

**Table E.1
Final Improvement Options Matrix**

Option I.D.	Exhibit No.	Location	Option Name	Components	Timeframe for Project	Priority Level	Cost	Benefits	Potential Impacts
ITS-1	2	Corridor wide	Incident Management Support Project	Develop Incident Management Plan - Install DMS, CCTV, RWIS, HAR Elements to support the plan	Near	High	\$250,000 or greater	Provides a quicker and more efficient response to incidents, a safer environment for first responders and crash victims, reduced delay and inconvenience to travelers, reduces diverted traffic, reduced queues on the freeway, reduces secondary incidents.	No anticipated right of way or environmental impacts.
ITS-2	2	Corridor wide	Traffic Management ITS Package	Implement variable speed limits through out the corridor, install speed display signs at key areas, add additional RWIS, and install active warning/speed reduction signs at loop ramps	Near	Medium	\$0.5M - \$3M	Reduce number of crashes involving speed, speed reduction and improved compliance with posted speeds, reduction in proportion of speeding vehicles, increase in community concern and support, behavioral changes.	No anticipated right of way or environmental impacts.
ITS-3	2	Corridor wide	Traveler Information ITS Package	Install and utilize DMS, CCTV, HAR, wireless, RWIS Elements for the purpose of improving traveler information.	Near	Low	\$0.5M - \$3M	Improvements in: travel time reliability, customer satisfaction, perception of quality of service, minimization of delay, safety, operational efficiency, reliability, and queue lengths	No anticipated right of way or environmental impacts.
ITS-4	2	Corridor wide	Site specific ITS Elements	Install DMS sign near Rocker I/C, Install speed reduction systems at the Harrison I/C and East Butte I/C Loop Ramps	Near	High	\$0.5M - \$3M	Provides potential safety improvements at loop ramps and adds a DMS sign in a key truck location for truck information without a full ITS implementation effort.	No anticipated right of way or environmental impacts.
CW-1	3	Corridor wide	Guardrail Package of Improvements	Extend guardrail lengths at various areas to meet standards, replace damaged sections and install current standard end treatments throughout corridor	Long-range	Medium	\$0.3M - \$1M	Potential to improve safety and upgrade corridor to current standards.	No anticipated right of way or environmental impacts.
CW-2	3	Corridor wide	Earthwork Package of Improvements	Perform minor sideslope grading to improve slopes to meet clear zone requirements throughout the corridor.	Long-range	Medium	\$0.5M - \$3.5M	Potential to improve safety through improved roadside geometrics. Would provide safe recovery areas where they do not currently exist.	No anticipated right of way or environmental impacts.
CW-3	3	Corridor wide	Bridge Anti-icing Systems	Install bridge anti-icing system on eight bridges (4 long bridges on M-2, 2-bridges at Harrison Avenue and 2-bridges at East Butte)	Near	High	\$2.5M - \$3.5M	Potential to improve safety during inclement weather periods through improved maintenance of the travel way.	No anticipated right of way or environmental impacts.
R-10	4	Rocker I/C	Rocker Minor Improvement Project	Improves access control along frontage roads; add a sidewalk on the east side of Rocker road between the frontage roads.	Near	High	\$0.3M - \$0.5M	Improves the cross road operations by consolidating access and channelizing movements.	No anticipated right of way or environmental impacts.
WB-10	5	West Butte I/C	West Butte Minor Improvements	Restripe EB off-ramp to narrow the off-ramp lane, install new overhead signs and add additional lighting on off-ramp	Near	High	\$0.1M - \$0.2M	Removes confusion associated with the left side off-ramp and unclear signing, and provides better lane delineation for the off-ramp.	No anticipated right of way or environmental impacts.
H-30	6	Harrison Ave I/C	Harrison Minor Improvement Project	Options include; restriping Harrison for 2-through lanes in each direction. Install new ADA ramps along Harrison. Install speed reduction system on loop ramps. Potentially reconfigure SE corner at Harrison & EB on-ramp.	Near	Medium	\$0.1M - \$1.5M	Potential to improve truck operations on Harrison Avenue and potentially eliminate the disproportionate number of sideswipe crashes in the NB direction at the EB on-ramp.	No right of way required for striping, however minor right of way required to improve the EB On-ramp curb return. No environmental impacts are anticipated.
H-31	6	Harrison Ave I/C	Harrison Avenue and Amherst Avenue Intersection Improvements	Extend 3rd NB through lane to end at Amherst Avenue. Requires right of way from adjacent business.	Long-range	Medium	\$0.7M - \$1.2M	Potential to improve traffic operations to an acceptable LOS standard and has the potential to improve safety by reducing the heavy lane unbalance issue in the NB direction.	Right of way would be required from the strip mall on the east side between Cornell and Amherst. The parking lot for these businesses would also need to be modified. No anticipated environmental impacts.

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EB-10	7	East Butte I/C	East Butte Minor Improvement Project	Project includes: adding lighting to interchange. Install speed reduction system at loop ramp and bridge anti-icing system.	Near	Medium	\$1.0M - \$2.0M	Potential to improve the cross road operations by consolidating access and channelizing movements.	No anticipated right of way or environmental impacts.
M-20	8	Mainline Segment 2	Replace 4-Mainline Bridges	Replace the 4-long EB and WB mainline functionally obsolete bridges over the railroad tracks	Long-range	Low	\$20M	Potential for improved safety with the addition of wider shoulders on the new bridges.	No anticipated right of way or environmental impacts.
MT-11	8	Montana St I/C	Replace Montana Street I/C bridges	Replace the EB and WB mainline functionally obsolete bridges over Montana Street	Long-range	Low	\$3.6M	Potential for improved safety with the addition of wider shoulders on the new bridges.	No anticipated right of way or environmental impacts.
H-32	8	Harrison Ave I/C	Replace Harrison Avenue I/C bridges	Replace the EB and WB mainline functionally obsolete bridges over Harrison Avenue	Long-range	Low	\$5.7M	Potential for improved safety with the addition of wider shoulders on the new bridges.	No anticipated right of way or environmental impacts.
R-1	9	Rocker I/C	Rocker Option 1a – Roundabout Ramp Terminals	Replace ramp terminal intersections with roundabouts that combine the frontage road intersections, includes auxiliary acceleration lane EB.	Long-range	Medium	\$2.4M	Potential to improve the cross road operations by consolidating access and channelizing movements.	No anticipated right of way or environmental impacts.
M-1	10	Rocker I/C & Mainline Segment 1	EB Auxiliary Acceleration Lane	Continuous auxiliary lane to crest of hill in EB direction beginning at on-ramp merge point	Near	High	\$1.9M	Provides a safer merge operation by providing a lane for truck traffic to accelerate at a safe speed before merging. This will eliminate the substantial speed differential that currently exists in this area.	Minor right of way is required and standard environmental requirements for earthwork grading will be required.
WB-1	11	West Butte I/C	West Butte Option 1 – Short Term WB off-ramp improvement	Relocate WB off-ramp to a right side exit on slightly improved EB mainline	Long-range	High	\$11.5M	Potential to improve safety through the elimination of the confusing left side off-ramp and improving the mainline curvature.	Right of way is required on the south side of the interstate and there is a potential for wetland impacts in the same area.
WB-3	12	West Butte I/C	West Butte Option 3 – Diamond type interchange w/ Improved Mainline	New cross road overpass. Construct 4-new ramps. Improve EB mainline curvature. Reclassify I-115 to primary route	Ultimate	Low	\$15.6M	Provides a full movement interchange at the West Butte location.	Right of way would be required and there is a potential for wetland impacts on the south side of the interstate.
M-2	12	Mainline Segment 2	Improve Mainline Segment 2 – WB Butte to Montana Street	Improve Horizontal Curvature and Replace FO mainline bridges	Long-range	High	\$28.5M	Potential to improve safety in this area by providing improved horizontal curvature and wider shoulders.	No anticipated right of way or environmental impacts.
EX-1	13	Excelsior I/C	Excelsior Avenue Option 1 – Ramp Improvements	Extend acceleration / deceleration length on all ramps. Replace I-115 bridge over Excelsior	Long-range	Low	\$3.25M	Potential to bring interchange geometry up to standard.	No anticipated right of way or environmental impacts.
MT-1	14	Montana St I/C	Montana Street Option 1 – Signalized Intersections	Signalize ramp terminals and modify shared frontage/ramp access. Improve acceleration/deceleration lengths to standards	Long-range	High	\$1.75M	Potential to improve traffic operation for the ramps and eliminate the potential for conflict between the local frontage road operations and the ramps.	No anticipated right of way or environmental impacts.
MT-2	15	Montana St I/C	Montana Street Option 2 – Roundabout Intersections	Use roundabouts at ramp terminals and modify shared frontage/ramp access. Improve acceleration/deceleration lengths to standards	Long-range	High	\$2.38M	Potential to improve the cross road operations by consolidating access and channelizing movements.	No anticipated right of way or environmental impacts.
H-1	16	Harrison Ave I/C	Harrison Avenue Option 1 – SPUI configuration	Reconstruct the interchange to a SPUI configuration including replacing the bridges and raising the mainline	Long-range	High - HR rank #5	\$24.1M	Potential to improve the entire interchange complex including the cross road operations.	Minor right of way will be required. Wetland impacts within the loop ramps and wetland and section 4(f) impacts along the bicycle path are anticipated.

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H-2	17	Harrison Ave I/C	Harrison Avenue Option 2 – Tight Diamond configuration	Reconstruct the interchange to a tight diamond configuration including widening Harrison for required left turn lanes	Long-range	High - HR rank #6	\$18.5M	Potential to improve the entire interchange complex including the cross road operations.	Minor right of way will be required. Wetland impacts within the loop ramps and wetland and section 4(f) impacts along the bicycle path are anticipated.
H-20	18	Harrison Ave I/C	Loop Ramps - Improve EB Loop Off-ramp and WB Loop On-ramp (combination of H3 and H9)	Eliminate straight ramps and improve loop ramps	Long-range	High - HR rank #1	\$10.75M	Potential to improve the entire interchange complex including the cross road operations.	No anticipated right of way or environmental impacts.
H-21	19	Harrison Ave I/C	Eliminate Loop Ramps - Eliminate both EB Off-ramp and WB on-Ramp, Improve straight ramps (combination of H4 and H6)	Eliminate Loop Ramps & improve straight ramps	Long-range	High - HR rank #4	\$1.75M	Potential to improve interchange acceleration/deceleration deficiencies with minimal construction and resolves operation issues on Harrison Avenue with additional traffic signal control.	No anticipated right of way is required. Wetland impacts within the WB off-ramp area are anticipated.
H-22	20	Harrison Ave I/C	Improve EB Loop Off-Ramp and Eliminate WB Loop Off-Ramp (combination of H3 and H6)	Improve EB Loop Off-ramp, eliminate straight EB off-ramp (to SB Harrison). Eliminate WB Loop On-ramp and add NB Left turn to WB On-ramp	Long-range	High - HR rank #3	\$5.38M	Potential to improve the major interchange deficiencies (acceleration/deceleration) and provides improved access on Harrison Avenue.	No anticipated right of way is required. Wetland impacts within the WB off-ramp area are anticipated.
H-23	21	Harrison Ave I/C	Improve WB Loop On-ramp and Eliminate EB Loop Off-ramp (combination of H4 and H9)	Improve WB Loop On-ramp, eliminate other WB on-ramp and EB Loop off-ramp	Long-range	High - HR rank #2	\$7.5M	Potential to improve interchange acceleration/deceleration deficiencies and provides improved operations on Harrison Avenue by utilizing a loop ramp for the highest ramp volume and improving the EB off-ramp and Dewey Boulevard operation issue via additional traffic signal control.	No anticipated right of way or environmental impacts.
EB-2	22	East Butte I/C	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	Long-range	Medium	\$3.3M	Potential to improve operations and safety.	No anticipated right of way or environmental impacts.
EB-3	23	East Butte I/C	East Butte Option 3 – SB Flyover	Reconstruct to high speed system level standards	Ultimate	Low	\$38.5M	Potential to improve the entire interchange complex including to a high speed system level standard.	Significant right of way including about six residential relocations is required. There would be several potential environmental impacts including, wetlands, visual, and
C-2	24	Continental I/C	Roundabout Ramp Terminals	Construct Roundabouts at each intersection, (1) WB on/off-ramp, (2) EB on/off-ramp and (3) Continental/Mount Highland Drive intersection	Long-range	Low	\$1.75M	Potential to mitigate existing deficiencies if the areas around this interchange change.	No anticipated right of way or environmental impacts.