

Dillon Interchange EA: Alternatives Analysis

PREPARED FOR: Project Files
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The need to improve connectivity to I-25 for residents and businesses in north Pueblo County and in Pueblo West has been identified by several studies dating back more than a decade. The PACOG 2035 fiscally constrained Long Range Transportation Plan (PACOG, 2008), for example, includes a project for the connection of Dillon Drive to I-25. The City of Pueblo's Comprehensive Plan (PACOG, 2001), identifies the lack of access and street connectivity in the area as a community concern. The Pueblo Boulevard Feasibility Study (CDOT, 1999) recommended reconstructing the Eden Interchange to improve connectivity of Dillon Drive to I-25 and to accommodate local land use plans.

This memorandum documents the process to develop and screen concepts to improve regional connectivity and accommodate planned growth along Platteville Boulevard and Dillon Drive west of I-25. The process was an interagency effort that included municipal officials, agency representatives, Colorado Department of Transportation (CDOT), and the Federal Highway Administration (FHWA); and shaped by input from citizens.

ALTERNATIVES DEVELOPMENT PROCESS

The alternatives development process evaluated interchange configuration, interstate access, and the connecting network of local streets. A public open house was held in December 2008 to introduce the purpose and need for the project, and a range of alternatives. A second open house was held in September 2009 to present five alternatives, the screening criteria, and the results of the alternatives screening.

Five alternative concepts for meeting the project purpose and need were developed and subjected to a screening process. Alternatives were evaluated with primarily qualitative measures based on field observations, modeling results, or professional judgment of the project's engineers and planners. Those alternatives which did not meet the project purpose and need, or did not sufficiently improve mobility, or which caused significant or unacceptable environmental impacts were eliminated from further consideration. This result of the screening process is identification of one alternative that will be evaluated in the environmental assessment (EA) document.

EVALUATION CRITERIA

The criteria used to screen alternative concepts pertained to improving mobility, design and construction, environmental resources, and community values. The criteria are listed in Exhibit 1.

EXHIBIT 1
Screening Criteria

| Criteria | Description |
|-------------------------|--|
| Mobility | <p>Does this accommodate existing and planned growth along Dillon Drive/Platteville Blvd? <i>Whether alternative accommodates planned growth west of the interstate by improving regional connectivity to the highway</i></p> <p>Does this provide logical system connectivity? <i>Whether alternative provides a good level of connectivity among I-25, Dillon Road, Elizabeth Street, Platteville Boulevard and Pace Road</i></p> <p>Does this improve residential and commercial access to and from I-25? <i>Whether alternative provides direct access to I-25 for residents and commercial businesses</i></p> <p>Does this maintain existing access to local businesses? <i>Whether alternative maintains access to commercial operations in the project area</i></p> |
| Design and Construction | <p>Does this meet interstate access requirements? <i>Whether alternative meets requirements for spacing of interchanges, traffic operations, and other elements</i></p> <p>Is this financially prudent? <i>Whether alternative's capital investment improves regional connectivity</i></p> <p>Can this be expanded to accommodate future improvements to I-25 and local streets? <i>Whether alternative precludes future infrastructure improvements</i></p> |
| Environmental Resources | <p>Can environmental impacts be avoided, reduced or mitigated? <i>Whether alternative causes significant adverse impacts to environmental resources</i></p> |
| Community Values | <p>Is this consistent with local plans? <i>Whether alternative meets local transportation and land use plans</i></p> |

RANGE OF ALTERNATIVES

Five alternative concepts for meeting the project purpose and need are described below and illustrated in Exhibit 4.

Alternative 1 - Full Diamond Interchange at Dillon Drive

This alternative consists of constructing a new, full diamond interchange at Dillon Drive. The frontage road west of I-25 between Dillon Drive and the Eden Interchange would be relocated to the west of the businesses. As part of this alternative, the existing Eden interchange would be removed to allow for sufficient interchange spacing along I-25.

Alternative 2 - Full Diamond at Eden Interchange

Under this alternative, the existing northbound and southbound ramps at the Eden Interchange would be lengthened to provide improved traffic flow. Currently, the existing

ramps are not long enough to allow heavy trucks and other large vehicles sufficient room to accelerate before merging into traffic. The existing ramps would be increased to meet current design criteria and standards. No other changes would be made to the interchange. The existing two-way frontage road west of I-25 would remain, and provide access to businesses and connect Dillon Drive with the Eden Interchange.

Alternative 3 - Split Diamond with Two-Way Frontage Road

This alternative consists of constructing a split diamond interchange at Dillon Drive and the Eden Interchange. The split diamond would require construction of a new bridge over I-25 at Dillon Drive and new on- and off-ramps to I-25 south of that bridge. The south ramps at the existing Eden Interchange would be removed. A two-way frontage road west of I-25 would connect the south half of the interchange at Dillon Drive with the north half at the Eden Interchange. Exhibit 3 illustrates the Proposed Action.

This alternative was modified in response to comments received from the public at the September 2009 open house. The modification is described in the "Preferred Alternative Refinement" section, below.

Alternative 4 - Split Diamond with One-Way Frontage Roads

This alternative consists of constructing a split diamond interchange at Dillon Drive and the Eden Interchange. The split diamond would require construction of a new bridge over I-25 at Dillon Drive and new on- and off-ramps to I-25 south of that bridge. The south ramps at the existing Eden Interchange would be removed. Whereas Alternative 3 includes a two-way frontage road west of I-25 and a one-way frontage road east of I-25, this alternative utilizes one-way frontage roads on both sides of I-25 to connect the split diamond. The west frontage road is an existing two-way road that would be re-striped; the east frontage road would be new construction.

Alternative 5 - No Action Alternative

Under the No Action Alternative, only maintenance and isolated safety-related repairs of the local roadway network and I-25 would occur. No improvements would be made to the Eden interchange, the mainline of I-25, or the local streets network.

SCREENING RESULTS

After conceptual alternatives were developed and refined they were compared relative to each other with the screening criteria. The results of the screening process are presented in Exhibit 2.

EXHIBIT 2
Screening Results

| Screening Criteria | Alternative 1 Full Diamond at Dillon Drive | Alternative 2 Full Diamond at Eden Interchange | Alternative 3 Split Diamond with Two-Way Frontage Road | Alternative 4 Split Diamond with One-Way Frontage Roads | Alternative 5 No Action |
|--|---|--|---|--|--|
| Mobility | | | | | |
| Does this accommodate existing and planned growth along Dillon Drive and Platteville Blvd? | <u>Yes</u> Provides direct access to I-25 and enables planned growth in project area. | <u>No</u> Does not improve or provide direct access to I-25 and fails to enable planned growth in project area. | <u>Yes</u> Provides direct access to I-25 and enables planned growth in project area. | <u>Yes</u> Provides direct access to I-25 and enables planned growth in project area. | <u>No</u> Does not improve or provide direct access to I-25 and fails to enable planned growth in project area. |
| Does this provide logical system connectivity? | <u>No</u> Removes access to I-25 at Eden. | <u>No</u> Does not eliminate out-of-direction travel between I-25 and Dillon. | <u>Yes</u> Maintains access to I-25 at Eden Interchange and provides new interstate access at Dillon, thereby eliminating out-of-direction travel between I-25 and Dillon Drive. | <u>Yes</u> Maintains access to I-25 at Eden and provides new access to I-25 at Dillon, thereby eliminating out-of-direction travel between I-25 and Dillon Drive. | <u>No</u> Does not eliminate out-of-direction travel between I-25 and Dillon Drive. |
| Does this improve residential and commercial accessibility to and from I-25? | <u>No</u> Provides direct access to I-25 from Dillon Drive, but requires out-of-direction travel to Eden Interchange east of I-25. | <u>No</u> Accessibility unchanged, requires out-of-direction travel from I-25 to Dillon Drive. | <u>Yes</u> Provides direct access to I-25 for traffic along Platteville Blvd and Dillon Drive. Requires out-of-direction travel to businesses east of I-25. | <u>Yes</u> Provides direct access to I-25 for traffic along Platteville Blvd and Dillon Drive. | <u>No</u> Accessibility unchanged, requires out-of-direction travel from I-25 to Dillon Drive. |
| Does this maintain existing access to local businesses? | <u>No</u> Relocates access to businesses along frontage road northwest of I-25/Dillon to west side of properties. | <u>Yes</u> Access unchanged. | <u>Yes</u> Minor changes to access to businesses along frontage road west of I-25. | <u>No</u> Reduces access to businesses west of I-25 by changing frontage road to one way. | <u>Yes</u> Access unchanged. |
| Design and Construction | | | | | |
| Does this meet interstate access requirements? | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> |

EXHIBIT 2
Screening Results

| Screening Criteria | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|--|--|--|--|--|
| | Full Diamond at Dillon Drive | Full Diamond at Eden Interchange | Split Diamond with Two-Way Frontage Road | Split Diamond with One-Way Frontage Roads | No Action |
| Is this financially prudent? | <u>No</u> Cost would not improve access. | <u>No</u> Cost would not improve access. | <u>Yes</u> Efficient use of funds. | <u>Yes</u> Efficient use of funds. | <u>Yes</u> Requires no funding. |
| Can this be expanded to accommodate future improvements to I-25 and local streets? | <u>Yes</u> I-25 can be widened to the inside, bridge accommodates future Dillon connection to the east. | <u>No</u> I-25 can be widened to the inside, does not accommodate future Dillon connection to the east. | <u>Yes</u> I-25 can be widened to the inside, bridge accommodates future Dillon connection to the east. | <u>Yes</u> I-25 can be widened to the inside, bridge accommodates future Dillon connection to the east. | <u>Yes</u> Does not preclude future improvements. |
| Environmental | | | | | |
| Can environmental impacts be avoided or mitigated? | <u>Yes</u> Requires the most property acquisition. Minor impacts to waters of the US. | <u>Yes</u> Requires the least amount of property acquisition among the build alternatives. | <u>Yes</u> Requires minor property acquisition. Minor impacts to waters of the US. | <u>Yes</u> Requires minor property acquisition. Minor impacts to drainageways. | <u>Yes</u> No environmental effects, though transportation network is not improved. |
| Community Values | | | | | |
| Is this consistent with local plans? i.e. 2035 Long Range Transportation Plan (2035 LRTP) | <u>No</u> 2035 LRTP shows access to I-25 at both Eden and Dillon. | <u>No</u> 2035 LRTP shows access to I-25 at both Eden and Dillon. | <u>Yes</u> 2035 LRTP shows access to I-25 at both Eden and Dillon. | <u>Yes</u> 2035 LRTP shows access to I-25 at both Eden and Dillon. | <u>No</u> 2035 LRTP shows access to I-25 at both Eden and Dillon. |

Alternative 1 - Full Diamond Interchange at Dillon Drive

This alternative reduces access to I-25 by removing the Eden interchange, performing worse than other alternatives in providing logical system connectivity. This alternative is not financially prudent, since the infrastructure investment fails to improve regional connectivity and interstate access. In addition, access to businesses along the existing frontage road west of I-25 would be moved to the west side of the properties to accommodate the relocated frontage road. Businesses located east of I-25 at the Eden Interchange would lose direct access to I-25 due to removing the existing Eden Interchange ramps, with future interstate access being provided at Dillon Drive via the relocated frontage road. This alternative also is inconsistent with the region's 2035 Long Range Transportation Plan. As a result, this alternative was eliminated from further consideration.

Alternative 2 - Full Diamond at Eden Interchange

A Full Diamond at Eden does not accommodate planned growth along Dillon Drive because it fails to provide direct and more efficient access to I-25. For the same reason, this alternative does not improve access to I-25 for residential and commercial purposes. This alternative is not financially prudent, since the infrastructure investment fails to improve regional connectivity and interstate access. This alternative also is inconsistent with the region's 2035 Long Range Transportation Plan. As a result, this alternative was eliminated from further consideration.

Alternative 3 - Split Diamond with Two-Way Frontage Road

This alternative satisfies the purpose and need of the project because it provides a direct and efficient connection to I-25 for the quickly developing area along Dillon Drive, thereby improving connectivity and traffic flow west of I-25. This alternative improves regional mobility at a reasonable cost, relative to other alternatives. The alternative also is consistent with local plans.

Alternative 4 - Split Diamond with One-Way Frontage Roads

While this alternative satisfies the project purpose and need, the one-way direction of the west frontage road limits access and requires out-of-direction travel for access to businesses west of the frontage road. As a result, this alternative was eliminated from further consideration.

Alternative 5 - No Action Alternative

The No Action Alternative would not improve traffic operations of the study area since it would not improve access to I-25. The Eagleridge and Eden Interchanges would continue to provide the only access to I-25 for businesses and traffic along Dillon Drive. The No Action Alternative does not meet the purpose and need for the project and is eliminated from further consideration.

The No Action Alternative will be retained in the EA document as a basis for comparing environmental impacts of the Proposed Action.

PREFERRED ALTERNATIVE SELECTION

Based on the results of the screening process, *Alternative 3 - Split Diamond with Two-Way Frontage Road* is the preferred alternative that will be carried forward for evaluation in the EA document.

Preferred Alternative Refinement

The initial concept design of the Preferred Alternative was presented to the public at an open house in September 2009. In the initial design, the Split Diamond with Two-Way Frontage Road included a two-way frontage road west of I-25, and no connection east of I-25 between the north and south halves of the split diamond interchange. A number of comments were made by business and property owners expressing concern about the problems this configuration would cause for the increased number of turn movements by

heavy trucks traveling northbound between the interstate and businesses east of the Eden interchange.

As a result, the concept design was refined to include a one-way, northbound ramp on the east side of I-25. This change provides ease of movement for northbound travelers via the proposed Dillon Drive Interchange and for southbound travelers via the Eden Interchange. The Preferred Alternative is shown as Exhibit 3.

REFERENCES

Colorado Department of Transportation (CDOT), 1999. *Preferred Alternative, Eden Interchange/Pueblo Boulevard Feasibility Study*. December.

Pueblo Area Council of Governments (PACOG), 2008. *2035 Long Range Transportation Plan*. January 24.

Pueblo Area Council of Governments (PACOG), 2001. *Pueblo's Regional Development Plan*. September 11.

EXHIBIT 3
Preferred Alternative



EXHIBIT 4
Alternatives Considered

