Presentation

- Introduction
- Exit 46 project history
- Preferred alternative concept
- Interchange Modification Justification Report (IMJR) overview
- Existing traffic and safety conditions
- Future conditions
- Shared use path component
- Next steps
1. Bridge opening will not accommodate future I-90 expansion
2. Bridge skew angle creates expansive ramp terminal intersections and difficult turning movements, particularly for large vehicles
3. Closely spaced major intersection causes conflict and safety concerns
4. Close succession of ramp, railroad grade crossing and local access raises safety concerns
5. Narrow bridge is not pedestrian friendly
6. Crest vertical curve on bridge hinders sight distance, making it difficult for vehicles to travel safely and efficiently
7. Ramp intersection mixes local and interstate-related traffic, causing safety concerns
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<tbody>
<tr>
<td>Document/Procedural Step</td>
<td>SDDOT Decennial Interstate Corridor Study</td>
<td>I-90 Black Hawk to Sturgis Corridor Preservation Study</td>
<td>I-90 Environmental Assessment - Exit 40 to Exit 51</td>
<td>SDDOT Decennial Interstate Corridor Study</td>
<td>Piedmont Valley Regional Shared Use Path Summary and Recommendations</td>
<td>SDDOT Statewide Transportation Planning Process</td>
<td>IMR and Categorical Exclusion (Environmental Clearance)</td>
<td>Complete Scoping and Design</td>
<td>Construction</td>
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<td>Exit 46 Information</td>
<td>Identified concern of close service road spacing, recommended project to realign service roads</td>
<td>Addressed potential for widening of I-90 to 94 lanes, evaluated Exit 46 interchange reconfiguration alternatives</td>
<td>Selected Preferred Alternative of Realigned Exit 46 Diamond Interchange</td>
<td>Reaffirmed issues of close service road spacing and substandard interchange design</td>
<td>Identified path along Elk Creek Road and crossing of I-90 at Exit 46 as high priorities</td>
<td>SDDOT included Exit 46 reconstruction in the Developmental Program of its statewide planning process</td>
<td>Will provide documentation of preferred alternative needed for Federal approval of Exit 46 project</td>
<td>SDDOT process of defining the reconstruction project and completing final design plans</td>
<td>Construction effort to be overseen by SDDOT</td>
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<td>Public Meeting(s)</td>
<td>No meetings</td>
<td>Yes</td>
<td>Yes</td>
<td>No meetings</td>
<td>Yes</td>
<td>Yes</td>
<td>Land Owner Meeting</td>
<td>To Be Determined</td>
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Conceptual Design

Spring Valley Road (completed Fall 2015)

PROPOSED ROW
EXISTING ROW
EDGE OF PAVEMENT
PROPOSED ROADWAY
PROPOSED BRIDGE
PROPOSED RETAINING WALLS
REMOVAL OF PAVEMENT
An Interchange Modification Justification Report (IMJR) is a planning document prepared to gain approval from the Federal Highway Administration to make changes to an existing freeway interchange. The document addresses eight policy points to ensure that the proposed change uniquely meets the need(s), provides acceptable traffic flow and operations, fits with local and regional plans, and will be included in required environmental evaluation, review and processing.
Crash History, 2010-2014

- Reported crashes show minor concentration at Sturgis Road/Elk Creek Road
- No significant correctable patterns
- Unreported crashes could show more significant pattern(s)
- Public input welcome regarding safety concerns
2015 Traffic Operations

- Study area includes adjacent interchanges and surface streets
- Mainline I-90 carries 20-25,000 vehicles per day, Sturgis Road 2-4,000
- Level of Service findings indicate no substandard freeway or ramp conditions
- Some surface street movements show concern (Sturgis/Elk Creek Road)
Future Growth

- Rapid City Area MPO’s Regional Travel Demand Model used to develop forecasts, 2021 and 2045
- I-90 to grow by about 60% to 2045, surface streets similar
- Exit 46 and 48 interchanges currently carry similar volume levels, expected to continue
Future Conditions - No Action

- General worsening of operational conditions across the study area
- Some movements through Elk Creek Road intersections reach substandard levels during peak hours
- Overall, operations remain at acceptable LOS
- Mainline I-90 and ramps continue to operate acceptably with 4-lane I-90
Future Conditions - Preferred Alternative

- Additional lanes at surface street intersection improve some movements
- Some movements through Elk Creek Road intersections remain at substandard levels during peak hours
- Mainline I-90 and ramps operate acceptably with 4-lane I-90
Path Options

Option A: South Side of Elk Creek Road

Option B: North Side of Elk Creek Road

Cross-Sectional View (looking west across Exit 46 bridge)

Cross-Sectional View (looking west across Exit 46 bridge)
Compile input received from public and stakeholders

Develop Draft and Final IMJR

Complete Environmental Process (Categorical Exclusion)