

I-70 Traffic and Revenue Study
Combined
Project Leadership Team (PLT) Meeting #6
Technical Team (TT) Meeting #3
Meeting Minutes
December 05, 2013
Golden, CO – CDOT West – Trail Ridge Conference Room

Handouts for the meeting included:

An information packet was given to PLT & TT members on December 05 that included the following: Agenda; Alternatives List with Descriptions, Alternatives Typical Cross Section Drawings, Traffic and Revenue Assumptions List

Welcome and Opening

Ben Acimovic (CDOT) opened the combined PLT and TT meeting with welcoming remarks and a request for self-introductions.

Agenda Item 1 – Reviews & Updates

Context Sensitive Solution (CSS) Process:

Ben Acimovic (CDOT) presented a summary of where we are at in the CSS Process.

The CSS process began in Spring 2013. The project team has completed CSS Process steps 1 through 3. The CSS Process steps 4 & 5 will be done today. The CSS Process step 6 will be planned for March.

The PLT has discussed the first five CSS Endorsed Components. After the Level 1 screening analysis, the PLT will review all CSS Endorsed Components as they relate to Level 2. Changes can be made to better align with a Level 2 T&R Analysis.

Traffic & Revenue Study Update:

Ben Acimovic presented a summary of what work is underway for the traffic and revenue study.

The project team is currently working on the following tasks:

- *Louis Berger* has developed assumptions to feed into the travel forecasting model, which we will be reviewing today.
- *Parsons* is working on developing the preliminary alternative designs to get base quantities and costs. These will feed into the revenue model to get financial results. The project team will then be able to perform the Level 1 screening analysis.
- All *Issues Task Forces* have met except the historic and the finance groups. The historic ITF will be meeting this month. All ITFs will all be able to review the preliminary screening results in early 2014.

Issues Task Forces Update:

Wendy Wallach (Parsons) presented a summary of what the Issue Task Forces have been doing to date.

- *Alternatives* – Reviewed initial alternatives; suggested additional option (Peak Period Shoulder Lane – Alternative 5 Option 1); working to differentiate between interim Peak Period Shoulder Lane project and our Alternative 5 Option 1;
- *Cost Estimating* – Necessary to develop an apples to apples approach of comparing cost estimates; working through CSS process with FHWA to get accurate cost estimates;
- *Structures/Tunnel Cost Estimating* – Working to finalize structural cost estimates; includes ALIVE crossings and 3rd bore tunnel;
- *Transit Cost Estimating* – Clarified that transit is only part of the alternatives, no stand-alone transit alternative; that the AGS has different termini leads to a challenge when comparing costs;
- *Traffic Operations and Maintenance* – The expectation of users of the managed lanes is to have very well maintained roadway in order to safely keep the speeds up;
- *Traffic Modeling & Tolling* – Assumptions are broader at this level; alternatives need to be designed before this ITF can complete their cost estimate;
- *Mitigation* – Very broad at this level; will incorporate SWEEP and ALIVE mitigation; will need agreement on cost estimating methodology;
- *Permitting* – Developing costs of getting permits; looking at risks to the schedule
- *ALIVE* – Determined to use Linkage Interference Zones (LIZs) as described in the PEIS; developing typology and prioritization of mitigation; mitigation will also include monitoring efforts after construction;
- *SWEEP* – Still developing cost estimates and making sure they aren't double counting items;

Discussion:

Cindy Neely (Clear Creek County): She would like to have the presentation slides sent out. The project team will include the presentation with the meeting minutes. **(ACTION ITEM)** Note: The presentation was sent out on December 12, 2013.

A Transit Service Plan White Paper was developed to discuss the following three ideas:

1. How the transit operating plans to feed into traffic modeling;
2. How to cost out the transit operations;
3. Verify assumptions made on transit from PEIS;

The overall summary of the Transit Service Plan White Paper is that depending on the alternative selected, there will be a base level of bus service operated by Colorado Department of Transportation until the managed lanes are opened. After that, a more developed bus service (BRT) will run in the managed lanes. Additionally, if no managed lanes are to be constructed, the CDOT bus service will run until the AGS is opened.

Cindy Neely (Clear Creek County): She would like to understand the diversity of attendance in the ITFs (would like to have access to meeting minutes from each ITF). The minutes are currently on SharePoint and members of the PLT should have access.

Clear Creek County wondered why SharePoint is being used and not a public site, so information could be available to constituents (i.e. CDOT website). CDOT will look into capabilities of CDOT public website for a project to this scale and will get back to PLT early next week. **(ACTION ITEM)**

Note: At request of the stakeholders, CDOT has created an I-70 Traffic and Revenue Study website, it will be updated in the weeks to come and then on a regular basis, it can be found at: <http://www.coloradodot.info/projects/i-70mountaincorridor/trafficrevenuestudy/>

Agenda Item 2 – Alternatives Under Consideration

Wendy Wallach (Parsons) presented a summary of the five alternatives.

Five Alternatives with several options under each alternative (listed in handout) were explained. All of the alternatives extend from C-470 to Silverthorne (the exception of the new temporary PPSL alternative). Typical cross sections of these alternatives were included in the handout. A few specific items of note include:

- Alternative 1 and Alternative 2 (both options) include third bores at EJMT and Twin Tunnels
- Alternative 4 Options 1 and 2 should have been removed from the handout – the project team is not considering these anymore as they have no means of producing revenue
- Alternative 4 Options 3 and 4 were developed recently based on CDOT policy to implement managed lanes when adding new capacity.

Please note: a revised version of the Alternatives table, including schematics has been distributed with these notes.

Discussion:

The team was previously not considering tolling on Alternative 3 as the alternative included such small sections of auxiliary lanes. CDOT will consider implementing managed lanes where new capacity is being added (for example tolling third bore). **(ACTION ITEM)**

Note: CDOT Response: All new capacity will be considered for tolling. Small sections of auxiliary lanes will not be tolled. It does not make sense to toll short lengths of improvements. But tunnels would be tolled.

Should the No Action Alternative include interim peak period shoulder lanes or not? CDOT will consider this. **(ACTION ITEM)**

Note: CDOT Response: No Action will include interim peak period westbound (WB) and eastbound (EB) from Empire to Floyd Hill (alternative 6a). An operations and maintenance narrative will be included in the results detailing how a WB and EB Peak Period Shoulder Lane would work from Empire to the Eisenhower Johnson Memorial Tunnels (EJMT).

Clear Creek County suggested the project team examine extending interim peak period shoulder lanes as another alternative for this study if they are shown to be effective at increasing mobility for a period of 5-10 years. CDOT will consider this. **(ACTION ITEM)**

Note: CDOT Response Alternative 5 Option 1 is a full peak period option. This T&R study will only evaluate ultimate solutions. This would be a future after construction decision once operations could be observed for a long period.

Agenda Item 3 – PLT Endorsement of Alternatives

Ben Acimovic (CDOT) and other members of the project team facilitated five small group break-out sessions to discuss the alternatives and answer the following two questions. 20 minutes was given for these small group break-out sessions. Group facilitators then reported back on each comment and discussion point, as well as any questions that were raised in the small group setting.

Question 1: Does everyone understand the differences between the Alternatives and the Alternative Options?

Question 2: Do we have a reasonable range of alternatives we are carrying forward? Have we missed anything big?

The reports back were as follows.

Group 1 – Ben Acimovic (CDOT)

- Clarified alternatives
- Is 65 mph on curves realistic with cost, construction time

How many years of construction will each alt take? **(see attachment on Assumptions Q&A)**

- More discussion about interim HSR
- Should we look at smaller segments of solutions vs. entire C-470 to Silverthorne

Group 2 – Wendy Wallach (Parsons)

- Would 3 managed lanes be able to do 2 one direction, 1 other direction? **(See attachment on General Q&A)**
- Will interchanges all be reconstructed? – mostly yes because of wider typical **(See attachment on General Q&A)**
- Bus service question: 2015 Denver to Glenwood Springs; 1-2 trips per day; no more until managed lanes in place
- More discussion about interim HSR
- Could HSR alt be for buses only
- Clarified alternatives; group felt good range of alts was examined

Group 3 – Brad Doyle (Parsons)

- Clarified alternatives
- Non-compete revenue clause? Concern that if phasing BRT to AGS is done in 2035, new bonds would need to be issued. Unless the original concessionaire had an agreement to phase, this could create a conflict if a second private concessionaire were

to implement an AGS and finance construction with bonds. **(See attachment on General Q&A)**

- Suggested 3rd bore location, when reversible, and explore tolling the Eisenhower Johnson Memorial tunnels (EJMT) with the minimum program. **(see attachment on Assumptions Q&A)**
- An alternative continuing interim hard shoulder running should be evaluated
- Why studying alternatives that some stakeholders feel are not viable to construct as proposed? **(See attachment on General Q&A)**

Group 4 – Ralph Trapani (Parsons)

- Why considering alts where no tolls? This is because there is a need to compare operational data. **(See attachment on General Q&A)**
- Alt 3 – what criteria could be established to determine length needed to toll? **(See attachment on General Q&A)**
- 2035 BRT, after 2035 AGS: why not BRT to 2050? **(See attachment on General Q&A)**
- Discussed interim peak period shoulder lanes
- Suggestion to model interim PPSL in No Action alternative
- How to get to publicly acceptable solution? **(See attachment on General Q&A)**

Group 5 – Al Racciatti (Louis Berger Group)

- Clarified alternatives – need more detail in descriptions
- Discussed AGS 2035 start date Clarified Alts 1 and 2 are mostly in median of existing lanes
- Clarify which alternatives included 3rd bore at EJMT
- Assumption Question No. 2: Explore tolling the Eisenhower Johnson Memorial tunnels (EJMT) with Alternative 3 **(see attachment on Assumptions Q&A)**
- Discussion HSR on left side of roadway

Agenda Item 4 – T&R Study Assumptions

Al Racciatti (Louis Berger Group) explained the assumptions, methods, and data sources going into the travel forecasting model (included in handout). Team will be using the PEIS traffic model in Level 1. It covers all potential origin and destination pairs that might be using I-70. It is currently up and running for base year and future year. Will feed Level 1 alternatives into this model to determine how traffic operations will work for each.

Discussion:

Cindy Neely (Clear Creek County): Stated April 15 to June 15 has very little traffic/congestion and should not be included in the Peak Period data set.: She suggested looking at those months more specifically to refine traffic volumes or develop third “season”. The project team will look at this and make adjustments as necessary. **(ACTION ITEM)**
(see attachment on Assumptions Q&A)

Dick Bauman: Should the value of time be different per each “season”? This will be looked at during Level 2. **(see attachment on Assumptions Q&A and General Q&A)**

Cindy Neely (Clear Creek County): Were the PEIS model results accurate in predicting future years?? How would those results compare to our model results? This is part of the calibration, and will be looked at. **(ACTION ITEM) (See attachment on General Q&A)**

Art Ballah (Colo. Motor Carriers Association): Can the sensitivity analysis be done for trucks? **(See attachment on General Q&A)** Is the value of time correct for trucks? **(see attachment on Assumptions Q&A)**

Project team will look at this and make adjustments as necessary. **(ACTION ITEM)**

Assumption Question No. 5 Truck percentage value might need to be explained further in the assumptions, as truck percentages are lower in the peak than in off-peak. **(ACTION ITEM)**

How will the design of the HSR Alternative look as far as on-ramp acceleration lanes? PPSL is on left, so alleviates these problems. **(also See attachment on General Q&A)**

The TBD statements within the assumptions will be developed and reviewed with the PLT in early 2014.

Cindy Neely (Clear Creek County): Stated all alternatives should not have the same construction year. The project team will look into this and make adjustments as necessary. **(ACTION ITEM) (see attachment on Assumptions Q&A)**

Agenda Item 5 – Discussion of T&R Study Assumptions

Ben Acimovic (CDOT) and other members of the project team facilitated a second round of five small group break-out sessions to discuss the study assumptions and answer the following two questions. 20 minutes was given for these small group break-out sessions. Group facilitators then reported back on each comment and discussion point, as well as any questions that were raised in the small group setting.

Question 1: The PEIS included an estimation of unmet demand, meaning that some people decide not to make a trip during the most congested periods on I-70. Do you agree with that assumption and what level of speed or travel time delay would prompt people to not make the trip?

Question 2: To be consistent with the PEIS, we will use the population and employment growth assumptions for future years. In the corridor, population and employment are expected to grow 2.5%-3% per year. In the Denver Metropolitan the expected growth is 1.5% per year. We will check this with current forecasts. Are there any trends we should consider?

The reports back were as follows.

Group 1 – Ben Acimovic (CDOT)

- When does congestion start in EB direction? When lifts close. **(Also See attachment on General Q&A)**
- Value of Time (VOT) is different for day trips versus weekend trip

Is the Value of Time assumption correct for all / different users? **(see attachment on Assumptions Q&A)**

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About ½ to 1 hour may be the time for delaying / omitting a trip. Can this information be incorporated? **(see attachment on Assumptions Q&A)**

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- Clear Creek County growth rate correct? Can we separate the growth rates out per area? **(See attachment on General Q&A)**
- What are the demographics of the skiers? **(See attachment on General Q&A)**

Group 2 – Mariana Torres (Louis Berger Group)

- This group feels that yes, people are foregoing trips or changing time of travel because of congestion. Repeat of No. 7 30 minutes might be a threshold to make the trip or not.
- Psychological effect between stopped versus slow moving traffic
- Are growth percentages from PEIS accurate? (See attachment on General Q&A)
- Younger generation changing when they take trip (i.e. trend of flexible work days)
- Increase in secondary home and/or using secondary home as primary home

Group 3 – Larry Pesesky (Louis Berger Group)

- This group feels that yes, there is unmet demand
- A survey should be conducted at Georgetown Visitor Center
- Jefferson County is finding more folks are using their facilities to avoid congestion on I-70
- 2013 tunnel volumes are getting back to pre-2008 drop: how will future drops be accounted for? **(see attachment on Assumptions Q&A)**
- Truck purpose questions and truck requirement questions for Level 1
- Alternatives 1 and 2 would still need to go through NEPA process, which would impact construction years – should we account for different construction years in revenue forecasts
- Include a per mile CSS factor or % CSS factor derived from previous successful CSS projects along the I-70 corridor. This is under development by CDOT. **(see attachment on Assumptions Q&A)**

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Group 4 – Ralph Trapani (Parsons)

- Construction schedules – will cash flow drive construction schedule? **(See attachment on General Q&A)**
- Population projections? **(See attachment on General Q&A)**
- Skier growth rates? **(See attachment on General Q&A)**
- Summer vs Winter demand? **(See attachment on General Q&A)**
- Compare AGS stated preference survey data to PEIS stated preference survey data for comparison at Level 1.
- How long until we finalize assumptions/still give input? Have until December 13, 2013 to get suggestions or questions to project team.

Group 5 – Al Racciatti (Louis Berger Group)

- Peak hour spread
- Difference in VOT for day pass holders versus season pass holders
- Not a good snow year last year – how does this affect traffic
- Clear Creek did not have growth according to PEIS growth rates
- Economic activity on western slope trends affect travel on I-70
- For Level 1, need to rely on FHWA roadway design guidelines
- Look at E-470 truck toll pricing structure

Agenda Item 6 – Next Steps & Schedule

Ben Acimovic (CDOT) presented a summary of the next meeting dates for the PLT/TT.

1/22/14 – PLT meeting – Silverthorne – discussion on process and partnering – CDOT will explore. (ACTION ITEM)

Note: After discussing this with representative PLT members, CDOT has decided to hold next PLT/TT in February.

2/26/14 – No meeting – project updates will be sent by email.

3/26/14 – PLT/TT meeting – CDOT HQ Auditorium (tentative) – presentation on Level 1 Results

Additional Discussion Topic

No Action Alternative – Should it include the interim peak period shoulder lane project?

Consensus that the No Action should include interim PPSL in both eastbound and westbound directions, from Empire to Twin Tunnels. **(Final Decision)**

Question remains as to what should No Action include west of Empire, in both eastbound and/or westbound directions? At this time it is not being modeled in the base case because PPSL is not funded in both directions. Consider doing two modeling runs – one with these and one without. **(CDOT will discuss and make a decision) (ACTION ITEM)**

Meeting adjourned.

Attachments:

Recommendations to Modeling Assumptions
General Q&A from PLT / TT Meeting

General Questions and Answers from PLT/TT Meeting December 5, 2013

Questions	Answers
Would 3 managed lanes be able to do 2 one direction, 1 other direction?	No, the intent is to run the Managed Lanes in the peak direction. In order to run 2 lanes in one direction, and one in the other would require a moveable barrier. Moveable barriers have already been studied for use on the Mountain Corridor and have been found to be infeasible.
Will interchanges all be reconstructed?	Most of the interchanges will need to be reconstructed to accommodate the wider template.
Will there be a non-compete revenue clause?	Yes, there will be a non-compete clause for the concessionaire contract. If a second concessionaire were to be allowed they could possibly divert revenue and ridership rendering the investment unattractive.
Why studying alternatives that some stakeholders feel are not viable to construct as proposed?	The team is evaluating a “reasonable range of alternatives”. The team asked if the PLT/TT felt this statement was accurate at the December 5, 2013 meeting and the answers were affirmative.
Why is the team considering alternatives that don’t include tolls?	The team is not considering any “Build” alternatives that don’t include tolls. There is a baseline alternative which does not include tolls that will be used for comparison of operations data.

<p>Regarding Alt 3 (PEIS Minimum Program) – what criteria could be established to determine length needed to toll?</p>	<p>Per CDOT Policy Directive 1603.0, managed lanes must be strongly considered during the planning and development of capacity improvements on state highway facilities.</p> <p>All new capacity will be considered for tolling. Small sections of auxiliary lanes will not be tolled. It does not make sense to toll short lengths of improvements. But tunnels would be tolled.</p>
<p>The assumptions state that there will be 2035 BRT, after 2035 AGS: Why not BRT to 2050?</p>	<p>Under concessionaire agreement, AGS will be analyzed for implementation on a regular basis. If a business case can be made for implementation, the concessionaire will be required to implement AGS.</p>
<p>How to get to publicly acceptable solution?</p>	<p>The team is working with a Project Leadership Team, a Technical Team and Issue Task Forces to solicit input on the Traffic and Revenue evaluation. These groups represent a wide array of interests in hopes of reaching a mutually agreeable solution for all stakeholders.</p>
<p>Should the value of time be different per each “season”?</p>	<p>USDOT guidelines and toll road literature have found that Value of Time (VoT) is a direct function of income. Income can be assumed to be generally steady throughout the year. In the Level 1 study we will maintain the assumption of steady VoT throughout the year, however, we will differentiate VoT by trip purpose as was done in the PEIS (e.g., recreation travelers have a higher value of time than commuters). In Level 2 we conduct a Stated Preference survey to determine if VoT differs substantial by season of travel in addition to trip purpose.</p>

<p>Were the PEIS model results accurate in predicting future years?</p>	<p>The study team has updated the PEIS model to incorporate 2010 census counts and up-to-date employment estimates. After updating the model performs as well as the PEIS model in corresponding to base year traffic counts. We will provide an evaluation of the performance of the model in the Level 1 Report.</p>
<p>Can the sensitivity analysis be done for trucks? Long-haul operators may have different value than short-haul LTL delivery.</p>	<p>The study team will conduct a literature review for the appropriate VoT for long vs. short haul trucking and will conduct sensitivity tests to determine the impact of a range of potential values on the final results for commercial traffic</p>
<p>How will the design of the Hard Shoulder Running Alternative look as far as on-ramp acceleration lanes?</p>	<p>The motorists on the Peak Period Shoulder Lane (HSR) would use the inside shoulder therefore there would be no conflict.</p>
<p>When does congestion start in EB direction?</p>	<p>When the lifts at the resorts close.</p>
<p>Clear Creek County growth rate correct? Can we separate the growth rates out per area?</p>	<p>Berger has updated the model to reflect growth in population and employment through a new base year (2010). We will provide documentation of the difference in growth rates in the Level 1 Report.</p>
<p>What are the demographics of the skiers?</p>	<p>The PEIS contained information regarding the demographic profile of winter resort visitors, and the recent AGS study may have additional relevant information. The study team will review this information for any impact on the study assumptions and will present the results of this review in the Level 1 Report.</p>
<p>Construction schedules – will cash flow drive construction schedule?</p>	<p>No, cash flow will not. However it is a benefit to the concessionaire to accelerate construction to start toll collection.</p>

<p>Are growth percentages from PEIS accurate? Skier growth rates? Summer vs Winter demand?</p>	<p>The study team will review Colorado tourism reports and available information from the ski industry to determine if the growth and demand rates for resort visitation are consistent with the assumptions in the PEIS and the I-70 Corridor Model. The results of this review will be documented in the Level 1 Report.</p>
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Recommendations to Modify Modeling Assumptions

Questions about Assumptions from PLT	Comments
How many years of construction will each alt take?	Construction duration varies from alternative to alternative, ranging from 1 year (Base Condition) up to 4 years (NOT including the time needed for additional environmental studies, This information has been added to the schematics for each alternative.
Explore tolling the Eisenhower Johnson Memorial tunnels (EJMT) with Alternative 3	For Alternative 3 Options 1 and 2 the lane that runs through the third bore of the EJMT will be dynamically tolled.
Refine months more specifically to refine traffic volumes or develop third "season".	The Level 1 Study will be based on the same seasons of travel as designated in the PEIS in order to appropriately compare across results. The peak travel seasons are defined by 12 winter weekends in a year (a total of 48 days) running from the Friday after Thanksgiving to April 15th; and 17 summer weekends in a year (a total of 69 days). The remaining 23 weekends in the year (92 days) are considered off-peak for the purposes of this analysis.
Is the value of time correct for trucks?	Berger is conducting a literature review to identify a more appropriate value of time for long distance freight. We will provide the PLT with further information as it develops.

<p>Truck percentage value might need to be explained further in the assumptions</p>	<p>As stated in the PEIS: "On weekends, truck and recreational vehicle use is most dominant in Garfield and Eagle counties: seven to eight percent, respectively. In the rest of the Corridor, truck and recreational vehicle use is about three to four percent of person trips. On summer weekdays, truck and recreational vehicle use is most dominant in Glenwood Canyon at 12 to 14 percent, followed by Clear Creek County at nine or ten percent, then Silverthorne to the Loveland Pass interchange with nine percent, and finally the Edwards to Vail East Entrance and Jefferson County segments tying with eight percent. (The fraction of heavy vehicles in Jefferson County represents a smaller percentage, but the greatest number of these vehicle trips in both directions combined.)" (Pg. 7 of the Technical Report). We will add this detail to the assumptions list. Note that we will use these numbers as a starting point, and expect to be able to corroborate the percentage with the winter and summer counts that we plan to conduct.</p>
<p>Is the Value of Time assumption correct for all / different users?</p>	<p>The VOTs proposed come directly from existing studies of the corridor including the PEIS (Pg. A-149 Technical Report) and the AGS study (Colorado AGS Mode Choice Model spreadsheet from SDG SP Survey Results). We will use these numbers as a starting point, but given that they do seem low when compared to the USDOT guidelines ("Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis" Sept. 28, 2011 http://www.dot.gov/office-policy/transportation-policy/revised-departmental-guidance-valuation-travel-time-economic), we will test a range of numbers and evaluate based on the results</p>

<p>About ½ to 1 hour may be the time for delaying / omitting a trip. Can this information be incorporated?</p>	<p>The Team will take into account this anecdotal information for Level 1 and corroborate it at Level 2 with the stated preference survey.</p>
<p>Can we separate the growth rates out per area?</p>	<p>The growth rates are separated on a per county basis, as described in the PEIS on appendix C, page. C-4.</p>
<p>How will future drops in volume at tunnels be accounted for?</p>	<p>There are no assumptions related to changes in traffic volumes, and none particularly to changes in traffic volumes at the tunnels. The traffic volumes throughout the corridor will be calculated by the model based on existing traffic volumes in combination with assumptions on traffic growth rates, design specifications of capacity additions, values of time and days of lane closures.</p>
<p>Include a per mile CSS factor derived from previous successful CSS projects</p>	<p>CDOT initially looked at a per lane mile CSS factor but found that more in-depth study of project budgets would be required to determine that from past projects. CDOT queried consultants, current and ex-CDOT employees, and contractors on the percentage of design and construction budgets impacted by CSS. Two factors will be applied. A CSS design factor ranged from 3%(SH91) to 300% (Glenwood Springs). Glenwood Springs was kept in the analysis and was not removed as an outlier. A CSS design factor of 27% will be added to all design costs for this study as the average of all projects. A CE or Construction CSS Factor ranged from 5% (SH 91/WB TT) to 39% (Frontage Road). A CSS design factor of 19% will be added to construction costs where CSS has not already been added or meets the CSS guidelines.</p>