

Route 29 Solutions – Berkmar Drive Extended – Albemarle County

Purpose and Need:

The purpose of the project is to increase capacity and mobility, improve safety and improve operational deficiencies along the US Route 29 corridor. This project was selected as the result of a process that included input from the Route 29 Solutions Advisory Panel, local governments, business and environmental groups from communities along the Route 29 corridor. The construction of this local road will provide citizens traveling between local and commercial sites the ability to avoid the regional traffic on Route 29.

Project Description:

This project will construct a roadway on new location using an urban typical section with 2 - 11' lanes curb and gutter, a 10' shared use path along the North Bound Lane (NBL) and a 5' Sidewalk along the South Bound lanes (SBL) with a 7.5' utility green strip, landscaping, and stormwater management basins. The proposed new alignment includes a 710' bridge structure spanning the South Fork of the Rivanna River. The length of this Project element is approximately 2.46 miles and extends between Hilton Heights Road and Towncenter Drive (Rte. 1719).

Alternative Analysis and Preliminary LEDPA:

	VDOT Alt A	VDOT Alt B	VDOT Alt C	Design-Build Alt A
Streams Loss	1937 linear feet	2569 Linear Feet	1582 Linear feet	1989 linear feet
Wetlands Impacts	0.1631 acre	0.2462 acre	0.1982 acre	0.1601 acre
Cultural Resources	No Effect	No Impact	Impacts 2 national register of historic places eligible resources	No Effect
Antenna farm impacts	No Impact	No Impact	\$2.5 million for impacts to 5 antenna	No Impact
Mooney Property	No Impact	Bisect Mooney parcel the only occupied residence in the project corridor	Bisect Mooney parcel the only occupied residence in the project corridor	No Impact
Mooney property access	No Impact	1.7 million to provide a bridge (Note that this structure would not be on state property and would therefore need to be maintained by	1.7 million to provide a bridge (Note that this structure would not be on state property and would therefore need to be maintained by	No Impact

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		the property owner).	the property owner).	
Public Involvement Results	Preferred Alternative by public by a 32/47 comments supported	little support	little support	Contracted Preferred Alternative

Corps of Engineer’s Preliminary LEDPA (Appendix G)

Alternative A - no large differences in impacts to jurisdictional waters and/or wetlands and assuming no impacts or federal action at the South Fork Rivanna River crossing, however Alts B and C have higher impacts in other categories and Alt A is preferred by the public – Alternative A received the Corps Preliminary LEDPA endorsement.

Alternative B - no large differences in impacts to jurisdictional waters and/or wetlands and assuming no impacts or federal action at the South Fork Rivanna River crossing; however Alt B has impacts to private landowner.

Alternative C - no large differences in impacts to jurisdictional waters and/or wetlands and assuming no impacts or federal action at the South Fork Rivanna River crossing, however Alt C has impacts to private and commercial landowners and impacts to cultural resources.

Avoidance and Minimization:

Streams and wetlands cross perpendicular to the project corridor due to the topography of the area. The wetlands and streams are headwater features. The wetlands are small in size and linear shape running parallel to the stream channels. Avoidance and minimization opportunities have been evaluated within the project corridor by reviewing shifts in the project alignment to the east and to the west at the proposed jurisdictional crossings within Alternative A, the USACE preliminary LEDPA alternative.

Avoidance and Minimization Opportunities Evaluated Alternative A – Preliminary LEDPA		
Crossing #	East	West
1	<ul style="list-style-type: none"> • Shifted VDOT’s proposed bridge location to the east at the Rivanna River not impacting any wetlands or jurisdictional waters • Avoiding 112’ of stream impacts north of Rio Mills Road • Avoids 558 square feet of wetlands impacts north of Rio Mills Road. • Avoids impacts to national register of historic places eligible archaeological 	<ul style="list-style-type: none"> • Shift the proposed bridge to the west impacts jurisdictional waters and wetlands on the south side of the South Fork Rivanna River crossing requiring federal action at this crossing. • Impacts 1,744 square feet of wetlands on south side of Rivanna River. The contract required these wetlands to be avoided. • Impacts 602 linear feet of streams on south side of Rivanna River. The contract required

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	<p>resource north of Rio Mills Road Recommendation Implemented</p>	<p>these wetlands to be avoided.</p> <ul style="list-style-type: none"> Moving alignment closer to the Rio Mills historic site within the floodplain Impacts national register of historic places eligible archaeological resource north of Rio Mills Road <p>Recommendation not implemented</p>
2	<ul style="list-style-type: none"> Impacts national register of historic places eligible archaeological resource Decreases stream impacts by 25' <p>Recommendation not implemented</p>	<ul style="list-style-type: none"> Impacts national register of historic places eligible archaeological resource Increases stream impacts by 48' <p>Recommendation not implemented</p>
3	<ul style="list-style-type: none"> Increased stream impacts by 125' Increase wetland impacts by 261 square feet <p>Recommendation not implemented</p>	<ul style="list-style-type: none"> Increases wetland impacts by 1,475 square feet Decreases stream impact by 40' <p>Recommendation not implemented</p>
4*	<ul style="list-style-type: none"> Impacts to 2 antennas plus the building running the antenna farm Increases Wetlands impact by 6000 square feet Stream impacts remain the same Wetland impact at Crossing #5 remain the same <p>Recommendation not implemented</p>	<ul style="list-style-type: none"> Impacts a subdivision located to the west of potential relocation. Increases Wetlands impact at Crossing #3 by 1,475 square feet Increases wetland impact at Crossing #5 by 500 square feet Wetland and stream impacts would remain the same at this crossing 4 <p>Recommendation not implemented</p>
5*	<ul style="list-style-type: none"> Impacts to 2 antennas plus the building running the antenna farm Increases Wetlands impact by 6000' square feet at crossing 4 Stream impacts would remain the same at this crossing 4 Wetland impact at Crossing #5 remain the same <p>Recommendation not implemented</p>	<ul style="list-style-type: none"> Impacts a subdivision located to the west of potential relocation. Increases wetland impact at Crossing #5 by 500 square feet Wetland and stream impacts would remain the same at this crossing 4 <p>Recommendation not implemented</p>
6*	<ul style="list-style-type: none"> Impacts additional 300' of stream Impacts additional 1,800 square feet of wetlands Impact the Mooney parcel home site causing potential relocation Increases wetlands impacts at Crossing #7 by 22,500 square feet Moves alignment into and thru the largest wetland complex on the project east of crossing #7 Stream impacts would reduce by 95' linear feet at crossing 7 <p>Recommendation not implemented</p>	<ul style="list-style-type: none"> Increases wetland impact at Crossing #5 by 500 square feet Stream impact remain the same at Crossing #5 Stream impacts would increase by 200' at Crossing #7 Wetland impact would remain the same Impacts a cemetery required to avoid by contract. <p>Recommendation not implemented</p>
7*	<ul style="list-style-type: none"> Impact the Mooney parcel home site 	<ul style="list-style-type: none"> Impacts a cemetery required to avoid

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	<p>causing potential relocation</p> <ul style="list-style-type: none"> Increases wetlands impacts at Crossing #7 by 22,500 square feet Moves alignment into and thru the largest wetland complex on the project east of crossing Stream impacts would reduce by 95' Impacts additional 300' of stream at Crossing #6 Impacts additional 1,800 square feet of wetlands at Crossing # 6 <p><i>Recommendation not implemented</i></p>	<p>by contract.</p> <ul style="list-style-type: none"> Stream impacts would increase by 200' Wetland impact would remain the same <p><i>Recommendation not implemented</i></p>
8	<ul style="list-style-type: none"> Stream would increase by 310' Wetland impact would remain the same Impact Kohl's parking area and retaining wall <p><i>Recommendation not implemented</i></p>	<ul style="list-style-type: none"> Stream would increase by 110' Wetland impact would remain the same Requires the intersection to shift to the west between the roundabout and a residential entrance on Towncenter drive. <p><i>Recommendation not implemented</i></p>

*Crossing 4, 5, 6, and 7 are in close proximity to each other. As a result, changes to one crossing effects the impacts at the other 2 crossings.

In conclusion, the Jurisdictional determination identified 126,722 square feet (2.91 acres) of wetlands, 13,184 linear feet of streams as jurisdictional under the Clean Water Act. The project design implemented avoidance and minimization efforts to:

- Avoid impacting 119,748 square feet of wetlands within the project corridor;
- Avoid impacting 11,195 linear feet of stream impacts within the project corridor;

In comparing the wetland and stream impacts with the Corps Preliminary LEDPA decision, the Design-Build Alternative A decreased wetland impacts by 0.003 acres (131 square feet) and increased stream impacts by 52 feet which can be contributed to the topography along the alignment and providing erosion control stone to meet the current stormwater and erosion and sediment control regulations.

The project as proposed will have “no effect” on the federally endangered James Spiny mussel (*Pleurobema collina*) because no in-stream work will occur within the South Fork of the Rivanna River. The project is “not likely to adversely affect” the federally threatened northern long-eared bat (*Myotis septentrionalis*) (NLEB) because a time of year restriction between April 15 and September 15 will be applied within the project’s right of way from Station 139+00 to Station 171+00 which includes stream crossings #2 and #3.

Conceptual Mitigation Plan

To compensate for unavoidable wetlands impacts to 0.1601 acres of PFO, the JV proposes compensate at the following ratios 2:1 for PFO, 1.5:1 for PSS and 1:1 for PEM. The JV proposes to purchase 0.3202

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wetland credits from an approved wetlands compensation bank that has a service area that includes the Hydrologic Unit Code (HUC) 02080204.

To compensate for unavoidable stream loss of 1,989 linear feet, the JV proposes to use the USMs contained in Appendix H. The JV will purchase 2,635 USM stream credits from an approved stream compensation bank that has a service area that includes the Hydrologic Unit Code (HUC) 02080204.

Once the amount and method of wetland and stream compensation for this project is accepted by the regulatory agencies, the JV will negotiate with appropriate wetland and stream bankers to secure the wetland and stream credits and provide documentation to the regulatory agencies prior to working within jurisdictional areas within the project.

It is anticipated the project construction will involve 26.42 cubic yards fill within 492 square feet of jurisdictional areas during construction. These areas will be restored to preconstruction contours and appropriately stabilized at the conclusion of the work at each crossing.

Berkmar Drive Extension
Water Quality Permit
Impact Table

Stream Identifier	Station (approximate)	Structure Number	Stream Name	Stream Width (feet)	Stream Depth (feet)	Drainage Area - Square Mile	pipe size (in)	Structure type	Total Stream Loss (L.F.)	Total Stream Loss (S.F.)	Reach Compensation Index	Stream Compensation Required	Total Wetlands Impact (Acres) - all PFO	Wetlands Compensation Required	Fill Permanent (C.Y.)	Excavation Permanent (C.Y.)	Fill Temporary Cubic Yards/Square Feet	Excavation Temporary Cubic Yards/Square Feet
Crossing 1 - SF Rivanna	122+00-129+00	B-676	South Fork of the Rivanna	135	6	259.9	na	710' long Bridge	0	0	1.5	0	0	0	0	0	0	0
Crossing 2 - Stream USM V	148+00	10-11	Unnamed tributary SF Rivanna	4	0.33	0.01	36	Pipe Construction, outlet protection	108	432	1.2	130	0	0	5.28	2.93	0.3 CY/24 sf	0.3 CY/24 sf
Crossing 3 - Stream USM X	159+00	11-3	Unnamed tributary SF Rivanna	5	1	0.035	60	Pipe Construction, inlet and outlet protection	290	1450	1.41	409	0	0	53.7	8.68	1.33 CY/36 sf	1.33 CY/36 sf
Crossing 4 - Stream USM T	174+00	13-2	Unnamed tributary SF Rivanna	6	0.75	0.044	60	Pipe Construction, inlet and outlet protection	260	1560	1.28	333	0.0411	0.0822	43.33	10.4	1.0 CY/36 sf	1.0 CY/36 sf
Crossing 5 - Stream USM K	186+00	15-8	Unnamed tributary SF Rivanna	6	0.58	0.061	60	Pipe Construction, inlet and outlet protection	206	1236	1.3	268	0.09	0.18	26.55	4.83	0.77 CY/36 sf	0.38 CY/36 sf
Crossing 6 - Stream USM I	197+00	17-3	Unnamed tributary SF Rivanna	6	0.58	0.022	60	Pipe Construction, inlet and outlet protection	350	2100	1.43	501	0.021	0.042	45.11	4.83	0.77 CY/36 sf	0.38 CY/36 sf
Crossing 7 - Stream USM G	212+00	19-4	Unnamed tributary to Powell Creek	10	2	0.2	84	Pipe Construction, inlet and outlet protection	400	4000	1.26	504	0.008	0.016	296.29	51.85	8.8 CY/120 sf	8.8 CY/120 sf
Crossing 7 - Stream USM E	212+00	19-3	Unnamed tributary to Powell Creek	4	0.33	0.004	30	Pipe Construction, inlet and outlet protection	95	380	1.26	120	0	0	4.64	1.47	0.15 CY/24 sf	0.15 CY/24 sf
Crossing 8 - Stream USM B	225+00	21-6	Powell Creek	15	2	0.52	84	Pipe Construction, inlet and outlet protection	280	4200	1.32	370	0	0	311.11	62.96	13.3 CY/180 sf	13.3 CY/180 sf
totals									1989	15358		2635	0.1601	0.3202	786.01	147.95	26.42 CY/492 sf	26.42 CY/492 sf

Stream Assessment Summary Form (Form 2)

Unified Stream Methodology for use in Virginia

Project #	Applicant	Date
15014	Lane-Corman JV	18-Aug-15
Evaluators		HUC
Rader-Dixon/Krause/Harden/Moreland/Woody		2080204.00
		Locality
		Albemarle

Stream Name	Reach ID	Length of Impact (L _I) (feet)	Reach Condition Index (RCI)	Impact Factor (IF)	Compensation Requirement (CR) (L _I × RCI × IF)
UT to SFRR-Xing 2	V-1	108	1.20	1.00	130
UT to SFRR-Xing 3	X-1	290	1.41	1.00	409
UT to SFRR-Xing 4	T-1	260	1.28	1.00	333
UT to SFRR-Xing 5	K-1	206	1.30	1.00	268
UT to SFRR-Xing 6	I-1	350	1.43	1.00	501
UT to Powell Creek-Xing 7	E-1	95	1.26	1.00	120
UT to Powell Creek-Xing 7	G-1	400	1.26	1.00	504
Powell Creek-Xing 8	B-1	280	1.32	1.00	370
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
Total L_I		1,989		Total CR	2,635

Note: Round all feet & CR's to the nearest whole number.