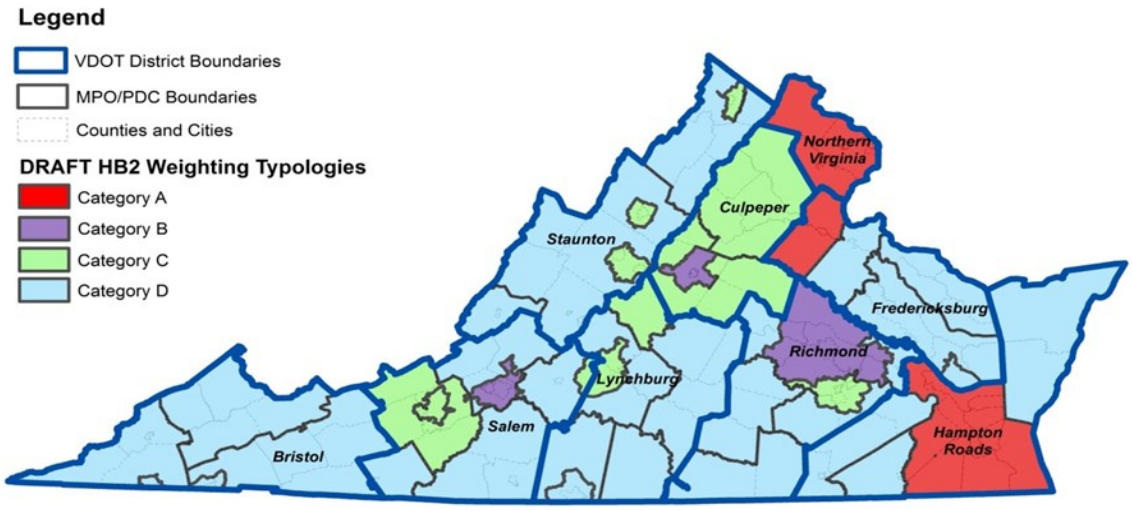
House Bill 2 Summary

The prioritization process applies to all types of transportation projects, including highway, transit, rail, bike and pedestrian, port, air and transportation demand management projects. Once these projects are scored, the State conducts a cost/benefit analysis, to determine the most cost-effective investments. While the Code of Virginia does not require the CTB to allocate funds to the highest scoring project(s), this process will provide the best information possible for managing the State's limited tax dollars. The scores will help Virginia invest in projects that meet the most critical transportation needs.

As the State developed its House Bill 2 process, the Secretary of Transportation conducted an outreach effort, engaging Metropolitan Planning Organizations (MPOs), Planning Districts Commissions (PDCs), localities and the public. This feedback helped to shape the final standards and the funding processes that will be central to future transportation programming. The Charlottesville-Albemarle MPO was one of the first entities to provide detailed input on how the factors should be applied to its region. Through tedious work sessions, MPO committees and staff conducted exercises that raked the values of the community. The results and process were influential in the final House Bill 2 standards, currently being vetted by the State.

Since the Commonwealth is a diverse state, the Secretary's office decided to apply four separate frameworks. Each is designed to apply a scoring methodology that is sensitive to the various regions and their transportation needs.

Framework	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	45%	5%	15%	5%	10%	20%
Category B	15%	20%	25%	20%	10%	10%
Category C	15%	25%	25%	25%	10%	
Category D	10%	35%	15%	30%	10%	



Ecological Summary

The environmental quality factor makes up 10 percent of the project scores, regardless of the project. These environmental quality measures include two considerations, each accounting for 50% of the environmental score. These include:

- Reduce pollutant emissions and energy consumption (50%); and,
- Minimize the impact on natural and cultural resources (50%).

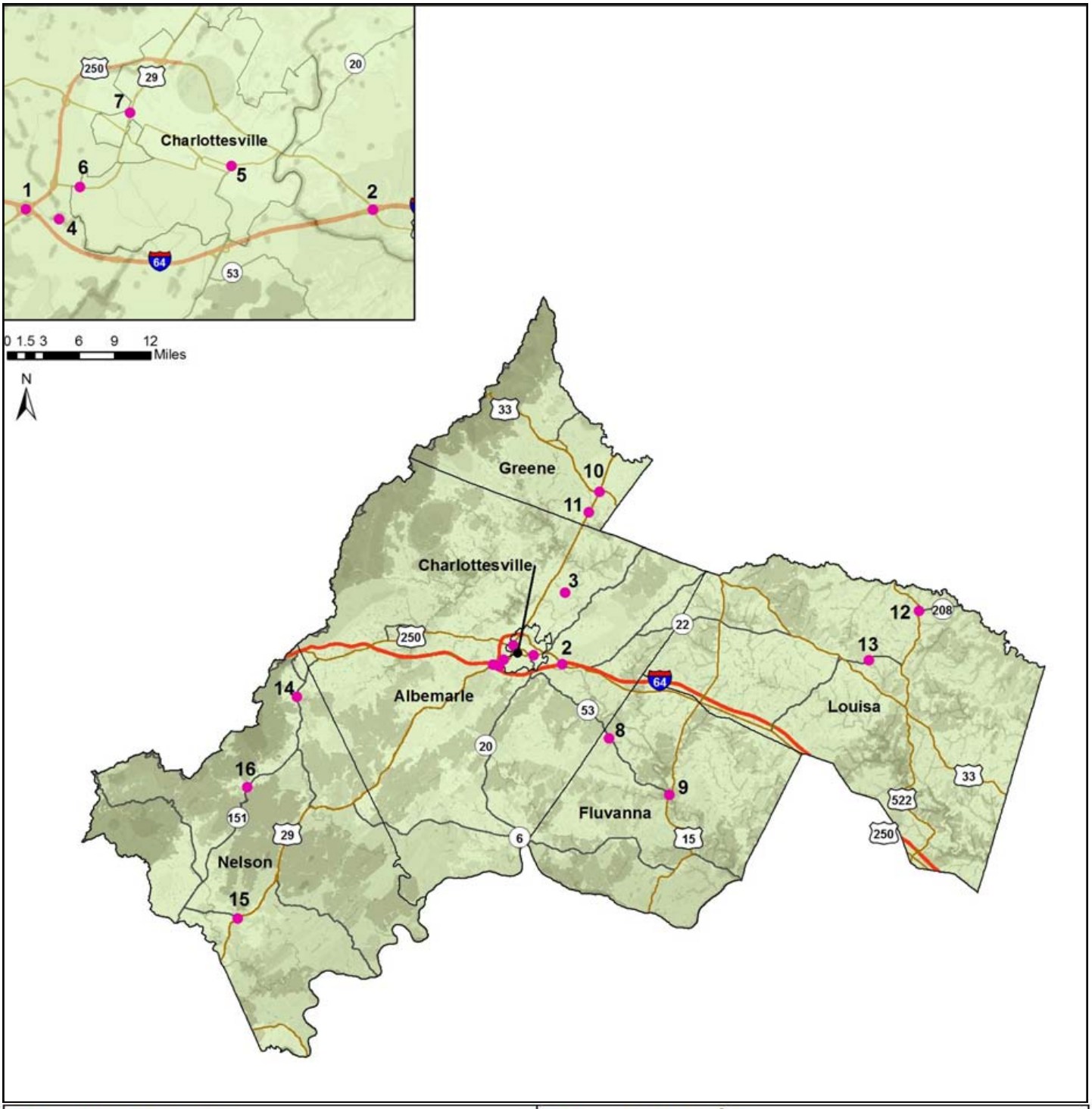
While the first piece may reward projects, such as transit or bike/ped investments, for reducing emissions, the second piece is concerned with impacts to resources that are also assessed with the Ecological Tool. This evaluates how much sensitive land would be affected within a buffer around the project area, and rates projects highest that have minimal or no impact. While the State does not currently use the Regional Ecological Framework (REF) Tool in this evaluation, it would provide an effective way to assess the impacts to these resources.

The Charlottesville Albemarle Metropolitan Planning Organization sees the REF tool as an effective tool to screen projects and identify the potential for environmental impacts when projects are still in the planning stages. MPO staff anticipated that having this ability through the REF tool would allow its projects to receive relatively higher scores under the HB2 Ecological scoring methodology. Note: projects are currently being reviewed by VDOT.

In order to assess HB2 project impacts on surrounding sensitive lands, the REF tool was run in conjunction with the interact tool in ArcMap, which identifies interaction points of the proposed HB2 projects with the environmental variables that have been identified. These variables include the 100 Year Flood Plain, wetland environments, conservation lands, protected trout streams, and protected species habitat lands. Each project was then assigned a corresponding eco-score based on the algorithm defined in the REF tool which considers the level of interaction with sensitive land. A low eco-score represents a project with low environmental impacts, where a high eco-score represents a project with high environmental impacts.

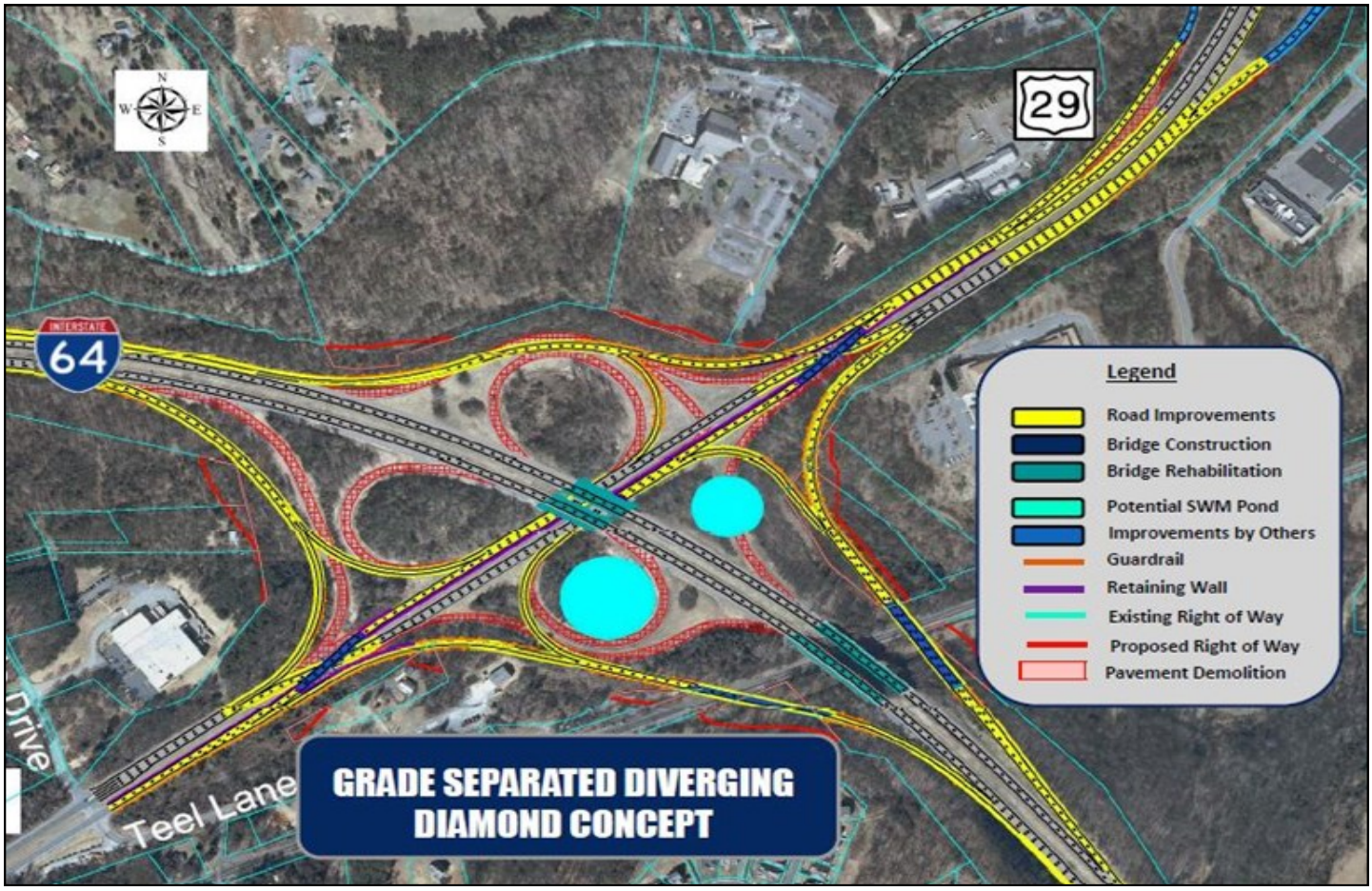
The MPO has used the REF tool to evaluate all projects submitted within the MPO and PDC region as part of the September 30, 2015 project submission. This document provides a summary of the projects that were submitted and demonstrates how the REF was used to screen the projects.

House Bill 2 Project Locations



1.	I-64 at Exit 118	9.	Route 15/53
2.	I-64 at Exit 124	10.	Route 33 & US 29
3.	Proffit Road	11.	Route 607 & US 29
4.	Sunset Avenue/Fontaine Connector	12.	Route 208
5.	East High St. & 9th	13.	Route 22 & Chalk Level Rd. & School Bus Rd.
6.	Fontaine Avenue	14.	Route 151/6/638
7.	Emmet St.	15.	Route 29/655
8.	Route 53/618	16.	Route 151/664

Project 1: Interstate 64/ US 29 Interchange at Exit 118



Project Information

Cost: $146.4 million

Environmental Impacts: Moderate

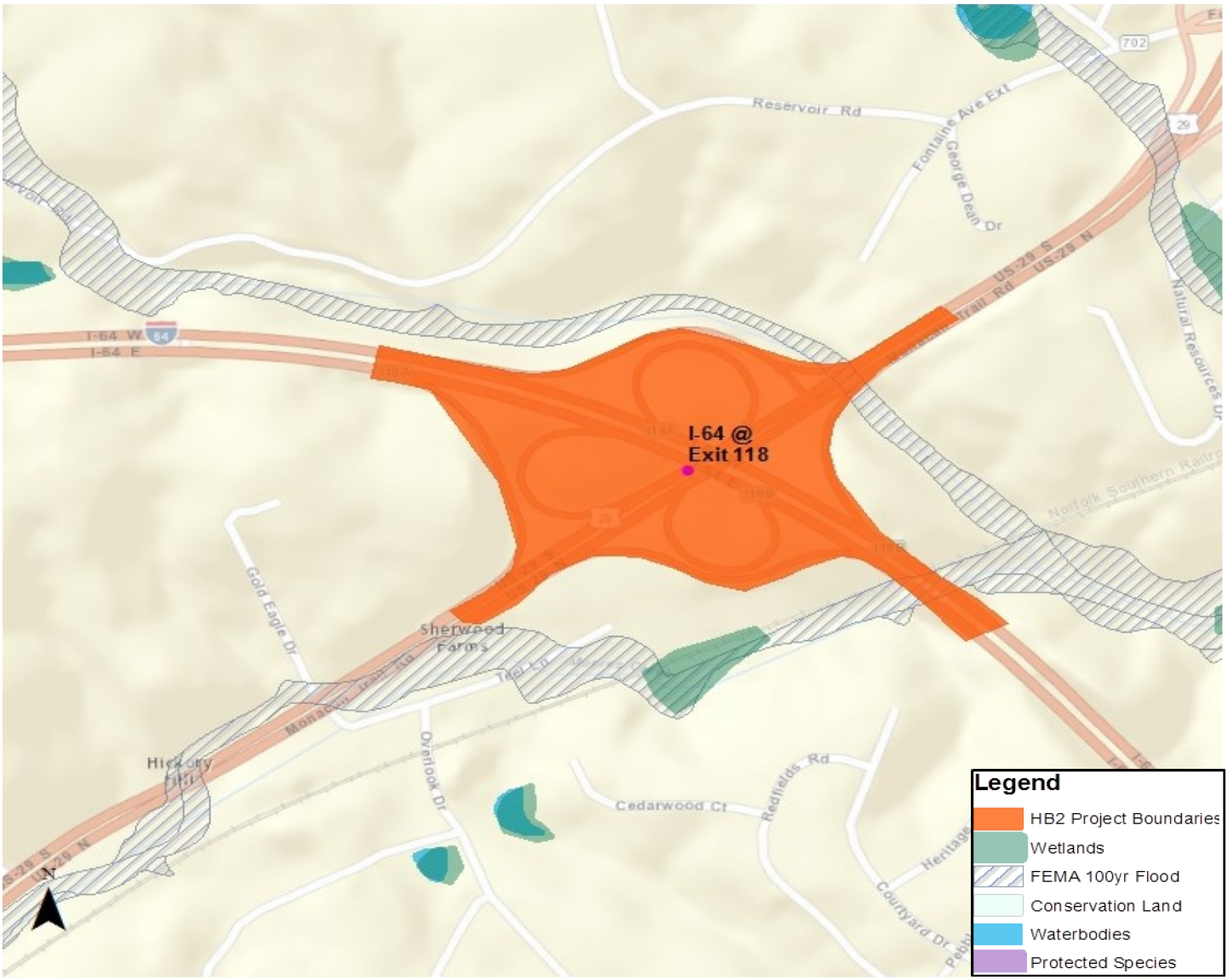
Expected Benefits: Increased interchange capacity & improved safety

Expected Issues: Project would require 7 acres of right-of- way (ROW) acquisition as well as a new traffic pattern and environmental impacts to the 100 Year Floodplain.

Overview

The I-64/US 29 interchange is a partial cloverleaf design. Motorists entering the interchange at high rates of speed have increased accident rates due to the loop ramp radii only supporting 25 mph traffic. Some ramp deceleration lanes are below American Association of State Highway & Transportation Officials (AASHTO) minimums and all ramp acceleration lanes fall below AASHTO minimums. This project calls for the I-64/US 29 interchange at Exit 118 to be reconstructed as a diverging diamond interchange with grade separations at the crossover locations. The new design would increase capacity and improve ramp geometries. The project would increase the capacity on US 29; remove the I-64 weave; and, improve acceleration and deceleration lanes on I-64, and would call for the removal of all of the loop ramps as well as improvements to the Fontaine Ave. Interchange. The WB to NB off-ramp would be widened to two lanes and realigned with a new bridge spanning the railroad and Moore's Creek and the NB to EB on-ramp would be reconstructed to realign with the new bridge.

Environmental Impacts Map



Impact Description

With an eco-score of 4, the I-64 at Exit 118 project will have moderate environmental impacts. Portions of the proposed project have interactions with the 100 Year Floodplain and wetland environments can be found to the north, south, and west of the project boundaries. Care should be taken to minimize impact with these environments as much as possible.

Eco Score: 4

Project 2: Interstate 64 at Exit 124

Project Information

Cost: $95.5 million

Environmental Impacts: Low

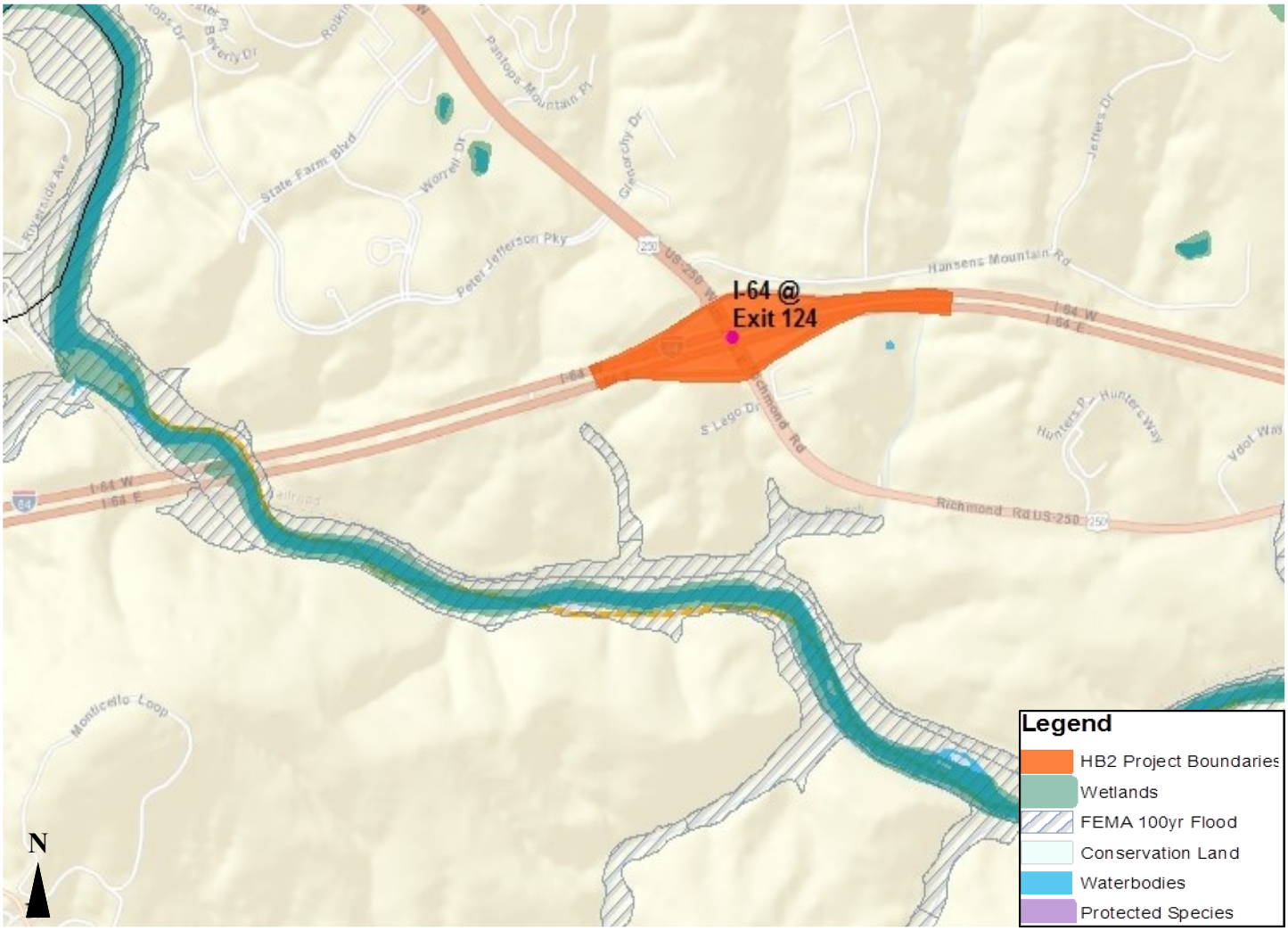
Expected Benefits: Increased interchange capacity & improved safety

Expected Issues: Project would require additional right-of-way acquisition and new traffic pattern

Overview

Currently, the I-64/Rte. 250 at Exit 124 diamond interchange is not adequately handling the increased traffic volumes along the corridor. Substantial vehicle loads have contributed to the traffic backups seen along the Rte. 250 turn lanes and I-64 on-ramps during peak travel hours. This project calls for improvements to include increased capacity to address higher traffic volumes and to improve safety. The extension of left turn lanes on US 250 to Interstate 64 would also be implemented to improve safety.

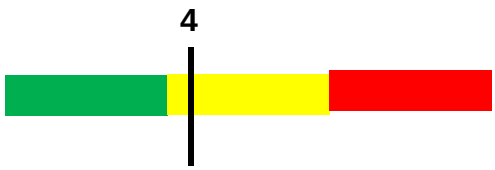
Environmental Impacts Map



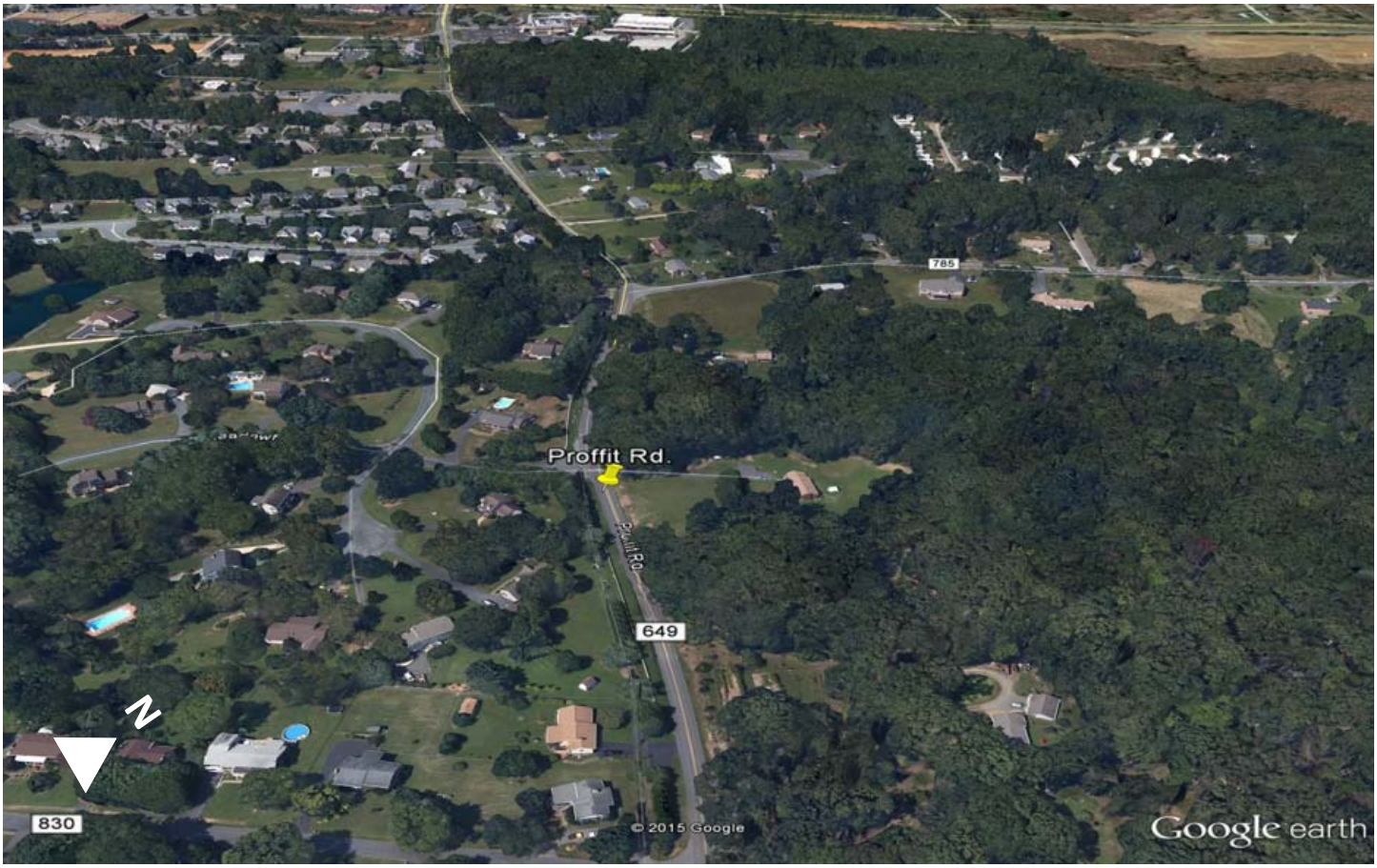
Impact Description

The I-64 at Exit 124 interchange project has a moderate environmental impact, with an eco-score of 4. There is no direct interaction with conservation lands, species habitat, wetlands, or floodplains, but the projects close proximity to wetland and floodplain environments to the south raise its eco-score to a moderate level.

Eco Score:



Project 3: Proffit Rd.



Project Information

Cost: $10 million

Environmental Impacts: **Low**

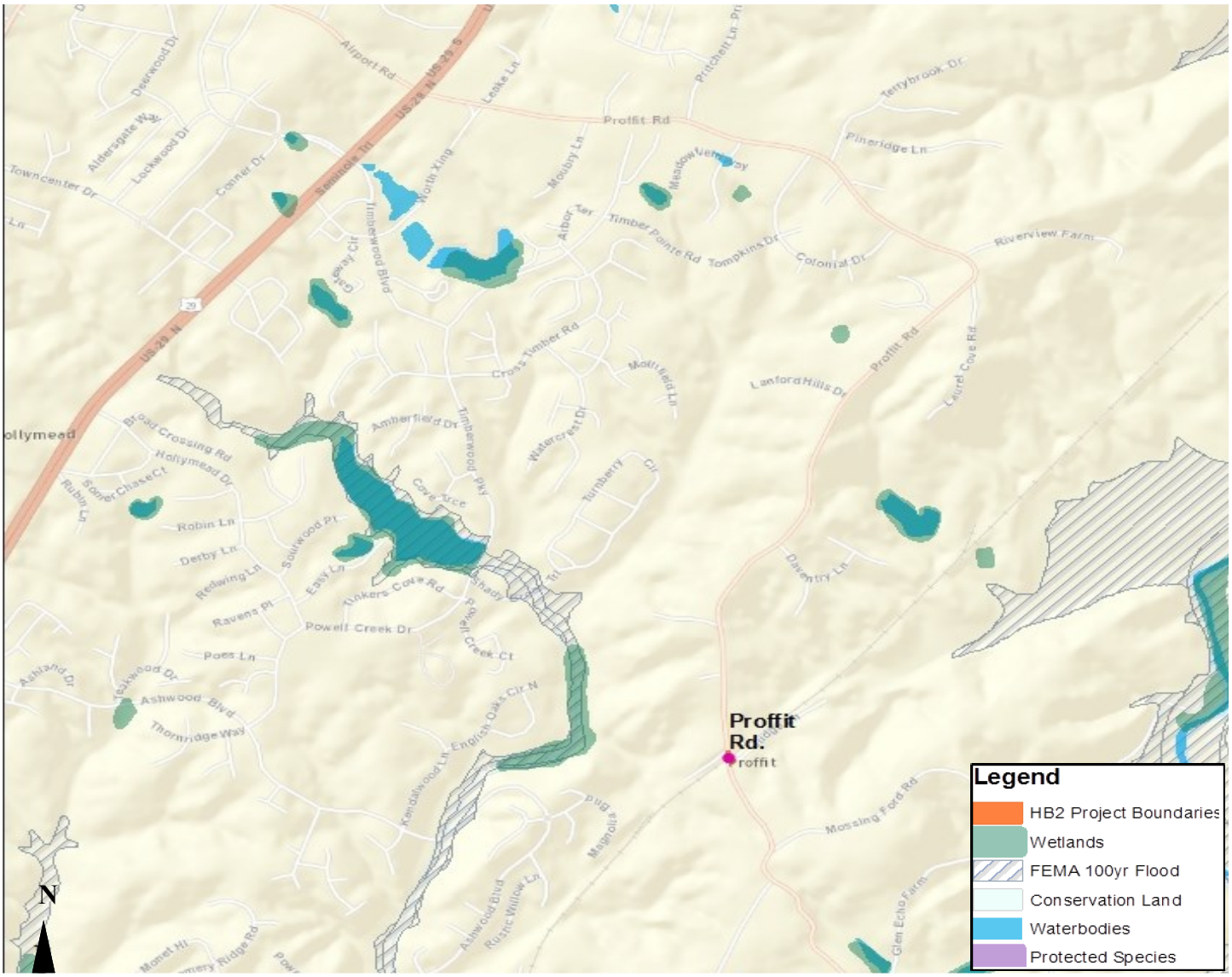
Expected Benefits: Increased pedestrian safety by incorporating sidewalks and bike lanes into the lane widening project

Expected Issues: Project would require additional right-of-way acquisition

Overview

This project will increase safety along Proffit Rd. by improving the road alignment. The project also includes the construction of bike lanes and sidewalks, as well as a multi-use path. The project will span the section of Proffit Rd. from Leake Ln. /Worth Crossing to Baker Butler Elementary School. Incorporating sidewalks into the road widening will provide safe, pedestrian-friendly routes to Baker Butler Elementary and reconfiguring the road alignment will improve motorist safety and sightlines along Proffit Rd.

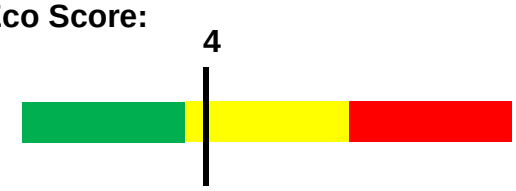
Environmental Impacts Map



Impact Description

With an eco-score of 4, the proposed Proffit Rd. project has moderate to low environmental impacts. There are no direct interactions with wetlands, floodplains, species habitats, or conservation lands, but close proximity to wetlands have resulted in a higher eco-score.

Eco Score:



Project 4: Sunset Ave./Fontaine Connector

Project Information

Cost: $30 million

Environmental Impacts: Moderate

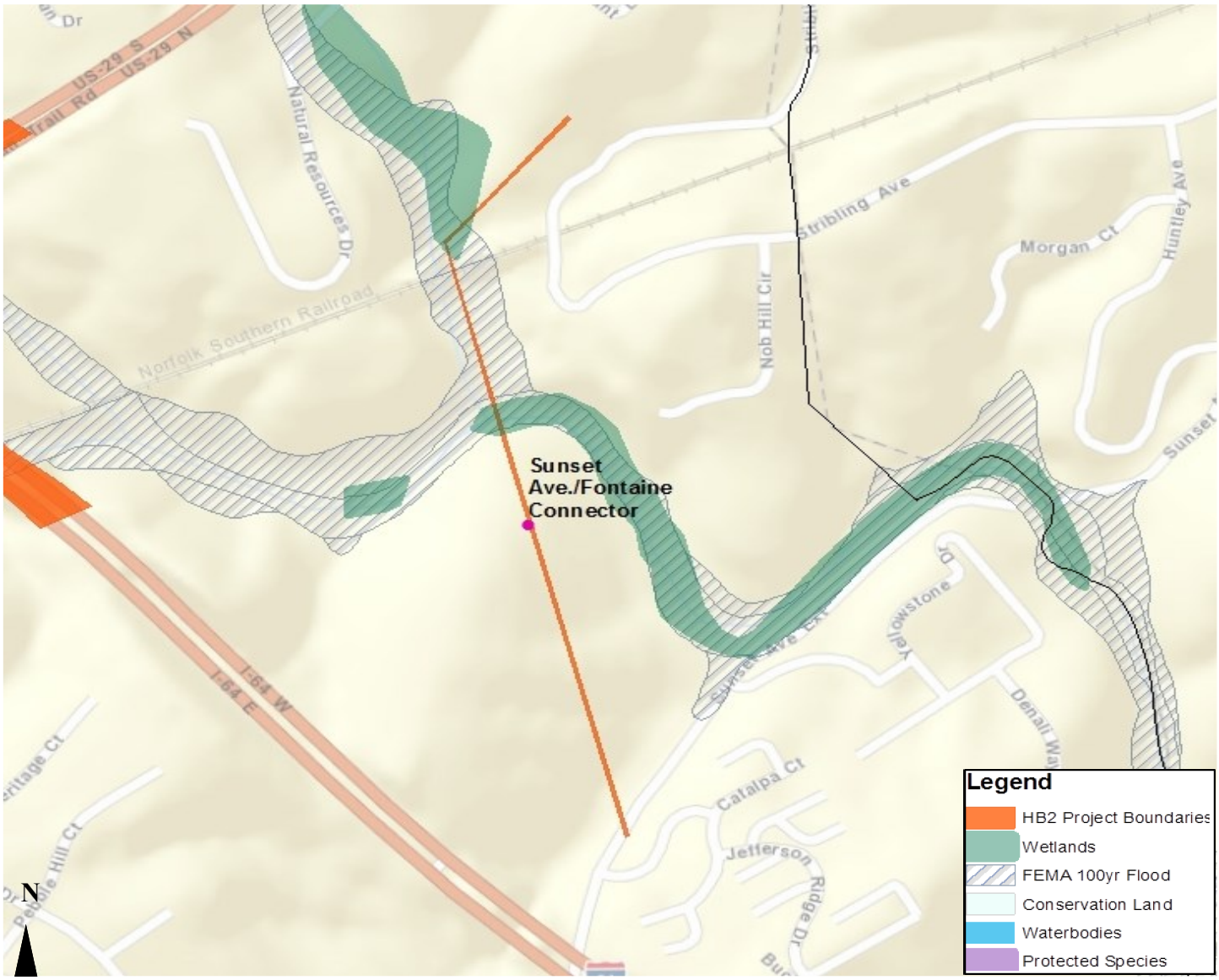
Expected Benefits: Project will provide a more direct connection from southern Development Areas to the Fontaine Research Park and UVA grounds

Expected Issues: Project will have environmental impacts on the 100 Year Flood Plain as well as with wetland environments, traffic demand modeling predicts minimal congestion reduction on Old Lynchburg Rd with significant increase in traffic on Fontaine Avenue

Overview

Currently, there is no direct connection between the southern Development Areas and the Fontaine Research Park /UVA grounds. Because of this, travelers must use city neighborhood streets to reach these locations, thus resulting in increased traffic demand on the existing network. The proposed project would provide a direct connection between the southern Development Areas and the Fontaine Research Park and the UVA grounds. It would also include sidewalks and bike lanes to make the connector safe for non-motorized traffic.

Environmental Impacts Map



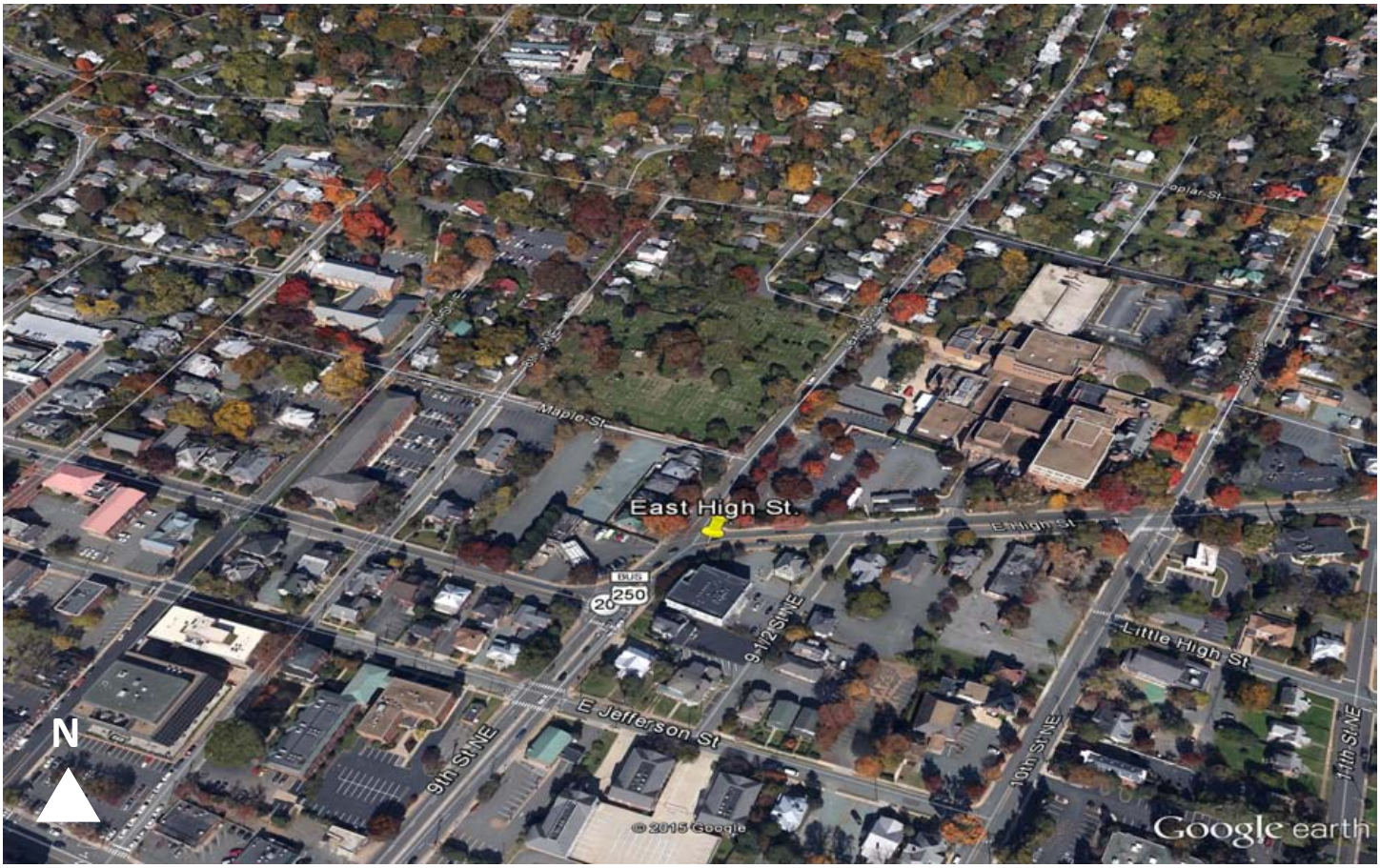
Impact Description

The Sunset Avenue and Fontaine Connector project will have moderate environmental impacts on surrounding land, and its eco-score of 4 reflects this. The project has direct interactions with both the 100 Year Floodplain and wetland environments.

Eco Score:

4

Project 5: East High St. & 9th



Project Information

Cost: $1,679,000

Environmental Impacts: **Low**

Expected Benefits: Project will provide extension of sidewalks from US 250 to 9th St. to provide increased safety for pedestrians and to bridge sidewalk system gaps

Expected Issues: Narrow road width does not allow for the inclusion of bike lanes

Overview

The East High St. & 9th project will address pedestrian connectivity issues within the East High St. corridor. Currently, there is a lack of connected sidewalks and crosswalks which have been identified as safety concerns. Frequent curb cuts, traffic bottlenecks, and discontinuous sidewalks are just a few of the details to be addressed on this part of High Street. Due to the narrow width of East High St., it would be difficult to incorporate bike lanes. This project would primarily focus on bridging sidewalk gaps, creating new crosswalks, and implementing streetscape design elements. The project would also involve repairing sidewalks that are in poor condition.

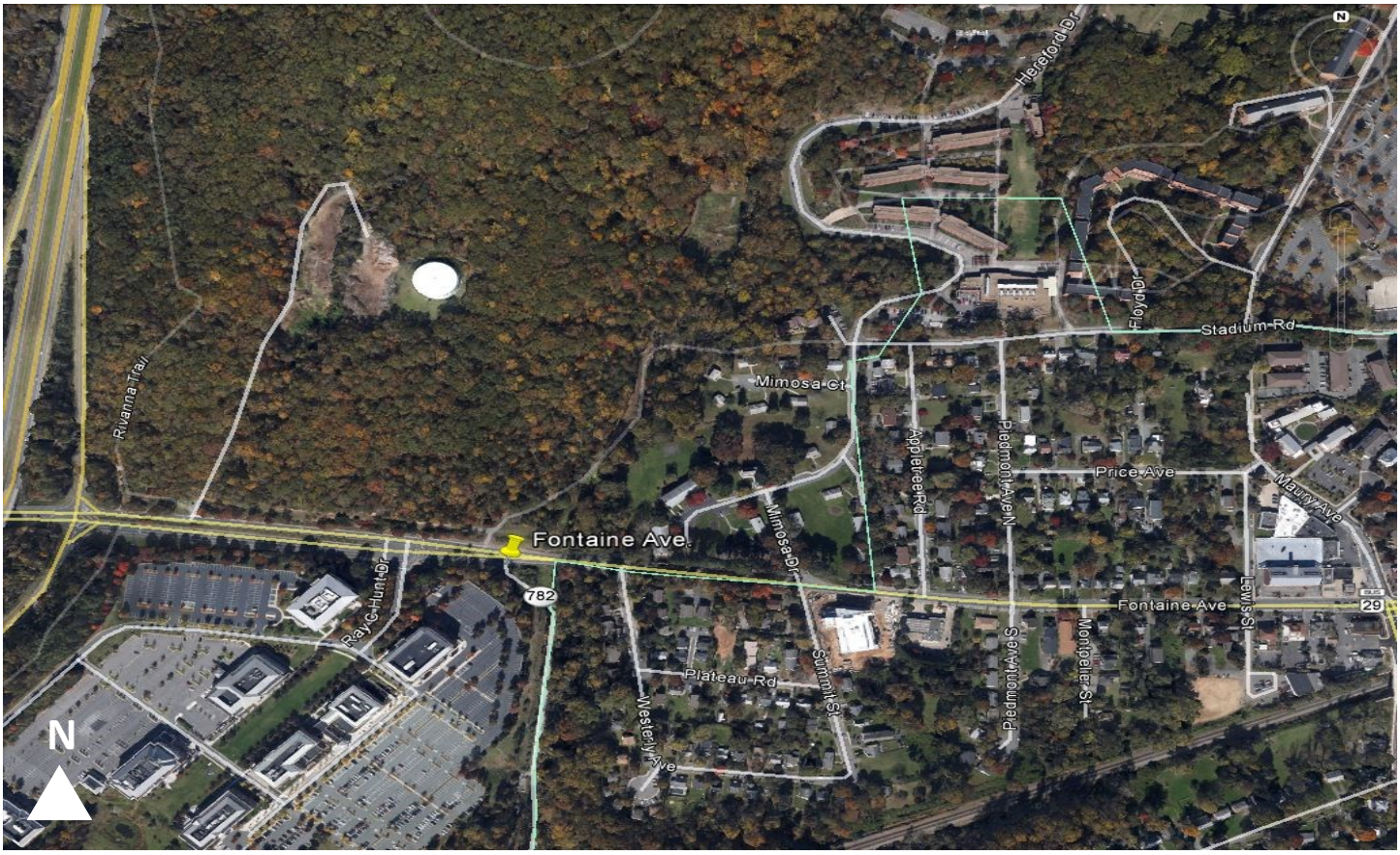
Environmental Impacts Map

Impact Description

With an eco-score of 2, and no interaction with species habitats, conservation lands, wetlands, or floodplains, the East High St. corridor project will have minimal environmental impacts. The environmental impact map does show that any future projects along East High St. to the east will begin to impact the 100 Year Floodplain.

Eco Score:

Project 6: Fontaine Avenue



Project Information

Cost: $1,021,147

Environmental Impacts: Moderate

Expected Benefits: Project will increase safety along Fontaine Ave. from the West Corporate Limits of Charlottesville to Jefferson Park Avenue by including sidewalks and bike lanes, cost of right-of-way acquisition will be reduced due to only widening the existing 2 lane sections at 2 intersections

Expected Issues: Right-of-way acquisition concerns exist

Overview

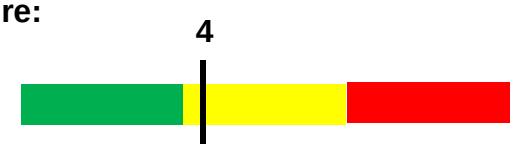
This project attempts to increase pedestrian and bicyclist safety along Fontaine Ave. from the West Corporate Limits of Charlottesville to Jefferson Park Avenue by providing connected sidewalks as wells as incorporating new bike lanes. Providing complete streets within this entrance corridor to the City of Charlottesville has been identified as a priority.

Environmental Impacts Map

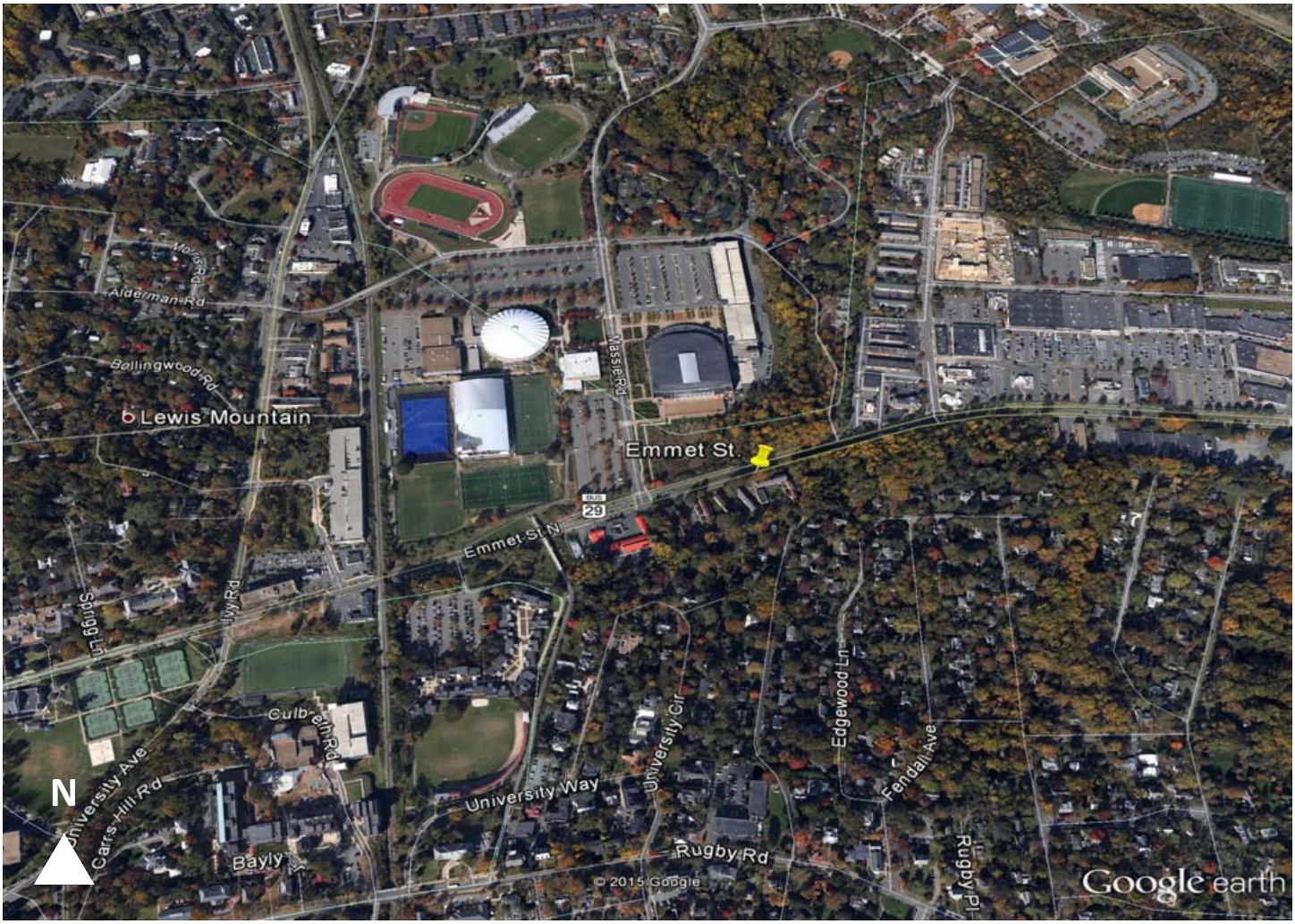
Impact Description

The Fontaine Ave. corridor project has relatively low environmental impacts, and its eco-score of 4 reflects this. Wetlands and floodplains lie to the southwest, but do not encroach upon the proposed project. While there are no direct interactions with surrounding sensitive lands, the close proximity of wetland and floodplain environments increase the project's eco-score.

Eco Score:



Project 7: Emmet Street



Project Information

Cost: $1,636,000

Environmental Impacts: **Low**

Expected Benefits: Project will increase safety along Emmet St. from University Ave. to Arlington Blvd.

Expected Issues: Right-of-way acquisition concerns exist

Overview

The Emmet St. corridor project from University Ave. to Arlington Blvd. includes pedestrian and bicycle facility improvements to address safety concerns. The addition of new bike lanes, sidewalk connections, traffic signalization, and streetscape improvements are the major components of this particular project. Providing a more pedestrian-friendly environment for non-motorized traffic has been identified as a priority along this corridor.

Environmental Impacts Map

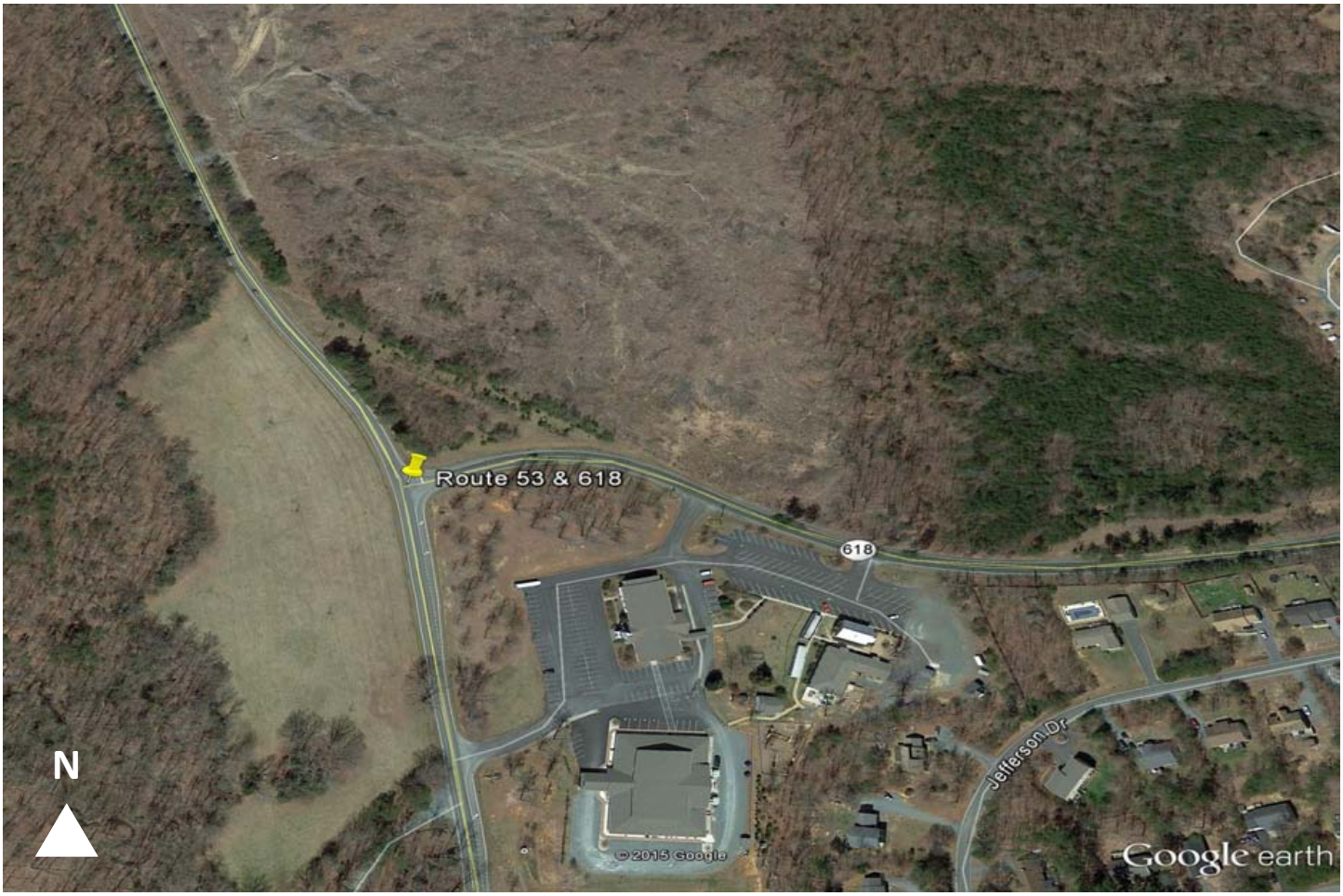
Impact Description

The Emmet St. project has an eco-score of 2, representing minimal environmental impacts. There are no intersections with species habitat, conservation lands, or wetlands. Because of this minimal interaction, the project will have little effect on surrounding sensitive lands.

Eco Score:

2

Project 8: Route 53/618



Project Information

Cost: $600,000

Environmental Impacts: Moderate

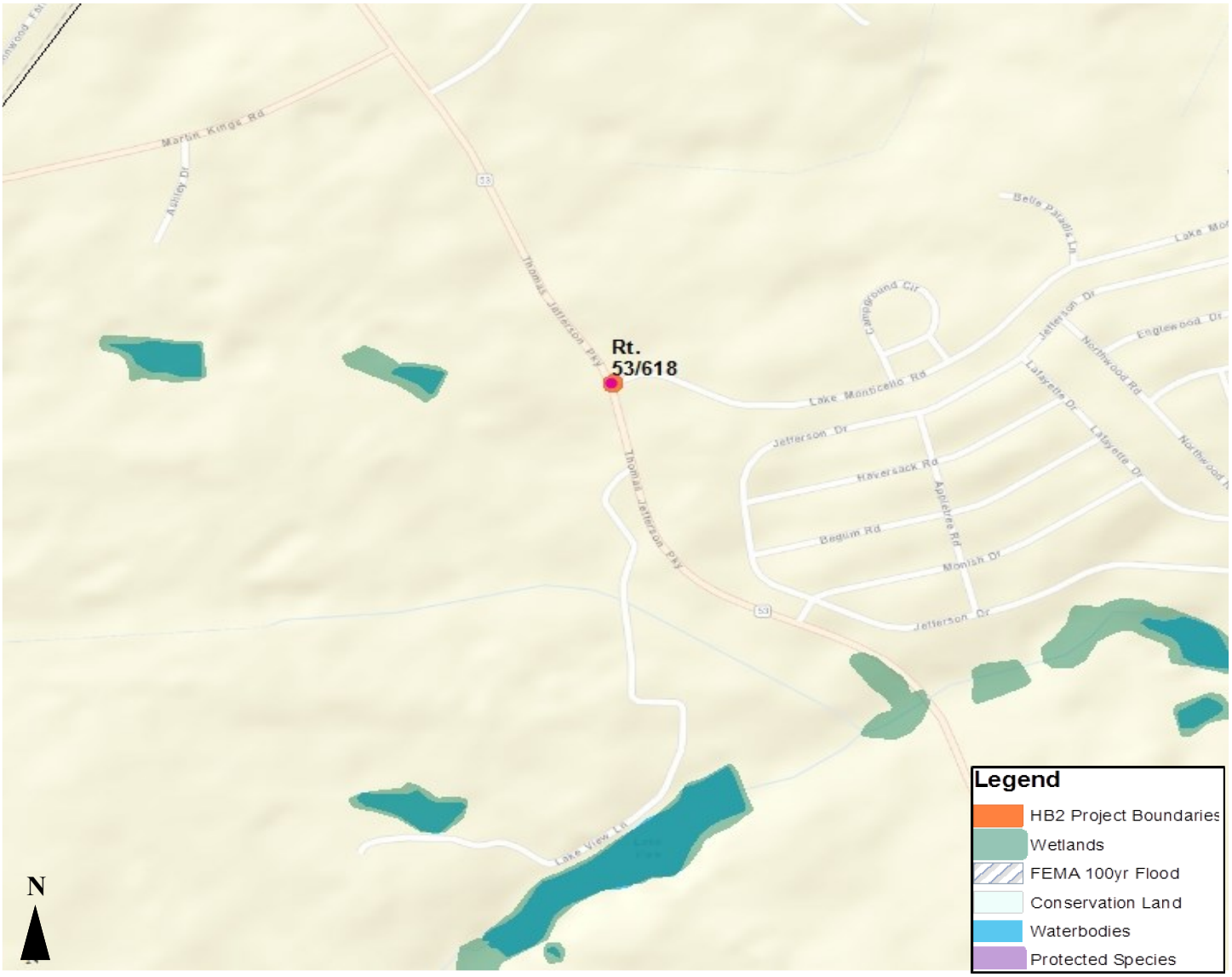
Expected Benefits: Improvement of both safety and traffic flow at the intersection of 53/618 as well as proactively addresses increased travel demand expected with commercial growth in the area

Expected Issues: Right-of-way acquisition concerns exist as well as new traffic patterns

Overview

This project aims at increasing safety and improving traffic flow at the Rte. 53, Thomas Jefferson Parkway/Rte. 618, Lake Monticello Rd. intersection. Based on VDOT 2014 Traffic Data and anticipated commercial growth within this area, the intersection has been identified as a prime candidate for the construction of a roundabout. The proposed roundabout would simultaneously improve traffic flow and address safety/sight-line concerns. Much of the construction would occur outside of the existing travel lanes of Rte. 53 and 618, which would reduce construction cost and time.

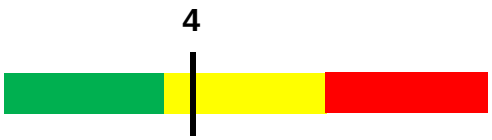
Environmental Impacts Map



Impact Description

The Route 53 and 618 roundabout project will have minimal environmental impacts. The proposed project will not have any direct interactions with wetlands, floodplains, conservation lands, or species habitats. The project receives an eco-score of 4, which may be artificially inflated due to an area of wetlands being in close proximity.

Eco Score:



Project 9: Route 15/53

Project Information

Cost: $1.8 million

Environmental Impacts: **High**

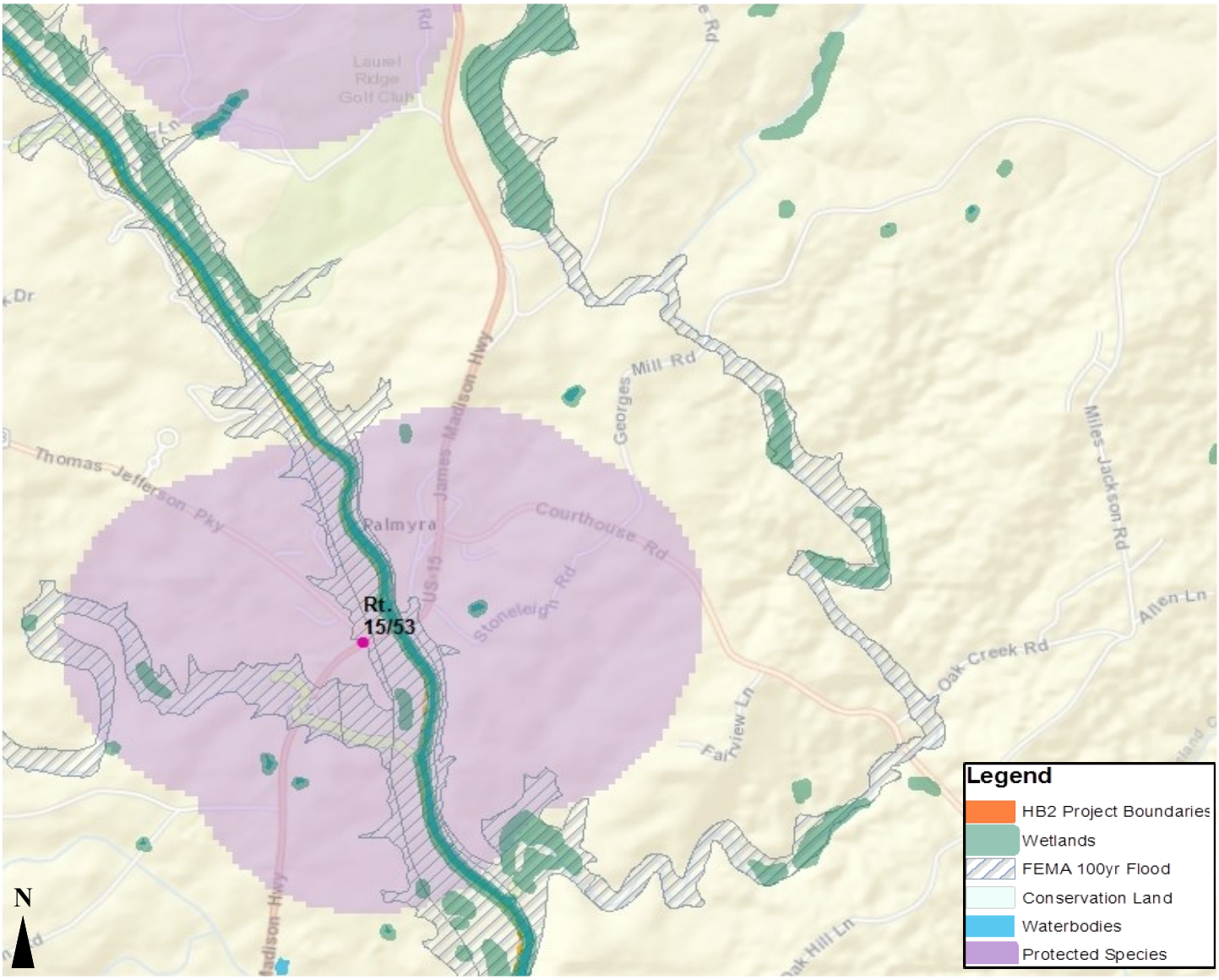
Expected Benefits: Improvement of both safety and traffic flow at the intersection of 15/53

Expected Issues: Right-of-way acquisition concerns exist as well as environmental impact concerns pertaining to lying in the 100 Year Flood Plain and interaction with species habitat

Overview

The project at Rte. 15/53 calls for the replacement of the “T” intersection with a single-lane roundabout to address safety and traffic flow concerns. Travel demand within the area is expected to increase, as an economic development area has been planned to the east of the intersection. This particular section of Rte. 15 sees roughly 6,500 vehicles per day, with the segment of Rte. 53 seeing roughly 5,000 vehicles per day according to 2013 data. Traffic data analysis has recognized a need for safety improvements at the Rte. 15/53 intersection, and the installation of a roundabout and other traffic calming practices are consistent with the Fluvanna comprehensive plan.

Environmental Impacts Map



Impact Description

The Route 15 and 53 roundabout project has high environmental impacts, and its eco-score of 12 dramatically reflects this. This project has direct interactions with the 100 Year Flood Plain, wetland environments, and species habitats. Extreme care should be taken with the construction of this project so as to minimize negative environmental interactions that may result from the project.

Eco Score:

Project 10: Route 33 & US 29

Project Information

Cost:

Environmental Impacts: Moderate

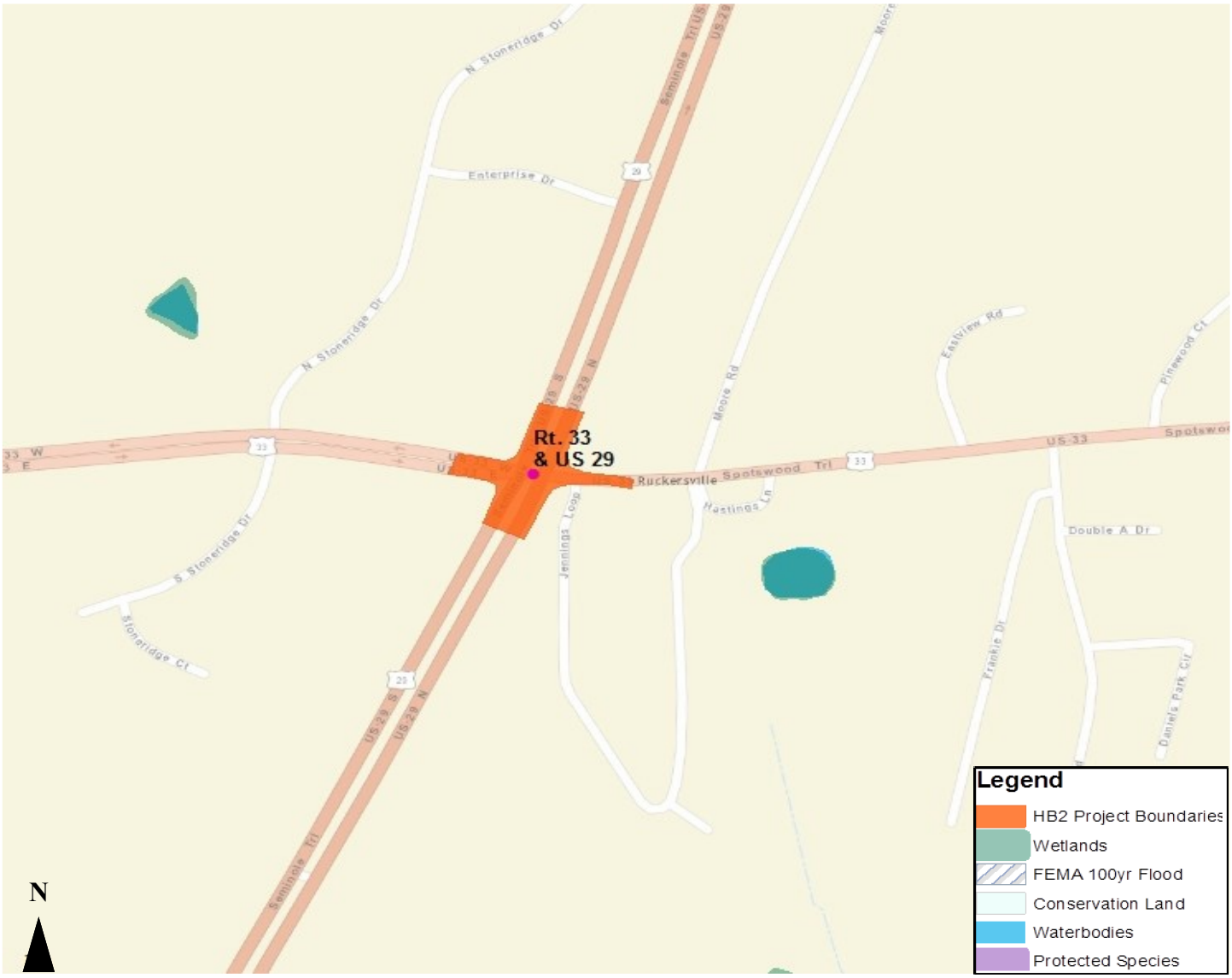
Expected Benefits: Improvement of both safety and traffic flow at the intersection of 33 & US 29

Expected Issues: Right-of-way acquisition concerns exist

Overview

Safety concerns exist at the intersection of Rte. 33 and US 29. The two-left turn lanes will be extended and a 200-foot taper will be added. This will alleviate congestion at the intersection by allowing additional space for stacking turning vehicles and removing them from the through travel lanes and reducing the amount of vehicle backup of motorists waiting to turn left.

Environmental Impacts Map

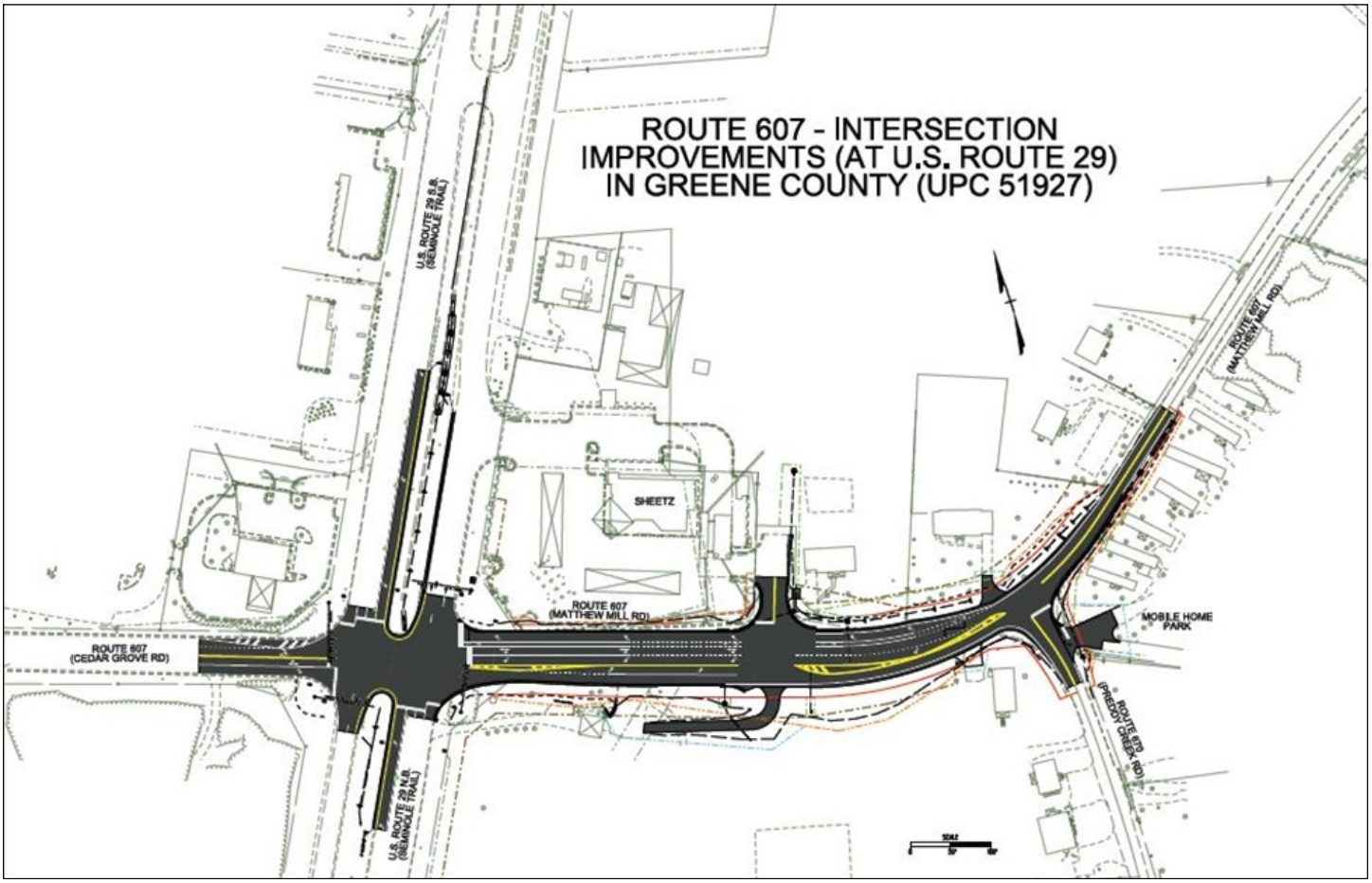


Impact Description

The Route 33 and US 29 intersection project will have minimal environmental impacts. Project boundaries have no direct interactions with wetlands, floodplains, species habitats, or conservation lands. The project has an eco-score of 4, which may be artificially inflated due to two wetland environments being located within close proximity to the project.

Eco Score: **4**

Project 11: Route 607 & US 29



Project Information

Cost: $2.8 million

Environmental Impacts: **High**

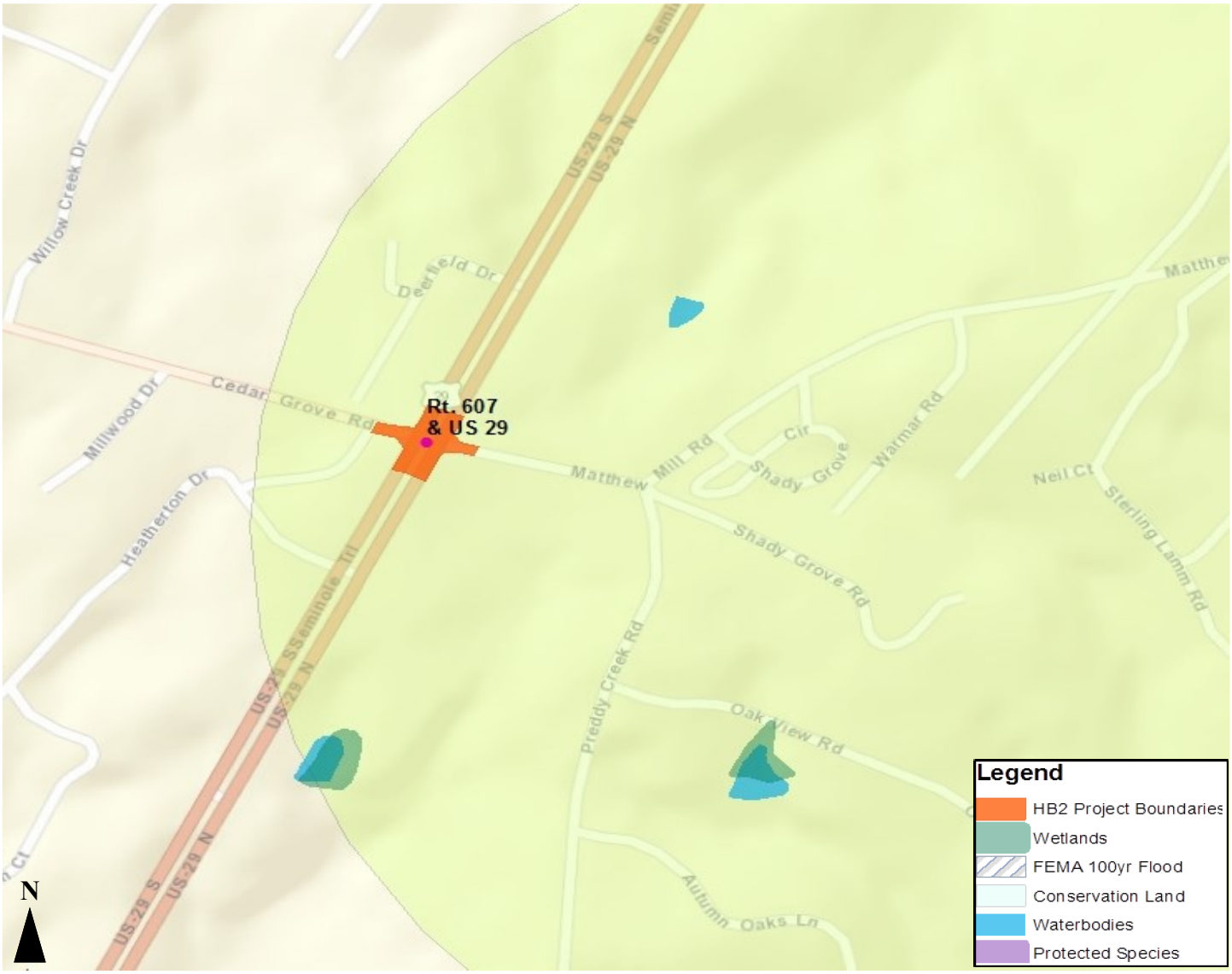
Expected Benefits: Improvement of both safety and capacity at the Rte. 607 & US 29 intersection

Expected Issues: Right-of-way acquisition concerns exist as well as environmental impact concerns pertaining to conservation area impacts

Overview

This project aims at addressing safety and capacity concerns at the intersection of Rte. 607 and Rte. 29. Increased recent development has contributed to a higher volume of traffic in the area. Presently, Rte. 607 is a two-lane connector road with a shared left-turn/through lane and a right-turn lane. The project proposes widening Rte. 607 to a total of five lanes where it meets Rte. 29 to provide motorists with an eastbound left-turn lane into the Sheetz service center and an additional westbound left-turn lane onto Rte. 29 south.

Environmental Impacts Map

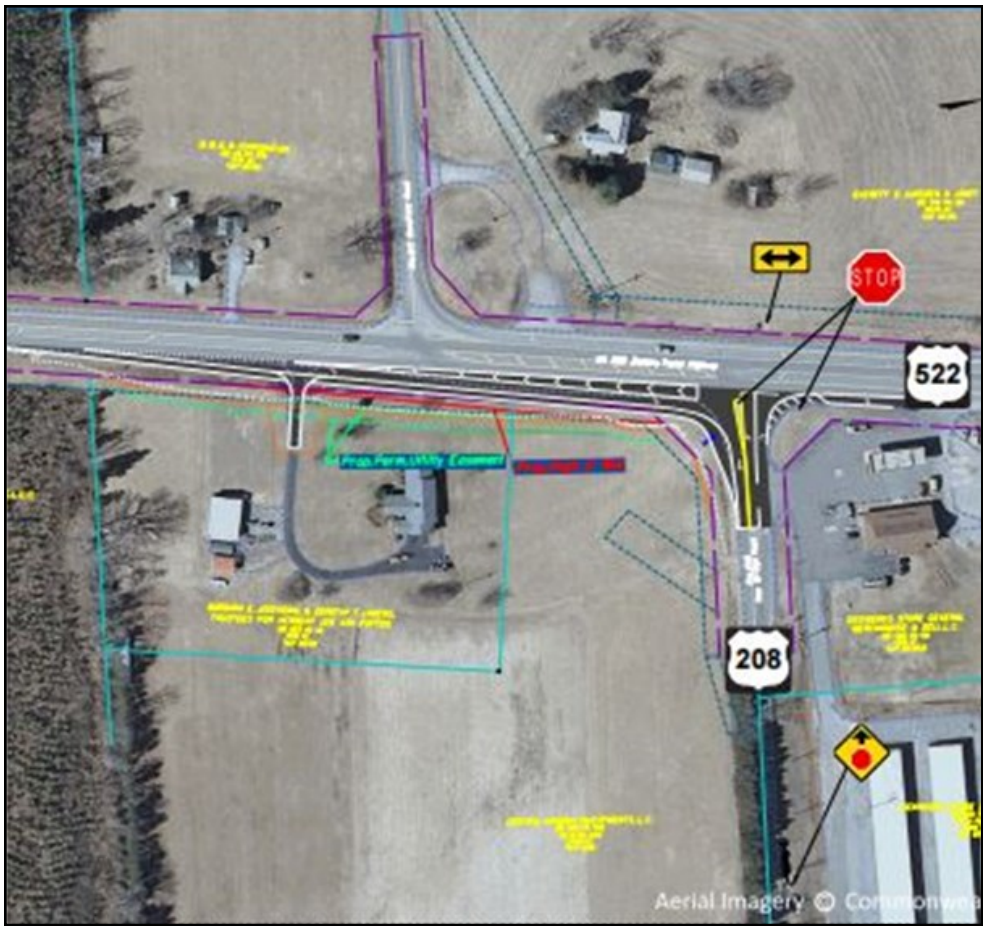


Impact Description

The Route 607 and US 29 intersection project will have high environmental impacts, and the projects eco-score of 8 reflects this. Project boundaries lie within protected species habitats and two wetland areas are within close proximity to the project.

Eco Score:

Project 12: Route 208



Project Information

Cost: $594,670

Environmental Impacts: Moderate

Expected Benefits: Improvement of both safety and capacity at the Rte. 208 and Rte. 522 intersection

Expected Issues: Right-of-way acquisition concerns exist as well as utility relocation

Overview

The project at the Rte. 208 and Rte. 522 intersection will improve motorist safety by constructing an offset right-turn lane onto Rte. 208 and widening Rte. 522 in the southeastern corner of the intersection to accommodate the turn lane. The new turn lane will simultaneously improve sight distance for vehicles turning from Rte. 208 and help Rte. 522 motorists more clearly distinguish turning and through traffic at the intersection. Plans also call for the installation of advance warning signage along Rte. 522 to inform motorists of the upcoming intersection. Additional signage will be installed along Rte. 208 to the east of the intersection to alert drivers to prepare to stop and to look for oncoming traffic.

Environmental Impacts Map

Impact Description

With an eco-score of 4, the Route 208 intersection project will have relatively low environmental impacts. The project boundaries do not have any direct interactions with wetlands, floodplains, conservation lands, or species habitats. Two wetland areas lie within close proximity of the proposed project, which have contributed to a slightly higher eco-score.

Eco Score: **4**

Project 13: Route 22 & Chalk Level Rd. & School Bus Rd.

Project Information

Cost:

Environmental Impacts: Moderate

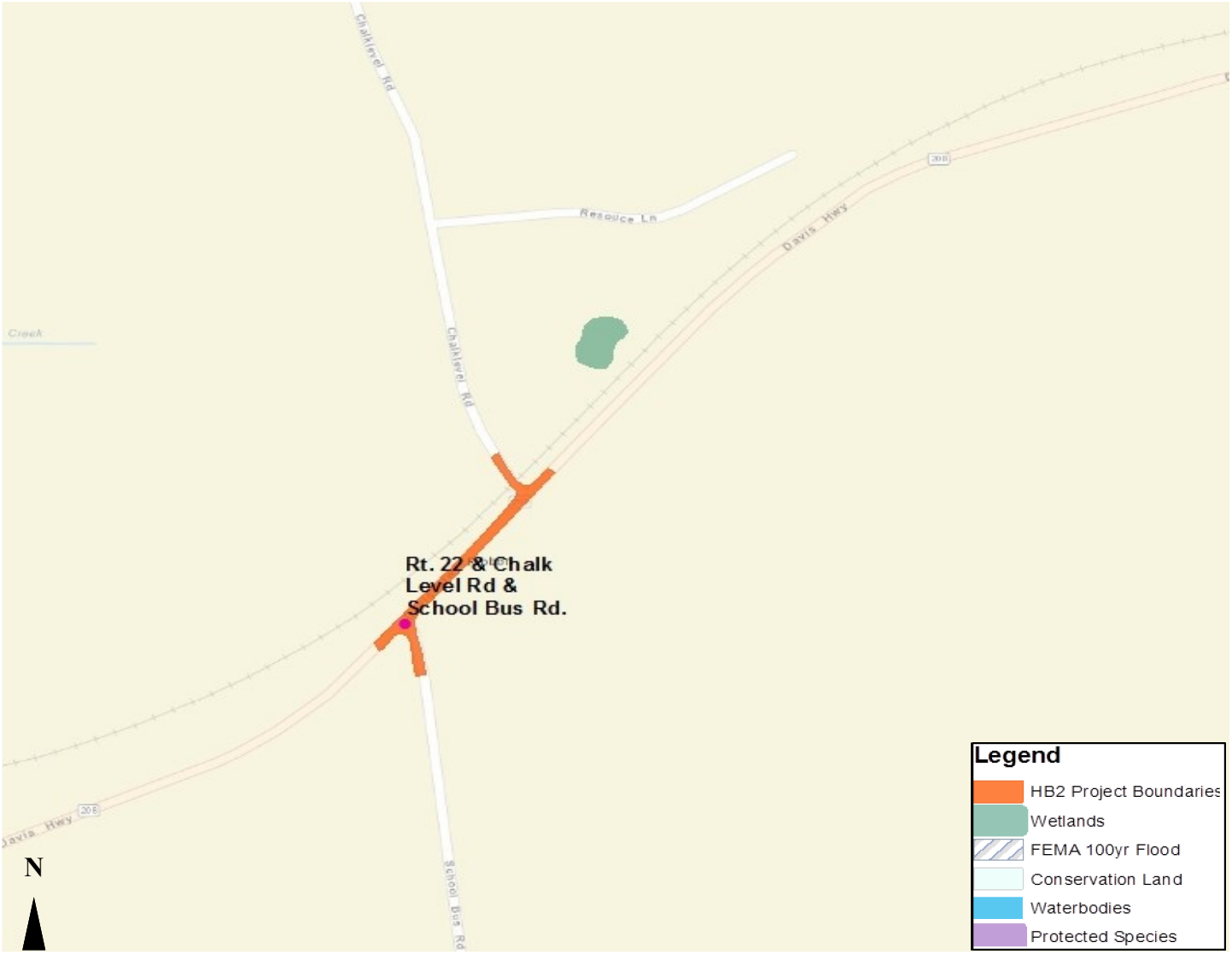
Expected Benefits: Improvement of both safety and capacity by realigning the Rte. 22 & Chalk Level Rd. & School Bus Rd.

Expected Issues: Right-of-way acquisition concerns exist along with intersection realignment and new traffic patterns

Overview

This project will improve safety along the intersections of Chalk Level Rd., School Bus Rd. and Rte. 22. The proposed project would align both Chalk Level Rd. and School Bus Rd. to form one, four-way intersection with Rte. 22 and traffic signals would be installed.

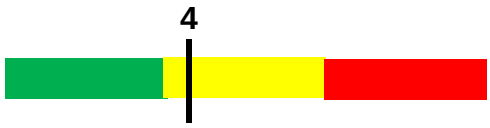
Environmental Impacts Map



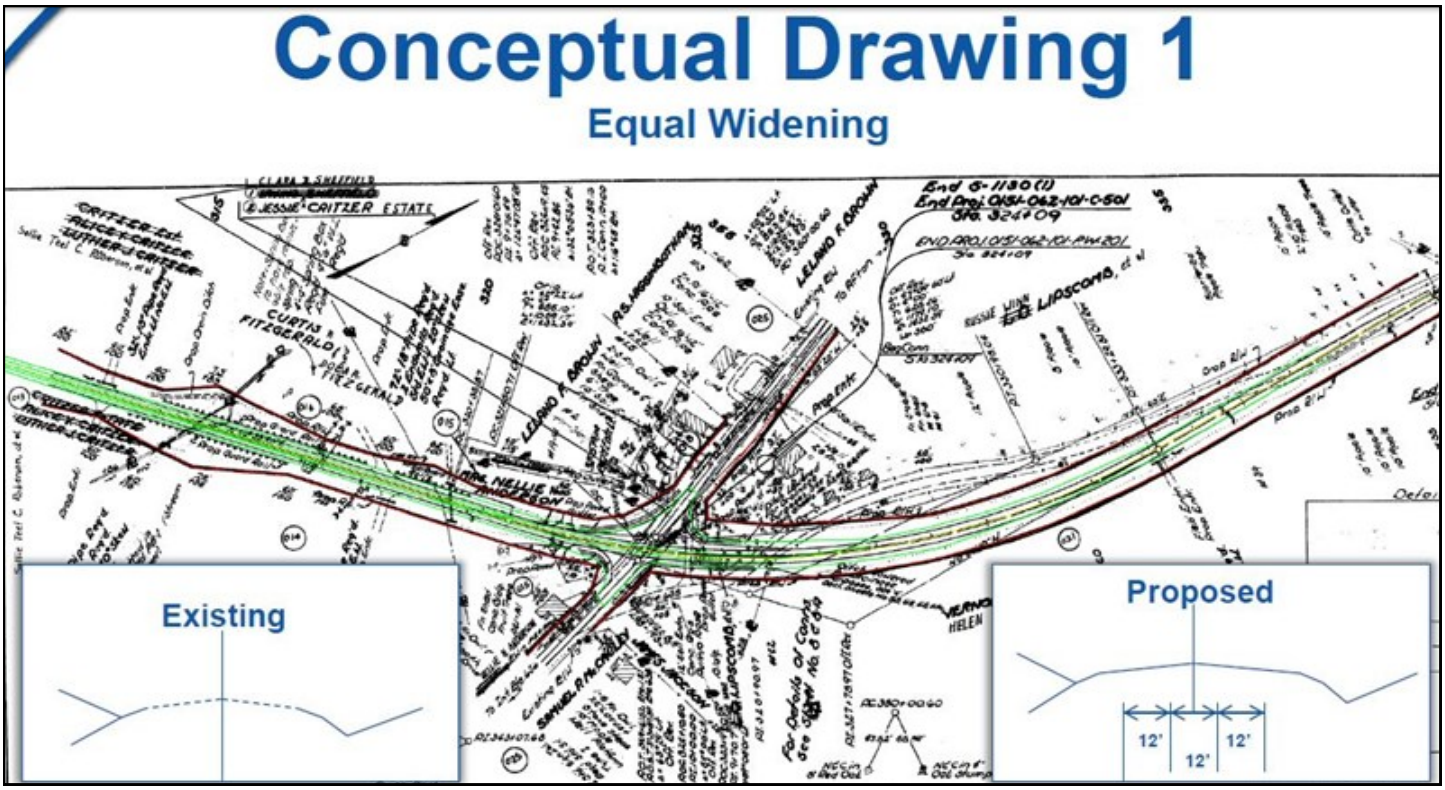
Impact Description

The Route 22 and Chalk Level Rd. and School bus Road has low environmental impacts. There are no direct interactions with floodplains, wetlands, conservation lands, or species habitats. A wetland zone does lie to the northeast of the project, contributing to the slightly higher eco-score.

Eco Score:



Project 14: Route 151/6/638



Project Information

Cost: $2.4 million

Environmental Impacts: Moderate

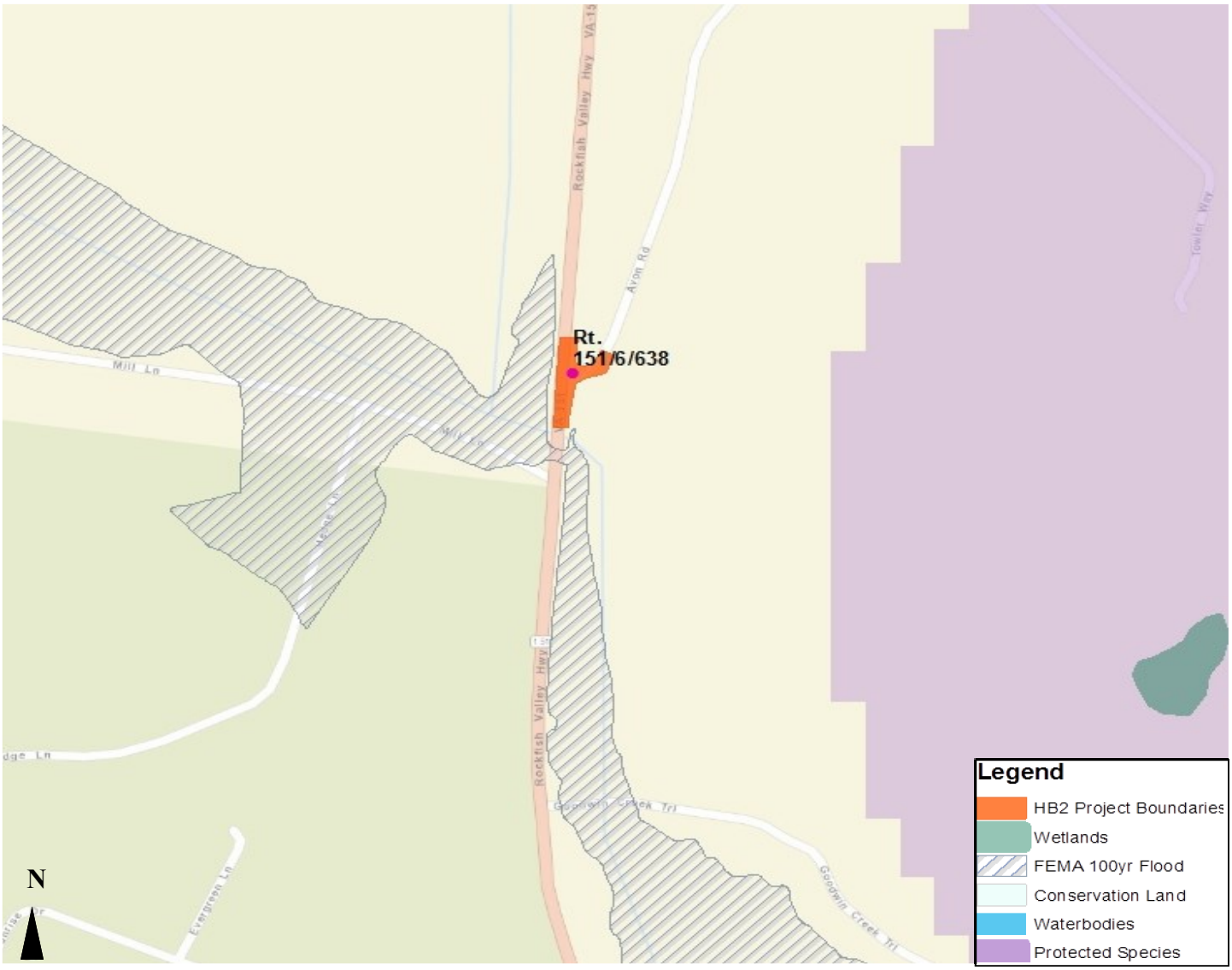
Expected Benefits: Improvement of both safety and capacity at the Rte. 151/6/638 intersection

Expected Issues: Right-of-way acquisition concerns exist along with new traffic patterns

Overview

This project is intended to address safety concerns along Rte.151. Currently, there is no turn lane from Rte. 151 onto Rte. 638. This project would construct a turn lane at the intersection of Rte. 6/151 and Rte. 638. Crash data collected over recent years has revealed an increased incidence of rear end collisions in the northbound direction from vehicles waiting to turn left onto Rte. 638. It is possible that sight line deficiencies may be contributing to this problem in addition to road geometry deficiencies.

Environmental Impacts Map

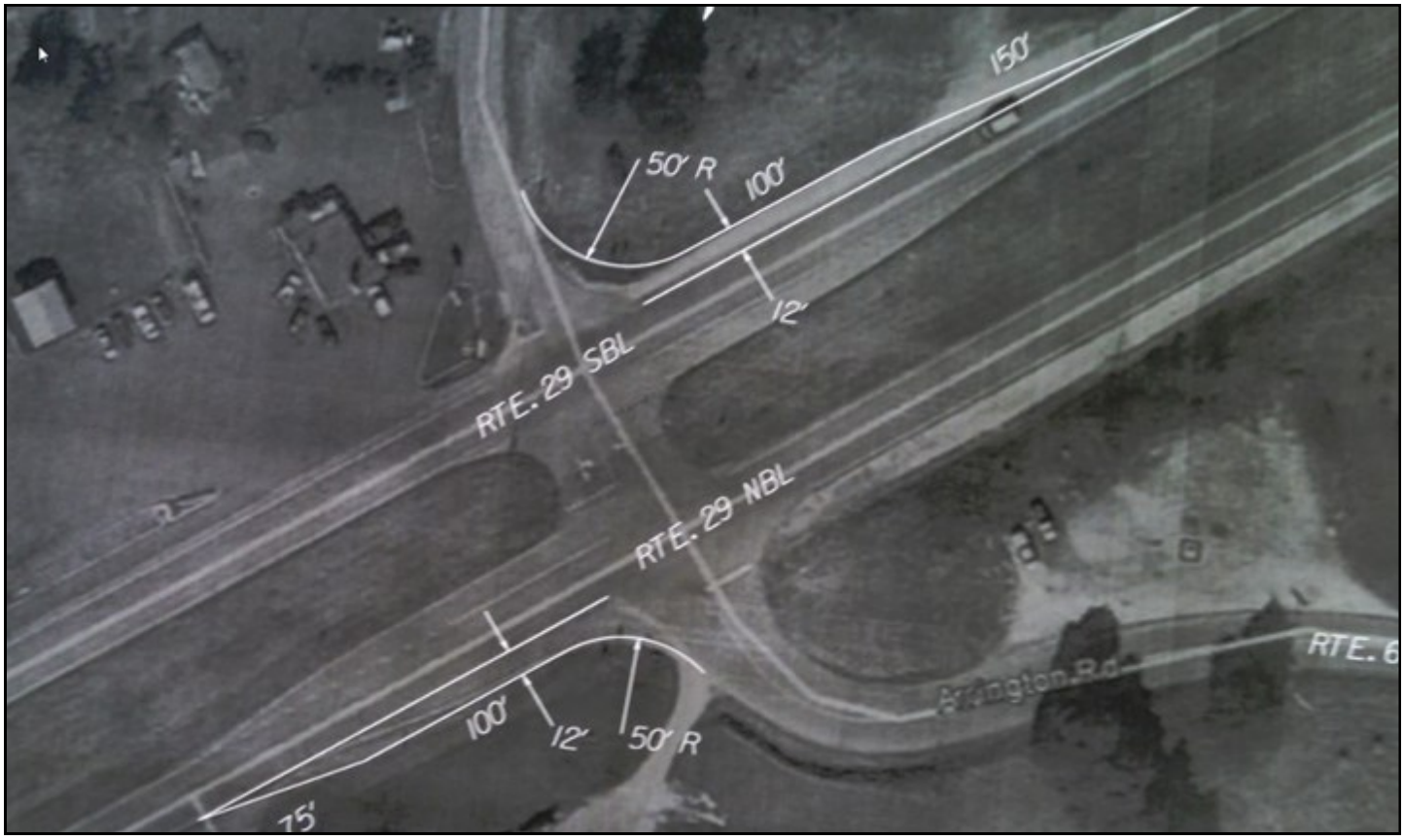


Impact Description

The Route 151/6/638 intersection project will have moderate environmental impacts. While there are no direct impacts with any of the identified environmental variables, the project does lie within close proximity to the 100 Year Floodplain and protected species habitats.

Eco Score:

Project 15: Route 29/655



Project Information

Cost: $1.13 million

Environmental Impacts: Moderate

Expected Benefits: Improvement of safety along Rte. 29 by reducing rear end collisions with the addition of a turn lane as well as removing impediments to traffic flow by motorists having to reduce speed in the primary travel lane

Expected Issues: Right-of-way acquisition concerns exist

Overview

This project includes a right-turn lane and taper to be constructed on the southbound direction of Rte. 29 (Thomas Nelson Highway) at the intersection with Rte. 655 (Arrington Road). This project also calls for the existing right-turn lane and taper on Rte. 29 northbound at the intersection with Rte. 655 to be extended and widened. Currently, Rte. 29 has a 100-foot left turn land with a 100-foot taper at the crossover in the northbound direction and a 75-foot left turn lane with a 125-foot taper in the southbound direction. Rte. 29 also has a 25-foot right turn lane with a 100-foot taper in the northbound direction.

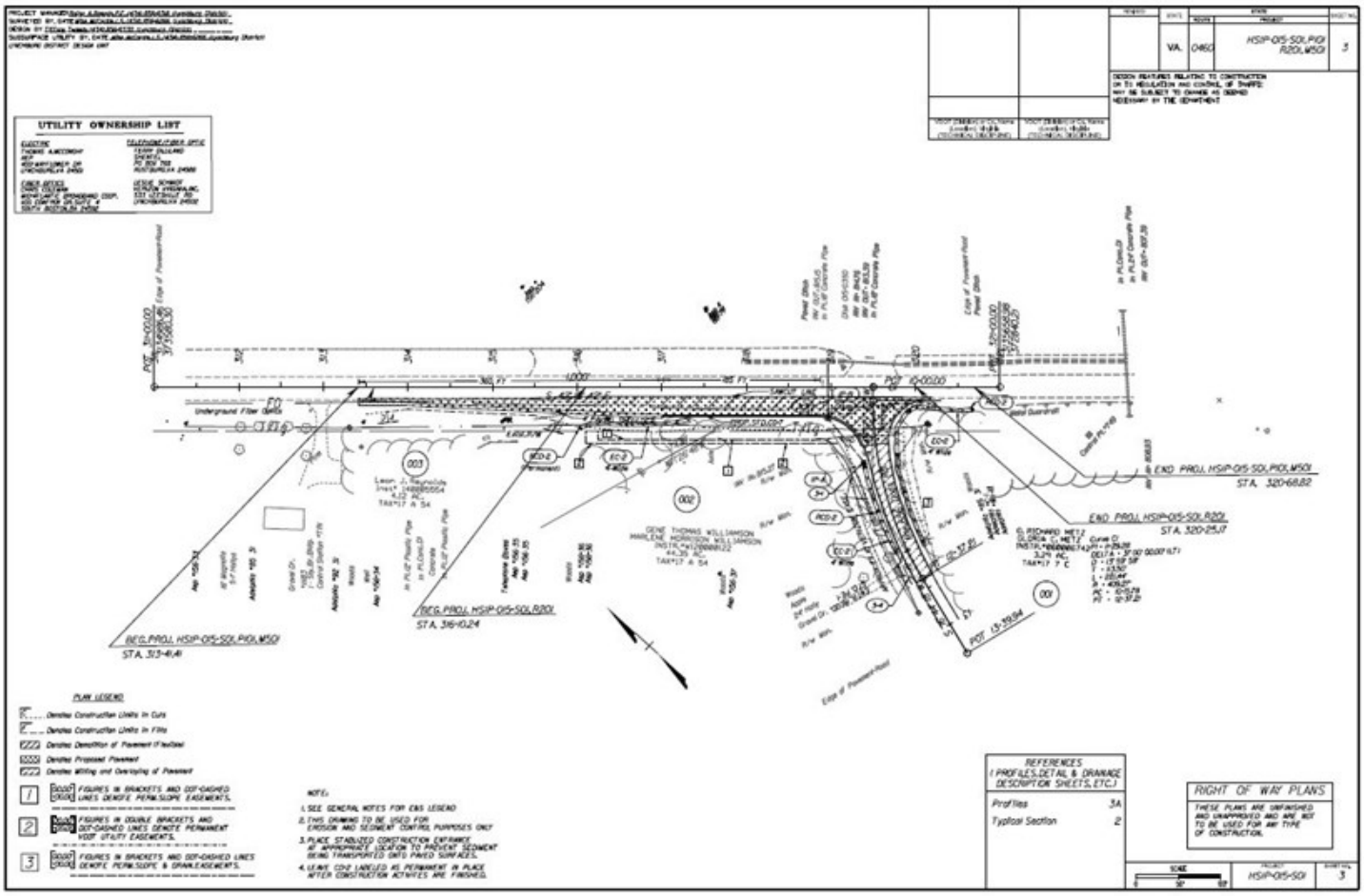
Environmental Impacts Map

Impact Description

The Route 29 and 655 intersection project will have minimal environmental impacts. While its eco-score of 4 does show that there are moderate environmental concerns with the project, there are no direct interactions with floodplains, wetlands, conservation lands, or species habitats. The wetland environment to the south of the project has inflated the eco-score, but the project boundaries have no interactions with this area.

Eco Score: 4

Project 16: Route 151/664



Project Information

Cost: $925,177

Environmental Impacts: Low

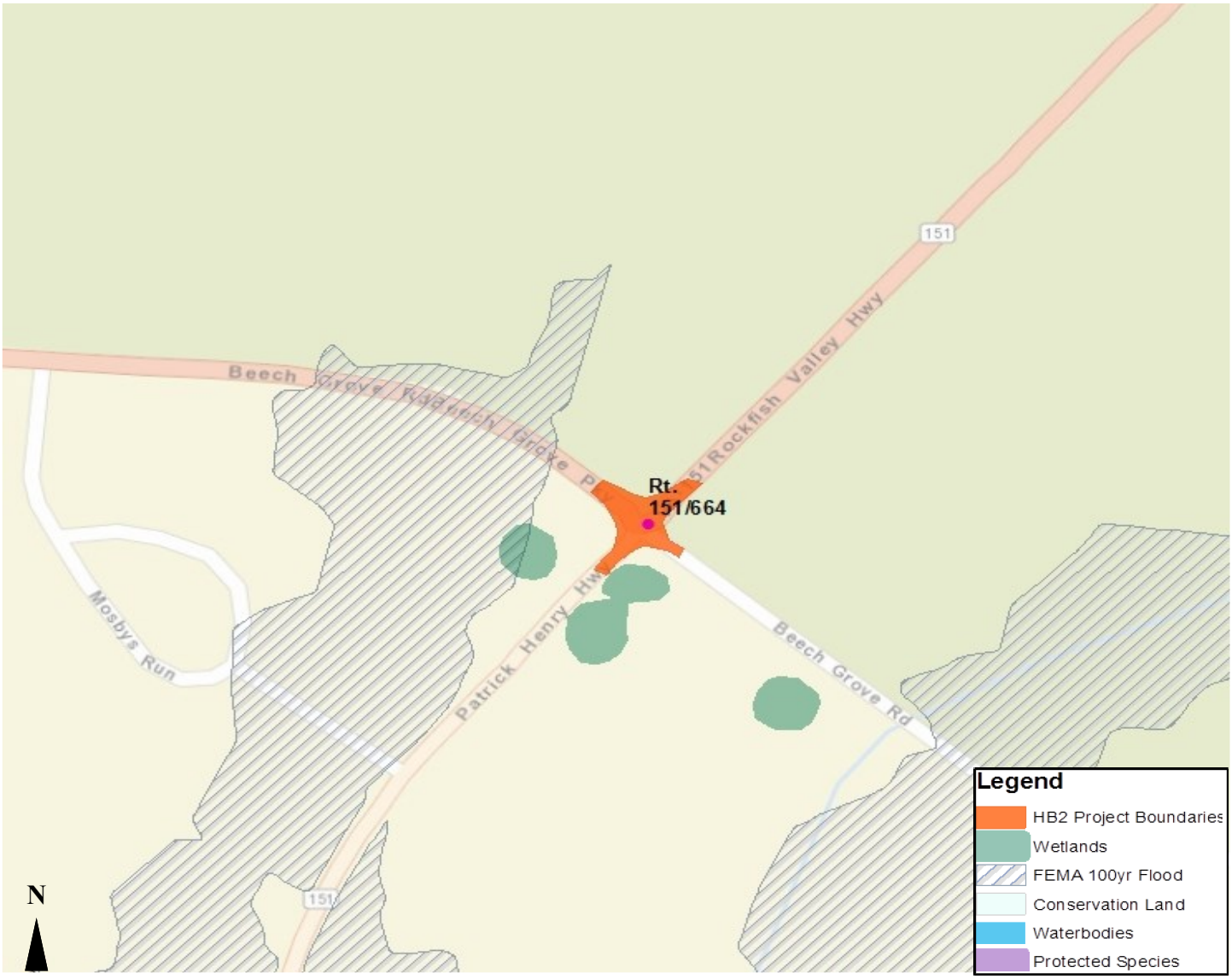
Expected Benefits: Improvement of safety along Rte. 151 by reducing rear end collisions with the addition of a turn lane as well as removing impediments to traffic flow by motorists having to reduce speed in the primary travel lane

Expected Issues: Right-of-way acquisition concerns exist

Overview

This project addresses safety concerns at the intersection of Rte. 151 and 664 by adding a right-turn lane and tapper on the southbound travel lane. This will improve motorist safety by providing a deceleration and turn lane for traffic turning onto 664, thus removing turning motorists from the travel lane and preventing rear-end collisions. This project will also aid safety by providing motorists with increased differentiation between southbound through traffic and right turning vehicles. Additional signage will also be installed to signal the upcoming intersection.

Environmental Impacts Map



Impact Description

The Route 151 and 664 intersection project has a relatively high eco-score of 10 due to the project boundaries being within close proximity to three wetland environments and the 100 Year Floodplain.

Eco Score:

10