Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street, Suite 150
Salem, OR 97301-2540
(503) 373-0050
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www.lcd.state.or.us

NOTICE OF ADOPTED AMENDMENT

03/31/2014

TO: Subscribers to Notice of Adopted Plan or Land Use Regulation Amendments

FROM: Plan Amendment Program Specialist

SUBJECT: Clackamas County Plan Amendment
DLCD File Number 009-13

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: Tuesday, April 15, 2014

This amendment was submitted to DLCD for review prior to adoption pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

*NOTE: The Acknowledgment or Appeal Deadline is based upon the date the decision was mailed by local government. A decision may have been mailed to you on a different date than it was mailed to DLCD. As a result, your appeal deadline may be earlier than the above date specified. NO LUBA Notification to the jurisdiction of an appeal by the deadline, this Plan Amendment is acknowledged.

Cc: Mike McCallister, Clackamas County
Jon Jinings, DLCD Community Services Specialist
Jennifer Donnelly, DLCD Regional Representative
Katherine Daniels, DLCD Farm/Forest Specialist

<paa> YA

DLCD FORM 2

NOTICE OF ADOPTED CHANGE TO A COMPREHENSIVE PLAN OR LAND USE REGULATION

Local governments are required to send notice of an adopted change to a comprehensive plan or land use regulation **no more than 20 days after the adoption.** (*See* OAR 660-018-0040). The rules require that the notice include a completed copy of this form. **This notice form is not for submittal of a completed periodic review task or a plan amendment reviewed in the manner of periodic review.** Use Form 4 for an adopted urban growth boundary including over 50 acres by a city with a population greater than 2,500 within the UGB or an urban growth boundary amendment over 100 acres adopted by a metropolitan service district. Use Form 5 for an adopted urban reserve designation, or amendment to add over 50 acres, by a city with a population greater than 2,500 within the UGB. Use Form 6 with submittal of an adopted periodic review task.

Jurisdiction: City of Estacada

Local file no.: **ZDO 2010-01**

Date of adoption: 12/14/2010 Date sent: 3/21/2014

Was Notice of a Proposed Change (Form 1) submitted to DLCD?
Yes: Date (use the date of last revision if a revised Form 1was submitted): 11/10/2010
No

Is the adopted change different from what was described in the Notice of Proposed Change? Yes No
If yes, describe how the adoption differs from the proposal:

No

Local contact (name and title): Scott Hoelscher

Phone: 503-742-4524 E-mail: scotthoe@clackamas.us

Street address: 150 Beavercreek Road City: Oregon City Zip: 97045-

PLEASE COMPLETE ALL OF THE FOLLOWING SECTIONS THAT APPLY

For a change to comprehensive plan text:
Identify the sections of the plan that were added or amended and which statewide planning goals those sections implement, if any:

N/A

For a change to a comprehensive plan map:
Identify the former and new map designations and the area affected:

Change from to acres. A goal exception was required for this change.

Change from to acres. A goal exception was required for this change.

Change from to acres. A goal exception was required for this change.

Change from to acres. A goal exception was required for this change.

Location of affected property (T, R, Sec., TL and address):

The subject property is entirely within an urban growth boundary

The subject property is partially within an urban growth boundary

If the comprehensive plan map change is a UGB amendment including less than 50 acres and/or by a city with a population less than 2,500 in the urban area, indicate the number of acres of the former rural plan designation, by type, included in the boundary.

Exclusive Farm Use – Acres:	Non-resource – Acres:
Forest – Acres:	Marginal Lands – Acres:
Rural Residential – Acres:	Natural Resource/Coastal/Open Space – Acres:
Rural Commercial or Industrial – Acres:	Other: – Acres:

If the comprehensive plan map change is an urban reserve amendment including less than 50 acres, or establishment or amendment of an urban reserve by a city with a population less than 2,500 in the urban area, indicate the number of acres, by plan designation, included in the boundary.

Exclusive Farm Use – Acres:	Non-resource – Acres:
Forest – Acres:	Marginal Lands – Acres:
Rural Residential – Acres:	Natural Resource/Coastal/Open Space – Acres:
Rural Commercial or Industrial – Acres:	Other: – Acres:

For a change to the text of an ordinance or code:
Identify the sections of the ordinance or code that were added or amended by title and number:

Amendment to the Transportation System Plan (TSP) to recognize Supplemental Scenario A, which was developed during the 2007 Estacada TSP update process. Supplemental Scenario A contemplates transporation needs based on a 130 acre urban growth bounary (UGB) expansion in the northerrn portion of the city. Supplemental Scenario A amended Chapters 1, 4, 8, 10 of the TSP.

For a change to a zoning map:
Identify the former and new base zone designations and the area affected:

Change from	to	Acres:
Change from	to	Acres:
Change from	to	Acres:
Change from	to	Acres:

Identify additions to or removal from an overlay zone designation and the area affected:

Overlay zone designation:	Acres added:	Acres removed:

Location of affected property (T, R, Sec., TL and address):

List affected state or federal agencies, local governments and special districts: City of Estacada; Oregon Department of Transportation (ODOT); Clackamas County Department of Transportation and Development (DTD); Estacada School District.

Identify supplemental information that is included because it may be useful to inform DLCD or members of the public of the effect of the actual change that has been submitted with this Notice of Adopted Change, if any. If the submittal, including supplementary materials, exceeds 100 pages, include a summary of the amendment briefly describing its purpose and requirements.

The following supplemental information is inlcuded with this notice: replacement TSP chapters 1, 4, 8 and 10; TSP replacement figures 8-1; 8-2 and 8-S; Planning Commission and City Council minutes; letter from ODOT dated June 1, 2010; City Council final order approving the TSP amendment and original DLCD Form 1. A summary of the amendment is also attached.

CLACKAMAS COUNTY

MIKE MCCALLISTER
PLANNING AND ZONING MANAGER

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD | OREGON CITY, OR 97045

March 21, 2014

Plan Amendment Specialist
Department of Land Conservation and Development
635 Capital Street NE, Suite 150
Salem, OR 97301

RE: Estacada Transportation System Plan Amendment

To Whom It May Concern:

Enclosed please find DLCD From 2: *Notice of Adopted Change to a Comprehensive Plan or Land Use Regulation* for an amendment to the City of Estacada Transportation System Plan (TSP). In addition to Form 2 the following information is enclosed:

- Summary of the Adopted Change
- City Council Findings and Decision
- Amended TSP Chapter 1, 4, 8 and 10
- Updated TSP Figures 8-1, 8-2 and 8-5
- ODOT Letter Dated June 1, 2010
- Planning Commission and City Council Minutes
- Original DLCD Form 1

If you have any questions regarding this matter please feel free to contact me directly at 503-742-4524. Thank you for your assistance.

Sincerely,

Scott Hoelscher – City Planner
City of Estacada

Cc: Denise Carey – City of Estacada

SUMMARY OF ADOPTED CHANGE

Summary of Adopted TSP Change

The City of Estacada amended its Transportation System Plan (TSP) to recognize "Supplemental Scenario A" (Scenario A) in conjunction with a 130 acre urban growth boundary (UGB) expansion. Scenario A was developed during the City's 2007 TSP update in anticipation of 130 acres in the northern portion of the city being brought in to the UGB and ultimately annexed and rezoned to M-1: Light Industrial.

Scenario A, prepared during the 2007 TSP update process but not adopted, specifically looks at transportation needs based on the 130 acre UGB expansion. Adoption of Scenario A amended Estacada's TSP to include transportation network extensions and transportation projects associated with the UGB expansion and M-1: Light Industrial zoning. The City's TSP now includes the steps necessary to provide the transportation system that supports the anticipated light industrial development and associated traffic.

Scenario A updated the following Chapters of the TSP: Chapter 1: Executive Summary; Chapter 4: Future Conditions and Needs; Chapter 8: Motor Vehicle Plan and Chapter 10: Financing and Implementation. These chapters are included with the Notice of Proposed Change.

CITY COUNCIL FINDINGS AND DECISION

NAME: City of Estacada
FILE NO.: ZDO 2010-01
HEARING DATE: December 13, 2010

CITY COUNCIL FINDINGS AND DECISION

GENERAL INFORMATION

Applicant: City of Estacada

Owner(s): Mike Park

Location: West side of Hwy. 224, directly north of the existing industrial park.

Legal Description: 34E18 T.L.00100; 34E17 T.L.01202; 34E17 T.L.01203

Size: 130.58 acres

Current Comprehensive Plan Designation: Agriculture

Zoning Designation: Current: Exclusive Farm Use (EFU); Future: M-1: Light Industrial

Proposal: Two actions related to the city-approved 130 acre Urban Growth Boundary expansion are proposed: 1) Amend the Transportation System Plan (TSP) to recognize *Supplemental Scenario A* and 2) Acknowledge completion of a wetlands delineation prepared for the 130 acre subject property.

City Council Decision: Approve the Transportation System Plan (TSP) amendment by adopting *Supplemental Scenario A* and recognize completion of the wetlands delineation for the 130 acre subject property.

Background Information: On June 14, 2010 the Estacada City Council voted to expand the city's Urban Growth Boundary (UGB) to include three large parcels and amend the Comprehensive Plan map for the parcels from Agricultural to Light Industrial. Upon annexation to the Estacada city limits, an M-1: Light Industrial zoning designation would be applied to the property. The proposed UGB expansion area is located directly north of the existing industrial park and includes three tax lots totaling 130 acres. The City Council decision included the following three conditions of approval:

1. **Preparation of a wetlands delineation report shall be required.**

2. **The Transportation System Plan (TSP) shall be amended by adopting Scenario A.**

3. **Amend the current M-1: Light Industrial Zone by adding development standards for the 130 acre site. The M-1: Light Industrial amendments shall, at a minimum, include a requirement to develop a Master Plan for the site that shall allow for at least one 25 acre parcel and one 50 acre parcel and to prohibit commercial uses except those that are accessory and incidental to industrial uses.**

The purpose of this application is to satisfy condition one and two of the June 14, 2010 City Council decision. A Notice of Proposed Amendment regarding the TSP amendment and wetlands delineation report was sent to the Department of Land Conservation and Development (DLCD) on June 9, 2010. A revised notice with new hearing dates was sent to DLCD on November 10, 2010.

FINDINGS

The application addresses relevant Oregon Statewide Planning Goals, the Oregon Transportation Planning Rule and City of Estacada Comprehensive Plan goals and policies. The City Council findings for the relevant criteria are presented below.

PART 1: STATEWIDE LAND USE PLANNING GOALS

Goal 5; Open Spaces, Scenic and Historic Areas, and Natural Resources: *To conserve open space and protect natural and scenic resources.*

The National Wetlands Inventory (NWI) identified Goal 5 resources (wetlands) on the proposed UGB expansion site. In accordance with the June 12, 2010 City Council decision, a wetland delineation report (delineation) has been prepared for the site. The October 2010 delineation from Ecological Land Services, Inc. indicates that there are two wetlands on the subject property. One wetland is 0.19 acres in size and the other wetland is 2.73 acres. The boundaries and characteristics of each of the wetlands are detailed in the October 2010 delineation. The delineation states that the wetland hydrology likely stems from precipitation.

The wetland delineation report was a required condition of approval because the NWI maps identified Goal 5 resources (wetlands) on the proposed UGB expansion site. The delineation satisfies a condition of approval for the UGB expansion imposed by the Estacada City Council. However, a wetland delineation by itself does not meet the Goal 5 rule for wetlands described in OAR 660-23-0100. For wetland resources inside a UGB, Goal 5 requires that a local wetland inventory (LWI) be conducted using the procedures outlined in OAR 141-086-01100 through 240. In addition, an assessment of significance using OAR 141-086-0300 through 350 is required within the UGB expansion area.

The subject property is not currently within the Estacada city limits or the UGB. Although the UGB amendment has been approved by both the city and county, acknowledgment by DLCD is pending. The delineation demonstrates compliance with condition number one of the City Council decision. Staff recommends that the city complete the Goal 5 process and adopt local

measures in accordance with Goal 5 to protect wetlands. The city may choose to adopt Goal 5 protections concurrently with the UGB amendment or after the property is annexed and under the city's jurisdiction. Regardless, this application does not purport to meet the requirements of Goal 5; future actions to protect Goal 5 resources will be required. Therefore, the Council will place a condition on the approval stating that the city will take the necessary steps to comply with Statewide Planning Goal 5.

This proposal will be consistent with Statewide Planning Goal 5 upon completion of future actions to protect Goal 5 resources.

Goal 12; Transportation: *To provide and encourage a safe, convenient and economic transportation system.*

The Transportation Planning Rule (TPR) implements Statewide Planning Goal 12: Transportation. Specifically, Oregon Administrative Rule (OAR) 660-012-0060: *Plan and Land Use Regulation Amendments* requires that "significant affects" caused by land use actions on the planned transportation system be mitigated. In other words, the Estacada transportation network must be planned and developed to support the proposed 130 acre UGB expansion and the eventual M-1: Light Industrial zoning designation when the property is annexed. To demonstrate compliance with Goal 12: Transportation, findings for the relevant sections of OAR 660-012-0060 are presented below.

1) OAR 660-012-0060 (1) ***Where an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or planned transportation facility, the local government shall put in place measures as provided in section (2) of this rule to assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility.***

   If acknowledged by DLCD, the 130 acre Urban Growth Boundary (UGB) expansion would affect the city's existing and planned transportation facilities. The most recent update of the City of Estacada's Transportation System Plan (TSP) was adopted in 2007. The traffic forecasts and transportation system planning were based on land use assumptions that were consistent with the city's adopted comprehensive plan, projecting growth and needs through the year 2030. *Supplemental Scenario A*, prepared during the 2007 TSP update but not adopted, specifically looks at transportation needs based on the 130 acre UGB expansion. There is no change in the trip generation estimates between the proposed UGB expansion and *Supplemental Scenario A*. This is because the land use designation for the proposed UGB expansion is identical to what is described in *Supplemental Scenario A*. Adopting *Supplemental Scenario A* would amend the City of Estacada's TSP to include transportation network extensions and transportation projects to support the proposed UGB expansion and M-1 zoning designation. Therefore, adopting *Supplemental Scenario A* will satisfy this section of the TPR. This standard is met.

2) OAR 660-012-0060 (2) ***Where a local government determines that there would be a significant effect, compliance with section (1) shall be accomplished through one or a combination of the following: (b) Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of this division; such amendments shall include a funding plan or mechanism consistent with section (4) or include an amendment to the transportation finance plan so that the facility, improvement, or service will be provided by the end of the planning period.***

As discussed in the above finding for OAR 660-012-0060 (1) the 130 acre UGB expansion will have an impact on the planned transportation system. Therefore, the current application proposes to amend the Estacada TSP by adopting *Supplemental Scenario A*. In a letter to the Estacada Planning Commission and City Council dated June 1, 2010, the Oregon Department of Transportation (ODOT) indicated that the City's adoption of *Supplemental Scenario A* would satisfy the requirements of the TPR. *Supplemental Scenario A* was prepared in 2007 during the TSP update process but not adopted into the TSP at that time. *Supplemental Scenario A* includes transportation network extensions and transportation projects to support the proposed 130 acre UGB expansion and corresponding Comprehensive Plan amendment and future M-1 zoning. The trip generation analysis prepared by DKS, indicates that the proposed Comprehensive Plan Map (Agriculture to Light Industrial) amendments are the same as the land use categories considered in *Supplemental Scenario A*. Therefore, the trip generation potential of the 130 acres of new industrial lands is accounted for under *Supplemental Scenario A* of the TSP. The proposed action is consistent with ORA 660-012-0060 section (2) and this standard is met.

3) OAR 660-012-0060 (4) ***Determinations under sections (1)-(3) of this rule shall be coordinated with affected transportation facility and service providers and other affected local governments.***

ODOT has been provided the opportunity to review and respond to the amendment proposals consistent with ORS 660-012-0060 section (4). Accordingly, ODOT has provided comments indicating that the proposed TSP amendments (*Scenario A*) will mitigate for the significant effect caused by the proposed Comprehensive Plan Map amendment consistent with ORS 660-012-0060 section (3). This standard is met.

This proposal to amend the Estacada Transportation System Plan is consistent with Goal 12 and Transportation Planning Rule (TPR).

PART 2. ESTACADA COMPREHENSIVE PLAN POLICIES

The following Estacada Comprehensive Plan policies are applicable to this proposal.

I. Goals 5 and 8. Open Spaces, Natural Resources, Cultural and Recreation Resources Element:

The two goals of Chapter 5/8 of the Estacada Comprehensive Plan are to 1) *Conserve open space and protect natural and cultural resources* and: 2) *Satisfy the recreational needs of citizens of Estacada and the state and visitors*. Chapter 5/8 of the Comprehensive Plan includes an inventory of wetland areas within the existing UGB. Figure 4: "Wetlands Map" of the city's Comprehensive Plan identifies "significant wetland areas" and other "insignificant or otherwise committed areas" within the city limits and within the UGB. Figure 4, based on maps prepared by the U.S. Fish and Wildlife, identifies twelve "significant" sites. Two of these sites are within the Estacada city limits; ten sites are outside of the city limits but inside the UGB. Because the two wetlands in the proposed expansion area are not currently inside the UGB, they are not inventoried on Figure 4 of the Comprehensive Plan. As part of the Goal 5 update process explained on pages 2-3 of this report, the city should include the delineated wetlands on Figure 4 of the Comprehensive Plan and take measures to comply with Statewide Planning Goal 5.

Policy 10 of the *Open Spaces, Natural Resources, Cultural & Recreational Resources* chapter of the Comprehensive Plan states that the "City shall complete the Goal 5 process for Wetlands (OAR 660, Div. 16) when adequate information providing the location, quality and quantity of potentially significant Goal 5 wetlands resource sites is available." Currently, the city's development ordinance relies on the state and federal permitting process for proposed development on sites containing Goal 5 resources (see Chapter 16.56.020: *Designation of wetland areas*). As discussed on pages 2-3 of this report, the city will take measures in the future to comply with Statewide Planning Goal 5.

This proposal will be consistent with this chapter of the Comprehensive Plan upon completion of actions to protect Goal 5 resources within the UGB expansion area.

II.Goal 12. Transportation Element. *The purpose of this Goal is to provide and encourage a safe, convenient, aesthetic and economical transportation system.*

As described in the section addressing Statewide Planning Goal 12 (see pages 3-4 of this report), the proposed TSP amendment to include transportation projects to support the proposed UGB expansion were prepared as *Supplemental Scenario A* in 2007 but were not adopted into the TSP at that time. The trip generation analysis prepared by DKS, indicates that the proposed Comprehensive Plan Map amendments are the same as the land use categories considered in *Supplemental Scenario A*. Therefore, through the adoption of *Supplemental Scenario A*, the TSP will be amended to include transportation network extensions and projects to support the proposed UGB expansion and M-1 zoning designation. Therefore, this standard is met.

This proposal is consistent with Goal 12.

DECISION: Based on the above findings, the Estacada City Council approves the Transportation System Plan (TSP) amendment by adopting *Supplemental Scenario A* and recognizes completion of the wetlands delineation report in compliance with condition number one of the City Council UGB expansion approval (file no. CP/AC 2010-01), subject to the following conditions of approval.

1. This approval amends the Estacada Transportation System (TSP) by adopting *Supplemental Scenario A*. No other changes to the TSP are authorized by this approval.

2. The TSP amendment shall not become effective until the Urban Growth Boundary (UGB) amendment to bring in 130 acres of industrial land has received final acknowledgment by the Oregon Department of Land Conservation and Development.

3. The City of Estacada shall complete the process to comply with Statewide Planning Goal 5 for the 130 acre Urban Growth Boundary expansion site.

Approved on December 13, 2010

Signed this 14th day of December, 2010

Becky Arnold

Becky Arnold, Mayor

AMENDED TSP CHAPTERS 1, 4, 8 AND 10

1. Executive Summary

Introduction

In May of 1999, the City of Estacada completed a nearly two-year planning effort to identify transportation system needs within the City over a 20-year period that culminated in a Draft Transportation System Plan (TSP). While this plan was never formally adopted, it provided the City with tools to guide the management and development of transportation facilities and to implement the vision of the community into a transportation system that addresses multimodal needs.

Since that time, there have been significant changes in regional and statewide planning efforts and requirements and plan development, in addition to continued growth in Estacada and surrounding communities, which have pressed the need to update the City's TSP. This plan update is aimed at fulfilling Transportation Planning Rule (TPR) requirements for comprehensive transportation planning in the cities of Oregon and presents the investments and priorities for the pedestrian, bicycle, transit, and motor vehicle systems along with new transportation programs to correct existing shortfalls and enhance critical services.

This TSP provides specific information regarding transportation needs to guide future transportation investment in the City and is based on needs required to meet transportation demand created by anticipated growth. For each travel mode, a Master Plan project map and list are provided to identify necessary projects to support the City's transportation goals and policies. The TSP identifies how land use and transportation decision making can be coordinated for community benefit. This chapter summarizes the TSP update process, study goals, modal plans, financing options, and recommended comprehensive plan and development code changes, all of which are discussed in more detail in the following chapters.

TSP Update Process and Public Involvement

The Estacada TSP update process included the following steps:

- Update goals and policies
- Inventory/data collection for a year 2006 baseline
- Evaluate existing conditions and future travel needs through forecasting
- Update transportation needs by mode and consider alternatives to address them
- Refine improvement lists to mitigate deficiencies by mode for 2030 conditions
- Update planning-level cost estimates of improvements
- Identify financing sources
- Recommend comprehensive plan and development code changes, and

- Present Recommended TSP to Estacada Planning Commission and City Council for adoption.

In addition to frequent coordination with ODOT and City staff, the following two committees were formed to guide the planning process:

- Technical Advisory Committee (TAC) – Representatives from ODOT, Clackamas County, the City of Estacada, the Department of Land Conservation and Development, Estacada Fire Department, and the Estacada School District participated in reviewing the technical methods and findings of the study. The focus of this group was on consistency with the plans and past decisions in adjoining jurisdictions, and developing consensus on plan recommendations.
- Citizens Advisory Committee (CAC) – The Estacada Citizens Advisory Committee included representative community members. A series of meetings were held with the CAC to report interim study findings and discuss outstanding policy issues that required their direction.

The committees met regularly through the plan development process to review interim work products, assist in developing and ranking transportation solutions, and to refine master plan elements to ensure consistency with community goals. Additionally, two public open houses were held, providing the opportunity for the general public to comment on the plan, make suggestions and provide feedback.

Study Goals

The City's Comprehensive Plan lays out a general policy framework for transportation services. Goals are defined as brief guiding statements that describe a desired result. Policies associated with each of the individual goals describe the actions needed to move the community in the direction of completing each goal.

The transportation-related goals and objectives established by the 1999 Draft TSP were chosen to guide the development and evaluation of alternatives, select a preferred transportation plan, and prioritize improvements. Since 1999, there have been changes to state transportation plan policies and regulations that have been addressed as a part of this TSP. In addition to retaining previously selected policies that are still applicable, new policies are recommended to incorporate recent initiatives within the City and County relevant to transportation facilities. The specific areas of the changes address the following key issues:

- Street design – New street design guidelines developed by the state provide options for narrower residential streets within new subdivisions. In addition, the City should formalize its application of neighborhood traffic management tools.

- Transportation Planning Rule (TPR) – The Oregon Land Conservation and Development Commission recently adopted amendments to the TPR in OAR 660-12-0060 that clarify steps which must be taken to ensure that proposed comprehensive plan and zoning code map and text changes are consistent with the planned transportation system.

The goals developed to guide the TSP update are outlined below. The policies identified to implement the goals are described in Chapter 2.

Goal 1: Transportation facilities shall be designed and constructed in a manner which enhances the livability of Estacada.

Goal 2: Provide a transportation system which is safe, efficient, and reduces length of travel.

Goal 3: Provide a balanced transportation system that promotes alternate modes of transportation.

Goal 4: Provide for efficient movement of goods.

Goal 5: Develop transportation facilities which are accessible to all members of the community.

Goal 6: Develop a transportation system that is consistent with the City's adopted comprehensive land use plan, and with the adopted plans of state, local and regional jurisdictions.

Goal 7: Establish a clear and objective set of transportation design and development regulations that addresses all elements of the city transportation system and that promote access to and utilization of a multi-modal transportation system.

Goal 8: Identify and prioritize transportation improvement needs in the City of Estacada and identify a set of reliable funding sources to implement these improvements.

Modal Plans

The existing system network for each mode (pedestrian, bicycle, transit, motor vehicle, and other modes) was updated from the 1999 Draft TSP to reflect completed projects since the original plan was completed. A Master Plan (long-range project goals that meet planning requirements) was compiled for each transportation mode, which was designed to comply with relevant state and adjoining jurisdictions planning documents. The following sections summarize the Master Plans for each mode.

Pedestrians (Chapter 5)

The Pedestrian Master Plan, shown in Table 1-1, identifies improvements to provide a connected pedestrian network within the City of Estacada, focusing on arterial and collector

roadways and in high pedestrian activity areas. In addition, local streets should provide sidewalks where possible, and the City of Estacada Development Code regulations should require new development to provide pedestrian infrastructure as part of the development. All new roadways constructed should include sidewalks.

The projects are prioritized into high, medium, and low categories. High priority pedestrian projects are located on arterial roadways and provide improved access to major activity centers. Medium priority pedestrian projects are located on major collectors but are less critical to connecting activity centers. Low priority projects are sidewalk infill on collectors or neighborhood streets.

Table 1-1: Pedestrian Master Plan Projects

Priority	Project Location	Orientation	From	To	Length (Feet)	Estimated Cost ($)
Fill In Gaps in Sidewalks on Arterials and Collectors						
High	6th Avenue[1]	East/West	Wade Street	Broadway Street	800	$120,000
High	Eagle Creek Road	North/South	6th Avenue	River Mill Road	4,300	$650,000
High	OR 224	North/South	2nd Avenue	UGB	9,800	$1,470,000
High	River Mill Road	East/West	Farmstead Road	Eagle Creek Road	3,800	$650,000[2]
Medium	Eagle Creek Road	North/South	River Mill Road	Duus Road	4,300	$640,000
Medium	6th Avenue	East/West	Shafford Avenue	Cemetery Road	700	$100,000[2]
Low	North 1st Avenue	East/West	Wade Street	Shafford Avenue	1,700	$250,000[2]
Low	North 2nd Avenue	East/West	Wade Street	Shafford Avenue	1,700	$250,000[2]
Low	South 4th Avenue	East/West	Currin Street	Reagan Hill Road	2,600	$390,000[2]
Low	Coupland Road	East/West	Cemetery Road	UGB	3,400	$850,000[2]
Low	Pierce Street	North/South	1st Avenue	6th Avenue	1,700	$250,000[2]
Low	Wade Street	North/South	2nd Avenue	6th Avenue	1,800	$200,000[2]
Pedestrian Crossing[3]						
High	OR 224 at 2nd Avenue	North/South	2nd Avenue	Lake Shore Drive	-	-
High	OR 224 at Wade Street	North/South	Wade Street	Lake Shore Drive	-	-

Bicycles (Chapter 6)

The Bicycle Master Plan identifies improvements to provide a connected bicycle network within the City of Estacada, focusing on arterial and collector roadways. Typically, local streets do not require delineated bicycle lanes as traffic volumes are low enough that bicycles and motor vehicles can safely share the right of way. A list of potential bicycle projects to

[1] Improvement identified in previous Transportation System Plan (1999).

[2] Includes estimated right-of-way cost in 2006 dollars.

[3] Marked crosswalks on state highways require approval of the State Traffic Engineer.

meet the identified needs and achieve these strategies was developed into a Bicycle Master Plan.

The Master Plan, summarized in Table 1-2, is an overall plan that summarizes the "wish list" of bicycle-related projects in Estacada, providing a long-range map for planning bicycle facilities. The Bicycle Master Plan projects are prioritized into high, medium, and low categories depending on the combination of vehicular volume and posted speed limits of the roadway involved. The bicycle plan will require incremental implementation. As development occurs, streets are rebuilt and other opportunities (such as grant programs) arise, projects on the Master Plan should be pursued.

Table 1-2: Bicycle Master Plan Projects

Priority	Project Location	Orientation	From	To	Length (Feet)	Estimated Cost ($)
Bike Lanes on Arterials & Collectors						
High	Eagle Creek Road	North/South	6th Avenue	Duus Road	7,600	$460,000
Medium	River Mill Road	East/West	Eagle Creek Road	Farmstead Road	3,800	$230,000
Signing of Designated Bike Routes						
Medium	Main Street	North/South	OR 224	6th Avenue	3,300	$2,750
Medium	6th Avenue	East/West	Wade Street	Cemetery Road	2,400	$2,000
Medium	Broadway Street	North/South	OR 224	6th Avenue	3,100	$2,600

Transit (Chapter 7)

To meet transportation performance standards and serve future growth, the future transportation system needs multi-modal improvements to manage the forecasted travel demand. The effectiveness of transit service is supported by a quality pedestrian and bicycle system. Pedestrian and bicycle system improvements, as detailed in Chapters 5 and 6, respectively, should serve transit services as well as other activity centers.

Transit enhancements within the TriMet and SAM service area are ultimately decided based on regional transit goals. Transit projects are determined based on the identified needs and strategies and project feasibility. Estacada should continue to coordinate with TriMet and SAM to improve bus service within the City. Improvements to service frequency and/or the creation of an additional park-and-ride lot in the northern part of the City may increase the quality of service, increase ridership, and improve access for the transportation disadvantaged residents and employees in the City. The benefits and feasibility of additional stops and bus pullout locations should be investigated with TriMet and SAM.

Metro has established a vanpool program to encourage vanpool usage in the greater Portland metropolitan area. The program eligibility specifies that the travel may be between Estacada and any location within the Metro urban growth boundary. Metro provides half of monthly van lease costs. Estacada should work with Metro to establish and promote vanpool services

between Portland and Estacada.

In addition to existing public transit service providers, the City of Estacada should investigate the feasibility of local shuttle-based paratransit services that may more directly address the needs of the community. As described in Chapter 3, the existing paratransit services (the LIFT service provided by TriMet and the Estacada Community Center van service) provide a travel option to primarily the elderly, disabled, or other riders with health concerns. As the city grows, greater demand will arise for travel within the local area which may not be covered by the existing fixed route and paratransit services.

Motor Vehicles (Chapter 8)

To meet performance standards and address future growth, the future transportation system needs multi-modal improvements and strategies to manage the forecasted travel demand. The impact of future growth would be severe without investment in transportation improvements. Strategies for meeting automobile facility needs include the following:

Transportation System Management

Transportation System Management (TSM) focuses on low cost strategies to enhance operational performance of the transportation system by seeking solutions to immediate transportation problems, finding ways to better manage transportation, maximizing urban mobility, and treating all modes of travel as a coordinated system. TSM strategies include:

Neighborhood Traffic Management (NTM)

Neighborhood traffic management strategies are commonly used to slow down or reduce automotive traffic with the intent of improving safety for pedestrians or bicyclists. Estacada currently has limited neighborhood traffic management elements, such as on-street parking, in place on streets within the study area. When the City considers traffic calming measures, it will work with the community to find the traffic calming solution that best meets their needs and maintains roadway function. Any NTM project should provide an opportunity for comment by emergency agency staff to ensure public safety is not compromised.

Access Management

Access management involves the control or limiting of access on arterial and collector facilities to maximize capacity and preserve functional integrity. Numerous driveways erode the capacity of arterial and collector roadways and introduce a series of conflict points that present the potential for crashes and interfere with traffic flow. Preservation of capacity is particularly important on higher volume roadways for maintaining traffic flow and mobility. Whereas local and neighborhood streets

primarily function to provide direct access, collector and arterial streets serve greater traffic volume with the objective of facilitating through travel. Estacada, as with every city, needs a balance of streets that provide access with streets that serve mobility.

Several access management strategies were identified to improve access and mobility in Estacada:

- Provide right turn deceleration lanes on OR 224 where warranted.
- Provide left turn lanes where warranted for access onto cross streets.
- Develop policies and procedures to address access management through City land use review. Employ strategies to consolidate driveways, provide crossover easements, and to take property access from lower classified roads where feasible.
- Establish City access spacing standards for local, collector and arterial streets to be addressed by development and roadway construction projects.
- Implement City access spacing standards for new construction on County facilities within the urban growth boundary.
- Comply with ODOT access requirements on State facilities.

Local Street Connectivity

By providing connectivity between neighborhoods, out-of-direction travel and vehicle miles traveled (VMT) can be reduced, accessibility for various travel modes can be enhanced and traffic levels can be balanced throughout the street network. Additionally, public safety response time is reduced when there is a greater network of connecting streets.

To protect existing neighborhoods from potential traffic impacts of extending stub end streets, connector roadways should incorporate neighborhood traffic management into their design and construction. Signs to indicate the potential for future street extension should be posted at the time that street stubs are constructed. Additionally, development that constructs new streets or street extensions should be required to submit a proposed street map that:

- Provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers.
- Provides bike and pedestrian access ways in lieu of streets with spacing of no more than 330 feet except where prevented by barriers.
- Limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections.
- Includes no closed-end street longer than 200 feet or having no more than 25 dwelling units.

- Includes street cross-sections showing dimensions of ROW improvements, with streets designed for posted or expected speed limits which meet City design standards (or ODOT standards for state highways).

Functional Classification

An updated roadway functional classification map has been provided in Chapter 8. In addition to the inclusion of new streets to the transportation network, the classification of Shafford Avenue was changed from a Local Street to a Minor Collector. Also, with the proposed extension of 6th Avenue to intersect with OR 224, the segment of 6th Avenue from OR 224 to Wade Street would be classified as a Major Collector to provide continuity with the existing network.

Roadway Cross-section Standards

The design characteristics for streets in Estacada were developed to meet the function and demand for each facility type. Because the actual design of a roadway can vary from segment to segment due to adjacent land uses and traffic demands, the objective was to define a system that allows standardization of key characteristics to provide consistency, but also to provide criteria for application that provides some flexibility, while meeting the design standards. Recommended roadway cross-section standards for each functional classification have been provided in Chapter 8, with additional recommendations provided for State highways that comply with ODOT's design standards.

Street cross-sections may vary among functional classifications as many elements are recommended, but have been left as "optional" to allow for flexibility. The actual treatment will be determined within the design and public process for implementation of each project.

Where center left turn lanes are identified, the actual design of the street may include sections without center turn lanes adjacent to environmentally sensitive or physically constrained areas or with median treatments, where feasible. Under some conditions a variance to the adopted street cross-sections may be requested from the City Engineer. Typical conditions that may warrant consideration of a variance include (but are not limited to) the following:

- Infill sites
- Innovative designs (roundabouts)
- Severe topographic or environmental constraints
- Existing developments and/or buildings that make it extremely difficult or impossible to meet the design standards.

On select non-grid residential local streets, consideration should be given to constructing the minimum curb to curb width (28 feet), as such streets are often

associated with lower travel speeds and lesser environmental impacts. The Oregon Fire Code currently allows for unobstructed driving surface widths as low as 20 feet, which could be accommodated within City local street design standards where parking is allowed on only one side of the street. The City of Estacada should require this design on select residential local streets, with parking allowed on both sides of the street under conditions deemed appropriate by the City.

Transportation Demand Management

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. As growth in the Estacada area occurs, the number of vehicle trips and travel demand in the area will also increase. The provision of alternative mode choices and other TDM options could help reduce single occupancy vehicle travel and reduce the need for facility expansion.

Generally, TDM focuses on reducing vehicle miles traveled and promoting alternative modes of travel for large employers of an area. The more effective TDM measures include elements related to parking and congestion pricing, improved services for alternative modes of travel, and other market-based measures. However, TDM includes a wide variety of actions that are specifically tailored to the individual needs of an area. A list of several strategies that could be applicable to the Estacada area has been provided in Chapter 8. Setting TDM goals and policies for new development will be necessary to help implement TDM measures in the future.

The City of Estacada should coordinate with Clackamas County, Sandy Area Metro (SAM), and TriMet to create procedures to assure that the TDM strategies are implemented. The City of Estacada, Clackamas County, Metro, SAM, and TriMet should coordinate to implement the pedestrian, bicycle, and transit system improvements, which offer alternative modes of travel. The recommended TDM action plan includes:

- Support continued efforts by TriMet, SAM, Metro, ODOT, and Clackamas County to develop productive TDM measures that reduce commuter vehicle miles and peak hour trips.
- Encourage the development of high speed communication in all part of the city (fiber optic, digital cable, DSL, etc). The objective would be to allow employers and residents the maximum opportunity to rely upon other systems for conducting business and activities than the transportation system during peak periods.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.
- Implementation of motor vehicle minimum and maximum parking ratios for new development.
- Continued implementation of street connectivity requirements.

- Work with employers to install bicycle racks.
- Implementation of bicycle, pedestrian, motor vehicle and transit system Master Plans.

Roadway Improvements

A list of potential motor vehicle projects that would meet identified needs and achieve motor vehicle policies was developed into a Motor Vehicle Master Plan. The Motor Vehicle Master Plan is an overall plan summarizing the "wish list" of motor vehicle related projects in Estacada and identifies improvements to provide an operationally effective roadway network within the City. The Motor Vehicle Master Plan projects and estimated costs are summarized in Chapter 8, with each project assigned a project number that corresponds with the illustrative Motor Vehicle Master Plan Map in Figure 8-5. These projects are also summarized below in Table 1-3.

Table 1-3: Motor Vehicle Master Plan Projects

Project	Improvement	Estimated City Cost*	Estimated Total Costs	Potential Funding Sources**
OR 224 / River Mill Intersection	Construct traffic signal at intersection. Add left turn lane on westbound approach, modify eastbound approach to include a left turn lane and a shared through/right turn lane, and improve right turn lane on southbound approach to comply with ODOT standard design.	$875,000	$1,750,000	City, ODOT, Developer Exactions
Main St. Realignment at OR 211 / OR 224 Intersection	Realign Main St. to intersect at north approach of OR 211/ OR 224 Intersection. Add left turn lane on eastbound and southbound approaches.	$1,500,000	$3,000,000	City, ODOT, Developer Exactions
Main St. / OR 211 / OR 224 Intersection	Construct traffic signal at reconfigured intersection.	$150,000	$300,000	City, ODOT, Developer Exactions
OR 224 / New Collector Roadway (between Evergreen Ave. and River Mill Rd.)	Construct traffic signal at intersection. Add right turn lane on northbound and left turn lane on southbound approach.	$1,350,000	$2,700,000	City, ODOT, Developer Exactions
Eagle Creek Rd. / River Mill Rd. Intersection	Add left turn lane on northbound approach.	$43,000	$85,000	City, Developer Exactions
N. 6th Ave. / Cemetery Rd. Intersection	Add left turn lane on eastbound approach.	$133,000	$265,000	City, Developer Exactions
N. 6th Ave. Extension	New roadway from Eagle Creek Rd. to OR 224 at Evergreen Ave.	$280,000	$670,000	City, Developer Exactions
Industrial Way Extension	New roadway from Evergreen Rd. to River Mill Rd.	$140,000	$1,020,000	City, Developer Exactions
New Roadway	New roadway connecting Coupland Rd. to Cemetery Rd.	$580,000	$4,130,000	City, Developer Exactions
River Mill Rd. Extension	Extend River Mill Rd. to Cemetery Rd.	$700,000	$1,700,000	City, Developer Exactions

New Roadway	New roadway connecting OR 224 to Cemetery Rd.	$320,000	$2,270,000	City, Developer Exactions
Cemetery Rd. Extension	Extend Cemetery Rd. to Duus Rd.	$290,000	$2,050,000	City, Developer Exactions
Shafford Ave. Improvement	Upgrade Shafford Ave. from S. 4th Ave. N. 6th Ave.	$390,000	$390,000	City
OR 224 / Duus Rd. Intersection	Construct traffic signal. Include two eastbound right turn lanes, northbound left turn lane, and southbound left turn lane.	$135,000	$270,000	City, ODOT, Developer Exactions
OR 224 / Park Ave.	Widen OR 224 to include two northbound and two southbound through travel lanes between Duus Rd. and River Mill Rd.	$675,000	$1,350,000	City, ODOT, Developer Exactions
OR 224 Widening	Widen OR 224 to include two northbound and two southbound through travel lanes between Duus Rd. and River Mill Rd.	$5,750,000	$11,500,000	City, ODOT, Developer Exactions
Duus Road Extension	Extend Duus Rd. to OR 224	$1,675,000	$2,350,000	City, Developer Exactions
OR 224 / Evergreen Ave. Intersection	Construct traffic signal at intersection. Add left turn lane on westbound approach.	$395,000	$790,000	City, ODOT, Developer Exactions
Total		**$11,330,000**	**$28,490,000**	

* Estimated cost assumes a portion of project costs are funded by ODOT contributions or exactions from development projects.

** Identification of ODOT as the responsible jurisdiction does not constitute a commitment by ODOT to fund the improvement. Funding decisions are made through the STIP (State Transportation Improvement Program) process.

Trucks

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The establishment of through truck routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. The OR 224 is the only designated through truck route in the TSP study area. The objective of this route designation is to allow truck routes to focus on design criteria that are "truck friendly"; i.e. 12-foot travel lanes, longer access spacing, 35-foot (or larger) curb returns, and pavement design that accommodates a larger share of trucks.

Other Modes (Chapter 9)

Marine

The Clackamas River is not used for commercial goods movement. The river serves recreational purposes. No marine policies or recommendations are provided for Estacada

other than to continue to support the recreational uses in and around the river, including the multi-use trail along the north bank.

Rail

There are no active rail facilities within the City of Estacada, nor are there expected to be any rail facilities within the City in the near future. Due to these considerations, no rail policies or recommendations are provided for Estacada.

Pipeline and Transmission Systems

High-voltage power transmission lines, operated by Portland General Electric, run through Estacada. No major pipelines cross through Estacada. No policies or recommendations for pipelines and transmission systems are provided for Estacada.

Air

The Valley View Airport is a Category 4 public use airport located with the Estacada urban growth boundary. The airport is used by small recreational planes or light jets. No changes to policies are recommended for the airport. The City may propose airport overlay zones to encourage compatible development around the airport and to promote aviation safety by prohibiting structures, trees, and other objects from compromising takeoffs and landings at the airport. Surrounding land uses will continue to be subject to applicable federal and state aviation safety regulations, as described in Chapter 3. Within 5,000 feet of the runway, Federal Aviation Regulations protect airspace at 150 feet or less above the runway elevation. Protected airspaces may impact land uses within 9,000 feet of the Airport, with restrictions lessening as distance from the runway increases[4].

Most passenger and freight air transportation demands for the City of Estacada will continue to be serviced by Portland area airports including Portland International Airport (PDX), which is located approximately 32 miles northwest of the City.

Financing

Transportation funding is commonly viewed as a user fee system where the users of the system pay for infrastructure through motor vehicle fees (such as gas tax and registration fees) or transit fares. However, a great share of motor vehicle user fees goes to road maintenance, operation and preservation of the system rather than construction of new system capacity. Much of what the public views as new construction is commonly funded (partially or fully) through property tax levies, traffic impact fees and fronting improvements to land development. The City of Estacada utilizes a number of mechanisms to fund construction and maintenance of its transportation infrastructure, including:

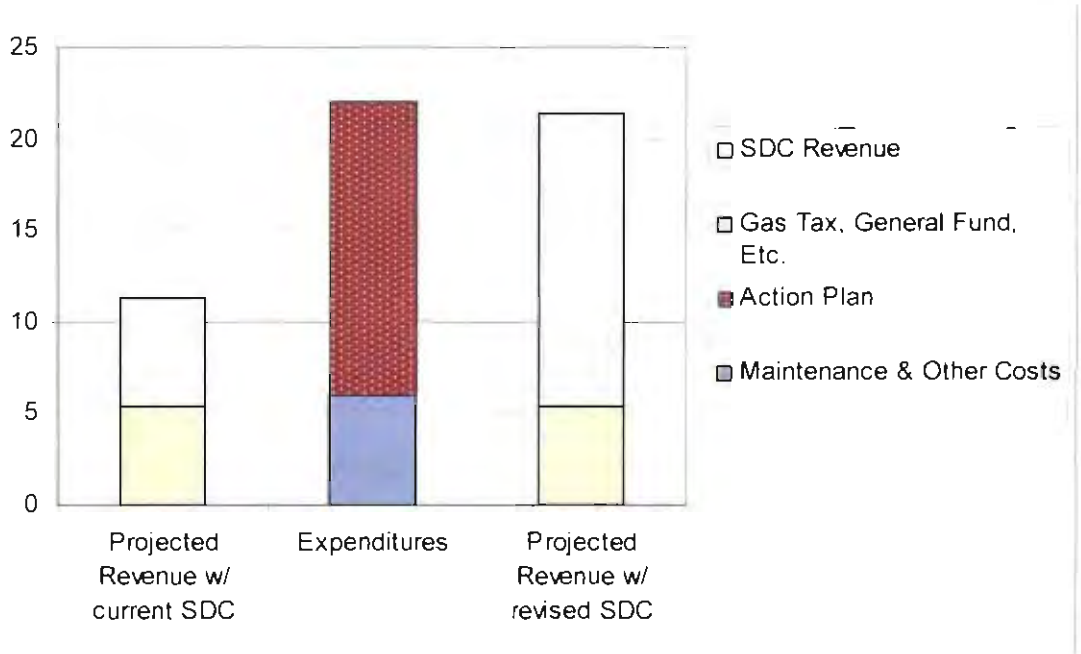
[4] More detailed information related to airport imaginary surface dimensions are located in the Oregon Department of Aviation's Airport Land Use Compatibility Guidebook. http://www.oregon.gov/Aviation/landuseguidebook.shtml

- Fuel Tax and Vehicle License Fee
- System Development Charges
- General Fund Transfers
- ODOT Grants
- Exactions (Developer Required Improvements)

Under the above current programs, the City of Estacada anticipates collecting approximately $492,000 for street construction and repair each year, which would total to approximately $11.3 million over 23 years[5]. The costs outlined in the Transportation System Plan to implement all projects identified in the Motor Vehicle, Bicycle, and Pedestrian Master Plans totals $35 million. However, under the assumption that many projects would be partially or fully funded by other parties, such as the Oregon Department of Transportation or as part of new land development, the cost that the City would be responsible for to implement these projects is estimated at only $14.6 million.

In addition, the City will need to fund transportation projects currently listed on the City Construction Improvement Program (CIP), totaling $1.4 million and other transportation operations and maintenance programs adding another $6.1 million for a total cost over 23 years of approximately $22.1 million, as shown in Figure 1-1.

Figure 1-1: Estacada TSP Financial Summary (Million $)



[5] This revenue level annualizes the expected growth over 23 years, and is a higher amount than expected for the next fiscal year.

The estimated $22.1 million in City costs for capital projects and other expenditures including maintenance exceeds the expected 23-year revenue estimate of $11.3 million by approximately $10.8 million. To fund all projects in the Transportation Master Plan and CIP, SDC rates would need to be set at 167% higher than the existing rate, or approximately $565 per ELNDT (e.g. approximately $5,410 per household). This provides an additional $10.0 million in projected funding for capital projects in addition to the existing revenue projections.

While the increased SDC rate would provide adequate funding for the proposed transportation projects, there would still be an $800,000 shortfall (or approximately $35,000 per year) in funding for maintenance and operations programs that were previously funded by SDC revenue that would now be diverted to capital projects. To fund these programs, it is recommended that the City consider new funding sources, such as local gas taxes, street utility fees, urban renewal districts, and other sources described in Chapter 10.

Comprehensive Plan & Development Code Changes

As part of the TSP update, changes to Estacada's Comprehensive Plan and Development code were recommended to bring consistency with the Transportation Planning Rule (TPR) and other state, county, and local plans. Specific issues addressed by these changes are outlined below, with a detailed discussion in Chapter 11.

Incorporation of TPR Goals into the Comprehensive Plan – Incorporate the overarching goals of the TPR to reduce reliance on the automobile and create a connection between transportation and land use planning.

Public Transportation Facilities Maintenance – Allow for necessary and desirable transportation facilities and maintenance by allowing transportation facilities to be included as an outright use in all zones.

Vehicular Access and Circulation Control – Set regulations and standards for vehicular access and circulation to promote safe and efficient roadways and access to developments.

Block Length and Perimeter – Decrease the current maximum block length and specify new maximum block lengths and perimeters for each zoning district.

Bicycle Parking – Promote non-vehicular modes of transportation by requiring the creation of permanent bicycle parking spaces for certain types of development.

Public Access Ways – Modify current ability of commission to require dedication for access ways to also allow for use of easements.

4. Future Conditions & Needs

Travel Demand and Land Use

The Estacada Transportation System Plan (TSP) Update addresses existing system needs and additional facilities that are required to serve future growth beyond the 2019 forecast year of the existing TSP. A forecast model for the year 2030 was developed to determine future traffic volumes in the City of Estacada. This model was based on current traffic counts, Metro regional model housing and employment projections[1], Estacada land use, ODOT forecasting methodology[2], and traffic network modeling. The methodology involves estimating trip growth by translating assumed housing and employment projections, planned land use, and buildable lands into person travel and assigning motor vehicles to the roadway network. These traffic volume projections form the basis for identifying potential roadway deficiencies. This section describes the forecasting process including key assumptions and the land use scenario developed from the existing land use as well as the current Comprehensive Plan designations and allowed densities. The land use scenario also includes proposed Comprehensive Plan Amendments to zoning in several areas within the City of Estacada Urban Growth Boundary (UBG) as well as a 125-acre UGB expansion, as identified in the City of Estacada – 2004 Draft Comprehensive Plan Update to the Urbanization Element.

Projected Land Use Growth

Land use is a key factor in developing a functional transportation system. The amount of land that is planned to be developed, the type of land uses, and how the land uses are mixed together have a direct relationship to expected demands on the transportation system. Understanding the amount and type of land use is critical to taking actions to maintain or enhance transportation system operation.

Projected land uses were developed for areas within the Estacada urban growth boundary and reflect the Comprehensive Plan (including proposed amendments within the Estacada UGB) and Metro's land use assumptions for the year 2030. Projected land uses for the 125-acre UGB expansion were based on a previously performed traffic impact study[3]

[1] 2030 Transportation Analysis Zone Forecast Allocations, Metro.

[2] Analysis Procedures Manual. ODOT Transportation Development Division, Planning Section. April 2006.

[3] Estacada Traffic Impact Study – Final Future Conditions Report. Parametrix Inc., June 2005. The land use and trip generation assumptions presented in this report were reviewed and accepted by ODOT and the City of Estacada.

Land uses were inventoried throughout the Portland metropolitan area by Metro. This land use database includes the number of households, the number of retail employees, the number of service employees, and the number of other employees. Although Estacada is not part of Metro, it is include in land use forecasts and other analyses due to its proximity to the Metro area.

For forecasting purposes, land use data is stratified into geographical areas called transportation analysis zones (TAZs). Metro's 2030 TAZ Forecast provides employment and household growth projections from a base year of 2005 for TAZs surrounding the City of Estacada. The City of Estacada is represented in two Metro TAZs: TAZ 876, which includes most of the city limits and areas to the south and east, and TAZ 816, which includes the northwest portion of the city (north of River Mill Road and west of Eagle Creek Road) and rural areas to the north. The TAZ boundaries for TAZ 816 and TAZ 876 are illustrated in the Appendix (Figure 4-2). Although the Metro TAZ areas extend well beyond the Estacada UGB, the analysis assumes all forecasted growth occurs within Estacada, since the surrounding areas are predominantly rural in nature.

Table 4-1 summarizes the land uses for existing conditions and the future 2030 scenario for the TAZs included in the Estacada TSP update study area. In order to identify the proper growth increment, both existing (2005) and future (2030) land use data reflect the entire Metro TAZs 816 and 876, whose border extend well beyond the Estacada UGB.

Table 4-1: Estacada TSP Study Area Land Use Summary

Land Use	2005	2030	Increase	Percent Increase
Households	2841	3618[4]	777	27%
Service Employees	167	283	116	69%
Retail Employees	377	757	380	101%
Other Employees[5]	1006	5659	4653	463%
Total Employees[5]	1550	6699	5149	332%

At the existing level of land development, the transportation system generally operates without significant deficiencies in the study area. As land uses are changed there will be a shift in the overall operation of the transportation system. Retail land uses generate higher amounts of trips per acre of land than households and other land uses. The location and design of retail land uses in a community can greatly affect transportation system operation. Additionally, if a community is homogeneous in land use character (i.e. all employment or

[4] Metro's forecast calls for a decrease of 25 households for TAZ 816 in 2030. This forecasted decline in households for this TAZ is assumed to occur outside of the Estacada UGB. Therefore, zero growth is assumed for Estacada households in Metro TAZ 816.

[5] Includes 2030 projected employment increase of 3,977 industrial jobs for the proposed UGB expansion. This employment figure is based on an estimate of 2.33 employees per thousand square foot of light industrial land use. The square footage estimate is based on the square footage identified in the Estacada Traffic Impact Study – Final Future Conditions Report (Parametrix Inc., June 2005), modified for a 30% floor to area ratio.

residential), the transportation system must support significant trips coming to or from the community rather than within the community. Typically, there should be a mix of residential, commercial, and employment type land uses so that some residents may work and shop locally, reducing the need for residents to travel long distances.

Table 4-1 indicates that significant employment growth (over 5,000 jobs) is expected in Estacada in the coming decades. This significant employment growth is primarily due to the forecasted land use in the proposed UGB expansion.[5] The forecast assumes full build out of the UGB expansion area with industrial land use with a 30% floor to area ratio, resulting in a large employment increase in the area. The transportation system should be monitored to make sure that land uses in the plan are balanced with transportation system capacity. This TSP update examines needs with the forecasted 2030 land uses.

Travel Demand Forecast

A determination of future traffic system needs in Estacada requires the ability to accurately forecast travel demand resulting from estimates of future housing and employment for the City. The objective of the transportation planning process is to provide the information necessary for making decisions on when and where improvements should be made to the transportation system to meet travel demand as developed in forecasting procedures.

Although the Metro Travel Demand Model, a computer based program for transportation planning for the Portland Metropolitan area, includes the Estacada area, the level of detail is too coarse in the area to provide a detailed analysis of traffic system performance in Estacada. For the Estacada TSP update, the regional 2030 model was used only as a basis for the housing and employment forecasts described above.

In order to accurately forecast 2030 traffic volume, future travel demand projections are based on adding three distinct segments of demand growth to existing traffic volumes:

- *Internal-Internal* trips: trips traveling within Estacada exclusively;
- *Internal-External and External Internal* trips: trips with either an origin or destination in Estacada with the opposite trip end in a location outside the Estacada TSP update study area; and
- *External-External* trips: trips that do not have an origin or destination in Estacada. In other words, this is through traffic that does not stop in Estacada.

Internal trips are based on local trip generation – trips resulting from the expected growth in employment and households within the current Estacada UGB based on Metro land use forecasts, as well as expected increase in trips resulting from development occurring in the UGB expansion that was not included in Metro's forecast. External trips are based on ODOT forecasted growth on Clackamas Highway . External-external and internal-internal trips are

[5] *2024 Secondary Highway Future Volume Table*. Retrieved June 2006, from ODOT Web site: http://www.oregon.gov/ODOT/TD/TP/TADR.shtml

calculated by removing the external-internal and internal-external segments of the demand from the two forecast methods. By using this method, double counting of trips was avoided.

The combined local land use and external trip growth was then added to the existing traffic to yield a future volume forecast. This future volume forecast was analyzed to uncover areas of performance deficiencies in the roadway network. The methodology for determining forecasted 2030 traffic volumes in Estacada is described in further detail below.

Local Trip Generation

The trip generation process translates land use quantities (number of households, retail, service and other employment) into vehicle trip ends (number of vehicles entering or leaving a TAZ) using established trip generation rates. Typically, most traffic impact studies rely on the Institute of Transportation Engineers (ITE) research for analysis[7]. Table 4-2 provides a listing of PM peak hour trip rates used in this analysis.

Table 4-2: ITE PM Peak Hour Trip Rates

Growth Segment	Land Use Description	ITE Code	Vehicle Trips Per Land Use Unit
Households	Single Family Detached Housing Dwelling Units	210	1.01
Retail Employment	Specialty Retail Center Employees	814	1.34[8]
Service Employment	Specialty Retail Center Employees	814	1.34[7]
Other Employment	General Light Industrial	110	0.42

Forecasted PM peak hour trip growth was calculated by applying the ITE Trip Generation rates above to the Metro land use growth forecasts for TAZs. Additional trips were added to include the impact of potential development occurring at the proposed UGB expansion.

[7] *Trip Generation Manual*, 7th Edition, Institute of Transportation Engineers, 2003.

[8,7] Because the Specialty Retail Center ITE code has no trip generation rate for PM peak hour based on employees, a daily rate had to be modified to a PM peak hour rate by utilizing the ratio of daily to PM peak hour trip generation rates of square footage-based trip generation rates.

Table 4-3 illustrates the estimated growth in vehicle trip ends (trip productions and attractions) generated within the Estacada study area during the PM peak hour between 2005 and 2030.

Table 4-3: Metro TAZ PM Peak Hour Vehicle Trip Generation Growth Forecast

Growth Segment	TAZ 816 Northwest Estacada /Clackamas County	TAZ 876 Estacada
Households	-	785
Retail Employment	66	444
Service Employment	43	113
Other Employment	1,707[10]	250
TOTAL	1,850[10]	1592

This forecast provides the internal-internal as well as the internal-external and external-internal trip growth segments, but not external-external trip growth. The following section describes external trip growth in more detail.

External Trip Growth

In addition to growth resulting from forecasted land use changes within the City of Estacada, growth of external traffic must be accounted for. Given that Clackamas Highway is the primary roadway for travel in Estacada with origins and/or destinations outside of the City, it was assumed that growth in external traffic would utilize Clackamas Highway.

Growth of external trips (trips that have an origin and/or a destination outside of Estacada) was projected based on forecasted traffic growth on Clackamas Highway. Traffic growth on Clackamas Highway is estimated by using the ODOT Future Volume Table[11], which forecasts traffic volume at several points along Clackamas Highway in 2024 based on historical growth trends. This data indicates an expected annual growth rate of approximately 1.7%, or total growth of 41% from 2006 to 2030. In addition to the growth projected by ODOT, a percentage of trips resulting from the development of the proposed UGB expansion area are distributed to external Clackamas Highway trips[12]. The projected growth on Clackamas Highway at each external location is illustrated in Table 4-4.

[10] Includes 1,673 trips resulting from projected employment increase of 3,977 industrial jobs for the proposed UGB expansion. The trip generation estimate is based on the Estacada Traffic Impact Study – Final Future Conditions Report (Parametrix Inc., June 2005), modified for a 30% floor to area ratio.

[11] *2024 Secondary Highway Future Volume Table*. Retrieved June 2006, from Oregon Dept. of Transportation Web site: http://www.oregon.gov/ODOT/TD/TP/TADR.shtml

[12] The distribution of additional trips resulting from the proposed UGB expansion area is based on a weighted average of trip productions and attractions to and from TAZs within the existing Estacada UGB.

Table 4-4: Clackamas Highway PM Peak Hour Growth Forecast

Location	Direction	2006 Design Hour Volume	2030 Design Hour Volume	Total Projected Growth
Hwy 224	Enter	535	994	459
North of Heiple Rd.	Exit	336	507	171
Hwy 224	Enter	134	286	152
East of Hwy 211	Exit	200	295	95
Hwy 211	Enter	340	652	312
South of Hwy 224	Exit	362	534	386

To separate external-external traffic growth from traffic using Clackamas Highway with either a trip origin or destination in Estacada (internal-external and external-internal trips, respectively) a probability of being an external-external trip was applied. The ODOT Analysis Procedures Manual[13] describes the process to calculate the probability of an external-external trip. By using this method, the external-external trip probability was estimated for travel to and from each end of the highway and applied to the forecasted trip growth at each location to yield the expected 2030 external-external trip growth. External-external trips are separated from external-internal and internal-external trips, thereby accounting for through trip growth on Clackamas Highway. The growth forecasted for Clackamas Highway was separated by type in Table 4-5.

[13] *Analysis Procedures Manual*. Oregon Dept. of Transportation: Transportation Development Division, April 2006. p.

Table 4-5: Clackamas Highway PM Peak Hour Growth Forecast by Trip Type

Location	Direction	Projected Growth from ODOT Growth Forecast	External-External Trip Probability	2030 External-External Trip Growth
Hwy 224	Enter	219	0.17	37
North of Heiple Rd.	Exit	138	0.09	12
Hwy 224	Enter	55	0.06	3
East of Hwy 211	Exit	82	0.16	13
Hwy 211	Enter	139	0.06	8
South of Hwy 224	Exit	148	0.16	24

TAZ Disaggregation

Since the Metro TAZs are too large to provide detailed information for traffic analysis in Estacada, the two Metro TAZs were subdivided into seven project TAZs to provide a more detailed representation of land use and access to the transportation system in Estacada. The TAZs are defined based on available vacant buildable land by comprehensive land use designations including proposed zoning changes specified in the 2004 Draft Comprehensive Plan Update to the Urbanization Element[14]. The disaggregated TAZ boundaries are shown in the Appendix (Figure 4-1).

The forecasted growth in trips was allocated to the project TAZs based on land use (comprehensive plan land use designation including proposed amendments) proportionally to the approximate vacant buildable land in the TAZ as well as approved developments within the city that are not yet occupied. Travel demand growth due to retail and service employment was assigned to lands designated as commercial land use, other employment was assigned to industrial land uses, and household growth was assigned to residential land uses. Trip generation for the proposed UGB expansion was added based on information provided in the Estacada Traffic Impact Study - Final Future Conditions Report (Parametrix Inc., June 2005), modified for a 30% floor to area ratio. The allocation of trips between zones is described in detail in the Appendix (Revised Forecast Trip Growth in Estacada).

The total trips added from each Metro TAZ and project TAZ land use allocation are summarized in table 4-6.

[14] City of Estacada – 2004 Comprehensive Plan Update

Table 4-6: PM Peak Hour Trip Generation Growth in Estacada TAZs

TAZ	Vacant Buildable Land (Acres)	Land Use Designation	Total In/Out Trips
1	97	Commercial \ Industrial	611
2	188	Residential	169
3	36	Commercial	550
4	8	Industrial	318
5	778	Residential	580
6	168	Residential	587
7	9	Residential	14
UGB Expansion	125	Industrial	1,673
TOTAL	1,409	-	4,502

External zones outside of the study area are added to the network, at Clackamas Highway north of Estacada, and Clackamas Highway east of Estacada and Highway 211 south of the City to result in a 10-zone system with an additional zone to represent the proposed UGB expansion.

Trip Distribution

Trip distribution estimates how many trips travel from one zone in the model to any other zone. Distribution was based on the number of trip ends generated in each zone as either trips coming out from the zone (productions) or trips going into the zone (attractions). The percentage of each zone's total trips that are productions and attractions are defined based on ITE trip generation research. The productions and attractions for each zone are used to determine an attraction probability and production probability for each zone, relative to other zones in the transportation network.

In projecting long-range future traffic volumes, it was important to consider potential changes in regional travel patterns as well. Although the locations and amounts of traffic generation in Estacada are essentially a function of future land use in the city, the distribution of trips was influenced by regional growth, particularly along Clackamas Highway. For this reason, external trips are included in the analysis as well.

External trips are added to the trip table, however, so as not to double-count the external-internal and internal-external trips, the growth in these trips calculated for Clackamas Highway was subtracted from the local trip growth. The production and attraction probabilities are used to distribute external trips to and from the appropriate TAZs.

Trip productions and attractions are balanced to result in a trip table that specifies the number of trips from each zone to each other zone in the network. The resulting trip

table was the travel growth that was added to the existing traffic in Estacada for 2030 traffic volume projections.

Traffic Assignment

In this process, trips from one zone to another are assigned to specific travel routes in the network, and resulting trip volumes are accumulated on links of the network until all trips are assigned. The Traffix software package was used to represent the transportation network and to assign the additional growth volume to the existing roadway and intersection volumes. To account for the new roadways added to the 2030 roadway network, some of the existing 2006 base volumes were adjusted at impacted intersections.

Forecasted 2030 traffic volumes assigned to study intersection turning movements have been diagramed and are included in the Appendix (Figure 4-3). Compared to the existing traffic volumes collected on Clackamas Highway, the 2030 forecasts indicate highway traffic will increase at an annual growth rate of approximately 5.2% per year within the City.

Planned Improvements

Planned transportation improvements from ODOT's Statewide Transportation Improvement Program, Clackamas County's Rural Transportation System Plan, and Estacada's current Transportation System Plan that would improve connectivity or add system capacity were assumed to be in place by the forecast year of 2030 and were included in the analysis model. Key improvements affecting future traffic assignment and operations included:

Clackamas County Rural Transportation System Plan (2000)

- Hwy 211 (Hayden Rd. to Hwy 224): Four-lane widening with left turn lanes;
- Hwy 224 (Heiple Rd. to Estacada North UGB): Addition of passing lanes; and

Estacada Transportation System Plan (1999)

- N. 6th Ave. extension to Hwy 224;
- Industrial Way Blvd. extension; and
- New streets connecting Coupland Rd., Cemetery Rd, and Eagle Creek Rd.

In addition to these improvements, the current Estacada Transportation System Capital Improvement Plan (April 2005) identifies future signalization of the intersections on Highway 224 at River Mill Road, Industrial Way (Evergreen Avenue), and Highway 211. For the purposes of this deficiencies and needs analysis, these intersections were left unsignalized so that the need for signals could be reevaluated given the updated future volume forecasts.

2030 Motor Vehicle Operations

Motor Vehicle Operations

The analysis for the forecasted 2030 growth was essentially a no-build scenario including only transportation system improvements in Estacada that are expected to be constructed with the current funding levels (see "Planned Improvements" described above). Assuming these improvements were in place, the forecasted 2030 design hour traffic volumes were applied to study area intersections and reanalyzed, using the same methodology employed for existing conditions to assess future operations. Table 4-7 displays the results of this analysis.

Table 4-7: 2030 Intersection Traffic Operations

Intersection	Existing Conditions (2006) v/c	LOS	Future Conditions (2030) v/c	LOS	Mobility Standard v/c	Projected Year of Failure
State Facilities						
OR224 / Heiple	0.10	C	**>1.0**	F	0.80	2010
OR224 / Ely	0.02	C	0.17	F	0.80	-
OR224 / River Mill	0.11	B	**>1.0**	F	0.80	2010
OR224 / Park	0.03	C	**>1.0**	F	0.80	2020
OR224 / Evergreen	0.12	B	**>1.0**	F	0.80	2015
OR224 / 2nd	0.17	B	0.25	C	0.90	-
OR224 / Wade	0.16	B	0.58	F	0.90	-
OR224 / Main	0.49	C	**>1.0**	F	0.90	2015
OR224 / Broadway	0.28	B	0.53	A	0.90	-
OR224 / OR211	0.54	C	**>1.0**	F	0.90	2020
Local Facilities						
Eagle Creek / Duus	0.03	A	0.10	B	-	-
Eagle Creek / River Mill	0.13	B	0.83	D	-	-
6th / Main	0.39	B	0.89	D	-	-
6th / Broadway	0.14	C	0.57	D	-	-
6th / Shafford	0.06	B	0.22	C	-	-
6th / Cemetery	0.08	A	0.42	C	-	-
2nd / Main	0.07	B	0.09	B	-	-
2nd / Broadway	0.33	B	0.33	B	-	-
Shafford / Regan Hill	0.07	A	0.24	B	-	-
4th / Main	0.14	B	0.47	D	-	-

Note: Bold type indicates failure to meet adopted mobility standard.

As shown, most non-highway study intersections operate with a worse LOS compared to the existing conditions. While most non-highway intersections are projected to continue to operate well in 2030, providing a level of service C or better, four local intersections; 4th Avenue and Main Street, 6th Avenue and Broadway Street, 6th Avenue and Main Street, and Eagle Creek Road and Mill Creek Road operate at LOS D.

On the State system, most intersections on Clackamas Highway are projected to fail to meet adopted standards for mobility, with the exception of the intersections at Ely Road, 2nd Avenue, Wade Street, and Broadway Street. The results reported in Table 4-7 for non-failing intersections would likely be optimistic due to potential rerouting of some traffic at failing intersections (which have volumes that exceed intersection capacities). Assuming traffic will grow at a constant and linear rate, the failure rates for study intersections would begin as early as 2010, as shown in table 4-7. It should be recognized that actual development patterns within the City will significantly impact these timelines and that these estimates are for general planning purposes. The actual timing of these needs should be monitored as development within the City occurs, with prioritization of improvements adjusted as needed.

Needs of the Transportation Disadvantaged

It is important to provide quality transportation services for people who, because of disability or income status, do not have access to automotive transport of their own. Estacada has significant populations of low income, senior, and disabled residents who benefit from public transportation services. Table 4-8 compares transportation disadvantaged indicators in Estacada to Clackamas County. The economic indicators of median income and percentage of population below the poverty level was significantly lagging relative to the countywide statistics. Estacada has been identified (statewide) as an economically "Distressed City" by the Oregon Economic & Community Development Department.[15]

Table 4-8: Demographic Characteristics[16]

Location	Median Household Income	Percent of Population Below Poverty Level	Percent of Population Over 65	Percent of Population with Disability
Estacada	$39,200	12.9%	11.1%	22.1%
Clackamas County	$52,080	6.6%	11.1%	16.0%

Mobility needs for the transportation disadvantaged are accommodated through TriMet and SAM bus routes as well as paratransit services. The Estacada Community Center provides a 14-passenger van for on-demand mid-day services on weekdays for senior lunches at the community center as well as for flexible route medical trips. The service has been used by approximately 200 individuals per month. Demand for services has been increasing as more retirees move into Estacada (in part due to retirement facilities) and the service becomes publicized through word-of-mouth and advertisements. The service originally provided more flexibility in trip types, but was limited to lunches and medical appointments when demand exceeded what the available funding and volunteer drivers could provide.

TriMet provides scheduled bus service through Estacada Route #31 and service for people unable to use buses due to disability through the LIFT Paratransit program. Demand for disabled riders was indicated by data[17] that show 29 outbound and inbound monthly wheelchair lift operations occur at bus stops in Estacada. Of the 29 outbound and inbound lift operations, 27 inbound and 23 outbound lifts occur at the bus stop located at Main Street and Southeast 4th Avenue. LIFT program ridership in Estacada averaged 129 bookings per month for an average of 16 different riders[18]. SAM bus service accommodates disabled riders through vehicles that are wheelchair accessible, either through lifts or ramps. The SAM and

[15] Oregon Economic & Community Development Department (http://www.econ.state.or.us/distlist.htm)

[16] U.S. Census Bureau, 2000 Census

[17] 2005 TriMet Passenger Census, Fall 2005

[18] Young Park, Manager of Capital Projects, TriMet. Email sent June 2, 2006.

TriMet bus routes provide access to employment, education, and recreation opportunities that transportation disadvantaged individuals would otherwise be unable to reach.

8. Motor Vehicle Plan

Introduction

This chapter summarizes needs for the motor vehicle system for future conditions in the City of Estacada and recommends plans and strategies to address those needs. The Motor Vehicle modal plan is intended to be consistent with other jurisdictional plans including Clackamas County's *Transportation System Plan* (TSP) and the *1999 Oregon Highway Plan.*

Policies

Several policies were developed for future motor vehicle facilities in Estacada. These policies are aimed at providing the City with priorities to direct its funds towards motor vehicle projects that meet the goals of the City and were also used to evaluate alternatives considered.

The policies for motor vehicle facilities are:

- Policy 1a: Minimize the "barrier" effect of large arterial streets (e.g. OR 224/Highway 224).
- Policy 1b: Make streets as "unobtrusive" to the community as possible. Livability near roadways including the surrounding neighborhood environment should be degraded little as possible. Considerations should be taken for noise, aesthetics, safety, and the conditions for travel by non-motorized means.
- Policy 1c: Build neighborhood streets to minimize speeding.
- Policy 1e: In residential areas, discourage extended use of on-street parking.
- Policy 2a: Design of streets should relate to their intended use.
- Policy 2b: Level of service standards that are consistent with County and ODOT mobility standards shall be adopted and maintained at all intersections within the city where streets included are of collector classification or higher.
- Policy 2c: The City shall adopt access management spacing standards for all arterial and collector streets under its jurisdiction to improve safety and promote efficient through street movement. Access management measures shall be generally consistent with Clackamas County access guidelines to ensure consistency on city and county roads. ODOT access management standards will be addressed for state highways under ODOT jurisdiction.

- Policy 2d: Local streets shall be designed to encourage a reduction in trip length by providing connectivity and limiting out-of-direction travel, without creating a strict grid-type network with long, straight streets which encourage speeding or through traffic. Provide connectivity to activity centers and designations with a priority for pedestrian connections. Wherever necessary, new streets built to provide connectivity shall incorporate traffic management design elements, particularly those which inhibit speeding. New or improved local streets should comply with adopted street spacing standards.
- Policy 4a: Designated arterial routes are essential for efficient movement of goods. Design of these facilities and adjacent land uses should reflect the needs of goods movement.
- Policy 4b: Access management standards shall be preserved on arterial routes to reduce conflicts between vehicles and trucks, as well as conflicts between vehicles and pedestrians.
- Policy 5a: Construct transportation facilities to meet the requirements of the Americans with Disabilities Act.
- Policy 6a: The City shall implement the transportation plan based on the functional classification of streets.
- Policy 6b: The City transportation system plan shall be consistent with the city's adopted land use plan and with transportation plans and policies of Clackamas County and ODOT.
- Policy 6c: The City shall work with Clackamas County and other regional transportation partners to implement regional transportation demand management programs where appropriate.
- Policy 7a: The City shall evaluate land development projects to determine possible adverse traffic impacts and to ensure that all new development contributes a fair share toward on-site and off-site transportation system improvement remedies.
- Policy 7b: The City shall require dedication of land for future streets when development is approved. The property developer shall be required to make street improvements for their portion of the street commensurate with the proportional benefit that the improvement provides the development.
- Policy 7c: The City shall require specific categories of development to prepare a traffic impact analysis to determine impacts and identify mitigation.
- Policy 7d: The City shall adopt a uniform set of design guidelines that provide one or more typical cross sections associated with those functional street classifications under its jurisdiction. For example, the City may allow for a standard roadway cross-section and a boulevard cross-section for arterial and collector streets.
- Policy 7e: The City shall adopt roadway design guidelines and standards that ensure sufficient right-of-way is provided for necessary roadway, bikeway, and pedestrian improvements. City shall work with ODOT and County to determine right of way requirements for their respective facilities.

Strategies

To meet performance standards and address future growth, the future transportation system needs multi-modal improvements and strategies to manage the forecasted travel demand. The impact of future growth would be severe without investment in transportation improvements. Strategies for meeting automobile facility needs include the following:

- Transportation System Management (TSM), including:
  - Neighborhood Traffic Management
  - Access Management
  - Local Circulation Enhancements
- Transportation Demand Management Programs
- Additional Traffic Signals on Arterial/Collector Intersections
- Intersection Modifications
- Mitigate all intersections to meet State and Local performance standards
- Extend and create new streets into urbanizing areas

The following sections outline the type of improvements that would be necessary as part of a long-range Motor Vehicle Master Plan. Phasing of implementation will be necessary since all of the improvements cannot be done at once. This will require prioritization of projects and periodic updating to reflect current needs. Most importantly, the improvements outlined in the following sections are a guide to managing growth in Estacada as it occurs over the next 20 years and beyond.

Transportation System Management

Transportation System Management (TSM) focuses on low cost strategies to enhance operational performance of the transportation system by seeking solutions to immediate transportation problems, finding ways to better manage transportation, maximizing urban mobility, and treating all modes of travel as a coordinated system. These types of measures include such things as signal improvements, traffic signal coordination, traffic calming, access management, local street connectivity and intelligent transportation systems (ITS). Typically, the most significant measures that can provide tangible benefits to the traveling public are traffic signal coordination and systems. Measures that are more difficult to measure but provide system reliability to maintain transportation flows include transit signal priority and incident management.

TSM measures focus primarily on region-wide improvements. However, there are a number of TSM measures that could be used in a smaller scale environment such as the Estacada area. The following sections discuss TSM measures that could be appropriate for the Estacada 2030 TSP study area.

Neighborhood Traffic Management (NTM)

Neighborhood traffic management strategies are commonly used to slow down or reduce automotive traffic with the intent of improving safety for pedestrians or bicyclists. Estacada currently has limited neighborhood traffic management elements, such as on-street parking, in place on streets within the study area. When the City considers traffic calming measures, it will work with the community to find the traffic calming solution that best meets their needs and maintains roadway function. Any NTM project should provide an opportunity for comment by emergency agency staff to ensure public safety is not compromised.

Access Management

Access Management is a broad set of techniques that balance the need to provide efficient, safe and timely travel with the ability to allow access to the individual destination. Proper implementation of access management techniques will promote reduced congestion, reduced accident rates, less need for highway widening, conservation of energy, and reduced air pollution.

Access management involves the control or limiting of access on arterial and collector facilities to maximize their capacity and preserve their functional integrity. Numerous driveways erode the capacity of arterial and collector roadways and introduce a series of conflict points that present the potential for crashes and interfere with traffic flow. Preservation of capacity is particularly important on higher volume roadways for maintaining traffic flow and mobility. Whereas local and neighborhood streets primarily function to provide direct access, collector and arterial streets serve greater traffic volume with the objective of facilitating through travel. Estacada, as with every city, needs a balance of streets that provide access with streets that serve mobility.

Several access management strategies were identified to improve access and mobility in Estacada:

- Provide right turn deceleration lanes on OR 224 where warranted.
- Provide left turn lanes where warranted for access onto cross streets.
- Develop policies and procedures to address access management through City land use review. Employ strategies to consolidate driveways, provide crossover easements, and to take property access from lower classified roads where feasible.
- Establish City access spacing standards for local, collector and arterial streets to be addressed by development and roadway construction projects.
- Implement City access spacing standards for new construction on County facilities within the urban growth boundary.
- Comply with ODOT access requirements on State facilities.

New development and roadway projects involving City street facilities should meet the recommended access spacing standards summarized in Table 8-1. In cases where physical constraints or unique site characteristics limit the ability for the access spacing standards shown in Table 8-2 to be met, the City of Estacada should retain the right to grant an access spacing variance.

Table 8-1: Recommended Minimum Access Spacing Standards for City Street Facilities[1]

Functional Classification	Distance between Public Streets	Distance between Private Accesses and other Private Access or Public Streets
Arterial	See Table 8-2	See Table 8-2
Major Collector	300 feet	75 feet
Minor Collector	300 feet	75 feet
Neighborhood/Local	150 feet	15 feet

In addition to implementing access spacing standards, the City of Estacada should require an access report for new access points, proposed to serve commercial and industrial developments, stating that the driveway/roadway is safe as designed and meets adequate stacking, sight distance and deceleration requirements as set by ODOT, Clackamas County and AASHTO. Consideration of the need for an access report should be triggered by land use actions, design reviews, or land divisions.

Any proposed accesses to State facilities must be approved by ODOT. The *1999 Oregon Highway Plan* identifies access management objectives for all classifications of roadways under State jurisdiction. Both OR 224 and OR 211 are classified as District Highways by ODOT, which maintain a management objective that balances the needs of through traffic movement with direct property access. Based on these objectives, ODOT has established access spacing standards for all highway classifications that vary with proximity to urbanized areas and changes in posted speeds. These standards are also provided in the *1999 Oregon Highway Plan*. Table 8-3 identifies the ODOT access spacing standards for District Highways that are applicable within the Estacada urban growth boundary. Note that the spacing standards below are only to be applied to accesses on the same side of the highway.

[1] Access spacing standards for collectors and neighborhood/local streets do not apply to single-family residential developments.

Table 8-2: Minimum Access Spacing Standards for ODOT District Highways

Posted Speed	Minimum Distance between Accesses (Private or Public)
55 mph or more	700
50 mph	550
40-45 mph	500
30-35 mph	350
25 mph or less	350

ODOT's access management requirements are implemented through OAR 734-051. These rules outline the criteria and procedure for approach permitting decisions, including the application process, conditions under which deviations from established access spacing standards can be allowed, and procedures for appealing decisions.

Clackamas County also maintains access spacing standards for facilities under County jurisdiction. However, it is recommended that the City of Estacada work with the County to reach an agreement that would allow for the implementation of City access spacing standards on all County facilities within the urban growth boundary.

Local Street Connectivity

Many of the existing local street networks, such as those in the downtown area, provide good connectivity with multiple options for travel in any direction. However, some of the newer residential neighborhoods have been developed with limited opportunities for ingress or egress, with some neighborhoods funneling all traffic onto a single street. This type of street network results in out-of-direction travel for motorists and an imbalance of traffic volumes that impacts residential frontage. The outcome can result in the need for investments in wider roads, traffic signals and turn lanes that could otherwise be avoided.

By providing connectivity between neighborhoods, out-of-direction travel and vehicle miles traveled (VMT) can be reduced, accessibility between various travel modes can be enhanced and traffic levels can be balanced out between various streets. Additionally, public safety response time is reduced.

Some of these local connections can contribute with other street improvements to mitigate capacity deficiencies by better dispersing traffic. Several roadway connections will be needed within neighborhood areas to reduce out of direction travel for vehicles, pedestrians and bicyclists. This is most important in the areas where a significant amount of new development is possible.

Figure 8-1 shows the proposed Local Street Connectivity Plan for Estacada. In most cases, the connector alignments are not specific and are aimed at reducing potential neighborhood traffic impacts by better balancing traffic flows on neighborhood routes. The arrows shown in the figures represent potential connections and the general direction for the placement of the connection. In each case, the specific alignments and design will be better determined as part of development review.

The criteria used for providing local connections are based on Portland Metro Regional Transportation Plan requirements for new residential or mixed-use developments.

- Every 330 feet, a grid for pedestrians and bicycles
- Every 530 feet, a grid for automobiles

To protect existing neighborhoods from potential traffic impacts of extending stub end streets, connector roadways should incorporate neighborhood traffic management into their design and construction. All stub streets should have signs indicating the potential for future connectivity. Additionally, new development that constructs new streets, or street extensions, must provide a proposed street map that:

- Provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers
- Provides bike and pedestrian access ways in lieu of streets with spacing of no more than 330 feet except where prevented by barriers
- Limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections
- Includes no close-end street longer than 200 feet or having no more than 25 dwelling units
- Includes street cross-sections showing dimensions of ROW improvements, with streets designed for posted or expected speed limits which meet City design standards (or ODOT standards for state highways)

Figure 8-1: Local Street Connectivity

The arrows shown on Figure 8-1 indicate priority connections only. Topography and environmental conditions limit the level of connectivity in several areas of Estacada. Other stub end streets in the City's road network may become cul-de-sacs, extended cul-de-sacs or provide local connections. Pedestrian connections from the end of any stub end street that results in a cul-de-sac should be considered mandatory as future development occurs. The goal would continue to be improved city connectivity for all modes of transportation.

Functional Classification

The proposed functional classification map (shown in Figure 8-2) differs from the existing roadway classification. In addition to the inclusion of new streets to the transportation network, the classification of Shafford Avenue was changed from a Local Street to a Minor Collector. Also, with the proposed extension of 6th Avenue to intersect with OR 224, the segment of 6th Avenue from OR 224 to Wade Street would be classified as a Major Collector to provide continuity with the existing network.

The proposed functional classification was developed following detailed review of the existing Estacada TSP and Clackamas County TSP. The criteria used to assess connectivity have two components: the extent of connectivity and the frequency of the facility type. Maps can be used to determine regional, city/district and neighborhood connections. The frequency or need for facilities of certain classifications is not routine or easy to package into a single criterion. While planning textbooks call for arterial spacing of a mile, collector spacing of a quarter to a half-mile, and neighborhood connections at an eighth to a sixteenth of a mile, this does not form the only basis for defining functional classification. Changes in land use, environmental issues or barriers, topographic constraints, and demand for facilities can change the frequency for routes of certain functional classifications. While spacing standards can be a guide, they must consider other features and potential long term uses in the area (some areas would not experience significant changes in demand, where others will). It is acceptable for the City to re-classify street functional designations to have different naming conventions than the Clackamas County street functional classifications, however, the general intent and purpose of the facility, whatever the name, should be consistent with regional, state and federal guidelines.

Figure 8-2: Proposed Functional Classification

Roadway Cross-Section Standards

The design characteristics of streets in Estacada were developed to meet the function and demand for each facility type. Because the actual design of a roadway can vary from segment to segment due to adjacent land uses and demands, the objective was to define a system that allows standardization of key characteristics to provide consistency, but also to provide criteria for application that provides some flexibility, while meeting the design standards.

Table 8-3 summarizes the proposed street characteristics for Estacada, with illustrations of recommended roadway cross-sections for major collectors, minor collectors, and local streets provided in Figure 8-3. These design characteristics do not pertain to arterials, as the only arterial streets designated within the City are under State jurisdiction. On facilities under State jurisdiction, ODOT's design standards from the current *Highway Design Manual* will apply, with any deviation from those standards requiring approval of a design exception.

Table 8-3: Proposed Street Characteristics

Street Element	Characteristic	Width/Options
Vehicle Lane Widths:	Truck Route =	12 feet
(Minimum widths)	Bus Route =	11 feet
	Arterial =	12 feet
	Major Collector =	12 feet
	Minor Collector =	11 feet
	Local =	10 feet
	Turn Lane =	12 feet[2]
On-Street Parking:		8 feet[3]
Bicycle Lanes[4]:	New Construction =	5 to 6 feet
(minimum widths)	Reconstruction =	5 to 6 feet
Sidewalks[5]:	Arterial =	6 to 11 feet
(Minimum width, including curb)	Collector =	5 to 8 feet
	Local =	5 to 8 feet
Landscape Strips:		4 to 6 feet
Medians:	5-Lane =	Required
	3-Lane =	Required
	2-Lane =	Optional
Neighborhood Traffic Management:	Arterial =	Prohibited
	Collector =	Under special conditions
	Local =	Should consider if appropriate
Transit:	Arterial/Collector =	Appropriate
	Local =	Only in special circumstances

[2] In constrained conditions on collectors and local routes, a minimum width of 10 feet may be considered.

[3] On arterials, on-street parking should be limited to special circumstances.

[4] 6-foot bike lanes preferred, unless adjacent to parking. Shoulder bikeways of 4 feet allowed, with minimum of 5 feet when adjacent to a roadside barrier.

[5] Wider sidewalks may be constructed in commercial districts (see Chapter 5).

As shown in Figure 8-3, street cross-sections may vary among functional classifications as many elements are recommended, but have been left as "optional" to allow for flexibility. The actual treatment will be determined within the design and public process for implementation of each project. Minor Collectors and Local Streets are similar in design, with both requiring 60 feet of right-of-way. However, the curb to curb width on Minor Collectors is generally greater as the minimum travel lane width allowed is 11 feet, as opposed to the 10-foot travel lanes allowed on Local Streets.

On select non-grid residential local streets, consideration should be given to constructing the minimum curb to curb width (28 feet), as such streets are often associated with lower travel speeds and lesser environmental impacts. The Oregon Fire Code currently allows for unobstructed driving surface widths as low as 20 feet, which could be accommodated within City local street design standards where parking is allowed on only one side of the street. The City of Estacada should require this design on select residential local streets, with parking allowed on both sides of the street under conditions deemed appropriate by the City.

Major Collectors are substantially wider, requiring right-of-way widths up to 84 feet. On these facilities, bike lanes are required and the inclusion of a 12-foot turn lane is an option where needed.

Where center left turn lanes are identified, the actual design of the street may include sections without center turn lanes adjacent to environmentally sensitive or physically constrained areas or with median treatments, where feasible. Under some conditions a variance to the adopted street cross-sections may be requested from the City Engineer. Typical conditions that may warrant consideration of a variance include (but are not limited to) the following:

- Infill sites
- Innovative designs (roundabouts)
- Severe topographic or environmental constraints
- Existing developments and/or buildings that make it extremely difficult or impossible to meet the design standards.

Facilities under State jurisdiction must be constructed in accordance with ODOT's design standards from the *Highway Design Manual*, with any deviation from those standards requiring approval of a design exception.. Within the City of Estacada, this would include both OR 224 and OR 211, which represent the only arterial-level facilities in the City. Figure 8-4 provides illustrations of the ultimate roadway cross-sections for various segments of the highways that are to be implemented as these facilities are modernized.

Within Figure 8-4, three different cross-sections have been provided for specified areas characterized by different travel speeds and surrounding environments. Of particular note is the section of OR 224 between SW 2nd Avenue and SE Currin Street, which is planned for improvement through a combination of an ODOT preservation project and a transportation enhancement grant. The cross-section shown for this segment represents a preliminary design and is expected to be further refined through the project development process.

Figure 8-3: Roadway Cross-Sections

Figure 8-4: State Highway Cross-Sections

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. As growth in the Estacada area occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help accommodate this growth.

Generally, TDM focuses on reducing vehicle miles traveled and promoting alternative modes of travel for large employers of an area. Research has shown that a comprehensive set of complementary policies implemented over a large geographic area can have an effect on the number of vehicle miles traveled to/from that area.[6] However, the same research indicates that in order for TDM measures to be effective, they should go beyond the low-cost, uncontroversial measures commonly used such as carpooling, transportation coordinators/associations, priority parking spaces, etc.

The more effective TDM measures include elements related to parking and congestion pricing, improved services for alternative modes of travel, and other market-based measures. However, TDM includes a wide variety of actions that are specifically tailored to the individual needs of an area. Table 8-4 provides a list of several strategies that could be applicable to the Estacada area.

[6] *The Potential for Land Use Demand Management Policies to Reduce Automobile Trips*, ODOT, by ECO Northwest, June 1992.

Table 8-4: Transportation Demand Management Strategies

Strategy	Description	Potential Trip Reduction
Telecommuting	Employees perform regular work duties at home or at a work center closer to home, rather than commuting from home to work. This can be full time or on selected workdays. This can require computer equipment to be most effective.	82-91% (Full Time) 14-36% (1-2 day/wk)
Compressed Work Week	Schedule where employees work their regular scheduled number of hours in fewer days per week.	7-9% (9 day/80 hr) 16-18% (4 day/40 hr) 32-36% (3 day/36 hr)
Alternative Mode Subsidy	For employees that commute to work by modes other than driving alone, the employer provides a monetary bonus to the employee.	21-34% (full subsidy of cost, high alternative modes) 2-4% (half subsidy of cost, medium alternative modes)
Bicycle Program	Provides support services to those employees that bicycle to work. Examples include: safe/secure bicycle storage, shower facilities and subsidy of commute bicycle purchase.	0-10%
On-site Rideshare Matching for HOVs	Employees who are interested in carpooling or vanpooling provide information to a transportation coordinator regarding their work hours, availability of a vehicle and place of residence. The coordinator then matches employees who can reasonably rideshare together.	1-2%
Provide Vanpools	Employees that live near each other are organized into a vanpool for their trip to work. The employer may subsidize the cost of operation and maintaining the van.	15-25% (company provided van with fee) 30-40% (subsidized van)
Gift/Awards for Alternative Mode Use	Employees are offered the opportunity to receive a gift or an award for using modes other than driving alone.	0-3%
Walking Program	Provide support services for those who walk to work. This could include buying walking shoes or providing lockers and showers.	0-3%
Company Cars for Business Travel	Employees are allowed to use company cars for business-related travel during the day	0-1%
Guaranteed Ride Home Program	A company owned or leased vehicle is provided in the case of an emergency for employees that use alternative modes.	1-3%
Time off with Pay for Alternative Mode Use	Employees are offered time off with pay as an incentive to use alternative modes.	1-2%

Source: *Guidance for Estimating Trip Reductions from Commute Options*, Oregon Department of Environmental Quality, August 1996.

Setting TDM goals and policies for new development will be necessary to help implement TDM measures in the future.

Significant decreases in the percent of trips made by single occupant vehicles can only be achieved with significant improvements to the transportation system and implementation of trip reduction strategies. The City of Estacada should coordinate with Clackamas County, Sandy Area Metro (SAM), and Tri-Met to create procedures to assure that the TDM strategies are implemented. The City of Estacada, Clackamas County, Metro, SAM, and Tri-Met should coordinate to implement the pedestrian, bicycle, and transit system improvements, which offer alternative modes of travel. The recommended TDM action plan includes:

- Support continued efforts by TriMet, SAM, Metro, ODOT, and Clackamas County to develop productive TDM measures that reduce commuter vehicle miles and peak hour trips.
- Encourage the development of high speed communication in all part of the city (fiber optic, digital cable, DSL, etc). The objective would be to allow employers and residents the maximum opportunity to rely upon other systems for conducting business and activities than the transportation system during peak periods.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.
- Implementation of motor vehicle minimum and maximum parking ratios for new development.
- Continued implementation of street connectivity requirements.
- Work with employers to install bicycle racks.
- Implementation of bicycle, pedestrian, motor vehicle and transit system Master Plans.

Recommended Motor Vehicle Master Plan

A list of potential motor vehicle projects that would meet identified needs and achieve motor vehicle policies was developed into a Motor Vehicle Master Plan. The Motor Vehicle Master Plan is an overall plan summarizing the "wish list" of motor vehicle related projects in Estacada and identifies improvements to provide an operationally effective roadway network within the City. The Motor Vehicle Master Plan projects and estimated costs are summarized in Table 8-5, with each project assigned a project number that corresponds with the illustrative Motor Vehicle Master Plan Map in Figure 8-5.

Phasing of implementation will be necessary since not all the improvements can be done at once. This will require prioritization of projects and periodic updating to reflect current needs. The improvements outlined in Table 8-5 are a guide to defining the types of right-of-way and street needs that will be required as development occurs.

The improvements identified in the Master Plan combine both those identified in prior plans (1999 Estacada TSP) and those determined from the outcome of the TSP update analysis. Projects that were identified in the previous TSP are identified with an asterisk (*). The resulting operations at study intersections with these improvements in place are discussed in the following sections, including a summary of the alternatives development.

Table 8-5: Motor Vehicle Master Plan Projects

Project Number	Project	Improvement	Estimated Costs
1	OR 224 / River Mill Rd. Intersection	Add left turn lane on westbound approach, modify eastbound approach to include a left turn lane and a shared through/right turn lane, improve right turn lane on southbound approach to comply with ODOT standard design, and construct traffic signal.	$1,750,000
2	Main St. Realignment at OR 211 / OR 224 Intersection	Realign Main St. to intersect at north approach of OR 211/ OR 224 Intersection. Add left turn lane on eastbound and southbound approaches.	$3,000,000
3	*Main St. / OR 211 / OR 224 Intersection	Construct traffic signal at reconfigured intersection.	$300,000
4	OR 224 / New Collector Roadway (between Evergreen Ave. and River Mill Rd.)	Construct traffic signal at intersection. Add right turn lane on northbound approach and left turn lane on southbound approach.	$2,700,000
5	Eagle Creek Rd. / River Mill Rd.	Add left turn lane on northbound approach.	$85,000
6	N. 6th Ave. / Cemetery Rd	Add left turn lane on eastbound approach.	$265,000
7	*N. 6th Ave. Extension	From Eagle Creek Rd. to OR 224 at Evergreen Ave.	$670,000
8	*Industrial Way Extension	From Evergreen Rd. to River Mill Rd.	$1,02,000
9	*New Roadway	Connecting Coupland Rd. to Cemetery Rd.	$4,130,000
10	River Mill Rd. Extension	Extend River Mill Rd. to Cemetery Rd.	$1,700,000
11	New Roadway	Connecting OR 224 to Cemetery Rd.	$2,270,000
12	Cemetery Rd. Extension	Extend Cemetery Rd. to Duus Rd.	$2,050,000
13	Shafford Ave. Improvement	Upgrade Shafford Ave. from S. 4th Ave. N. 6th Ave.	$390,000
14	OR 224 / Duus Rd. Intersection	Construct traffic signal. Include two eastbound right turn lanes, northbound left turn lane, and southbound left turn lane.	$270,000
15	OR 224 / Park Ave.	Construct traffic signal and two eastbound right turn lanes.	$1,350,000
16	OR 224 Widening	Widen OR 224 to include two northbound and two southbound through travel lanes between Duus Rd. and River Mill Rd.	$11,500,000
17	Duus Road Extension	Extend Duus Rd. to OR 224	$2,350,000
18	OR 224 / Evergreen Ave.	Construct traffic signal at intersection. Add left turn lane on westbound approach	$790 000

* Project identified in current Estacada TSP

Figure 8-5: Motor Vehicle Master Plan

Capacity Needs

The motor vehicle capacity needs in Estacada were determined for future conditions through the year 2030. The analysis procedures employed, along with the findings for future deficiencies and needs, were documented in Chapter 4. This section identifies the future intersection operations with implementation of all Master Plan projects, as identified above.

Future Intersection Capacity Analysis

The future year 2030 No-Build conditions were identified in Chapter 4. Year 2030 traffic volume forecasts were analyzed to identify locations where peak hour performance will drop below minimum desirable levels, focusing on the 20 study intersections. Traffic volumes were developed as described previously and applied to existing intersection geometries, accounting for transportation improvement projects that have already been planned for. The value in reviewing the motor vehicle system performance is that it highlights where the system fails to meet performance standards. These locations were reviewed to consider street improvement alternatives that could better serve planned growth.

The 2030 Motor Vehicle Master Plan shown in Table 8-5 includes improvements identified in the existing 1999 Estacada TSP plus additional projects identified as needed through this analysis. Table 8-6 shows the forecasted motor vehicle operations at study intersections in the Estacada 2030 TSP study area for the No-Build scenario (taken from Chapter 4), as well as for conditions that would be present with all Master Plan improvements in place.

Under No-Build conditions in 2030, the five intersections on OR 224 at Park Avenue, River Mill Road, Evergreen Avenue, Main Street, and OR 211 would not meet adopted performance standards. However, with the improvement projects identified in the Master Plan, performance can be mitigated back to within acceptable limits at these locations. It should also be recognized that the construction of new roadways throughout the City will help to improve overall connectivity, which may also provide operational benefits to area intersections.

It should be noted that the recommendation to widen OR 224 to a five-lane cross-section from Duus Road to River Mill Road should be coordinated with another project to continue the widening from Duus Road to Heiple Road, where two southbound through lanes already exist. This improvement would avoid leaving a small two-lane section of highway between sections maintaining five lanes and would also extend the two southbound through lanes needed at the OR 224/Duus Road intersection to achieve better lane utilization. Because this area lies outside of the Estacada urban growth boundary, it was not included in the Motor Vehicle Master Plan. However, there may be an opportunity to coordinate with ODOT and Clackamas County to combine this project with the project on the Clackamas County Rural TSP to add passing lanes on OR 224 between Heiple Road and the northern Estacada urban growth boundary.

Table 8-6: 2030 Intersection Traffic Operations

Intersection	No-Build Conditions (2030) v/c	LOS	Master Plan Conditions (2030) v/c	LOS	Mobility Standard v/c
State Facilities					
OR 224 / Heiple Rd	0.17	E	0.17	E	0.70**
OR 224 / Ely Rd	0.17	F	0.15	F	0.80
OR 224 / Duus Rd	-	-	0.61	B	0.75**
OR 224 / Park Ave	**>1.0**	F	0.68	B	0.75**
OR 224 / River Mill Rd	**>1.0**	F	0.67	B	0.75**
OR 224 / New Collector	-	-	0.58	B	0.75**
OR 224 / Evergreen Ave	**>1.0**	F	0.63	B	0.75**
OR 224 / 2nd Ave	0.25	C	0.26	C	0.85
OR 224 / Wade St	0.58	F	0.59	F	0.90
OR 224 / Main St	**>1.0**	F	-	-	0.90
OR 224 / Broadway St	0.53	A	0.51	B	0.90
* OR 224 / OR211	**>1.0**	F	0.77	C	0.80**
Local Facilities					
Eagle Creek Rd / Duus Rd	0.10	B	0.20	B	-
Eagle Creek Rd / River Mill Rd	0.83	D	0.77	D	-
6th Ave / Main St	0.89	D	0.73	C	-
6th Ave / Broadway St	0.57	D	0.45	C	-
6th Ave / Shafford Rd	0.22	C	0.18	C	-
6th Ave / Cemetery Rd	0.42	C	0.21	B	-
2nd Ave / Main St	0.09	B	0.08	B	-
2nd Ave / Broadway St	0.33	B	0.34	B	-
Shafford Rd / Regan Hill Rd	0.24	B	0.33	B	-
4th Ave / Main St	0.47	D	0.43	D	-

Notes: * OR 224/ OR 211 intersection includes Main St. realignment in Master Plan.

** Mitigated intersections on State facilities are evaluated against Highway Design Manual standards.

Bold values indicate failure to meet adopted mobility standard.

Unsignalized intersections indicate LOS and v/c for critical movement.

While the City of Estacada does not maintain a standard for motor vehicle mobility, adoption of a standard requiring a minimum LOS D is recommended.

All intersections on the City street network will operate well, with improvements only added to the Master Plan to enhance safety.

Preliminary Traffic Signal Warrants

Preliminary signal warrants[7] were evaluated at all unsignalized intersections that failed to meet operational standards under the 2030 No-Build conditions, where lower cost improvements would not be sufficient. Meeting these warrants does not guarantee that a traffic signal will be installed. Before a signal can be installed on a State highway, a traffic signal investigation must be conducted, including an assessment of whether signal warrants would be met at the time of construction. This investigation must be reviewed by the Oregon Department of Transportation, with approval of the request granted by the State Traffic Engineer. Signals on non-state facilities need to be reviewed and approved by appropriate local officials.

Since only peak hour traffic volumes were available for study intersections, peak hour volumes were factored to estimate average daily traffic volumes, under the assumption that peak hour volumes were approximately 10% of daily volumes. This assumption was based on comparisons of peak hour volumes to daily volumes at select locations in the City where daily counts were available.

The Preliminary Signal Warrants use two conditions to test for the potential need for signalization. Condition A (Minimum Vehicular Volume) reflects whether there is enough volume on both the main street and side street to warrant a traffic signal. Condition B (Interruption of Continuous Traffic) is also a measure of volume, but puts more emphasis on the volume of the main street. If either Condition A or Condition B is met, the intersection is considered to meet preliminary warrants for signalization. The results of this analysis are shown in Table 8-7.

Table 8-7: 2030 Signal Warrant Analysis

Intersection	2030 Master Plan		
	Cond. A Met	Cond. B Met	Signal Warrant Met
Duus Rd. / OR 224	Yes	Yes	Yes
Park Ave. / OR 224	Yes	Yes	Yes
River Mill Rd. / OR 224	No	Yes	Yes
New Collector / OR 224	No	No	No
Evergreen Ave. / OR 224	No	No	No
Main Street / OR 211 / OR 224	Yes	Yes	Yes

Based on the preliminary signal warrant analysis findings, a traffic signal at the intersection of OR 211 and OR 224 with a realigned Main Street connecting at the north approach, is

[7] Preliminary Traffic Signal Warrant Analysis, Analysis Procedures Manual, Oregon Department of Transportation – Transportation Planning Analysis Unit. Average Daily Traffic volumes were estimated based on peak hour volumes.

recommended as a project on the Motor Vehicle Master Plan. The traffic signal control at this intersection would improve existing traffic operations and safety for both vehicles and pedestrians. In addition, the growth in the northwest portion of the City will create a need for traffic signals at the intersections on OR 224 at Duus Road, Park Avenue, and River Mill Road.

The intersections on OR 224 at the new collector and at Evergreen Avenue would also benefit operationally from the installation of traffic signals, but the stop-controlled minor street volumes would be too low to warrant such treatment. However, as signalization of these intersections is necessary to comply with adopted performance standards, the traffic signals were included on the Motor Vehicle Master Plan.

Deceleration Turn Lane Warrants

An additional investigation was performed to identify needs for left and right turn deceleration lanes on unsignalized, uncontrolled approaches where traffic volumes are high enough that the frequency of conflicts may compromise safety. In some situations, left and/or right turn deceleration lanes are recommended to ensure safe operating conditions. Turn lane warrants were evaluated for study intersections and where needs were found, these improvements were included in the Motor Vehicle Master Plan. Locations where additional turn lanes were found to be needed include:

- OR 224 at River Mill Road: southbound right turn lane
- OR 224 at the New Collector (between Evergreen Avenue and River Mill Road): northbound right turn lane and southbound left turn lane
- Cemetery Road at N. 6th Avenue: eastbound left turn lane
- Eagle Creek Road at River Mill Road: northbound left turn lane

Other Alternatives Considered

Multiple alternatives for addressing capacity needs identified in 2030 were considered during the development of the Motor Vehicle Master Plan project list, however some alternatives were not carried past a qualitative level of review. These alternatives are described below.

OR 224 at Duus Road

With this intersection acting as one of two major gateways to the 125-acre urban growth boundary expansion area, it must serve significant volumes of traffic turning to and from OR 224. Adding additional access points on OR 224 to serve this area was considered, but choosing alternatives that would use a minimal number of access points on the highway was preferred, as increasing access points would lead to degradation of highway safety. Furthermore, the construction of additional local streets between the highway and the Clackamas River would improve overall connectivity, but the amount of out of direction travel that would be necessary to mitigate highway operations does not make this a reasonable alternative on its own.

OR 224 at Park Avenue

With this intersection acting as one of two major gateways to the 125-acre urban growth boundary expansion area, it must serve significant volumes of traffic turning to and from OR 224. Adding additional access points on OR 224 to serve this area was considered, but choosing alternatives that would use a minimal number of access points on the highway was preferred, as increasing access points would lead to degradation of highway safety. Furthermore, the construction of additional local streets between the highway and the Clackamas River would improve overall connectivity, but the amount of out of direction travel that would be necessary to mitigate highway operations does not make this a reasonable alternative on its own.

OR 224 at River Mill Road

To mitigate the failing conditions forecast on OR 224 at River Mill Road, alternatives that did not require the installation of a traffic signal were also considered. Such alternatives included:

- **Prohibition of left turns from River Mill Road**

  Prohibitions of left turns would degrade connectivity and divert congestion to adjacent intersections. Therefore, it is not recommended.

- **Construction of new street connections**

  An extension of Duus Road from its current terminus at Eagle Creek Road to intersect with OR 224 was considered as a way to improve connectivity and better distribute traffic demand. However, with the expansion of the urban growth boundary to include an additional 125 acres of industrial land, traffic demand in the northwest area of the city increases such that even with the extension of Duus Road to OR 224 additional improvements are needed at the intersection with River Mill Road.

The planning effort to develop the previous Transportation System Plan for the City of Estacada (Kittelson & Associates, Inc., May 1999) also identified future failure at this intersection and recommended the installation of a traffic signal to improve this condition, which concurs with the recommendations in this plan.

OR 224 at Evergreen Road

To mitigate the failing conditions forecast on OR 224 at Evergreen Road, only the recommended alternative was considered, as it was determined to be a low-cost, effective improvement.

OR 224 at Main Street

The failure of the intersection on OR 224 at Main Street was also identified as part of the planning effort to develop the previous Transportation System Plan, with three alternatives considered including:

- **Implementing a one-way couplet on Main Street and Broadway Street;**

  This alternative would only convert Main Street and Broadway Street into a one-way couplet system for one block north of OR 224, with northbound traffic on Main Street and southbound traffic on Broadway Street. This alternative would improve operations at the intersection on OR 224 at Main Street, but would require the use of the highway for downtown circulation and would have significant impacts on the downtown.

- **Installing a traffic signal on OR 224 at Main Street; and**

  This alternative would maximize downtown accessibility and provide additional pedestrian crossing opportunities on OR 224, but would also introduce a new traffic signal in very close proximity (approximately 300 feet) to the existing traffic signal at Broadway Street.

- **Installing a traffic signal on OR 224 at 2nd Avenue.**

  Installing a traffic signal at 2nd Avenue rather than at Main Street would improve traffic signal spacing from the existing signal at Broadway Street, but it is unlikely that it would divert much traffic away from Main Street, which provides a more direct connection to the core of the downtown.

The planning effort to develop the previous Transportation System Plan for the City of Estacada (Kittelson & Associates, Inc., May 1999) recommended the implementation of the alternative that converts Broadway Street and Main Street into a couplet system. However, the recommended alternative in this plan is preferred as it would have lesser impacts on downtown circulation, would improve access spacing on OR 224, and would take advantage of a traffic signal on OR 224 that would be already be needed to address another deficiency.

OR 224 at OR 211

The failure of the intersection on OR 224 at OR 211 was also identified as part of the planning effort to develop the previous Transportation System Plan, with three alternatives considered including:

- **Modifying traffic controls to stop OR 224;**

  This was the original configuration of traffic control prior to the 1970's and was corrected to meet driver expectations regarding route continuity. Therefore, returning it to this state is not recommended.

- **Install a traffic signal; and**

  This improvement would mitigate failing operations forecast to occur in 2030 and maintain adequate signal spacing between the existing signal at Broadway Street.

- **Construct a roundabout.**

  This improvement would also mitigate failing operations, but would require a higher cost of construction and may not meet driver expectations as well as a traffic signal, which has already been used throughout this corridor.

The planning effort to develop the previous Transportation System Plan recommended the implementation of the alternative that modifies traffic control to stop OR 224 instead of OR 211. While this would be the lowest cost improvement, it would not meet driver expectations and was removed by ODOT years ago for that reason. Therefore, it is not recommended that it be considered further. The alternative including the installation of a traffic signal is consistent with the recommendations in this plan.

Trucks

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The establishment of through truck routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. The OR 224 is the only designated through truck route in the TSP study area. The objective of this route designation is to allow truck routes to focus on design criteria that are "truck friendly"; i.e. 12-foot travel lanes, longer access spacing, 35-foot (or larger) curb returns, and pavement design that accommodates a larger share of trucks.

The OR 224 designation as a truck route is consistent with Clackamas County TSP designations. Existing signage identifies Main Street as a truck route, although this is no longer accurate.

10. Financing and Implementation

Introduction

This chapter outlines funding strategies and sources that can be used to meet the needs of the transportation system. The costs for the recommended transportation improvements are identified and compared to the potential revenue sources. Options are discussed regarding how costs of the Transportation Master Plan and revenues can be balanced.

Current Funding Strategies

Transportation funding is commonly viewed as a user fee system where the users of the system pay for infrastructure through motor vehicle fees (such as gas tax and registration fees) or transit fares. However, a greater share of motor vehicle user fees goes to road maintenance, operation and preservation of the system rather than construction of new system capacity. Much of what the public views as new construction is commonly funded (partially or fully) through local improvement districts (LIDs) and frontage or off-site improvements required as mitigation for land development.

The City of Estacada currently utilizes several sources to fund construction of its transportation infrastructure as described below. These sources collect revenue that is used to maintain street facilities or construct new roadway improvements, with some restrictions on the type and location of projects. In Estacada, as in many other Oregon cities, street revenues are also used to fund administrative costs such as salaries, benefits, expenses and other services related to street projects. Some sources of revenue are collected annually while others are provided on a project-specific basis.

The City of Estacada anticipates collecting approximately $492,000 for street construction and repair each year[1]. This revenue will be generated from the state (fuel taxes, license fees and grants), general fund transfers, system development charges, and other revenue sources. Total revenues to be collected over 23 years between 2007 and 2030 would be $11,316,000 with current funding sources and projected population and employment growth.

[1] The City has historically allocated $35,000-$90,000 a year for capital outlays (including maintenance) from the gas tax revenues. This historical allocation is expected to increase over the next 23 years.

State Fuel Tax and Vehicle License Fee

The State of Oregon Highway Trust Fund collects various taxes and fees on fuel, vehicle licenses, and permits. A portion is paid to cities annually on a per capita basis. By statute, the money may be used for any road-related purpose. Estacada currently uses these funds for street operating and maintenance needs.

Oregon gas taxes are collected as a fixed amount per gallon of gasoline served. The gas tax in Oregon has not increased since 1992 (currently 24 cents per gallon.) The tax does not vary with gas prices changes, nor is there an adjustment for inflation. The lack of change since 1992 means that the net revenue collected has gradually eroded as the cost to construct and repair transportation systems has increased. Fuel efficiency in new vehicles has further reduced the revenue stream.

Oregon vehicle registration fees are collected as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. Vehicle registration fees in Oregon have recently increased from $15 per vehicle per year to $27 per vehicle per year for passenger cars, with similar increases for other vehicle types. There is no adjustment for inflation tied to vehicle registration fees.

In 2006, Estacada received about $120,000 in State gas tax and vehicle license fee revenue. Essentially all of these funds are spent on surface maintenance of local streets and administrative costs. Because there is no index for cost inflation, this revenue level will increase only proportionate with the city's population growth relative to Clackamas County growth. Estacada is expected to receive approximately $2.8 million over the next 23 years.

System Development Charge

The System Development Charge (SDC) for streets is used as a funding source for capacity projects for the transportation system. The SDC is collected from new development based on the proposed land use and size. SDC fees are based on each land use's potential vehicle trip generation. The current SDC rate was set in 1999 and updated in 2007. SDCs are based on the number of Equivalent Length New Daily Trips (ELNDT) estimated for each development. The current SDC rate is $211.60 per ELDNT. The SDC for a single-family residence is $2,025.

For fiscal year 2006/2007, the income from SDCs within Estacada was $45,300. Average SDC revenues over the last six years were $45,730, but varied from $10,000 to $183,000 depending on the development that occurred in a given year. The SDC income potential over the next 23 years was estimated based on the forecasted household and employment growth within the City urban growth boundary. Based on land use forecasts[2], Estacada is expected to collect approximately $6 million from SDC fees over the next 23 years.

[2] This revenue estimate should be refined as more specific development data becomes available.

General Fund Transfer

The transfer of monies from the general fund has been used to help finance transportation services in Estacada. An annual average of $67,000 has been transferred from the general fund over the last six years. This money is primarily used to cover administrative expenditures such as salaries and overhead.

ODOT Grants

Estacada has received at least $25,000 annually from ODOT's Special Cities Allotment Grant for small community funding. These grants come from a statewide $1 million distribution for cities with less than 5,000 population. It is anticipated that this grant money will continue to be a revenue source for city street projects.

Exactions

These are improvements that are obtained as conditions of development approval. Developers are required to improve their street frontage and, in some cases, provide off site improvements depending upon the level of traffic generation and the impact to the transportation system. This has been a common method of funding sidewalk improvements within the City, but is a difficult funding source to plan for because exactions are highly variable and currently unknown.

Other Revenue Sources

Development plan review fees, voluntary property owner contributions, and investment interest have provided additional revenues for the City street fund. An average of $17,000 in revenue has been received from these sources over the last 6 years and totaled $27,500 in the 2006-2007 fiscal year. An average estimate of $20,000 per year is assumed through the 2030.

Summary

Table 10-1 summarizes the current funding sources. Under the above funding programs, the City of Estacada will collect approximately $492,000 for street fund revenues each year. Administrative costs have averaged approximately $160,000 per year leaving $332,000 for street construction and repair each year. Total gross revenues collected by 2030 are anticipated to be $11.3 million with the current sources (in 2006 dollars).

If the City spends more than the above revenues collected for transportation purposes, the funding will most likely need to be taken from City reserve funds or increases in other revenue sources such as SDCs or street utility fees. Therefore, it is reasonable to expect that additional capital and maintenance responsibilities in the City would require new or expanded revenue sources. If the forecasted future growth does not occur, the amount of SDC revenue would be reduced significantly.

Table 10-1: Transportation Revenues for Estacada (2006 Dollars)

Funding Category	Annual Amount	Estimated Revenues Through 2030
State Fuel Apportionment & Vehicle License Fee	$ 120,000	$ 2,760,000
SCA Grant	$ 25,000	$ 575,000
General Fund Transfer	$ 67,000	$ 1,541,000
Other Revenues (Investment Income, Fees, etc.)	$ 20,000	$ 460,000
System Development Charge (Street)	$ 260,000	$ 5,980,000
Total Revenues	**$492,000**	**$11,316,000**

Source: City of Estacada, Adopted Budget, Fiscal Years 2001-2002 through 2006-2007.

Projects and Programs

This section presents the recommended projects and programs necessary for the City of Estacada to serve projected local transportation needs for the next 23 years. Pedestrian, Bicycle, Transit, and Motor Vehicle projects were identified in the Master Plan for each mode, and represent those projects that are needed to satisfy performance standards, or other policies established for the Estacada Transportation System Plan.

Project Cost Estimates

Cost estimates (general, order of magnitude) were developed for the projects identified in the motor vehicle, bicycle, transit, and pedestrian elements. Projects were estimated using general unit costs for transportation improvements, but do not reflect the unique project elements that can significantly add to project costs[1]. All cost estimates are based on 2006 dollars.

Many of the projects overlap elements of various modes. Therefore, where improvements for different modes are identified in the same location, costs are combined into one project to capture efficiencies in construction. Each of these project costs will need further refinement to detail right-of-way requirements and costs associated with special design details as projects are pursued.

Other Transportation Programs and Services

In addition to the physical system improvements identified in the previous chapters, transportation facilities will require on-going operation and maintenance improvements in a variety of areas. These programs are recommended to respond to the specific policies and

[1] Cost estimates are planning-level only and will be refined when projects are programmed into the City C.I.P and/or ODOT STIP. General plan level cost estimates do not reflect specific project construction costs, but represent an average estimate. Further preliminary engineering evaluation is required to determine impacts to right-of-way, environmental mitigation and/or utilities.

needs for maintaining roadway pavement quality, allocations for implementing neighborhood traffic management, and on-going update and support of related planning documents.

Roadway Maintenance

The annual cost of maintaining the streets within Estacada was estimated at $66,000[4], a portion of which is paid for by gas tax revenues from the state. Routine maintenance and capital outlay projects that improve the existing roadway conditions (including SCA Grant projects) are included. Over 23 years, the City's road maintenance responsibility accounts for $1.5 million. The actual maintenance costs could vary from this estimate. (Maintenance costs for Clackamas County and ODOT roads are addressed by the respective road authority and are not included in this estimate.)

Street Lighting

Street lighting costs are included under the City's street fund project. This expense averaged approximately $32,000 per year over the last six years. The expected total expense over the next 23 years is $736,000.

Signs and Striping

Costs for signing and striping of streets averaged approximately $5,000 per year and are expected to account for $115,000 in expenses over the next 23 years.

Neighborhood Traffic Management (NTM)

Specific NTM projects are not defined. These projects will be based upon City placement and design criteria and would be subject to neighborhood consensus. A City-wide NTM program, if desired, should be developed with criteria and policies adopted by the City Council. Speed humps can cost $2,000 to $4,000 each and traffic circles can cost $3,000 to $8,000 each. It is important, where appropriate, that any new development incorporate elements of NTM as part of its on-site mitigation of traffic impacts. No allocation is identified for the implementation of NTM projects, as exactions are expected to cover costs where projects are deemed to be necessary.

Other Expenditures

Administrative costs such as personnel (payroll, benefits, etc.), materials and services (supplies, utilities, etc.) are included as part of street fund expenditures. These expenses are partially covered by transfers from the City General Fund but are also supported by other street fund revenues. This expense averaged approximately $160,000 per year over the last six years. Over the next 23 years, these other expenditures are expected to total is $3.7 million.

[4] Estimate based on: City of Estacada, Adopted Budget, Fiscal Year 2001-2002 through 2006-2007.

Summary

Table 10-2 illustrates expected transportation expenditures. Based on current expenditures, the total cost of programs (excluding new road construction projects or other capacity improving capital projects) is expected to be $264,000 annually or $6.1 million over the next 23 years. With the revenue projection identified, this leaves approximately $5.2 million for capital improvements. However, SDC revenues should be used entirely for capital projects and not for any maintenance, lighting or other expenses. Therefore, the City would need to find additional revenue sources to fund the gap between projected expenditures (all expenditures in Table 10-2 excluding capital projects - $264,000 annually) and revenues (all revenues in Table 10-1 excluding SDCs - $232,000 annually).

Table 10-2: Transportation Expenditures for Estacada (2006 Dollars)

Expense Category	Annual Amount	Estimated Expenses Through 2030
Maintenance	$ 67,000	$ 1,541,000
Street Lighting	$ 32,000	$ 736,000
Signing and Striping	$ 5,000	$ 115,000
Other Expenses (Administrative Costs)	$ 160,000	$ 3,680,000
Capital Projects.	$ 228,000	$ 5,244,000
Total Expenditures	**$492,000**	**$11,316,000**

Source: City of Estacada, Adopted Budget, Fiscal Years 2001-2002 through 2006-2007.

Estacada TSP Master Plan and Costs

The costs outlined in the Transportation System Plan to implement the Master Plans for Streets, Bicycles, and Pedestrians total $35 million. Other potential transit, transportation operations, or maintenance programs would add significant costs to the estimate. Refer to Chapters 5 through 9 for details on the individual projects by travel mode. Note that some projects listed in the Transportation System Plan are expected to be partially or fully funded by ODOT or through exactions required of new development. Assumptions regarding non-City funding sources have been reflected in Table 10-4 for each Transportation Master Plan project. Given these assumptions, the total cost for the City share of Master Plan funding is $14.6 million.

In addition to Master Plan projects, other projects currently identified in Construction Improvement Program (CIP) must also be funded. These projects are identified in Table 10-3 and total $1.8 million, with City SDCs expected to cover $1.4 million and exactions or other revenue sources covering the remainder.

Table 10-3: Estacada CIP Projects

Project	Improvement	Estimated City Cost*	Estimated Total Costs
Broadway Street	Extend roadway north to new collector.	$306,000	$76,500
Regan Hill / 4th Ave. / Shafford Intersection	Intersection improvement	$678,000	$678,000
System Planning	SDC Update Master Planning	$76,000	$76,000
Downtown Roadway Improvement Program	Safety improvements and overlay in downtown roadways including Broadway Street, Maine Street and S. 4th Avenue	$190,000	$190,000
OR 224 Improvement	Facility upgrade from OR 211 to South 2nd Avenue.	$135,000	$13,500
Cemetery Road	Upgrade north of 6th Avenue	$197,000	$197,000
Carol Street	Upgrade between Shafford Avenue and Ginseng Drive	$44,000	$44,000
Oak View Drive	Upgrade east of Ginseng Drive	$11,000	$11,000
West View Lane	Upgrade east of Ginseng Drive	$20,000	$20,000
Foothills Drive	Upgrade east of Cemetery Road	$20,000	$20,000
Hill Way	Upgrade east of Cemetery Road	$32,000	$32,000
North Broadway	Upgrade north of 6th Avenue	$25,000	$25,000
Miscellaneous Roadway Projects	Roadway and intersection upgrades as needed.	$27,000	$27,000
New Connector	OR 224 to River Mill Road via Strubhar Lane	$54,000	$5,400
Total		**$1,415,400**	**$1,815,000**

* Estimated cost assumes a portion of project costs are funded by ODOT contributions or exactions from development projects.

The estimated $22.1 million in City costs for capital projects and other expenditures including maintenance exceeds the expected 23-year revenue estimate of $11.3 million (see Table 10-1) by approximately $10.8 million. To fund all projects in the Transportation Master Plan and CIP, SDC rates would need to be set at 167% higher than the existing rate, or approximately $565 per ELNDT (or approximately $5,410 per household). This provides an additional $10.0 million in projected funding for capital projects in addition to the existing revenue projections. Alternative solutions to address this funding deficit for Master Plan projects are discussed in the next section. In addition to new funding sources obtained by the City, ODOT may provide partial funding on roadways within their jurisdiction.

Table 10-4 identifies the Transportation Master Plan for Estacada which includes transportation projects identified to be needed for all modes of travel. The Transportation Master Plan identifies total project cots as well as estimated City costs and potential funding sources. This plan assumes that maintenance, lighting, signing, striping and other street fund

costs are funded by other revenue sources including the state tax revenues, grants, general fund transfers, and other revenue sources. The Transportation Master Plan total (including current CIP) is approximately $16 million. With the identified increase in SDCs, an estimate of $16 million in capital project funding is available.

Table 10-4: Estacada Master Plan Projects

Project	Improvement	Estimated City Cost*	Estimated Total Costs	Potential Funding Sources**
Motor Vehicle Projects				
OR 224 / River Mill Intersection	Construct traffic signal at intersection. Add left turn lane on westbound approach, modify eastbound approach to include a left turn lane and a shared through/right turn lane, and improve right turn lane on southbound approach to comply with ODOT standard design.	$875,000	$1,750,000	City, ODOT, Developer Exactions
Main St. Realignment at OR 211 / OR 224 Intersection	Realign Main St. to intersect at north approach of OR 211/ OR 224 Intersection. Add left turn lane on eastbound and southbound approaches.	$1,500,000	$3,000,000	City, ODOT, Developer Exactions
Main St / OR 211 / OR 224 Intersection	Construct traffic signal at reconfigured intersection.	$150,000	$300,000	City, ODOT, Developer Exactions
OR 224 / New Collector Roadway (between Evergreen Ave. and River Mill Rd.)	Construct traffic signal at intersection. Add right turn lane on northbound and left turn lane on southbound approach.	$1,350,000	$2,700,000	City, ODOT, Developer Exactions
Eagle Creek Rd. / River Mill Rd. Intersection	Add left turn lane on northbound approach.	$43,000	$85,000	City, Developer Exactions
N. 6th Ave. / Cemetery Rd. Intersection	Add left turn lane on eastbound approach.	$133,000	$265,000	City, Developer Exactions
N. 6th Ave. Extension	New roadway from Eagle Creek Rd. to OR 224 at Evergreen Ave.	$280,000	$670,000	City, Developer Exactions
Industrial Way Extension	New roadway from Evergreen Rd. to River Mill Rd.	$140,000	$1,020,000	City, Developer Exactions
New Roadway	New roadway connecting Coupland Rd. to Cemetery Rd.	$580,000	$4,130,000	City, Developer Exactions
River Mill Rd. Extension	Extend River Mill Rd. to Cemetery Rd.	$700,000	$1,700,000	City, Developer Exactions
New Roadway	New roadway connecting OR 224 to Cemetery Rd.	$320,000	$2,270,000	City, Developer Exactions
Cemetery Rd. Extension	Extend Cemetery Rd. to Duus Rd.	$290,000	$2,050,000	City, Developer Exactions
Shafford Ave. Improvement	Upgrade Shafford Ave. from S. 4th Ave. N. 6th Ave.	$390,000	$390,000	City

Table 10-4 (continued): Estacada Master Plan Projects

Project	Improvement	Estimated City Cost*	Estimated Total Costs	Potential Funding Sources**
OR 224 / Duus Rd. Intersection	Construct traffic signal. Include two eastbound right turn lanes, northbound left turn lane, and southbound left turn lane.	$135,000	$270,000	City, ODOT, Developer Exactions
OR 224 / Park Ave.	Widen OR 224 to include two northbound and two southbound through travel lanes between Duus Rd. and River Mill Rd.	$675,000	$1,350,000	City, ODOT, Developer Exactions
OR 224 Widening	Widen OR 224 to include two northbound and two southbound through travel lanes between Duus Rd. and River Mill Rd.	$5,750,000	$11,500,000	City, ODOT, Developer Exactions
Duus Road Extension	Extend Duus Rd. to OR 224	$1,675,000	$2,350,000	City, Developer Exactions
OR 224 / Evergreen Ave. Intersection	Construct traffic signal at intersection. Add left turn lane on westbound approach.	$395,000	$790,000	City, ODOT, Developer Exactions
Total		**$11,330,000**	**$28,490,000**	
Bicycle Projects				
Eagle Creek Road Bike Lanes	Bike lanes from 6th Avenue to Duus Road	$230,000	$460,000	City, Developer Exactions
River Mill Road Bike Lanes	Bike lanes from Eagle Creek Road to Farmstead Road	$115,000	$230,000	City, Developer Exactions
Designated Bike Route Signing on Main Street	From OR 224 to 6th Avenue	$2,750	$2,750	City
Designated Bike Route Signing on Main Street	From Wade Street to Cemetery Road	$2,000	$2,000	City
Designated Bike Route	Signing on Main Street from OR 224 to 6th Avenue	$2,600	$2,600	City
Total		**$352,350**	**$697,350**	

Table 10-4 (continued): Estacada Master Plan Projects

Pedestrian Projects				
6th Avenue	Sidewalk from Wade Street to Broadway Street	$60,000	$120,000	City, Developer Exactions
Eagle Creek Road	Sidewalk from 6th Avenue to River Mill Road	$325,000	$650,000	City, Developer Exactions
OR 224	Sidewalk from 2nd Avenue to UGB	$735,000	$1,470,000	City, ODOT
River Mill Road	Sidewalk from Farmstead Road to Eagle Creek Road	$325,000	$650,000	City, Developer Exactions
Eagle Creek Road	Sidewalk from River Mill Road to Duus Road	$320,000	$640,000	City, Developer Exactions
6th Avenue	Sidewalk from Shafford Avenue to Cemetery Road	$50,000	$100,000	City, Developer Exactions
North 1st Avenue	Sidewalk from Wade Street to Shafford Avenue	$125,000	$250,000	City, Developer Exactions
North 2nd Avenue	Sidewalk from Wade Street to Shafford Avenue	$125,000	$250,000	City, Developer Exactions
South 4th Avenue	Sidewalk from Currin Street to Reagan Hill Road	$195,000	$390,000	City, Developer Exactions
Coupland Road	Sidewalk from the Cemetery Road to the UGB	$425,000	$850,000	City, Developer Exactions
Pierce Street	Sidewalk from 1st Avenue to 6th Avenue	$125,000	$250,000	City, Developer Exactions
Wade Street	Sidewalk from 2nd Avenue to 6th Avenue	$100,000	$200,000	City, Developer Exactions
OR 224 Pedestrian Crossing	Crossing at 2nd Avenue intersection	-	-	City, ODOT
OR 224 Pedestrian Crossing	Crossing at Wade Street intersection	-	-	City, ODOT
Total		**$2,910,000**	**$5,820,000**	

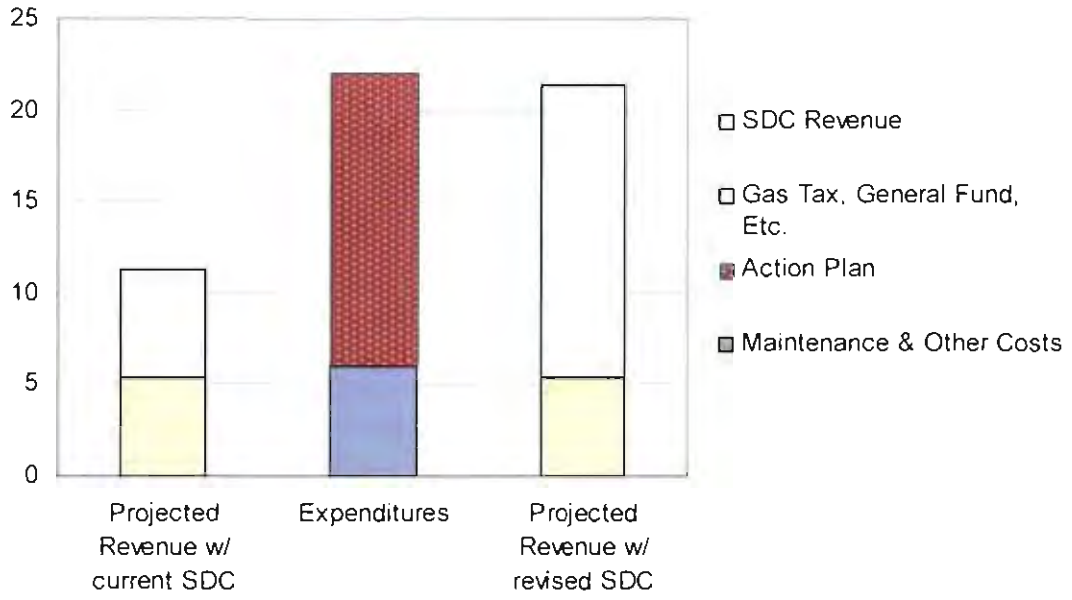
*Estimated cost assumes a portion of project costs are funded by ODOT contributions or exactions from development projects.

**Identification of ODOT as the responsible jurisdiction does not constitute a commitment by ODOT to fund the improvement. Funding decisions are made through the STIP (State Transportation Improvement Program) process.

TSP Financial Summary

A summary of TSP transportation financing is illustrated in Figure 10-1. The figure shows projected revenues with current SDC rates to be $11.3 million. Funding of the Transportation Master Plan and other expenditures including maintenance totals $22.1 million. By raising SDC rates 167%, projected revenues are increased to $21.4 million. The remaining gap for maintenance, lighting, striping, signing and other expenses would need to be covered by other revenue sources as described in the following section.

Figure 10-1: Estacada TSP Financial Summary (Million $)



New Funding Sources and Opportunities

The new transportation improvement projects and recommended programs will require funding beyond the levels currently collected by the City. There are several potential funding sources for transportation improvements which are summarized below. These are sources that have been used in the past by agencies in Oregon. In most cases, these funding sources, when used collectively, are sufficient to fund transportation improvements for local communities. Due to the complexity of today's transportation projects, it is necessary to seek several avenues of funding. Unique or hybrid funding of projects generally would include these funding sources combined in a new package.

Transportation program funding options range from local taxes, assessments, and charges to state and federal appropriations, grants, and loans. All of these resources can be constrained based on a variety of factors, including the willingness of local leadership and the electorate to burden citizens and businesses; the availability of local funds to be dedicated or diverted to transportation issues from other competing City programs; and the availability and competitiveness of state and federal funds. Nonetheless, it is important for the City to consider all of its options and understand where opportunities exist to provide and enhance funding for its transportation programs.

The following funding sources have been used by cities to fund the capital and maintenance aspects of their transportation programs, and should be considered by the City to address needs identified in the Transportation System Plan.

General Fund Revenues

At the discretion of the City Council, the City can allocate General Fund revenues to pay for its Transportation program. (General Fund revenues primarily include property taxes, use taxes, and other miscellaneous taxes and fees imposed by the City.) Allocation is completed as a part of the City's annual budget process, and funding for transportation is constrained by competing community priorities set by the City Council. General Fund resources can fund any aspect of the program, from capital improvements to operations, maintenance, and administration. General fund revenues have been used in Estacada to help fund the street fund, but those revenues are exceeded by expenditures for administrative costs such as payroll, benefits, and services. Additional revenues available from this source to fund new aspects of the Transportation program would only become available to the extent that either General Fund revenues increase or City Council directs and diverts funding from other City programs.

Voter-Approved Local Gas Tax

Communities such as Sandy, Woodburn, and Tillamook have adopted local gas taxes by public vote. In Sandy, the tax is one cent per gallon, paid to the city monthly by fuel distributors. The process for presenting such a tax to voters would need to be consistent with State as well as City of Estacada laws.

Street Utility Fee Revenue

A number of Oregon cities supplement their street funds with street utility fees. Metro cities with adopted street utility fees include Lake Oswego, Wilsonville and Tualatin. Establishing user fees to fund applicable transportation activities and/or capital construction ensures that those who create the demand for service pay for it proportionate to their use. The street utility fees are recurring monthly or bi-monthly charges paid by all residential, commercial, industrial, and institutional users. The fees are charged proportionate with the amount of traffic generated, so a retail commercial user pays a higher rate than a residential user. Typically, there are provisions for reduced fees for those that can demonstrate they use less than the average rate implies, for example, a residence without automobile or truck ownership.

From a transportation system health perspective, creating a street utility fee would help to support the ongoing viability of the program by establishing a source of reliable, dedicated funding for that specific function. Fee revenues can be used to secure revenue bond debt to finance capital construction. A street utility can be formed by Council action and does not require a public vote.

A preliminary estimate for street utility fee revenue in Estacada ranges between $70,000 to $130,000 annually, based on average rates charged around the state. A specific fee study

would be necessary to establish a fee program for the City of Estacada to determine specific allocations for residents and businesses.

Expanded SDC Rate for Transportation

The City's transportation SDC rate is within the typical range in Oregon. At the current rate of $211.60 per trip, a single family residence is charged approximately $2,025. A typical transportation SDC in Oregon is $2,000 per single family residence. However, without an increase in funding, operational deficiencies would not be addressed through a reasonably funded Transportation Master Plan. Because funds collected at the current SDC rate would not provide adequate funding for identified projects (including most newly proposed roadways which provide improved connectivity and/or new capacity for motor vehicles as well as sidewalks for pedestrians and facilities for bicycles), it is suggested that the SDC program and rate be re-examined to adjust for the TSP recommended Transportation Master Plan.

By increasing the current rate, the SDC program would provide funding for the Transportation Master Plan listed in Table 10-4. As part of construction of new roadways, appropriate bicycle and pedestrian facilities will be constructed in accordance with roadway design standards for the designated functional class of the roadway.

Other Funding Sources

Urban Renewal District

An Urban Renewal District (URD) is a tax funded district within a City. URDs are funded with the incremental increases in property taxes that result from construction of infrastructure improvements. This type of tax increment financing has been used in Oregon since 1960. It is tax-increment funded rather than fee-funded and can provide for renewal that includes, but is not limited to, transportation projects. Downtown Estacada is currently being proposed for designation as an URD.

Local Improvement District Assessment Revenue

The City may set up Local Improvement Districts (LIDs) to fund specific capital improvement projects within defined geographic areas, or zones of benefit. LIDs impose assessments on properties within its boundaries. LIDs may not fund ongoing maintenance costs. They require separate accounting, and the assessments collected may only be spent on capital projects within the geographic area. Citizens representing 33% of the assessment can terminate a LID and overturn the planned projects, therefore projects and costs of a LID must gain broad approval of those within the boundaries of the LID.

Direct Appropriations

The City can seek direct appropriations from the State Legislature and / or U.S. Congress for transportation capital improvements. There may be projects identified

in the Transportation Master Plan for which the City may want to pursue these special, one-time appropriations.

Special Assessments

A variety of special assessments are available to be used in Oregon to defray costs of sidewalks, curbs, gutters, street lighting, parking and CBD or commercial zone transportation improvements. These assessments would fall within the Measure 50 limitations. A regional example from Portland would be the Westside LRT where the local share of funding was voter approved as an additional property tax.

Employment Taxes

TriMet collects a tax for transit operations in the Portland region, including Estacada, through payroll and self employment taxes. Approximately $145 million are collected annually in the Portland region for transit.

Debt Financing

While not direct funding sources, debt financing can be used to mitigate the immediate impacts of significant capital improvement projects and spread costs over the useful life of a project. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but is also viewed as an equitable funding strategy, spreading the burden of repayment over existing and future customers who will benefit from the projects. The caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations.

Voter-Approved General Obligation Bond Proceeds: Subject to voter approval, the City can issue General Obligation (G.O.) bonds to debt finance capital improvement projects. G.O. bonds are backed by the increased taxing authority of the City, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property City-wide (a property tax increase). Depending on the critical nature of projects identified in the Transportation Master Plan, and the willingness of the electorate to accept increased taxation for transportation improvements, voter-approved G.O. bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.

Revenue Bonds: Revenue bonds are debt instruments secured by rate revenue. In order for the City to issue revenue bonds for transportation projects, it would need to identify a stable source of ongoing rate funding. Interest costs for revenue bonds are slightly higher than for general obligation bonds, due to the perceived stability offered by the "full faith and credit" of a jurisdiction.

Oregon Transportation Infrastructure Bank

The Oregon Transportation Infrastructure Bank is a statewide revolving loan fund started as part of a federal pilot program. The fund is designed to promote innovative financing solutions to transportation needs.

Oregon Immediate Opportunity Fund

The Oregon Immediate Opportunity Fund (IOF) provides grant funding needed for street or road improvements to influence the location or retention of a firm, revitalize business or industrial centers, and prepare Oregon Certified Project Ready Industrial Sites. Maximum grant limits range from $250,000 to $1,000,000 depending on the nature of the request.

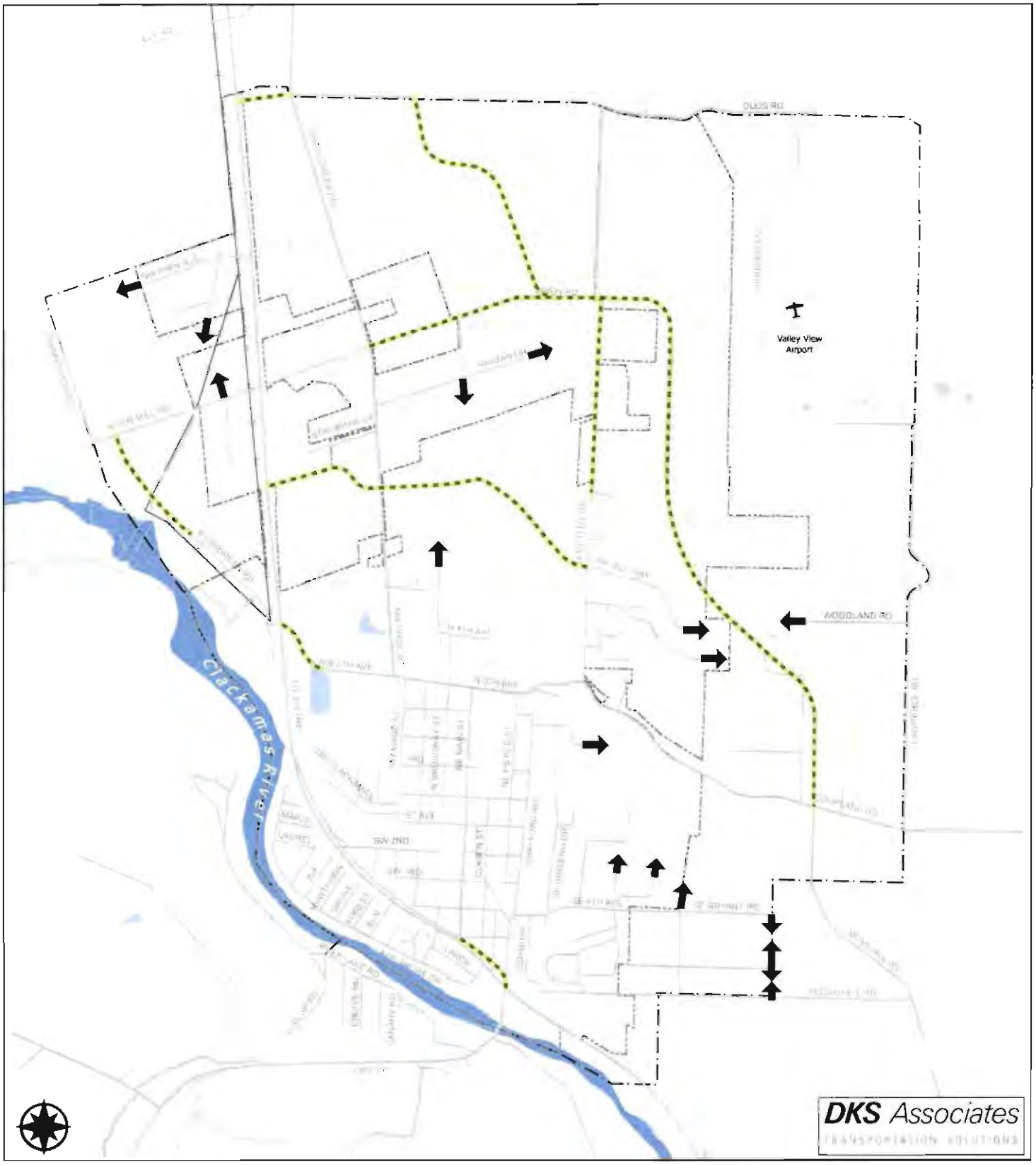
Recommended Funding Strategies

The City Council will determine and recommend any funding strategies needed to address shortfalls in revenue needed to implement the TSP.

Consideration could be given to the adoption of street utility fees, which can provide a stable source of dedicated revenue for transportation system operations and maintenance and / or capital construction. A street utility fee program can be initiated by City Council action, and billed through the City utility billing system. Rate revenues can also secure revenue bond debt if used to finance capital improvements.

It is also recommended the City consider updating its transportation SDC with a 167% increase to cover the new City funded capital projects identified in the TSP Master Plans for which existing funding is inadequate. This would help to ensure that local growth pays its fair share of new transportation facilities that are required to serve future development. Exactions may also be used to fund new roadways which support mobility for new developments and mitigate impacts of new developments on existing roadway infrastructure. A local gas tax is also recommended to provide a reliable transportation program revenue source. In addition, the City should actively pursue grants and other special program funding in order to mitigate the costs to its citizens of transportation capital construction.

UPDATED TSP FIGURES 8-1, 8-2 AND 8-5



City of Estacada

Transportation System Plan

Local Street Connectivity

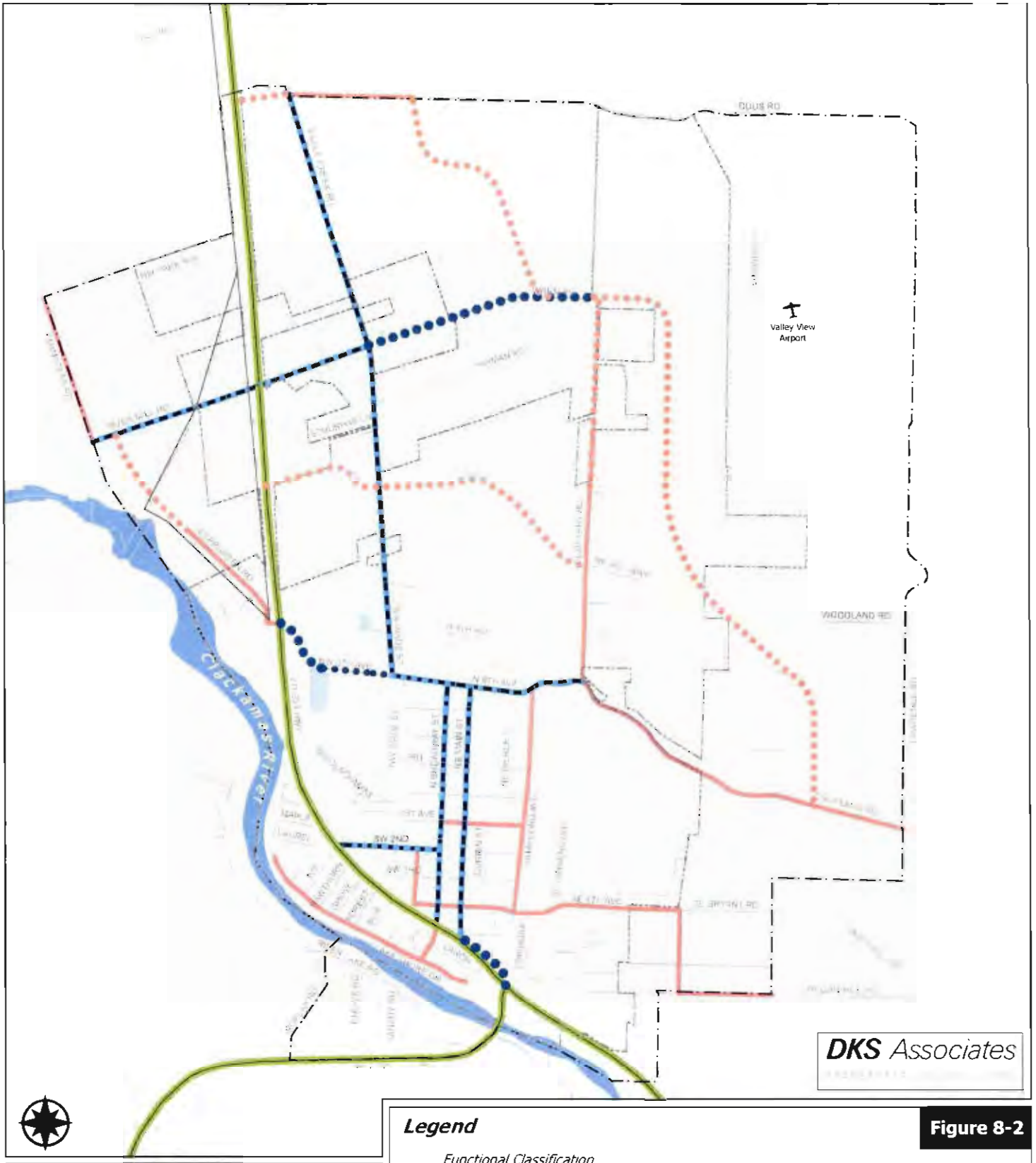
0 1,000 2,000 4,000 Feet

Figure 8-1

Legend

- future streets
- conceptual street connection*
- tax lots
- utility line
- airport
- streets
- water
- city limits
- urban growth boundary

*additional studies should be completed for specific alignments.



City of Estacada

Transportation System Plan

Functional Classification

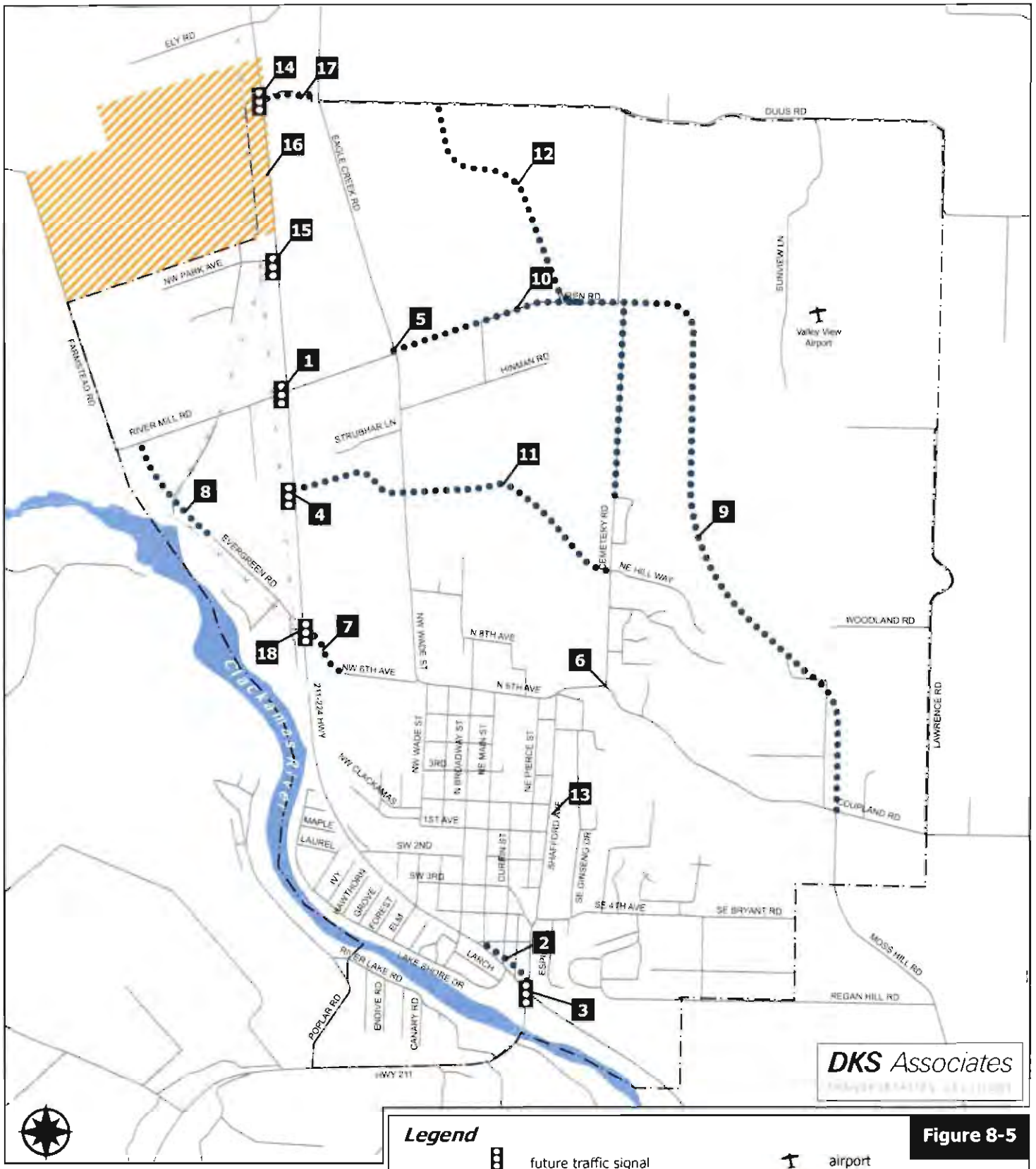
0 1,000 2,000 4,000 Feet

Figure 8-2

Legend

Functional Classification

- arterial/highway
- major collector
- proposed major collector
- minor collector
- proposed minor collector
- local street
- airport
- water
- city limits
- urban growth boundary
- tax lots
- utility line



DKS Associates

Legend

- future traffic signal
- future streets
- streets
- project number (Table 8-5)
- proposed UGB expansion
- airport
- water
- city limits
- urban growth boundary
- tax lots
- utility line

Figure 8-5

City of Estacada

Transportation System Plan

Motor Vehicle Master Plan

0 1,000 2,000 Feet

ODOT LETTER DATED JUNE 1, 2010

Exhibit 1

ODOT

Oregon
Theodore R. Kulongoski, Governor

Oregon Department of Transportation
ODOT Region 1
123 NW Flanders St
Portland, OR 97209
Telephone (503)731-8200
FAX (503)731-8259

June 1, 2010

City of Estacada
475 SE Main Street
PO Box 958
Estacda, OR 97023

Attn: Estacada Planning Commission and City Council

Re: **Transportation Planning Rule Compliance for Proposed City UGB Expansion**

ODOT has reviewed the revised 5/28/10 staff report for the proposed action. We concur that City adoption of the Scenario A transportation network and projects into the City's TSP will satisfy the requirements of the state Transportation Planning Rule. Specially, OAR 660-12-060 *Plan and Land Use Amendments* requires that *significant effects* caused by land use actions on the planned transportation system are mitigated. The City's TSP needs to includes the steps necessary to provide the transportation system that supports the proposed UGB expansion area.

We understand the City intends to hold hearings for the TSP amendments later in the summer. Therefore, we request that the City include a "condition of approval" for the UGB expansion action to require approval of the TSP amendments prior to any urban development occurring on the site.

Thank you for coordinating with ODOT. Please let me know if you have questions on the above.

Sincerely,

Sonya Kazen, Sr. Planner

Cc: Jennifer Donnelly, DLCD
Steve Faust, Cogan Owens Cogan
Scott Hoelscher, Clackamas County
Bill Elliott, City of Estacada
Jamie Johnk, Clackamas County

[redacted]

PLANNING COMMISSION & CITY COUNCIL MINUTES

Hoelscher, Scott

From: Denise Carey [carey@cityofestacada.org]
Sent: Thursday, March 20, 2014 11:26 AM
To: Hoelscher, Scott
Subject: RE: DLCD notice

Here is the text from the minutes. No one commented from the public.

UGB Expansion – Amend TSP (Scenario A), Wetlands Delineation – Mayor Arnold opened the public hearing and asked the council to declare any conflicts or ex parte contact. There was none.

CP Scott Hoelscher stated that the Council approved the UGB expansion in June 2010 with three conditions. Two of these conditions were the wetlands delineation study and the TSP Amendments related to the UGB expansion.

The wetlands study has determined that there are two wetlands on the property that are approximately 3 acres. The council must acknowledge that the study has been done. At the time of development of the property, the Goal 5 wetlands process will continue to determine how to protect the wetlands that have been identified. CP Hoelscher stated that after the council has acknowledged the study, the Division of State Lands (DSL) will also acknowledge it and determine the significance of the wetlands area. This will determine what the city has to do to complete the Goal 5 process and what regulations must be put in place to protect the wetlands area.

The council adopted the Transportation System Plan in 2007. Scenario A is TSP amendments that will have to be done if the UGB expansion happens. Scenario A addresses the transportation issues created by the 130 acre expansion of the UGB. It identifies projects that need to be done to accommodate development of the 130 acres. The Planning Commission has recommended approval of the amendments with conditions. Condition 2 is that Scenario A is only effective when the UGB expansion is acknowledged by DLCD. CP Hoelscher stated that the language for this condition needs to be clear that it is after the UGB expansion is acknowledged and all challenges are complete. He will work on rewording the condition to make it clear that the amendments are only effective after the expansion is done.

The council discussed how the additional projects will be funded. CM Elliott stated that the developer is usually responsible for infrastructure improvements needed to accommodate the development.

There was no public input so Mayor Arnold closed the public hearing.

Cr. Dodrill asked about the five traffic lights required in the plan. CM Elliott stated that this would be required at full development stage of the 130 acres and the requirements are based on the traffic study. Cr. Dodrill stated there will probably be resistance to these lights if they ever go in.

Cr. James moved to recognize completion of the wetlands delineation report in compliance with condition 1 of the City Council UGB expansion approval. Cr. Conditt seconded the motion. The motion passed unanimously.

Cr. Dodrill moved to adopt supplemental Scenario A with the conditions forwarded by the planning commission. Cr. Ernst seconded the motion. The motion passed unanimously.

Denise Carey, MMC

Hoelscher, Scott

From: Denise Carey [carey@cityofestacada.org]
Sent: Thursday, March 20, 2014 11:27 AM
To: Hoelscher, Scott
Subject: RE: DLCD notice

Here is the Planning Commission minutes – again, nobody spoke during public comments.

A. EOA Implementation. Amend the Transportation System Plan (TSP) to recognize Supplemental Scenario A and conduct a wetlands delineation consistent with Statewide Planning Goal 5 for the Urban Growth Boundary (UGB) expansion area located at 34E17 01203/01202 and 34E18 00100. These actions are required conditions of approval for the 130 acre UGB expansion that was previously approved by the City Council.

CP Hoelscher gave a brief update of the process and reviewed the wetlands delineation report. The report identifies two small wetland areas on the site. The delineation must be acknowledged by Division of State Lands. CP also stated that this delineation report does not satisfy the goal 5 requirement and that there will need to be additional work to satisfy that. The wetland delineation satisfies a condition of the June 14, 2010 City Council decision approving the 130 acre UGB expansion. Condition #1 of the City Council decision required preparation of a wetlands delineation report. CP Hoelscher passed around a copy of the wetlands delineation.

CP stated that the TSP was updated in 2007 and at that time they made a supplemental report to address this 130 ugb expansion. The Planning Commission and City Council will need to adopt this supplemental report as part of the TSP. The supplemental report, referred to as Scenario A, looks at transportation needs based on the 130 acre UGB expansion and infrastructure projects to support new development on the subject property. As part of the UGB expansion, ODOT requires that the City amend the TSP by adopting Scenario A.

CP discussed a couple of handouts he had. The first handout showed the size and location of the two wetlands on the subject property. CP Hoelscher indicated that the wetlands may or may not be considered "significant." The Division of State Lands (DSL) will need to "acknowledge" the wetlands delineation. The wetlands on the property most likely stems from precipitation.

The second handout included the Motor Vehicle Master Plan in Scenario A. CP Hoelscher explained that the Master Plan is a "wish list" of vehicle related projects in Estacada and identifies certain projects based on the 130 acre UGB expansion. One page of the Motor Vehicle Master Plan is a map showing project locations and the second page is a corresponding table listing estimated costs and the specific infrastructure improvements.

Cm. Piper moved to recommend that the City Council amend the Transportation System Plan (TSP) by adopting Supplemental Scenario A and recognize that the completed wetlands delineation submitted by the property owner satisfies Condition #1 of the June 14, 2010 city council decision (case file no. CP/AC 2010-01) approving the 130 acre UGB expansion. Cm. Ennis seconded the motion. Motion passed 6-0.

Denise Carey, MMC
City Recorder/Finance Director
City of Estacada
PO Box 958
Estacada, OR 97023
503-630-8270 ext. 202 (phone)
503-630-8280 (fax)
carey@cityofestacada.org

ORIGINAL DLCD FORM 1

Revised (003-10)

DLCD Notice of Proposed Amendment

THIS FORM **MUST BE RECEIVED** BY DLCD AT LEAST
45 DAYS PRIOR TO THE FIRST EVIDENTIARY HEARING
PER ORS 197.610, OAR CHAPTER 660, DIVISION 18

DATE STAMP — in person ☐ electronic ☐ mailed ☐ — For DLCD Use Only

Jurisdiction: City of Estacada
Local File Number: 200 2010 - 01
Is this a **REVISION** to a previously submitted proposal? ☐Yes ☒No Date submitted: 06/09/2010

Date of First Evidentiary Hearing: ~~07/29/2010~~ 11/18/201
Date of Final Hearing: ~~08/09/2010~~ 12/13/2010

- ☐ Comprehensive Plan Text Amendment
- ☐ Land Use Regulation Amendment
- ☐ New Land Use Regulation
- ☑ Transportation System Plan Amendment
- ☐ Comprehensive Plan Map Amendment
- ☐ Zoning Map Amendment
- ☐ Urban Growth Boundary Amendment
- ☐ Other:

Briefly Summarize Proposal. Do not use technical terms. Do not write "See Attached"(limit 500 characters):

The City of Estacada is amending its Transportation System Plan to recognize Supplemental Scenario A ~~and conducting a wetlands delineation consistent with Statewide Planning Goal 5~~ for a proposed Urban Growth Boundary (UGB) expansion area. ~~These actions will complete approval of the UGB expansion to fulfill a local, regional and statewide need for large lot industrial employment lands~~.

Has sufficient information been included to advise DLCD of the effect of proposal? ☑Yes, text is included
For Map Changes: Include 8½"x11" maps of Current and Proposed designation. ☐ Yes, Maps included

Plan map changed from: N/A To: N/A
Zone map changed from: N/A To: N/A
Location of property (do not use Tax Lot):
Previous density: N/A New density: N/A Acres involved:
Applicable statewide planning goals:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	☐

Is an exception to a statewide planning goal proposed? ☐ YES ☒ NO Goals:

Affected state or federal agencies, local governments or special districts (It is jurisdiction's responsibility to notify these agencies. DLCD only records this information):

Department of Land Conservation and Development
~~Umatilla County~~ Clackamas County
~~City of Stanfield~~ City of Estacada

Local Contact: Scott Hoelscher ~~Jerry Carlson~~ Phone: ~~541-449-3831~~ 503-742-4524 Extension:
Address: 150 Beavercreek Rd. ~~155 West Coe Avenue~~ City: Oregon City ~~Stanfield~~ Zip: 97045 ~~97875-0000~~
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DLCD file No. 003-10

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) Beavercreek Road
egon City, OR 97045

Dept. of Land conservation + Dev.
Attn. Plan Amendment Specialist
635 Capitol St. NE
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