ORDINANCE NO. 636

AN ORDINANCE ADOPTING THE TROUTDALE TRANSPORTATION SYSTEM PLAN

WHEREAS, the Transportation Planning Rule requires each city and county in Oregon to adopt a detailed Transportation System Plan (TSP) to address existing and future transportation needs of the community; and,

WHEREAS, Troutdale's Comprehensive Plan contains several very general policy statements relating to transportation but the City does not now have a plan which addresses transportation issues in a comprehensive manner; and,

WHEREAS, it is important for the City to have a plan that both satisfies state requirements for transportation planning and responds to the transportation needs of the community's growing population; and,

WHEREAS, a special citizen task force assisted in the preparation of the TSP to guide future transportation facility improvements within the City of Troutdale; and,

WHEREAS, the Planning Commission held a public hearing on October 18, 1995 to take public testimony on the proposed Plan and has forwarded this matter to the City Council with a recommendation for adoption; and,

WHEREAS, the City Council held public hearings concerning this proposal on November 28, 1995 and December 12, 1995 to provide opportunity for public comment; and,

WHEREAS, the City Council is satisfied that this matter has been adequately considered;

NOW, THEREFORE BE IT ORDAINED BY THE COUNCIL OF THE CITY OF TROUTDALE THAT:

Section 1: Findings Findings of fact supporting adoption of the proposed Transportation System Plan (TSP) are as follows:

1. The proposed TSP complies with the requirements of the State Transportation Planning Rule which requires local governments to adopt a detailed Plan that addresses all modes of transportation.

2. As a capital facilities plan, the Troutdale TSP serves as a support document to, and an element of, the City's Comprehensive Plan and will guide future decisions pertaining to transportation facilities.

3. The plan recommends transportation improvement projects that will benefit the community as a whole because they will either accommodate higher traffic volumes resulting from increased population growth, or they will improve circulation and neighborhood connectivity for all modes of transportation.

4. Revisions to the proposed TSP as forwarded to the Council by the Planning Commission are desirable and necessary in order to address the following issues and concerns raised by citizens, staff and other governmental organization:
   a) Changes requested by Edgefield Station, Inc. to provide recognition and support for the proposed Edgefield Station development project along Halsey Street.
   b) Changes requested by Multnomah County to clarify local and regional transportation projects and programs.
   c) Changes to clarify the purpose and need for improved circulation and conncectivity and balancing traffic flows within the community particularly as it relates to extension of stub-end streets.
   d) Changes to clarify ambiguities or to correct errors in the plan text and maps.

6. The proposed Plan is consistent with the General Goals and Objectives of the Troutdale Comprehensive Plan and with all applicable Statewide Planning Goals.

7. The Plan will contribute to the public health, safety and welfare of Troutdale citizens.

8. Adoption of the TSP involves a legislative action which is being processed in accordance with Chapter VIII of the Troutdale City Charter.

9. The staff report, minutes and final order from the October 18, 1995 Planning Commission public hearing, and the staff report and minutes of the City Council public hearings of November 28, 1995 and December 12, 1995, together with all written testimony received, are incorporated herein by reference as part of these findings.

10. The Plan as adopted by this ordinance consists of the following:
   a) Troutdale Transportation System Plan, dated September 1995.

b) Recommended revisions to the proposed Troutdale TSP, dated November 22, 1995

c) Additional recommended revisions contained in the staff report dated December 12, 1995.

d) All other revisions to the proposed TSP approved by the City Council at the December 12, 1995 public hearing.

Section 2: Troutdale Transportation System Plan

Based upon the above findings, the Troutdale Transportation System Plan, is hereby adopted.

YEA: 6
NAY: 0
ABSTAIN: 0

Paul Thalhofer

Paul Thalhofer, Mayor
Dated: 12-15-95

George Martinez

George Martinez, City Recorder
Adopted: 12-12-95

Troutdale

Transportation System Plan

Executive Summary

Prepared for the

City of Troutdale

by

DKS Associates

Adopted: December 12, 1995

ORDINANCE No. 636

Transportation Advisory Committee

Citizen's Advisory Committee Members

Gena Williams
Cate Connell
Paul Rabe
William Paugh
Liz Orwatt
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Larry Deacon
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City Council Member

David Ripma

This project was partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. TGM grants rely on federal Intermodal Surface Transportation Efficiency Act and Oregon Lottery funds. The contents of this document do not necessarily reflect the views or policies of the State of Oregon.

Acknowledgement

Production of this report has been the collective effort of the following people:

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TROUTDALE TRANSPORTATION SYSTEM PLAN
EXECUTIVE SUMMARY

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INTRODUCTION

The City of Troutdale has not previously undertaken a thorough review of its transportation system. Transportation issues in the City were last addressed, via goals and policies, in a comprehensive plan update in 1992. Since that time, Troutdale has grown significantly and the adoption of the *Transportation Planning Rule* statewide in May, 1991, mandates comprehensive transportation planning for cities in Oregon. To meet these needs, an update of the Transportation Plan has been prepared. Its aim is to fulfill the state mandates (Goal 12) for comprehensive planning in Troutdale, to address current problem areas, to look into the future to identify the needs created by growth and to provide guidelines for neighborhood traffic planning in the future. The Transportation System Plan (TSP) provides specific information regarding transportation needs to guide future transportation investment in the City and determine how land use and transportation decisions can be brought together beneficially for the City. This plan is intended to be consistent with other jurisdictional plans including Metro's *Regional Transportation Plan* (RTP), Multnomah County's *Urban Road Functional Classification Study* and *Bicycle Master Plan*, and ODOT's *Oregon Transportation Plan* (OTP).

After several months of extensive engineering and planning analysis, the draft Transportation System Plan was prepared for public review. The plan process began with the involvement of the public (through a Transportation Advisory Committee comprised of Troutdale citizens, including one Planning Commission member and one City Council member) and continued with the public providing key input into the vision for transportation in Troutdale through review of the *DRAFT Transportation System Plan*.

PROCESS

The Troutdale Transportation System Plan process is summarized in Figure 1, and includes the following elements:

- Inventory/Data Collection
- Evaluate Existing Conditions and Needs
- Travel Forecasting Needs
- Determine Needs by Mode
- Develop Improvements to Mitigate Deficiencies by Mode
- Cost Estimates of Improvements
- Action Plan
- Draft TS

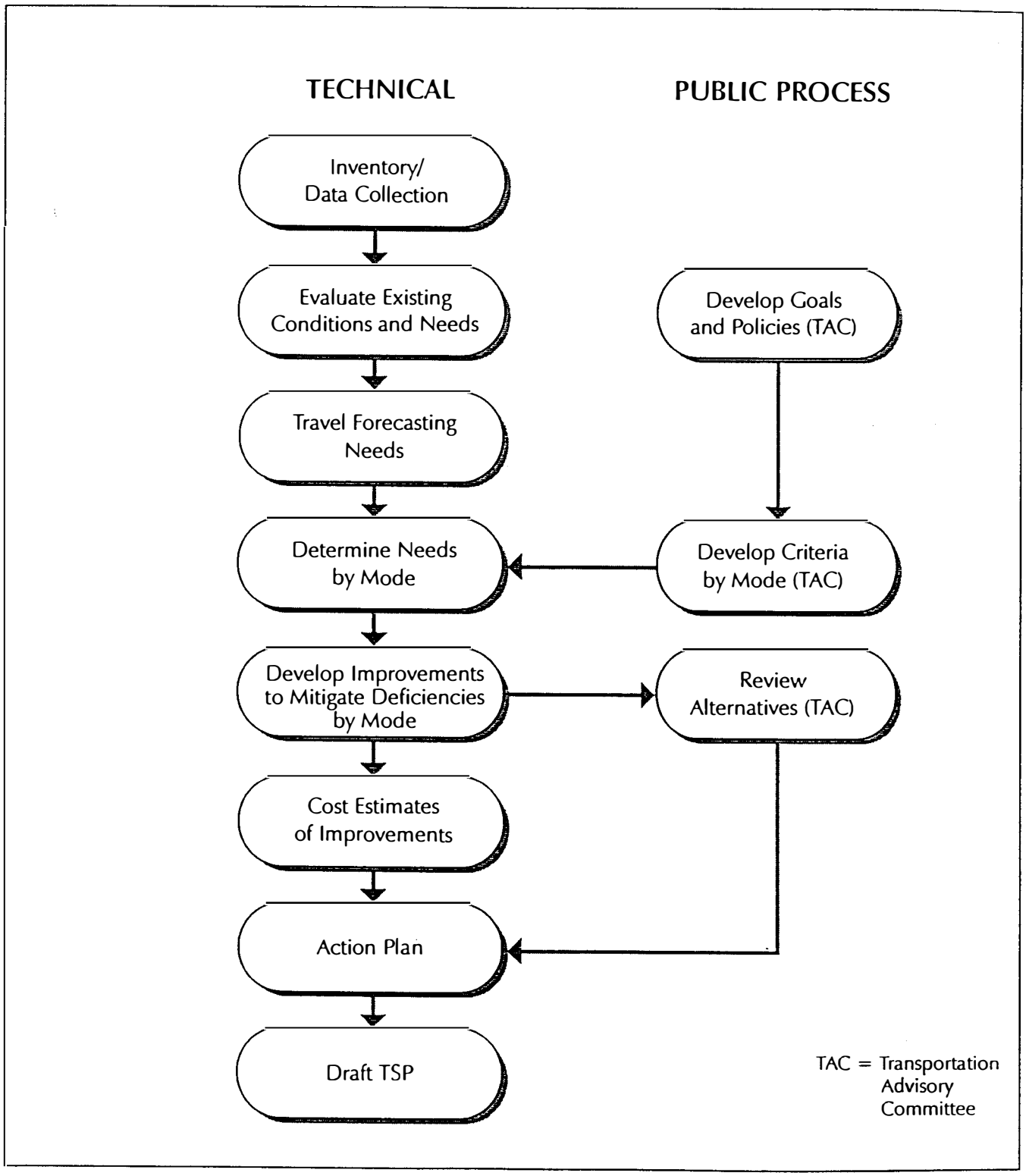

Figure 1
TROUTDALE TSP

The transportation system was broken into five basic modes (or mode groups):

- Pedestrians
- Bicycles
- Transit
- Autos/Trucks
- Other Modes (Including Rail, Air, Water, Pipeline, etc.)

The objective of this TSP was to optimize each of these modes of transportation within Troutdale. The following sections summarize the findings of the Transportation System Plan technical studies. Specific chapters of this report address existing conditions (Chapter 2), Future Demand (Chapter 3), Land Use (Chapter 4), Pedestrians (Chapter 5), Bicycles (Chapter 6), Transit (Chapter 7), Autos/Trucks (Chapter 8), Other Modes (Chapter 9), "The Plan" (Chapter 10) and Costs/Phasing (Chapter 11).

PREFACE

As a starting point for this plan, a few of the commonly asked questions have been outlined to provide an understanding of what this plan is and why it is being done now.

Why do a transportation system plan?

There are two basic reasons for updating the City's current transportation plan. First, it is required by Oregon State law. Statewide Planning Goal 12, Transportation, requires that all Oregon communities prepare a transportation plan to address existing and future access and circulation needs of the community. The recently adopted Transportation Planning Rule (May 1991, and updated April 1995) further defines the specific requirements for a transportation system plan. Troutdale's most recent transportation plans date back to 1992.

A second reason for preparing a transportation plan is that it makes good sense. Just as with family financial planning, transportation planning allows a community to look at its present and future needs and develop strategies to address those needs for the quality of environment it desires. It is a road map to good, well thought out transportation investment within Troutdale. The plan can help avoid building unneeded, redundant or unwanted public infrastructure and assist officials in making short term decisions which do not contradict future needs and thus reduce costs in the long run.

What is a transportation system plan?

A transportation system plan establishes the City's goals in developing its transportation facilities for both the short and long term. It identifies existing and future facility needs and the improvements needed to address those needs. The transportation plan can be developed in components, such as a Trails Plan, an Airport Master Plan, a Transit Plan and a Streets Plan. In Troutdale, Pedestrian, Bicycle, Transit, Auto/Truck and Other Modes (Air, Rail, Water,

Pipelines, etc.) are all incorporated into the Transportation System Plan, although other plans may address each mode in a more detailed manner (i.e. Port of Portland completed a Portland-Troutdale Airport Master Plan in 1990). Basically, the Transportation System Plan (TSP) is a master plan to guide decision making in Troutdale and focus future evaluation of transportation facilities within a community context. Further detailed project specific or corridor studies will be undertaken as implementing actions of the TSP.

Why do the plan now?

Periodic review of the City's Comprehensive Plan is required every 4 to 10 years (House Bill 2150). The Transportation System Plan is an element of this process. The Transportation Planning Rule requires a Transportation Plan be put in place within five years (from 1991). It is timely and important to complete the updated Transportation System Plan and adopt it this year. Metro is expected to complete the Portland Region TSP in 1996 and all cities are required to have local TSP's in place within 12 months of the Metro study.

SUMMARY

GOALS AND POLICIES

The Transportation Advisory Committee (TAC) developed the following transportation-related goals and policies to guide transportation system development in Troutdale. Some policies are provided with background information and explanation regarding their implementation:

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

Policy 1a. No new limited access highway shall be constructed within Troutdale other than the proposed H-1 alignment of the Mount Hood Parkway, (more detail about this policy is provided on page 8-7 of the TSP report).

Policy 1b. Minimize the "barrier" effect of large arterial streets (for example, 257th Drive).

Pedestrian crossing spacing, traffic signal spacing and landscape standards for large arterial streets in Troutdale will be developed in conjunction with Multnomah County. The urban design aspects of 257th Avenue should be addressed through a corridor or task force study.

Policy 1c. Make streets as "unobtrusive" to the community as possible.

The city will maintain design standards for local streets which address landscaping, cross section width, and provision of alternative modes for each functional classification.

Policy 1d. Build neighborhood streets to minimize speeding.

The city will develop and maintain design standards and criteria for neighborhood traffic management for use in new development as well as existing neighborhoods for City streets. Measures to be developed may include narrower streets, humps, traffic circles, curb/sidewalk bulbs, curving streets, diverters and/or other measures.

Policy 1e. Encourage pedestrian accessibility by providing safe, secure and desirable pedestrian routes, with a maximum spacing of one-half mile between elements of the pedestrian network.

The city will develop and maintain a "pedestrian grid" in Troutdale, outlining pedestrian routes. Sidewalk standards will be developed to define various widths, as necessary, for City street types.

Policy 1f. In residential areas, discourage extended use of on-street parking.

The city will maintain code provisions addressing extended on-street parking and on-street parking of vehicles used for commercial use or non-residential-type purposes (i.e. semi trucks or home businesses with extensive use of on-street parking).

Goal 2. Provide a transportation system in Troutdale which is safe, reduces length of travel and limits congestion.

Policy 2a. Design of streets should relate to their intended use.

A functional classification system shall be developed for Troutdale which meets the City's needs and respects needs of other agencies (Multnomah County, ODOT, Metro, City of Gresham, City of Wood Village). Appropriate design standards for these roadways will be developed by the appropriate jurisdiction.

Policy 2b. Local streets shall be designed to encourage a reduction in trip length by providing connectivity and limiting out-of-direction travel. Provide connectivity to activity centers and destinations 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.

The purpose of this policy is to provide accessibility to various destinations within Troutdale without creating a grid-type network with long, straight streets which encourage speeding or through traffic. Spacing standards for roadways, signals and pedestrian connections will need to be developed.

Policy 2c. Safe and secure routes to schools shall be designated for each school and any new residential project shall identify the safe path to school for children.

Working with the school district and citizens, the City will need to undertake a process of defining school routes, using the ITE process as a guide.

Policy 2d. No Troutdale streets, other than 257th Avenue, the proposed 242nd Connector, and Stark Street west of Troutdale Road, shall exceed one travel lane in each direction, with turn lanes allowed to accommodate demand. Halsey Street shall be sized to adequately support Edgefield Station.

To avoid impacts of land use on roadway capacity, land uses in the comprehensive plan should be followed. Unless designed and built as part of a transit oriented development (TOD),[1] large retail land uses (greater than 20,000 SF) in areas not zoned commercial should be avoided (allowing for some service commercial for adjacent uses) due to the significantly larger vehicle traffic generation. Retail developments would be responsible for improvements required to accommodate their associated traffic.

Policy 2e. Safe and secure pedestrian and bicycle ways shall be designed between parks and other activity centers in Troutdale.

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[1] As defined by Transportation Planning Rule, section 660-12-005(22).

Goal 3. Provide a balanced transportation system and reduce the number of trips by single occupant vehicles.

Policy 3a. Commercial, community service and high employment industrial uses shall be developed and sited to be supportive and convenient to pedestrians, bicyclists and transit riders. Pedestrian and bicycle amenities, transit facilities, ride-share programs or similar commute trip reduction measures shall be incorporated in commercial and industrial development to the maximum extent possible.

Standards will be necessary for development adjacent to transit streets. Site design requirements will be needed. Pedestrian accessways, without vehicle conflicts, will need to be identified for every site for access to public right-of-way and pedestrian system (alternatives with minimum conflict may also be developed).

Policy 3b. Recreational trails, including the Airport Loop and 40-Mile Loop, shall link to Troutdale's bicycle and pedestrian plans.

The pedestrian plan will need to indicate linkages between recreational and basic pedestrian network. Design standards for recreational elements will need to be developed and maintained.

Policy 3c. Consistent with the Multnomah County Bicycle Master Plan, bicycle lanes should be constructed on all arterials and collectors within Troutdale (with construction or reconstruction projects). All schools, parks, public facilities and retail areas shall have direct access to a bicycle lane or route.

The bicycle plan will be defined and needs to connect key activity centers with adjacent access. Standards for bicycle facilities within Troutdale will be developed and maintained. Definition of needs for bicycle parking will be required including guidelines on placement on sites. Where activity centers are on local streets, connections to bicycle lanes shall be designated.

Policy 3d. The City shall coordinate with Tri-Met to improve transit service to Troutdale. Transit will use arterial and collector streets in Troutdale.

The Tri-Met service plan will be the guiding transit plan for Troutdale. Adding elements such as park-and-ride lots near I-84, circulation routes linking retail to residential in Troutdale and direct service to downtown Portland (or Columbia Corridor) are samples of the input to be provided to Tri-Met.

Policy 3e. Troutdale will participate in trip reduction strategies developed regionally, including employment, tourist and recreational trip programs.

DEQ and Metro are developing regional policies regarding trip reduction. Some of these policies are aimed at provision of parking and others are aimed at ridesharing (Employee Commute Options - ECO rules).

Policy 3f. Support Edgefield Station, Incorporated in its efforts to construct the Edgefield Station multi-modal Transportation Center.

The Edgefield Station development project intends to reduce single occupant vehicles and VMT by dispersing the travelling public among a variety of transportation modes to destination points in the Columbia Gorge National Scenic Area, Mount Hood Recreation Area and the Metropolitan region.

Goal 4. Provide for efficient movement of goods.

Policy 4a. Grade separation or gate control should be considered for all railroad crossings.

Support the upgrade of railroad grade crossings to current design standards.

Policy 4b. Light industrial land uses shall generally be confined to the area surrounding I-84 and the railroad.

Policy 4c. The City shall coordinate and cooperate with the Port of Portland on its plans for the Troutdale Airport.

Policy 4d. Designated arterial routes and freeway access areas in Troutdale are essential for efficient movement of goods. Design of these facilities and adjacent land uses should reflect the needs of goods movement.

Work with ODOT to improve freight movement in the Frontage Road area to reduce conflicts between truck maneuvering and through moving residents and tourists.

Policy 4e. Access control standards shall be preserved on arterial routes to reduce conflicts between vehicles and trucks, as well as conflicts between vehicles and pedestrians.

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

Policy 5a. Construct transportation facilities to meet the requirements of the Americans with Disabilities Act.

RECOMMENDATIONS

As described in the introduction, optimal modal plans were developed for each mode of transportation used in Troutdale, including, in alphabetical order, automobiles, bicycles, pedestrians, transit, trucks and other modes (i.e. air, water, rail, pipeline). For each mode, a master plan, showing long range priorities for each mode, and an action plan, showing modal priorities for routes in the City, were developed (with the exception of transit and trucks, for which only a master plan was developed). The master plan summarizes projects which are desirable to complete the modal network in Troutdale and should be pursued as opportunities arise (via development or other means). The action plan consists of projects which would be the steps or building blocks needed to implement the intent of the modal master plan. These projects should become priorities for Troutdale to pursue, either via development, state, county or city funding. Action plan projects generally complete key links in the modal networks or serve highly used locations. Modal summaries are provided and figures 2 through 9 summarize the modal plans for Troutdale.

AUTOMOBILES

Forecasts of 2015 traffic volumes were developed using Metro's forecast model. These data were reviewed and refined to produce detailed traffic forecasts at intersections. When assigned to the roadway network, this level of traffic growth is expected to create the need for improvements at several locations. Table 1 summarizes the improvements which would mitigate 2015 conditions.

The Transportation Advisory Committee evaluated various strategies and then ranked them. Each committee member was assigned a certain number of points that he or she could allocate to each of the strategies according to his or her vision of priorities for the City of Troutdale. The ranking of these strategies follows, from most important to least important[2]:

- Neighborhood Traffic Management
- Additional Signals on Arterial/Collector Intersections
- Improve Connectivity of Residential Areas (Hensley, Cherry Park, etc.)
- Circulation Enhancements (Sandy overcrossing of I-84 to Halsey)
- Regional Circulation (Mt. Hood Parkway in Gresham)
- Provision of left turning lanes on collectors (Troutdale Road)
- Intersection Modifications
- Mitigate all Intersections to Level of Service D in PM Peak Hour
- Develop TDM Programs to Reduce Peak Traffic for Employers in Troutdale

The City, through its Capital Improvement Program (CIP), joint funding with other agencies (County, Metro) and development approval would implement the projects listed in Table 1. Figure 2 shows the proposed functional classification system for Troutdale. The Proposed Auto Master Plan is shown in Figure 3 and the proposed Auto Action Plan is shown in Figure 4. In addition, Neighborhood Traffic Management (NTM) and Transportation Demand Management (TDM) are places that City funds can be allocated to improve transportation conditions in Troutdale. Discussions of NTM and TDM are provided below.

NEIGHBORHOOD TRAFFIC MANAGEMENT

Neighborhood Traffic Management (NTM) is a term that has been used to describe traffic control devices typically used in residential neighborhoods to slow traffic. A number of streets in Troutdale have been identified as Neighborhood streets. These streets are typically longer than the average local street and would be appropriate locations for potential of NTM applications. A wide range of traffic control devices are being tested throughout the region, including such devices as chokers, medians, traffic circles, speed humps and on-street parking. However, no standards have been developed in Troutdale yet. NTM traffic control devices must be tested within the confines of Troutdale as guidelines are developed for implementation criteria and applicability. The guidelines should address

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[2] Appendix H contains the overall scoring.

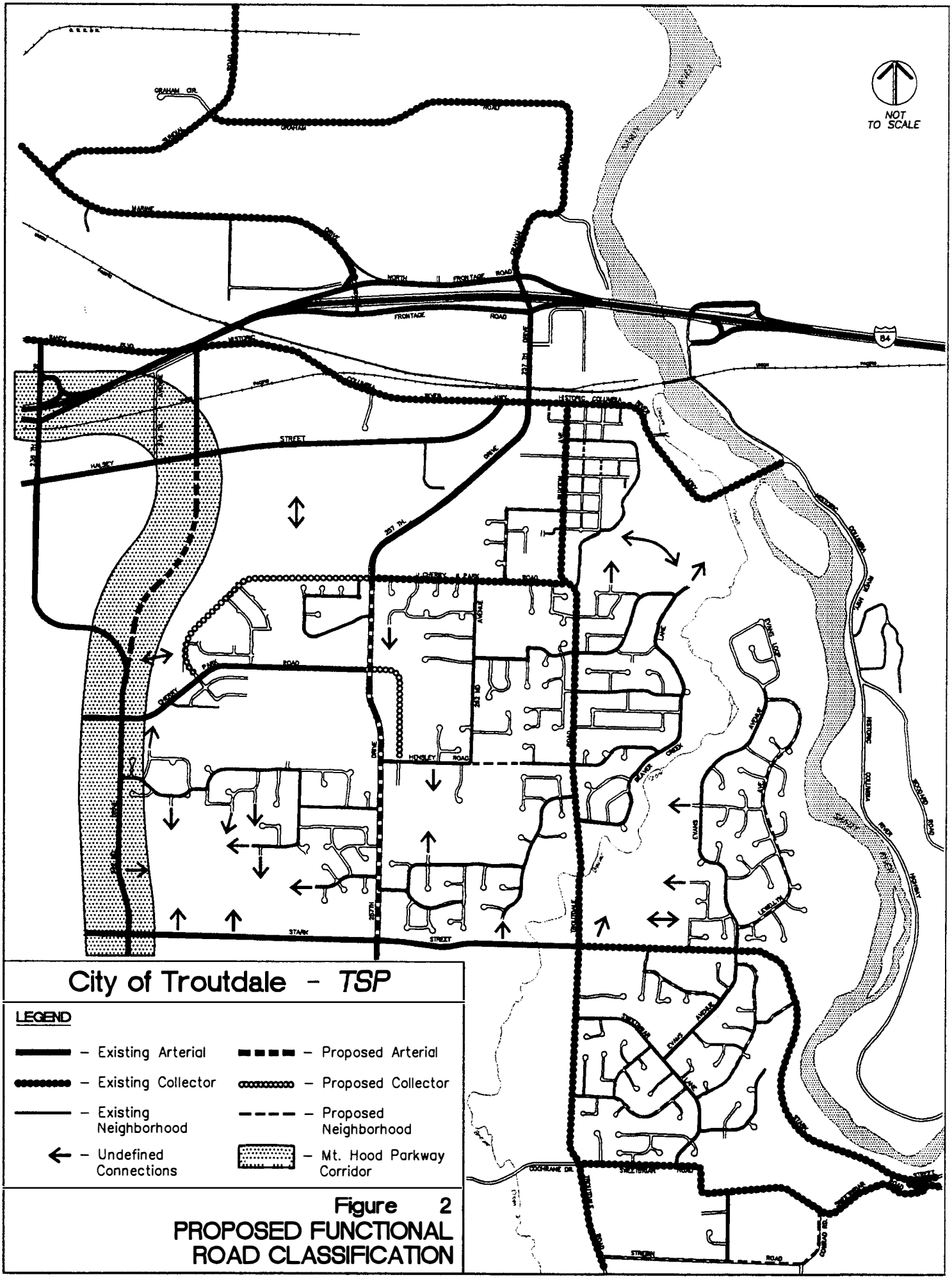


Figure 2
PROPOSED FUNCTIONAL ROAD CLASSIFICATION

both existing streets and new roads built with development. Also, NTM should be applied only where a majority of neighborhood residents agree that it would be effective (for example, using a petition process).

TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. The following are examples of TDM measures:

- Work with employers to install bicycle racks
- Work with property owners to place parking stalls for carpoolers near building entrances
- Provide incentives to take transit and use other modes (i.e. free transit pass)
- Provide information regarding commute options to larger employers (eg. carpools, vanpools)
- Encourage linkage of housing, retail and employment centers (including having local home builders and employers provide incentives to live and work in or near Troutdale)
- Encourage flexible working hours
- Encourage telecommuting
- Schedule deliveries outside of peak hours
- Provide City staff support to Troutdale TDM coordination

ACTION PLAN

A series of traffic improvements were identified which are needed to meet future circulation needs of the year 2015. Some of these projects may be addressed through the Multnomah County capital improvement program. Others will be built by adjacent development. Lane configurations are shown for reference only and ultimately are the responsibility of Multnomah County.

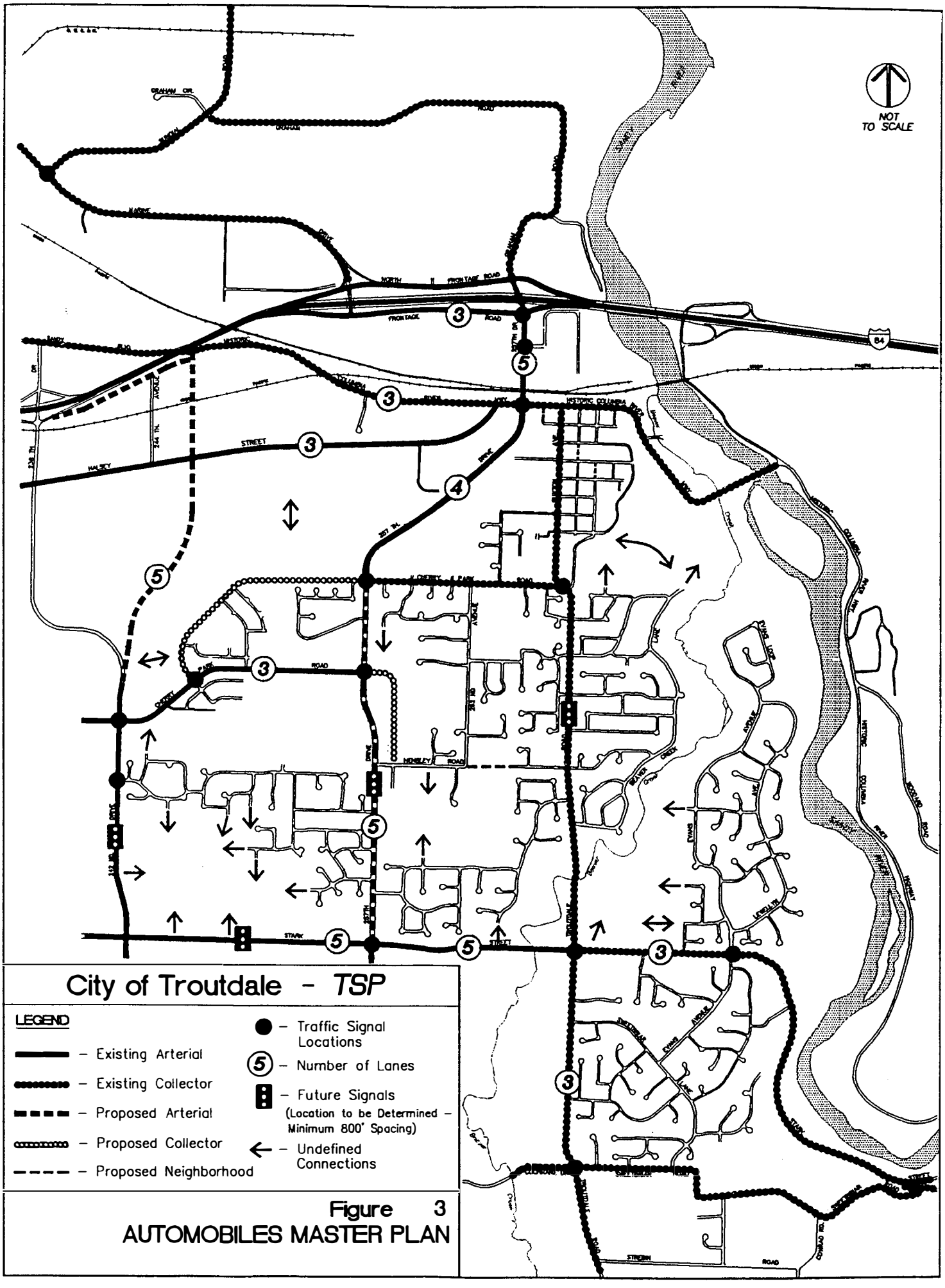
Several roadway connections will be needed within neighborhood areas to reduce out of direction travel for vehicles, pedestrians and bicyclists. The Master Plan provides arrows to indicate desired connection points and access points to arterial or collector roadways. In each case, these connections are aimed at meeting the goal of improved connectivity in the community. 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. Neighborhood traffic management devices could include speed humps, traffic circles, curvilinear street design, or other measures devised to constrain vehicle speeds and to discourage non-neighborhood through traffic.

The arrows shown on the Master Plan map indicate priority connections only. Other stub end streets in the City's road network may become cul-de-sacs, extended cul-de-sacs or provide local connections. Connections from these stub end streets could be deemed appropriate and beneficial to the public, as future development occurs. The goal would continue to be improved city connectivity for all modes of transportation.

Several of these "connection points" with arterial streets may require signalization. The master plan establishes guidelines of 800 foot spacing between signals in certain segments where these connections are likely.

Table 1
2015 Project List

Num	Location	Description
1	257th Drive/North Frontage Road	Specific design alternatives to be subject to future studies conducted with ODOT, City and County.
2	Marine Drive/North Frontage Road	Specific design alternatives to be subject to future studies conducted with ODOT, City and County.
3	Marine Drive/Frontage Road	Specific design alternatives to be subject to future studies conducted with ODOT, City and County.
4	257th Drive/Frontage Road	Specific design alternatives to be subject to future studies conducted with ODOT, City and County.
5	Marine Drive/Sundial Road	Signalize Intersection.
6	Buxton Avenue/Columbia River Hwy	Restripe to include eastbound right turn lane.
7	Troutdale Road/Stark Street	Northbound approach will have left turn lane, eastbound approach will have two travel lanes and a left turn lane and westbound approach will have one travel lane and a left turn lane (Multnomah County CIP makes Troutdale Road three lanes south of Stark Street). Add southbound left turn lane.
8	257th Drive/Cherry Park Road (South)	Add southbound right turn lane.
9	Frontage Road between Marine Drive and 257th Drive	Specific design alternatives to be subject to future studies conducted with ODOT, City and County.
10	257th Drive/Historic Columbia River Highway	Intersection improvements (to be determined by further study).
11	Hensley Road Extension	Connect Hensley Road between 257th and Troutdale Road
12	242nd/244th Extension	Extend 242nd north to Halsey and Sandy/Historic Columbia River Highway. Connect Sandy to Historic Columbia River Highway. Study linkage between I-84 exit 16A and 242nd Avenue extension.
13	North Star Way	Connection between Sturges and extended 242nd.
14	Sturges Drive	Complete roadway.
15	Sturges Drive/Cherry Park Road	Signalize Intersection.
16	Citywide	Optimization and coordination of traffic signals.
17	242nd Drive/23rd Street	Signalize Intersection.
18	Stark Street (242nd to 257th)	Signalize Intersection (in corridor).
19	242nd Drive (Stark St to 23rd St)	Signalize Intersection (in corridor).
20	Halsey Street (238th Ave to Historic Columbia River Highway)	Widen to three lanes, provide bike lanes and sidewalks, signalize if necessary.

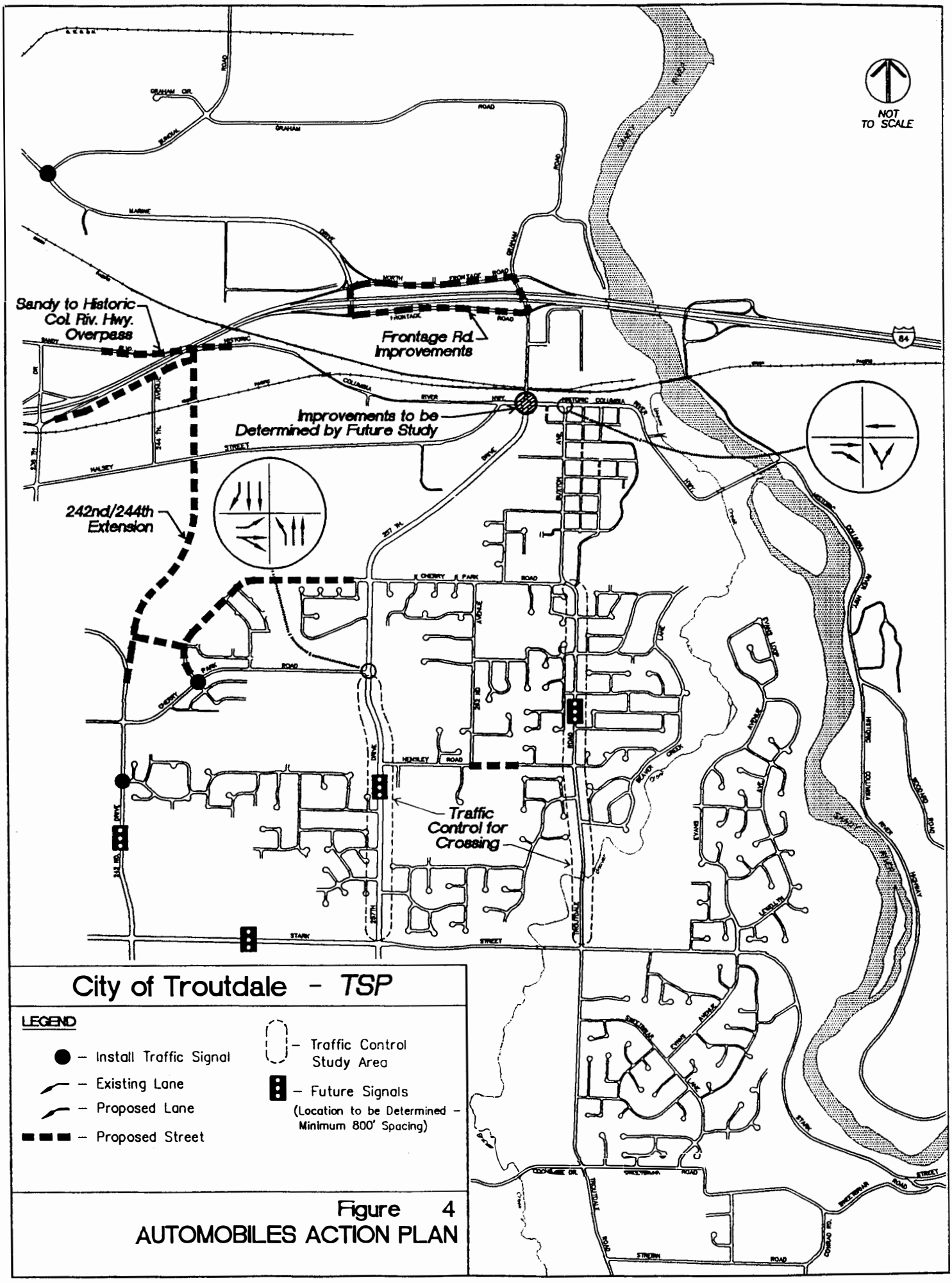


City of Troutdale - *TSP*

LEGEND

- Existing Arterial
- Existing Collector
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood
- ● – Traffic Signal Locations
- (5) – Number of Lanes
- Future Signals (Location to be Determined – Minimum 800' Spacing)
- ← – Undefined Connections

Figure 3
AUTOMOBILES MASTER PLAN



City of Troutdale - *TSP*

LEGEND

- ● – Install Traffic Signal
- – Existing Lane
- – Proposed Lane
- ▬ ▬ ▬ – Proposed Street
- ▯ – Traffic Control Study Area
- ▮ – Future Signals (Location to be Determined – Minimum 800' Spacing)

Figure 4

AUTOMOBILES ACTION PLAN

BICYCLES

Bikeways are currently provided on many of the arterial and collector roadways in the City of Troutdale, forming a good bikeway network (see Figure 5). Bikeways generally consist of designated bike lanes and segments where specific accommodation has been made for bicyclists. There are, however, segments where bikeways do not exist on the arterial and collector roadway network. Continuity and connectivity are key issues for bicyclists and gaps in the bikeway network cause the most significant problems for bicyclists.

The Transportation Advisory Committee evaluated several strategies and then ranked them. Each committee member was assigned a certain number of points that he or she could allocate to each of the strategies according to his or her vision of priorities for the City of Troutdale. The ranking of these strategies follows, from most important to least important[3]:

- Finish 40-Mile Loop in Troutdale
- Connect key bicycle corridors to schools, parks and activity centers (public facilities, etc.)
- Arterial crossing enhancement
- Reconstruct all bikeways to City of Troutdale standards
- Bicycle corridors that connect neighborhoods
- Fill in gaps in the network where some bikeways exist
- Bicycle corridors that connect to major recreational facilities such as the 40-Mile Loop, Airport Loop and Marine Drive
- Bicycle corridors that access retail areas
- Bicycle corridors that commuters might use

Completion of the 40-Mile Loop in Troutdale, connecting key bicycle corridors to schools parks and activity centers and arterial crossings were clearly viewed as important strategies by the group. Other strategies each received several points, but were clearly less important than the first three strategies.

A list of likely actions to achieve fulfillment of these priorities was developed into a Bicycle Master Plan. The Bicycle Master Plan (Figure 5) is an overall plan and summarizes the "wish list" of bicycle-related projects in Troutdale. From this Master Plan, a more specific, shorter term, Action Plan was developed. The Action Plan consists of projects that the City should actively try to fund in the next ten years. The Action Plan is consistent with plans developed by Metro and Multnomah County.[4] 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 integrated into project development.

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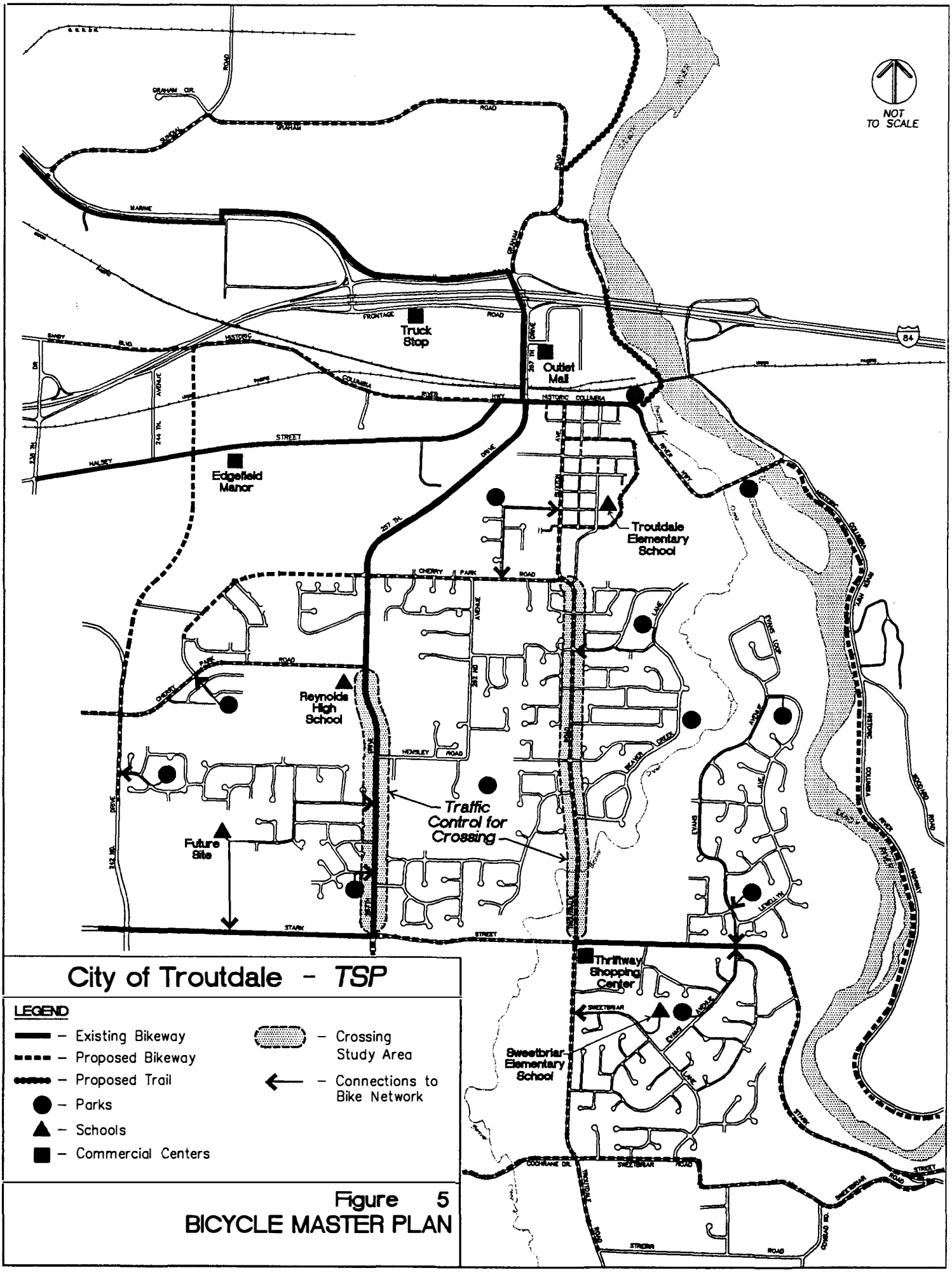
[3] Appendix H contains the overall scoring.

[4] *Draft 1995 Interim Federal Regional Transportation Plan*, April, 1995, Metro and *Bicycle Master Plan*, Multnomah County, Oregon, December, 1990.



City of Troutdale - *TSP*

LEGEND

- Existing Bikeway
- Proposed Bikeway
- Proposed Trail
- Parks
- Schools
- Commercial Centers
- Crossing Study Area
- Connections to Bike Network

Figure 5
BICYCLE MASTER PLAN

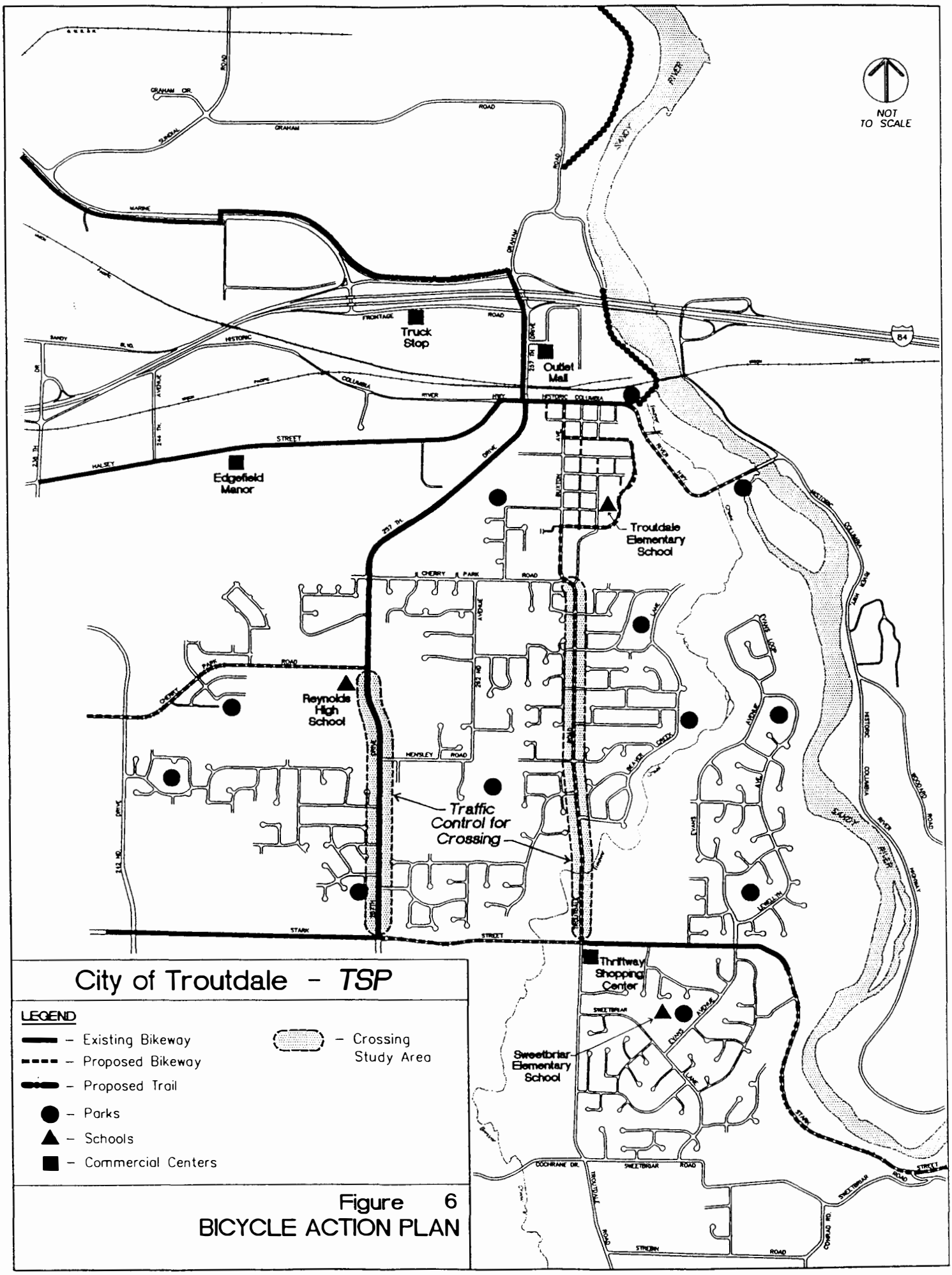


Figure 6
BICYCLE ACTION PLAN

The following section outlines potential bicycle projects in Troutdale. The City, through its Capital Improvement Program (CIP), joint funding with other agencies (County, Metro) and development approval would implement these projects. Figure 6 summarizes the Bicycle Action Plan.

Action Plan Projects

- **40-Mile Loop.** A number of projects could be undertaken to complete various segments of the 40-Mile Loop in Troutdale. Separate segments could be completed under different funding structures.
- **Cherry Park Road (South).** This project would construct bike lanes between 242nd Avenue (Hogan Drive) and 257th Avenue (Kane Road). Cherry Park Road (South) fronts Reynolds High School and provides key east-west connectivity in Troutdale.
- **Stark Street.** This project would construct bike lanes for the length of Stark Street within Troutdale. Bike lanes will be constructed as part of the proposed project between 257th Avenue and Troutdale Road. Another project should be considered to construct bike lanes east of Troutdale Road. This is a key east-west route in Troutdale and serves Mount Hood Community College, a retail shopping center and provides access to a school and park to the south and two parks to the north.
- **Troutdale Road (north of Stark Street).** This project would construct bike lanes along Troutdale Road where they do not currently exist. A majority of this roadway already has bike lanes, so this project would "fill in the gaps".
- **Buxton Avenue.** This project would construct bike lanes between Historic Columbia River Highway and Cherry Park Road (North), filling in the gap in the bicycle network between where the existing bike lanes on Troutdale Road end and Historic Columbia River Highway and downtown Troutdale. This project completes a key north-south route in Troutdale and provides direct access to downtown Troutdale for many Troutdale residents.
- **Pedestrian/Bicyclist signal on 257th Drive** between Cherry Park Road (South) and Stark Street
- **Pedestrian/Bicyclist signal on Troutdale Road** between Cherry Park Road (North) and Stark Street

PEDESTRIANS

Sidewalks are provided on many of the arterial and collector roadways (see Figure 2-11) in the City of Troutdale, forming a good existing pedestrian network. However, there are several gaps in the existing network where the sidewalks are discontinuous along a segment of roadway. These gaps significantly impact the potential for pedestrian circulation. Generally, where sidewalks are available, there is sufficient capacity. In other words, it is much more important that a continuous sidewalk be available than that it be of a certain size or type.

The most important existing pedestrian needs in Troutdale are connectivity of a system of walkways within a half mile grid and connectivity to key activity centers in Troutdale (parks, schools, retail, etc.). This includes safe, convenient crossings of large arterial streets which act as barriers to pedestrian movement. In the future, pedestrian needs will be similar, but there will be additional activity centers that will need to be considered/interconnected.

The Transportation Advisory Committee evaluated various strategies and then ranked them. Each committee member was assigned a certain number of points that he or she could allocate to each of the strategies according to his or her vision of priorities for the City of Troutdale. The ranking of these strategies follows from most important to least important[5]:

- Arterial crossing enhancement
- Connect key pedestrian corridors to schools, parks and activity centers (public facilities, commercial areas, etc.)
- Pedestrian corridors that connect neighborhoods
- Fill in gaps in the network where some sidewalks exist
- Pedestrian corridors that connect to major transit locations
- Pedestrian corridors that connect to major recreational uses such as the 40-Mile Loop
- Pedestrian corridors that commuters might use
- Reconstruct all sidewalks to City of Troutdale standards

Arterial crossing enhancement was clearly considered to be the highest priority for pedestrians in Troutdale. This strategy is strongly related to the perceived "barrier" effect of 257th Drive through the City of Troutdale. It is very difficult for pedestrians to cross this street, especially along certain segments where signal protection is not available. Connections to schools, parks, retail centers and recreation areas relate best to the policies developed for Troutdale. From this an action list was developed to focus in these two areas.

A list of likely actions to achieve fulfillment of these priorities was developed into a Pedestrian Master Plan. The Pedestrian Master Plan (Figure 7) is an overall plan and summarizes the "wish list" of pedestrian-related projects in Troutdale. From this Master Plan, a more specific, shorter term, Action Plan was developed. The Action Plan consists of projects that the City should provide priority in

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[5] Appendix H contains overall scoring.

funding. As development occurs, streets are rebuilt and other opportunities (such as grant programs) arise, projects on the Master Plan should be pursued as well.

The following section outlines potential pedestrian projects in Troutdale. The City, through its Capital Improvement Program (CIP), joint funding with other agencies (Multnomah County, Metro) and development approval would implement these projects. The following considerations should be made for each sidewalk installation:

- Every attempt should be made to meet City standards
- Sidewalks should be a minimum of five feet wide
- Landscape strips should be considered and are encouraged

Figure 8 summarizes the Pedestrian Action Plan.

Action Plan Projects

- **257th Avenue Crossing.** Provide additional traffic signals and/or pedestrian signals between Cherry Park Road (South) and Stark Street. This project provides access across a major barrier in Troutdale.
- **Troutdale Road Crossing.** Provide a traffic or pedestrian signal between Cherry Park Road (North) and Stark Street, should volumes on Troutdale Road increase above 10,000 ADT. This provides pedestrian access across a potential pedestrian barrier in Troutdale.
- **Troutdale Road.** Construct sidewalks (to match existing sidewalk) on both sides where they do not currently exist. This project would complete a key north-south route.
- **Stark Street.** Construct sidewalk on north side, just east of 242nd Drive intersection, to meet existing sidewalk to the east. Stark Street is an arterial and is considered a key east-west route in Troutdale.
- **Stark Street.** Construct sidewalks from Troutdale Road to 257th Drive where they do not currently exist.
- **Stark Street.** Construct sidewalk on north from Troutdale Road to Hampton.
- **Halsey Street.** Construct sidewalks on each side from City Limits to Historic Columbia River Highway. Halsey Street provides a key east-west pedestrian linkage.
- **Historic Columbia River Highway.** Construct sidewalks on each side from Kibling Street to Sandy River Bridge. Historic Columbia River Highway provides access to Troutdale Community Park and the Sandy River. This is a recreational route and also provides a key east-west linkage.
- **3rd Street/Sandy Avenue/8th Street loop.** Construct minimum sidewalks on both sides. The project provides pedestrian connectivity between Troutdale Elementary School and the existing pedestrian network on Buxton Avenue.
- **Hensley Road.** Construct sidewalks on the existing street and on both sides of the proposed Hensley Road extension where it does not currently exist. This route provides a key east-west linkage, especially if a traffic signal crossing of 257th Avenue is provided at Hensley Road.

- **Troutdale Road.** Construct sidewalks on the west side from Stark Street to Sweetbriar Road.
- **242nd Drive.** Construct sidewalks on the east side of the street where it does not currently exist.
- **Cherry Park Road (South).** Construct sidewalks from 18th Way to 257th Drive where it does not currently exist (sidewalk exists for a portion of the way on the north side of Cherry Park Road (South) and on both sides near 257th Drive).

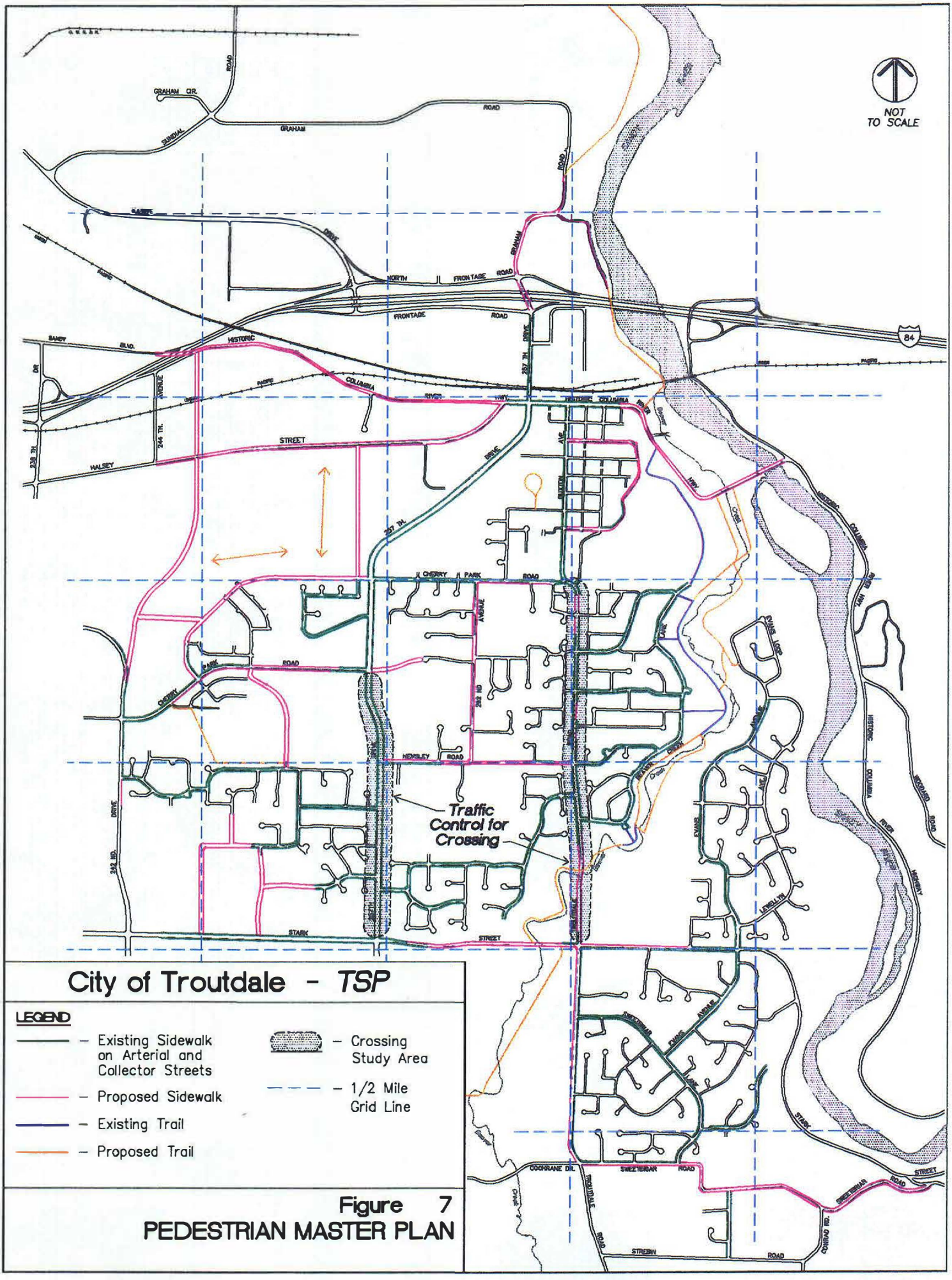

Figure 7
PEDESTRIAN MASTER PLAN

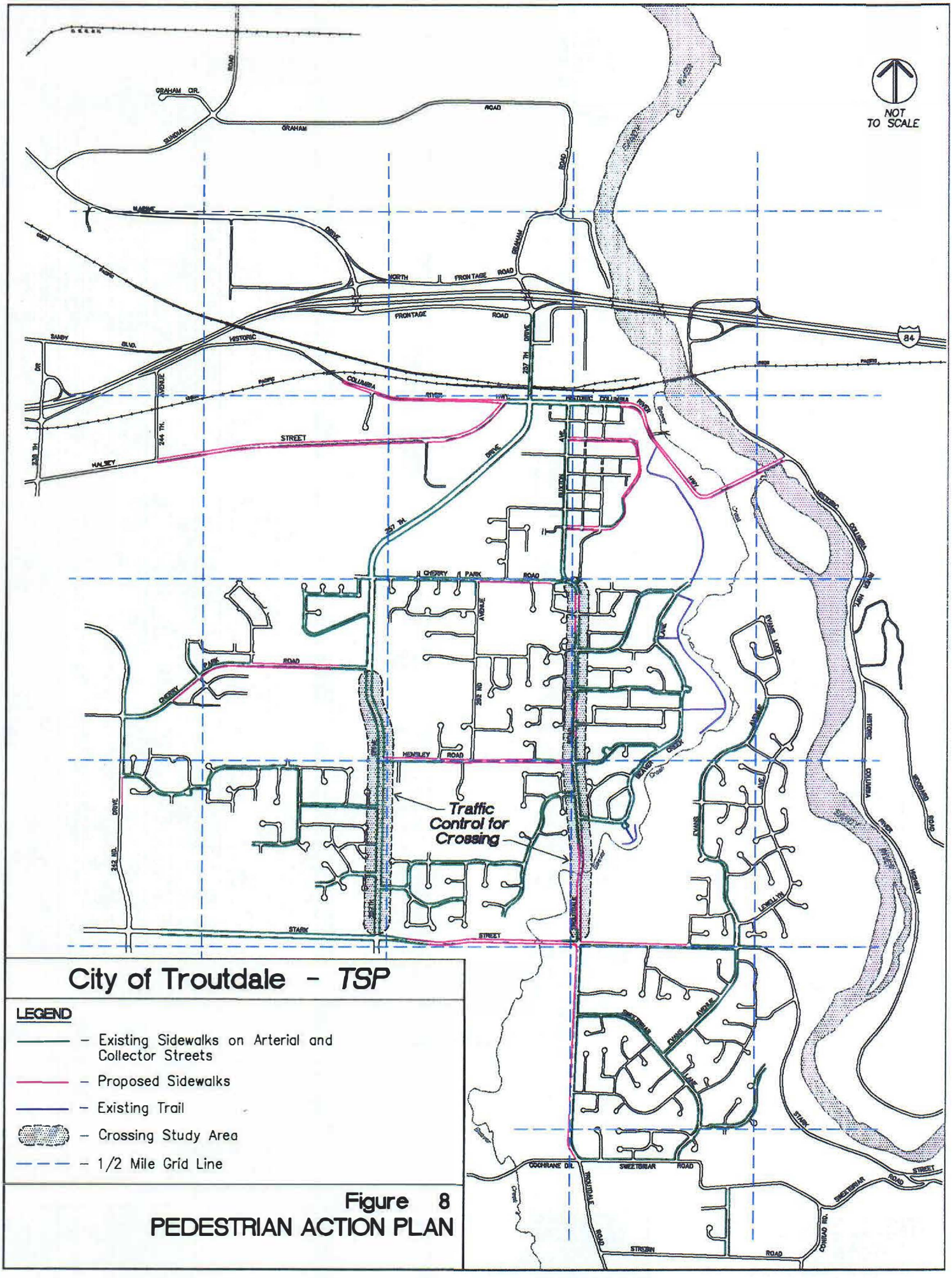

Figure 8
PEDESTRIAN ACTION PLAN

TRANSIT

There are three bus routes passing through the City of Troutdale. Currently, these routes generally travel along Halsey Street, 257th Drive, Stark Street and Troutdale Road. They all terminate in downtown Troutdale on the Historic Columbia River Highway near Kibling Street. These routes serve a number of activity centers in Troutdale, however, there are three key activity centers that are not served by the current routes:

- Columbia Gorge Factory Outlet Mall
- Retail Activity along Frontage Road
- Troutdale Airport and surrounding Industrial areas

These three activity centers all have significant employment generation and are destinations for many people. The Factory Outlet Mall and Frontage Roads are scheduled to be added to two of the three existing routes in September, 1995. Existing needs include service to the remaining activity centers (identified above) in Troutdale and future needs include providing service to activity centers that are created by future development in Troutdale.

Metro's Draft Regional Transportation Plan (RTP) identifies Halsey Street, 257th Drive and Stark Street west of 257th Drive as part of the *primary transit network*. Primary routes provide the backbone of the transit system and are intended to provide the highest quality service and carry the highest passenger volumes. These routes would be desirable locations for any transit oriented developments in Troutdale.

The Transportation Advisory Committee evaluated several strategies and then ranked them. Each committee member was assigned a certain number of points that he or she could allocate to each of the strategies according to his or her priorities. The ranking of these strategies follows, from most important to least important[6]:

- Provide direct/Express access to MAX
- Provide access to employment areas
- Provide access to activity & service centers (i.e. MHCC, Hospitals, Schools, etc.)
- Provide access to commercial areas
- Provide express routes to regional employment centers (i.e. downtown Portland)
- Provide Park & Ride lots
- Provide Bus Shelters
- Provide service often (i.e. every 20 minutes) in peak commute periods

Tri-Met is responsible for any changes in routes through their annual transit service plan process. In order for the City to have its transit needs addressed, the City can provide input to Tri-Met through this process. The following projects were identified as desirable for Troutdale:

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[6] See Appendix H for overall scoring.

- **New route** (or extension of Halsey line) connecting Gateway Transit Center to Outlet Mall via Halsey Street and continuing down either 257th Avenue or Troutdale Road to Stark Street to Rockwood MAX station (see Figure 9).

- **New route** (or extension of existing routes) along Cherry Park Road between 242nd Avenue and 257th Avenue.

- **Provide bus shelters** on all fronting development on transit streets and

- **Define major transit stop sites** on 257th, Stark, Halsey and Troutdale Road.

- **Build park-and-ride** facility at I-84 interchange funded by City and ODOT
  - Work with ODOT as construction to convert possible staging area for I-84 to park-and-ride
  - Site to be accessible to 40-Mile Loop and Airport as recreation loop on weekends.

- **Study the desirability** of establishing a downtown pedestrian district.

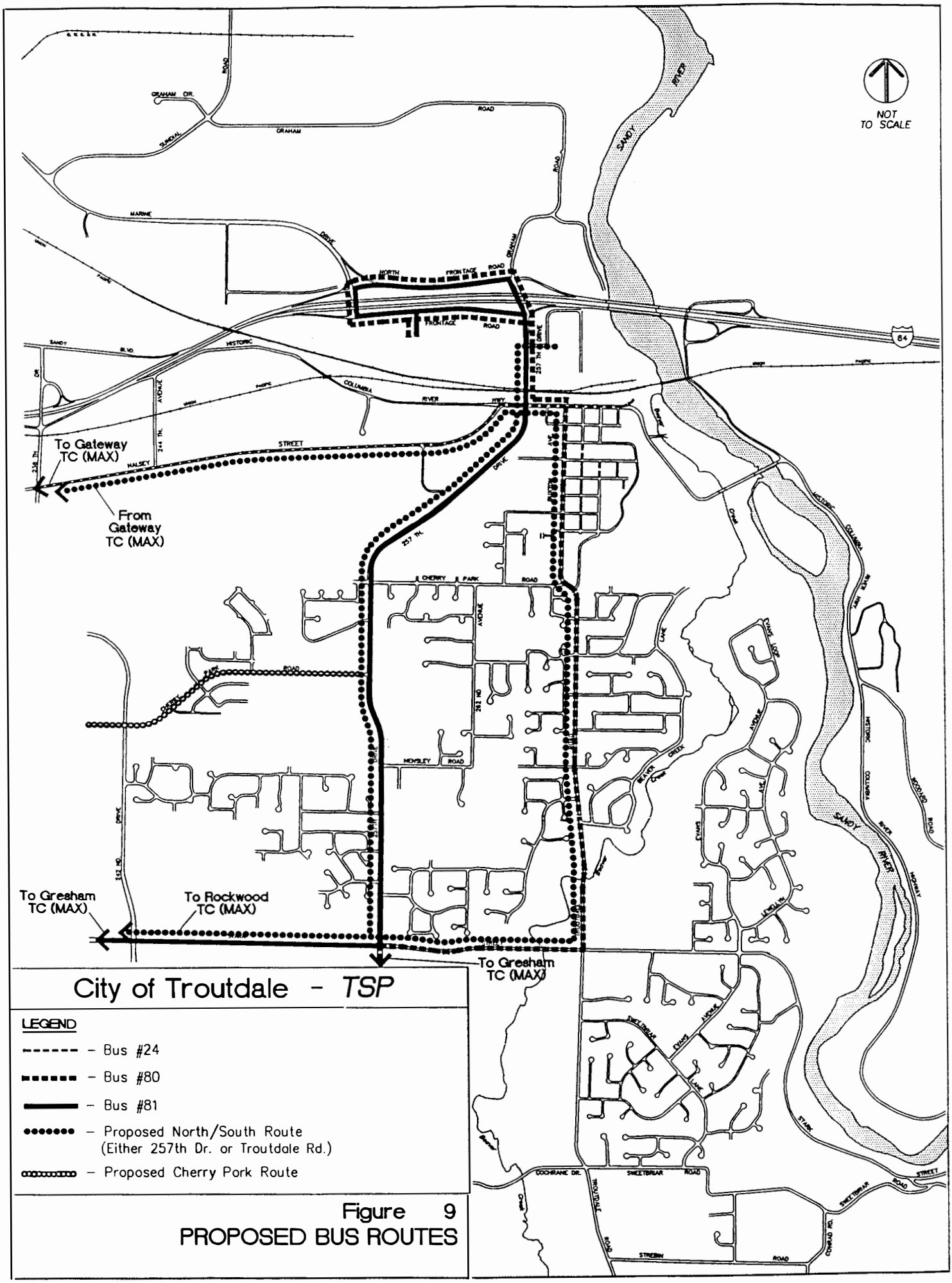

Figure 9
PROPOSED BUS ROUTES

TRUCKS

Troutdale is a hub of trucking activity. There are a number of truck stops along Frontage Road and Troutdale is the first stop in the Portland metropolitan area for trucks traveling westbound and is the last stop in the Portland metropolitan area for trucks traveling eastbound along I-84. Trucking needs in Troutdale mainly center around I-84 and the activity centers directly adjacent to it (much of the industrial activity in Troutdale is also located in the vicinity of I-84). Also, it is important that there are designated truck routes in Troutdale for trucks that need to travel to other destinations in Troutdale or pass through Troutdale to get to other destinations.

The Transportation Advisory Committee evaluated several strategies and then ranked them. Each committee member was assigned a certain number of points that he or she could allocate to each of the strategies according to his or her priorities. The ranking of these strategies follows, from most important to least important[7]:

- Enhance Truck Circulation on Frontage Road to Reduce Conflicts with Local Traffic
- Designate Arterials for Through Goods Movement and Service Routes
- Utilize All Streets in Troutdale for destination delivery of Goods and Services Only

The general outcome of the strategies evaluated by the committee is that a "Truck Route Map" be developed. This map, showing proposed truck routes in Troutdale is shown in Figure 10.

No specific truck related projects are recommended, however it may be desirable to conduct an access and circulation study in and around the Frontage Road area.

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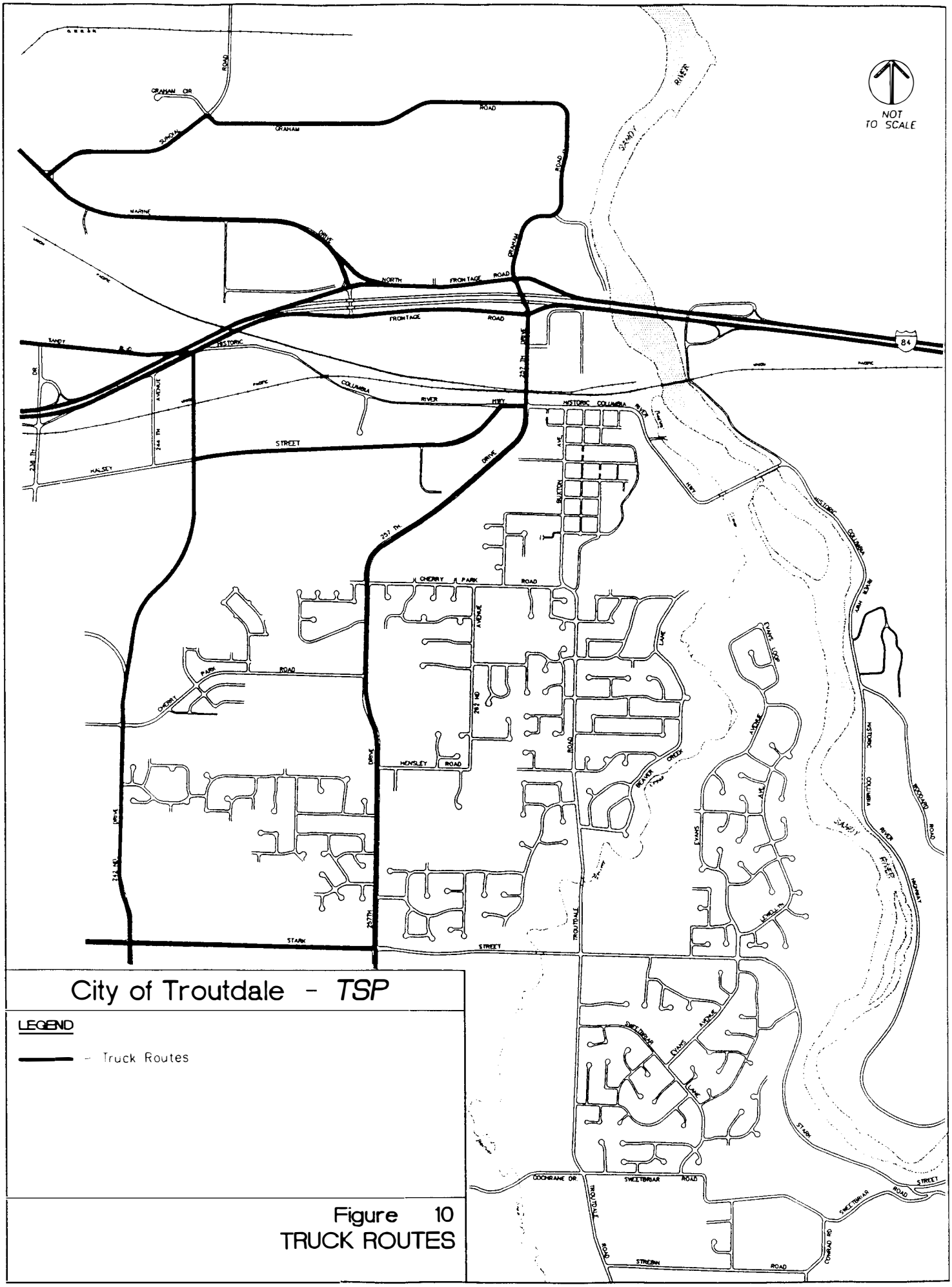
[7] See Appendix H for overall scoring.



City of Troutdale - *TSP*

LEGEND

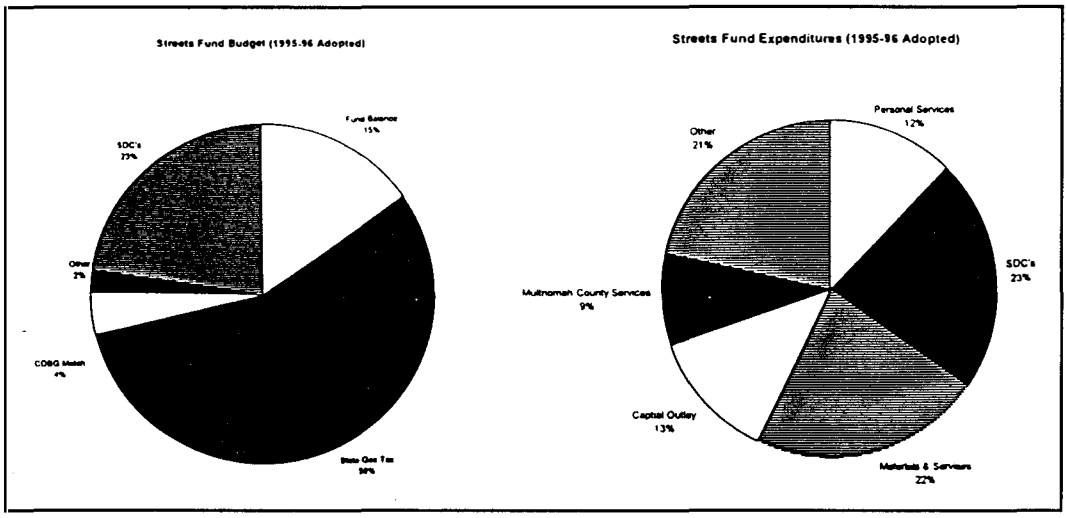
— Truck Routes

Figure 10
TRUCK ROUTES

FUNDING

The funding currently available for Troutdale Transportation/capital improvement projects is summarized in Figure 11 in terms of where it comes from and how it is budgeted to be spent. A majority of the funds available for roadway projects comes from the State Gas Tax. Approximately $900,000 a year is spent on transportation in Troutdale. The majority is spent on maintenance and presentation of existing facilities. The Systems Development Charges generate $150,000 to $200,000 per year (to be used on specific projects on City list, see appendix J).

Figure 11
City of Troutdale Public Works
Income and Expenditures



Funding Sources and Opportunities

There are several potential funding sources for transportation improvements. These are sources which have been used in the past by agencies in Oregon. In most cases, these funding sources 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 projects. Unique or hybrid funding of projects generally will include these funding sources, combined in a new package. Table 2 summarizes several funding options available for transportation improvements. Examples of funding sources which generally do not provide funding for roadways include: Property Tax General Funds, Car Rental Tax, Transient Lodging Tax, Business Income Tax, Business License Tax and Communication Services Tax.

Currently, the City of Troutdale's motor vehicle fees, which are dedicated to transportation, amount to about $500,000 per year. A large percentage of these funds are used for maintenance and preservation activities on roadways. This source of funds has generally been used for system maintenance in the past with a small allocation for capital projects (which in most cases includes

rebuilding streets to newer standards). Because of this, many transportation projects are funded through other sources.

Table 2
Potential Transportation Revenue Sources

Type	Description
System Development Charges (SDC)	SDC's or traffic impact fees have been used in Oregon and throughout the United States. The cornerstone to development of SDC's involves two principals: 1) there must be a reasonable connection between growth generated by development and the facilities constructed to serve that growth (generally determined by level of service or connectivity); and 2) there must be a general system-wide connection between the fees collected from the development and the benefits development receives. Charges are typically developed based on a measurement of the demand that new development places on the street system and the capital costs required to meet that demand.
Gas Tax	The State, cities and counties provide their basic roadway funding through a tax placed on gasoline. State gas tax is approved legislatively while local gas taxes are approved by voters. State funds are dedicated to roadway construction and maintenance, with one percent allocated to pedestrian and bicycle needs. This tax does not fall under the Measure 5 limits, because it is a pay-as-you-go user tax.
Street Utility Fees	Certain cities have used street utility fees for maintenance. The fees are collected monthly with water or sewer bills. These funds are not for capacity improvements, but for supporting local roadway maintenance based upon land use type and trip generation. This frees other revenue sources for capacity needs. Utility fees can be vulnerable to Measure 5 limitations, unless they include provisions for property owners to reduce or eliminate charges based on actual use.
Exactions	Frontage improvements are common examples of exaction costs passed onto developers. These have been used to build much of Troutdale's local street system. Developers of sites adjacent to unimproved roadway frontage are responsible to provide those roadway improvements. Developers of sites adjacent to improvements identified as SDC projects can be credited the value of their frontage work, which is included in the SDC project-list cost estimate.
Local Improvement Districts (LID)	LIDs provide a means for funding specific improvements that benefit a specific group of property owners. LIDs require owner/voter approval and a specific project definition. Assessments are placed against benefiting properties to pay for improvements. LIDs can be matched against other funds where a project has system wide benefit, beyond benefiting the adjacent properties. Fees are paid through property tax bills.
Special Assessments	A variety of special assessments are available in Oregon to defray costs of sidewalks, curbs, gutters, street lighting, parking and CBD or commercial zone transportation improvements. These assessments would likely fall within the Measure 5 limitations.
Fees	Gresham collects a Public Street Charge and a Driveway Approach Permit Fee. These fees are project specific and vary year to year based upon development permits.
Other Vehicle Fees	The state collects truck weight mile taxes, vehicle registration fees, and license fees. These funds are pooled together with the gas tax in distributing state motor vehicle fees to local agencies. Local agencies do not have the authority to impose local registration fees (a 1990 ballot measure for this purpose was defeated).
Oregon Special Public Works Fund	The Special Public Works Fund (SPWF) Program was created by the legislature in 1985 as an economic development element of the Oregon Lottery. The program provides grants and loan assistance to eligible municipalities. There has been little use of these funds on urban arterials.

Much of Troutdale's local street system has been built and paid for by fronting property owners when the property was developed. These streets have typically included sidewalks, which are required in the development code.

Within the Portland region, funding for major transportation projects is typically brought to a vote of the public for approval. Specific projects are outlined for use of public funds, such as the Major Streets Transportation Improvement Program (MSTIP) in Washington County or the Westside Light Rail Project. Because of the need to gain public approval for transportation funding, it is important to develop a consensus in the community which supports needed transportation improvements. That is the value of the Transportation System Plan. In most communities, where time is taken to build a consensus regarding a transportation plan, existing funding sources (similar to those noted) can be packaged together to address funding needs.

Several groups of projects were identified in the TSP. They include:

- Bicycle Improvements
- Pedestrian Improvements
- Street Improvements
- Street Maintenance
- Transit Improvements

Table 3 identifies which existing funding sources might be used to implement elements of the plan. Tax increment financing has not been used in Troutdale and other fees were not identified in this initial funding summary beyond those associated with motor vehicle fees, which are combined with gas tax. Historically, funding sources which have been developed have supported roadways for automobiles. Few funding sources have been allocated to other modes. Other modes were generally implemented as an element of a roadway project. Now motor vehicle fees and exaction's are specifically allocated to roadway, bicycle and pedestrian improvements. But even so, most of the current funding structure is built to support roadway development and typically requires either supplementary funding or reallocation of funding to address other modes in a balanced fashion.

To accommodate a more balanced funding program, the city will need to specifically seek funding for programs such as pedestrian improvements or neighborhood traffic management. One approach would be for the City to initiate a grants program where an allocation of transportation funds (for example, $20,000 per year) is set aside for neighborhoods to match with local funds (at a level determined by council - for example, 10%, 25%, 50% or 75%) through special assessments or LIDs. This hybridization of funding, where local support is matched with other funding sources can become a significant element of transportation funding in the future with constrained overall funds. Additionally, should new gas tax funds be developed statewide or regionally, the City can incorporate more alternative modes projects, using the TSP as a guide.

Table 3
Fundable Projects by Source

Source	Bicycle	Pedestrian	Streets	Maintenance	Transit
System Development Charges (SDC)*	•	•	✓		
Gas Tax/Motor Vehicle Fees*	✓	✓	✓	✓	
Street Utility Fees				✓	
Exaction's*	•	✓	✓		
Local Improvement Districts (LID)	•	•	✓		
Tax Increment Financing					
Special Assessments	•	•	✓	✓	✓
Fees					
Other Vehicle Fees					
Oregon Special Public Works Fund			✓		✓
Employee Tax					✓

* Used in Troutdale

• Typically as part of roadway project where other modes are incorporated

✓ Used as a primary source of funding

COSTS

Order of magnitude cost estimates were developed for the projects identified in the auto, bicycle and pedestrian elements. Since many of the project overlap elements of various modes, the costs were developed at a project level incorporating all modes, as appropriate. It may be desirable to break project mode elements out separately, however, in most cases, there are greater cost efficiencies of undertaking a combined, multi-modal project. 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. Table 4 summarizes the elements of the plan which were not project specific and how costs will be addressed for these elements. Table 5 summarizes the transportation plan project costs.

Table 4
Issues with Non-Auto, Pedestrian and Bicycle Costs

Mode	Issues
Parking	The TSP does not define specific projects. Off-street parking will be provided by private property owners as land develops. Downtown area parking issues will need to be addressed based upon needs, using packaged funding including local and private sources.
Neighborhood Traffic Management	Specific NTM projects are not defined. These project will be subject to neighborhood consensus, based upon City of Troutdale design criteria. Humps/undulations can cost $2,000 to $4,000 each and traffic circle can cost $3,000 to $8,000 each. Based upon this, a limited program could cost $10,000 to $40,000 per year, depending upon neighborhood needs. If this cost were entirely funded through the city, implementation may lag behind neighborhood needs. If private cost sharing (or matching funds) is established as a criteria for the neighborhoods, the program could become more comprehensive. Consideration of neighborhood value provided by NTM should be considered by the City in determining whether to pursue non-public funds. It is important that **any new development** incorporate elements of NTM as part of its on-site design to eliminate its cost impact to the public.
Public Transportation	Tri-Met will continue to develop costs for implementing transit related improvements. The City can supplement this by incorporating transit features through development exaction's and roadway project design.
Trucks/Freight	Roadway funding will address these needs. Roadway overcrossings of railroads can use special PUC funds set aside for safety improvements to railroad crossings.
Rail	Cost to be addressed and funded by private railroad companies and the state.
Air, Water, Pipeline	Not Required by City.
Transportation Demand Management	City support may include staff involvement in TDM program, helping initiate or coordinate activities. Costs could range from $20,000 to $50,000 per year. DEQ will be establishing regional guidelines. Private business will need to support employee trip reduction programs. Requirements of TDM can be exacted as conditions of development.

Most of the project costs have been developed by Multnomah County or previous work by the City. Where the TSP identified the comparable needs, these project costs have been utilized. In addition, projects which were not identified by the TSP, but had previous costs allocated to them by Multnomah County or the City were included. Table 5 summarizes the key projects in the TSP by mode,

identifying Action Plan projects by number (corresponding to Table 1). The County funds improvements on its roadways. The City of Troutdale is responsible for local street improvements. Many of the local street connections contemplated in the master plan would be built with associated land development in the City. The significant areas for the City to fund include:

- Local road preservation/reconstruction
- Sidewalks connections
- Neighborhood traffic management
- Transportation Demand Management

Table 5
Costs for Transportation Projects

Action Plan Number	Project	Initial Project Estimate
	MULTI-MODAL PROJECTS	
1	257th Drive/North Frontage Road *	$140,000
2	Marine Drive/North Frontage Road *	$250,000
3	Marine Drive/Frontage Road *	$140,000
4	257th Drive/Frontage Road/I-84 Underpass *	$5,000,000
5	Marine Drive/Sundial Road (Signalize)	$140,000
6	Buxton Avenue/Columbia River Highway (Restripe to include turn lane)	$5,000
7	Troutdale Road/Stark Street (Add turn lanes)	$75,000
8	257th Drive/Cherry Park Road (South) (Add turn lane)	$75,000
9	Frontage Road (South) between Marine Drive and 257th Drive *	$1,000,000
10	257th Drive/Historic Columbia River Highway (Intersection improvements-Involves Study)	$300,000
12	242nd/244th Extension (Cherry Park to Sandy)	$3,000,000
	Sandy Overcrossing	$5,000,000
13	North Star Way (Connection between Sturges and extended 242nd)	$325,000
16	Optimization and coordination of traffic signals Citywide	$500,000
14	Sturges Road (Complete Road)	$700,000
15	Signalize Sturges Road/Cherry Park Road	$140,000

Action Plan Number	Project	Initial Project Estimate
	Stark Street (257th to Troutdale Road)	$1,600,000
	Cherry Park Road (South) (242nd to 257th)	$400,000
	Historic Columbia River Highway (Halsey Street to 244th)	$800,000
	Troutdale Road (Strebin to Stark)	$1,400,000
11	Hensley Road (257th to Troutdale Road)	$400,000
	Troutdale Road (Beaver Creek Lane to Stark Street)	$600,000
	Buxton Avenue (Historic Columbia River Highway to Cherry Park Road)	$610,000
17	242nd Drive/23rd Street Signal	$140,000
18	Stark Street Traffic Signal	$140,000
19	242nd Drive Traffic Signal	$140,000
	257th Avenue Signal Crossing	$300,000
	Troutdale Road Signal Crossing	$140,000
20	Halsey Street (238th Avenue to Historic Columbia River Highway). Widen to three lanes, provide bike lanes and sidewalks, signalize if necessary.	$3,240,000
Auto Projects Subtotal		**$26,700,000**
	PRESERVATION/MAINTENANCE/UPGRADE PROJECTS	
	Preservation/Maintenance/Upgrade Projects (See Appendix for Listing)	$1,515,000
	SIDEWALK PROJECTS	
	Stark Street - Troutdale Road to Hampton (Sidewalks)	$75,000
	Historic Columbia River Highway - Kibling to Sandy River Bridge (Sidewalks)	$250,000
	Cherry Park Road (North)	$50,000
	242nd Drive (east side of 23rd Street south to City Limits)	$25,000
	Troutdale Road (Cherry Park Road to Chapman Street, where missing)	$50,000
	3rd/Sandy Avenue/8th Street Loop (Sidewalks)	$150,000
Pedestrian Projects Subtotal		**$600,000**

Action Plan Number	Project	Initial Project Estimate
	BICYCLE PROJECTS	
	40-Mile Loop (Columbia/Sandy River Road, 223rd-Graham)	$925,100
	40-Mile Loop (Stark Street, West of Troutdale Road to Crown Point Highway)	$173,900
	40-Mile Loop (North of I-84)	$800,000
	40-Mile Loop (South of I-84)	$400,000
	Cherry Park Road (257th to Troutdale Road)	$272,400
	Stark Street (257th to Troutdale Road)	$63,800
Bicycle Projects Subtotal		**$2,635,200**
TOTAL OF ALL PROJECTS		**$31,450,200**

* Improvements to be defined by further study. Cost estimates are based on general assumptions about the improvements that may be required and are included as a space holder for budgeting purposes.

The potential funding responsibility of the City could amount to approximately 20 percent of total project costs, or approximately six million dollars over the course of the next 20 years. The combination of exactions, motor vehicle fees and SDC's should be able to fund approximately $100,000 to $300,000 per year over the next 20 years which would amount to approximately $2 - 6 million. Costs of TDM and Neighborhood Management could run approximately $500,000 over the next 20 years. These costs are approximate and the City's share of some projects could be different in the future depending on allocations from the County, State or developers. The City will need to pursue other sources of funding as described earlier in this chapter to decrease the gap between project needs and available funds. It is possible that some of the projects identified as City projects may be funded by adjacent development as it occurs.