



“MODIFIED” COMBINED ALTERNATIVE

MERGED AND PACKAGED REGIONAL ARTERIAL/TOLLWAY ALTERNATIVE ON THE “B” ALIGNMENT (US 6/SH 93) WITH A PRINCIPAL ARTERIAL ON THE “C” ALIGNMENT (INDIANA STREET/MCINTYRE STREET) GENERAL DESCRIPTION

This alternative is a merged and packaged alternative bringing together three differing classifications of roadways into one alternative. The Regional Arterial Alternative is merged with the Tollway Alternative to form a major regional arterial on the south end of the “B” alignment (US 6/SH 93), a short transition section south of 64th Parkway, a tollway north to SH 128, and a major regional arterial through the Interlocken area connecting with the Northwest Parkway. This is packaged with a principal arterial on the “C” alignment (Indiana Street/McIntyre Street).

As a result there is a major regional arterial through Golden with a mixture of interchanges and signalized intersections providing limited access. From C-470 to Washington Avenue, opposing lanes are separated by a 2 foot wide median barrier. From Washington Avenue north to Golden Gate Canyon Road, the median transitions to a wider grassed depressed median. This grassed depressed median continues along the major regional arterial alignment to the north. The major regional arterial portion consists of six through lanes with an overall width of 122 feet from edge of outside shoulder to edge of outside shoulder where the median barrier is utilized and 144 feet where the grassed depressed median is utilized. Most of the right-of-way is fenced to keep unauthorized ingress and egress from occurring.

The roadway classification between the transition south of 64th Parkway and SH 128 is a tollway. The tollway portion is a high speed facility that is fully access controlled with the use of interchanges at crossroads. The tollway portion consists of four tolled lanes placed to ensure that no general purpose lanes are impacted by the tollway foot print. Opposing lanes on the tollway are separated by a grassed depressed median. The tollway portion has an overall width of 144 feet from edge of outside shoulder to edge of outside shoulder. Most of the right-of-way is fenced to keep unauthorized ingress and egress from occurring.

From SH 128 to the Northwest Parkway, the alignment follows Interlocken Loop and is again classified as a major regional arterial. The existing Interlocken Loop will be improved from a four lane section to a six lane section and will connect directly to the Northwest Parkway at 96th Street. Most of this section is in a commercial district with various retail outlets so fencing is not necessary in most areas. Fencing may be utilized to the north of US 36 where there are no retail outlets.

The principal arterial portion of the alternative is located along Indiana Street and McIntyre Street and is a facility with a lesser standard of access control. Opposing lanes are separated by a raised curb and gutter median. The principal arterial consists of four through lanes, an on-street bike lane and detached sidewalks with an overall width that varies from 109 to 145 feet from edge of sidewalk to edge of sidewalk. The principal arterial traverses the study area from 3,000 feet south of SH 58 on McIntyre Street to 6,000 feet north of SH 72 on Indiana Street. Most of the right-of-way is fenced to keep unauthorized ingress and egress from occurring.

The alternative is broken into 4 portions. The **South Portion** is from the C-470 ramps at US 6 (Sta 0+00 Freeway) to a mile north of 64th Parkway (Sta 450+00). The **Central Portion** is from this point (Sta 450+00) to 4,200 feet south of SH 128 (Sta 805+00). The **North Portion** is from south of SH 128 (Sta 805+00) to the Northwest Parkway (Sta 1070+00) 7,000 feet north of its crossing with US 36. The **Indiana/McIntyre Portion** is from the Indiana Street Connection interchange with the main alignment south down Indiana and McIntyre Streets to 3,000 feet past SH 58 (see **Figure 2.6-7**).

SOUTH PORTION

From C-470 to Washington Avenue, this portion has six-12 foot through lanes, 12 foot inside shoulders and 12 foot outside shoulders. Retaining walls are provided on both sides of the alignment at the edge of the



outside shoulders. The area between the inside shoulders is a 2 foot median barrier to separate traffic. The two 12 foot inside shoulders added to the 2 foot median barrier account for a 26 foot wide median. From Washington Avenue to the north on the major regional arterial, this portion has six-12 foot through lanes, 10 foot inside shoulders and 12 foot outside shoulders. The area between the inside shoulders is grassed depressed at six to one for 14 feet either side of the centerline for a total grass width of 28 feet. The two 10 foot inside shoulders added to the 28 foot width depressed grass area account for a 48 foot wide median. Cut and fill slopes are generally four to one.

The C-470 ramps are two lane ramps that connect with the existing four lanes of US 6 at the present location of the C-470/US 6 interchange. By combining the four lanes of the ramps and the four lanes of US 6, there are eight lanes between the C-470 ramps and the ramps at the Heritage/10th Avenue interchange. The outside lanes in each direction are utilized as auxiliary lanes between the two interchanges.

From the Heritage Road/10th Avenue interchange the mainline alignment generally follows the existing alignment of US 6 and consists of six through lanes plus auxiliary lanes. Between the Heritage Road interchange and the 19th Street interchange, there is a continuous northbound acceleration/deceleration lane between the ramps. At the present intersection of US 6/ SH 58/ SH 93 the six lane alignment continues north generally along the existing SH 93 alignment. Fifteen hundred feet south of the existing Golden Gate Canyon Road intersection with existing SH 93, the six lane Regional Arterial Alternative alignment splits to the west from existing SH 93 on a more northerly course on a new alignment through the industrial park, then connects back with the SH 93 existing alignment about 2,000 feet south of 56th Avenue. The Regional Arterial Alternative alignment transitions to the Tollway Alternative alignment just south of 64th Avenue, then shifts to the west of the existing SH 93/64th Parkway intersection. After this transition, the existing alignment of SH 93 is maintained to the north. Ramps are provided to connect the Regional Arterial Alternative alignment to SH 93 as the facility transitions from a major regional arterial to a tollway. The tollway has four 12 foot through lanes, 8 foot inside shoulders and 12 foot outside shoulders. The area between the inside shoulders is grassed and is depressed at six to one for 28 feet either side of the center line for a total grass width of 56 feet. The two 8 foot inside shoulders added to the 56 foot width depressed grass area account for a 72 foot wide median. The alignment continues north along the west side of SH 93 up to the interchange with SH 93.

CENTRAL PORTION

At the beginning of this portion, an interchange will be constructed where the Tollway Alternative alignment diverges from the existing SH 93 alignment and heads in a northeasterly direction. Movements to and from SH 93 will be provided at this interchange allowing access to Boulder. The four lane Tollway Alternative mainline crosses Leyden Gulch a mile and a half west of the town of Leyden. The alignment continues northeast and crosses SH 72 a mile and a half west of Indiana Street, curves around the Welton Reservoir, and then curves north parallel to Indiana Street 7,000 feet north of 86th Parkway at the Rocky Flats Wildlife Refuge southern boundary. The Tollway Alternative alignment continues north parallel to Indiana Street utilizing the 300 foot buffer on the east side of the Rocky Flats Wildlife Refuge to Sta 805+00, 4,200 feet south of SH 128. Indiana Street is maintained as it is today on the east side of the alignment.

NORTH PORTION

This portion of the Tollway Alternative alignment is a four through lane section from the point 4,200 feet south of SH 128 parallel to Indiana Street to a new interchange connection with SH 128. To the north of the SH 128 interchange, the alignment once again becomes a major regional arterial utilizing the existing Interlocken Loop arterial. Interlocken Loop will be improved to six lanes from four lanes and will connect directly with the Northwest Parkway at 96th Street. The new Interlocken Loop configuration will include six 11 foot through lanes, 10 foot outside shoulders and 6 foot bike lanes. A 28 foot raised median will also be utilized through this portion as well as curb and gutter. All of the existing accesses along Interlocken Loop will be maintained including ramp access to US 36.



INDIANA/MCINTYRE PORTION

The section for the Principal Arterial alignment contains four 11 foot through lanes, two five foot bike lanes, two 6.5 foot detached sidewalks and a 17-28 foot raised median. The total width from point of slope selection is 123 feet to 134 feet within a 150 foot ROW. Cut and fill slopes are generally four to one. Turn lanes are provided at the major cross street intersections to accommodate the required turning movements.

The Principal Arterial alignment begins 3,000 feet south of the SH 58 Interchange on McIntyre Street and matches the two lane typical section on existing McIntyre Street. From this point the section tapers into a four lane section with a raised median, bike paths and detached sidewalks.

As the Principal Arterial alignment approaches the SH 58 interchange, the median tapers from 17 feet to 33 feet to accommodate three turn lanes on the bridge over SH 58. The median tapers back to 17 feet north of the SH 58 interchange.

The Principal Arterial alignment swings to the east at 50th Avenue to avoid the historical site located at the northwest corner of McIntyre and 50th Avenue. The alignment swings back to the west and is on the existing roadway alignment at 52nd Avenue.

As the Principal Arterial alignment approaches 64th Avenue, it follows the existing roadway around the south and east side of the King Sooper's shopping center. The median tapers from 17 feet to 28 feet to accommodate double left turn lanes at 64th Parkway.

North of 64th Avenue, the Principal Arterial alignment continues to the north along the west side of Sunstrand. Once north of Sunstrand, the alignment curves to the east along the north side of Sunstrand and ties back into Indiana Street just south of the Jefferson County School Bus Facility.

The Principal Arterial alignment then generally follows the existing Indiana alignment to the north with a shift to the east near 72nd Avenue to avoid the Croke Canal and a shift to the west at Sta 255+00 to avoid the historical church that is now a photo studio. A shift to the west begins at 76th Drive to avoid the historic Pearce Grocery store located at Sta 280+00. The Principal Arterial alignment then swings back to the existing alignment just south of Leyden Road.

The alignment swings to the west approximately 3,000 feet north of 86th Parkway to tie into the Tollway Alternative alignment at a new interchange called the Indiana Street Connection.

ACCESS CONTROL AND CROSS STREETS

The access control for the Regional Arterial Alternative is through interchanges, intersections and driveways. In some areas frontage roads are provided to minimize the number of driveway access points. This allows existing access points to be maintained and in some cases consolidated into one access point. The access control for the Tollway Alternative is strictly through interchanges at major crossroads. The access control for the Principal Arterial is through both intersections and driveways. The Principal Arterial has very few limitations on access and maintains most existing accesses. The following discusses the cross streets and interchange locations and how each interfaces with the Combined Alternative alignment.

SOUTH PORTION

C-470/ US 6

The C-470 ramps are two lane ramps that connect with the existing four lanes of US 6 at the present location of the C-470/US 6 interchange. This interchange remains but is modified by combining the four lanes of the ramps and the four lanes of US 6 to create eight lanes between the C-470 ramps and the ramps at the Heritage Road/10th Avenue interchange. The outside lanes are utilized as auxiliary lanes between the two interchanges. The three inside lanes in each direction (six in total) would continue north. Heading southeast on US 6, the four lanes of US 6 remain by having lane drops and additions at the C-470 connection.



Heritage Road/10th Avenue

The existing signalized Heritage Road/10th Avenue intersection would be converted to a single point urban interchange with the Regional Arterial Alternative mainline crossing under Heritage Road/10th Avenue. Double left turning movements are provided at the cross street with single lane merge and diverge ramps at the mainline. The four lane existing cross street is improved to just past the radius return at the ramps. A large rectangular structure is provided over the mainline so that adequate room is available for sight distance and other amenities.

19th Street

The existing signalized 19th Street intersection would be converted to a single point urban interchange with the Regional Arterial Alternative mainline crossing under 19th Street. Single left turning movements are provided at the cross street with single lane merge and diverge ramps at the mainline. The two lane existing cross street is improved to five hundred feet east and west of the major regional arterial. A large rectangular structure is provided over the mainline so that adequate room is available for sight distance and other amenities.

US 6/SH 58/ SH 93

The existing US 6/ SH 58/ SH93 signalized intersection would be converted to a single point urban interchange with the Regional Arterial Alternative mainline crossing over SH 58/US 6. Double left turning movements are provided at the cross street with single lane merge and diverge ramps at the mainline. The four lane existing cross street is improved to approximately five hundred feet east and one thousand west of the mainline freeway. The structure over the cross street is fairly long as it also crosses over Clear Creek. Extensive retaining walls are provided on either side of the structure. The retaining walls continue to the north as the mainline section is in a fill to pass over Iowa Street. US 6 will narrow to two lanes to the west of the interchange to match up with the existing two lane section.

Iowa Street

The Regional Arterial Alternative mainline passes over the existing profile of Iowa Street with no access connection. In doing this the Regional Arterial Alternative mainline contains large fill walls on either side of the alignment. Iowa Street is reconstructed 100 feet west and 400 feet east to smooth out the existing profile along Iowa.

Washington Avenue

The Regional Arterial Alternative mainline would intersect Washington Avenue providing a full movement signalized intersection. Washington Avenue would remain a two lane section and would be reconstructed approximately 200 feet east and west of the intersection.

Golden Gate Canyon Road

The existing Golden Gate Canyon Road intersection would be relocated approximately 600 feet to the west where the Regional Arterial Alternative mainline crosses existing Golden Gate Canyon Road. A full movement signalized intersection would provide access from the Regional Arterial Alternative mainline alignment to Golden Gate Canyon Road. Golden Gate Canyon Road would remain a two lane section and would be reconstructed approximately 600 feet east and west on the new intersection. A frontage road along the west side of the Regional Arterial Alternative alignment would connect Pine Ridge Road with Golden Gate Canyon Road. This new intersection will also provide access to the existing SH 93 alignment which is located to the east of the Regional Arterial Alternative alignment.

SH 93

A full movement signalized intersection would connect the Regional Arterial Alternative mainline alignment with existing SH 93. This intersection would be located approximately 500 feet south of the point where the Regional Arterial Alternative mainline alignment begins following the existing SH 93 alignment north of Golden. Existing SH 93 would remain a two lane section and would be reconstructed approximately 700 feet south of the intersection. To the north of this intersection, the Regional Arterial Alternative alignment will follow the existing SH 93 alignment.



56th Avenue

The existing intersection with 56th Avenue and SH 93 would be removed. Access to 56th Avenue to the west would be provided via a frontage road to be constructed adjacent to the alignment on the west and access to 56th Avenue to the east would be provided via Van Bibber Drive to be constructed to the east of the alignment.

58th Avenue

The existing signalized “T” intersection would be replaced with a full movement four leg signalized intersection. The west leg of this intersection would connect to the frontage road from 56th Avenue. 58th Avenue would remain a two lane facility and would be reconstructed approximately 300 feet east of the intersection.

Tollway/Major Regional Arterial Transition

A “Y” configured interchange will be provided at the tollway connection, just north of 58th Avenue with existing SH 93. The Regional Arterial Alternative alignment northbound will allow vehicles to continue north on the tollway or on existing SH 93. Southbound SH 93 and the tollway will merge into the southbound Regional Arterial Alternative alignment.

64th Parkway

The Existing signalized 64th Parkway intersection would be converted to a single point urban interchange with the Tollway Alternative mainline over the cross street. Double left turning movements are provided at the cross street with single lane merge and diverge ramps at the mainline. The four lane existing cross street is improved to one hundred feet east and two hundred feet west of the mainline tollway. Existing SH 93 is maintained in its current location.

CENTRAL PORTION

SH 93 Interchange

This interchange provides access to and from SH 93. SH 93 will not be relocated and will provide access to and from Boulder. The interchange includes a flyover ramp and a loop ramp.

Leyden Road Crossing

The Tollway Alternative mainline crosses over Leyden Creek and Leyden Road with two parallel 1,100 foot structures. The heights of the structures over Leyden Road are 88 feet due to the large hills north and south of Leyden Road.

SH 72

The Tollway Alternative mainline interchanges with relocated SH 72 using a diamond interchange. The Tollway Alternative mainline crosses under SH 72. The alignment of relocated SH 72 is curved and bowed out to the north to allow the south ramps to get clearance under the UPRR tracks along with the mainline. All movements are single lane connecting the mainline to SH 72 using merge and diverge ramps.

Indiana Street Connection

Indiana Street is connected to the Tollway Alternative alignment by a new four lane connector street to the west that interchanges with Tollway Alternative using a diamond interchange with single lane merge and diverge ramps. The Tollway Alternative mainline crosses over the connector street.

NORTH PORTION

Eldorado Boulevard Extension

Future Eldorado Boulevard would connect with the Tollway Alternative mainline with a diamond interchange. The Tollway Alternative mainline crosses over the future cross street with single lane merge and diverge ramps connecting to the mainline.

SH 128

SH 128 will be re-aligned and a single point urban interchange will be constructed with the mainline passing under SH 128. Single lane left turning movements are provided at the cross street with single lane merge and diverge ramps at the mainline. The alignment to the north of the interchange will be a six lane major regional



arterial following Interlocken Loop and the alignment to the south of the interchange will be a four lane tollway. Lane drops will be made at the interchange to transition from the six lane major regional arterial to the four lane tollway.

Eldorado Boulevard (at Interlocken Loop)

The existing signalized intersection would remain with the addition of two outside lanes on the Regional Arterial Alternative mainline.

Flatiron Boulevard

The existing intersection would remain with the addition of two outside lanes on the Regional Arterial Alternative mainline.

Interlocken Boulevard

The existing signalized intersection would remain with the addition of two outside lanes on the Regional Arterial Alternative mainline.

US 36 Ramps

The existing signalized intersections would remain with the addition of two outside lanes on the Regional Arterial Alternative mainline.

Tape Drive

The existing signalized intersection would remain with the addition of two outside lanes on the Regional Arterial Alternative mainline.

96th Street

The existing signalized intersection would remain. The additional two outside lanes on the Regional Arterial Alternative mainline would be dropped or added at this intersection.

Northwest Parkway

The Regional Arterial Alternative mainline connects directly with the four lanes of the Northwest Parkway.

INDIANA/MCINTYRE PORTION

SH 58

The SH 58 interchange would remain in its current location. Additional left turn lanes would be added on the Principal Arterial alignment as appropriate at this interchange. The existing signalized intersections at the ramp terminals would remain signalized intersections.

44th Avenue

The intersection with the Principal Arterial mainline and 44th Avenue would remain signalized. 44th Avenue would be reconstructed approximately 200 feet to the west and 125 feet to the east of the Principal Arterial alignment.

48th Avenue

The 48th Avenue intersection would be located approximately 150 feet south of the existing intersection. The new intersection would line up with the access to the Coors facility to the west of the Principal Arterial alignment. 48th Avenue would be reconstructed approximately 500 feet to the east of the Principal Arterial alignment.

50th Avenue

The 50th Avenue intersection would be located approximately 100 feet east of the existing intersection. This relocation is necessary due to the re-alignment of the Principal Arterial alignment to avoid impacting the historical site at the northwest corner of 50th Avenue and McIntyre Street. 50th Avenue would be reconstructed approximately 150 feet to the west of the Principal Arterial alignment.

52nd Avenue

The 52nd Avenue intersection would remain a “T” intersection similar to the existing intersection. 52nd Avenue would be reconstructed approximately 125 feet to the east of the Principal Arterial alignment.



52nd Drive

The 52nd Drive intersection would remain a “T” intersection similar to the existing intersection. 52nd Drive would be reconstructed approximately 125 feet to the west of the Principal Arterial alignment.

54th Avenue

The 54th Avenue intersection would remain a “T” intersection similar to the existing intersection. 54th Avenue would be reconstructed approximately 100 feet to the west of the Principal Arterial alignment.

56th Place

The 56th Place intersection would remain a “T” intersection similar to the existing intersection. 56th Place would be reconstructed approximately 100 feet to the west of the Principal Arterial alignment.

56th Avenue

The 56th Avenue intersection would become a “T” intersection. The driveway to the east would be relocated 300 feet north to combine two access points. 56th Avenue would be reconstructed approximately 100 feet to the west of the Principal Arterial alignment.

64th Avenue

The 64th Avenue intersection would remain a signalized intersection. The north leg of the intersection would be reconstructed to accommodate the re-alignment for the Principal Arterial alignment along the west side of Sunstrand. 64th Avenue would be reconstructed approximately 100 feet to the east and west of the Principal Arterial alignment.

Indiana Street (south)

As the Principal Arterial alignment swings to the east to follow Indiana Street, a new full movement intersection would be provided approximately 1,400 feet north of the existing 64th Avenue and Indiana Street intersection. This new intersection would provide access to the businesses located at the northeast corner of 64th and Indiana Street. It would also provide access to the Jefferson County Bus Facility. The new connector street would be approximately 250 feet in length on the north and south sides of the Principal Arterial alignment.

72nd Avenue

The existing signalized intersection would be relocated approximately 50 feet to the east to accommodate the slight alignment shift in the Principal Arterial alignment. 72nd Avenue would be reconstructed approximately 100 feet to the east and west of the Principal Arterial alignment.

76th Drive

The 76th Drive intersection would remain a “T” intersection similar to the existing intersection. 76th Drive would be reconstructed approximately 125 feet to the west of the Principal Arterial alignment.

77th Drive

The 77th Drive intersection would remain a “T” intersection similar to the existing intersection. 77th Drive would be reconstructed approximately 250 feet to the west of the Principal Arterial alignment.

Leyden Road

The existing signalized intersection would be relocated approximately 50 feet to the west to accommodate the slight alignment shift in the Principal Arterial alignment. Leyden Road would be reconstructed approximately 100 feet to the west and 125 feet to the east of the Principal Arterial alignment.

82nd Avenue

The 82nd Avenue intersection would remain a “T” intersection similar to the existing intersection. 82nd Avenue would be reconstructed approximately 150 feet to the east of the Principal Arterial alignment.

86th Parkway

The existing signalized intersection would remain with some adjustments to accommodate the additional lanes on the Principal Arterial mainline. 86th Parkway would be reconstructed approximately 225 feet to the west and 200 feet to the east of the Principal Arterial alignment.



Indiana Street (north)

As the Principal Arterial alignment swings to the west to tie into the Tollway Alternative alignment, a new “T” intersection would be provided approximately 3,500 feet north of the 86th Parkway and Indiana Street intersection. This new intersection would provide access to Indiana Street to the north. The new connector street would be approximately 600 feet in length to the north.

TOLLWAY ALTERNATIVE INTERCHANGE

As the Principal Arterial alignment swings to the west from Indiana Street, a new diamond interchange would be provided with the Tollway Alternative alignment.

MAJOR CROSSING STRUCTURES

Along the Combined Alternative alignment there are several major drainage and wildlife crossings that are included. Each location is described below as to the amount of grade separation, the type, and the clearance available at the crossing.

SOUTH PORTION

Kinney Run

Kinney Run crosses the Regional Arterial Alternative mainline just north of Heritage Road from the west to the east. It presently has a trail associated with the crossing. The proposed improvements would include a new 300 foot bridge structure to open the area up and allow for the pedestrian crossing. A ten foot clearance would be maintained for the pedestrian crossing. This would also allow for small animals to cross from the open areas on the west and east. The Kinney Run tributary to the north would be conveyed in a medium size box culvert.

Clear Creek

Clear Creek has a peak discharge of 12,400 cfs for the 100 year storm event. The Regional Arterial Alternative mainline crosses Clear Creek with a 950 foot long bridge. Spans are such that piers would not encroach into the creek channel. The bridge length is required to span the creek, trails, and the highway below (SH 58/US 6). Tight weave chain link fence would be installed on top of the guard rail to protect the water supply below as well as the trail and highway from plowed snow. The south ramps for the interchange would also have bridges over Clear Creek but would only span the creek and the trail. The condominiums on the south and west side of the interchange would have their access closed on US 6 so new access would be provided off of the west leg of US 6 to the west of the interchange. The new access would require a bridge over Clear Creek to the west of the interchange.

Tucker Gulch

Tucker Gulch crosses the Regional Arterial Alternative mainline just south of Golden Gate Canyon Road. A double cell concrete box culvert would convey the flows from the west to the east. The profile of the Regional Arterial Alternative mainline is approximately 22 feet above the invert of Tucker Gulch.

Cressman’s Gulch

Cressman’s Gulch crosses the Regional Arterial Alternative mainline just north of Pine Ridge Road. A double cell concrete box culvert would convey the flows from the west to the east. The profile of the Regional Arterial Alternative mainline is approximately 24 feet above the invert of Cressman’s Gulch.

Van Bibber Creek

Van Bibber Creek has a peak 100 year storm discharge of 1,570 cfs. Van Bibber Creek crosses the Regional Arterial Alternative mainline just north of 58th Avenue. A double cell concrete box culvert would convey the flows from the west to the east. The profile of the Regional Arterial Alternative mainline is approximately 15 feet above the invert of Van Bibber Creek.

CENTRAL PORTION

Ralston Creek

The Tollway Alternative footprint along with existing SH 93 crosses Ralston Creek approximately 4,400 ft north of 64th Parkway which is sited at Sta 440+00. This drainage way presents unique conditions in that the



topography dictates a very long structure to balance the cuts, fills and length of bridge. It also provides for the wildlife crossing demands. The existing culvert underneath current SH 93 is being kept in place and would be supplemented with a new bridge at this location to allow for wildlife crossing and any major flood event to overflow into the reservoir. Ralston Creek conveys 5,000 cfs per second for the 100 year storm peak discharge.

Leyden Gulch

Two 1,200 foot bridge structures for the Tollway Alternative Alignment near Sta 530+00 (approximately a mile and a half northeast of SH 93) provides for the crossing of the Leyden Gulch Water Way, Leyden Gulch Wildlife Crossing and Leyden Road. Due to the steep topography and grade differences at this crossing, the long span provides for better balance between cuts, fills and structure length.

Barbara Gulch

Barbara Gulch is a intermittent stream conveyed through a deep topographical drainage way requiring a 500+ foot bridge to balance the requirements for crossing, access roads, and balance of cuts and fills.

Big Dry Creek

Big Dry Creek is a low flow to intermittent stream that would carry significant volumes during the 100 year storm peak discharge of 4,900 cfs.

It crosses the Tollway Alternative alignment one mile north of the Union Pacific Railroad and it is conveyed underneath two bridge structures which are approximately 300 feet in length for access, trails, and floodplain drainage. Retaining walls are provided on each of the abutment approaches to contain the resulting cut and fill areas produced by the crossing.

Woman Creek

Woman Creek conveys the water from the Rocky Flats National Wildlife Refuge across Indiana to water quality remediation ponds east of Indiana Street. The remediation ponds are a function of the Rocky Flats requirement drainage system. The crossing is located approximately 3,000 feet north of the southern boundary of the Rocky Flats Wildlife Refuge at Sta 730+00 of the Tollway Alternative Alignment. The conveyance structure is a multi-cell box culvert carrying the discharge from the Rocky Flats Wildlife Refuge underneath the tollway. It also reconstructs the current conveyance structure on Indiana Street to match the multiple boxes under the Tollway Alternative.

NORTH PORTION

Walnut Creek

Walnut Creek traverses Rocky Flats National Wildlife Refuge and conveys runoff water to the Great Western Reservoir a mile east of Indiana Street. The creek intersects the Tollway Alternative alignment at Sta 815+00 and would be conveyed under the Tollway Alternative as well as the alignment reconnection of Indiana Street south and north of the Tollway Alternative Alignment. 100 ft bridges for the Tollway Alternative mainline combined with retaining walls to contain the fill and cut, created by the grade difference will be required for the crossing.

Rock Creek

Rock Creek traverses the Tollway Alternative alignment at a location approximately 1,000 ft north of the intersection of US 36 and the Tollway Alternative. This conveyance facility has had multiple modifications by previous parties in relation to the development of Flat Irons Crossing Mall. The current multi-cell box culvert conveys Rock Creek underneath what is now called 96th Street. This drainage way would transport approximately 4,500 cfs during the 100 year storm peak discharge.

INDIANA/MCINTYRE PORTION

Clear Creek

Clear Creek crosses the Principal Arterial alignment at the existing bridge located just south of the SH 58 interchange. The existing bridge would be widened to accommodate the additional lanes associated with the Principal Arterial mainline.



Croke Canal

The Croke Canal crosses the Principal Arterial alignment at numerous locations. The first of these locates is at Sta 48+50. The existing concrete box culvert that conveys the Croke Canal under the Principal Arterial alignment would be extended to accommodate the additional lanes of the Principal Arterial mainline.

The second of these crossings is located north of 64th Avenue at Sta 197+75. A new concrete box culvert would be constructed to convey the flow under the Principal Arterial mainline.

As the Croke Canal and the Principal Arterial mainline approach the 72nd Avenue intersection, the Principal Arterial alignment swings to the east to avoid impacting the Croke Canal ditch section. Just north of 72nd Avenue the Principal Arterial mainline swings back to the west. The ditch section of the Croke Canal would be relocated to the west along the west side of the Principal Arterial mainline.

The third and final crossing of the Croke Canal is at Sta 252+00. The existing concrete box culvert would be extended to accommodate the additional lanes on the Principal Arterial mainline.

Farmers Highline Canal

The Farmers Highline Canal also crosses the Principal Arterial alignment at numerous locations. The first of these is at Sta 99+00. A new concrete box culvert would replace the existing concrete box culvert.

The second crossing is at Sta 124+50. A new concrete box culvert would replace the existing concrete box culvert.

The third crossing is at Sta 130+50. A new concrete box culvert would replace the existing concrete box culvert.

The fourth crossing is at Sta 182+00. A new concrete box culvert would replace the existing concrete box culvert.

The fifth crossing is at Sta 267+00. A new concrete box culvert would replace the existing concrete box culvert.

The sixth crossing is at Sta 282+00. A new concrete box culvert would replace the existing concrete box culvert.

The seventh and final crossing is at Sta 293+00. A new concrete box culvert would replace the existing concrete box culvert.

Van Bibber Creek

Van Bibber Creek crosses the Principal Arterial mainline just north of 56th Place. A 125 foot long bridge structure would convey the flows from the west to the east. The profile of the Principal Arterial mainline is approximately 16 feet above the invert of Van Bibber Creek.

Ralston Creek

Ralston Creek crosses the Principal Arterial mainline 3,000 feet north of 64th Avenue. A 200 foot long bridge structure is planned to convey the flows from the west to the east. The profile of the Principal Arterial mainline is approximately 13 feet above the invert of Ralston Creek.

Leyden Gulch

Leyden Gulch crosses the Principal Arterial mainline 1,400 feet south of Leyden Road. A double cell concrete box culvert would convey the flows from the west to the east. The profile of the Principal Arterial mainline is approximately 15 feet above the invert of Leyden Gulch.

Church Ditch

Church Ditch crosses the Principal Arterial mainline just south of the Leyden Road intersection. A double cell concrete box culvert would convey the flows from the west to the east. The profile of the Principal Arterial mainline is approximately 15 feet above the invert of Church Ditch.



Tucker Ditch

Tucker Ditch crosses the Principal Arterial mainline just south of the Union Pacific Railroad crossing. A single pipe inverted siphon would convey the flows from the west to the east. The profile of the Principal Arterial mainline is approximately 10 feet below the invert of Tucker Gulch.

WILDLIFE CROSSINGS

NORTH TABLE MOUNTAIN

Bridges are planned for both the northbound and southbound lanes of the Regional Arterial Alternative mainline to accommodate large wildlife migration to North Table Mountain. The bridges would span a natural drainage way east of existing SH 93 between just south of the historic ranch property and north of the commercial area in the northern part of Golden. The spans are approximately 200 feet long and would have an opening of about 15 to 20 feet from the bottom of the bridge girder to the top of existing ground.

RALSTON CREEK

Large bridges are planned for both northbound and southbound lanes of the Tollway Alternative alignment over Ralston Creek. These bridges would be approximately 500 feet in length, 70 to 90 feet above the existing creek. In addition, the existing SH 93 alignment would be rebuilt on a new bridge structure in its current location above Ralston Creek. The existing grade will be lowered 20 feet and a new bridge will be built to allow for large wildlife to cross under. The new bridge would span about 200 feet.

LEYDEN GULCH

Long span bridges are planned for both the northbound and southbound lanes for the Tollway Alternative across Leyden Gulch. The bridges would span both Leyden Creek and Leyden Road and be approximately 1,200 feet long and approximately 65 feet above the existing roadway and 85 feet above the creek.

PEDESTRIAN AND BICYCLE PATHS

Along the Combined Alternative alignment there are presently pedestrian and bicycle facilities. They are generally located in Golden, near 64th Parkway and along Interlocken Loop. Below is a description of what the design would do to accommodate the existing facilities and what new facilities would be added. Exact location within the footprint of the alternative would be determined during final design.

SOUTH PORTION

There are existing bicycle/pedestrian trails on the east side of US 6 from C-470 to 19th Street much of which are within the existing CDOT right-of-way. These trails would be maintained and replaced as necessary where the alignment would encroach on them. From 19th Street at the end of the existing trails to Washington Avenue the existing City of Golden on street system would be used to convey the bicyclist and pedestrians. A small stretch of new trail would be added from Washington Avenue to where existing SH 93 becomes an independent facility. The trail would then continue along existing SH 93.

CENTRAL PORTION

There are some trails near 64th Parkway. The new alignment would accommodate new trails along this stretch of the alternative continuing along existing SH 93. Between the SH 93 interchange and Interlocken, the trail will parallel the Tollway Alternative alignment within the new right-of-way. Existing trails would be maintained and replaced as necessary where the alignment would encroach on them.

NORTH PORTION

There are existing bicycle/pedestrian trails on the either side of Interlocken Loop from SH 128 to US 36. These trails would be maintained and replaced as necessary where the alignment or fill slopes encroach on them. Bicycle lanes would be added to the urban portion to provide on-street bicycle lanes.

INDIANA/MCINTYRE PORTION

There are some trails and sidewalks along small portions of Indiana Street and McIntyre Street. The new principal arterial would accommodate the sidewalk on both sides of the roadway. Existing cross trails would be maintained and replaced as necessary where the alignment or fill slopes encroach on them.



LIGHTING

Lighting would be provided at intersections and interchanges. They would be fixed 40 foot cut off lens luminaries. The remainder of the route would not be lighted in accordance with rural standards. Lighting at interchanges would be at the cross street intersections and at the ramp gores. At intersections there would be a minimum of two light standards to illuminate the intersection for visibility at night in the high traffic conflict areas. Lighting would also be provided in under-pass locations. Specific lighting requirements will be determined during final design.

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