

# MEMORANDUM

<b>To:</b>	ACHD Staff & Commission	<b>Date:</b>	February 13, 2007
<b>From:</b>	Andy Mortensen, The Transpo Group	<b>TG:</b>	05256.00
<b>Subject:</b>	<b>February 21 Work Session: Update</b> Travel Demand Model Refinement for TLIP Application		

This memorandum report summarizes the work-in-progress refining the Regional Travel Demand Model for use in the Transportation-Land Use Integration Plan (TLIP) and in future ACHD efforts. The major findings and deliverables of the TLIP process will include revised (livable) street design standards, revised street functional classification map and policy, revised long-range transportation plan which includes important collector street. To prepare these findings the TLIP effort includes a significant step to refine and apply COMPASS' travel demand model.

At the work session, Andy Mortensen will present more detailed information as well as some illustrations of the process and results to date.

## Purpose of TLIP Travel Modeling

At present, the COMPASS travel demand model is too coarse to test the impacts of new collector streets and enhanced collector street connectivity, an important element of the TLIP effort. The TLIP study is also tasked with testing alternative level of service (LOS) standards, consistent with the current findings of *Blueprint for Good Growth*, and the forthcoming adequate public facilities ordinance (APFO).

## Tasks Completed To Date

Within the past six months two major tasks have been completed in refinement of the COMPASS model for use in the TLIP study:

- (1) splitting the transportation analysis zone (TAZ) structure to provide a basis for better subdivision and collector level analysis— in some areas split square-mile zones into 4, 1/4-mile zones
- (2) refined model traffic assignments to match base-year count volume. This has been a technical process to develop the ACHD model.

In the process of refining the TAZ structure the consultant team has also established a “master” network and database structure, enabling ACHD staff to more efficiently and accurately develop and track alternative roadway network and forecast scenarios in later study efforts.

For all of the model refinement both the **24-Hour** and **PM Peak Hour** model estimates are identified. The **24-Hour** volume estimates provide a general sense of street network use and capacity, and the **PM Peak Hour** volume estimates provide more focused results and assessment of the effects of peak hour congestion.

## Work-In-Progress

Several different “scenarios” have been defined in the TLIP study to compare and contrast model findings with respect to the region’s future street and highway system capacity. Elements for each scenario are segregated in two categories: (a) street capacity and (b) land-use/transportation policy options.

### Street Capacity Options

Model scenarios have been defined to illustrate the effect of *Communities in Motion* components, to better understand the affect of long-range plans on the ACHD network. These scenarios are:

- ITD’s freeway and highway capacity improvements
- ACHD’s current Capital Improvement Plan for arterial street capacity improvements
- ACHD planned collector street system (degree in which a well-planned and connected collector street network alleviates congestion on arterial system)

### Land-Use/Transportation Policy Options

For each of the future street capacity options studied in TLIP, the baseline future *travel demand* estimate is based on the region’s land use plan finding reflected in the “Community Choices” land plan option from *Communities-In-Motion*, mutually agreed-upon by the various jurisdictions in Ada County.

- ***This is an extremely critical policy issue to ACHD, as it is central to the evolving issues relating to the eventual Adequate Public Facilities Ordinance, of which the Draft Extraordinary Impact Fee is part.***

Another policy option to be studied is an alternative LOS option which reflects the *Blueprint* and *TLIP* interim findings, focusing on perhaps more relaxed LOS standard thresholds in areas designated by *Blueprint for Good Growth Tiers*. These tiers are generally defined as activity centers, including neighborhood, community and regional activity centers. We will illustrate these on the map during the work session.

Rather than ACHD’s current LOS “D” standard, other thresholds will be tested such as LOS “E” and/or “F” for certain facilities in the Tier locations (e.g. consider “E” or “F” in downtown settings; consider LOS “C” or higher in rural settings). Policy ramifications will be identified and the findings of this option may indicate a different and perhaps shorter list of long-range arterial street capacity improvement projects needed within 20 years than previously studied (e.g. 2007 CIP).

And finally, a third policy option will be tested which compares the composite transportation improvement project list from TLIP and refined LOS thresholds based on the *CIM Trend* option. This option can then be compared side-by-side with *Community Choices*.

## Further Uses of Model & Policy Implications

The refined ACHD travel model database will be available for a number of uses by ACHD, particularly in future sub-area and corridor analyses. Consideration of the interim TLIP

findings and recommendations contained in the model database will be helpful to future land use/transportation studies. Technically, a more detailed database structure and analysis method will help ACHD develop project plans.

The model database will also serve as a baseline for policy analysis and consideration of major land use plan options within Ada County. The model can be used to directly test the impact of alternative Comprehensive Land Use Plans on ACHD's arterial and collector street system while comparing and contrasting new findings with the Region's baseline land plan assumption (Choices) and the currently adopted ACHD CIP (Traffic Impact Fee); such that the findings can then be transitioned into a discussion of *Adequate Public Facilities Ordinance* and *Extraordinary Impact Fees* (or conditional approvals).

## Feedback to COMPASS

Preliminary findings of work refining the model have indicated a number of interim products that may prove helpful to COMPASS and can be incorporated in future updates of COMPASS' regional model refinement and planning. These include:

- Refined TAZ system and planned collector street network,
- Alternative volume-delay functions for arterial and collector street model assignments (better indicators of congestion), and
- Comparative scenarios tracking TLIP findings and policy consistency with *Community Choices* and *Blueprint* findings, particularly the baseline policy assumptions with regards to Adequate Public Facilities Ordinance (a product of *Blueprint*) and concurrent development of ACHD's Extraordinary Impact Fee.

## ACHD Model Limitations

While there are many uses ahead for ACHD's refined travel model, several significant limitations should be kept in perspective:

- Travel model estimates do not replace the need for site-specific traffic studies that address safety and operational impacts of specific land use development plans.
- The model does not provide street corridor and intersection design needs as output. Professional planning and engineering analysis is required in use of travel model output as part of street plans and designs, which includes a variety of other tools and input information.
- The model provides intersection turn-volume estimates, but does not consider the direct affect of intersection operational constraints (e.g. signal timing, etc). Also, intersection volumes are not suitable for direct application in intersection operation analysis without professional review and assessment.
- The quality and accuracy of the land use and demographic inputs have significant impact on model volume estimates and travel patterns. Care must always be given to base land use and growth forecast assumptions.