CHAPTER 2
Description of the Build Alternative

The Build Alternative will replace the existing US 6/Wadsworth interchange and widen Wadsworth between 4th and 14th Avenues. The existing cloverleaf will be replaced with a tight diamond with loop design, consisting of a diamond interchange with a loop ramp in the northwest quadrant. Exhibit 2-1 illustrates the operation of the new interchange. The structurally deficient bridge over Wadsworth will be replaced, and all entrance and exit ramps will be lengthened. Along Wadsworth, the Build Alternative will add a travel lane in each direction and a multi-use sidewalk on both sides of Wadsworth. A raised median will be added to the center of the roadway to direct left turns and U-turns. The typical cross-section for Wadsworth under the Build Alternative is shown in Exhibit 2-2.

2.1 ELEMENTS OF THE BUILD ALTERNATIVE

The section below discusses the primary elements of the Build Alternative design: traffic operations, pedestrian and bicycle facilities, transit operations, drainage and water quality treatment, bridge structures, and noise walls.

2.1.1 TRAFFIC OPERATIONS

The tight diamond with loop configuration of the interchange will improve operational efficiency of the interchange, provide better interchange capacity, address safety needs, and support multi-modal connections in the project area. Three of the interchange ramps will operate as intersections with Wadsworth. The loop ramp in the northwest quadrant of the interchange will allow traffic traveling west on US 6 to exit to southbound Wadsworth without stopping at a signal or yielding to through traffic. All of the ramps in the interchange area will be lengthened to provide adequate acceleration and deceleration distances for vehicles entering and exiting US 6. Merging conflicts between traffic entering and exiting US 6 will be eliminated.

US 6 will remain a six-lane freeway corridor. The existing on-/off-ramps at Carr and Garrison Streets will remain, but auxiliary lanes will be added between those ramps and the west Wadsworth on-/off-ramps to provide safer weaving distances between the two sets of ramps.

Improvements to Wadsworth between 4th and 14th Avenues will improve operational efficiency, meet current and future traffic demands, address safety needs, and support multi-modal connections along Wadsworth. The Build Alternative will feature an additional travel lane in each direction, a raised median, and a multi-use sidewalk on both sides of Wadsworth. The additional travel lanes will reduce congestion for vehicles traveling through the study area. The median will direct left turns and U-turns to intersections with cross streets and prevent mid-block turns. By limiting left turns to and from cross streets, there will be fewer locations along Wadsworth where left-turning vehicles conflict with through-traffic or pedestrians/bicyclists. In addition, an Access Management Plan will be developed and implemented to consolidate driveways, limit the number of locations where cars enter Wadsworth to improve traffic operations, and address safety needs along Wadsworth

Exhibit 2-1: Build Alternative – US 6 and Wadsworth Boulevard Interchange

Northwest Quadrant

Interchange

1. Reconstructed loop off-ramp from westbound US 6 to southbound Wadsworth.
2. A grade-separated or at-grade pedestrian crossing at on-ramp and loop ramp will be determined at final design.
3. New longer on-ramp from northbound and southbound Wadsworth to westbound US 6 provides adequate acceleration and merge distances for vehicles entering US 6.
4. Continuous lane on US 6 between on-ramp and Carr St. off-ramp provides safer merging conditions.

Frontage Road

5. Frontage road access is shifted north and changed to two-way traffic between the 6th Ave. Business Center and Wadsworth.
6. Channel improvements to Lakewood Gulch to reduce floodplain.

Northeast Quadrant

Interchange

10. New longer off-ramp from westbound US 6 to northbound Wadsworth provides adequate deceleration and vehicle queue distances for vehicles accessing Wadsworth. Free flow movement onto Wadsworth.

Frontage Road

11. Frontage road is reconfigured to provide access directly to Wadsworth. Provides two-way operation that reduces neighborhood cut-through traffic.
12. New noise walls next to the frontage road.

Southwest Quadrant

Interchange

7. Continuous lane on US 6 between Carr St. on-ramp and Wadsworth off-ramp provides safer merging conditions.
8. New longer off-ramp from eastbound US 6 to northbound and southbound Wadsworth feeds into a multi-lane intersection that accommodates expected vehicle queues. Exiting vehicles wanting to travel east at the 5th Ave. intersection utilize the signalized intersection to make a hard right and vehicles destined farther south can use the adjacent right-turn yield lane to merge onto southbound Wadsworth.

Frontage Road

9. Frontage road remains one-way and continues to connect to 5th Ave. at Yukon St.

Southeast Quadrant

Interchange

13. New longer on-ramp from northbound and southbound Wadsworth to eastbound US 6 provides adequate acceleration and merge distance for vehicles entering US 6.

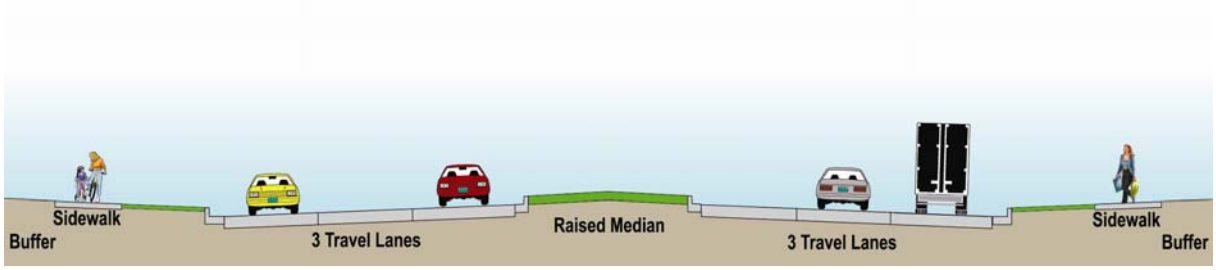
Frontage Road

14. Frontage road remains two-way and connects to 5th Ave. on Vance St. instead of Webster St.

Project Wide

15. New noise walls between the frontage roads and US 6, west of Wadsworth.
16. Detached multi-use sidewalk along both sides of Wadsworth.

Exhibit 2-2: Build Alternative – Wadsworth Boulevard Typical Cross-Section



2.1.2 PEDESTRIAN AND BICYCLE FACILITIES

The Build Alternative includes continuous 8-foot sidewalks on both sides of Wadsworth between 4th and 14th Avenues. Sidewalks will be separated from the road in most places by a 10-foot buffer. The Lakewood Gulch box culvert at 8th Avenue will be reconstructed and replaced with a wider structure that will include accommodations for a pedestrian/bicycle crossing. The new box culvert will provide an opportunity for a future east-west pedestrian and bicycle crossing between 5th and 10th Avenues (although connections between the box culvert and the paths along Wadsworth would need to be constructed by others).

The Build Alternative will provide new sidewalks on both sides of Wadsworth through the interchange area. Although the crossing will be greatly improved from the existing condition, free-flow ramp crossings and the loop ramp crossing still present challenges for pedestrians and bicycles. Additional mitigation measures will be considered during final design to improve the visibility and safety of free-flow ramp crossings, as described in Appendix B, Mitigation Commitments. An underpass of the loop ramp in the northwest quadrant will also be further evaluated in final design.

2.1.3 TRANSIT OPERATIONS

New sidewalks on each side of Wadsworth will improve access to and the condition of bus stops, improving connections to bus service on Wadsworth. Increased capacity on Wadsworth will improve bus operations on Wadsworth by accommodating the planned increase in bus frequency, improving the timeliness of bus service, and facilitating timely transfers between buses and light rail transit (LRT). The bridge on US 6 over Wadsworth will be long enough to accommodate future transit options on Wadsworth, such as a dedicated LRT or street car, without the need for reconstruction.

2.1.4 DRAINAGE AND WATER QUALITY TREATMENT

McIntyre, Lakewood, and Dry Gulches will be widened and realigned at their crossings with US 6 and Wadsworth to remove the roadways from the floodplains and improve drainage. The Build Alternative will also include water quality basins to treat stormwater runoff and comply with federal and state water quality regulations. Approximately seven basins will be located in the study area. Locations, sizes, and configurations of planned basins were designed to minimize property acquisition and take advantage of property remnants that would result from the right-of-way acquisition process. The basins will be adequately sized to filter roadway runoff from existing and expanded paved areas. In some cases, the water quality basins will also treat stormwater from non-roadway development that enters the roadways. The basins will typically be dry except during and shortly after storm events.

2.1.5 BRIDGE STRUCTURES

The US 6 bridge over Wadsworth will be replaced, addressing the structural deficiency of the bridge deck.

The bridge span will be long enough to accommodate future transit options on Wadsworth.

2.1.6 NOISE WALLS

Noise walls will be installed between US 6 and its frontage roads from the interchange west to near Garrison Street. Approximately 1,500 linear feet of noise walls are included on the north side of US 6, and approximately 1,700 linear feet of noise walls are included on the south side of US 6, between Wadsworth and Garrison Street. As noted in Appendix B, Mitigation Commitments, final height, design, and configuration of noise barriers will be confirmed in final design. Planned noise walls along US 6 would be approximately 15 feet high. Noise barriers also will extend along the reconstructed frontage road in the northeast quadrant of the interchange; these barriers will be approximately 10 feet high. Existing walls east of Wadsworth, and within the limits of the proposed improvements disturbed during construction, would be reconstructed and extended farther west toward Wadsworth to improve noise mitigation for residents in the interchange area. The reconstructed walls would be approximately 15 feet high, which is taller than the existing walls.

2.2 FUNDING PLAN AND PROJECT COMPLETION SCHEDULE

The US 6/Wadsworth project is included in the Denver Regional Council of Government's (DRCOG's) 2035 Metro Vision Regional Transportation Plan (DRCOG, 2007). Approximately $81 million (in adjusted 2010 dollars) has been identified for this project in the fiscally constrained plan. Due to declining tax revenue and the current economic downturn, CDOT has not set the schedule for design, ROW acquisition, or construction at this time. Completion of the EA and the signing of the FONSI will allow CDOT to pursue funding for the implementation phases of the project.