

**Burlington Mill Creek Alignment Alternative Evaluation/Cost Matrix - June 24,2013**

Impact Category	Alternate No. 1 New structure at existing location with a downstream detour for temporary traffic control. The design of the new structure will accommodate vehicular turning movements and pedestrians.	Alternate No. 2 Bypass alignment that re-aligns CR 11 east of the existing bridge site. Existing CR 11 bridge is closed to vehicular traffic, but remains accessible to pedestrians. A turn-around is required near the existing bridge location.	Alternate No. 3 New structure at existing location using staged construction techniques for temporary traffic control. The design of the new structure will accommodate vehicular turning movements and pedestrians.	Alternate No. 4 Bypass alignment that re-aligns CR 11 east of the existing bridge site to the entrance of the WVDOH District 5 headquarters entrance. Existing CR 11 bridge is closed to vehicular traffic, but remains accessible to pedestrians. A turn-around is required near the existing bridge location	Alternate No. 5 New structure on a new alignment downstream of the existing bridge. The existing bridge will remain in service during construction of the new bridge. The design of the new structure will accommodate vehicular turning movements and pedestrians.	Alternate No. 5A New structure on a new alignment downstream of the existing bridge. The existing bridge will remain in service during construction of the new bridge. The design of the new structure will accommodate vehicular turning movements and pedestrians.	Alternate No. 6 - Preferred Alternative New structure at existing location with a upstream detour for temporary traffic control. The design of the new structure will accommodate vehicular turning movements and pedestrians.
Engineering							
Prelim. Length of CR 11 Improvements	Length (ft) 250 Bridge 49' Wide X 52' Length	3,100 38.5' Wide X 96.5' Length	250 49' Wide X 52' Length	2,800 38.5' Wide X 94' Length	310 43.5' Wide X 60.5' Length	310 43.5' Wide X 55' Length	250 49' Wide X 52' Length
Roadway Configuration (Refer to Attached Drawings)	Two 12' wide lanes with 6' wide shoulders - 4' paved with 2' curb and gutter	Two 12' wide lanes with 6' wide shoulders - 4' paved	Two 12' wide lanes with 6' wide shoulders - 4' paved with 2' curb and gutter	Two 12' wide lanes with 6' wide shoulders - 4' paved	Two 12' wide lanes with 6' wide shoulders - 4' paved with 2' curb and gutter	Two 12' wide lanes with 6' wide shoulders - 4' paved with 2' curb and gutter	Two 12' wide lanes with 6' wide shoulders - 4' paved with 2' curb and gutter
Horizontal Geometry (Min Radius)	Tangent Roadway	251' radius - 30 MPH	Tangent Roadway	251' radius - 30 MPH	175' radius - 25 MPH	175' radius - 25 MPH	1,000' - 40 MPH
Financial / Costs							
Estimated Construction Costs	\$1,127,190	\$3,386,094	\$1,014,434	\$3,950,640	\$707,232	\$732,889	\$1,239,636
Estimated Right of Way Costs	\$400,000	\$1,665,000 Cul-de-Sac Right of Way Estimate Used	\$120,000	\$965,000 Cul-de-Sac Right of Way Estimate Used	\$700,000	\$700,000	\$200,000
Estimated Utility Costs	\$60,000	\$120,000	\$60,000	\$100,000	\$60,000	\$60,000	\$70,000
Traffic Operations							
Number of Local Roadways Severed	None	1 - CR 11 at existing bridge location.	None	1 - CR 11 at existing bridge location.	None	None	None
Safety Constraints / Impacts	Increased safety in comparison to existing conditions due to accommodating turning vehicles and pedestrians. The horizontal alignment follows the existing alignment and widening occurs mainly on the upstream side of the existing bridge. A retaining wall is required between US50/US220 and Mill Creek on the upstream side of the proposed structure. A detour constructed on the downstream side of the existing bridge will be used for temporary traffic control. Property acquisition is required to construct the temporary detour.	This new bypass alignment re-aligns CR 11 east of the existing bridge site and requires a connector road to CR 11 and a turn-around near the existing bridge location. Through traffic is diverted from the center of the Burlington Historic District and elementary school. Existing CR 11 bridge is closed to vehicular traffic, but remains accessible to pedestrians. A community septic system is within the footprint of the new alignment.	Increased safety in comparison to existing conditions due to accommodating turning vehicles and pedestrians. The horizontal alignment follows the existing alignment and widening occurs mainly on the upstream side of the existing bridge. A retaining wall is required between US50/US220 and Mill Creek on the upstream side of the proposed structure. Construction is more complicated due to the phase construction scheme. The phase construction for this alternate will place workers closer to the traveling public and there would be more conflicts with construction activities and the traveling public.	This new bypass alignment re-aligns CR 11 east of the existing bridge site to the entrance of the WVDOH District 5 headquarters entrance. This alternate requires a connector road to CR 11 and a turn-around near the existing bridge location. Through traffic is diverted from the center of the Burlington Historic District and elementary school. Existing CR 11 bridge is closed to vehicular traffic, but remains accessible to pedestrians. A community septic system is within the footprint of the new alignment.	Increased safety in comparison to existing conditions due to accommodating turning vehicles and pedestrians. New structure on a new alignment downstream of the existing bridge. The existing bridge will remain in service during construction of the new bridge. The design of the new structure will accommodate vehicular turning movements and pedestrians. Alternate 5 eliminates the need to construct and acquire property for either an upstream or downstream detour for the temporary traffic control phase of the project.	Increased safety in comparison to existing conditions due to accommodating turning vehicles and pedestrians. New structure on a new alignment downstream of the existing bridge. The existing bridge will remain in service during construction of the new bridge. The design of the new structure will accommodate vehicular turning movements and pedestrians. Alternate 5 eliminates the need to construct and acquire property for either an upstream or downstream detour for the temporary traffic control phase of the project.	Increased safety in comparison to existing conditions due to accommodating turning vehicles and pedestrians. The horizontal alignment is downstream of the existing alignment and widening occurs mainly on the upstream side of the existing bridge. A retaining wall is required between US50/US220 and Mill Creek on the upstream side of the proposed structure. A detour constructed on the upstream side of the existing bridge will be used for temporary traffic control. The upstream detour is not as desirable as the downstream detour location due to the close proximity of Mill Creek to the roadway slope of US50/US 220. Property acquisition is required to construct the temporary detour.
Human Environment							
Historic Resource Impacts	Burlington Historic District 1 – Contributing Structures	Burlington Historic District The proposed bridge over Mill Creek is near the edge of the Burlington Historic District boundary and for construction of the selected turn-around for this alternate.	Burlington Historic District 1 – Contributing Structures	No impacts to the Burlington Historic District for the new roadway alignment. Construction of a new turn-around will be within the Burlington Historic District.	Burlington Historic District 0 – Contributing Structure	Burlington Historic District 0 – Contributing Structure	Burlington Historic District 1 – Contributing Structures
Cemetery Impacts	None	None	None	None	None	None	None
National Wetlands Inventory	None	Yes - (Mill Creek and Patterson Creek)	None	Yes - (Mill Creek and Patterson Creek)	None	None	None
Commercial Facilities Impacts (e.g. Businesses)	1-Commercial Facility	5-Commercial Facilities	None	3-Commercial Facilities	1-Commercial Facility	1-Commercial Facility	None
Residential Displacement (# houses and apartment buildings)	1-Residence 1-Apartment Building 1-Abandoned Residence	3-Residences 1-Abandoned Residence (for turn-around)	1-Abandoned Residence	2-Residences 1-Abandoned Residence (for turn-around)	1-Residences 1-Apartment Building	1-Residences 1-Apartment Building	1-Abandoned Residence
Potential Land Development	None	None	None	None	None	None	None
Physical Impacts							
Potential Hazard Waste Site(s)	No known sites.	No known sites.	No known sites.	No known sites.	No known sites.	No known sites.	No known sites.
Water Well Abandonment	1	1	1	1	0	0	1
Septic Tank Abandonment	2	1	1	1	1	1	1
Major (Public) Utility Conflicts / Impacts	Major Utility Relocations Required	Major Utility Relocations Required	Major Utility Relocations Required	Major Utility Relocations Required	Major Utility Relocations Required	Major Utility Relocations Required	Major Utility Relocations Required
Major (Private) Utility Conflicts / Impacts	None	Private septic system that serves the private septic system serves the Burlington Elementary School and seven (7) residences.	None	Private septic system that serves the private septic system serves the Burlington Elementary School and seven (7) residences.	None	None	None