

ABC Innovative Projects

US 26 Bridge over Mill Creek					
Location	US 26 at Milepost 92.68 over Mill Creek in Wasco County between Oregon Route 216 and the town of Warm Springs				
State	Oregon				
Owner	State				
Year ABC Built	2002				
State ID #	01660				
NBI #	01660				
Coordinates	Latitude: 44.865069		Longitude: -121.4217		
Contact Person	Bruce V. Johnson, P.E. State Bridge Engineer Oregon Department of Transportation Phone: 503-986-3344 Email: bruce.v.johnson@odot.state.or.us				
Mobility Impact Time	ABC: 24 days		Conventional: 9-12 months		
Impact Category	<i>Tier 1</i>	<i>Tier 2</i>	<i>Tier 3</i>	Tier 4	<i>Tier 5</i>
				X	
Primary Driver(s)	<ul style="list-style-type: none"> • reduced traffic impacts • reduced onsite construction time • improved work-zone safety • improved material quality and product durability • minimized environmental impacts • reduced life-cycle cost 				
Description	<ul style="list-style-type: none"> • 536-ft-long and 35-ft-wide five-span continuous steel deck truss bridge (20 ft - 165 ft - 165 ft - 265 ft - 20 ft) • Rural location • Average Daily Traffic count: 4,200 (2010) • Traffic management alternative, if constructed conventionally: extended use of 1.95-mile detour <p>Existing Bridge: The bridge has two 12-ft-wide traffic lanes and two 4.5-ft-wide shoulders. Built in 1948, it had a deteriorated deck that required replacement. The Exodermic™ steel-grid-and-concrete-filled deck replacement is the same width as the original deck.</p> <p>Construction Methods: The contractor detoured traffic and closed the bridge. Starting on the southeast end of the bridge, the contractor saw cut the edge of the bridge deck, removed the sidewalk at the abutment, formed the pocket where the new deck would overlap the abutment sidewalk, and constructed the drainage curb and guardrail transitions. The contractor transversely cut and removed a portion of the existing deck and installed a new deck panel. The stringer studs were welded and the panel was raised to grade. The closure concrete was cast. After concrete cured, the new bridge rail segments were placed and bolted and grouted into position. The process was repeated as closure time allowed. As work progressed, one floor beam was replaced at location U10. Asphaltic concrete was</p>				

	<p>placed to transition the change in deck elevations. Temporary rail transitions and joint seals were installed, and the bridge was opened to traffic. The process was repeated until the replacement was completed. The bridge was paved with an asphalt overlay without waterproofing membrane.</p> <p>A total of 540 linear feet of deck was replaced in 24 days. A conventional deck replacement would have taken 9-12 months of road closure under a single-lane staged construction sequence.</p> <p>Stakeholder Feedback: The Oregon DOT had the following observations:</p> <ul style="list-style-type: none"> • A flexible schedule for work and traffic windows facilitated replacement progress. • The new deck is stiffer and stronger. • The superstructure is stiffer with the composite concrete-filled grid deck. • The replacement traffic rail is crash worthy. • The bridge has improved hydraulics (increased cross-slope and wider traveled way for drainage), which allowed removal of the deck drains. 			
High Performance Materials	<ul style="list-style-type: none"> • 			
Photos				
Additional photos				
Project Planning	Decision-Making Tools <ul style="list-style-type: none"> • State process 	Site Procurement <ul style="list-style-type: none"> • 	Procurement <ul style="list-style-type: none"> • Design-bid-build 	Contracting <ul style="list-style-type: none"> • Full lane closure
Geotechnical Solutions	Foundations & Walls <ul style="list-style-type: none"> • 		Rapid Embankment <ul style="list-style-type: none"> • 	
Structural Solutions	Prefabricated Bridge Elements & Systems			Construction <ul style="list-style-type: none"> •
	Elements <ul style="list-style-type: none"> • Exodermic deck 	Systems <ul style="list-style-type: none"> • 	Miscellaneous <ul style="list-style-type: none"> • CIP reinforced concrete closure joints • Asphalt overlay w/o membrane 	
Costs	The engineer's estimate and bid information for the project are not available.			
Funding	<i>Federal only</i>	<i>State only</i>	Federal and State	<i>Other</i>
			X	
Incentive Program (\$)	<i>Highways for LIFE</i>	<i>IBRD</i>	<i>SHRP2</i>	<i>Other</i>
Contract Plans	Complete Set:		ABC *:	Bridge Plans (link to pdf)
Specifications	Complete Set: Not available.		ABC *:	
Bid Tabs	Not available.			

Schedule	Engineer's: Not available.	Actual:
Other Related Information	ODOT Bridge Engineering Website [http://www.oregon.gov/ODOT/HWY/BRIDGE/]	
Photo Credits	Oregon Department of Transportation	

* Specific to the ABC used in the project.