M E M O R A N D U M

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METRO

Date: November 6, 1997

To: JPACT

From: Andrew Cotugno, Transportation Director

Subject: Summary of Comments Received To Date About Proposed Amendments to Title 6 of the Urban Growth Management Functional Plan (*dated September 24, 1997*)

Note: These recommendations have not yet been approved by TPAC. TPAC will consider them on Friday, November 7. Any changes to staff recommendations will be forwarded to JPACT for discussion at the November 13 meeting.

Attachment "A" presents a summary of issues and public comments identified to date related to Title 6 (dated 9/24/97). For each comment, included is a discussion of the issue and a staff recommendation. The comments have been organized into two sections:

- Discussion Items (Key issues that warrant further JPACT discussion)
- Consent Items (Other issues to be approved collectively by consent. These items are organized into the following sections:
    - Section 2., Regional Street Design Guidelines
    - Section 3., Design Standards for Street Connectivity
    - Section 4.A., Alternative Mode Analysis
    - Section 4.B., Motor Vehicle Congestion Analysis

Attachment "B" to this memo reflects the proposed amendments to the September 24 draft of Title 6 of the Urban Growth Management Functional Plan. The proposed amendments (dated 10/24/97) reflect all staff recommendations included in Attachment "A." The document is presented in engrossed format (strike and underline) and is dated November 5, 1997. The proposed amendments specify implementation of regional transportation policies included in Chapter 2 of the Regional Framework Plan.

CC: MPAC, TPAC, MTAC

DISCUSSION ITEMS

1) Modify Section 2 to either have a stronger requirement to follow regional street design guidelines when planning for improvements to regional facilities or to link consideration of regional street design guidelines to regional funding approval through Transportation Improvement Program (TIP) criteria. Transportation funding should be given to those jurisdictions who are actively and aggressively implementing the 2040 Growth Concept. (Charlie Hales, City of Portland)

   Staff Recommendation: Staff recommends using financial incentives through TIP criteria to leverage consideration of regional street design guidelines rather than implementing them as requirements. Further consideration should be given to what detailed funding criteria should be used to developed the TIP and financially constrained RTP. Therefore, no change to Section 2 is recommended, related to this comment.

2) Modify Section 2 to require regional street design elements when planning for improvements to facilities designated on the Regional Street Design Map. Therefore:
   - amend lines 56-58 to read, "All cities and counties within the Metro region shall ~~consider~~ provide the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, ~~or~~ Tri-Met or the Port of Portland."
   - amend lines 71-73 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."
   - amend lines 101-102 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."
   - amend lines 127-128 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."
   - amend lines 170-172 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."

   (Rex Burkholder, Bicycle Transportation Alliance)

   Staff Recommendation: Disagree. See previous comment.

3) "Design Standards for Street Connectivity" should not apply to industrial areas. (Dave Lohman, Port of Portland)

   Staff Recommendation: Agree. As written, lines 193-246 apply only to new residential and mixed-use development.

4) Clarify lines 193-246 to ensure that the connectivity standards also apply to commercial and employment areas. (Charlie Hales, City of Portland)

Staff Recommendation: The current text provides, "For new residential and mixed-use development, all contiguous areas of vacant and primarily undeveloped land of five acres or more shall be identified by cities and counties and the following will be prepared, consistent with regional street design policies: A map that identifies possible local street connections to adjacent developing areas..." and "New residential and mixed-use developments shall include local street plans..."

Staff recommends amending the "Definitions" section of the Urban Growth Management Functional Plan to include the following definition:

Mixed-Use Development. Mixed-use development includes areas of a mix of at least two of the following land uses and includes multiple tenants or ownerships: residential, retail, office. This definition excludes large, single-use land uses such as colleges and hospitals.

5) Revise the introduction to Section 3 to reflect that the connectivity standards are intended to apply to the most dense 2040 areas and new residential areas, not, for example, throughways that travel through 2040 Design Types. (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation on Comment 16 and Comment 17: Agree. Revise lines 188-189 to read, "Therefore, streets should be designed to keep through trips on arterial streets and provide local trips with alternative routes. In addition, connections of "local" and "collector" street intersections to regional streets should occur at the upper end of the street spacing range in more densely developed centers and corridors. The following design and performance options are intended to improve local circulation in a manner that protects the integrity of the regional system."

Staff also recommends revising Section 3.A., lines 193-227 to read,

"A. Design Option. Cities and counties shall ensure that their comprehensive plans, implementing ordinances and administrative codes require demonstration of compliance with the following, consistent with regional street design policies:

~~1.~~2. New residential and mixed-use developments shall include local street plans that...

c. provide bike and pedestrian connections on public easements or right-of-way when full street connections are not possible, with spacing between connections of no more than 330 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers~~, prevent street extension~~; and...

~~2~~1. For new residential and mixed-use development, all contiguous areas of vacant and primarily undeveloped land of five acres or more shall be identified by cities and counties and the following will be prepared, consistent with regional street design policies:

A map that identifies possible local street connections to the adjacent developing areas. The map shall include:

a. full street connections at intervals of no more than ~~660~~530 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers. Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~with more frequent connections in areas planned for mixed use or dense development,~~
b. accessways for pedestrians, bicycles or emergency vehicles on public easements or right-of-way where full street connections are not possible, with spacing between full street or accessway connections of no more than 330 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers."

Staff also recommends adding the following definitions to Chapter 2 of the Regional Framework Plan and the Urban Growth Management Functional Plan:

Full Street Connection. Right-of-way designed for public access by motor vehicles, pedestrians and bicycles.

Accessway. Right-of-way or easement designed for public access by bicycles and pedestrians, and may include emergency vehicle passage.

Finally, staff recommends revising lines 231-236 to read, "Cities and counties shall develop local street design standards in text or maps or both with street intersection spacing to occur at intervals of no ~~less~~ more than ~~eight street intersections per mile~~ 530 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers. ~~,prevent street extension.~~ Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~The number of street connections should be the greatest in the highest density 2040 Growth Concept design types.~~"

Comments Related to Title 6, Sections 4.A., Alternative Mode Analysis and 4.B., Motor Vehicle Congestion Analysis

6) Amend Section 4 to include an introduction that reflects the intent of the section. (Joint TPAC/MTAC work session, 10/10/97)

7) Add clarifying text to explain what is meant by "identify and evaluate on a case-by-case basis" as referred to in the Motor Vehicle Level of Service Deficiency Threshold Table on line 276. (Brent Curtis, Washington County)

8) Clarify distinction between system level planning and project level planning in terms of what actions a local jurisdiction must consider. (Joint TPAC/MTAC work session, 10/10/97 and TPAC, 10/31/97)

9) Clarify references to the 1995 and 1998 Regional Transportation Plans (lines 349-350) so that it does not imply "grandfathering" of the 1995 Federal RTP projects. (Steve Dotterrer, City of Portland)

10) The following modifying statement should be added in reference to the Motor Vehicle Level of Service Deficiency Threshold table on line 276: "Jurisdictions may adopt higher levels of service in transportation system plans for local traffic mitigation and the application of traffic impact fees." (Richard Ross, City of Gresham)

11) Allow cities and counties the option of choosing either the A.M. or P.M. peak condition for analysis purposes when using Table 3. Current information and models may not be adequate to analyze A.M. conditions in some areas of the region. (City of Portland, 10/30/97)

12) The project need, mode, corridor, and function should not have to be revisited as part of Section 4.D. (Washington County, 10/28/97)

Staff Recommendation: Staff recommends the following amendments to Section 4 to address comments 6-12.

A process to identify transportation mode split targets, transportation needs and appropriate actions to address those targets and needs is included in this section. The intent is to provide guidance to cities, counties, ODOT, Tri-Met and the Port of Portland when developing a transportation system plan, defining a project, or evaluating the potential transportation impacts of a land use action.

A transportation need is identified when a particular transportation standard or threshold has been exceeded. Needs are generally identified either through a comprehensive plan amendment review or as result of a system-planning analysis which evaluates forecast travel demand.

Subsequent to the identification of a need, an appropriate transportation strategy or solution is identified through a two-phased multi-modal planning and project development process. The first phase is multi-modal system-level planning. The purpose of system-level planning is to examine a number of transportation alternatives over a large geographic area such as a corridor or sub-area, or through a local or regional Transportation System Plan (TSP). The purpose of the multi-modal system-level planning step is to 1) consider alternative modes, corridors, and strategies to address identified needs; and 2) determine a recommended set of transportation projects, actions, or strategies and the appropriate modes and corridors to address identified needs in the system-level study area.

The second phase is project-level planning (also referred to as project development). The purpose of project-level planning is to develop project design details and select a project alignment, as necessary, after evaluating engineering and design details and environmental impacts.

The following sub-sections (A-D): (1) require that cities and counties establish regional mode split targets for all 2040 design types that will be used to guide transportation system improvements; (2) establish optional performance standards and deficiency thresholds intended to identify transportation needs through multi-modal system-level planning and (3) establish the process to identify appropriate recommended solutions to address those needs identified through multi-modal system-level planning and project-level planning.

2) Amend lines 274-276 to read,

~~*General Congestion Performance Standards (using LOS*)*~~ *Table 3.* ~~*General Congestion Performance Standards (using LOS*)*~~*Motor Vehicle Level of Service Deficiency Thresholds and Operating Standards**

	~~Preferred~~	~~Acceptable~~	~~Exceeds~~
~~Mid-Day one~~	~~C or better~~	~~DD~~	~~E or worse~~
~~Peak two-hour~~	~~E/E or better~~	~~F/EF/E~~	~~F/F or worse~~

Location	Mid-Day One-Hour Peak			A.M./P.M. Two-Hour Peak		
	Preferred Operating Standard	Acceptable Operating Standard	Exceeds Deficiency Threshold	Preferred Operating Standard	Acceptable Operating Standard	Exceeds Deficiency Threshold
Central City, Regional Centers, Town Centers, Main Streets and Station Communities	C	E	F	1st hour E 2nd hour E	1st hour F 2nd hour E	1st hour F 2nd hour F
Corridors, Industrial Areas and Intermodal Facilities, Employment Areas and Inner and Outer Neighborhoods	C	D	E	1st hour E 2nd hour D	1st hour E 2nd hour E	1st hour F 2nd hour E

Regional Highway Corridors	identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives	identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives

*Level-of-Service is determined by using either the latest edition of the Highway Capacity Manual (Transportation Research Board) or through volume to capacity ratio equivalencies as follows: LOS C = .8 or better; LOS D = .8 to .9; LOS E = .9 to 1.0; and LOS F = ~~greater than~~ 1.0 to 1.1. A copy of the Level of Service Tables from the Highway Capacity Manual is attached as Exhibit A. Regional Highway Corridors are identified in the map attached as Figure 2.7.

**See Section 4.B.3.

3) Amend lines 284-299 to further clarify the intended use of Table 3, as follows:

2. **Analysis.** A transportation need is identified in a given location when analysis indicates that congestion has reached the level indicated in the "exceeds deficiency threshold" column of Table 3 and that this level of congestion will negatively impact accessibility, as determined through Section 4.B.4, below. The analysis should consider a mid-day hour appropriate for the study area and the appropriate two-hour peak-hour condition, either A.M. or P.M. or both to address the problem. The lead agency or jurisdictions will be responsible for determining the appropriate peak analysis period.

An appropriate solution to the need is determined through multi-modal system-level planning considerations listed in Section 4.C., below. For regional transportation planning purposes, the recommended solution should be consistent with the acceptable or preferred operating standards identified in Table 3. A city or county may choose a higher level-of service operating standard where findings of consistency with Section 4.C. have been developed.

3. **Regional Highways.** Exhibit B identifies the Regional Highways specified in Table 3. Each corridor will be evaluated on a case-by-case basis through system-level refinement studies. The studies will identify the performance and operating expectations for each corridor based on their unique operating and geographic characteristics. Appropriate multi-modal solutions to needs identified through these studies will be forwarded for inclusion in the Regional Transportation Plan.

4.~~2.~~ **Accessibility.** If a ~~congestion standard~~deficiency threshold is exceeded as identified in ~~4.B.1.~~Table 3, cities and counties shall evaluate the impact of the congestion on regional accessibility using the best available ~~(~~quantitative or qualitative~~)~~ methods. If a determination is made by Metro that exceeding the ~~congestion~~ deficiency threshold negatively impacts regional accessibility, ~~local jurisdictions~~ cities and counties shall follow the ~~congestion management~~ transportation systems analysis and transportation project analysis procedures identified in 4.C. and 4.D. below.

5.~~3.~~**Consistency.** The identified function or the identified capacity of a road may be significantly affected by planning for ~~Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~ 2040 Growth Concept design types. Cities and counties shall take actions described in Section 4.C. and 4.D. below, including amendment of their transportation plans and implementing ordinances, if necessary ~~to either change or take actions as described in Section 4.C., below,~~ to preserve the identified function and identified capacity of the road~~, if necessary~~ and to retain consistency between allowed land uses and planning for transportation facilities.

C. **Transportation Systems Analysis**

This section applies to city and county comprehensive plan amendments or to studies, regardless of lead agency or jurisdiction, that would require an amendment to the Regional Transportation Plan that will result in a recommendation to add significant single occupancy vehicle (SOV) capacity to multi-modal arterials and highways. Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following shall be considered when:

1. local transportation system plans (TSPs), multi-modal corridor and sub-area studies, mode specific plans or special studies (including land use actions) are developed; and
2. recommendations are made to revise the Regional Transportation Plan and/or local transportation system plans to define the need, mode, corridor and function to address an identified transportation need consistent with Table 3, above and recommendations are made to add significant SOV capacity:
   a. Actions to be addressed through the Regional Transportation Plan include:
      1) regional transportation demand strategies
      2) regional transportation system management strategies, including intelligent Transportation Systems (ITS)
      3) High Occupancy Vehicle (HOV) strategies
      4) regional transit, bicycle and pedestrian system improvements to improve mode split
      5) unintended land use and transportation effects resulting from a proposed SOV project or projects
      6) effects of latent demand from other modes, routes or time of day from a proposed SOV project or projects
      7) regional land use changes to the 2040 Growth Concept where needs have been identified and acceptable operating standards as defined in Table 3 cannot be achieved through cost-effective measures and where accessibility is significantly hindered.

   b. Actions to be addressed at the local, sub-area, or corridor level include:
      1) transportation demand strategies that further refine or implement a regional strategy identified in the RTP

2) transportation system management strategies, including intelligent Transportation Systems (ITS), that refine or implement a regional strategy identified in the RTP
3) sub-area or local transit, bicycle and pedestrian system improvements to improve mode split
4) the effect of a comprehensive plan change on mode split targets and actions to ensure the overall mode split target for the local TSP is being achieved
5) improvements to parallel arterials, collectors, or local streets, consistent with connectivity standards contained in Section 2 of this Title, as appropriate, to address the transportation need and to keep through trips on arterial streets and provide local trips with alternative routes
6) traffic calming techniques or changes to the motor vehicle functional classification, to maintain appropriate motor vehicle functional classification
7) local or sub-area land use changes where needs have been identified and acceptable operating standards as defined in Table 3 cannot be achieved through cost-effective measures and where accessibility is significantly hindered.

~~If~~ ~~If~~Upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant capacity improvements may be included in the comprehensive plan. Demonstration of compliance will be included in the required congestion management system compliance report submitted to Metro by cities and counties as part of system-level planning and through findings consistent with the TPR in the case of an amendment to the Regional Transportation Plan.

D. Transportation Project Analysis

The TPR and Metro's Interim Congestion Management System (CMS) document require that measures to improve operational efficiency be addressed at the project level. Section 2 of this Title requires that street design guidelines be considered as part of the project-level planning process. Therefore, cities, counties, Tri-Met, ODOT, and the Port of Portland shall address the following operational and design considerations during transportation project analysis:

1. Transportation system management (e.g., access management, signal inter-ties, lane channelization, etc.) to address or preserve existing street capacity.
2. Guidelines contained in "Creating Livable Streets: Street Design Guidelines for 2040" (1997) and other similar resources to address regional street design policies.

The project need, mode, corridor, and function do not need to be addressed at the project level. This section (4.D) does not apply to locally funded projects on facilities not

designated on the Regional Motor Vehicle System Map or the Regional Street Design Map. Demonstration of compliance will be included in the required Congestion Management System project-level compliance report submitted to Metro as part of project-level planning and development."

CONSENT ITEMS

Comments Related to Title 6, Section 2, Regional Street Design Guidelines

13) Clarify line 57 to define what constitutes consideration of the regional street design elements. (Dave Lohman, Port of Portland)

Staff Recommendation: Cities and counties will be required to demonstrate through findings how they have considered the regional street designs elements.

14) Adopt the priorities listed in the "Creating Livable Streets: Street Design for 2040" (1997) as part of each street design description in Title 6. Therefore, amend Section 2.B. to add the following language:

Regional Boulevards: The design of a regional boulevard shall be based on the following priorities:
Higher Priorities
a. pedestrian sidewalks with transit access
b. bicycle lanes
c. number of travel lanes
Lower Priorities
a. width of travel lanes
b. on-street parking
c. median for landscaping

Community Boulevards: The design of a community boulevard shall be based on the following priorities:
Higher Priorities
a. pedestrian sidewalks with transit access
b. bicycle lanes
c. on-street parking
d. median for landscaping
Lower Priorities
a. number of travel lanes
b. width of travel lanes

Regional Streets: The design of a regional street shall be based on the following priorities:
Higher Priorities
a. number of travel lanes
b. pedestrian sidewalks with transit access and buffer strip
c. medians
d. bicycle lanes
e. width of travel lanes
Lower Priorities
a. on-street parking

Community Streets: The design of a community street shall be based on the following priorities:

Higher Priorities

a. pedestrian sidewalks with transit access
b. bicycle lanes
c. on-street parking

Lower Priorities

a. median for landscaping
b. number of travel lanes
c. width of travel lanes

(Rex Burkholder, Bicycle Transportation Alliance)

Staff Recommendation: Disagree. "Creating Livable Streets: Street Design for 2040" (1997) addresses these tradeoff issues and is a resource for cities and counties to use when prioritizing street design elements within a constrained right-of-way.

15) Amend lines 56-58 to read, "All cities and counties within the Metro region shall consider the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, ~~or~~ Tri-Met or the Port of Portland." (G.B. Arrington, Tri-Met)

Staff Recommendation: Agree. Amend as requested.

16) In all street design types, the inclusion of an option of a wide outside lane as a "bicycle facility" is inappropriate and contrary to AASHTO guidelines and ODOT standards. Therefore, amend lines 89 and 119 to read, "8. Striped bikeways ~~or shared outside lane~~." (Rex Burkholder, Bicycle Transportation Alliance)

Staff Recommendation: Disagree. Bicycle lanes are the preferred bikeway choice. However, wide outside lanes are acceptable where any of the following conditions exist:

- it is not possible to eliminate or reduce lane widths;
- topographical constraints exist;
- additional pavement would disrupt the natural environment or character of the natural environment;
- parking is essential to serve adjacent land uses or improve the character of the pedestrian environment;
- densely developed areas with low motor vehicle speeds.

17) Amend line 56 to read, "Throughways, Boulevards, Streets and Roads ~~and Throughways~~." (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as requested. In addition, recommend organizing Section 2 to reflect this order of street design elements.

18) Clarify lines 77, 106 and 132 to better define what is meant by "low" and "moderate" motor vehicle speeds. (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff specifically intended to use relative definitions of motor vehicle speed. Staff recommends leaving that determination to cities and counties through their transportation system plans, consistent with the street design guidelines identified in Title 6, Section 2.

19) In reference to lines 87, 116, 135, 160, better define what is meant by "improved pedestrian crossings." (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff recommends adding a definition to the Urban Growth Management Functional Plan that reads, "Improved pedestrian crossing. An improved pedestrian crossing is marked and may include signage, signalization, curb extensions and a pedestrian refuge such as a landscaped median."

20) Clarify line 88 to better define what is the threshold for "excessive intersection spacing." (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff recommends revising line 88 to read, "where intersection spacing exceeds 530 feet ~~is excessive~~."

21) Add reference to regional street design handbook to Section 2 introduction. (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Revise lines 56-58 to read, "All cities and counties within the Metro region shall consider the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, ~~or~~ Tri-Met or the Port of Portland. "Creating Livable Streets: Street Design for 2040" (1997) is a resource for cities, counties, ODOT, Tri-Met and the Port of Portland to use when prioritizing street design elements within a constrained right-of-way.

22) Amend line 74 to read, "with ~~right-of-way~~ improvements within the right-of-way on regional routes..." (Washington County, 10/28/97)

Staff Recommendation: Agree. Amend as requested.

23) Amend lines 82 and 111 to read, " on-street parking where ~~possible~~practicable."

Staff Recommendation: Disagree. No change is recommended.

24) Amend line 116 to not require improved pedestrian crossings at all intersections on Community Streets. (Washington County, 10/28/97)

Staff Recommendation: Disagree. No change is recommended.

Comments Related to Title 6, Section 3, Design Standards for Street Connectivity

25) In reference to line 239, define "local vehicle trips." (Mike McKillip, City of Tualatin)

Staff Recommendation: Local vehicle trips are trips that are five miles or shorter in length. In contrast, regional vehicle trips, are trips that are greater than five miles in length. Therefore, recommend adding two definitions to the Urban Growth Management Functional Plan that read:

"Local trips. Local vehicle trips are trips that are five miles or shorter in length."

"Regional vehicle trips. Regional vehicle trips are trips that are greater than five miles in length."

26) Amend lines 236-246 to read, "Local street designs for new developments shall satisfy the following additional criteria...2. Performance Criterion: everyday local travel needs are served by direct, connected local street systems where: (1) the shortest motor vehicle trip over public streets from a local origin to a collector or greater facility is no more than twice the straight-line distance; ~~and~~ (2) the shortest pedestrian trip on public right-of-way is no more than one and one-half the straight-line distance; and (3) any trip less than ½-mile is not subject to (1) and (2) above. (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff recommends further TPAC discussion on this issue.

27 Amend the first sentence, lines 249-251 to clarify that mode split will be the key regional measure for personal travel in region, separate from measuring regional freight and safety objectives. (Council Transportation Planning Committee, 10/21/97)

Staff Recommendation: Agree. Staff recommends amending lines 249-251 to read, "1. Personal travel represents the largest share of person trips for all modes of transportation. Mode split will be used as the key regional measure for personal travel ~~transportation effectiveness in the Central City, Regional Centers and Station Communities~~ all 2040 Growth Concept design types and will be used to guide transportation system improvements.

28 Amend the first sentence, line 249, to read "1. Mode split will be used as ~~the~~ a key regional measure for transportation effectiveness in all 2040 Growth Concept land use design types. (Ted Spence, JPACT)

Staff Recommendation: See previous comment.

29) In reference to lines 278-283, the Oregon Highway Plan states that the LOS is determined by the volume/capacity method. Until this is changes, ODOT intends to use that method for the determination of LOS on state facilities. While other methods have significant merit, there is as yet no universal agreement on application. (Leo Huff, ODOT)

Staff Recommendation: Disagree. As more suitable measures to define level-of-service are developed by the transportation industry, these measures should be available for use, as appropriate.

30) Amend the second sentence, lines 251-255 to read, "Each jurisdiction shall establish an alternative mode split target (as a percentage of all person-trips for all modes of transportation) for...trips into, out of and within all 2040 Growth Concept land use design types within its boundaries." (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as requested.

31) Amend proposed language to delete repetitive reference to the level of service table on line 276. (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as follows, "...~~The following table~~ Table 3. ~~using~~Motor Vehicle Level Of Service Deficiency Thresholds and Operating Standards may be incorporated into ~~local~~ city and county comprehensive plans and implementing ordinances to replace current methods of determining motor vehicle congestion on regional facilities, if a city or county determines that this change is needed to permit Title 1, Table 1 capacities ~~in the Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~for the 2040 design types and facilities as follows..."

32) Amend proposed language in lines 249-263 to recognize that mode split targets for intermodal and industrial areas should not look at total trips because for these uses, a high percentage of the trips are truck trips which cannot choose an alternative mode. The mode split targets need to be clear that they are directed at employees or passenger trips. (Dave Lohman, Port of Portland)

Staff Recommendation: Agree. Mode split targets have been developed that exclude commercial traffic. Table 3 of Chapter 2 (Transportation) of the Regional Framework Plan identifies those targets, as shown below:

Table 3. Regional Non-SOV Mode Split Targets
Needed To Achieve State Transportation Planning Rule 10% VMT/Capita Reduction Requirement
(for trips to and within each 2040 Design Type)

2040 Design Type	Non-SOV* Mode Split Target
Central City	60-70%
Regional Centers, Town Centers, Main Streets, Station Communities and Corridors	45-55%
Industrial Areas and Intermodal Facilities, Employment Areas and Inner and Outer Neighborhoods	40-45%

*Non-SOV includes shared ride, bike, walk and transit.

33) Section 4.B. should reflect a better level of service standard for access to terminals because freight mobility is the backbone of the region's economy. Recommend separating intermodal facilities out from others in the second category and modifying the AM/PM two hour peak to D for the first hour under the preferred column and to D for the second hour under the acceptable column. (Dave Lohman, Port of Portland)

Staff Recommendation: The Regional Highways Corridors map, Figure 2.7 in Exhibit A of Title 6 identifies roads that access terminals on Swan Island, Marine Drive and Airport Way. Title 6 calls for identification and evaluation of level of service thresholds for "Regional Highway Corridors" on a case-by-case basis to allow for a better level of service on roadways that access those areas. Therefore, no change is recommended.

34) In reference to lines 284-291, clarify what happens if exceeding a deficiency threshold does not negatively impact regional accessibility, but does impact local accessibility. (Mike McKillip, City of Tualatin)

Staff Recommendation: The proposed language in lines 284-291 applies only to the regional transportation system not the local transportation system. Therefore, staff recommends revising lines 284-285 to read, "If a deficiency threshold is exceeded <u>on the regional transportation system</u> as identified in Table ~~3.4.B.1.~~,..."

35) Clarify line 345 to define "significant capacity expansion" and "regional facility." (Mike McKillip, City of Tualatin and Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Staff recommends adding the following definitions to the Urban Growth Management Functional Plan for "significant capacity expansion" that reflect the definition used in the Portland Interim Congestion Management System (CMS) Document (1996).

> **Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Multi-modal Arterials.** An increase in SOV capacity created by the construction of additional general purpose lanes totaling ½ lane miles or more in length. General purpose lanes are defined as through travel lanes or multiple turn lanes. This also includes the construction of a new general purpose highway facility on a new location. Lane tapers are not included as part of the general purpose lane. Significant increases in SOV capacity should be assessed for individual facilities rather than for the planning area.
>
> **Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Regional Through-Route Freeways.** Any increase in SOV capacity created by the construction of additional general purpose lanes other than that resulting from a safety project or a project solely intended to eliminate a bottleneck. An increase in SOV capacity associated with the elimination of a bottleneck is considered significant only if such an increase provides a highway section SOV capacity greater than ten percent over that provided immediately upstream of the bottleneck. An increase in SOV capacity associated with a safety project is considered significant only if the safety deficiency is totally related to traffic congestion. Construction of a

new general purpose highway facility on a new location also constitutes a significant increase in SOV capacity. Significant increase in SOV capacity should be assessed for individual facilities rather than for the planning area.

36) Clarify line 369 to define how cities and counties "shall consider" the "Creating Livable Streets: Street Design Guidelines for 2040" during transportation project development. (Mike McKillip, City of Tualatin)

Staff Recommendation: Cities and counties will be required to demonstrate through findings how they have considered the regional street designs elements.

37) Amend line 276, last row to read, "identify and evaluate on a case-by-case basis to balance regional and local mobility and accessibility objectives." (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Amend as requested.

38) Amend Regional Highways Corridors map, Figure 2.7 in Exhibit A of Title 6 to add the following: Highway 99 to I-5, the Sunrise Corridor, US 26 entering the eastern UGB, US 30 entering NE Portland and the Mt. Hood Parkway. (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Amend as requested.

39) In reference to lines 284-291 related to evaluating the impact of congestion on regional accessibility, where as quantitative methods are well known, qualitative methods for measuring accessibility are not. If Metro is going to make the determination of accessibility deficiencies, then ODOT recommends that the criteria, both qualitative and quantitative be reviewed and adopted by TPAC. (Leo Huff, ODOT)

Staff Recommendation: Agree. The Regional Transportation Plan will define the locations that exceed the motor vehicle level-of-service threshold criteria and affect regional accessibility. TPAC will review this determination as part of the Regional Transportation Plan update.

40) In reference to Section 4, Metro should provide guidance materials to local governments for Title 6, Section 4 implementation and applicability. (City of Portland, 10/30/97)

Staff Recommendation: Agree. Staff will develop materials to assist cities and counties with understanding and applying Title 6, Section 4 requirements.

41) Provide clarification for lines 238-246 as to how this analysis is to be completed. For example, such criteria as the "1995 arithmetic median of regional trips" and "the shortest trip from a local origin to a collector" would benefit from some clarification, possibly through an appendix to Title 6. (Washington County, 10/28/97)

Staff Recommendation: Agree. See above comment.

42) Consistent with TPR requirements for transportation system planning, the deadline for cities and counties to submit mode split targets and implementing actions should be one year after Metro adopts the Regional Transportation Plan. (City of Portland, 10/30/97)

Staff Recommendation: Agree. Amend line 251 to add, "Each jurisdiction shall establish an alternative mode split target...for all 2040 Growth Concept land use design types within its boundaries one year after adoption of the Regional Transportation Plan." In addition, amend line 312 to add, "Cities and counties...shall identify actions which will implement mode split targets one year after adoption of the Regional Transportation Plan."

43) Mid-day thresholds and standards as listed in Table 3 should remain optional. Cities and counties cannot currently analyze mid-day conditions. (City of Portland, 10/30/97)

Staff Recommendation: Disagree. Table 3 is optional until adoption of the 1998 Regional Transportation Plan. The issue of mid-day modeling will be considered as part of the RTP update this winter. At that time, staff will work with cities and counties to develop acceptable methods for mid-day analysis. In addition, traffic counts rather than forecasts are an available method to evaluate mid-day conditions.

44) Section 4.D. should not apply to locally funded projects off the Regional Motor Vehicle System Map or the Regional Street Design Map. (City of Portland, 10/30/97)

Staff Recommendation: Agree. Recommended revisions to Section 4.D. include the following statement, "This section (4.D) does not apply to locally funded projects on facilities not designated on the Regional Motor Vehicle System Map or the Regional Street Design Map."

Other Comments Related to Title 6

45) Amend the third sentence in Section 1, lines 5-6 to read, "Focusing development in the concentrated activity centers, including the central city, regional centers, town centers and station communities, requires the use of alternative modes of transportation in order to avoid unacceptable levels of congestion." (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as requested.

TITLE 6: REGIONAL ACCESSIBILITY

Section 1. Intent

Implementation of the 2040 Growth Concept requires that the region identify key measures of transportation effectiveness which include all modes of transportation. Developing a full array of these measures will require additional analysis. Focusing development in the concentrated activity centers, including the central city, regional centers, town centers and station communities, requires the use of alternative modes of transportation in order to avoid unacceptable levels of congestion. The continued economic vitality of industrial areas and intermodal facilities is largely dependent on preserving or improving access to these areas and maintaining reasonable levels of freight mobility in the region. Therefore, regional congestion standards and other regional system performance measures shall be tailored to reinforce the specific development needs of the individual 2040 Growth Concept design types.

These regional standards ~~will be~~are linked to a series of regional street design concepts that fully integrate transportation and land use needs for each of the 2040 land use ~~components~~design types in the Regional Framework Plan. The designs generally form a continuum; a network of throughways (freeway and highway designs) ~~will~~ emphasize auto and freight mobility and connect major activity centers. Slower-speed boulevard designs within concentrated activity centers ~~will~~ balance the multi-modal travel demands for each mode of transportation within these areas. Street and road designs ~~will~~ complete the continuum, with multi-modal designs that reflect the land uses they serve, but also serving as moderate-speed vehicle connections between activity centers that complement the throughway system. ~~While these designs are under development, it is important that improvements in the most concentrated activity centers are designed to lessen the negative effects of motor vehicle traffic on other modes of travel. Therefore, implementation of amenity oriented boulevard treatment that better serves pedestrian, bicycle and transit travel in the central city, regional centers, main streets, town centers, and station communities is a key step in the overall implementation of the Metro 2040 Growth Concept.~~ It is intended that the entirety of these Title 6 standards will be supplemented by the 1998 Regional Transportation Plan (RTP) ~~when the RTP is approved and adopted by the Metro Council~~.

~~Section 2. Boulevard Design~~

~~Regional routes in the central city, regional centers, station communities, main streets and town centers are designated on the Boulevard Design Map. In general, pedestrian and transit oriented design elements are the priority in the central city and regional centers, station communities, main streets and town centers. All cities and counties within the Metro region shall implement or allow others to implement boulevard design elements as improvements are made to these facilities including those facilities built by ODOT or Tri-Met. Each jurisdiction shall amend their comprehensive plans and implementing ordinances, if necessary, to require consideration or installation of the following boulevard design elements when proceeding with right-of-way improvements on regional routes designated on the boulevard design map:~~

~~A. Wide sidewalks with pedestrian amenities such as benches, awnings and special lighting;~~

~~B. Landscape strips, street trees and other design features that create a pedestrian buffer between curb and sidewalk;~~

~~C. Pedestrian crossings at all intersections, and mid-block crossings where intersection spacing is excessive;~~

~~D. The use of medians and curb extensions to enhance pedestrian crossings where wide streets make crossing difficult;~~

~~E. Accommodation of bicycle travel;~~

~~F. On-street parking;~~

~~G. Motor vehicle lane widths that consider the above improvements;~~

~~H. Use of landscaped medians where appropriate to enhance the visual quality of the streetscape.~~

Section 2. Regional Street Design Guidelines

Regional routes in each of the 2040 Design Types are designated as one of four major classifications on the Regional Street Design Map, attached in Exhibit "A" The four classifications are: Throughways, Boulevards, Streets and Roads. All cities and counties within the Metro region shall consider the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, Tri-Met or the Port of Portland. "Creating Livable Streets: Street Design for 2040" (1997) is a resource for cities, counties, ODOT, Tri-Met and the Port of Portland to use when prioritizing street design elements within a constrained right-of-way.

A. Throughways. Throughways connect the region's major activity centers within the region, including the central city, regional centers, industrial areas and intermodal facilities to one another and to points outside the region. Throughways are traffic oriented with designs that emphasize motor vehicle mobility. Throughways are divided into Freeway and Highways designs.

1. Freeway Design. Freeways are designed to provide high speed travel for longer motor vehicle trips throughout the region. These facilities also serve new urban areas added to the urban growth boundary where plans for urban land use and infrastructure are not complete. These designs usually include four to six vehicle lanes, with additional lanes in some situations. They are completely divided, with no left turn lanes. Street connections always occur at separated grades with access controlled by ramps. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the

following Freeway design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

a. high vehicle speeds
b. improved pedestrian crossings on overpasses
c. parallel facilities for bicycles
d. motor vehicle lane widths that accommodate freight movement and high-speed travel

2. Highway Design. Highways are designed to provide high speed travel for longer motor vehicle trips throughout the region while accommodating limited public transportation, bicycle and pedestrian travel. Highways are usually divided with a median, but also have left turn lanes where at grade intersections exist. These designs usually include four to six vehicle lanes, with additional lanes in some situations. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the Highway design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

a. high vehicle speeds
b. few or no driveways
c. improved pedestrian crossings at overpasses and all intersections
d. accommodation of bicycle travel through the use of a striped bikeway
e. sidewalks where appropriate
f. motor vehicle lane widths that accommodate freight movement and high-speed travel

B.. Boulevard Designs. Boulevards serve major centers of urban activity, including the Central City, Regional Centers, Station Communities, Town Centers and some Main Streets. Boulevards are designed with special amenities to favor public transportation, bicycle and pedestrian travel and balance the many travel demands of these areas. Boulevards are divided into regional and community scale designs on the Regional Street Design Map. Regional and Community Boulevards combine motor vehicle traffic with public transportation, bicycle and pedestrian travel where dense development is oriented to the street. Regional Boulevard designs usually include four vehicle lanes, with additional lanes or one-way couplets in some situations. Community Boulevard designs usually include four vehicle lanes and on-street parking. Fewer vehicle lanes may be appropriate in Community Boulevard designs in some situations, particularly when necessary to provide on-street parking. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Regional and Community Boulevard design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

1. low to moderate vehicle speeds on Regional Boulevard and low vehicle speeds on Community Boulevards
2. the use of medians and curb extensions to enhance pedestrian crossings where wide streets make crossing difficult
3. combined driveways
4. on-street parking where possible
5. wide sidewalks with pedestrian amenities such as benches, awnings and special lighting
6. landscape strips, street trees or other design features that create a pedestrian buffer between curb and sidewalk
7. improved pedestrian crossings at all intersections, and mid-block crossings where intersection spacing exceeds 530 feet
8. striped bikeways or shared outside lane
9 motor vehicle lane widths that consider the above improvements

C. Street Designs. Streets serve the region's transit corridors, neighborhoods and some main streets. Streets are designed with special amenities to balance motor vehicle traffic with public transportation, bicycle and pedestrian travel in the 2040 Design Types they serve. Streets are divided into regional and community scale designs on the Regional Street Design Map. Regional Streets are designed to carry motor vehicle traffic while also providing for public transportation, bicycle and pedestrian travel. Regional street designs usually include four vehicle lanes, with additional lanes in some situations. Community Street designs usually include four vehicle lanes. Fewer vehicle lanes may be appropriate in Community Street designs in some situations, particularly when necessary to provide on-street parking. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Regional Street design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

1. moderate vehicle speeds
2. the use of medians and curb extensions to enhance pedestrian crossings where wide streets make crossing difficult or to manage motor vehicle access
3. combined driveways
4. on-street parking when appropriate
5. buffered sidewalks with pedestrian amenities such as special lighting and special crossing amenities tied to major transit stops
6 landscape strips, street trees or other design features that create a pedestrian buffer between curb and sidewalk
7. improved pedestrian crossings at signaled intersections on Regional Streets and improved pedestrian crossings at all intersections on Community Streets
8. striped bikeways or shared outside lane
9. motor vehicle lane widths that consider the above improvements

D. Urban Roads. Urban Roads serve the region's industrial areas, intermodal facilities and employment centers where buildings are less oriented to the street, and primarily emphasize motor vehicle mobility. Urban Roads are designed to carry significant motor vehicle traffic while providing for some public transportation, bicycle and pedestrian travel. These designs usually include four vehicle lanes, with additional lanes in some situations. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Urban Road design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

1. moderate vehicle speeds
2. few driveways
3. sidewalks
4. improved pedestrian crossings at major intersections
5. striped bikeways
6. center medians that manage access and control left turn movements
7. motor vehicle lane widths that consider the above improvements

Section 3. Design Standards for Street Connectivity

The design of local street systems, including "local" and "collector" functional classifications, is generally beyond the scope of the Regional Transportation Plan (RTP). However, the aggregate effect of local street design impacts the effectiveness of the regional system when local travel is restricted by a lack of connecting routes, and local trips are forced onto the regional network. Therefore, streets should be designed to keep through trips on arterial streets and provide local trips with alternative routes. In addition, connections of "local" and "collector" street intersections to regional streets should occur at the upper end of the street spacing range in more densely developed centers and corridors. The following design and performance options are intended to improve local circulation in a manner that protects the integrity of the regional system.

~~Local jurisdictions~~Cities and counties within the Metro region are hereby required to amend their comprehensive plans and implementing ordinances, if necessary, to comply with or exceed one of the following options in the development review process:

A. **Design Option**. Cities and counties shall ensure that their comprehensive plans, implementing ordinances and administrative codes require demonstration of compliance with the following, consistent with regional street design policies:

1. New residential and mixed-use developments shall include local street plans that:

   a. encourage pedestrian and bicycle travel by providing short, direct public right-of-way routes to connect residential uses with nearby existing and

planned commercial services, schools, parks and other neighborhood facilities; and

b. include no cul-de-sac streets longer than 200 feet, and no more than 25 dwelling units on a closed-end street system except where topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers, prevent street extension; and

c. provide bike and pedestrian connections on public easements or right-of-way when full street connections are not possible, with spacing between connections of no more than 330 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers, ~~prevent street extension~~; and

d. consider opportunities to incrementally extend and connect local streets in primarily developed areas; and

e. serve a mix of land uses on contiguous local streets; and

f. support posted speed limits; and

g. consider narrow street design alternatives that feature total right-of-way of no more than 46 feet, including pavement widths of no more than 28 feet, curb-face to curb-face, sidewalk widths of at least 5 feet and landscaped pedestrian buffer strips that include street trees; and

h. limit the use of cul-de-sac designs and closed street systems to situations where topography, pre-existing development or environmental constraints prevent full street extensions.

12. For new residential and mixed-use development, all contiguous areas of vacant and primarily undeveloped land of five acres or more shall be identified by cities and counties and the following will be prepared, consistent with regional street design policies:

A map that identifies possible local street connections to adjacent developing areas. The map shall include:

a. full street connections at intervals of no more than ~~660~~530 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers. Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~with more frequent connections in areas planned for mixed use or dense development~~.

b. accessways for pedestrians, bicycles or emergency vehicles on public easements or right-of-way where full street connections are not possible, with spacing between full street or accessway connections of no more than 330 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers.

B. **Performance Option**. For residential and mixed use areas, cities and counties shall amend their comprehensive plans, implementing ordinances and administrative codes, if necessary, to require demonstration of compliance with performance criteria in the

following manner. Cities and counties shall develop local street design standards in text or maps or both with street intersection spacing to occur at intervals of no more~~less~~ than ~~eight street intersections per mile~~530 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers~~, prevent street extension~~. Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development.~~The number of street intersections should be greatest in the highest density 2040 Growth Concept design types~~. Local street designs for new developments shall satisfy the following additional criteria:

1. Performance Criterion: minimize local traffic on the regional motor vehicle system, by demonstrating that local vehicle trips on a given regional facility do not exceed the 1995 arithmetic median of regional trips for facilities of the same motor vehicle system classification by more than 25 percent.

2. Performance Criterion: everyday local travel needs are served by direct, connected local street systems where: (1) the shortest motor vehicle trip over public streets from a local origin to a collector or greater facility is no more than twice the straight-line distance; and (2) the shortest pedestrian trip on public right-of-way is no more than one and one-half the straight-line distance.

Section 4. Transportation Performance Standards

A process to identify transportation mode split targets, transportation needs and appropriate actions to address those targets and needs is included in this section. The intent is to provide guidance to cities, counties, ODOT, Tri-Met and the Port of Portland when developing a transportation system plan, defining a project, or evaluating the potential transportation impacts of a land use action.

A transportation need is identified when a particular transportation standard or threshold has been exceeded. Needs are generally identified either through a comprehensive plan amendment review or as result of a system-planning analysis which evaluates forecast travel demand.

Subsequent to the identification of a need, an appropriate transportation strategy or solution is identified through a two-phased multi-modal planning and project development process. The first phase is multi-modal system-level planning. The purpose of system-level planning is to examine a number of transportation alternatives over a large geographic area such as a corridor or sub-area, or through a local or regional Transportation System Plan (TSP). The purpose of the multi-modal system-level planning step is to 1) consider alternative modes, corridors, and strategies to address identified needs; and 2) determine a recommended set of transportation projects, actions, or strategies and the appropriate modes and corridors to address identified needs in the system-level study area.

The second phase is project-level planning (also referred to as project development). The purpose of project-level planning is to develop project design details and select a project alignment, as necessary, after evaluating engineering and design details and environmental impacts.

The following sub-sections (A-D): (1) require that cities and counties establish regional mode split targets for all 2040 design types that will be used to guide transportation system improvements; (2) establish optional performance standards and deficiency thresholds intended to identify transportation needs through multi-modal system-level planning and (3) establish the process to identify appropriate recommended solutions to address those needs identified through multi-modal system-level planning and project-level planning.

A. Alternative Mode Analysis

1. Personal travel represents the largest share of person trips for all modes of travel. Mode split will be used as the key regional measure for personal travel in ~~transportation effectiveness in the Central City, Regional Centers and Station Communities~~all 2040 Growth Concept land use design types and will be used to guide transportation system improvements. Each jurisdiction shall establish an alternative mode split target (defined as non-Single Occupancy Vehicle person-trips as a percentage of all person-trips for all modes of transportation) for trips into, out of and within~~each of the central city, regional centers and station communities~~ all 2040 Growth Concept land use design types within its boundaries one year after adoption of the Regional Transportation Plan. The alternative mode split target shall be no less than the regional targets for these ~~Region~~ 2040 Growth Concept land use ~~components~~design types to be established in the 1998 Regional Transportation Plan.

2. Cities and counties ~~which have Central City, regional centers and station communities~~ shall identify actions which will implement the mode split targets one year after adoption of the Regional Transportation Plan. These actions should include consideration of the maximum parking ratios adopted as part of Title 2; Section 2: ~~Boulevard~~Regional Street Design considerations in~~of~~ this Title; and transit's role in serving the area.

B. Motor Vehicle Congestion Analysis ~~for Mixed Use Areas~~

1. Motor Vehicle Level-Of-Service (LOS) is a measurement of ~~the use of a road~~congestion as a share of designed motor vehicle capacity of a road. ~~The following table using~~ Table 3. Motor Vehicle Level Of Service Deficiency Thresholds and Operating Standards may be incorporated into local comprehensive plans and implementing ordinances to replace current methods of determining motor vehicle congestion on regional facilities, if a city or county determines that this change is needed to permit Title 1, Table 1 capacities ~~in the~~

~~Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~for the 2040 design types and facilities as follows:

~~***General Congestion Performance Standards (using LOS*)***~~***Table 3. Motor Vehicle Level of Service Deficiency Thresholds and Operating Standards****

	~~**Preferred**~~	~~**Acceptable**~~	~~**Exceeds**~~
~~**Mid-Day one-hour**~~	~~C or better~~	~~D~~	~~E or worse~~
~~**Peak two-hour**~~	~~E/E or better~~	~~F/E~~	~~F/F or worse~~

Location	**Mid-Day One-Hour Peak**			**A.M./P.M. Two-Hour Peak**		
	Preferred Operating Standard	**Acceptable Operating Standard**	**Exceeds Deficiency Threshold**	**Preferred Operating Standard**	**Acceptable Operating Standard**	**Exceeds Deficiency Threshold**
Central City, Regional Centers, Town Centers, Main Streets and Station Communities	C	E	F	1st hour E 2nd hour E	1st hour F 2nd hour E	1st hour F 2nd hour F
Corridors, Industrial Areas and Intermodal Facilities, Employment Areas and Inner and Outer Neighborhoods	C	D	E	1st hour E 2nd hour D	1st hour E 2nd hour E	1st hour F 2nd hour E
Regional Highway Corridors	identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives			identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives		

*Level-of-Service is determined by using either the latest edition of the Highway Capacity Manual (Transportation Research Board) or through volume to capacity ratio equivalencies as follows: LOS C = .8 or better; LOS D = .8 to .9; LOS E = .9 to 1.0; and LOS F = ~~greater than~~ 1.0 to 1.1. A copy of the Level of Service Tables from the Highway Capacity Manual is attached as Exhibit A. Regional Highway Corridors are identified in the map attached as Figure 2.7.

** See Section 4.B.3.

2. **Analysis.** A transportation need is identified in a given location when analysis indicates that congestion has reached the level indicated in the "exceeds deficiency threshold" column of Table 3 and that this level of congestion will negatively impact accessibility, as determined through Section 4.B.4, below. The analysis should consider a mid-day hour appropriate for the study area and the appropriate two-hour peak-hour condition, either A.M. or P.M. or both to address the problem. The lead agency or jurisdictions will be responsible for determining the appropriate peak analysis period.

An appropriate solution to the need is determined through multi-modal system-level planning considerations listed in Section 4.C., below. For regional transportation planning purposes, the recommended solution should be consistent with the acceptable or preferred operating standards identified in Table 3. A city or county may choose a higher level-of service operating standard where findings of consistency with Section 4.C. have been developed.

3. **Regional Highways.** Exhibit B identifies the Regional Highways specified in Table 3. Each corridor will be evaluated on a case-by-case basis through system-level refinement studies. The studies will identify the performance and operating expectations for each corridor based on their unique operating and geographic characteristics. Appropriate multi-modal solutions to needs identified through these studies will be forwarded for inclusion in the Regional Transportation Plan.

4~~2~~. **Accessibility.** If a ~~congestion standard~~deficiency threshold is exceeded on the regional transportation system as identified in Table 3~~4.B.1~~, cities and counties shall evaluate the impact of the congestion on regional accessibility using the best available ~~methods (~~quantitative or qualitative~~)~~ methods. If a determination is made by Metro that exceeding the ~~congestion~~deficiency threshold negatively impacts regional accessibility, cities and counties~~local jurisdictions~~ shall follow the ~~congestion management~~transportation systems analysis and transportation project analysis procedures identified in 4.C. and 4.D. below.

5~~3~~. **Consistency.** The identified function or the identified capacity of a road may be significantly affected by planning for~~Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~ 2040 Growth Concept design types. Cities and counties shall take actions described in Section 4.C. and 4.D. below, including amendment of their transportation plans and implementing ordinances, if necessary~~ to either change or take actions as described in Section 4.C., below~~, to preserve the identified function and identified capacity of the road, ~~if necessary,~~and to retain consistency between allowed land uses and planning for transportation facilities.

~~C. Congestion Management~~ **[Note: Deleted text is incorporated in new 4.C. and 4.D., below]**

~~For a city or county to amend their comprehensive plan to add a significant capacity expansion to a regional facility, the following actions shall be applied, unless the capacity expansion is included in the Regional Transportation Plan:~~

~~1. To address Level of Service, the following shall be implemented:~~

~~a. Transportation system management techniques~~
~~b. Corridor or site-level transportation demand management techniques~~
~~c. Additional motor vehicle capacity to parallel facilities, including the consideration of a grid pattern consistent with connectivity standards contained in Title 6 of this plan~~
~~d. Transit service improvements to increase ridership~~

~~2. To address preservation of motor vehicle function:~~

~~a. Implement traffic calming~~
~~b. Change the motor vehicle function classification~~

~~3. To address or preserve existing street capacity, implement transportation management strategies (e.g. access management, signal interties, lane channelization)~~

C. **Transportation Systems Analysis**

This section applies to city and county comprehensive plan amendments or to studies, regardless of lead agency or jurisdiction, that would require an amendment to the Regional Transportation Plan that will result in a recommendation to add significant single occupancy vehicle (SOV) capacity to multi-modal arterials and highways. Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following shall be considered when:

1. local transportation system plans (TSPs), multi-modal corridor and sub-area studies, mode specific plans or special studies (including land use actions) are developed; and
2. recommendations are made to revise the Regional Transportation Plan and/or local transportation system plans to define the need, mode, corridor and function to address an identified transportation need consistent with Table 3, above and recommendations are made to add significant SOV capacity:
   a. Actions to be addressed through the Regional Transportation Plan include:
      1) regional transportation demand strategies
      2) regional transportation system management strategies, including intelligent Transportation Systems (ITS)

3) High Occupancy Vehicle (HOV) strategies
4) regional transit, bicycle and pedestrian system improvements to improve mode split
5) unintended land use and transportation effects resulting from a proposed SOV project or projects
6) effects of latent demand from other modes, routes or time of day from a proposed SOV project or projects
7) regional land use changes to the 2040 Growth Concept where needs have been identified and acceptable operating standards as defined in Table 3 cannot be achieved through cost-effective measures and where accessibility is significantly hindered.

b. Actions to be addressed at the local, sub-area, or corridor level include:
1) transportation demand strategies that further refine or implement a regional strategy identified in the RTP
2) transportation system management strategies, including intelligent Transportation Systems (ITS), that refine or implement a regional strategy identified in the RTP
3) sub-area or local transit, bicycle and pedestrian system improvements to improve mode split
4) the effect of a comprehensive plan change on mode split targets and actions to ensure the overall mode split target for the local TSP is being achieved
5) improvements to parallel arterials, collectors, or local streets, consistent with connectivity standards contained in Section 2 of this Title, as appropriate, to address the transportation need and to keep through trips on arterial streets and provide local trips with alternative routes
6) traffic calming techniques or changes to the motor vehicle functional classification, to maintain appropriate motor vehicle functional classification
7) local or sub-area land use changes where needs have been identified and acceptable operating standards as defined in Table 3 cannot be achieved through cost-effective measures and where accessibility is significantly hindered.

~~If~~Upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant ~~-~~capacity improvements may be included in the comprehensive plan. Demonstration of compliance will be included in the required congestion management system compliance report submitted to Metro by cities and counties as part of system-level planning and through findings consistent with the TPR in the case of an amendment to the Regional Transportation Plan.

~~**D. Motor Vehicle Congestion Analysis Outside of Mixed Use Areas**~~

~~Outside of Central City, Regional Centers, Town Centers, Main Streets and Station Communities, and where cities and counties have not elected to use the General Congestion Performance Standards in subsection 4.B of this Title:~~

~~1. The identified function or the identified capacity of a road may be significantly affected by implementation of this functional plan. Cities and counties shall amend their transportation plans and implementing ordinances to change or take actions as described in Section 4.C., below, to preserve the identified function and identified capacity of the facility, if necessary, to retain consistency between allowed land uses and planning for transportation facilities.~~

~~2. The congestion performance standard for designated state highways as identified in the 1990 Oregon Highway Plan shall be the peak and off-peak performance criteria in Appendix F of the 1992 Oregon Transportation Plan.~~

~~3. The congestion performance standard for arterials of regional significance identified at Figure 4-2 of Chapter 4 of the 1992 Regional Transportation Plan should be the peak and off-peak performance criteria in Chapter 1, Section D of the 1992 Regional Transportation Plan.~~

~~4. Congestion level of service standards are not required for all other roads.~~

~~5. If the congestion performance for a road is exceeded or the identified function or identified capacity is inconsistent with land uses, cities and counties shall apply the congestion management actions identified in 4.C.1-3, above. If these actions do not adequately and cost-effectively address the problem, capacity improvements may be included in the comprehensive plan."~~

D. Transportation Project Analysis

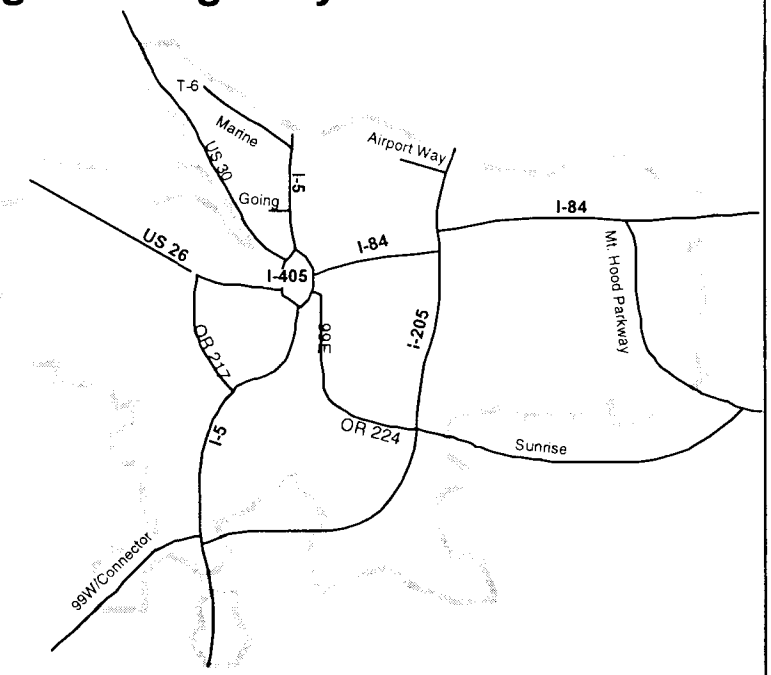
The TPR and Metro's Interim Congestion Management System (CMS) document require that measures to improve operational efficiency be addressed at the project level. Section 2 of this Title requires that street design guidelines be considered as part of the project-level planning process. Therefore, cities, counties, Tri-Met, ODOT, and the Port of Portland shall address the following operational and design considerations during transportation project analysis:

1. Transportation system management (e.g., access management, signal inter-ties, lane channelization, etc.) to address or preserve existing street capacity.
2. Guidelines contained in "Creating Livable Streets: Street Design Guidelines for 2040" (1997) and other similar resources to address regional street design policies.

The project need, mode, corridor, and function do not need to be addressed at the project level. This section (4.D) does not apply to locally funded projects on facilities not designated on the Regional Motor Vehicle System Map or the Regional Street Design Map. Demonstration of compliance will be included in the required Congestion Management System project-level compliance report submitted to Metro as part of project-level planning and development."

Figure 2.7

Regional Highway Corridors



9-12-97

Definitions to Be Amended to Title 10 of the Urban Growth Management Functional Plan

Accessway. Right-of-way or easement designed for public access by bicycles and pedestrians, and may include emergency vehicle passage.

Full Street Connection. Right-of-way designed for public access by motor vehicles, pedestrians and bicycles.

Improved pedestrian crossing. An improved pedestrian crossing is marked and may include signage, signalization, curb extensions and a pedestrian refuge such as a landscaped median.

Local trips. Local vehicle trips are trips that are five miles or shorter in length.

Mixed-Use Development. Mixed-use development includes areas of a mix of at least two of the following land uses and includes multiple tenants or ownerships: residential, retail and office. This definition excludes large, single-use land uses such as colleges and hospitals.

Regional vehicle trips. Regional vehicle trips are trips that are greater than five miles in length.

Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Multi-modal Arterials. An increase in SOV capacity created by the construction of additional general purpose lanes totaling ½ lane miles or more in length. General purpose lanes are defined as through travel lanes or multiple turn lanes. This also includes the construction of a new general purpose highway facility on a new location. Lane tapers are not included as part of the general purpose lane. Significant increases in SOV capacity should be assessed for individual facilities rather than for the planning area.

Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Regional Through-Route Freeways. Any increase in SOV capacity created by the construction of additional general purpose lanes other than that resulting from a safety project or a project solely intended to eliminate a bottleneck. An increase in SOV capacity associated with the elimination of a bottleneck is considered significant only if such an increase provides a highway section SOV capacity greater than ten percent over that provided immediately upstream of the bottleneck. An increase in SOV capacity associated with a safety project is considered significant only if the safety deficiency is totally related to traffic congestion. Construction of a new general purpose highway facility on a new location also constitutes a significant increase in SOV capacity. Significant increase in SOV capacity should be assessed for individual facilities rather than for the planning area.

M E M O R A N D U M

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METRO

Date: November 12, 1997

To: JPACT

From: Andrew Cotugno, Transportation Director

Subject: Summary of Comments Received To Date About Proposed Amendments to Title 6 of the Urban Growth Management Functional Plan (*dated September 24, 1997*)

Note: The following attachments have been approved by TPAC. An asterisk (*) in Attachment "A" denotes a change from the November 6 mailing to JPACT .

Attachment "A" presents a summary of issues and public comments identified to date related to Title 6 (dated 9/24/97). For each comment, included is a discussion of the issue and a staff recommendation. The document is dated November 12, 1997. The comments have been organized into two sections:

- Discussion Items (Key issues that warrant further JPACT discussion)
- Consent Items (Other issues to be approved by JPACT collectively by consent. These items are organized into the following sections:
    - Section 2., Regional Street Design Guidelines
    - Section 3., Design Standards for Street Connectivity
    - Section 4.A., Alternative Mode Analysis
    - Section 4.B., Motor Vehicle Congestion Analysis

Attachment "B" to this memo reflects the proposed amendments to the September 24 draft of Title 6 of the Urban Growth Management Functional Plan. The proposed amendments (dated 10/24/97) reflect all staff recommendations included in Attachment "A." The document is presented in engrossed format (strike and underline) and is dated November 12, 1997. The proposed amendments specify implementation of regional transportation policies included in Chapter 2 of the Regional Framework Plan.

DISCUSSION ITEMS

1) Modify Section 2 to either have a stronger requirement to follow regional street design guidelines when planning for improvements to regional facilities or to link consideration of regional street design guidelines to regional funding approval through Transportation Improvement Program (TIP) criteria. Transportation funding should be given to those jurisdictions who are actively and aggressively implementing the 2040 Growth Concept. (Charlie Hales, City of Portland)

   Staff Recommendation: Staff recommends using financial incentives through TIP criteria to leverage consideration of regional street design guidelines rather than implementing them as requirements. Further consideration should be given to what detailed funding criteria should be used to developed the TIP and financially constrained RTP. Therefore, no change to Section 2 is recommended, related to this comment.

   TPAC Recommendation: Concur

2) Modify Section 2 to require regional street design elements when planning for improvements to facilities designated on the Regional Street Design Map. Therefore:
   - amend lines 56-58 to read, "All cities and counties within the Metro region shall ~~consider~~ provide the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, ~~or~~ Tri-Met or the Port of Portland."
   - amend lines 71-73 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."
   - amend lines 101-102 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."
   - amend lines 127-128 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."
   - amend lines 170-172 to read, "Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require ~~consideration of~~ ..."

   (Rex Burkholder, Bicycle Transportation Alliance)

   Staff Recommendation: Disagree. See previous comment.

   TPAC Recommendation: Concur

3) Amend the first sentence, lines 249-251 to clarify that mode split will be the key regional measure for personal travel in region, separate from measuring regional freight and safety objectives. (Council Transportation Planning Committee, 10/21/97)

Staff Recommendation: Agree. Staff recommends amending lines 249-251 to read, "1. Person travel represents the largest share of trips for all modes of transportation. Mode split will be used as the key regional measure for person travel ~~transportation effectiveness in the Central City, Regional Centers and Station Communities~~ in all 2040 Growth Concept design types and will be used to guide transportation system improvements.

TPAC Recommendation: Concur

4) Amend the first sentence, line 249, to read "1. Mode split will be used as ~~the~~ a key regional measure for transportation effectiveness in all 2040 Growth Concept land use design types. (Ted Spence, JPACT)

Staff Recommendation: See previous comment.

5) "Design Standards for Street Connectivity" should not apply to industrial areas. (Dave Lohman, Port of Portland)

Staff Recommendation: Agree. As written, lines 193-246 apply only to new residential and mixed-use development.

TPAC Recommendation: Concur

6) Clarify lines 193-246 to ensure that the connectivity standards also apply to commercial and employment areas. (Charlie Hales, City of Portland)

Staff Recommendation: The current text provides, "For new residential and mixed-use development, all contiguous areas of vacant and primarily undeveloped land of five acres or more shall be identified by cities and counties and the following will be prepared, consistent with regional street design policies: A map that identifies possible local street connections to adjacent developing areas..." and "New residential and mixed-use developments shall include local street plans..."

Staff recommends amending the "Definitions" section of the Urban Growth Management Functional Plan to include the following definition:

Mixed-Use Development. Mixed-use development includes areas of a mix of at least two of the following land uses and includes multiple tenants or ownerships: residential, retail, office. This definition excludes large, single-use land uses such as colleges and hospitals.

TPAC Recommendation: Concur

7) Revise the introduction to Section 3 to reflect that the connectivity standards are intended to apply to the most dense 2040 areas and new residential areas, not, for example, throughways that travel through 2040 Design Types. (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Revise lines 188-189 to read, "Therefore, streets should be designed to keep through trips on arterial streets and provide local trips with alternative routes. T~~t~~he following design and performance options are intended to improve local circulation in a manner that protects the integrity of the regional system."

Staff also recommends revising Section 3.A., lines 193-227 to read,

"A. Design Option. Cities and counties shall ensure that their comprehensive plans, implementing ordinances and administrative codes require demonstration of compliance with the following, consistent with regional street design policies:

~~1.~~2. New residential and mixed-use developments shall include local street plans that...

c. provide bike and pedestrian connections on public easements or right-of-way when full street connections are not possible, with spacing between connections of no more than 330 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers~~, prevent street extension~~; and...

~~2~~1. For new residential and mixed-use development, all contiguous areas of vacant and primarily undeveloped land of five acres or more shall be identified by cities and counties and the following will be prepared, consistent with regional street design policies:

A map that identifies possible local street connections to the adjacent developing areas. The map shall include:

a. full street connections at intervals of no more than ~~660~~530 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers. Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~with more frequent connections in areas planned for mixed use or dense development,~~

b. accessways for pedestrians, bicycles or emergency vehicles on public easements or right-of-way where full street connections are not possible, with spacing between full street or accessway connections of no more than 330 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers."

Staff also recommends adding the following definitions to Chapter 2 of the Regional Framework Plan and the Urban Growth Management Functional Plan:

Full Street Connection. Right-of-way designed for public access by motor vehicles, pedestrians and bicycles.

Accessway. Right-of-way or easement designed for public access by bicycles and pedestrians, and may include emergency vehicle passage.

Finally, staff recommends revising lines 231-236 to read, "Cities and counties shall develop local street design standards in text or maps or both with street intersection spacing to occur at intervals of no ~~less~~ more than ~~eight street intersections per mile~~ 530 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers. ~~, prevent street extension.~~ Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~The number of street connections should be the greatest in the highest density 2040 Growth Concept design types.~~"

TPAC Recommendation: Concur

Comments Related to Title 6, Sections 4.A., Alternative Mode Analysis and 4.B., Motor Vehicle Congestion Analysis

8) Amend Section 4 to include an introduction that reflects the intent of the section. (Joint TPAC/MTAC work session, 10/10/97)

9) Add clarifying text to explain what is meant by "identify and evaluate on a case-by-case basis" as referred to in the Motor Vehicle Level of Service Deficiency Threshold Table on line 276. (Brent Curtis, Washington County)

10) Clarify distinction between system level planning and project level planning in terms of what actions a local jurisdiction must consider. (Joint TPAC/MTAC work session, 10/10/97 and TPAC, 10/31/97)

11) Clarify references to the 1995 and 1998 Regional Transportation Plans (lines 349-350) so that it does not imply "grandfathering" of the 1995 Federal RTP projects. (Steve Dotterrer, City of Portland)

12) The following modifying statement should be added in reference to the Motor Vehicle Level of Service Deficiency Threshold table on line 276: "Jurisdictions may adopt higher levels of service in transportation system plans for local traffic mitigation and the application of traffic impact fees." (Richard Ross, City of Gresham)

13) Allow cities and counties the option of choosing either the A.M. or P.M. peak condition for analysis purposes when using Table 3. Current information and models may not be adequate to analyze A.M. conditions in some areas of the region. (City of Portland, 10/30/97)

14)The project need, mode, corridor, and function should not have to be revisited as part of Section 4.D. (Washington County, 10/28/97)

Staff Recommendation: Staff recommends the following amendments to Section 4 to address comments 6-12.

A process to identify transportation mode split targets, transportation needs and appropriate actions to address those targets and needs is included in this section. The intent is to provide guidance to cities, counties, ODOT, Tri-Met and the Port of Portland when developing a transportation system plan, defining a project, or evaluating the potential transportation impacts of a land use action.

A transportation need is identified when a particular transportation standard or threshold has been exceeded. Needs are generally identified either through a comprehensive plan amendment review or as result of a system-planning analysis which evaluates forecast travel demand.

Subsequent to the identification of a need, an appropriate transportation strategy or solution is identified through a two-phased multi-modal planning and project development process. The first phase is multi-modal system-level planning. The purpose of system-level planning is to examine a number of transportation alternatives over a large geographic area such as a corridor or sub-area, or through a local or regional Transportation System Plan (TSP). The purpose of the multi-modal system-level planning step is to 1) consider alternative modes, corridors, and strategies to address identified needs; and 2) determine a recommended set of transportation projects, actions, or strategies and the appropriate modes and corridors to address identified needs in the system-level study area.

The second phase is project-level planning (also referred to as project development). The purpose of project-level planning is to develop project design details and select a project alignment, as necessary, after evaluating engineering and design details and environmental impacts.

The following sub-sections (A-D): (1) require that cities and counties establish regional mode split targets for all 2040 design types that will be used to guide transportation system improvements; (2) establish optional performance standards and deficiency thresholds intended to identify transportation needs through multi-modal system-level planning and (3) establish the process to identify appropriate recommended solutions to address those needs identified through multi-modal system-level planning and project-level planning.

2) Amend lines 274-276 to read,

~~*General Congestion Performance Standards (using LOS*)*~~ *Table 3.* ~~*General Congestion Performance Standards (using LOS*)*~~*Motor Vehicle Level of Service Deficiency Thresholds and Operating Standards**

	~~**Preferred**~~	~~**Acceptable**~~	~~**Exceeds**~~
~~**Mid Day one**~~	~~C or better~~	~~DD~~	~~E or worse~~
~~**Peak two-hour**~~	~~E/E or better~~	~~F/EF/E~~	~~F/F or worse~~

Location	**Mid-Day One-Hour Peak**			**A.M./P.M. Two-Hour Peak**		
	Preferred Operating Standard	**Acceptable Operating Standard**	**Exceeds Deficiency Threshold**	**Preferred Operating Standard**	**Acceptable Operating Standard**	**Exceeds Deficiency Threshold**
Central City, Regional Centers, Town Centers, Main Streets and Station Communities	C	E	F	1st hour E 2nd hour E	1st hour F 2nd hour E	1st hour F 2nd hour F
Corridors, Industrial Areas and Intermodal Facilities, Employment Areas and Inner and Outer Neighborhoods	C	D	E	1st hour E 2nd hour D	1st hour E 2nd hour E	1st hour F 2nd hour E
Regional Highway Corridors	identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives			identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives		

*Level-of-Service is determined by using either the latest edition of the Highway Capacity Manual (Transportation Research Board) or through volume to capacity ratio equivalencies as follows: LOS C = .8 or better; LOS D = .8 to .9; LOS E = .9 to 1.0; and LOS F = ~~greater than~~ 1.0 to 1.1. A copy of the Level of Service Tables from the Highway Capacity Manual is attached as Exhibit A. Regional Highway Corridors are identified in the map attached as Figure 2.7.

**See Section 4.B.3.

3) Amend lines 284-299 to further clarify the intended use of Table 3, as follows:

2. **Analysis.** A transportation need is identified in a given location when analysis indicates that congestion has reached the level indicated in the "exceeds deficiency threshold" column of Table 3 and that this level of congestion will negatively impact accessibility, as determined through Section 4.B.4, below. The analysis should consider a mid-day hour appropriate for the study area and the appropriate two-hour peak-hour condition, either A.M. or P.M. or both to address the problem. Other non-peak hours of the day, such as mid-day on Saturday, should also be considered to determine whether congestion is consistent with the acceptable or preferred operating standards identified in Table 3. The lead agency or jurisdictions will be responsible for determining the appropriate peak and non-peak analysis periods.

An appropriate solution to the need is determined through multi-modal system-level planning considerations listed in Section 4.C., below. For regional transportation planning purposes, the recommended solution should be consistent with the acceptable or preferred operating standards identified in Table 3. A city or county may choose a higher level-of service operating standard where findings of consistency with Section 4.C. have been developed.

3. **Regional Highways.** Exhibit B identifies the Regional Highways specified in Table 3. Each corridor will be evaluated on a case-by-case basis through system-level refinement studies. The studies will identify the performance and operating expectations for each corridor based on their unique operating and geographic characteristics. Appropriate multi-modal solutions to needs identified through these studies will be forwarded for inclusion in the Regional Transportation Plan.

4.~~2.~~ **Accessibility.** If a ~~congestion standard~~deficiency threshold is exceeded as identified in ~~4.B.1.~~Table 3, cities and counties shall evaluate the impact of the congestion on regional accessibility using the best available ~~(~~quantitative or qualitative~~)~~ methods. If a determination is made by Metro that exceeding the ~~congestion~~ deficiency threshold negatively impacts regional accessibility, ~~local jurisdictions~~ cities and counties shall follow the ~~congestion management~~ transportation systems analysis and transportation project analysis procedures identified in 4.C. and 4.D. below.

5.~~3.~~**Consistency.** The identified function or the identified capacity of a road may be significantly affected by planning for ~~Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~ 2040 Growth Concept design types. Cities and counties shall take actions described in Section 4.C. and 4.D. below, including amendment of their transportation plans and implementing ordinances, if necessary ~~to either change or take actions as described in Section 4.C., below,~~ to preserve the identified function and identified capacity of the road~~, if necessary~~ and to retain consistency between allowed land uses and planning for transportation facilities.

C. **Transportation Systems Analysis**

This section applies to city and county comprehensive plan amendments or to any studies that would recommend or require an amendment to the Regional Transportation Plan to add significant single occupancy vehicle (SOV) capacity to multi-modal arterials and/or highways.

Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following actions shall be considered through the Regional Transportation Plan when recommendations are made to revise the Regional Transportation Plan and/or local transportation system plans to define the need, mode, corridor and function to address an identified transportation need consistent with Table 3, above, and recommendations are made to add significant SOV capacity:

1) regional transportation demand strategies
2) regional transportation system management strategies, including intelligent Transportation Systems (ITS)
3) High Occupancy Vehicle (HOV) strategies
4) regional transit, bicycle and pedestrian system improvements to improve mode split
5) unintended land use and transportation effects resulting from a proposed SOV project or projects
6) effects of latent demand from other modes, routes or time of day from a proposed SOV project or projects

7) If upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant capacity improvement may be included in the Regional Transportation Plan.

Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following actions shall be considered when local transportation system plans (TSPs), multi-modal corridor and sub-area studies, mode specific plans or special studies (including land use actions) are developed:

1) transportation demand strategies that further refine or implement a regional strategy identified in the RTP
2) transportation system management strategies, including intelligent Transportation Systems (ITS), that refine or implement a regional strategy identified in the RTP
3) sub-area or local transit, bicycle and pedestrian system improvements to improve mode split
4) the effect of a comprehensive plan change on mode split targets and actions to ensure the overall mode split target for the local TSP is being achieved

5) improvements to parallel arterials, collectors, or local streets, consistent with connectivity standards contained in Section 2 of this Title, as appropriate, to address the transportation need and to keep through trips on arterial streets and provide local trips with alternative routes
6) traffic calming techniques or changes to the motor vehicle functional classification, to maintain appropriate motor vehicle functional classification
7) If upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant capacity improvement may be included in the comprehensive plan.

~~If~~ Upon a demonstration that the above considerations do not adequately and cost-effectively address the problem and where accessibility is significantly hindered, ~~capacity improvements may be included in the comprehensive plan~~ Metro and the affected city or county shall consider:

(1) amendments to the boundaries of a 2040 Growth Concept design type;
(2) amendments or exceptions to land use functional plan requirements; and/or
(3) amendments to the 2040 Growth Concept.

Demonstration of compliance will be included in the required congestion management system compliance report submitted to Metro by cities and counties as part of system-level planning and through findings consistent with the TPR in the case of amendments to applicable plans.

D. Transportation Project Analysis

The TPR and Metro's Interim Congestion Management System (CMS) document require that measures to improve operational efficiency be addressed at the project level. Section 2 of this Title requires that street design guidelines be considered as part of the project-level planning process. Therefore, cities, counties, Tri-Met, ODOT, and the Port of Portland shall address the following operational and design considerations during transportation project analysis:

1. Transportation system management (e.g., access management, signal inter-ties, lane channelization, etc.) to address or preserve existing street capacity.
2. Guidelines contained in "Creating Livable Streets: Street Design Guidelines for 2040" (1997) and other similar resources to address regional street design policies.

The project need, mode, corridor, and function do not need to be addressed at the project level. This section (4.D) does not apply to locally funded projects on facilities not designated on the Regional Motor Vehicle System Map or the Regional Street Design

Map. Demonstration of compliance will be included in the required Congestion Management System project-level compliance report submitted to Metro as part of project-level planning and development."

TPAC Recommendation: *Concur*

CONSENT ITEMS

Comments Related to Title 6, Section 2, Regional Street Design Guidelines

15) Clarify line 57 to define what constitutes consideration of the regional street design elements. (Dave Lohman, Port of Portland)

Staff Recommendation: Cities and counties will be required to demonstrate through findings how they have considered the regional street designs elements.

TPAC Recommendation: Concur

16) Adopt the priorities listed in the "Creating Livable Streets: Street Design for 2040" (1997) as part of each street design description in Title 6. Therefore, amend Section 2.B. to add the following language:

Regional Boulevards: The design of a regional boulevard shall be based on the following priorities:
Higher Priorities
a. pedestrian sidewalks with transit access
b. bicycle lanes
c. number of travel lanes
Lower Priorities
a. width of travel lanes
b. on-street parking
c. median for landscaping

Community Boulevards: The design of a community boulevard shall be based on the following priorities:
Higher Priorities
a. pedestrian sidewalks with transit access
b. bicycle lanes
c. on-street parking
d. median for landscaping
Lower Priorities
a. number of travel lanes
b. width of travel lanes

Regional Streets: The design of a regional street shall be based on the following priorities:
Higher Priorities
a. number of travel lanes
b. pedestrian sidewalks with transit access and buffer strip
c. medians
d. bicycle lanes
e. width of travel lanes

Lower Priorities

a. on-street parking

Community Streets: The design of a community street shall be based on the following priorities:

Higher Priorities

a. pedestrian sidewalks with transit access
b. bicycle lanes
c. on-street parking

Lower Priorities

a. median for landscaping
b. number of travel lanes
c. width of travel lanes

(Rex Burkholder, Bicycle Transportation Alliance)

Staff Recommendation: Disagree. "Creating Livable Streets: Street Design for 2040" (1997) addresses these tradeoff issues and is a resource for cities and counties to use when prioritizing street design elements within a constrained right-of-way.

TPAC Recommendation: Concur

17) Amend lines 56-58 to read, "All cities and counties within the Metro region shall consider the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, ~~or~~ Tri-Met or the Port of Portland." (G.B. Arrington, Tri-Met)

Staff Recommendation: Agree. Amend as requested.

TPAC Recommendation: Concur

18) In all street design types, the inclusion of an option of a wide outside lane as a "bicycle facility" is inappropriate and contrary to AASHTO guidelines and ODOT standards. Therefore, amend lines 89 and 119 to read, "8. Striped bikeways ~~or shared outside lane~~." (Rex Burkholder, Bicycle Transportation Alliance)

Staff Recommendation: Disagree. Bicycle lanes are the preferred bikeway choice. However, wide outside lanes are acceptable where any of the following conditions exist:

- it is not possible to eliminate or reduce lane widths;
- topographical constraints exist;
- additional pavement would disrupt the natural environment or character of the natural environment;
- parking is essential to serve adjacent land uses or improve the character of the pedestrian environment;
- densely developed areas with low motor vehicle speeds.

TPAC Recommendation: Concur

19) Amend line 56 to read, "Throughways, Boulevards, Streets and Roads ~~and Throughways~~." (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as requested. In addition, recommend organizing Section 2 to reflect this order of street design elements.

TPAC Recommendation: Concur

20) Clarify lines 77, 106 and 132 to better define what is meant by "low" and "moderate" motor vehicle speeds. (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff specifically intended to use relative definitions of motor vehicle speed. Staff recommends leaving that determination to cities and counties through their transportation system plans, consistent with the street design guidelines identified in Title 6, Section 2.

TPAC Recommendation: Concur

21) In reference to lines 87, 116, 135, 160, better define what is meant by "improved pedestrian crossings." (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff recommends adding a definition to the Urban Growth Management Functional Plan that reads, "Improved pedestrian crossing. An improved pedestrian crossing is marked and may include signage, signalization, curb extensions and a pedestrian refuge such as a landscaped median."

TPAC Recommendation: Concur

22) Clarify line 88 to better define what is the threshold for "excessive intersection spacing." (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff recommends revising line 88 to read, "where intersection spacing exceeds 530 feet ~~is excessive~~."

TPAC Recommendation: Concur

23) Add reference to regional street design handbook to Section 2 introduction. (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Revise lines 56-58 to read, "All cities and counties within the Metro region shall consider the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, ~~or~~ Tri-Met or the Port of Portland. "Creating Livable Streets: Street Design for 2040" (1997) is a resource for cities, counties, ODOT, Tri-Met and the Port of Portland to use when prioritizing street design elements within a constrained right-of-way.

TPAC Recommendation: Concur

24) Amend line 74 to read, "with ~~right-of-way~~ improvements within the right-of-way on regional routes..." (Washington County, 10/28/97)

Staff Recommendation: Agree. Amend as requested.

TPAC Recommendation: Concur

25) Amend lines 82 and 111 to read, " on-street parking where ~~possible~~practicable."

Staff Recommendation: Disagree. No change is recommended.

TPAC Recommendation: Concur

26) Amend line 116 to not require improved pedestrian crossings at all intersections on Community Streets. (Washington County, 10/28/97)

Staff Recommendation: Disagree. No change is recommended.

TPAC Recommendation: Concur

Comments Related to Title 6, Section 3, Design Standards for Street Connectivity

27) In reference to line 239, define "local vehicle trips." (Mike McKillip, City of Tualatin)

Staff Recommendation: Local vehicle trips are trips that are five miles or shorter in length. In contrast, regional vehicle trips, are trips that are greater than five miles in length. Therefore, recommend adding two definitions to the Urban Growth Management Functional Plan that read:

"Local trips. Local vehicle trips are trips that are five miles or shorter in length."

"Regional vehicle trips. Regional vehicle trips are trips that are greater than five miles in length."

TPAC Recommendation: Concur

28) Amend lines 236-246 to read, "Local street designs for new developments shall satisfy the following additional criteria...2. Performance Criterion: everyday local travel needs are served by direct, connected local street systems where: (1) the shortest motor vehicle trip over public streets from a local origin to a collector or greater facility is no more than twice the straight-line distance; ~~and~~ (2) the shortest pedestrian trip on public right-of-way is no more than one and one-half the straight-line distance; and (3) any trip less than ½-mile is not subject to (1) and (2) above. (Mike McKillip, City of Tualatin)

Staff Recommendation: Staff recommends further TPAC discussion on this issue.

TPAC Recommendation: Concur

29) In reference to lines 278-283, the Oregon Highway Plan states that the LOS is determined by the volume/capacity method. Until this is changes, ODOT intends to use that method for the determination of LOS on state facilities. While other methods have significant merit, there is as yet no universal agreement on application. (Leo Huff, ODOT)

Staff Recommendation: Disagree. As more suitable measures to define level-of-service are developed by the transportation industry, these measures should be available for use, as appropriate.

TPAC Recommendation: Concur

30) Amend the second sentence, lines 251-255 to read, "Each jurisdiction shall establish an alternative mode split target (as a percentage of all person-trips for all modes of transportation) for...trips into, out of and within all 2040 Growth Concept land use design types within its boundaries." (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as requested.

TPAC Recommendation: Concur

31) Amend proposed language to delete repetitive reference to the level of service table on line 276. (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as follows, "...~~The following table~~ Table 3. ~~using~~Motor Vehicle Level Of Service Deficiency Thresholds and Operating Standards may be incorporated into ~~local~~ city and county comprehensive plans and implementing ordinances to replace current methods of determining motor vehicle congestion on regional facilities, if a city or county determines that this change is needed to permit Title 1, Table 1 capacities ~~in the Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~for the 2040 design types and facilities as follows..."

TPAC Recommendation: Concur

32) Amend proposed language in lines 249-263 to recognize that mode split targets for intermodal and industrial areas should not look at total trips because for these uses, a high percentage of the trips are truck trips which cannot choose an alternative mode. The mode split targets need to be clear that they are directed at employees or passenger trips. (Dave Lohman, Port of Portland)

Staff Recommendation: Agree. Mode split targets have been developed that exclude commercial traffic. Table 3 of Chapter 2 (Transportation) of the Regional Framework Plan identifies those targets, as shown below:

Table 3. Regional Non-SOV Mode Split Targets
Needed To Achieve State Transportation Planning Rule 10% VMT/Capita Reduction Requirement
(for trips to and within each 2040 Design Type)

2040 Design Type	Non-SOV* Mode Split Target
Central City	60-70%
Regional Centers, Town Centers, Main Streets, Station Communities and Corridors	45-55%
Industrial Areas and Intermodal Facilities, Employment Areas and Inner and Outer Neighborhoods	40-45%

*Non-SOV includes shared ride, bike, walk and transit.

TPAC Recommendation: Concur

33) Section 4.B. should reflect a better level of service standard for access to terminals because freight mobility is the backbone of the region's economy. Recommend separating intermodal facilities out from others in the second category and modifying the AM/PM two hour peak to D for the first hour under the preferred column and to D for the second hour under the acceptable column. (Dave Lohman, Port of Portland)

Staff Recommendation: The Regional Highways Corridors map, Figure 2.7 in Exhibit A of Title 6 identifies roads that access terminals on Swan Island, Marine Drive and Airport Way. Title 6 calls for identification and evaluation of level of service thresholds for "Regional Highway Corridors" on a case-by-case basis to allow for a better level of service on roadways that access those areas. Therefore, no change is recommended.

TPAC Recommendation: Concur

34) In reference to lines 284-291, clarify what happens if exceeding a deficiency threshold does not negatively impact regional accessibility, but does impact local accessibility. (Mike McKillip, City of Tualatin)

Staff Recommendation: The proposed language in lines 284-291 applies only to the regional transportation system not the local transportation system. Therefore, staff recommends revising lines 284-285 to read, "If a deficiency threshold is exceeded <u>on the regional transportation system</u> as identified in Table ~~3.B.1.~~,..."

TPAC Recommendation: Concur

35) Clarify line 345 to define "significant capacity expansion" and "regional facility." (Mike McKillip, City of Tualatin and Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Staff recommends adding the following definitions to the Urban Growth Management Functional Plan for "significant capacity expansion" that

reflect the definition used in the Portland Interim Congestion Management System (CMS) Document (1996).

Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Multi-modal Arterials. An increase in SOV capacity created by the construction of additional general purpose lanes totaling ½ lane miles or more in length. General purpose lanes are defined as through travel lanes or multiple turn lanes. This also includes the construction of a new general purpose highway facility on a new location. Lane tapers are not included as part of the general purpose lane. Significant increases in SOV capacity should be assessed for individual facilities rather than for the planning area.

Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Regional Through-Route Freeways. Any increase in SOV capacity created by the construction of additional general purpose lanes other than that resulting from a safety project or a project solely intended to eliminate a bottleneck. An increase in SOV capacity associated with the elimination of a bottleneck is considered significant only if such an increase provides a highway section SOV capacity greater than ten percent over that provided immediately upstream of the bottleneck. An increase in SOV capacity associated with a safety project is considered significant only if the safety deficiency is totally related to traffic congestion. Construction of a new general purpose highway facility on a new location also constitutes a significant increase in SOV capacity. Significant increase in SOV capacity should be assessed for individual facilities rather than for the planning area.

TPAC Recommendation: Concur

36) Clarify line 369 to define how cities and counties "shall consider" the "Creating Livable Streets: Street Design Guidelines for 2040" during transportation project development. (Mike McKillip, City of Tualatin)

Staff Recommendation: Cities and counties will be required to demonstrate through findings how they have considered the regional street designs elements.

TPAC Recommendation: Concur

37) Amend line 276, last row to read, "identify and evaluate on a case-by-case basis to balance regional and local mobility and accessibility objectives." (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Amend as requested.

TPAC Recommendation: Concur

38) Amend Regional Highways Corridors map, Figure 2.7 in Exhibit A of Title 6 to add the following: Highway 99 to I-5, the Sunrise Corridor, US 26 entering the eastern UGB, US

30 entering NE Portland and the Mt. Hood Parkway. (Joint TPAC/MTAC work session, 10/10/97)

Staff Recommendation: Agree. Amend as requested.
TPAC Recommendation: Concur

39) In reference to lines 284-291 related to evaluating the impact of congestion on regional accessibility, where as quantitative methods are well known, qualitative methods for measuring accessibility are not. If Metro is going to make the determination of accessibility deficiencies, then ODOT recommends that the criteria, both qualitative and quantitative be reviewed and adopted by TPAC. (Leo Huff, ODOT)

Staff Recommendation: Agree. The Regional Transportation Plan will define the locations that exceed the motor vehicle level-of-service threshold criteria and affect regional accessibility. TPAC will review this determination as part of the Regional Transportation Plan update.

TPAC Recommendation: Concur

40) In reference to Section 4, Metro should provide guidance materials to local governments for Title 6, Section 4 implementation and applicability. (City of Portland, 10/30/97)

Staff Recommendation: Agree. Staff will develop materials to assist cities and counties with understanding and applying Title 6, Section 4 requirements.

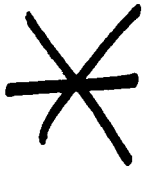
TPAC Recommendation: Concur

41) Provide clarification for lines 238-246 as to how this analysis is to be completed. For example, such criteria as the "1995 arithmetic median of regional trips" and "the shortest trip from a local origin to a collector" would benefit from some clarification, possibly through an appendix to Title 6. (Washington County, 10/28/97)

Staff Recommendation: Agree. See above comment.

TPAC Recommendation: Concur

42) Consistent with TPR requirements for transportation system planning, the deadline for cities and counties to submit mode split targets and implementing actions should be one year after Metro adopts the Regional Transportation Plan. (City of Portland, 10/30/97)



Staff Recommendation: Agree. Amend line 251 to add, "Each jurisdiction shall establish an alternative mode split target...for all 2040 Growth Concept land use design types within its boundaries one year after adoption of the 1998 Regional Transportation Plan." In addition, amend line 312 to add, "Cities and counties...shall identify actions which will implement mode split targets one year after adoption of the 1998 Regional Transportation Plan."

TPAC Recommendation: Concur

43) Mid-day thresholds and standards as listed in Table 3 should remain optional. Cities and counties cannot currently analyze mid-day conditions. (City of Portland, 10/30/97)

Staff Recommendation: Disagree. Table 3 is optional until adoption of the 1998 Regional Transportation Plan. The issue of mid-day modeling will be considered as part of the RTP update this winter. At that time, staff will work with cities and counties to develop acceptable methods for mid-day analysis. In addition, traffic counts rather than forecasts are an available method to evaluate mid-day conditions.

44) Section 4.D. should not apply to locally funded projects off the Regional Motor Vehicle System Map or the Regional Street Design Map. (City of Portland, 10/30/97)

Staff Recommendation: Agree. Recommended revisions to Section 4.D. include the following statement, "This section (4.D) does not apply to locally funded projects on facilities not designated on the Regional Motor Vehicle System Map or the Regional Street Design Map."

TPAC Recommendation: Concur

Other Comments Related to Title 6

45) Amend the third sentence in Section 1, lines 5-6 to read, "Focusing development in the concentrated activity centers, including the central city, regional centers, town centers and station communities, requires the use of alternative modes of transportation in order to avoid unacceptable levels of congestion." (Mike McKillip, City of Tualatin)

Staff Recommendation: Agree. Amend as requested.

TPAC Recommendation: Concur

TITLE 6: REGIONAL ACCESSIBILITY

Section 1. Intent

Implementation of the 2040 Growth Concept requires that the region identify key measures of transportation effectiveness which include all modes of transportation. Developing a full array of these measures will require additional analysis. Focusing development in the concentrated activity centers, including the central city, regional centers, town centers and station communities, requires the use of alternative modes of transportation in order to avoid unacceptable levels of congestion. The continued economic vitality of industrial areas and intermodal facilities is largely dependent on preserving or improving access to these areas and maintaining reasonable levels of freight mobility in the region. Therefore, regional congestion standards and other regional system performance measures shall be tailored to reinforce the specific development needs of the individual 2040 Growth Concept design types.

These regional standards ~~will be~~are linked to a series of regional street design concepts that fully integrate transportation and land use needs for each of the 2040 land use ~~components~~design types in the Regional Framework Plan. The designs generally form a continuum; a network of throughways (freeway and highway designs) ~~will~~ emphasize auto and freight mobility and connect major activity centers. Slower-speed boulevard designs within concentrated activity centers ~~will~~ balance the multi-modal travel demands for each mode of transportation within these areas. Street and road designs ~~will~~ complete the continuum, with multi-modal designs that reflect the land uses they serve, but also serving as moderate-speed vehicle connections between activity centers that complement the throughway system. ~~While these designs are under development, it is important that improvements in the most concentrated activity centers are designed to lessen the negative effects of motor vehicle traffic on other modes of travel. Therefore, implementation of amenity oriented boulevard treatment that better serves pedestrian, bicycle and transit travel in the central city, regional centers, main streets, town centers, and station communities is a key step in the overall implementation of the Metro 2040 Growth Concept.~~ It is intended that the entirety of these Title 6 standards will be supplemented by the 1998 Regional Transportation Plan (RTP) ~~when the RTP is approved and adopted by the Metro Council~~.

~~Section 2. Boulevard Design~~

~~Regional routes in the central city, regional centers, station communities, main streets and town centers are designated on the Boulevard Design Map. In general, pedestrian and transit oriented design elements are the priority in the central city and regional centers, station communities, main streets and town centers. All cities and counties within the Metro region shall implement or allow others to implement boulevard design elements as improvements are made to these facilities including those facilities built by ODOT or Tri-Met. Each jurisdiction shall amend their comprehensive plans and implementing ordinances, if necessary, to require consideration or installation of the following boulevard design elements when proceeding with right-of-way improvements on regional routes designated on the boulevard design map:~~

~~A. Wide sidewalks with pedestrian amenities such as benches, awnings and special lighting;~~

~~B. Landscape strips, street trees and other design features that create a pedestrian buffer between curb and sidewalk;~~

~~C. Pedestrian crossings at all intersections, and mid-block crossings where intersection spacing is excessive;~~

~~D. The use of medians and curb extensions to enhance pedestrian crossings where wide streets make crossing difficult;~~

~~E. Accommodation of bicycle travel;~~

~~F. On-street parking;~~

~~G. Motor vehicle lane widths that consider the above improvements;~~

~~H. Use of landscaped medians where appropriate to enhance the visual quality of the streetscape.~~

Section 2. Regional Street Design Guidelines

Regional routes in each of the 2040 Design Types are designated as one of four major classifications on the Regional Street Design Map, attached in Exhibit "A" The four classifications are: Throughways, Boulevards, Streets and Roads. All cities and counties within the Metro region shall consider the following regional street design elements when planning for improvements to these facilities, including those facilities built by ODOT, Tri-Met or the Port of Portland. "Creating Livable Streets: Street Design for 2040" (1997) is a resource for cities, counties, ODOT, Tri-Met and the Port of Portland to use when prioritizing street design elements within a constrained right-of-way.

A. Throughways. Throughways connect the region's major activity centers within the region, including the central city, regional centers, industrial areas and intermodal facilities to one another and to points outside the region. Throughways are traffic oriented with designs that emphasize motor vehicle mobility. Throughways are divided into Freeway and Highways designs.

1. Freeway Design. Freeways are designed to provide high speed travel for longer motor vehicle trips throughout the region. These designs usually include four to six vehicle lanes, with additional lanes in some situations. They are completely divided, with no left turn lanes. Street connections always occur at separated grades with access controlled by ramps. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Freeway design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

a. high vehicle speeds
b. improved pedestrian crossings on overpasses
c. parallel facilities for bicycles
d. motor vehicle lane widths that accommodate freight movement and high-speed travel

2. Highway Design. Highways are designed to provide high speed travel for longer motor vehicle trips throughout the region while accommodating limited public transportation, bicycle and pedestrian travel. Highways are usually divided with a median, but also have left turn lanes where at grade intersections exist. These designs usually include four to six vehicle lanes, with additional lanes in some situations. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the Highway design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

a. high vehicle speeds
b. few or no driveways
c. improved pedestrian crossings at overpasses and all intersections
d. accommodation of bicycle travel through the use of a striped bikeway
e. sidewalks where appropriate
f. motor vehicle lane widths that accommodate freight movement and high-speed travel

B. Boulevard Designs. Boulevards serve major centers of urban activity, including the Central City, Regional Centers, Station Communities, Town Centers and some Main Streets. Boulevards are designed with special amenities to favor public transportation, bicycle and pedestrian travel and balance the many travel demands of these areas. Boulevards are divided into regional and community scale designs on the Regional Street Design Map. Regional and Community Boulevards combine motor vehicle traffic with public transportation, bicycle and pedestrian travel where dense development is oriented to the street. Regional Boulevard designs usually include four vehicle lanes, with additional lanes or one-way couplets in some situations. Community Boulevard designs may include up to four vehicle lanes and on-street parking. Fewer vehicle lanes may be appropriate in Community Boulevard designs in some situations, particularly when necessary to provide on-street parking. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Regional and Community Boulevard design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

1. low to moderate vehicle speeds on Regional Boulevard and low vehicle speeds on Community Boulevards

2. the use of medians and curb extensions to enhance pedestrian crossings where wide streets make crossing difficult
3. combined driveways
4. on-street parking where possible
5. wide sidewalks with pedestrian amenities such as benches, awnings and special lighting
6. landscape strips, street trees or other design features that create a pedestrian buffer between curb and sidewalk
7. improved pedestrian crossings at all intersections, and mid-block crossings where intersection spacing exceeds 530 feet
8. striped bikeways or shared outside lane
9 motor vehicle lane widths that consider the above improvements

C. Street Designs. Streets serve the region's transit corridors, neighborhoods and some main streets. Streets are designed with special amenities to balance motor vehicle traffic with public transportation, bicycle and pedestrian travel in the 2040 Design Types they serve. Streets are divided into regional and community scale designs on the Regional Street Design Map. Regional Streets are designed to carry motor vehicle traffic while also providing for public transportation, bicycle and pedestrian travel. Regional street designs usually include four vehicle lanes, with additional lanes in some situations. Community Street designs may include up to four vehicle lanes. Fewer vehicle lanes may be appropriate in Community Street designs in some situations, particularly when necessary to provide on-street parking. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Regional Street design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

1. moderate vehicle speeds
2. the use of medians and curb extensions to enhance pedestrian crossings where wide streets make crossing difficult or to manage motor vehicle access
3. combined driveways
4. on-street parking when appropriate
5. buffered sidewalks with pedestrian amenities such as special lighting and special crossing amenities tied to major transit stops
6 landscape strips, street trees or other design features that create a pedestrian buffer between curb and sidewalk
7. improved pedestrian crossings at signaled intersections on Regional Streets and improved pedestrian crossings at all intersections on Community Streets
8. striped bikeways or shared outside lane
9. motor vehicle lane widths that consider the above improvements

D. Urban Roads. Urban Roads serve the region's industrial areas, intermodal facilities and employment centers where buildings are less oriented to the street, and primarily

emphasize motor vehicle mobility. Urban Roads are designed to carry significant motor vehicle traffic while providing for some public transportation, bicycle and pedestrian travel. These designs usually include four vehicle lanes, with additional lanes in some situations. Cities and counties shall amend their comprehensive plan and implementing ordinances, if necessary, to require consideration of the following Urban Road design elements when proceeding with improvements to the right-of-way on regional routes designated on the regional street design map:

1. moderate vehicle speeds
2. few driveways
3. sidewalks
4. improved pedestrian crossings at major intersections
5. striped bikeways
6. center medians that manage access and control left turn movements
7. motor vehicle lane widths that consider the above improvements

Section 3. Design Standards for Street Connectivity

The design of local street systems, including "local" and "collector" functional classifications, is generally beyond the scope of the Regional Transportation Plan (RTP). However, the aggregate effect of local street design impacts the effectiveness of the regional system when local travel is restricted by a lack of connecting routes, and local trips are forced onto the regional network. Therefore, streets should be designed to keep through trips on arterial streets and provide local trips with alternative routes. Tthe following design and performance options are intended to improve local circulation in a manner that protects the integrity of the regional system.

~~Local jurisdictions~~Cities and counties within the Metro region are hereby required to amend their comprehensive plans and implementing ordinances, if necessary, to comply with or exceed one of the following options in the development review process:

A. **Design Option**. Cities and counties shall ensure that their comprehensive plans, implementing ordinances and administrative codes require demonstration of compliance with the following, consistent with regional street design policies:

2~~1~~. New residential and mixed-use developments shall include local street plans that:

a. encourage pedestrian and bicycle travel by providing short, direct public right-of-way routes to connect residential uses with nearby existing and planned commercial services, schools, parks and other neighborhood facilities; and

b. include no cul-de-sac streets longer than 200 feet, and no more than 25 dwelling units on a closed-end street system except where topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers, prevent street extension; and

c. provide bike and pedestrian connections on public easements or right-of-way when full street connections are not possible, with spacing between connections of no more than 330 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers, ~~prevent street extension~~; and

d. consider opportunities to incrementally extend and connect local streets in primarily developed areas; and

e. serve a mix of land uses on contiguous local streets; and

f. support posted speed limits; and

g. consider narrow street design alternatives that feature total right-of-way of no more than 46 feet, including pavement widths of no more than 28 feet, curb-face to curb-face, sidewalk widths of at least 5 feet and landscaped pedestrian buffer strips that include street trees; and

h. limit the use of cul-de-sac designs and closed street systems to situations where topography, pre-existing development or environmental constraints prevent full street extensions.

12. For new residential and mixed-use development, all contiguous areas of vacant and primarily undeveloped land of five acres or more shall be identified by cities and counties and the following will be prepared, consistent with regional street design policies:

A map that identifies possible local street connections to adjacent developing areas. The map shall include:

a. full street connections at intervals of no more than ~~660~~530 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers. Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~with more frequent connections in areas planned for mixed use or dense development~~.

b. accessways for pedestrians, bicycles or emergency vehicles on public easements or right-of-way where full street connections are not possible, with spacing between full street or accessway connections of no more than 330 feet, except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers.

B. **Performance Option**. For residential and mixed use areas, cities and counties shall amend their comprehensive plans, implementing ordinances and administrative codes, if necessary, to require demonstration of compliance with performance criteria in the following manner. Cities and counties shall develop local street design standards in text or maps or both with street intersection spacing to occur at intervals of no more~~less~~ than ~~eight street intersections per mile~~530 feet except where prevented by topography, barriers such as railroads or freeways, or environmental constraints such as major streams and rivers~~, prevent street extension~~. Street connections at intervals of no more than 330 feet are recommended in areas planned for the highest density mixed-use development. ~~The~~

~~number of street intersections should be greatest in the highest density 2040 Growth Concept design types~~. Local street designs for new developments shall satisfy the following additional criteria:

1. Performance Criterion: minimize local traffic on the regional motor vehicle system, by demonstrating that local vehicle trips on a given regional facility do not exceed the 1995 arithmetic median of regional trips for facilities of the same motor vehicle system classification by more than 25 percent.

2. Performance Criterion: everyday local travel needs are served by direct, connected local street systems where: (1) the shortest motor vehicle trip over public streets from a local origin to a collector or greater facility is no more than twice the straight-line distance; and (2) the shortest pedestrian trip on public right-of-way is no more than one and one-half the straight-line distance.

Section 4. Transportation Performance Standards

A process to identify transportation mode split targets, transportation needs and appropriate actions to address those targets and needs is included in this section. The intent is to provide guidance to cities, counties, ODOT, Tri-Met and the Port of Portland when developing a transportation system plan, defining a project, or evaluating the potential transportation impacts of a land use action.

A transportation need is identified when a particular transportation standard or threshold has been exceeded. Needs are generally identified either through a comprehensive plan amendment review or as result of a system-planning analysis which evaluates forecast travel demand.

Subsequent to the identification of a need, an appropriate transportation strategy or solution is identified through a two-phased multi-modal planning and project development process. The first phase is multi-modal system-level planning. The purpose of system-level planning is to examine a number of transportation alternatives over a large geographic area such as a corridor or sub-area, or through a local or regional Transportation System Plan (TSP). The purpose of the multi-modal system-level planning step is to 1) consider alternative modes, corridors, and strategies to address identified needs; and 2) determine a recommended set of transportation projects, actions, or strategies and the appropriate modes and corridors to address identified needs in the system-level study area.

The second phase is project-level planning (also referred to as project development). The purpose of project-level planning is to develop project design details and select a project alignment, as necessary, after evaluating engineering and design details and environmental impacts.

The following sub-sections (A-D): (1) require that cities and counties establish regional mode split targets for all 2040 design types that will be used to guide transportation system improvements; (2) establish optional performance standards and deficiency thresholds intended to identify transportation needs through multi-modal system-level planning and (3) establish the process to identify appropriate recommended solutions to address those needs identified through multi-modal system-level planning and project-level planning.

A. **Alternative Mode Analysis**

1. Person travel represents the largest share of trips for all modes of travel. Mode split will be used as the key regional measure for person travel ~~transportation effectiveness in the Central City, Regional Centers and Station Communities~~in all 2040 Growth Concept land use design types and will be used to guide transportation system improvements. Each jurisdiction shall establish an alternative mode split target (defined as non-Single Occupancy Vehicle person-trips as a percentage of all person-trips for all modes of transportation) for trips into, out of and within~~each of the central city, regional centers and station communities~~ all 2040 Growth Concept land use design types within its boundaries one year after adoption of the 1998 Regional Transportation Plan. The alternative mode split target shall be no less than the regional targets for these ~~Region~~ 2040 Growth Concept land use ~~components~~design types to be established in the 1998 Regional Transportation Plan.

2. Cities and counties ~~which have Central City, regional centers and station communities~~ shall identify actions which will implement the mode split targets one year after adoption of the 1998 Regional Transportation Plan. These actions should include consideration of the maximum parking ratios adopted as part of Title 2; Section 2: ~~Boulevard~~Regional Street Design considerations in~~of~~ this Title; and transit's role in serving the area.

B. **Motor Vehicle Congestion Analysis ~~for Mixed Use Areas~~**

1. Motor Vehicle Level-Of-Service (LOS) is a measurement of ~~the use of a road~~congestion as a share of designed motor vehicle capacity of a road. ~~The following table using~~ Table 3. Motor Vehicle Level Of Service Deficiency Thresholds and Operating Standards may be incorporated into local comprehensive plans and implementing ordinances to replace current methods of determining motor vehicle congestion on regional facilities, if a city or county determines that this change is needed to permit Title 1, Table 1 capacities ~~in the Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~for the 2040 design types and facilities as follows:

~~General Congestion Performance Standards (using LOS*)~~Table 3. Motor Vehicle Level of Service Deficiency Thresholds and Operating Standards*

	~~Preferred~~	~~Acceptable~~	~~Exceeds~~
~~Mid-Day one-hour~~	~~C or better~~	~~D~~	~~E or worse~~
~~Peak two-hour~~	~~E/E or better~~	~~F/E~~	~~F/F or worse~~

Location	Mid-Day One-Hour Peak			A.M./P.M. Two-Hour Peak		
	Preferred Operating Standard	Acceptable Operating Standard	Exceeds Deficiency Threshold	Preferred Operating Standard	Acceptable Operating Standard	Exceeds Deficiency Threshold
Central City, Regional Centers, Town Centers, Main Streets and Station Communities	C	E	F	1st hour E 2nd hour E	1st hour F 2nd hour E	1st hour F 2nd hour F
Corridors, Industrial Areas and Intermodal Facilities, Employment Areas and Inner and Outer Neighborhoods	C	D	E	1st hour E 2nd hour D	1st hour E 2nd hour E	1st hour F 2nd hour E
Regional Highway Corridors	identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives			identify and evaluate on a case-by-case basis** to balance regional and local mobility and accessibility objectives		

*Level-of-Service is determined by using either the latest edition of the Highway Capacity Manual (Transportation Research Board) or through volume to capacity ratio equivalencies as follows: LOS C = .8 or better; LOS D = .8 to .9; LOS E = .9 to 1.0; and LOS F = ~~greater than~~ 1.0 to 1.1. A copy of the Level of Service Tables from the Highway Capacity Manual is attached as Exhibit A. Regional Highway Corridors are identified in the map attached as Figure 2.7.

** See Section 4.B.3.

2. **Analysis.** A transportation need is identified in a given location when analysis indicates that congestion has reached the level indicated in the "exceeds deficiency threshold" column of Table 3 and that this level of congestion will negatively impact accessibility, as determined through Section 4.B.4, below. The

analysis should consider a mid-day hour appropriate for the study area and the appropriate two-hour peak-hour condition, either A.M. or P.M. or both to address the problem. Other non-peak hours of the day, such as mid-day on Saturday, should also be considered to determine whether congestion is consistent with the acceptable or preferred operating standards identified in Table 3. The lead agency or jurisdictions will be responsible for determining the appropriate peak and non-peak analysis periods. The lead agency or jurisdictions will be responsible for determining the appropriate peak analysis period.

An appropriate solution to the need is determined through multi-modal system-level planning considerations listed in Section 4.C., below. For regional transportation planning purposes, the recommended solution should be consistent with the acceptable or preferred operating standards identified in Table 3. A city or county may choose a higher level-of service operating standard where findings of consistency with Section 4.C. have been developed.

3. **Regional Highways.** Exhibit B identifies the Regional Highways specified in Table 3. Each corridor will be evaluated on a case-by-case basis through system-level refinement studies. The studies will identify the performance and operating expectations for each corridor based on their unique operating and geographic characteristics. Appropriate multi-modal solutions to needs identified through these studies will be forwarded for inclusion in the Regional Transportation Plan.

4~~2~~. **Accessibility.** If a ~~congestion standard~~deficiency threshold is exceeded on the regional transportation system as identified in Table 3~~4.B.1~~, cities and counties shall evaluate the impact of the congestion on regional accessibility using the best available ~~methods (~~quantitative or qualitative~~)~~ methods. If a determination is made by Metro that exceeding the ~~congestion~~deficiency threshold negatively impacts regional accessibility, cities and counties~~local jurisdictions~~ shall follow the ~~congestion management~~transportation systems analysis and transportation project analysis procedures identified in 4.C. and 4.D. below.

5~~3~~. **Consistency.** The identified function or the identified capacity of a road may be significantly affected by planning for~~ Central City, Regional Centers, Town Centers, Main Streets and Station Communities~~ 2040 Growth Concept design types. Cities and counties shall take actions described in Section 4.C. and 4.D. below, including amendment of their transportation plans and implementing ordinances, if necessary~~ to either change or take actions as described in Section 4.C., below~~, to preserve the identified function and identified capacity of the road, ~~if necessary,~~and to retain consistency between allowed land uses and planning for transportation facilities.

~~C. Congestion Management~~ **[Note: Deleted text is incorporated in new 4.C. and 4.D., below]**

~~For a city or county to amend their comprehensive plan to add a significant capacity expansion to a regional facility, the following actions shall be applied, unless the capacity expansion is included in the Regional Transportation Plan:~~

~~1. To address Level of Service, the following shall be implemented:~~

~~a. Transportation system management techniques~~
~~b. Corridor or site-level transportation demand management techniques~~
~~c. Additional motor vehicle capacity to parallel facilities, including the consideration of a grid pattern consistent with connectivity standards contained in Title 6 of this plan~~
~~d. Transit service improvements to increase ridership~~

~~2. To address preservation of motor vehicle function:~~

~~a. Implement traffic calming~~
~~b. Change the motor vehicle function classification~~

~~3. To address or preserve existing street capacity, implement transportation management strategies (e.g. access management, signal interties, lane channelization)~~

C. **Transportation Systems Analysis**

This section applies to city and county comprehensive plan amendments or to any studies that would recommend or require an amendment to the Regional Transportation Plan to add significant single occupancy vehicle (SOV) capacity to multi-modal arterials and/or highways.

Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following actions shall be considered through the Regional Transportation Plan when recommendations are made to revise the Regional Transportation Plan and/or local transportation system plans to define the need, mode, corridor and function to address an identified transportation need consistent with Table 3, above, and recommendations are made to add significant SOV capacity:

1) regional transportation demand strategies
2) regional transportation system management strategies, including intelligent Transportation Systems (ITS)
3) High Occupancy Vehicle (HOV) strategies
4) regional transit, bicycle and pedestrian system improvements to improve mode split
5) unintended land use and transportation effects resulting from a proposed SOV project or projects

6) effects of latent demand from other modes, routes or time of day from a proposed SOV project or projects
7) If upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant capacity improvement may be included in the Regional Transportation Plan.

Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following actions shall be considered when local transportation system plans (TSPs), multi-modal corridor and sub-area studies, mode specific plans or special studies (including land use actions) are developed:

1) transportation demand strategies that further refine or implement a regional strategy identified in the RTP
2) transportation system management strategies, including intelligent Transportation Systems (ITS), that refine or implement a regional strategy identified in the RTP
3) sub-area or local transit, bicycle and pedestrian system improvements to improve mode split
4) the effect of a comprehensive plan change on mode split targets and actions to ensure the overall mode split target for the local TSP is being achieved
5) improvements to parallel arterials, collectors, or local streets, consistent with connectivity standards contained in Section 2 of this Title, as appropriate, to address the transportation need and to keep through trips on arterial streets and provide local trips with alternative routes
6) traffic calming techniques or changes to the motor vehicle functional classification, to maintain appropriate motor vehicle functional classification
7) If upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant capacity improvement may be included in the comprehensive plan.

~~If~~Upon a demonstration that the above considerations do not adequately and cost-effectively address the problem and where accessibility is significantly hindered, ~~capacity improvements may be included in the comprehensive plan~~ Metro and the affected city or county shall consider:

(1) amendments to the boundaries of a 2040 Growth Concept design type;
(2) amendments or exceptions to land use functional plan requirements; and/or
(3) amendments to the 2040 Growth Concept.

Demonstration of compliance will be included in the required congestion management system compliance report submitted to Metro by cities and counties as part of system-level planning and through findings consistent with the TPR in the case of amendments to applicable plans.

~~**D. Motor Vehicle Congestion Analysis Outside of Mixed Use Areas**~~

~~Outside of Central City, Regional Centers, Town Centers, Main Streets and Station Communities, and where cities and counties have not elected to use the General Congestion Performance Standards in subsection 4.B of this Title:~~

~~1. The identified function or the identified capacity of a road may be significantly affected by implementation of this functional plan. Cities and counties shall amend their transportation plans and implementing ordinances to change or take actions as described in Section 4.C., below, to preserve the identified function and identified capacity of the facility, if necessary, to retain consistency between allowed land uses and planning for transportation facilities.~~

~~2. The congestion performance standard for designated state highways as identified in the 1990 Oregon Highway Plan shall be the peak and off-peak performance criteria in Appendix F of the 1992 Oregon Transportation Plan.~~

~~3. The congestion performance standard for arterials of regional significance identified at Figure 4-2 of Chapter 4 of the 1992 Regional Transportation Plan should be the peak and off-peak performance criteria in Chapter 1, Section D of the 1992 Regional Transportation Plan.~~

~~4. Congestion level of service standards are not required for all other roads.~~

~~5. If the congestion performance for a road is exceeded or the identified function or identified capacity is inconsistent with land uses, cities and counties shall apply the congestion management actions identified in 4.C.1-3, above. If these actions do not adequately and cost-effectively address the problem, capacity improvements may be included in the comprehensive plan."~~

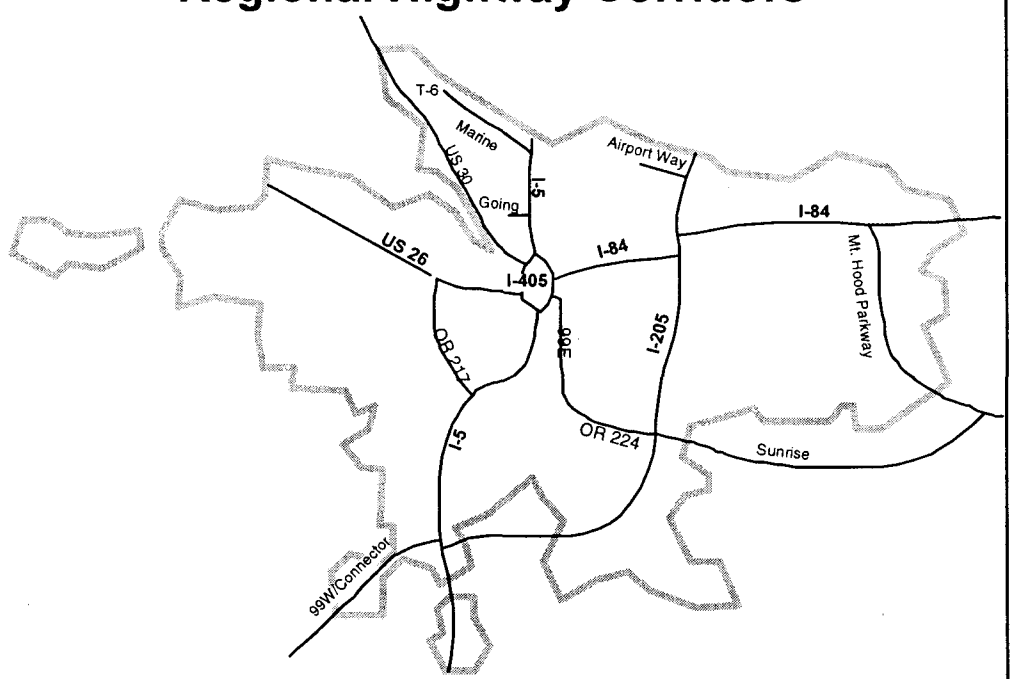
D. Transportation Project Analysis

The TPR and Metro's Interim Congestion Management System (CMS) document require that measures to improve operational efficiency be addressed at the project level. Section 2 of this Title requires that street design guidelines be considered as part of the project-level planning process. Therefore, cities, counties, Tri-Met, ODOT, and the Port of Portland shall address the following operational and design considerations during transportation project analysis:

1. Transportation system management (e.g., access management, signal interties, lane channelization, etc.) to address or preserve existing street capacity.
2. Guidelines contained in "Creating Livable Streets: Street Design Guidelines for 2040" (1997) and other similar resources to address regional street design policies.

The project need, mode, corridor, and function do not need to be addressed at the project level. This section (4.D) does not apply to locally funded projects on facilities not designated on the Regional Motor Vehicle System Map or the Regional Street Design Map. Demonstration of compliance will be included in the required Congestion Management System project-level compliance report submitted to Metro as part of project-level planning and development."

Figure 2.7
Regional Highway Corridors



9-12-97

Definitions to Be Amended to Title 10 of the Urban Growth Management Functional Plan

Accessway. Right-of-way or easement designed for public access by bicycles and pedestrians, and may include emergency vehicle passage.

Full Street Connection. Right-of-way designed for public access by motor vehicles, pedestrians and bicycles.

Improved pedestrian crossing. An improved pedestrian crossing is marked and may include signage, signalization, curb extensions and a pedestrian refuge such as a landscaped median.

Local trips. Local vehicle trips are trips that are five miles or shorter in length.

Mixed-Use Development. Mixed-use development includes areas of a mix of at least two of the following land uses and includes multiple tenants or ownerships: residential, retail and office. This definition excludes large, single-use land uses such as colleges and hospitals.

Regional vehicle trips. Regional vehicle trips are trips that are greater than five miles in length.

Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Multi-modal Arterials. An increase in SOV capacity created by the construction of additional general purpose lanes totaling ½ lane miles or more in length. General purpose lanes are defined as through travel lanes or multiple turn lanes. This also includes the construction of a new general purpose highway facility on a new location. Lane tapers are not included as part of the general purpose lane. Significant increases in SOV capacity should be assessed for individual facilities rather than for the planning area.

Significant Increase in Single Occupancy Vehicle (SOV) Capacity for Regional Through-Route Freeways. Any increase in SOV capacity created by the construction of additional general purpose lanes other than that resulting from a safety project or a project solely intended to eliminate a bottleneck. An increase in SOV capacity associated with the elimination of a bottleneck is considered significant only if such an increase provides a highway section SOV capacity greater than ten percent over that provided immediately upstream of the bottleneck. An increase in SOV capacity associated with a safety project is considered significant only if the safety deficiency is totally related to traffic congestion. Construction of a new general purpose highway facility on a new location also constitutes a significant increase in SOV capacity. Significant increase in SOV capacity should be assessed for individual facilities rather than for the planning area.

Level-of-Service (LOS) Definitions for Freeways, Arterials and Signalized Intersections

LOS	Freeways (average travel speed assuming 70 mph design speed)	Arterials (average travel speed assuming a typical free flow speed of 40 mph)	Signalized Intersections (stopped delay per vehicle)	Traffic Flow Characteristics
A	Greater than 60 mph Average spacing: 22 car-lengths	Greater than 35 mph	Less than 5 seconds; most vehicles do not stop at all	Virtually free flow; completely unimpeded Volume/capacity ratio less than or equal to .60
B	57 to 60 mph Average spacing: 13 car-lengths	28 to 35 mph	5.1 to 15 seconds; more vehicles stop than for LOS A	Stable flow with slight delays; reasonably unimpeded Volume/capacity ratio .61 to .70
C	54 to 57 mph Average spacing: 9 car-lengths	22 to 28 mph	15.1 to 25 seconds; individual cycle failures may begin to appear	Stable flow with delays; less freedom to maneuver Volume/capacity ratio of .71 to .80
D	46 to 54 mph Average spacing: 6 car-lengths	17 to 22 mph	25.1 to 40 seconds; individual cycle failures are noticeable	High density, but stable flow Volume/capacity ratio of .81 to .90
E	30 to 46 mph Average spacing: 4 car-lengths	13 to 17 mph	40.1 to 60 seconds; individual cycle failures are frequent; poor progression	Operating conditions at or near capacity; unstable flow Volume/capacity ratio of .91 to 1.00
F	Less than 30 mph Average spacing: bumper-to-bumper	Less than 13 mph	Greater than 60 seconds; not acceptable for most drivers	Forced flow, breakdown conditions Volume/capacity ratio of greater than 1.00
>F	Demand exceeds roadway capacity, limiting volume that can be carried and forcing excess demand onto parallel routes and extending the peak period			Demand/capacity ratios of greater than 1.10

Source: 1985 Highway Capacity Manual (A through F descriptions)
Metro (>F description)

Oregon
John A. Kitzhaber, M.D., Governor

Department of Transportation
Office of the Director
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Salem, OR 97310
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File Code:

November 12, 1997

Andy Cotugno, Director
METRO Transportation
600 NE Grand Ave.
Portland, OR 97232-2736

I will be unable to attend the J-PACT meeting scheduled for tomorrow, November 13, 1997. In my absence, I authorize Dave Williams to vote on my behalf.

Sincerely,

Grace Crunican
Director

COMMITTEE MEETING TITLE JPACT

DATE 11-13-97

NAME	AFFILIATION
Tom Walsh	Tri-Met
ED. CWASHINGTON	METRO
DAVE WILLIAMS	ODOT
Susan McLain	Metro
Mike Hoglund	Metro
KARL ROHDE	JPACT ALT - CC CITIES
Don Wagner	WSDOT
Dean Lookingbill	RTC
Ed Lindquist	Clackamas Co.
Jean Knight	4-Cities E. County
CHARLIE HALES	Portland
Craig J. Lommasson	Cities of Clackamas Co
Jon Kvistad	Metro
Andy Cotugno	Metro
STEVE DOTTERRER	CITY OF PORTLAND STAFF
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Kathy Lehtola	Washington County
Dennis Mulvihill	Washington County
Dick Feeney	Tri-Met
Rod Sandoz	CLACKAMAS COUNTY
Deb Wallan	C-TRAN
K Busse	Mult Co.
Susan Lee	Mult Co

COMMITTEE MEETING TITLE JPACT

DATE 11-13-97

NAME	AFFILIATION
Paul Silver	City of Wilsonville
Brian Campbell	Port of Portland
Gary Katsion	Kittelson & Associates, Inc.
Ron Papsdorf	Cities of Mult. County
Betty Atteberry	Sunset Corridor Assn.
Gordon Oliver	OREGONIAN
Scott L. Rice	Cornelius City Council
Roy Rogers	Washington County