

TECHNICAL MEMORANDUM

To: Mark Nielsen, Public Works Director

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Subject: Draft State Route (S.R.) 30 Travel Modeling

Introduction

Logan City wishes to better understand the impacts of the Cache Metropolitan Planning Organization (MPO) 2040 Regional Transportation Plan (RTP) projects as they pertain to the S.R. 30 Environmental Impact Statement (EIS) project. To do so, they have contracted with Parametrix to perform three 2040 model alternatives, which test the impacts of the Western Arterial and the widening of the "Jail Split" and 400 North. The three model alternatives are as follows:

1. 2040 RTP Model without the Western Arterial
2. 2040 RTP Model with Jail Split and 400 North as 3-lane Collector to 100 West
3. 2040 RTP Model without the Western Arterial and with Jail Split and 400 North as 3-lane Collector to 100 West

Model Preparation

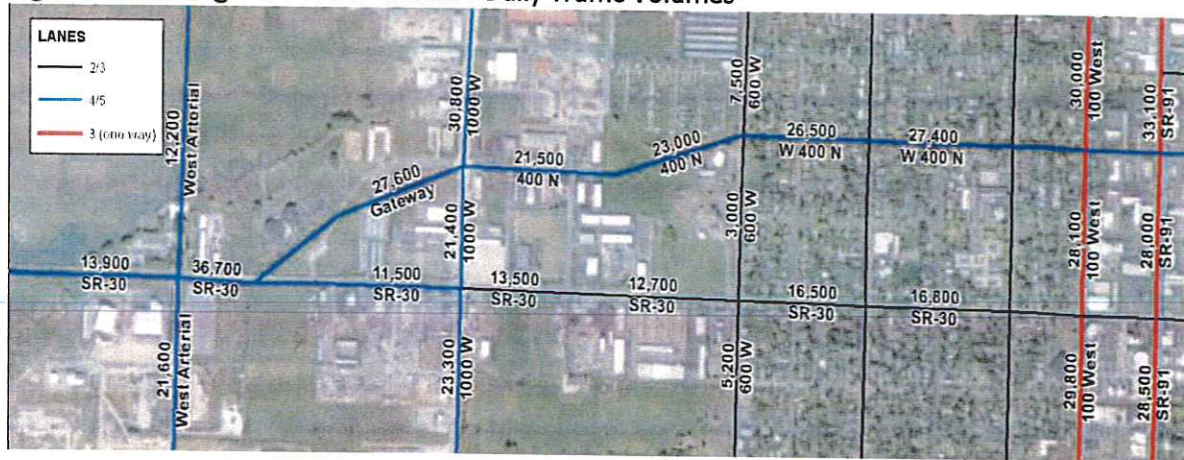
Because Parametrix is conducting the modeling for the S.R. 30 EIS project, the calibrated 2040 Cache MPO model used for the EIS served as the basis for the three model alternatives.

For alternatives 1 and 3, model links for the Western Arterial were removed from approximately 1400 North to U.S. 91 to represent no Western Arterial connecting to S.R. 30. For alternatives 2 and 3, lanes inputs were changed from two in each direction to one in each direction along 400 West from the Jail Split to 100 West. Also for alternative 2 and 3, the functional class for 400 North was changed from arterial to collector along the same extents so that the roadway represents similar character and functionality as it does today.

Results

The results (expressed in daily traffic volumes) of the three model alternatives are discussed below. As a point of reference, model results from an unchanged 2040 RTP model are shown in Figure 1.

Figure 1: Unchanged 2040 RTP Model - Daily Traffic Volumes



Alternative 1: 2040 RTP Model without the Western Arterial

Without the Western Arterial, north-south traffic is being displaced to parallel routes, such as 1900 West and 1000 West. East of 1000 West, the absence of the Western Arterial has little impact on overall traffic volumes on 200 and 400 North as compared to the unchanged 2040 RTP Model. However, there is a marked decrease in volumes on the Jail Split west of 1000 West. This is because traffic has already been displaced from the Western Arterial to the east of this road segment. Figure 2 shows Alternative 1 model outputs.

Figure 2: 2040 RTP Model without the Western Arterial – Daily Traffic Volumes



Alternative 2: 2040 RTP Model with Jail Split and 400 North as 3-lane Collector to 100 West

With 400 North functioning as a 3-lane collector, it does not provide an attractive enough option to divert traffic coming to and from the west on S.R. 30. In this scenario the Jail Split and 400 North carry a small amount of traffic, while 200 North (S.R. 30) supports most of the demand. Figure 3 shows Alternative 2 model outputs.

Figure 3: 2040 RTP model with Jail Split and 400 North as 3-lane Collector to 100 West – Daily Traffic Volumes



Alternative 3: 2040 RTP Model without Western Arterial with Jail Split and 400 North as 3-lane Collector to 100 West

As compared to Alternative 2, removal of the Western Arterial has little impact on total traffic volumes on 200 North and 400 North. Volumes on these two roads largely mirror Alternative 2, with the traffic from the Western Arterial being diverted to parallel routes. Figure 4 shows Alternative 3 model outputs.

Figure 4: 2040 RTP Model without Western Arterial and with Jail Split and 400 North as 3-lane Collector to 100 West – Daily Traffic Volumes



Conclusion

Examined together, the alternatives reveal a strong north-south travel demand that filters east towards Logan. This demand remains constant with or without the Western Arterial, where in its absence the demand is carried by other existing routes (1900 West, 10th West). Travel demand in all alternatives is sufficient to warrant widening on either 400 North or S.R. 30 east of 10th West. East of 10th West, predicted demand on 400 North as a 3-lane road is likely understated by the model, but demand prefers SR-30 unless 400 North is a 5-lane road.