



COLORADO

Department of Transportation

Office of the Chief Engineer

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MEMORANDUM

TO: REGION 1 SOUTH PROGRAM
FROM: JOSHUA LAIPPLY, CDOT CHIEF ENGINEER
DATE: NOVEMBER 20, 2017
SUBJECT: I-25 SOUTH GAP: MONUMENT TO CASTLE ROCK PAVEMENT TYPE

The pavement type for the I-25 South Gap: Monument to Castle Rock project is being determined as asphalt pavement ahead of the Life Cycle Cost Analysis (LCCA) due to the following reasons:

- Long term needs
 - The planned improvement of adding an additional lane is an interim improvement to meet the current demand and safety needs in the Gap. The on-going Planning and Environmental Linkage study will determine the long term ultimate needs of the corridor.
- Meets the goals of the project within the fixed construction budget of \$350M
 - While desirable, full reconstruction with either HMA or PCCP would greatly increase the initial capital cost, reducing available funds to widen structures as necessary to accommodate the additional roadway width. The project cannot fall short of improving the safety, reliability and mobility along the full 18 miles.
 - In general the project will use as much of the existing pavement as possible with widening to the median and outside. We anticipate shallow milling of the existing pavement and full width overlay for the final wearing surface. Placing a potential thin white topping would likely raise the roadway profile or require more milling, could complicate construction phasing and potentially add cost of additional embankment which could extend slopes beyond the existing ROW or require additional walls.
 - Any detour pavement could be built with permanent asphalt with a final top mat being placed without concerns of underlying joint locations.
- Construction schedule may be lessened with asphalt
 - Quicker traffic phasing can be accommodated with tapered longitudinal joints and without having to wait on proper cure times for PCCP.
 - Milled surfaces would still allow for traffic useage.
 - Detour pavement could be constructed with minimal throw away as pavement joint locations can be accommodated with a final top mat.
 - Super evelvation correction over existing pavement can be made easier with like materials
 - Smaller work zones can be accommodated.
- Technical compatability
 - Per the CDOT Pavement Design Manual the widened cross section should generally closely match the existing pavement cross section in material type and thickness.
 - Widening an ahalt roadway with concrete pavement would not be acceptable due to material temperature variations and the resulting maintenance needs.

