

I-70 TRAFFIC & REVENUE STUDY ISSUES TASK FORCES

TOLLING AND MODELING TASK FORCE MEETING MINUTES

- **Meeting Date:** *Dec. 4, 2013* ► **Time:** *Modeling & Tolling
9:30 am – 11:30 am*
- **Meeting Place:** *CDOT West Campus - 425B Corporate Circle, Golden, CO*
- **Distribution / Attendees:**

Modeling & Tolling Task Force

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Modeling Task Force Meeting Notes

Topic #1 - Introductions

Joe Mahoney and Nick Farber kicked-off the meeting. Introductions were made. The meeting was then handed over to Al Racciatti from Louis Berger Group (LBG). He began a PowerPoint presentation with an overview of the modeling and limits, and discussed assumptions. Some assumptions are more of a “method”, and include data sources. This set of assumptions will be discussed at the PLT meeting on the following day, so any comments that we have before presentation would help.

Topic #2 – Level 1 Modeling Assumptions

Level 1 analysis is using the existing modeling tool developed for the PEIS. This is appropriate for this sketch level study. The team is fortunate to have a complete modeling tool for this corridor. Model contains base year and future year representation of full roadways, household, and employment locations by Traffic Analysis Zone (TAZ).

Regional model is much larger than DRCOG metro region, so it picks up trips that originate or end in numerous counties; model includes thru trips as well. Al reviewed termini, on the west - Exit 205 (Silverthorne) and on east - C-470 interchange.

Future year is 2025 and the team will extrapolate to 2035 and 2040 to use for outputs for the financial model. The driver is the growth that produces trips between 2010 and 2025.

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Art from Colorado Motor Carriers Association stated that commercial vehicle miles travelled (VMT) will increase more than general VMT and inquired whether the model will reflect this. American Transportation Research Institute (ATRI) has information on this; there has been an issue in the past of DRCOG underestimating freight VMT in their model. Al said he should get that information from ATRI because he thinks the PEIS model will behave similar to the Denver Regional Council of Governments (DRCOG) model. The PEIS model may be okay for Level 1 but the team will use ATRI info in Level 2; however Berger will do a sensitivity check in Level 1 for this issue.

Melinda asked what platform was used for the PEIS? It was TransCAD. Caliper (who is a subconsultant to Louis Berger on the project team) developed this program, and they did verification runs and the model is functioning.

Randy asked if the model takes into account a Build Year. Al said since they are only doing two years: 2010 and 2025. A No Build alternative will be modeled for both 2010 and 2025 to be used as a baseline. When Berger does the extrapolation, it will include a Build year.

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Topic #3 - Alternatives

Al briefed group on current list of Alternative Options, the range includes alternatives from PEIS, as well as several managed lane scenarios. There is also a proposed Hard Shoulder Running (HSR) Alternative. Joe asked if it was practical to even consider construction of a third bore with HSR. Nick said we need to look at it and include the cost, so we can see if it brings in sufficient revenue. Randy said that also the team wants an “apples to apples” comparison.

Melinda asked if a Managed Lane with tolling is considered part of the Minimum and Maximum Program. Berger responded that currently there is not. Melinda asked why we are modeling these alternatives if there is no way for them to generate revenue. Al said we want to show the traffic performance of those alternatives compared to revenue generating alternatives. Although they won't score well in financial component, there are other criteria to consider in the evaluation. Al said the team needs to clearly understand costs associated with traffic performance. Randy asked if we should consider Minimum and Maximum Program as a base case for this analysis. Al said somewhat since the PEIS outlined improvements to resolve issues, so the team needs to see how it performs relative to other alternative options. Al noted that usually for a strict T&R Study, these non-revenue alternatives wouldn't be considered. However because of corridor specific process, we are including these alternatives.

Ralph noted that the Minimum program includes “disconnected auxiliary lanes” and he is not sure how they can generate revenue. Al said they are assuming that the Minimum and Maximum Program alternatives cannot be tolled. Ralph thinks we may want to explore this in Maximum, Parsons assumed it could be tolled. Nick said any new capacity should consider tolling so maybe we should model the Maximum Program both ways.

David asked if there could be a Level 1 versus Level 2, where we should address tolling more in depth in Level 2. Al agreed and said the TransCAD model makes it a little more difficult to represent tolls. We could do it for Maximum but more challenging. David said if we do this in Level 1, model would need to be recalibrated and may need stated preference survey. Al said the PEIS model can consider tolling and value of time. David said tolling is considered as a value of time proxy. Eric said regarding tolling approach, the ITF is still considering how to handle it. Eric thinks it should be handled through assignment and diversion so it can be used with PEIS model. Berger feels handling toll lanes in the assignment process is acceptable for Level 1. In Level 2 it will be much more detailed.

Ralph thinks the stakeholders are expecting to see tolling explored with the Maximum Program. Ralph said it came out in the earlier meetings. There were concerns about changing alternatives that were developed as part of the Alternatives ITF. Wendy said this could be discussed at PLT; Joe concurred. He asked are we looking at diversion for BRT and AGS. Al said for BRT it is more than just a diversion rate and for AGS rate we are using recent data from AGS study. David asked if the PEIS model will run the mode choice. Not at this level.

Joe said if there is no revenue we still have capital costs and operating costs and asked how are we addressing CDOT bus service. It was noted that there are references that will be provided by CDOT-DTR. This will include fare box revenue and will be considered in the cash flow model. Al said there will a cash flow model for every alternative option.

Randy feels like we should recommend that the third lane be tolled under the Maximum Program. Scott asked would this be a new option. Ralph said it would be a subset on the PEIS alternatives. Al asked what design speed should we assume. Ralph said it shouldn't make a difference since we have estimated costs for both 55 and 65. Randy thinks we should model the Maximum Program with and without a toll; the group concurred. Berger said then we need to add explicitly where the toll would be applied.

Art asked whether the managed lane is operated during the peak period only. Al said for Alternatives 1 and 2, they are open 24/7 and toll is relative to level of congestion. Management of the toll will be considered at 15 minute intervals. This will achieve free flow in the lanes at any hour. There will always be a minimal cost.

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Scott said with HSR, the lanes would not be managed 24/7 for this, it would be shoulder in off-peak and only be charged in peak period.

Scott asked how trucks are considered in the model, like exiting at Port of Entry and chain stations; how is this considered? Al said in Level 1 we are not looking at these factors, but they will be determined in Level 2. Art inquired whether in Level 1 there will be no segmentation for trucks but this will be developed in Level 2. Al answered yes.

Randy asked if we are assuming the MUTCD spacing for signs. This will be a point of contention on corridor — less is best. Ralph said we were directed by FHWA to use industry standards.

Joe provided cost factors for processing transponder and license plate toll transactions. Randy asked if this is a Level 1 or Level 2 cost. Where are the assumptions built in? Scott said we have base assumptions for Level 1 and in Level 2 will make specific assignments. Art cautioned against using E-470 because it is a high cost for freight. Nick said we have to use E-470 for cost assumptions as that is the CDOT toll services provider at this time. Joe agreed.

Al noted that for Level 1 they are using PEIS model trip purposes and trip tables for their assumptions. This is valuable because it has been calibrated and validated to existing conditions. They are using Origin-Destination data from the Advanced Guideway System (AGS) Study. They will compare this to PEIS for benchmarking purposes. Bart asked how holidays were considered. Berger said they are classified into the weekend peak period.

Ralph asked how route assignment would handle new CDOT bus route. Berger said they will manually assign it. In Level 1 they are not explicitly including the AGS capture rate, they will convert it into auto trips instead of person trips.

Eric asked at what level will we be doing multi-class assignment, this is why people talk about looking at choice before assignment and will cause various differences in sensitivity to price. What are they planning breakout for purpose and also by occupancy levels? How far will Berger go? Al said they will be doing modeling at the trip purpose level, so they capture value of time and discounting for auto occupancy. In level 2, they will represent value of time as distribution and distribution will be developed for each trip purpose. Distribution will be derived from the stated preference survey. Caliper will structure survey so that we can get a representation of distribution. Al will work with Eric to move forward.

Eric asked how old the socioeconomic forecasts were. They were initially based on year 2000; will be brought up to year 2010. Some of them were updated for the PEIS in 2010. Al said they are gathering new data and benchmarking as to what's in the model, if there is substantial delta, the model will be adjusted. Joe said the State Demographer's Office projects annual growth to be closer to 1.8%.

Al talked briefly about the "all tolled" option for sensitivity. Melinda asked what we mean by sensitivity. He is not referring to probability or confidence, but it helps Berger evaluate the model and get some confidence that model is a good forecast of base year conditions. This allows Berger to see if models perform accurately. Melinda asked how will we know if model is working with data from sensitivity test. Al said this will be detailed with the Level 1 report.

Eric asked how we are looking at effects on trip table distribution from different scenarios. Al said this will not be considered much at Level 1. Eric thinks it is related to trip inducement and suppression, and it would be interesting to see results. Is toll included in trip distribution or not? Al said this is a good question and he will provide an answer back to the group. Al said it would be included in the Level 2. Eric said this will make a significant difference between Level 1 and Level 2. This difference should be understood and documented. Al said this will be an output from Level 2. Eric said this should be developed in Level 1 so we can think about doing it sooner rather than later. Al said this information will be included as a risk assessment. Art has a problem with using value of time. The industry uses a per mile cost. Art feels that value of time is irrelevant for truckers; the impact of the toll will depend of length or segment that is being tolled. He said the only elasticity is where a driver is bumping up

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against an “hours of service limitation”. Art said this is why value of time is not applicable to commercial vehicles. Al understood and said this needs to be discussed in Level 2.

Scott said for maximum program since there is only one buffer separated lane, assume trucks will not be allowed to use it. Al concurred.

Scott also asked how we are considering closing the lanes for reversal. Al will need to check with Caliper. Eric said he thinks DRCOG addresses this for the I-25 reversible express lanes and we should check with them.

Ralph asked if they were going to break out tunnel separately for Level 1. Ralph said they were concerned with this earlier in Wilbur Smith study. Al said he will see if this can be broken out and get back to Ralph.

David said the AGS has different value of time numbers than Berger is showing. David will get with Berger offline to rectify or provide explanation for differences. Al cautioned that Berger will be doing their own stated preference and the value of time will be higher than what they are currently showing. Randy asked if AGS did stated preference; he thinks value of time was 15 to 18 dollars.

The group said there may be updated date on traffic mix (commercial) since the PEIS.

Al went over how they would address induced demand. The PEIS model estimated extent of trips not taken; Berger will examine how this was developed. They will also do model runs of constrained versus unconstrained to arrive at how much is suppressed. In Level 2 model will determine this with more precision. Eric asked how we are considering “time of day choice”, Al said not included, distributions are static. Eric would like to know more about this relative to trip purpose. Al said for Level 1 it can only be static, for Level 2 Berger will try to address it in the stated preference survey. Eric said he thinks we could come up with methodology to address suppressed demand to help validate. Patrick B said that since 2007 skier has dropped off, he thinks it is due to I-70. Eric said this group or a subset needs to consider the extremes of our scenario.

Joe asked about transit assumptions, bus will be operating in 2014, Bus Rapid Transit (BRT) in 2018, and AGS in 2035. The bus will go away in 2035. Joe thinks the team may need updated numbers for cost estimating. He and David will work to get the team. Joe asked how we are assuming AGS will be paid for. David said one means would be to form an RTA and a tax will generate funds. CDOT will not be funding or financing the AGS or BRT service. This could dilute ridership in the managed lanes and should be accounted for. Joe feels that the CapEx cost of the AGS is staggering, Debt Coverage ratios and Rehabilitation costs are not in the calculations, 2035 is not a realistic assumption. Solely for T&R analysis AGS starting in year 2050 is a more appropriate year; how will this be considered? David responded that for some it (2035) is realistic. Current studies show that you look at it as a comprehensive system that 18 counties could use to form RTA. Joe responded yes but of the 18 counties the metro area, especially north front range, would be built out first and the AGS would be the last segment implemented. In response there was comment that stakeholders on the PLT expect an AGS and will not pull back from this concept. Al asked how we should consider this. Joe said if need be he will bring it up in the PLT meeting tomorrow. Ralph noted they struggled with this and there is concern about revenue erosion with AGS diversion. Ralph thinks maybe we could just roll the ridership over and then it would not impact model significantly. Joe just thinks we need to reexamine when AGS should be taken into consideration.

Mariana said we need O&M costs for the CDOT bus. David will ask for finalized costs and get it back to the team.

Melinda asked about operation assumptions for the lanes. Al said they will look at speed to volume relationships for these lanes. A simulation model will be used in Level 2 to test assumptions. This will help determine if assumptions are reasonable.

Bart asked the tunnels have reduced capacities which also vary between summer and winter and whether the model will account for this. Al said yes.

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These notes are an interpretation of discussions held. Please provide any additions or corrections to the originator within seven days of the date signed, otherwise they will be assumed correct as written.

► *Prepared By:* Wendy Wallach – Parson & Scott Thomas – Apex Design *Date:* 12-11-13

Next Meeting: TBD, expected to be held in January, 2014.

Attachments: The following attachments were provided as supplemental information at the meeting.