



**Sub Group 4 Meeting, Medians
Access Management Committee
Transportation Building
355 Capitol Street NE, Room 119
Salem, OR 97301
1:00 – 3:00 AM, July 26, 2010
FINAL**

Working Facilitator: Del Huntington.

Participants: Representative Doherty, Craig Campbell, Bob Russell, Harold Lasley, Joe Marek, Chris Doty, Jim Cox, , Rick Nys, and Lainie Smith.

Meeting Purpose

Identify legislative concepts for potential additions and/or revisions to the Oregon Revised Statutes (ORS), potential revisions to the Oregon Administrative Rules (OAR), and the Oregon Highway Plan (OHP) of objective standards for the use of “medians”, to advance to the Access Management (AM) Committee. Identify when and where “medians” are installed on state highways as a mitigation measure for a proposed development and in corridor applications. PLEASE NOTE: for the purpose of this discussion, “medians” provide an area between opposing lanes of travel on the roadway and include a diverse set of possibilities including but not limited to; a painted stripe or series of painted stripes, a narrow section of pavement, a Continuous Two Way Left Turn Lane (CTWLTL), a physical barrier, a landscaped strip and a non-traversable (NT) median that prevents motorists from crossing from one side of the roadway to the other. The vast majority of the sub-group discussion focused on NT medians and this type of median treatment is implied in the meeting minutes unless stated otherwise.

Discussion

Del provided a brief summary of the AM sub-group # 1 and # 2 from last Thursday and identified a proposed timeline that would require each sub-group to advance recommendations to the AM Committee by the September meeting. This would allow time for the AM Committee to request revisions from each sub-group in order to finalize a recommendation by the October meeting date. This schedule would allow ODOT and other stakeholders to formalize and review the proposed text for legislative concepts and advance to the Senate Committee in December, 2010.

Bob Russell informed the sub-group that Senator Johnson is developing a senate bill that will separate the counties from ODOT within ORS 374. The bill will provide a placeholder for other access management related issues that may be advanced by the AM Committee. Senator Johnson's bill will provide an extended timeline for the AM Committee to work on specific recommendations as concepts may be added to the bill as late as February, 2011.

A policy that would protect and preserve a vertical and horizontal dimension to accommodate truck traffic and the movement of freight

Bob would like to see a matrix developed based on Average Daily Traffic (ADT) and safety that would provide guidance on the necessary horizontal and vertical clearances required to move freight on highways across the state. The matrix would be used for decisions on routes that are not a part of the state freight route system and not included under requirements of ORS 366.215. The matrix would serve as a second tier of criteria when ODOT considers various median treatments.

The trucking industry has a need for 28 feet of unobstructed horizontal clearance on the surface of roadway cross section. Even a 6 inch vertical curb at a raised median can become a concern as many of the heavy, large loads are pulled on a trailer with three inches of vertical clearance. Bob is mostly concerned when medians are installed on two and three lane highways in the rural areas. A lack of intersecting public roads requires the truck to turn at one designated location which can be difficult when the horizontal dimension is unavailable. (Bob supports the raised median on Highway 22 between West Salem and Rickreall as it was constructed on a five lane highway, with wide shoulders and was installed to address a specific safety concern of high-speed cross-over crashes).

Bob expressed concern with a raised median that was installed on a highway between Stanfield and Hermiston in eastern Oregon. Truck traffic frequents a Wal-Mart distribution center located adjacent to the highway and the raised median has made it very difficult for left-turning trucks entering the highway. Trucks are unable to turn into a CTWLTL as part of a two-stage left turn, rather, they are required to into the through lane. T-bone crashes involving trucks and through vehicles have occurred since the raised median was installed. Landscaping in the median has recently been trimmed in an effort to improve sight distance to allow truckers to better identify an acceptable gap in the travel stream before proceeding into the roadway.

Lainie – there are areas that have already developed where it is more difficult to install a median. Consideration of a raised median requires local government and ODOT to work together. She identified Highway # 212 through Damascus as a location where ODOT and the local jurisdiction are considering a raised median in the planning process.

Jim Cox asked the question if ODOT installs median barriers as a means to prevent every left-turn to and/or from the site. ODOT typically attempts to install raised medians prior to the development along the roadway and Jim wants to preserve this right for the agency.

Representative Doherty prefers that raised medians be installed prior to development along the corridor, not after the development has occurred.

Craig is concerned that a raised median installed through a developed corridor could result in properties becoming obsolete.

Del summarized a section on median treatments that is part of the National Cooperative Highway Research Program (NCHRP) *Report 420: Impacts of Access Management Techniques*. (Please note; Del incorrectly referred to the Transportation Research Board (TRB) *Access Management Manual, 2003* as the source document). Report 420 identifies that CTWLTLs generally provide a 33 percent safety improvement as compared to undivided highways while raised medians generally provide a 35 percent safety improvement as compared to undivided highways. The *Access Management Manual, 2003* is in support of raised medians over CTWLTLs as it can provide a pedestrian refuge at mid-block crossing locations. A properly designed raised median also provides more positive guidance for motorists than a CTWLTL and has been found to be increasingly effective as vehicle speeds and traffic volumes increase.

High traffic volumes through a corridor with a CTWLTL can effectively act as a raised median as it can be difficult for a motorist to turn left into the travel stream. A motorist can make the left-turn across the CTWLTL when traffic volumes decrease in the non-peak hours of the day. It is generally acknowledged that a CTWLTL will support a different adjacent land use along the highway corridor as compared to a non-traversable median.

Harold provided a handout, Policy 3: Medians, page 112 and 113 from the OHP. This policy provides staff with various thresholds as to when a non-traversable median is to be installed on state highways. (The median policy is available at the following link).

<http://www.oregon.gov/ODOT/TD/TP/docs/orhwyplan/hwyplan/PolicyElement.pdf>

In reviewing the handout, Bob commented that the trucking industry is not concerned about highway where the ADT exceeds 28,000 ADT as shown in policy 3B.3 as he is confident that the roadway will include 28 feet of unobstructed horizontal clearance.

Harold indicated that median installation required as mitigation for development often relates to the following two bullets listed under Action 3B.3:

- Highways not undergoing modernization where a median could improve safety.
- Topography and horizontal or vertical roadway alignment result in inadequate left-turn intersection sight distance and it is impractical to relocate or reconstruct the connecting approach road or impractical to reconstruct the highway in order to provide adequate sight distance.

Bob – There is no ORS requirement for non-traversable medians. Medians are often identified as a mitigation measure for a corridor through the planning process, though the

trucking association is often unaware of the planning decisions that may impact the movement of freight. Lainie stated that ODOT is now aware of ORS 366.215 that identifies necessary clearances for trucks on certain highways.

Volume/Capacity (V/C) analysis for private approaches

Chris – V/C analysis or other mobility standards are an important tool to address how public streets operate as they identify the amount of delay a motorist can expect, and/or capacity that is available on the roadway. However, a motorist entering the highway from a private development should expect that they will have longer delays than a motorist on the highway or at a public street intersection. Chris does not believe that we should apply the same standard of delay. He supports the provision of a left-turn from the highway to the private development. It may be possible to restrict the left-out from the development without severely impacting the business.

Joe – Balance is critical as you consider the safety implications along with the V/C analysis. As the delay becomes excessive, motorists may be prone to make an unsafe left-turn to the highway and across the travel stream. Joe wondered if the recent publication of the “*Highway Safety Manual*” (HSM) might provide some guidance for practitioners. It was discussed briefly though the general consensus was that using the HSM as a predictive tool to identify specific safety issues is still a few years away.

Harold suggested that ODOT could develop a revised V/C standard for the left-out from a private driveway.

As the current V/C standard is to ensure some available reserve capacity on the roadway during the 30th highest hour of the traffic on the roadway during the year, Del asked who is to be served by the reserve capacity and is it realistic to analyze the roadway during this time period.

Representative Doherty asked if there is any acknowledgement or provision of time for properties adjacent to the roadway that may be impacted with the installation of a raised median. The representative is concerned that property owners may need adequate time to re-orient their business and identify suitable access to and from the highway.

Establish the use of a double/double yellow solid line

Craig supports the concept that Jim Hanks recommended in the previous sub-group meeting and has been used successfully in California; advance a legislative concept to establish the use of a double/double yellow solid line as a restrictive median barrier on state highways. This measure would increase the number of available solutions within the “toolbox” of possible median options. There was a question as to whether or not this was already a law within Oregon as some of the participants know examples where a double/double yellow solid line is painted on the roadway within certain cities within the state. Del will work with Jim Hanks to determine the legal status of a double/double

yellow solid line in Oregon, and also determine if this has been a successful strategy in California.

Raised medians to protect left-turn lane refuges at intersections

There was a general agreement that the use of a raised median to protect the left-turn lane on certain highways at public intersections within the UGB may be a strategy to pursue. This strategy would be coupled with an acknowledgment that left-turns from mid-block private driveways would be subject to less stringent standards.

Chris – Keep in mind that the current analysis methodology would require a protected left-turn lane based on the 95th percentile queue during the peak hour of traffic volumes. This can result in long queue lanes that effectively blocks left turns from the highway to adjacent properties for a considerable distance away from the intersection for certain periods of the day. There may be a need to revise the queue storage requirements, or modify the control at the end of the queue, i.e., transition into a CTWLT as opposed to a tapered, raised concrete median.

Median treatments through corridors

Consider various alternatives to the V/C analysis through a corridor, such as overall travel time. Florida DOT applies a mobility standard for the roadway segment rather than an individual intersection analysis. Del will investigate this further and report back to the sub-group.

Modification to the U-turn law in Oregon

It is recommended that the sub-group support the legislative concept to revise the U-turn law in Oregon and make it legal to make a U-turn at a public street intersection unless signed otherwise.

OHP

There was a discussion regarding potential revisions to the 1999 OHP. Options may include a revision to Policy 3B: Medians, that provides a set of escalating median options, in which a non-traversable median is a measure of last resort (consistent with recommendations from Doug Tindall, former ODOT Deputy Director, at the initial AM Committee meeting, April 29, 2010).

Action Items

Bob offered to develop a proposed “strawman” that would include the issues identified by the sub-group. Once a draft is completed, this would provide an opportunity for the sub-group participants to comment and further refine the recommendations before they are advanced to the AM Committee.

The meeting adjourned at 2:55 PM.