

Design Option Evaluation Matrix

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| Meeting Notes | Option I.D. | Option Name | Description | Does option address all I/C deficiencies? | Type of Deficiency Addressed | Estimated Construction Cost | Right of Way Impacts | Potential Environmental Impacts | Traffic Operational Notes | Anticipated Public Opinion | Additional Notes/Comments |
|----------------------------|-------------|--|--|---|------------------------------|---------------------------------------|---|---|---|---|---|
| Carried Forward | R1a | Rocker Option 1a – Roundabout Ramp Terminals | Replace ramp terminal intersections with roundabouts that combine the frontage road intersections, includes auxillary acceleration lane EB. | Yes | Safety, Geometry | \$1,900,000 | N/A | Normal environmental concerns | Single decision point on each side of I/C | General opposition to roundabouts | Requires large roundabouts ~180', Potential operational issues w/weight station |
| Dropped | R1b | Rocker Option 1b – Roundabout Ramp Terminals | Replace with roundabouts and move ramp terminal intersections in towards bridge, includes auxillary acceleration lane EB. | Yes | Safety, Geometry | \$1,800,000 | N/A | Normal environmental concerns | Inconsistent intersection types (roundabout & stop) | General opposition to roundabouts | Smaller roundabouts can be used ~130', Potential operational issues w/weight station |
| Dropped | R2 | Rocker Option 2 – Relocate the EB off-ramp | EB off-ramp will be relocated west of cross road and tie into south frontage road, includes auxillary acceleration lane EB. | Yes, by adding roundabout to WB ramp terminal | Safety, Geometry | \$3,600,000 | 3.56 acres, 3 parcels | Normal environmental concerns | Splits I/C operations | General opposition to roundabouts | Costs include adding roundabout from R1 to Westbound ramp terminals |
| Dropped | R3 | Rocker Option 3 – Single Point Urban Interchange (SPUI) | Reconfigure the interchange ramps to a SPUI configuration, requires replacing mainline bridges, includes auxillary lane EB. | Yes | Safety, Geometry | \$18,000,000 | 1.67 acres | Normal environmental concerns | Signal does not meet warrants | Potential opposition to interchange type | Mainline interstate has to be raised |
| Dropped | R4 | Rocker Option 3 – Modify Ramp terminals and use 3-way stop control | Slightly realign ramps so ramp terminals are pushed in towards bridges, configure the intersections for 3-way stop control, includes auxillary lane EB | Yes | Safety, Geometry | \$1,000,000 | N/A | Normal environmental concerns | Additional stopping required on cross road | Truckers may oppose additional stops | Operates at LOS A and B, Potential operation issues w/weight station |
| Added | M1 | Auxillary Acceleration Lane | Develop continuous auxillary lane to crest of hill in EB direction beginning at on-ramp merge point | Yes | Safety/Geometry | | | | | | |
| Carried Forward | WB1 | West Butte Option 1 – Short Term WB off-ramp improvement | Relocate WB off-ramp to a right side exit on slightly improved EB mainline | No - EB I-115 ramp bridge is F.O., and WB clear zones | Safety, Geometry | \$14,000,000 | 1.96 acres, 3-parcels | Wetland impacts, Temporary 4(f) impacts | Eliminates confusing left side exit | None expected | Ties in prior to existing I-115 EB bridge over WB mainline |
| Dropped | WB2 | West Butte Option 2 – Standard system-level interchange | High speed system level interchange option based on min. design standards, including realigned mainline segment M-2 | Yes | Safety, Geometry | \$99,600,000 | 10.63 acres, 6 parcels, building relocation/removal | Wetland impacts, Temporary 4(f) impacts, potential Hazardous material | Provides high speed movements | None expected | WB I-115 to EB I-15 and WB I-15 to EB I-115 are anticipated to be very low volumes |
| Modified & Carried Forward | WB3 | West Butte Option 3 – Diamond type interchange - IMPROVE MAINLINE | Diamond interchange on realigned I-15/90 mainline with I-115 reclassified to primary route, includes mainline segment M-2 | Yes | Safety, Geometry | \$73,900,000 | 11.24 acres, 5-parcels, building relocation/removal | Wetland impacts, Temporary 4(f) impacts, potential Hazardous material | | Potential opposition to elimination of free movements | Requires reclassifying I-115, Legislative issue, WB I-115 to EB I-15 and WB I-15 to EB I-115 are anticipated to be very low volumes |
| Modified & Carried Forward | Main 1 | Realigned Mainline M-2 – Realign I-15/90 between West Butte and ½ mile west of Montana St IMPROVE MAINLINE | Eliminate split alignment, bring curves up to standard, new bridges - IMPROVE CURVE RADIUSSES AND REPLACE BRIDGES | Yes | Safety | Costs and RAW included in WB2 and WB3 | | Wetland impacts, potential hazardous material | N/A | None expected | Design speed of 80 mph |
| Carried Forward | Ex1 | Excelsior Avenue Option 1 – Ramp Improvements | Extend acceleration/deceleration length on all ramps. Based on I-115 remaining an interstate classification | Yes | Guideline/Standard | \$1,800,000 | N/A | Potential wetland impacts | N/A | None expected | Drawings in progress |
| Carried Forward | MT1 | Montana Street Option 1 – Signalized Intersections | Signalize ramp terminals and modify shared frontage/ramp access. Improve acceleration/deceleration lengths to standards | No - Mainline bridges are F.O. | Traffic Operations, Geometry | \$400,000 | N/A | Normal environmental concerns | Operates at LOS A | Opposition to changes in access along frontage roads | Drawings in progress |
| Carried Forward | MT2 | Montana Street Option 2 – Roundabout Intersections | Use roundabouts at ramp terminals and modify shared frontage/ramp access. Improve acceleration/deceleration lengths to standards | No - Mainline bridges are F.O. | Traffic Operations, Geometry | \$1,900,000 | N/A | Normal environmental concerns | Operates at LOS B | Opposition to changes in access & double lane roundabouts | May be able to go to 150' roundabout |
| Carried Forward | H1 | Harrison Avenue Option 1 – SPUI configuration | Reconstruct the interchange to a SPUI configuration including replacing the bridges and raising the mainline | Yes | Traffic Operations, Geometry | \$21,400,000 | 1.56 acres | Wetland Impacts, potential 4(f) impacts | Spacing for NB turn lanes is constrained by Dewey | Potential Opposition to I/C type | Mainline interstate has to be raised, impact to adjacent path |
| Carried Forward | H2 | Harrison Avenue Option 2 – Tight Diamond configuration | Reconstruct the interchange to a tight diamond configuration including widening Harrison for required left turn lanes | Yes | Traffic Operations, Geometry | \$18,000,000 | N/A | Wetland Impacts, potential 4(f) impacts | Spacing between EB ramps and Dewey is still tight | May question how it improves existing | Mainline interstate has to be raised, impact to adjacent path |
| Carried Forward as Combo | H3 | Harrison Avenue Option 3 – EB loop ramp option | Remove the EB off-ramp and lengthen the EB loop off-ramp deceleration to meet standards, signalize the EB loop off/on-ramp terminal | No - Mainline bridges are F.O. & WB on-ramp accel & turning at EB on-ramp | Traffic Operations, Geometry | \$2,750,000 | N/A | Potential wetland impacts | Eliminates space issue between EB ramps and Dewey | None expected | Option with widening of EB mainline bridge may have issues with vertical clearance |
| Carried Forward as Combo | H4 | Harrison Avenue Option 4 – EB off-ramp terminal modifications | Remove the EB loop off-ramp and add a left turn lane and signal at the EB off-ramp | No - Mainline bridges are F.O. & WB on-ramp accel & int spacing | Traffic Operations, Geometry | \$400,000 | N/A | Normal environmental concerns | Potential for confusion with closely spaced signals | Potential opposition to additional signal | Dewey and EB off-ramp operate together |

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| Dropped | H5 | Harrison Avenue Option 5 — Relocate WB on-ramps to Amherst Avenue | Relocate WB on-ramps and tie in w/Amherst Avenue, realign Harrison west so that third NB lane can be developed to Amherst along with a new NB-duplicate left turn lane | No - Mainline bridges are F.O. & EB ramp deficiencies remain | Traffic Operations, Geometry | \$4,981,300 | 2.21 acres, 6 parcels, commercial relocation | Wetland Impacts, 4(f)-impacts, water resource-impacts | Adds additional volume to already-congested Amherst intersection | Should be in favor of fixing Amherst | Addresses operation issues at Amherst and will improve lane balance issue between Cornell and Amherst | |
| Carried Forward as Combo | H6 | Harrison Avenue Option 6 – WB off and on ramp improvements | Remove the WB loop on-ramp, add a turn lane for the WB on-ramp in the NB direction, potential to realign WB off-ramp | No - Mainline bridges are F.O. & EB ramp deficiencies remain | Traffic Operations, Geometry | \$300,000 | N/A | Normal environmental concerns | Single turn lane is not desirable, eliminates free movement | May question how it improves existing | Could realign WB off-ramp and improve gemotery, will add costs and cause wetland impacts | |
| New and included as Combo | H9 | Harrison Avenue Option 9 - WB Loop On-Ramp Improvements | Eliminate westside On-Ramp and Improve WB Loop Ramp by extending Acceleration Length | | | | | | | | | |
| New | H20 | Combine H3 and H9 | Eliminate straight ramps and improve loop ramps | | | | | | | | | |
| New | H21 | Combine H4 and H6 | Eliminate Loop Ramps & improve straight ramps | | | | | | | | | |
| New | H22 | Combine H3 and H6 | Improve EB Loop Off-ramp, eliminate other EB off-ramp and WB Loop on-ramp | | | | | | | | | |
| New | H23 | Combine H4 and H9 | Improve WB Loop On-ramp, eliminate other WB on-ramp and EB Loop off-ramp | | | | | | | | | |
| Dropped | EB1 | East Butte Option 1 — Standard system-level interchange | Remove tight loop ramp and build new high speed-flyover ramp for SB to EB | Yes | Geometry, Guidline | \$18,800,000 | N/A | potential visual, noise impacts | Eliminates tight loop | Potential public opposition from neighborhood | Significant fills and walls close to residences | |
| Carried Forward | EB2 | East Butte Option 2 – Utilize existing configuration and improve acceleration lengths | Lengthen EB to NB deceleration length and SB to EB acceleration length, would require widening bridge | Yes | Geometry, Guidline | \$2,600,000 | N/A | noise impacts | Tight loop remains | Potential public opposition from neighborhood | Speed reduction system would be still be needed for vehicles approaching loop ramp | |
| Carried Forward | EB3 | East Butte Option 3 – SB Flyover | Reconstruct to high speed standards | Yes | Geometry, Guidline | \$44,600,000 | 2.03 acres, x-parcels, 5- residential relocations | potential visual, noise impacts | Provides high speed movements | Anticipated public opposition | Requires reconstruction of Continental Overpass bridge | |
| Dropped - Not Feasible | EB4 | East Butte Option 4 — Our Lady of the Rockies I/C | Our Lady of the Rockies off set diamond interchange as shown in the Butte Transportation Plan | Geometrically unfeasible — due to ramp grades and ramp spacing with I-15/I-90 interchange | | | | | | | | |
| Dropped | C1 | Continental Option 1 — Frontage Road Realignment | Relocate Eastside frontage road intersection | No, ISD on EB off ramp | Geometric, Guidline | \$600,000 | 1.52 acres, 3 parcels | Normal environmental concerns | none | Property owners may oppose r/w takes | Currently very few large vehicles use the frontage road | |
| Dropped | C2a | Continental Option 2a — Roundabout Ramp Terminals | Add Roundabouts at each ramp terminal and adjacent frontage road | Yes | Geometric, Guidline | \$1,300,000 | N/A | Normal environmental concerns | Single decision point on each side of I/C | General opposition to roundabouts | Large roundabouts — 180' | |
| Carried Forward | C2b | Continental Option 2b – Roundabout Ramp Terminals | Add Roundabouts at each intersection, WB and frontage road are combined | Yes | Geometric, Guidline | \$1,000,000 | N/A | Normal environmental concerns | | General opposition to roundabouts | Roundabouts on west side could be smaller — 140'-150' | |