Transportation System Plan

Newberg Transportation System Plan

Newberg, Oregon

June 2005

Newberg
Transportation System Plan

Newberg, Oregon

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Preface

This project was conducted under funding from the Oregon Department of Transportation (ODOT), and in close coordination with the URS Corporation, prime contractor for the Newberg-Dundee Transportation Improvement Project (NDTIP).

The progress of this plan was guided by the City of Newberg Transportation Advisory Committee (NTAC) and the Consultant Team. Members of each of these groups is identified below.

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Executive Summary

Executive Summary

OVERVIEW

The City of Newberg, in conjunction with the Oregon Department of Transportation (ODOT), initiated a study of the City's transportation system. This transportation system plan (TSP) will guide the management and development of appropriate transportation facilities within Newberg, incorporating the community's vision, while remaining consistent with state, regional, and other local plans. This report provides the City of Newberg with the necessary elements to be adopted as the transportation element of the City's comprehensive plan. In addition, this report provides ODOT and Yamhill County with recommendations that can be incorporated into their respective planning efforts.

The contents of this TSP are guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR). These laws and rules require that jurisdictions develop the following:

- a road plan for a network of arterial and collector streets;
- a public transit plan;
- a bicycle and pedestrian plan;
- an air, rail, water, and pipeline plan;
- a transportation financing plan; and
- policies and ordinances for implementing the transportation system plan.

The TPR requires that alternative travel modes be given equal consideration with the automobile, and that reasonable effort be applied to the development and enhancement of the alternative modes in providing the future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide bicycle and pedestrian facilities between residential, commercial, and employment/institutional areas. It is further required that local communities coordinate their respective plans with the applicable county, regional, and state transportation plans.

TSP PROCESS

The Newberg TSP was developed through a process that, first, identified transportation needs, second, developed and analyzed potential projects addressing those needs and, third, developed a fundable plan that includes the projects that best address Newberg's needs within the funding expected to be available during the next 20-25 years. The following steps were involved in this process:

- Reviewing state, regional, county, and local transportation plans and policies that the Newberg TSP must either comply with or be consistent with.
- Providing public open houses to provide project information to, and gather feedback from, the public at key points during the TSP development process, establishing project advisory committees, and developing transportation plan goals and objectives.
- Evaluating existing transportation needs.

- Evaluating transportation needs in the year 2025, if growth occurs as expected, but no transportation improvements are made, other than those already funded.
- Developing, modeling, and analyzing several alternatives providing transportation improvement packages intended to address Newberg's future transportation needs.
- Estimating the revenue available for transportation capital projects through the year 2025, assuming no increase in transportation funding.
- Developing a prioritized, financially constrained, consultant-recommended alternative that includes projects that meet the project's goals and objectives, and that best address future transportation needs within the funding available.
- Modifying the consultant-recommended alternative, based on public, and advisory committee input, to develop the preferred alternative that forms the heart of this TSP.
- Developing a list of unfunded priority projects, in the event that additional transportation funding becomes available in the future.
- Developing alternative local funding strategies to augment expected revenues, so as to provide a funding base for those unfunded projects.
- Compiling the results of this work into this TSP document, for review, amendment and adoption by the Newberg City Council.

The remainder of this summary describes this process in more detail.

PUBLIC INVOLVEMENT

An aggressive Public and Agency Involvement Process was executed to involve members of affected agencies, citizen representatives and the general public in providing guidance to the development of viable solutions for the City's transportation system plan. Interested individuals and groups were included on the project's mailing list and notified of meetings and events. A project Transportation Advisory Committee, met regularly to give input and guidance to the process. Three public meetings and three planning commission hearings were held to gain valuable input from the community at key points in the process.

PLAN AND POLICY REVIEW

The TSP is required to be consistent with state, regional, county, and local plans. Three jurisdictions own the public roadways serving Newberg: the City of Newberg, Yamhill County, and the Oregon Department of Transportation (ODOT). In order to identify applicable standards and policies, as well as potential inconsistencies, the Newberg Development Code and Comprehensive Plan, were reviewed for compliance and consistency with the following plans and policies:

State/ODOT	Transportation Planning Rule
	1999 Oregon Highway Plan
	ODOT Division 51 Rules, 2000
	Oregon Transportation Plan, 1999
Yamhill County	Yamhill County Transportation System Plan, 1996
	Yamhill County Public Transportation Needs Assessment, 2000
	Yamhill County Capital Improvement Program, 2000
Neighboring Cities	Dundee Transportation System Plan, 2003

Areas where the Newberg Development Code and Comprehensive Plan are currently not consistent with portions of these plans are identified in Section 2 of the TSP. The Transportation System Plan

Policies section (Section 8) of this TSP document, identifies areas of these documents that will be amended to maintain consistency with the recommendations of this plan.

EXISTING CONDITIONS

The following is a summary of the current condition of the transportation modes serving Newberg:

- **Pedestrian:** Ore 99W through Newberg is generally well-covered by a sidewalk network. There are a few pedestrian crosswalks along Ore 99W that are missing, specifically near Harmony Lane and beyond Main Street to the west. However, newer residential and commercial areas have good pedestrian facilities, reflecting city policies that require new developments to provide adequate sidewalk facilities. Crosswalks are provided across Ore 99W at all signalized intersections.
- **Bicycle:** Based on the City's most recent inventory of the existing bicycle facilities, striped bike lanes are provided on both sides of the highway along Ore 99W throughout Newberg. In addition, based on a qualitative assessment of the street network via field visits and aid of an aerial image of the city, a preliminary evaluation suggests that bicycle travel is primarily supported through the shared use of the existing roadway network with vehicles.
- **Public Transportation:** Several public transportation services are provided within the City of Newberg. The Newberg School District operates school buses within Newberg and nearby areas, taking children to and from schools located in Newberg and Dundee. The Chehalem Valley Senior Citizens Council (CVSCC) operates the following public transportation services through Newberg.
  - LINKS - Commuter service that connects McMinnville with Meridian Park Hospital in Tualatin and makes scheduled stops in Newberg.
  - Link Express - Commuter service that provides service twice a day from Newberg (Nap's) to Hillsboro through Gaston, connecting to the Hillsboro Max Rail Line.
  - Dial-a-Ride
  - The Town Flyer - Intra-city fixed-route bus service.
- **Pipelines and Transmission Systems:** Electric transmission lines, natural gas distribution lines, and water lines serve the City. No issues have been identified with any of these facilities.
- **Rail:** The Portland & Western Railroad (PNWR) operates one line through Newberg aligned roughly with Ore 99W. The closest AMTRAK passenger rail stations are located in Portland and Salem.
- **Air:** No public airports are located within the City of Newberg. However, private aircraft use and some limited commercial (crop dusting) services are provided at the Sportsman Airpark in Newberg. A larger general aviation airport is located north of Newberg, in Hillsboro. The nearest airport with scheduled passenger service is the Portland International Airport, located approximately 25 miles northeast of Newberg.
- **Marine:** The Willamette River is located south of Newberg and provides potential opportunities for recreational boating. Marine access is located in Newberg at the Rogers Landing County Park.
- **Signalized Intersection Operations:** Ore 99W through Newberg operates at capacity during the weekday p.m. peak hour, due to high volumes of traffic. The following signalized intersections currently operate at an acceptable level of service (LOS); however, the volume-to-capacity (v/c) ratio at these intersections currently exceeds ODOT's performance standard of 0.75.

  - 1st Street/River Street (0.83 v/c ratio)
  - Ore 99W/Villa Road (0.79 v/c ratio)
- **Unsignalized Intersection Operations:** The following unsignalized intersections currently operate at LOS "F" and are over capacity. In all cases, the critical minor street movements operate unacceptably. All other traffic movements through these intersections currently experience acceptable levels of service. (The list below also indicates which traffic signal warrants are met at these intersections.)
  - Springbrook Street/Haworth Avenue (LOS "F", >1.0 v/c ratio, peak hour warrant met)
  - Ore 219/Wilsonville Road (LOS "F", >1.0 v/c ratio, four-hour and peak hour warrant met)
  - Springbrook Street/Wilsonville Road (LOS "F", >1.0 v/c ratio, peak hour warrant met)
- **Roadway Safety:** Based on the available data, most intersections do not appear to have specific safety issues to be addressed. The Haworth Avenue/Springbrook Street and Ore 99W/Villa Road intersections have crash rates and frequencies that warrant more detailed investigation into crash types, patterns, and seriousness to identify specific contributing factors and develop mitigation measures to address safety issues at these locations.
- **Truck Freight Movement:** Traffic congestion on Ore 99W slows freight movements to and through Newberg.

FUTURE CONDITIONS

The following is a summary of the future condition of the transportation system in Newberg, considering a future transportation network that includes only committed and funded transportation projects.

- **Roadway Operations:** In the absence of a Bypass, Ore 99W will operate poorer than Oregon Highway Plan standards. In the five-lane section of Ore 99W from Brutscher Street to Meridian Street, a minimum of seven lanes (three through plus center left turn lane) will be required to restore 2025 operations to acceptable levels. In many sections, four through lanes and additional turn lanes would be required. This expanded cross-section would result in an overall width that would be operationally infeasible, with severe, unacceptable impacts to adjacent land uses. This result is consistent with the findings in the draft NDTIP Locational Environmental Impact Statement.
- **Roadway Safety:** As traffic volumes grow in the Ore 99W corridor, driver exposure to accidents grows, and it can be expected that the number of crashes will grow proportionately.
- **Truck Freight Movement:** No specific freight deficiencies have been determined through the future conditions analysis thus far, apart from those arising from the operational problems associated with inadequate capacity that affects all vehicular movement through Newberg. Congestion through Newberg and the Ore 99W corridor in general does have a negative economic impact on businesses that rely on truck freight. This issue is being comprehensively examined in the Newberg-Dundee Transportation Improvement Project which has identified a corridor for a future bypass of Ore 99W around the two cities.
- **Pedestrian:** New pedestrian facilities have been planned, as described in Chapters 6 and 7. These planned facilities include those missing sections on the arterial/collector system, as well as on those key streets which access major pedestrian generators (i.e. schools and other

major public facilities). New developments in the City of Newberg should provide adequate pedestrian facilities in conjunction with the City's policy of requiring developers to provide sidewalk connections along with other infrastructure. The provision of missing pedestrian connections is largely a retrofitting task to the existing system. The major gaps in the existing pedestrian system identified by the community at Public Meeting #2 in April 2003 were College Street north of Vermillion, Main Street from Hancock Street to Foothills Drive, and Elliot Road north of Ore 99W.

- **Bicycle:** New bicycle facilities are planned in the City. The future local bicycle network should generally feature designated bicycle lanes on all arterials and on streets carrying in excess of 3,000 vehicles per day. In some cases, such lanes may be needed on local streets with lower volumes as well, but street widths where cyclists share the roadway with other traffic will usually be sufficient for local streets.
- **Public Transportation:** New transit facilities are planned in the City. As part of the NDTIP Bypass Project, establishing mainline transit service from McMinnville to the Portland area in the Ore 99W corridor was evaluated in the Location Phase and will be further studied in the Design Phase. Park and Ride facilities recommended in this plan that: 1) are located in the vicinity of the bypass and 2) match up with a service plan adopted by the Yamhill County Transit Committee, will be considered for inclusion in the Bypass project. This service should be coordinated with local bus service provided in Newberg.

ALTERNATIVES ANALYSIS

Alternatives Analysis, were developed and evaluated to address the transportation needs identified in the existing and future conditions and deficiencies analyses. Selections were made from the alternatives presented in this analysis for incorporation into the City's TSP.

Roadway Connectivity

The plan evaluated four different road network alternatives, each consisting of numerous new street connections, street closures, and intersection improvements that would improve mobility and accessibility within the City.

Bicycle

The plan evaluated different magnitudes of bicycle facilities in the City. Several options were developed to assess the relative costs of potential City policies. With respect to bike routes, the alternatives included simply designating routes by way of information, using signing, or actually striping designating roadways. With respect to bicycle provisions such as bike racks, lockers, and showers at employment sites, the plan recommends that the City consider whether it should take any action to foster such facilities.

Pedestrian

The plan considered three levels of pedestrian facilities in this section. The alternatives ranged from the existing City policy requiring developer funded frontage improvements to trigger improvements in the pedestrian system, to providing sidewalks on both sides of street to schools, to a complete both-sided system of sidewalks.

Transit

The public transportations matters addressed include the selection of potential transit centers and park-and-ride lot locations to address the future Newberg regional public transportation needs and consideration of six intra-city fixed bus route options assembled into four distinct patterns to serve local activity centers and high-density neighborhoods, as well as the potential park-and-ride lots and regional transit stations.

TRANSPORTATION SYSTEM PLAN

The Transportation System Plan chapter of this document (Section 6) contains the majority of the material that will be adopted as the transportation element of the City's comprehensive plan. The preferred alternative that forms the basis of this plan balances Newberg's transportation needs with available resources, and prioritizes its projects based on need and when funding is expected to be available.

The TSP chapter includes the following elements:

- transportation goals and objectives;
- a street system plan, including functional classifications for Newberg's streets, street design standards, and access management policies;
- a local streets plan that identifies future street connections into and through undeveloped residential and commercial areas;
- pedestrian and bicycle plans that identify the locations of future facilities;
- a transit plan that identifies transit services; and
- pipeline, air, rail, marine, and freight plans.

TRANSPORTATION FUNDING

Transportation system improvements to satisfy future demand in the City of Newberg will cost an estimated $403.438 million. The majority of these costs are associated with the NDTIP Bypass project, estimated at $310 million. It is estimated that approximately $20.18 million of improvements will occur on ODOT facilities within the City. In addition, Yamhill County would be responsible for approximately $1.75 million of the total costs. Of the remainder, the majority would be funded by property developers through on-site improvements and System Development Charge contributions. The City may need to re-evaluate its System Development Charges for Transportation, to adjust rates charged to new developments in order to adequately fund needed capacity improvements. Only an estimated $12.243 million of costs would be directly borne by the City, for which alternative funding sources need to be considered. In addition to seeking special funding sources available through the state and county, possible alternatives currently under consideration by the City include: Transportation Maintenance Fees, Sidewalk Fees, Local Improvement Districts and Special SDCs.

Section 1

Introduction

Introduction

1.1 OVERVIEW

The City of Newberg, in conjunction with the Oregon Department of Transportation (ODOT), initiated a study of the City's transportation system in March 2002. This transportation system plan (TSP) that resulted from the study will guide the management and development of appropriate transportation facilities within Newberg, incorporating the community's vision, while remaining consistent with state, regional, and other local plans. This report provides the City of Newberg with the necessary elements to be adopted as the transportation element of the City's comprehensive plan. In addition, this report provides ODOT and Yamhill County with recommendations that can be incorporated into their respective planning efforts.

State of Oregon planning rules require that the TSP be based on the current comprehensive plan land use map and must also provide a transportation system that accommodates the expected 20-year growth in population and employment that will result from implementation of the land use plan.

The contents of this TSP are guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR). These laws and rules require that jurisdictions develop the following:

- a road plan for a network of arterial and collector streets;
- a public transit plan;
- a bicycle and pedestrian plan;
- an air, rail, water, and pipeline plan;
- a transportation financing plan; and
- policies and ordinances for implementing the transportation system plan.

The TPR requires that alternative travel modes be given equal consideration with the automobile, and that reasonable effort be applied to the development and enhancement of the alternative modes in providing the future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide bicycle and pedestrian facilities between residential, commercial, and employment/institutional areas. It is further required that local communities coordinate their respective plans with the applicable county, regional, and state transportation plans.

1.2 STUDY AREA & CONTEXT

Newberg obtained its name in 1869 by its first postmaster, Sebastian Brutscher, after his Bavarian hometown of Newburgh.

In the 1870's, a minister named William Hobson visited Newberg from Iowa and eventually settled in the area and began preaching. Because of his preaching, a large following migrated to the area and in 1885 started the Pacific Academy, currently known as George Fox University. A gentleman named Dr. Henry Minthorn served as the superintendent of the academy.

In 1885 Dr. Minthorn's nephew, at the age of 9, came to live with him and his wife in Newberg. This young boy, who went by the name of Herbert Hoover, remained in Newberg for his boyhood before moving on to become the 31st President of the United States.

In the year 1889 Newberg became incorporated as a town and shortly after a city in the year 1893. The Newberg Graphic, a local newspaper that began in 1888, still exists today.

Because TSPs are adopted as part of a city's comprehensive plan, Oregon's Transportation Planning Rule limits TSPs to addressing the growth that will occur within the city's Urban Growth Boundary and Urban Reserve Areas. While there are areas outside the current UGB that may eventually be considered for annexation into the urban area, Newberg's TSP would need to be updated to account for the additional travel demand that would be generated in those areas. This TSP attempts to provide guidance to that effort, by prescribing functional classifications and likely improvements necessary for those planned transportation facilities.

1.3 PUBLIC INVOLVEMENT PROCESS

The purpose of this public involvement process, designed and coordinated by Cogan Owens Cogan, LLC, was to involve members of affected agencies, citizen representatives and the general public in providing guidance to the development of viable solutions for the City's transportation system plan. Individuals and groups who indicated an interest in the project were notified of meetings and events. A summary of specific elements follows.

1.3.1 Technical Advisory Committee (TAC)

The TAC, consisting of representatives from local, regional and state agencies affected by the project, met four times between June, 2002 and August, 2003. Members worked with the City and the consultant to provide information on technical and regulatory matters to be considered and possible outcomes. They also reviewed materials and maintained communication between the project team and the agencies they represented. *A list of members and summaries of TAC meetings are included in the Appendix "A".*

1.3.2 Public Events

At key steps in the process, citizens were given opportunities at public events to gain information about the project and provide input. At the first event, on July 11, 2002, the City invited TAC, Planning Commission and City Council members as well as members of the public to inaugurate the NTSP Refinement project. After presentations about project goals, schedule and anticipated products, approximately five attendees were invited to comment.

At the second public event, on April 23, 2003, approximately 30 attendees viewed and commented upon display boards summarizing the project schedule, current and possible future transportation conditions, alternatives to incorporating the proposed Newberg-Dundee bypass of Ore 99W into the existing network of local roads, and proposed revisions to the City's land use planning documents.

The final public event was held on August 26, 2003. Approximately 14 attendees viewed and commented upon display boards summarizing the proposed improvements.

The public events were advertised through flyers in utility bills mailed by the City to every resident.

TAC members, the consultant and the City carefully considered the input from these events before making their final recommendations. *Appendix "B" contains meeting minutes from each public meeting.*

1.3.3 Planning Commission Public Workshops

Four Planning Commission public workshops were held between November, 2003 and January, 2004 to examine specific choices related to 1) Southern Newberg; 2) Northern and Eastern Newberg; 3) non-auto transportation; and 4) downtown traffic routes. The results of the workshops were considered by the TAC for the preparation of the TSP. *Appendix "C" contains meeting minutes from each planning commission public workshops.*

1.4 PROJECT EVALUATION CRITERIA

As part of the identification, assessment and review of future transportation alternatives during the development of the 1994 Newberg TSP, the Newberg Citizen's Advisory Committee helped develop evaluation criteria that were used to measure the success or failure of the alternatives evaluated, and then choose a preferred alternative for recommendation in the 1994 Newberg TSP. As part of this TSP update, those same evaluation criteria were used as a decision-making tool to assist in choosing among the many transportation system alternatives. The description of the evaluation criteria is given below.

Considering current demands and anticipated local, regional, and national trends in transportation, The Citizen's Advisory Committee of the Newberg Transportation System Plan believes that the success of the Final Newberg Transportation/Land Use System Plan shall be measured by it's ability to satisfy the following 10 criteria. The criteria have been numbered for reference purposes only and do not reflect any order of priority at this time.

The Final Plan shall:

1. ***Be coordinated to balance transportation system impacts to and from adjacent communities*** by:

    a. *Establishing cooperative agreements to address transportation based planning, development, operation and maintenance*; and

    b. *Establishing consistent policies which require concurrent consideration of transportation/land use system impacts*.

2. ***Promote reliance on multiple modes of transportation and reduce reliance on the automobile*** by:

    a. *Designing the system and facilities to accommodate multiple modes where appropriate and encourage their integrated use;* and

    b. *Suggesting modifications to the City's land use plan and development ordinances that will decrease trip length and encourage non-auto oriented development*.

3. ***Minimize the impact of regional traffic on local transportation system*** by:

    a. *Enhancing the efficiency of the existing collector/arterial street system to move local traffic off the regional system*;

    b. *Providing for alternative routes for regional traffic*; and

c. *Minimizing the use of local streets for regional traffic*.

4. ***Maximize pedestrian, bicycle and other non-motorized travel throughout the City*** by:

   a. *Providing a complete system of safe sidewalks*;

   b. *Providing a well maintained and routed bike system*;

   c. *Increasing the convenience of non-auto travel routes*; and

   d. *Providing effective levels of non-auto oriented support facilities (e.g. bus shelters, bicycle racks, etc.)*.

5. ***Minimize the capital improvement and community costs to implement the plan*** by:

   a. *Utilizing the existing transportation system whenever possible*; and

   b. *Avoiding excessive impacts of improvements to adjacent properties*.

6. ***Maintain or enhance the City's image, character and quality of life*** by:

   a. *Adopting transportation/land use system design standards which emphasize visual and aesthetic quality*; and

   b. *Encouraging and supporting plans which protect the integrity of existing neighborhoods, downtown and industrial areas*.

7. ***Create effective circulation and access for the local transportation system*** by:

   a. *Enhancing existing and adding alternative routes for local travel*; and

   b. *Increasing efficient movement of commercial and industrial goods*.

8. ***Promote a safe transportation system for all users including operators, pedestrians, passengers and property owners*** by:

   a. *Defining effective safety criteria for all transportation system improvements*.

9. ***Maintain the viability of existing rail, water and air transportation systems*** by:

   a. *Encouraging and supporting compatible transportation and land use development*; and

   b. *Evaluating and mitigating potential losses whenever possible*.

10. ***Establish fair and equitable distribution of transportation improvement costs*** by:

   a. *Defining appropriate phasing and funding which relates to the benefits received.*

1.5 TSP ORGANIZATION AND METHODOLOGY

The development of the City of Newberg's Transportation System Plan began with a review of the local, county, regional, and statewide plans and policies that guide land use and transportation planning in the City. This plan and policy review is presented in **Section 2** of this plan. Next, an inventory of the existing transportation system was performed. This inventory documented all major transportation-related facilities within the study area, which allowed for an objective assessment of the current system's physical characteristics, operational performance, safety, and general function.

The inventory process and the documentation of current transportation conditions are presented in **Section 3** of this report.

Upon completion of the existing conditions analysis, the focus of the project shifted to forecasting future travel demand and the corresponding long-term future transportation system needs. Future transportation demand within the City of Newberg was estimated based on an EMME/2 travel-forecasting model developed by ODOT Transportation & Analysis Unit (TPAU). Development of long-term (year 2025) transportation system forecasts relied heavily on the City's population growth projections, along with general growth in the Ore 99W corridor. **Section 4** of this report, Future Conditions Analysis, details the development of anticipated long-term future transportation needs within the study area.

Section 5 of this report, Alternatives Analysis, documents the development and prioritization of alternative measures to mitigate identified safety and capacity deficiencies, as well as projects that would enhance the multi-modal aspects of the City's transportation system. The impact of each of the identified alternatives was considered on the basis of its potential costs and benefits, as well as its conformance with and potential conflicts to the City's transportation system and land uses. Ultimately, based on comments received from the City staff, Newberg residents, Planning Commission, and NTAC, a preferred plan was developed that reflected a consensus on which elements should be incorporated into the City's long-term transportation system.

Having identified a preferred set of alternatives, the next phase of the planning process involved presenting and refining the individual elements of the TSP through a series of decisions and recommendations. The recommendations identified in **Section 6**, Transportation System Plan, include a Street Plan, Pedestrian System Plan, Bicycle System Plan, and Transit Plan, as well as plans for other transportation modes serving Newberg.

Section 7, Transportation Funding Plan, provides an analysis and summary of the alternative funding sources available to finance the identified transportation system improvements.

The recommended modifications presented in **Section 8**, Suggested Policy Considerations, address major land use transportation issues identified during the development of the TSP and reflect the desire to enhance all modes of the transportation system. This section presents changes in the form of ordinances that are needed to implement the TSP.

Section 2

Plan and Policy Review

Plan and Policy Review

2.1 INTRODUCTION

This section summarizes the plans and policies at the state, county, and local level that directly impact transportation planning in the City of Newberg. Although each document reviewed contains many policies, only the most pertinent policies were chosen to help focus the discussion. The policies outlined within this section provide a policy context for the remainder of the study and new policies considered as part of this study should be consistent with the currently adopted policies listed here.

Each applicable goal, policy and action is either listed verbatim from its source or paraphrased where necessary. An independent conclusion is given after each individual policy. These conclusions are meant to emphasize the most important parts of the policies as they apply to the City of Newberg's Transportation System Plan. Conclusions also may point out inconsistencies between policies that were considered further during the course of this study.

2.1.1 Documents Reviewed

Three jurisdictions regulate and exercise control over the public roadways serving Newberg: the City of Newberg, Yamhill County, and the Oregon Department of Transportation (ODOT). The Newberg Development Code and Comprehensive Plan were reviewed for compliance and consistency with the following plans and policies:

- Oregon Highway Plan, ODOT, 1999
- Division 51 Highway Approaches, Access Control, Spacing Standards and Medians, ODOT, 2000
- Oregon Transportation Plan, ODOT 1992
- 2002-2005 Final Statewide Transportation Improvement Program, ODOT
- Portland to Lincoln City Corridor, Oregon Highways 99W and 18 I-5 to US 101, Interim Corridor Strategy, ODOT, March 1997
- Newberg-Dundee Transportation Improvement Project Alternatives Analysis, December 1997
- Yamhill County Transportation System Plan, March 1996
- Yamhill County Public Transportation Needs Assessment, 2000
- City of Newberg Transportation System Plan and Addendum Report, June 1994

2.2 STATEWIDE AND REGIONAL PLANS

2.2.1 Transportation Planning Rule (TPR)

In April 1991, the Land Conservation and Development Commission (LCDC), with the concurrence of ODOT, adopted the Transportation Planning Rule (TPR), OAR 660 Division 12. The TPR requires all local jurisdictions with a population greater than 2,500 to prepare and adopt a Transportation System Plan.

The Newberg TSP and the recommended revisions to the Newberg Comprehensive Plan and the Zoning and Development Code have been carefully crafted to address all applicable requirements of the TPR. The planning process included an audit of existing plan policies and implementing ordinances for compliance with the TPR, and the development of recommended plan policies and development regulations that address circumstances where there are gaps between requirements of the rule and existing city policies and regulations. Plan policy and development code amendments are recommended as part of this amended TSP document to ensure compliance with the TPR.

Key policies and regulations that were revised or added to the TSP to ensure compliance with the TPR include:

Newberg Comprehensive Plan

- Policies that ensure coordination between affected agencies in general, and for specific projects including the Newberg-Dundee Transportation Improvement Project (NDTIP)
- Policies that ensure the provision of adequate off-street parking and truck loading areas for commercial and industrial uses, as well as the utilization of on-street parking to preserve neighborhood character
- The addition of language that addresses transit needs for disadvantaged residents.
- Policies to develop Transportation Demand Management (TDM) strategies to contribute a reduction in the use of single occupancy vehicles.
- Coordination with TriMet and the regional transit system
- Policies that maximize pedestrian, bicycle and other non-motorized travel throughout the City.
- Policies requiring the development of a Future Street Plan or Future Area Plan for certain developments in order to facilitate right-of-way acquisition and dedication with minimal disruption and cost.

Newberg Development Code

- Modifications to land use procedures to facilitate transportation system development as illustrated in the adopted Transportation System Plan.
- Ensuring coordination with ODOT for projects affecting state highways
- Revised vehicular access control standards that manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency.
- Provisions requiring traffic studies in cases where comprehensive plan and zoning map amendments significantly affect the transportation system
- Amendments to ensure street and pedestrian connectivity, as well as pedestrian and bicycle safety.
- The documents were updated throughout to include references to consistency with the adopted TSP and the TPR
- Updated street standards and cross sections to include pedestrian and bicycle facilities

2.2.2 Oregon Highway Plan, ODOT, 1999

The 1999 Oregon Highway Plan (OHP) is one modal element of the Oregon Transportation Plan. The OHP outlines the policies and strategies to guide the Highway Division's operating and fiscal activities. The policies found within the OHP that apply to this TSP include:

Policy 1A: State Highway Classification System. The state highway classification system includes five classifications: Interstate, Statewide, Regional, District, and Local Interest Roads. Additionally, there are four special purpose categories: land use, statewide freight route, scenic byways, and lifeline routes. There are three state-owned facilities in or adjacent to Newberg:

- **Ore 99W** is designated as a *Statewide Highway* and is on the National Highway System.
- **Ore 219** is designated as a *District Highway.*
- **Ore 240** is designated as a *District Highway.*

According to the SCS:

Statewide Highways typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.

District Highway. These are facilities of county-wide significance and function largely as county and city arterials or collectors. They provide connections and links between small urbanized areas, rural centers and urban hubs, and also serve local access and traffic. The management objective is to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas reflecting the surrounding environment and moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movements. Inside STAs, local access is a priority. Inside Urban Business Areas, mobility is balanced with local access.

Policy 1B: Land Use and Transportation. This policy recognizes the role of both the State and local governments related to the state highway system and calls for a coordinated approach to land use and transportation planning. Special Transportation Areas (STAs) and Urban Business Areas (UBAs) are included as action items under this policy. Within STAs and UBAs, highways may be managed to provide a greater level of access to businesses and residences than might otherwise be allowed. One definition in this section may be applicable to Newberg and could be considered during development of the Ore 99W Refinement Plan recommended on page 149:

- Special Transportation Area (STA): An STA is a highway segment designation that may be applied to a highway segment when a downtown, business district or community center straddles the state highway within an urban growth boundary or in an unincorporated community. Direct street connections and shared on-street parking are encouraged in urban areas. An STA is a designated compact district located where the need for appropriate local access outweighs the consideration of highway mobility except on designated Freight Highways where accessibility and mobility are balance which is the case for ORE 99W.

Policy 1C: State Highway Freight System. This policy recognizes the need for the efficient movement of freight through the state. According to the OHP the following facilities are designated as freight routes.

- Ore 99W

Policy 1F: Highway Mobility Standards Access Management Policy. This policy addresses state highway performance expectations for planning and plan implementation or amendment, as well as providing guidance for managing access and traffic control systems. Action 1F.5 states that for transportation system plans, where the volume-to-capacity (v/c) ratio is worse than the identified standards, and transportation improvements are not planned, the performance standard for the highway shall be to improve performance as much as feasible and to avoid further degradation of performance. Table 2-1 shows v/c ratios that apply to Newberg.

TABLE 2-1
MAXIMUM VOLUME TO CAPACITY RATIOS FOR PEAK HOUR OPERATING CONDITIONS THROUGH A PLANNING HORIZON FOR STATE HIGHWAY SECTIONS LOCATED OUTSIDE THE PORTLAND METROPOLITAN AREA URBAN GROWTH BOUNDARY

Highway Category	Land Use Type/Speed Limits					
	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
	STAs	MPO	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit >= 45 mph	Unincorporated Communities	Rural Lands
Statewide (NHS) Freight Routes	0.85	0.80	0.75	0.70	0.70	0.70
District/Local Interest Roads	0.95	0.90	0.85	0.80	0.80	0.75

Policy 1G: Major Improvements. This policy emphasizes the state's preference for improving system efficiency and management before adding capacity.

Policy 2F: Traffic Safety. This policy emphasizes the state's efforts to improve safety of all uses of the highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues.

Policy 3A: Classification and Spacing Standards. This policy addresses the location, spacing and type of road and street intersections and approach roads on state highways. It includes standards for each highway classification, including specific standards for Special Transportation Areas (STAs) and Urban Business Areas (UBAs). The adopted standards can be found in Appendix C of the *Oregon Highway Plan*; generally, the access spacing distance increases as either the highway's importance or posted speed increases. The minimum access spacing is somewhat lower in STAs and UBAs than would otherwise be allowed. STAs and UBAs are established through joint agreements between a city and ODOT; these areas must meet the criteria identified in Action 1B.7, including being identified in the adopted TSP.

Policy 4A: Efficiency of Freight Movement. This policy emphasizes the need to maintain and improve the efficiency of freight movement on the state highway system. As noted previously, Interstate 5, Interstate 205 and Ore 99W are designated freight routes

2.2.3 Division 51 Highway Approaches, Access Control, Spacing Standards and Medians, ODOT, 2000

Table 2-2 in this plan outlines access management spacing standards for both private and public approaches on Statewide Highways. Table 2-3 illustrated access management spacing standards for private and public approaches on District Highways. There are no specific standards in the rule that relate solely to Ore 99W, Ore 219, or Ore 240.

TABLE 2-2
ACCESS MANAGEMENT SPACING STANDARDS FOR BOTH PRIVATE AND PUBLIC APPROACHES ON STATE HIGHWAYS
[1,2,3,4] (OAR 734-051-0190)
(MEASUREMENT IS IN FEET)*

Posted Speed	Rural		Urban			
	Expressway ***	Other	Expressway ** ***	Other ***	UBA	STA
≥55	5280	1320	2640	1320		
50	5280	1100	2640	1100		
40 & 45	5280	990	2640	990		
30 & 35		770		770	720	See footnote 6
<25		550		550	520	See footnote 6

Notes following Table 2-3 apply to Table 2-2.

TABLE 2-3
ACCESS MANAGEMENT SPACING STANDARDS FOR BOTH PRIVATE AND PUBLIC APPROACHES ON DISTRICT HIGHWAYS
[1,2,3,4] (OAR 734-051-0115)
(MEASUREMENT IS IN FEET)*

Posted Speed	Rural		Urban			
	Expressway ***	Other	Expressway ** ***	Other ***	UBA	STA
≥55	5280	700	2640	700		
50	5280	550	2640	550		
40 & 45	5280	500	2640	500		
30 & 35		400		400	350	See footnote 6
<25		400		400	350	See footnote 6

[1] These access management spacing standards are for unsignalized approaches only. Signal spacing standards supercede access management spacing standards for approaches.
[2] These access management spacing standards do not retroactively apply to legal approaches in effect prior to adoption of interchange construction projects, highway or interchange modernization projects, or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks, which affect these management spacing standards, but at the very least to improve current conditions by moving in the direction of the access management spacing standards. (See OAR 734-051-0190(2)(b)).

[3] When in-fill development occurs, the goal is to meet the appropriate access management spacing standards. This may not be possible and at the very least the goal is to improve the current conditions by moving in the direction of the access management spacing standards. Thus, in-fill development should not worsen current approach spacing. This may involve appropriate mitigation, such as joint access. (See OAR 734-051-0190(2)(c)).
[4] In some cases an approach will be allowed to a property at less than the designated access management spacing standards or minor deviation limits, but only where a right of access exists, the designated access management spacing standards or minor deviation limits cannot be accomplished, and that property does not have reasonable access, thus the options should be considered such as joint access. (See OAR 734-051-0190(3). Other options should be considered such as joint access. (See OAR 734-051-0190(2)(d)).
[5] Does not apply.
[6] Minimum access management spacing for public road approaches is the existing city block spacing or the city block spacing as identified in the local comprehensive plan. Public road connections are preferred over private driveways and in STAs driveways are discouraged. However, where driveways are allowed and where land use patterns permit, the minimum access management spacing for driveways is 175 feet (55 meters) or mid-block if the current city block spacing is less than 350 feet (110 meter).
** Spacing for Expressway at-grade intersections only.
*** These standards also apply to Commercial Centers.

2.2.4 Oregon Transportation Plan, ODOT 1992

This plan outlines alternatives to meet general transportation goals for Oregon's transportation systems. The elements which are related to the Portland-Lincoln City corridor and Newberg in particular include a Commuter Transit Service between Portland and McMinnville by the year 2012, and an intercity bus or commuter bus service available to cities over 2,500 population. The OHP is currently in the process of being updated to address the 2005 to 2025 planning horizon with adoption scheduled for 2005.

2.2.5 2004-2007 Approved Statewide Transportation Improvement Program, ODOT

The Statewide Transportation Improvement Program (STIP) identifies the transportation projects that the state will fund during a four-year program. It is updated every two years. The 2004-2007 STIP identifies two Newberg that will be designed and/or constructed over the next four years. In addition, the STIP also funds a variety of ongoing state, regional, and local programs (e.g., the joint ODOT-DLCD Transportation Growth Management program, TriMet enhancement projects, etc.). Additional small projects within Newberg could be funded through one of these programs, although they would not be specifically called out in the STIP. Table 2-4 below displays the STIP projects planned for Newberg.

TABLE 2-4
2004-2007 ORE 99W SCHEDULED PROJECTS

Key	Section	Route	Highway Name	Total Cost (millions)	Description	Status	Year
09274	OR219: HILLSBORO/ SILVERTON HWY @ WILSONVILLE RD	Ore-219	HILLSBORO-SILVERTON	$ 0.672	CONSTRUCT INTERSECTION IMPROVEMENTS	CONSTR	2005
09320	NEWBERG-DUNDEE TRANS. IMP. #1	Ore-99W	PACIFIC WEST	$6.045	FUNDING TO BEGIN ENVIRONMENTAL DOCUMENT. TOTAL T-21 EARMARK = $333,000	ROWACQ	2004
12819	NEWBERG-DUNDEE TRANS. IMP. #2	Ore-99W	PACIFIC WEST	$2.000	DEVELOPMENT AND ROW ACQUISITION	ROWACQ	2006

Source: www.odot.state.or.us

2.2.6 Portland to Lincoln City Corridor, Oregon Highways 99W and 18 Interim Corridor Strategy, ODOT, March 1997

ORE 99W and OR 18 are currently the principal arterial routes in the communities which they pass. ORE 99W also acts as the main street setting in Newberg. These state routes serve dual functions of providing through movement and local access. Capacity improvements to improve regional connectivity in the ORE 99W corridor include a proposed bypass of the cities of Newberg and Dundee. The Newberg-Dundee Bypass will serve the long-term need for a limited access through western Yamhill County. The regional route would be maintained with signing and design features to attract traffic onto the bypass route. The bypass would incorporate full access control.

- The measures recommended in the interim corridor strategy specific to the city of Newberg are listed below. Other policies in the Plan are applicable, but are more broadly applicable. Some of the policies may have been superseded by other plans, particularly by the Newberg-Dundee Transportation Improvement Project. Establish park-and-ride lots at selected intersections in the corridor to serve carpool formation. Sites could be chosen based on their proximity to major intersections or interchanges and for their market potential in attracting park-and-ride users. Candidate locations include Sherwood, Newberg, McMinnville, and Willamina.
- Consider planting strips between the curb and sidewalk in urban areas.
- Link sidewalks together by completing intermittent section, particularly in Tigard, Tualatin, Sherwood, Newberg and Dundee.
- Consider developing separate multi-use paths for pedestrians and bicyclists along limited-access or heavily traveled portions of the corridor, or along new bypasses.
- Continue project development efforts related to the Newberg-Dundee bypass to assist in relieving congestion in the Newberg/Dundee area. If ongoing analysis indicates feasibility, this bypass could be constructed as a limited-access tollway.
- Identify locations for Ore 99W's interchanges with the proposed Newberg-Dundee Bypass and Tualatin-Sherwood Expressway.
- Implement planned access management projects in Tigard and Newberg.
- Investigate conversion of the Ore 99W/18 junction to a limited-access facility.
- Improve or provide traffic signal coordination in urban areas, specifically along Ore 99W in Tigard, Sherwood, and in Newberg.
- Eliminate median openings along Ore 99W, particularly between King City and Newberg, where safety history demonstrates that potential problems. Consider retaining median openings only at public streets.

2.2.7 Newberg-Dundee Transportation Improvement Project Alternatives (NDTIP) Analysis, December 1997 and Related Planning Process

The Project Oversight Steering Team (POST) for the NDTIP recommended the following three Multimodal Alternative Packages (MAPs) for advancement to the EIS Phase:

- The Regional Bypass MAP
- The Southern Bypass MAP
- The Transportation Management MAP

As of Spring 2004, the POST selected the Southern Bypass MAP as the preferred alternative. This MAP allows through traffic to bypass the constrained segment of ORE 99W in Newberg and Dundee by traveling along a new bypass roadway south of the cities.

The route will run from the base of Rex Hill Road east of Newberg to the junction of Ore 99W and Ore 18 (McDougal Corner). Four interchanges would provide access to the bypass. There will be an interchange at each end of the bypass: one at Ore 219 and one in east Dundee. The east Dundee interchange would be linked with Ore 99W by a new connector road. The MAP also includes express buses, as well as low level of transportation management. Additionally, it discourages large-scale retail zoning outside of Newberg and Dundee's central business districts.

2.3 LOCAL PLANS

2.3.1 Newberg Comprehensive Plan, 1979 (amended 1999)

The Newberg Comprehensive Plan addresses transportation in Section K, *Transportation*. This section includes transportation-related policies organized by the following nine goals:

GOAL 1: Establish cooperative agreements to address transportation based planning, development, operation and maintenance.

GOAL 2: Establish consistent policies which require concurrent consideration of transportation/land use system impacts.

GOAL 3: Promote reliance on multiple modes of transportation and reduce reliance on the automobile.

GOAL 4: Minimize the impact of regional traffic on the local transportation system.

GOAL 5: Maximize pedestrian, bicycle and other non-motorized travel throughout the City.

GOAL 6: Provide effective levels of non-auto oriented support facilities (e.g. bus shelters, bicycle racks, etc.).

GOAL 7: Minimize the capital improvement and community costs to implement the transportation plan.

GOAL 8: Maintain and enhance the City's image, character and quality of life.

GOAL 9: Create effective circulation and access for the local transportation system.

GOAL 10: Maintain the viability of existing rail, water and air transportation systems.

The Transportation Policy section of the Newberg Comprehensive Plan will be amended to implement the TSP and to comply with the other federal, state and local policy documents reviewed in this chapter. New policies will need to address the following issues included but not limited to the coordination of the Newberg-Dundee Transportation Improvement Project including the Newberg-Dundee Bypass and management of future interchanges, transit service, transportation demand management, downtown development, future streets plans, on-street parking and bicycle and pedestrian facilities.

2.3.2 Yamhill County Transportation System Plan, March 1996

The County has identified the following in their Transportation System Plan:

- Support of a limited access Newberg-Dundee bypass.
- Future consideration of commuter rail between McMinnville and Sherwood.

2.3.3 Yamhill County Public Transportation Needs Assessment, 2000

This study opens with a synopsis of all current public transportation planning impacting Yamhill County from the state, regional, county and city level. The synopsis indicates that generally public transportation is inadequately addressed in current planning programs to completely meet state goals and guidelines. The rest of the needs assessment study is divided into the following:

- An in-depth demographic study is provided
- Existing services were inventoried and evaluated.
- A Public Transportation Opinion Survey was conducted and analyzed..
- A section on how public transportation is funded provided a synopsis of existing and potential funding sources.
- A final section of the report discussed that anticipated changes in the immediate future of Yamhill County public transportation.

2.3.4 City of Newberg Transportation System Plan and Addendum Report, June 1994

The conclusions of this report regarding the Newberg-Dundee bypass can be updated to reflect current planning efforts. Regarding the NDTIP, the report highlights the fact that there is insufficient funding for the Newberg-Dundee bypass, which is estimated to cost of roughly $65 million. As of 2004, cost estimates for the construction of the Newberg-Dundee Bypass are $300-$350 million. This estimate does not consider design details or potential environmental mitigation. The 1994 report goes on to say that the City has no mechanism in place to develop a bypass facility, as these types of transportation improvements are typically planned, designed, and constructed by the State. As reflected by current planning efforts, ODOT and the NDTIP Project Oversight Steering Team (POST) are exploring ways to phase development of the bypass, in order to make funding and construction of the facility more manageable.

Section 3

Existing Conditions

Existing Conditions

3.1 INTRODUCTION

Transportation is one of the most important aspects of the economic viability and livability for a city. The City of Newberg is situated approximately 25 miles to the south and west of Portland and has experienced a population increase from 10,400 in 1980 to approximately 18,100 in 2000, an annual average growth rate of 3.7%. The growth of Newberg has placed increased demands on transportation modes in, and around the City. This section provides a summary of the existing transportation system conditions within the Newberg urban area.

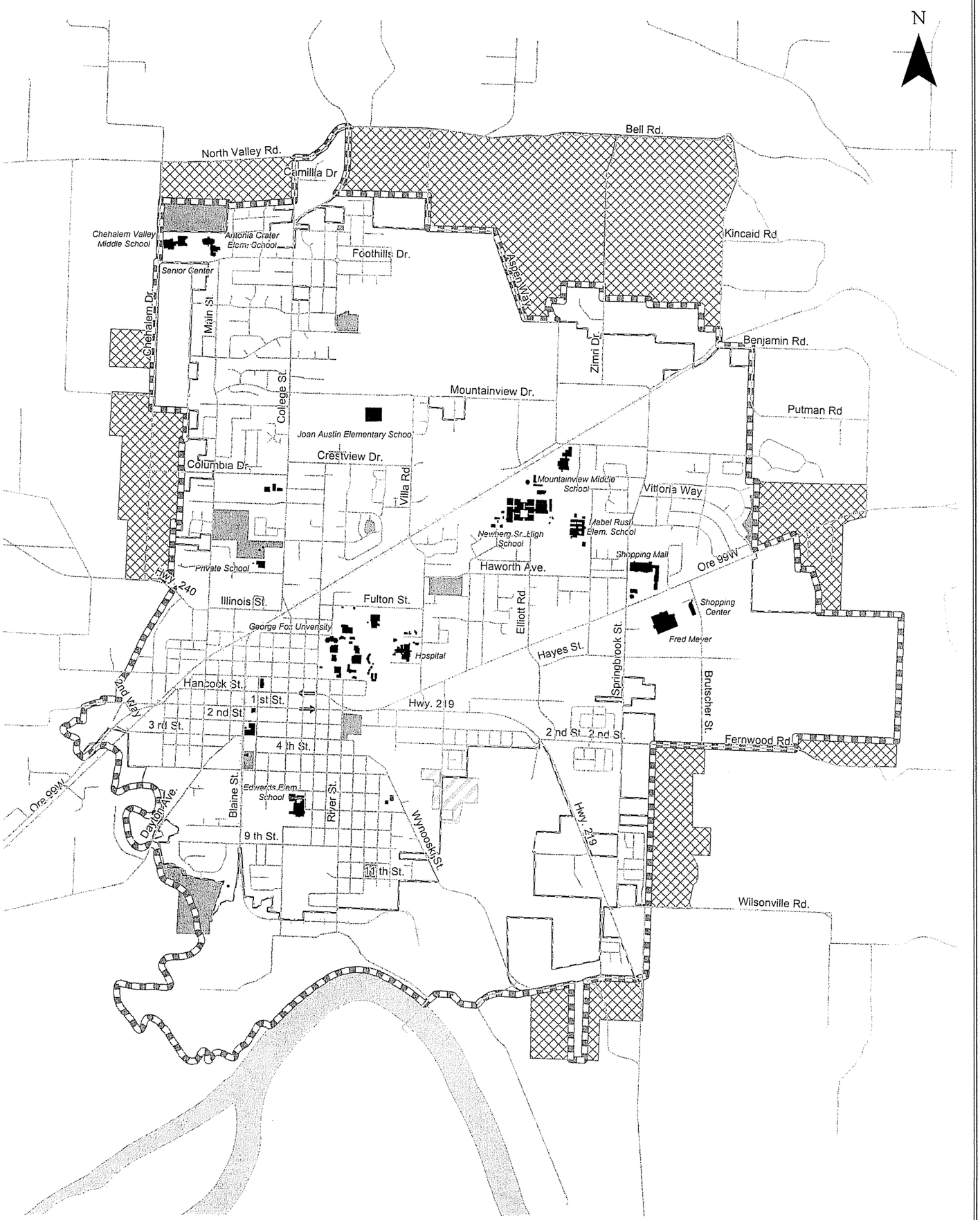
This section describes the existing condition of the City's transportation system, covering the highway, pedestrian, bicycle, transit, rail, air, water, freight movement, and pipeline/transmission transportation modes. Each mode's current performance and deficiencies are described. Also included is an inventory of existing transportation facilities. The findings of this existing conditions analysis serve as a baseline to which future conditions can be compared.

This section is a fact-finding document, in that it describes existing conditions, but does not recommend solutions to identified problems. Its findings will be combined with the findings of two other sections (plan and policy review, and future conditions) to provide a comprehensive overview of Newberg's transportation needs. Once this complete set of needs has been identified, subsequent sections will describe solution alternatives developed to meet these needs.

3.2 STUDY AREA AND LAND USE

Figure 3-1 is a street map of Newberg as of May 2004 and its immediate vicinity, with the city limits and Urban Growth Boundary (UGB) indicated. The base map used in Figure 3-1 and other maps included in this chapter provide a reference for locating other features of Newberg's transportation system. They do not depict the condition or public status of a particular roadway. The study area for the TSP generally consists of the area within the UGB and the Urban Reserve Area (URA), although in some instances areas outside the study area are also addressed, where transportation issues extend beyond the City.

Based on the requirements of Oregon's Transportation Planning Rule, only significant streets within the study area—those that can be classified as arterials or collectors—and intersections of these streets are generally addressed. Local street issues such as street connectivity and safety issues are also discussed where appropriate. Local traffic and safety issues on other roadways will be addressed in subsequent chapters through the primary analysis of the public involvement process, while the future conditions chapter presents a more extensive analysis of Newberg's development potential. However, because of the requirements of Oregon's Transportation Planning Rule, the TSP will only consider those areas currently within the City's planning area boundary (i.e., those areas currently covered by the City's comprehensive plan) when making assumptions about where Newberg will grow in the next 20-25 years.



LEGEND

- Urban Growth Boundary
- City Limits
- Urban Reserve Area
- Activity Centers
- Parks
- Cemetery
- Railroad
- Streets
- River

NOTE: STREET SYSTEM AS OF MAY 2004

STREET SYSTEM MAP
NEWBERG, OR.

FIGURE **3-1**

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3.3 TRANSPORTATION MODES AND FACILITIES

The City of Newberg's transportation system provides facilities serving many different transportation modes. This memorandum documents the existing facilities for the following modes:

- Pedestrian
- Bicycle
- Public Transportation
- Pipeline and Transmission System
- Rail
- Air
- Marine
- Roadway

Each of these modes is identified and discussed in the following sections.

3.3.1 Pedestrian

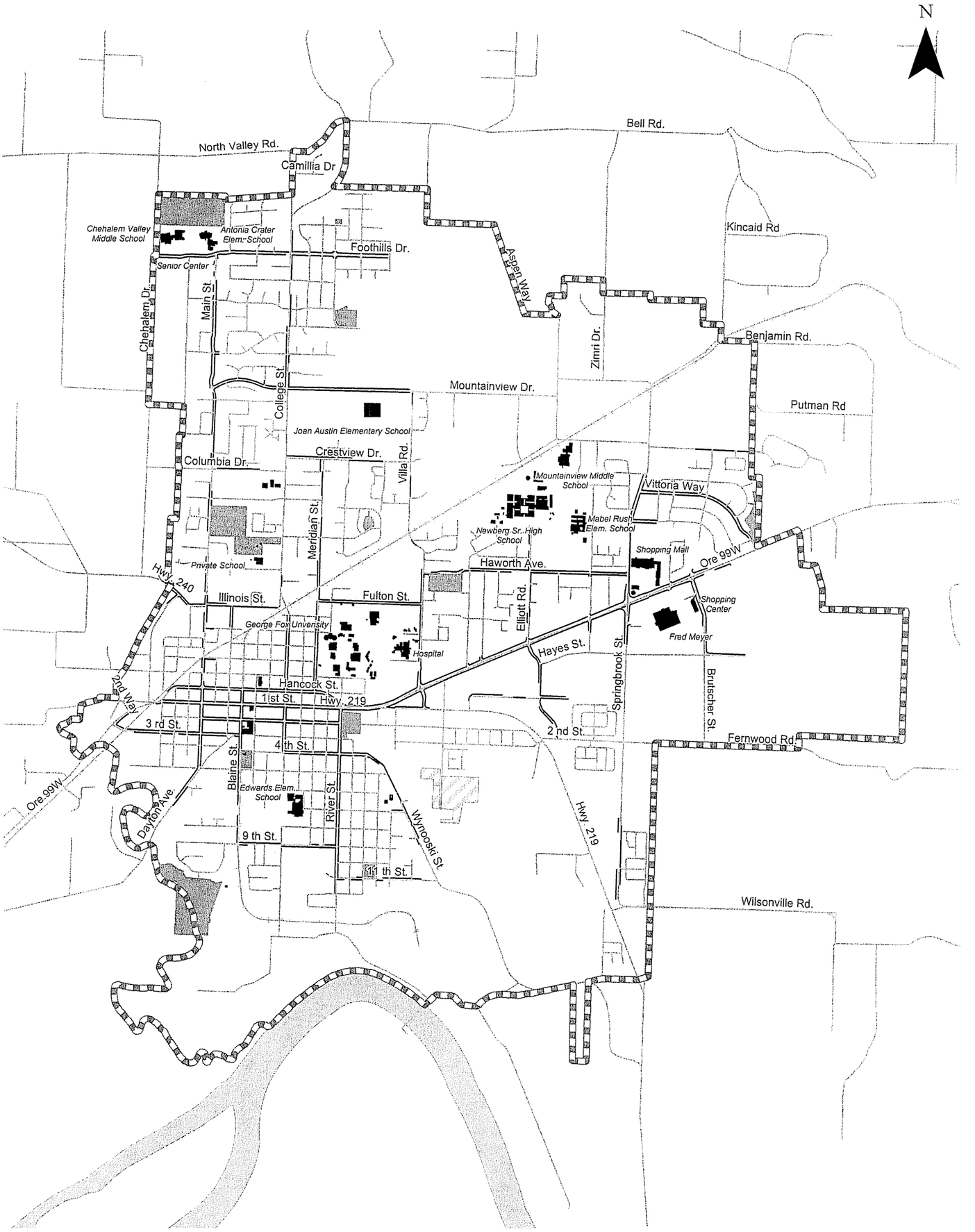
Pedestrian facilities serve a variety of needs. These include:

- Relatively short trips (under a mile) to major pedestrian attractors, such as schools, parks and open spaces, retail centers, churches, and public facilities, such as libraries, recreation centers, and community centers.
- Recreational trips—for example, jogging or hiking—and circulation within parklands.
- Access to transit (generally trips under ¼ mile to bus stops).
- Commute trips, where mixed-use development is provided, and people have chosen to live near where they work.

Continuous pedestrian facilities should connect neighborhoods and employment areas to nearby pedestrian attractors, be integrated with transit stops, and separate pedestrians from vehicular traffic. In addition to providing sidewalks *along* major roadways, opportunities need to be provided at reasonable intervals for pedestrians to *cross* roadways, as well. This latter feature may require trade-offs between the automobile and pedestrian modes.

Persons with disabilities, persons with strollers, and many other types of pedestrians desire sidewalk facilities with minimal grades and even surfaces. Wheelchair users require ramps at intersections, while persons with visual impairments require tactile information, such as a textured pavement surface, to help them navigate.

Figure 3-2 depicts the locations of sidewalks along key roadways within Newberg. As shown, there are significant gaps in the sidewalk network, where no dedicated pedestrian facilities exist, or where sidewalks are only provided along one side of a street. However, also shown in Figure 3-2 are areas of good sidewalk coverage. Ore 99W through central Newberg is generally well-covered by the sidewalk network. In addition, newer residential and commercial areas also have good pedestrian facilities, reflecting city policies that require new development to provide adequate sidewalk facilities.



LEGEND

- Urban Growth Boundary
- Activity Centers
- Parks
- Cemetery
- Sidewalks
- Railroad Tracks
- Streets
- River

EXISTING PEDESTRIAN FACILITIES
NEWBERG, OR.

FIGURE **3-2**

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3.3.2 Bicycle

Just as sidewalks do, bicycle facilities (dedicated bicycle lanes in the paved roadway, multi-use paths shared with pedestrians, etc.) serve a variety of trips. These include:

- Trips to major attractors, such as schools, parks and open spaces, retail centers, and public facilities such as recreation centers and community centers, where secure (and preferably covered) bicycle parking is available.
- Commute trips, where changing and showering facilities are provided at the workplace.
- Recreational trips.
- Access to transit, where bicycle storage facilities are available at the stop, or where space is available on bus-mounted bicycle racks.

As this list suggests, supporting bicycling as a viable alternative to the automobile requires more than simply providing bicycle lanes. Support facilities, such as secure parking and worksite changing facilities, are also needed before the bicycle trip will be considered as a practical alternative by most potential users.

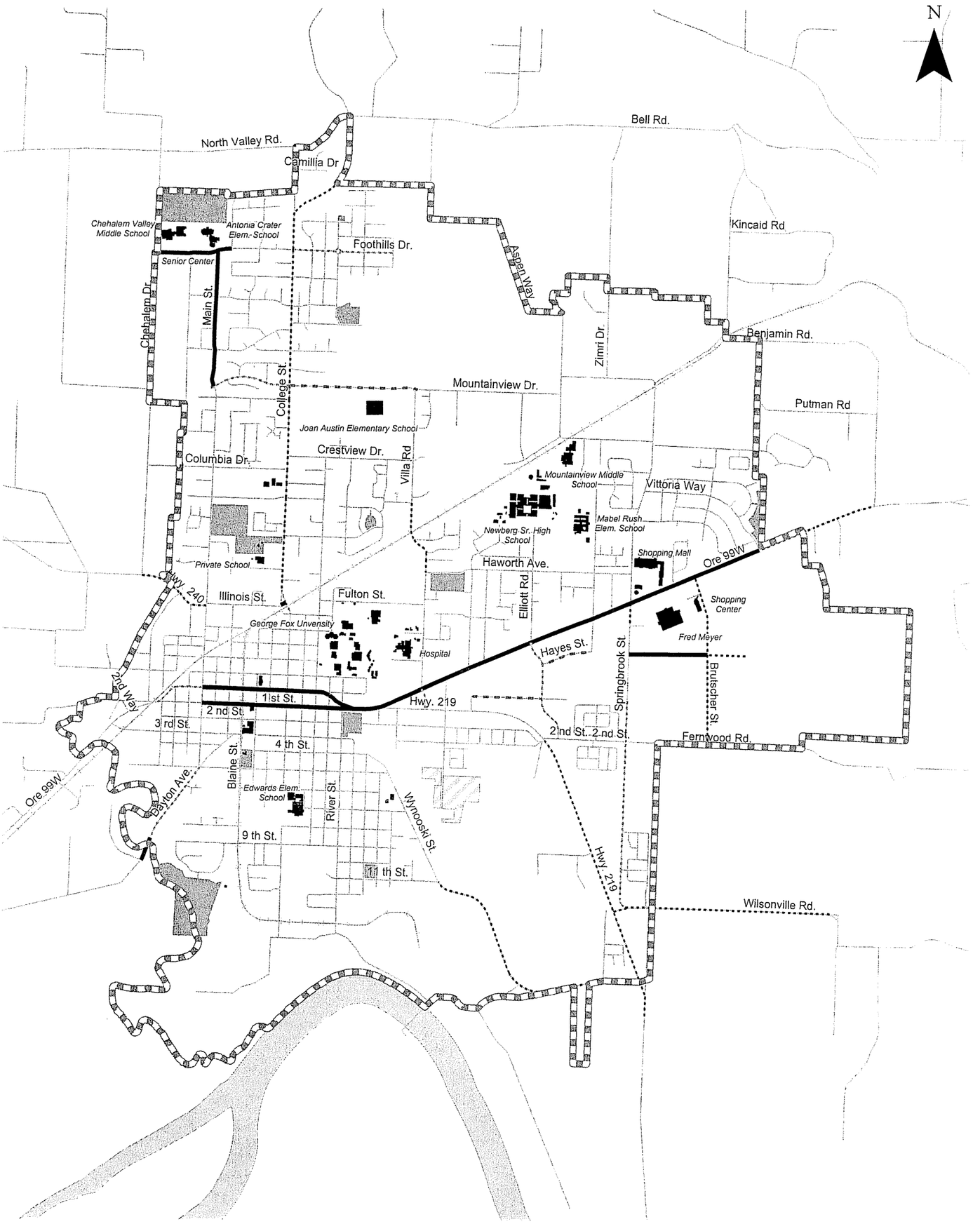
Dedicated bicycle facilities should be provided along major streets where automobile traffic speeds are significantly higher than bicycle speeds. Bicycle facilities should connect residential neighborhoods to schools, retail centers, and employment areas. However, allowing bicycle traffic to mix with automobile traffic is acceptable where the average daily traffic (ADT) on a roadway is less than 3,000 vehicles per day, according to the *Oregon Bicycle and Pedestrian Plan* (Oregon Department of Transportation, 1995).

Providing bicycle lanes on local streets would be appropriate where the volume of bicyclists is high, vehicle speeds are higher than 25 miles per hour, or poor sight distance exists. Streets leading to schools, for example, may have high volumes of bicyclists and a dedicated bicycle lane may be appropriate. In areas where no street connection currently exists, a multi-use path may be appropriate to provide adequate facilities for bicyclists.

Based on the City's most recent inventory of the existing bicycle facilities, Figure 3-3 depicts the locations of striped and unmarked bicycle lanes along the existing street network within Newberg. The following text provides a brief description of each facility type.

- Shared Roadway – designated shared roadway to accommodate shared use between vehicles and bicycles
- Shoulder Bikeway – wide roadway shoulder available for bicycle use
- Wide Lane – wide travel lanes to accommodate shared use between vehicles and bicycles
- Striped Lane 1 Side – dedicated striped bicycle lane along one side of roadway section
- Striped lane on about 75% of Section – dedicated striped bicycle lane along approximately 75% of roadway section
- Striped Lane – dedicated striped bicycle lane

As shown in Figure 3-3, very limited unmarked bike lanes and no striped bike lanes are provided along Ore 99W through Newberg. However, it should be noted that in some areas the potential for bicycle travel is available on Ore 99W along the striped shoulder on the highway.



LEGEND

- Urban Growth Boundary
- Activity Centers
- Parks
- Cemetery
- Railroad Tracks
- Streets
- River

Bicycle Network

- Shared Roadway
- Shoulder Bikeway
- Wide Lane
- Striped Lane 1 Side
- Striped Lane on about 75% of Section
- Striped Lane

EXISTING BIKE FACILITIES NEWBERG, OR.

FIGURE 3-3

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As shown in Figure 3-3, an inventory of existing bicycle facilities along the majority of the collector and local street network has been completed. This inventory suggests that bicycle travel is primarily supported through the shared use of the existing roadway network with vehicles. For all roadways within Newberg that carry less than 3,000 ADT, bike lanes are not required according to the criteria set forth in the *Oregon Bicycle and Pedestrian Plan.*

3.3.3 Public Transportation

Several public transportation services are provided within the City of Newberg. The operators include the Newberg School District and the Chehalem Valley Senior Citizens Council (CVSCC).

The Newberg School District operates school buses within Newberg and nearby areas, taking children to and from the four elementary schools, two middle schools, and Newberg High School, all located in Newberg and the Dundee Elementary School.

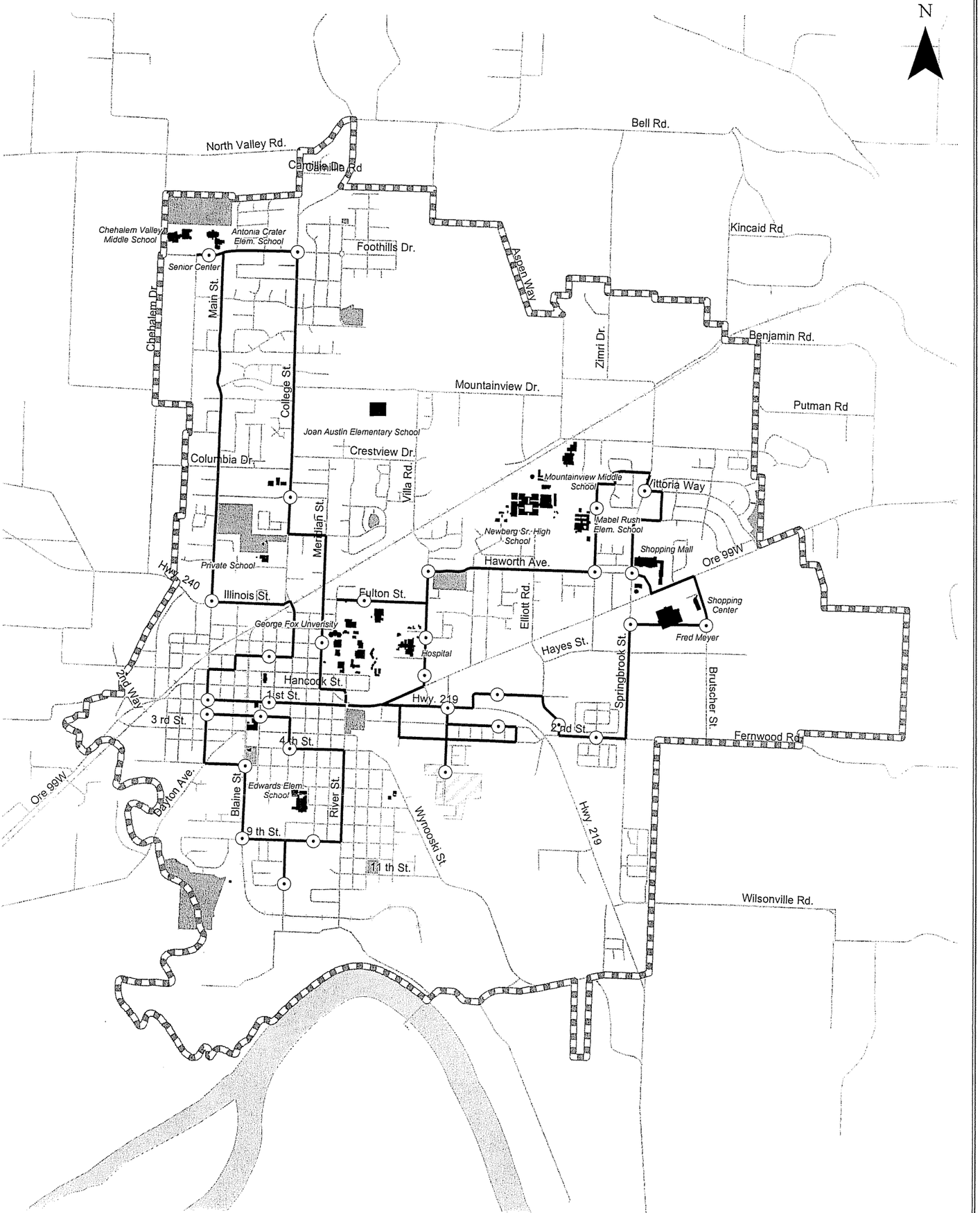
CVSCC operates the following public transportation services in Newberg.

- LINKS, a commuter service that connects McMinnville with Meridian Park Hospital in Tualatin and makes scheduled stops in Newberg. This service makes morning, afternoon, and evening round trips every weekday with transfer connection in Sherwood to the TRI-MET system serving the Portland/Vancouver urban area.
- Link Express, a commuter service that provides service twice a day from Newberg (Nap's) to Hillsboro through Gaston, connecting to the Hillsboro Max Rail Line.
- Dial-a-ride service is offered to the transportation impaired between 8:00 a.m. and 5:00 p.m., Monday through Friday.
- The Town Flyer, an intra-city fixed-route bus service operates approximately 6 hours a day (9:15 a.m.-3:12 p.m.), Monday through Friday. Figure 3-4 shows the route location and transit stops of the Town Flyer service.

The *Yamhill County Public Transportation Needs Assessment* also identifies the following public transportation services available to Newberg residents and employees:

- Gray Line of Portland (a sightseeing service)
- Amtrak passenger rail (described in detail later in the plan)
- Luxury TowVan Corporation (specialized towing services)
- Oregon Coachways (bus charter services)
- Shamrock Taxi (taxi service operating primarily out of Newberg and McMinnville but serving the entire county)
- Way-to-Go Shuttle (provides one round trip to Portland International Airport daily)
- Several specialized transport services associated with medical and institutional purposes

In addition, Newberg residents can take advantage of carpooling resources provided by Mid-Valley Rideshare.



LEGEND

- Flyer Transit Stop
- Flyer Transit Route
- Urban Growth Boundary
- Activity Centers
- Parks
- Cemetery
- Railroad Tracks
- Streets
- River

CVSCC TOWN FLYER FIXED-ROUTE TRANSIT SERVICE NEWBERG, OR.

FIGURE 3-4

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3.3.4 Pipeline and Transmission System

Pipelines transportation in and through the Newberg urban area includes transmission lines for electricity, cable television and telephone service; and pipeline transport of water, sewer and natural gas.

3.3.5 Rail

Lines and Operators

The Portland & Western Railroad (PNWR), owned by the Connecticut-based Genesee & Wyoming Railroad, operates one line through Newberg aligned roughly with Ore 99W along tracks that are owned by Union Pacific. The PNWR, along with the Willamette & Pacific Railroad (WPRR) operates approximately 447 miles of track in the Willamette Valley, with branches serving the coastal communities of Toledo and Astoria. Rail freight originating in the western Willamette Valley is carried on PNWR as far as Portland, where it may be switched to a larger railroad or to another mode.

The Federal Railroad Administration has established six track classes, which set maximum speeds for freight and passenger trains, based on the track condition. The track is classified as Class 1, which limits freight trains to 10 mph and passenger trains to 15 mph. The line is currently used for freight movement. Currently the line has one train operating daily in each direction with up to two additional smaller trains operating periodically.

Passenger Rail Service

Currently, the nearest passenger rail service is located in Portland and Salem and is operated by AMTRAK. From Portland, service is provided four times daily north to Seattle (with service partially funded by Washington State), with next-day rail and same-day bus connections to and from Vancouver, B.C.; and east once a day to Chicago via Spokane, Fargo, and Minneapolis. Service is provided south once a day from Portland and Salem to Sacramento, Oakland/San Francisco, and Los Angeles. Two additional rail trips per day and three bus trips per day are provided between Portland and Eugene, with stops in Salem and Albany.

3.3.6 Air

No public airports are located within the City of Newberg. However, private aircraft use and some limited commercial (crop dusting) services are provided at the Sportsman Airpark in Newberg, whose location is shown in Figure 3-1. The Sportsman Airpark is a privately owned airport operated for public use. It has one paved 2,800-foot runway and averages 14,000 operations (takeoffs or landings) per year. Approximately 55 aircraft are based at the airport. The Sportsman Airpark provides general flight instruction and airplane rental and maintenance services, as well as private helicopter and recreational hot-air ballooning services.

A larger general aviation airport is located north of Newberg, in Hillsboro. The Hillsboro Airport serves approximately 200,000 operations annually. It is owned by the Port of Portland and has two paved runways (6,600 feet and 4,000 feet). There are three fixed-base operators at the airport, and the airport provides all the facilities to support jet- and propeller-driven aircraft and helicopters.

In addition, the McMinnville Municipal Airport also provides a full-service, general aviation airport for limited local commercial service and private aircraft use. It is owned by the City of McMinnville and has two paved runways (6,280 feet and 4,800 feet). The fixed-base services include flight instruction, aviation fuel, aircraft maintenance and charter services. The airport provides all the facilities to support jet- and propeller-driven aircraft and helicopters and aircraft tie-downs and hangars are available for rental to the public.

The nearest airport with scheduled passenger service is the Portland International Airport, located approximately 25 miles northeast of Newberg. This airport is also owned by the Port of Portland and has three runways (7,000 feet, 8,000 feet, and 11,000 feet). The Portland International Airport serves more than 13.7 million passengers and 270,000 tons of cargo annually.

3.3.7 Marine

The Willamette River is located south of Newberg (as shown in Figure 3-1) and provides potential opportunities for recreational boating. Historically, the Willamette River has been used for the shipment of raw timber and other bulk goods. Current use of the Willamette River as a transportation route is limited to barge shipment of sand and gravel. Recreational boating on the Willamette River is popular year-round. In addition, marine access is available at the Rogers Landing County Park in southern Newberg.

Yamhill County provides marine patrol on the Willamette River between the I-5 Bridge and the Weatland Ferry to enforce boating regulations and to respond to marine emergencies. The marine patrol is comprised of twelve fulltime deputies and two seasonal employees, all certified in boat operations. During the summer months between Memorial Day and Labor Day, the marine patrol operates two boats on the Willamette River for a minimum of sixty patrol hours per week. Outside of the summer months, the marine patrol only responds to emergency calls.

3.3.8 Roadways

Highways and streets are the primary means of mobility for residents of Newberg. These public facilities are under several jurisdictions and are typically classified based on traffic loads, speeds and accessibility.

Jurisdiction

Public roads within the study area are maintained by three different jurisdictions: the City of Newberg, Yamhill County, and the Oregon Department of Transportation (ODOT). Each jurisdiction is responsible for the following:

- Determining the road's functional classification, which sets the roadway's role in the transportation system and its design features, such as width, right-of-way, driveway (access) spacing standards, and the types of pedestrian and bicycle facilities provided.
- Maintenance.
- Approving construction and access permits.

From the City's perspective, having other agencies regulate and maintain some of the roadways within the City can be both good and bad. Typically, county and state facilities carry a greater proportion of regional and statewide traffic than city facilities, and having county and state

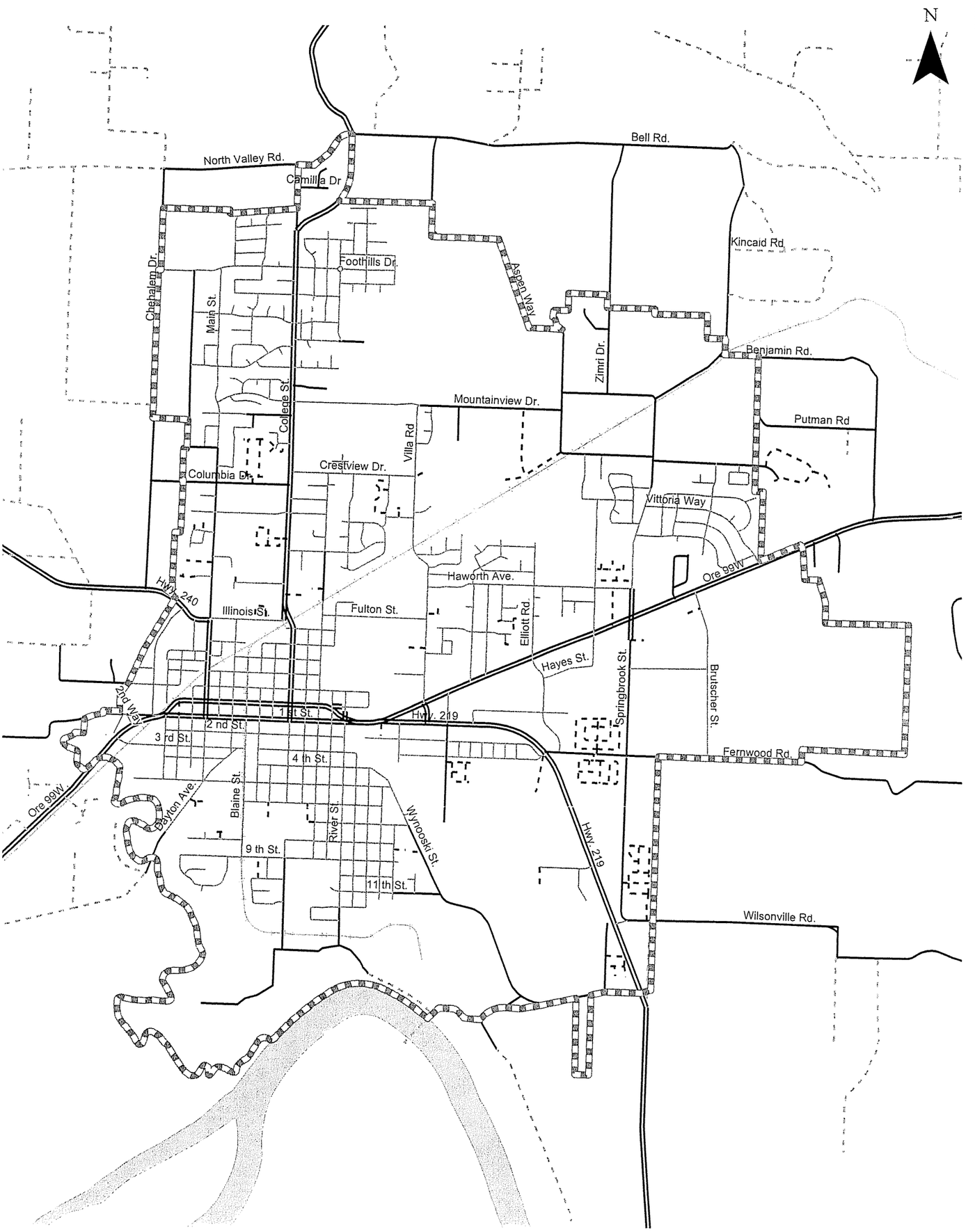
jurisdiction of these facilities allows the costs of these facilities to be spread over a larger group of users than just residents of Newberg. On the other hand, when improvements are needed to county and state facilities, those agencies' project priorities, design standards, and/or funding abilities may not match those of the City. This can leave the City in the position of either (1) adopting needed projects into the TSP that it cannot persuade or influence other jurisdictions to construct, or (2) locally funding part or all of the cost of improvements to regional and statewide facilities in order to construct them according to the City's priorities. Clearly, coordination is required between ODOT, Yamhill County and the City of Newberg to ensure that projects are constructed as needed to benefit the transportation system as a whole. Figure 3-5 shows the jurisdiction of roadways in and around Newberg.

As shown in Figure 3-5, ODOT regulates and maintains Ore 99W. Ore 99W is a five-lane highway (two lanes in each direction with a continuous center left-turn lane) north and south of Newberg, that splits into a couplet through downtown Newberg between River Street and Harrison Street. North of Newberg, Ore 99W connects to the Portland Metro area via Sherwood and Tigard. Ore 99W continues south of Newberg to connect to Dundee, McMinnville, Monmouth and Corvallis, joining with Ore 99E in Junction City. According to the *Oregon Highway Plan* (ODOT, 1999), Ore 99W is designated as a *Statewide Highway* and a *Statewide Freight Route*. Tourist traffic headed for Yamhill County wineries, the Grande Ronde casino, and Lincoln City via Ore 99W greatly increased during the 1990s. The highway experiences significant congestion in both directions on a daily basis.

As shown in Figure 3-5, Yamhill County has jurisdiction over the following roads within the study area:

- Chehalem Drive
- Bell Road
- Aspen Way (between Bell Road and Mountain View Drive)
- Zimri Drive
- Mountain View Drive (between Villa Road and Aspen Way)
- Springbrook Street (between Kincaid Road and Benjamin Road)
- Kincaid Road (between Bell Road and Springbrook)
- Crestview Drive (between Springbrook Street and Libra Street)
- Meridian Street (between Sierra Vista Street and Fulton Street)
- Springbrook Street (between Fernwood Road and Wilsonville Road)
- Columbia Drive (between Chehalem Drive and College Street)
- 2nd Street (between Ore 219 and Springbrook Street)
- 11th Street (between 175 feet west of Mill Place and Wynooski Street)
- Wynooski Street (between 11th Street and Ore 219)
- North Valley Road (between Chehalem Drive and College Street)
- Fernwood Road
- Wilsonville Road

All other public roadways not listed above are maintained and regulated by the City of Newberg.



LEGEND

Roadway Jurisdiction

- State
- County
- City
- Private
- Other
- Railroad Tracks
- Urban Growth Boundary
- River

ROADWAY JURISDICTION
NEWBERG, OR.

FIGURE **3-5**

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Functional Classification

A roadway's *functional classification,* as described earlier, determines its role in the transportation system, as well as its width, right-of-way dedications, driveway (access) spacing requirements, types of pedestrian and bicycle facilities provided, and so on. The functional classification is typically established by the city or county based on the following hierarchy:

Arterials represent the highest class of city street. These roadways are intended to serve higher volumes of traffic, particularly through traffic, at higher speeds. They also serve truck movements and should emphasize traffic movement over local land access. In some cases, arterial streets are further designated as "major" or "minor," each of which is a slight variation with different design standards.

Collectors represent the intermediate class. As their name suggests, these roadways collect traffic from the local street system and distribute it to the arterial street system. These roadways provide a balance between traffic movement and land access, and should provide extended continuous stretches of roadway to facilitate traffic circulation through the City. As part of this update, the City has divided collector streets into two discrete categories – major and minor collectors.

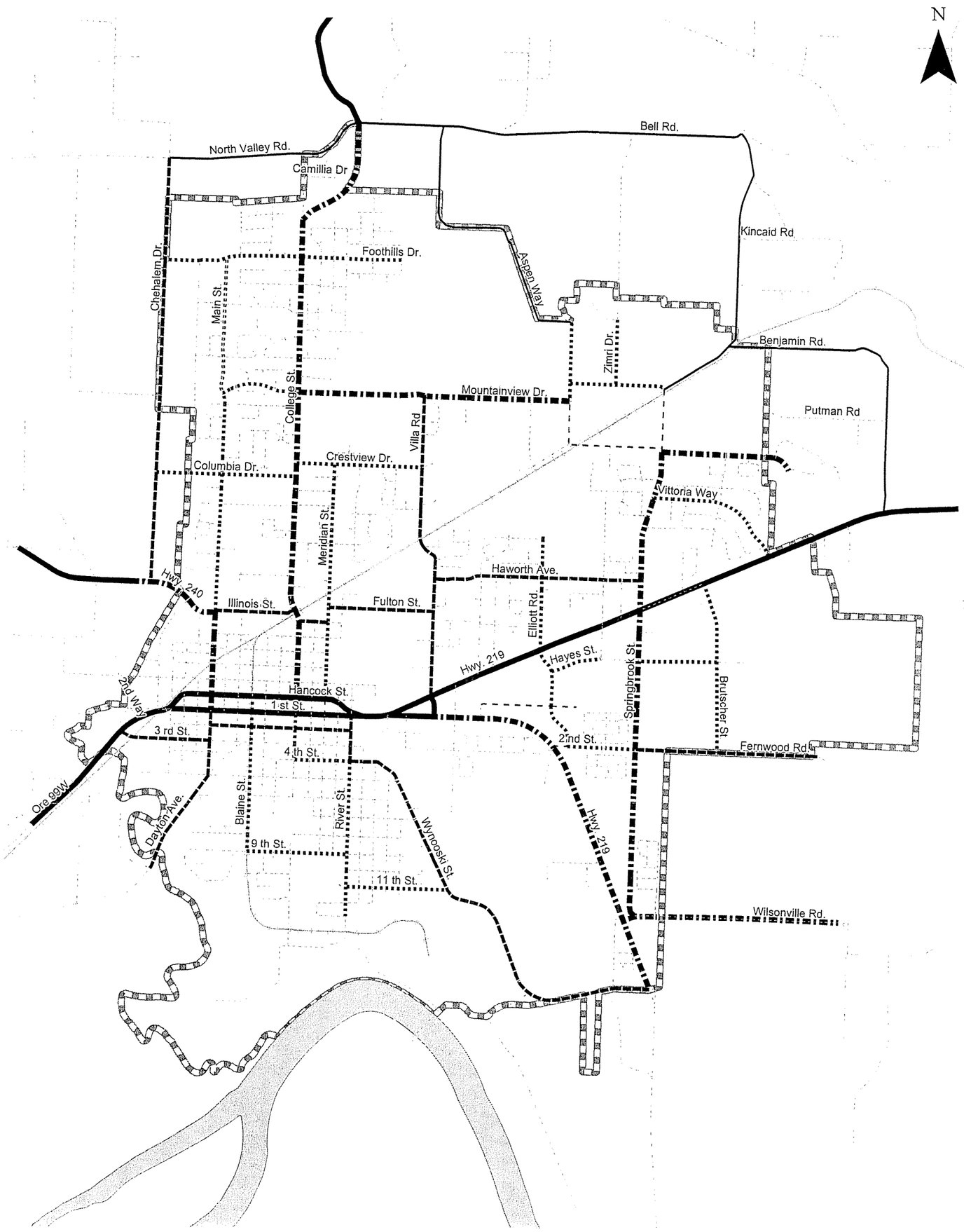
Local streets are the lowest classification. Their primary purpose is to provide local land access and to carry locally generated traffic at relatively low speeds to the collector street system. Local streets should provide connectivity through neighborhoods, but should be designed so as not encourage cut-through vehicular traffic.

The City of Newberg uses a roadway classification system that is fairly consistent with the classification system discussed above, with greater segregation for each classification. Six general classifications make up the system and include: Major Arterial, Minor Arterial, Major Collector, Minor Collector, Local Commercial/Industrial, and Local Residential streets. The City's functional classification system, as applied to existing roadways, is depicted in Figure 3-6. A potential functional classification system for the City of Newberg, including specific design and access management standards, will be discussed in subsequent sections.

ODOT applies a similar classification system to its highways, particularly concerning roadway operating standards and access standards. ODOT's categories, from highest to lowest, are *Interstate*, *Statewide*, *Regional*, and *District* highways. Ore 99W through Newberg is classified as a *Statewide* highway and *Statewide Freight Route*. Ore 219 and Ore 240 are both classified as *District* highways.

Traffic Control

Traffic control devices within the City of Newberg are placed based on the *Manual on Uniform Traffic Control Devices* (MUTCD) and the Oregon supplement to the MUTCD. The MUTCD is published by the Federal Highway Administration and is adopted nationwide as the guideline for traffic control devices.



LEGEND

Road Classification

- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- County Arterial
- Local Commercial
- Local Residential
- No Data
- Railroad Tracks

- Urban Growth Boundary
- River

FUNCTIONAL CLASSIFICATION
NEWBERG, OR.

FIGURE **3-6**

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Traffic Operations

Traffic volume counts were conducted in June 2002 and September 2002 for intersections of collectors and arterial roadways within Newberg. These counts were conducted during the weekday p.m. peak period (4:00 to 6:00 p.m.), which is when traffic volumes are highest on area roadways. Through these counts, the weekday p.m. peak hour was found to occur between 4:15 and 5:15 p.m. The traffic volumes for the weekday p.m. peak hour time period were then summarized and used to evaluate existing operations of intersections within the City of Newberg.

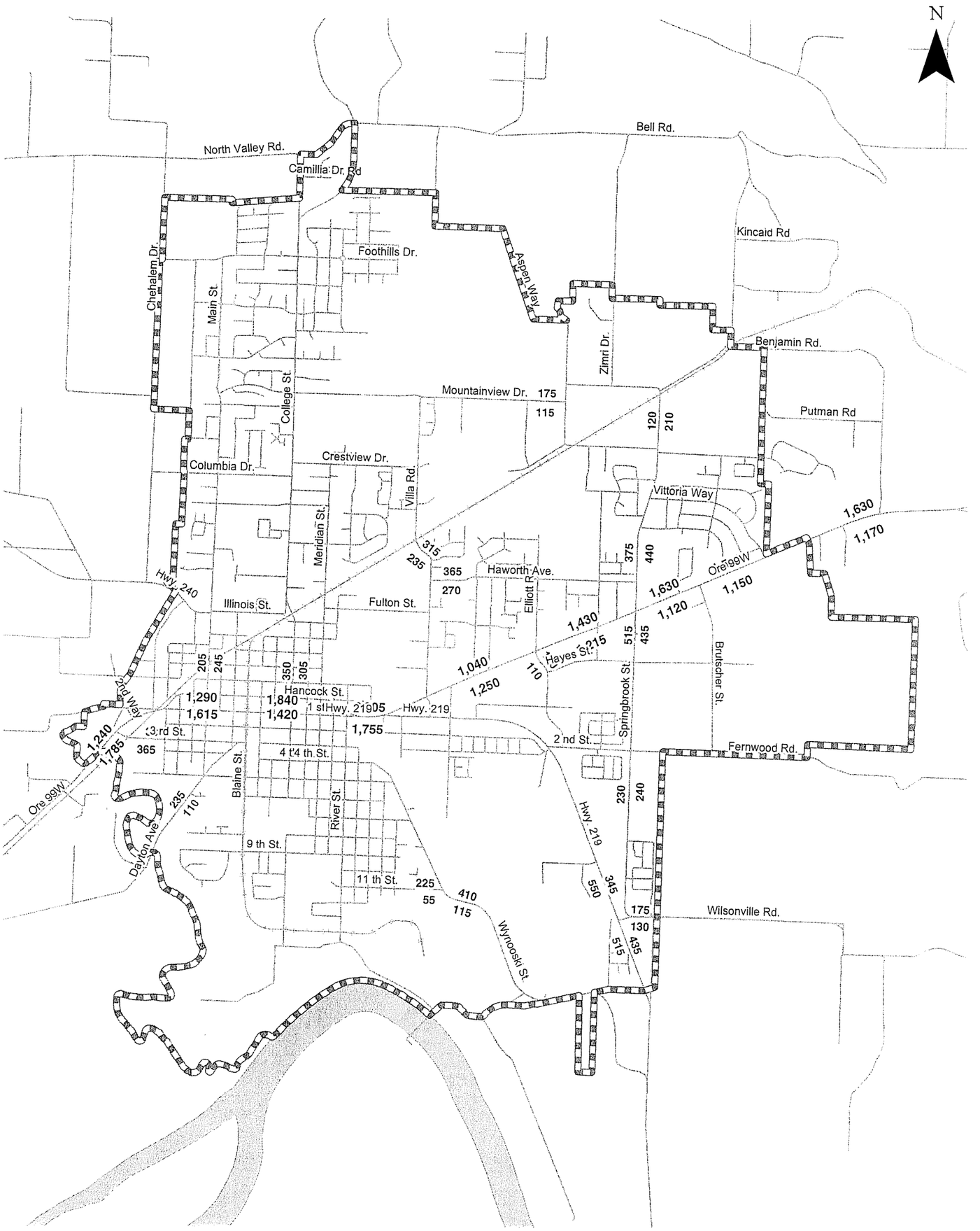
Figure 3-7 presents weekday p.m. peak hour traffic volumes (in the peak direction only) for the City's arterial and collector roadway system, derived from traffic volumes observed entering and exiting intersections adjacent to each street segment.

Intersection Operations

Traffic operations at intersections are generally described using a measure known as "level of service" (LOS). Level of service represents ranges in the average amount of delay that motorists experience when passing through the intersection. LOS is measured on an "A" (best) to "F" (worst) scale. At signalized and all-way stop-controlled intersections, LOS is based on the average delay experienced by all vehicles entering the intersection. At two-way stop-controlled intersections, LOS is based on the average delay experienced by the worst movement at the intersection, typically a left-turn from the stop-controlled street. For signalized intersections, LOS "D" (representing no more than 55 seconds of average delay) is generally considered to be the minimum acceptable operational level. For unsignalized intersections, LOS "E" (representing no more than 50 seconds of average delay) is generally considered to be the minimum acceptable level.

ODOT uses a different criterion for intersections under its jurisdiction (e.g. Ore 99W), based on the roadway's classification and the volume-to-capacity (v/c) ratio of signalized intersections located along its length. The v/c ratio indicates the percentage of an intersection's or movement's capacity that is being used. For example, a v/c ratio of 0.50 indicates that half of the available capacity is used. As stated previously, ODOT designates Ore 99W within Newberg a *Statewide Highway* and *Statewide Freight Route* located outside the Portland Metro area's Urban Growth Boundary. As such, to meet ODOT performance standards, the volume-to-capacity ratio for the signalized intersections along Ore 99W should not exceed 0.75. In addition, any intersection operating at or above capacity (v/c $\geq$ 1.00) should be considered to be operating unacceptably, even if other LOS standards are met, as queues will develop that can cause operational problems at adjacent intersections.

All of the operational analyses described in this report were performed in accordance with the procedures stated in the 2000 Highway Capacity Manual (Reference 1). A total of 25 intersections (Figure 3-8) were identified for traffic operations analysis. Table 3-1 shows the level of service and volume-to-capacity ratio for the intersections. Following traffic engineering terminology, unsignalized intersections that are not all-way stops are referred to as "two-way stops", even if the intersection is a "T" intersection with only one approach stopped. *Appendix "D" provides the existing conditions operational results worksheets for each study intersection.*



LEGEND

Weekday PM Peak Hour Traffic

Existing Traffic Volumes (Weekend PM Peak Hour)

Streets

Railroad Tracks

Urban Growth Boundary

River

2002 EXISTING TRAFFIC VOLUMES, WEEKDAY PM PEAK HOUR
NEWBERG, OR.

FIGURE **3-7**

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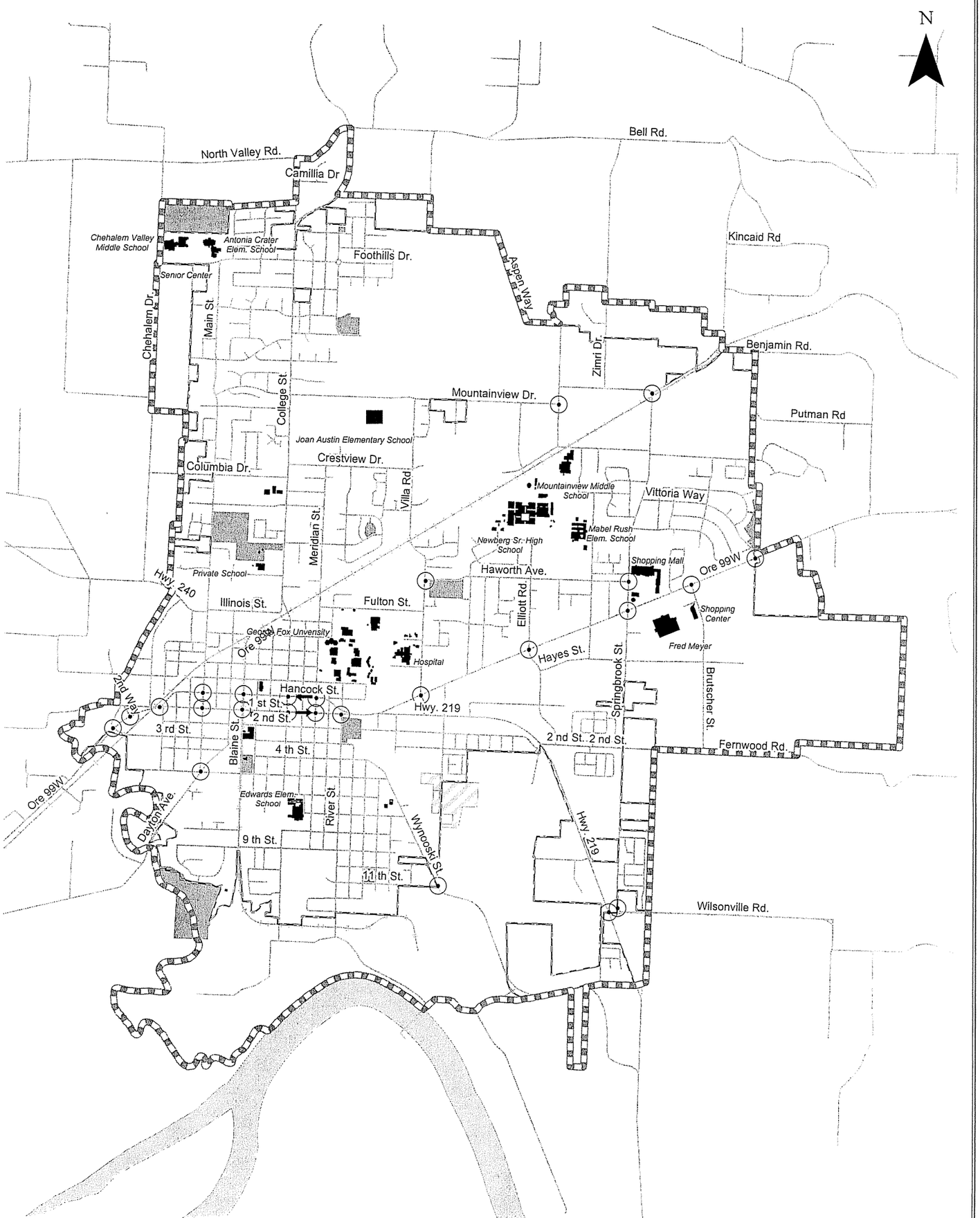

LEGEND

- Study Intersections
- Urban Growth Boundary
- City Limits
- Activity Centers
- Parks
- Cemetery
- Railroad
- Streets
- River

STUDY INTERSECTIONS
NEWBERG, OR.

FIGURE **3-8**

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TABLE 3-1
OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay (sec/veh)	
Ore 99W / 3rd Street	Two-way Stop	E	0.21	37.5	No
Ore 99W / 2nd Way	One-way Stop	F	0.48	>50	No [1]
1st Street / Harrison Street	Two-way Stop	D	0.07	29.4	No
1st Street / Main Street	Signal	B	0.68	15.1	No
1st Street / Blaine Street	Two-way Stop	C	0.17	23.4	No
1st Street /College Street	Signal	B	0.46	10.3	No
1st Street / Meridian Street	Signal	A	0.41	6.2	No
1st Street / River Street	Signal	B	0.83	19.9	No
Hancock Street / Main Street	Signal	B	0.66	14.9	No
Hancock Street / Blaine Street	Two-way Stop	E	0.02	37.8	No
Hancock Street / College Street	Signal	B	0.66	13.2	No
Hancock Street / Meridian Street	Signal	A	0.51	6.4	No
Ore 99W / Villa Road	Signal	D	0.79	36.8	No
Ore 99W / Elliot Road	Signal	B	0.64	10.9	No
Ore 99W / Springbrook Street	Signal	D	0.74	38.4	No
Ore 99W / Brutscher Street	Signal	C	0.74	22.1	No
Ore 99W / Vittoria Street	Two-way Stop	F	0.39	> 50	Yes
South Aspen Way / Mountain View Drive	Two-way Stop	B	0.18	11.0	No
Springbrook Street / Mountain View Drive	Two-way Stop	B	0.13	11.6	No
Villa Road / Haworth Avenue	Two-way Stop	D	0.68	36.7	No
Springbrook Street / Haworth Avenue	All-way Stop	D	0.81	25.4	No
5th Street / Dayton Street	Two-way Stop	B	0.49	11.2	No
Wynooski Street / 11th Street	Two-way Stop	A	0.07	9.5	No
Ore 219 / Wilsonville Road	Two-way Stop	F	> 1.0	> 50	Yes
Springbrook Street / Wilsonville Road	Two-way	F	> 1.0	> 50	Yes

1 While the level of service for the minor street approach at this two-way stop-controlled intersection is unacceptable, all other traffic movements through these intersections currently experience acceptable levels of service. In addition, there are alternative local street options to access the state highway at a signalized location, thereby providing an acceptable level of service for this movement.

	Stop				

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only.

The Springbrook/Haworth intersection was improved during the preparation o f this TSP. Accordingly, the LOS F that existed as a two-way stop-controlled intersection has been mitigated to LOS D by the installation of all-way stop controls.

LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

As shown in Table 3-1, all study intersections currently operate acceptably during the weekday p.m. peak hour with the exception of the following intersections.

Signalized Intersections

The following signalized intersections currently operate at acceptable LOS "B" to "D"; however, the v/c ratio at these intersections currently exceeds ODOT's performance standard of 0.75.

- 1st Street/River Street (0.83 v/c ratio)
- Ore 99W/Villa Road (0.79 v/c ratio)

Unsignalized Intersections

The following unsignalized intersections currently operate at LOS "F" and over capacity with the exception of the Ore 99W/2nd Way and Ore 99W/Vittoria Street intersections. In all cases, the critical minor street movements operate unacceptably. All other traffic movements through these intersections currently experience acceptable levels of service.

- Ore 99W/2nd Way (LOS "F", 0.48 v/c ratio)
- Ore 99W/Vittoria Street (LOS "F", 0.39 v/c ratio)
- Ore 219/Wilsonville Road (LOS "F", >1.0 v/c ratio)
- Springbrook Street/Wilsonville Road (LOS "F", >1.0 v/c ratio)

Signal Warrants

Unsignalized intersections experiencing failing levels of service can typically be mitigated with signalization to restore operational capacity and an acceptable LOS. However, LOS failures do not necessarily require signalization or other mitigation measures, particularly if the failure is linked to a lower volume, minor movement. Consequently, warrants have been developed to assist in the determination of the appropriateness of signalization at an intersection.

The *Manual on Uniform Traffic Control Devices* provides the nationally accepted warrant methodology for determining the need for signalization of intersections. The City of Newberg and ODOT accept this methodology and typically rely on Warrants 1, 2 and 3 for an initial determination of signalization of an intersection. At least one warrant must be met before a traffic signal can be considered; however, meeting a warrant does not necessarily mean a traffic signal is the best solution.

Signal warrants were evaluated at all intersections found to experience an unacceptable LOS "F" during the weekday p.m. peak hour. All traffic signal warrants were analyzed per procedures found in the Millennium Edition of the *Manual on Uniform Traffic Control Devices* (Reference 2). Table

3-2 reveals the results of signal warrant analyses. *Appendix "E" contains the signal warrant analysis worksheets.*

TABLE 3-2
TRAFFIC SIGNAL WARRANT RESULTS

Intersection	MUTCD Signal Warrant		
	Warrant #1 (Eight-Hour)	Warrant #2 (Four-Hour)	Warrant #3 (Peak Hour)
Ore 99W/2nd Way	No	No	No
Ore 99W / Vittoria Street	No	No	No
Ore 219 / Wilsonville Road	No	Yes	Yes
Springbrook Street/Wilsonville Road	No	No	Yes

Yes: warrant met No: warrant not met

As shown in Table 3-2, signal warrants are met at three of the five intersections evaluated. Under year 2002 traffic conditions, Warrant #3 (peak hour) is met at the Springbrook Street/Wilsonville Road intersection. At the Ore 219/Wilsonville Road intersection, Warrant #2 (four-hour) and Warrant #3 (peak hour) are met. Signal warrants are not met at the Ore 99W/2nd Way and Ore 99W/Vittoria Street intersections due to relatively low traffic volumes on the minor street approaches to Ore 99W.

Safety Evaluation

To determine whether safety deficiencies or potential conflict points exist within the study area, crash data was examined. This examination was completed through a preliminary review of the most recent three years of crash data for each of the study intersections provided by the City of Newberg. The crash data were reviewed at the intersection level in order to identify potential safety issues that should be addressed at each of the study intersections.

Review of Crash Data

Detailed crash data was obtained from ODOT for the three-year period from January 1, 1999 to December 31, 2001 for each of the study intersections. Typically, intersection safety is evaluated by calculating a crash rate (the number of crashes per million entering vehicles (MEV)) and the frequency of crashes (number of crashes per year). Generally, a crash rate exceeding 1.0 crashes per MEV warrants a more qualitative evaluation for that specific intersection. The crash frequency, typical crash patterns, and other characteristics are used to further evaluate whether a safety deficiency exists. Additional examination is particularly necessary when crashes of a particular type recur, pedestrians or bicyclists are involved, a high proportion of crashes result in injuries, or one or more fatalities occur.

Results of Preliminary Safety Evaluation

Based on the most recent three years of crash data, crash rates and frequencies were calculated as shown in Table 3-3. It should be noted, however, that motorists might not report some crashes or the property damage limit may not have been exceeded to classify the crash. Therefore, not all crashes that occur at an intersection may show up in the data.

TABLE 3-3
STUDY INTERSECTION CRASH RATES

Intersection Name	Crashes	Freq	TEV	ADT	MEV	Rate
Ore 99W/3rd Street	3	1.00	2285	22850	25.02	0.12
Ore 99W/2nd Way	5	1.67	2365	23650	25.90	0.19
Ore 99W/Harrison Street	0	0.00	2450	24500	26.83	0.00
1st Street/Main Street	21	7.00	2310	23100	25.30	0.83
1st Street/Blaine Street	3	1.00	1485	14850	16.25	0.18
1st Street/College Street	10	3.33	1840	18400	20.15	0.50
1st Street/Meridian Street	4	1.33	1625	16250	17.79	0.22
1st Street/River Street	9	3.00	3810	38100	41.72	0.22
Hancock Street/Main Street	14	4.67	1770	17700	19.38	0.72
Hancock Street/Blaine Street	4	1.33	1885	18850	20.64	0.19
Hancock Street/College Street	8	2.67	2445	24450	26.77	0.30
Hancock Street/Meridian Street	6	2.00	1975	19750	21.63	0.28
Ore 99W/Villa Road	13	4.33	3355	33550	36.74	0.35
Ore 99W/Elliott Road	9	3.00	2885	28850	31.59	0.28
Ore 99W/Springbrook Street	22	7.33	3755	37550	41.12	0.54
Ore 99W/Brutscher Street	6	2.00	2980	29800	32.63	0.18
Ore 99W/Vittoria Way	1	0.33	2840	28400	31.10	0.03
Mountainview Drive/Aspen Way	1	0.33	320	3200	3.50	0.29
Mountainview Drive/Springbrook Street	0	0.00	360	3600	3.94	0.00
Haworth Avenue/Villa Road	4	1.33	905	9050	9.91	0.40
Haworth Avenue/Springbrook Street	14	4.67	1430	14300	15.66	0.89
5th Street/Dayton Street	1	0.33	560	5600	6.13	0.16
Wynooski Street/11th Street	1	0.33	530	5300	5.80	0.17
Ore 219/Wilsonville Road	10	3.33	1305	13050	14.29	0.70
Wilsonville Road/Springbrook Street	0	0.00	675	6750	7.39	0.00

Table 3-3 indicates crash rates for each study intersection along with the total number of reported crashes and total number of entering vehicles at each location. A number of intersections have a relatively high total number of crashes, resulting in a high frequency although their overall crash rate may not be particularly high due to the high volume of vehicles using these intersections. Table 3-4 provides additional detail about the crash history at each of the study intersections, including the crash type and severity of the collision.

TABLE 3-4
CRASH TYPE AND SEVERITY

Intersection Name	No. of Crashes	Collision Type					Severity	
		Lane Changing/ Sideswipe	Rear-End	Turning	Angle	Other	Property Damage Only	Injury
Ore 99W/3rd Street	3	0	1	2	0	0	0	3
Ore 99W/2nd Way	5	0	1	3	0	1	5	0
Ore 99W/Harrison Street	0	0	0	0	0	0	0	0
1st Street/Main Street	21	0	6	6	8	1	14	7
1st Street/Blaine Street	3	0	1	0	1	1	2	1
1st Street/College Street	10	0	4	3	2	1	8	2
1st Street/Meridian Street	4	0	1	0	3	0	2	2
1st Street/River Street	9	0	3	4	0	2	5	4
Hancock Street/Main Street	14	0	2	4	7	1	8	6
Hancock Street/Blaine Street	4	0	2	1	1	0	1	3
Hancock Street/College Street	8	0	0	3	5	0	6	2
Hancock Street/Meridian Street	6	1	1	0	4	0	4	2
Ore 99W/Villa Road	13	1	8	3	1	0	10	3
Ore 99W/Elliott Road	9	0	1	3	4	1	6	3
Ore 99W/Springbrook Street	22	0	16	3	3	0	11	11
Ore 99W/Brutscher Street	6	0	5	1	0	0	3	3
Ore 99W/Vittoria Way	1	0	0	1	0	0	1	0
Mountainview Drive/Aspen Way	1	0	1	0	0	0	1	0
Mountainview Drive/Springbrook Street	0	0	0	0	0	0	0	0
Haworth Avenue/Villa Road	4	0	0	3	1	0	3	1
Haworth Avenue/Springbrook Street	14	0	0	5	9	0	11	3
5th Street/Dayton Street	1	0	0	1	0	0	1	0
Wynooski Street/11th Street	1	0	0	1	0	0	1	0
Ore 219/Wilsonville Road	10	0	2	3	4	1	4	6
Wilsonville Road/Springbrook Street	0	0	0	0	0	0	0	0

Based on the available data, most intersections do not appear to have specific safety issues to be addressed. However, the following locations have been identified as having high crash frequencies and apparent crash patterns, despite their low crash rate.

- **First Street/Main Street:** This intersection has a crash rate of 0.85 crashes per MEV, however, it has a crash frequency of 7.00 crashes per year. Five of these crashes were angle collisions due to improper left turns in oncoming traffic. Four of these angle collisions resulted in at least minor injuries to one or more parties involved. The collisions are likely

due to drivers failing to yield. There are no sight distance or other physical characteristics that would contribute to these crashes.

- **Hancock Street/Main Street:** Fourteen crashes occurred at this location in the three-year time period studied. There were no distinct patterns in the crashes observed and no physical characteristics that might contribute to these crashes.
- **Ore 99W/Villa Road:** This intersection experienced 13 crashes during the study period. This intersection is highly congested and long queues are common. Six of the 13 crashes reported were rear-end collisions, likely due to the long queues and congestion level.
- **Ore 99W/Springbrook Street:** This intersection experienced approximately 7.33 crashes per year. Fifteen of the 22 crashes reported over the three-year time period were rear-end collisions on Oregon Ore 99W, seven resulting in at least minor injuries to one or more parties involved. This intersection experiences high levels of congestion, which may contribute to the number of rear-end collisions that occur at this location. In addition, vehicles traveling westbound are entering the city from a rural area and experience reduced speeds as it approaches the intersection. This change in speed may also contribute to the westbound rear-end collisions.
- **Haworth Avenue/Springbrook Street:** At this location, an average of 4.67 crashes per year occurred. Of the 14 reported crashes, seven were angle collisions between northbound and eastbound vehicles. This is a two-way stop controlled intersection and these collisions are likely a result of limited gaps available for the minor street egress movement. City staff has identified this location and is discussing alternatives to mitigate this including signalization, realignment, and closure of the driveway on the east approach.
- **Ore 219/Wilsonville Road:** This intersection experienced 10 crashes during the study period. Seven of the 10 crashes reported were either turning or angle collisions, likely due to a combination of high travel speeds and limited acceptable gaps in the mainline traffic stream during peak hour conditions.

3.3.9 Truck Freight Transportation

ODOT classifies Ore 99W as a freight route through the City of Newberg. Based on traffic data taken from the ODOT automatic traffic recorder station # 36-004, approximately four percent of the daily traffic on Ore 99W are heavy vehicles. Triple trailers are not allowed on Newberg streets. No other truck weight or size restrictions were identified in the City.

Truck freight movements in Newberg involve shipments both to and from locations in the City, and shipments that pass through the City, particularly along Ore 99W. Most trucks with origins or destinations within the City are headed for the commercial and industrial areas located along Ore 99W. Freight movements rely in large part on Ore 99W, since it is a primary freight route through Yamhill County. Congestion that occurs on the highway produces delays in getting freight to its destination.

3.4 SUMMARY OF EXISTING CONDITIONS

The following is a summary of the current condition of the transportation modes serving Newberg:

- **Pedestrian:** Ore 99W through Newberg is generally well-covered by a sidewalk network. Newer residential and commercial areas also have good pedestrian facilities, reflecting city policies that require new development to provide adequate sidewalk facilities. However, there are many residential and industrial neighborhoods in Newberg in which the sidewalk system has many missing links. Crosswalks are provided across Ore 99W at all signalized intersections.
- **Bicycle:** Based on the City's most recent inventory of the existing bicycle facilities, striped bike lanes are provided in limited sections along Ore 99W through Newberg. In addition, based on a qualitative assessment of the street network via field visits, data provided by the City's Geographic Information System (GIS), and aid of an aerial image of the city, a preliminary evaluation suggests that bicycle travel is primarily supported through the shared use of the existing roadway network with vehicles.
- **Public Transportation:** Several public transportation services are provided within the City of Newberg. The Newberg School District operates school buses within Newberg and nearby areas, taking children to and from schools located in Newberg and Dundee. The Chehalem Valley Senior Citizens Council (CVSCC) operates the following public transportation services through Newberg.
  - LINKS - Commuter service that connects McMinnville with Meridian Park Hospital in Tualatin and makes scheduled stops in Newberg.
  - Link Express - Commuter service that provides service twice a day from Newberg (Nap's) to Hillsboro through Gaston, connecting to the Hillsboro Max Rail Line.
  - Dial-a-Ride
  - The Town Flyer - Intra-city fixed-route bus service.
- **Pipelines and Transmission Systems:** Electric transmission lines, natural gas distribution lines, and water lines serve the City. No issues have been identified with any of these facilities.
- **Rail:** The Portland & Western Railroad (PNWR) operates one line through Newberg aligned roughly with Ore 99W. The closest AMTRAK passenger rail stations are located in Portland and Salem.
- **Air:** No public airports are located within the City of Newberg. However, private aircraft use and some limited commercial (crop dusting) services are provided at the Sportsman Airpark in Newberg. A larger general aviation airport is located north of Newberg, in Hillsboro. The nearest airport with scheduled passenger service is the Portland International Airport, located approximately 25 miles northeast of Newberg.
- **Marine:** The Willamette River is located south of Newberg and provides potential opportunities for recreational boating. Marine access is located in Newberg at the Rogers Landing County Park.
- **Signalized Intersection Operations:** Ore 99W through Newberg operates at capacity during the weekday p.m. peak hour, due to high volumes of traffic. The following signalized intersections currently operate at an acceptable LOS; however, the v/c ratio at these intersections currently exceeds ODOT's performance standard of 0.75.
  - 1st Street/River Street (0.83 v/c ratio)
  - Ore 99W/Villa Road (0.79 v/c ratio)
- **Unsignalized Intersection Operations:** The following unsignalized intersections currently operate at LOS "F" and over capacity. In all cases, the critical minor street movements

operate unacceptably. All other traffic movements through these intersections currently experience acceptable levels of service. (Signal warrants that are met at each intersection are indicated below).

  - Springbrook Street/Haworth Avenue (LOS "F", >1.0 v/c ratio, peak hour warrant met)
  - Ore 219/Wilsonville Road (LOS "F", >1.0 v/c ratio, four-hour and peak hour warrant met)
  - Springbrook Street/Wilsonville Road (LOS "F", >1.0 v/c ratio, peak hour warrant met)

- **Roadway Safety:** Based on the available data, most intersections do not appear to have specific safety issues to be addressed. The Haworth Avenue/Springbrook Street and Ore 99W/Villa Road intersections have crash rates and frequencies that warrant more detailed investigation into crash types, patterns, and seriousness to identify specific contributing factors and develop mitigation measures to address safety issues at these locations.
- **Truck Freight Movement:** Traffic congestion on Ore 99W slows freight movements to and through Newberg.

Section 4

Future Conditions

Future Conditions

4.1 INTRODUCTION

This section presents the initial population growth forecast for Newberg through the year 2025 and the transportation needs that will result if no improvements are made to the City's transportation system in the meantime.

This section is organized into two main sections, followed by a brief summary of land use, growth, and TSP content issues identified through the future conditions analysis. The first section (Future Transportation Demand) presents growth forecasts for the City of Newberg and the impacts of that growth on the City's roadway system. The second section (Transportation Modes and Facilities) presents a list of conditions by mode, based on the technical analysis presented in the five technical memoranda and input received through the project's public involvement process.

4.2 FUTURE TRANSPORTATION DEMAND

4.2.1 Growth Forecasts

Future transportation demand within the City of Newberg was estimated based on an EMME/2 travel forecasting model developed by ODOT Transportation & Analysis Unit (TPAU). For the purposes of the model, Newberg is divided into a number of traffic analysis zones (TAZs), which are intended to represent areas that contain similar land uses and access similar roadways.

4.2.2 Travel Forecasts

As discussed above, ODOT's TPAU generated No-Build existing and future year model forecasts using the EMME/2 model. To perform the capacity analysis, year 2025 traffic volume forecasts for intersection turning movements and street segments were derived using the procedures outlined in National Cooperative Highway Research Program (NCHRP) Report 2-55. This procedures accounts for a combination of existing turning movement counts, and base and future year model forecasts, as outlined below:

- Measured turning movement volumes and patterns are used as a starting point. For example, a particular movement at an intersection might have a volume of 50 vehicles per hour.
- The percentage change in the model's base (existing) and future year traffic volume for each movement is calculated. For example, if the model's base year volume is 25 vehicles per hour and the future year volume is 75 vehicles per hour, the movement's volume triples during that time. Tripling the measured volume would result in a 2020 volume of 150 vehicles per hour.
- The numerical change (delta) in the model's traffic volumes is also calculated. In the example above, the model's volume for the movement increased by 50 vehicles per hour, from 25 to 75. Increasing the measured volume by 50 vehicles per hour results in a 2020 volume of 100 vehicles per hour.
- The results obtained from the percentage and numerical change calculations are averaged to obtain the 2020 analysis traffic volume. In this example, 150 and 100 would be averaged to obtain a year 2020 volume of 125 vehicles per hour for analysis purposes.

This process was applied to all of the study intersections in Newberg that exist in the base year model. The reasonableness of the averaging method was reviewed at each location, especially in instances in which the numerical and percentage change yielded very different results (which can often occur on very low volume movements in the base model that increase significantly in 2025) or when the existing model differed significantly from the existing turning movement counts. In these occasions, the available data and travel forecasts were reviewed to determine the appropriate year 2025 analysis volumes. In addition, where intersections are closely spaced, with little or no opportunity for access between the intersections, traffic volumes were balanced between the two intersections.

4.2.3 Year 2025 Roadway Operations

Figure 4-1 shows the projected weekday p.m. peak hour traffic volumes for the Year 2025 No-Build. The traffic volumes shown in Figure 4-1 represent an expected general growth of about 30-40 percent in as compared to the existing conditions described in Section 3 and Appendix D, with significantly greater increases in areas of new development. Figure 4-2 shows the corresponding planning-level volume-to-capacity ratio for each highway, arterial and collector link in the Newberg system.

Based on an analysis of the volume-to-capacity ratios, in the absence of a Bypass, Ore 99W will operate well over Oregon Highway Plan standards. In the five-lane section of Ore 99W from Brutscher Street to Meridian Street, a minimum of seven lanes (three through plus center left turn lane) will be required to restore 2025 operations to acceptable levels. In many section, four through lanes and additional turn lanes would be required. This expanded cross-section would result in an overall width that would be operationally infeasible, with severe, unacceptable impacts to adjacent land uses. This result is consistent with the findings in the draft NDTIP Locational Environmental Impact Statement.

Volumes and volume-to-capacity ratios on collector, arterial and highway links in the system are shown in Figures 4-1 and 4-2, respectively. Figure 4-2 is intended to provide a broad overview of the link operation of the system. It should be noted that typically capacity constraints in a transportation system occur at intersections. Hence, a detailed analysis of the key intersections in the system has been conducted to verify capacity constraints, where Figure 4-2 volume-to-capacity ratios are shown (near and over capacity).

4.2.4 Year 2025 Intersection Operations

Based on the methodology described above, year 2025 intersection traffic operations were analyzed for the same twenty-five study intersections analyzed under existing conditions. Table 4-1 shows the level of service and volume-to-capacity ratio for the intersections. Intersections in which the measure of effectiveness does not meet the relevant jurisdictional standard are identified in **bold**. For state highways, volume-to-capacity ratio is the relevant standard, and for city and county roads level-of-service is the relevant standard. *Appendix "F" provides the 2025 No-Build conditions operational results worksheets for each study intersection.*

Figure 4-1 Year 2025 No Build Traffic Volumes, Weekday PM Peak Hour

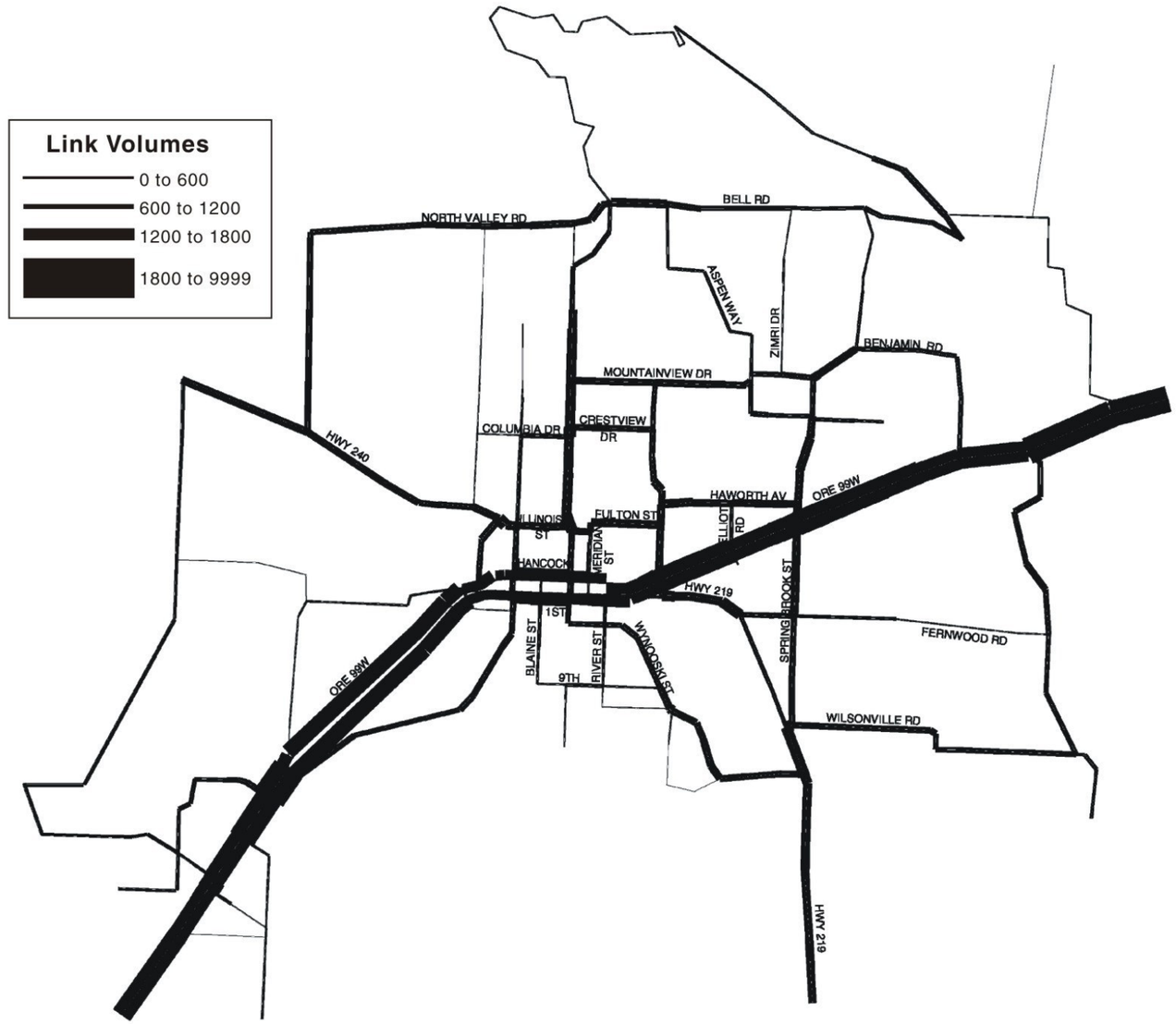


Figure 4-2 Year 2025 No Build Volume-to-Capacity Ratios, Weekday PM Peak Hour

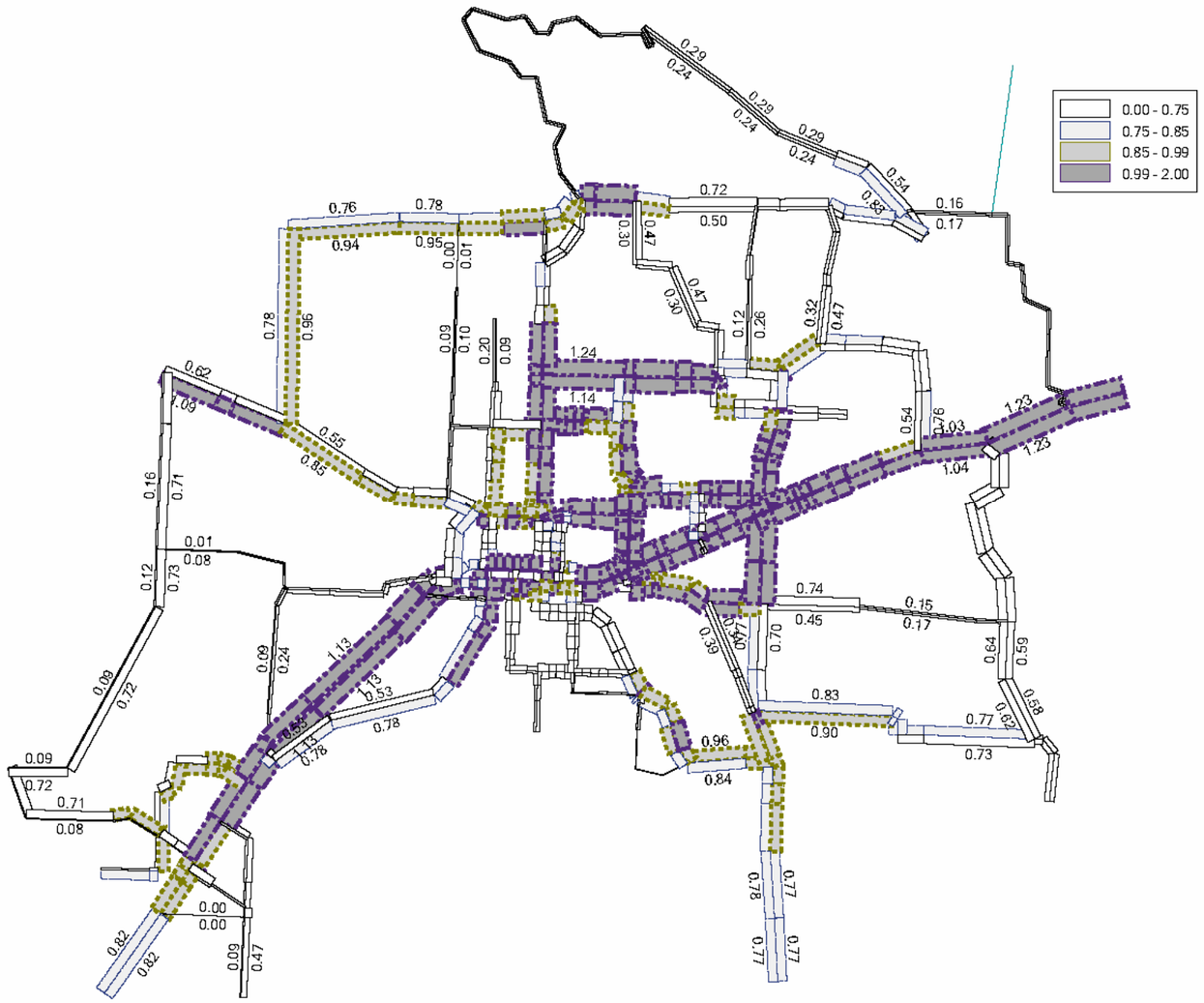


TABLE 4-1
YEAR 2025 NO BUILD OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay (sec/veh)	
Ore 99W / 3rd Street	Two-way Stop	F	0.38	> 50	No [1]
Ore 99W / 2nd Way	Two-way Stop	F	0.64	> 50	No [1]
1st Street / Harrison Street	Two-way Stop	E	0.31	44.1	No
1st Street / Main Street	Signal	C	**0.85**	21.0	Yes
1st Street / Blaine Street	Two-way Stop	F	**0.98**	>50	Yes
1st Street /College Street	Signal	B	0.60	12.9	No
1st Street / Meridian Street	Signal	A	0.57	9.6	No
1st Street / River Street	Signal	C	**0.97**	28.1	Yes
Hancock Street / Main Street	Signal	B	**0.85**	19.8	Yes
Hancock Street / Blaine Street	Two-way Stop	F	**>1.0**	> 50	Yes
Hancock Street / College Street	Signal	B	**0.85**	19.1	Yes
Hancock Street / Meridian Street	Signal	B	0.69	10.0	No
Ore 99W / Villa Road	Signal	E	**> 1.0**	78.5	Yes
Ore 99W / Elliot Road	Signal	D	**> 1.0**	51.9	Yes
Ore 99W / Springbrook Street	Signal	E	**> 1.0**	76.3	Yes
Ore 99W / Brutscher Street	Signal	D	**0.98**	48.1	Yes
Ore 99W / Vittoria Street	Two-way Stop	F	**> 1.0**	> 50	Yes
South Aspen Way / Mountain View Drive	Two-way Stop	**F**	> 1.0	> 50	Yes
Springbrook Street / Mountain View Drive	Two-way Stop	**F**	> 1.0	> 50	Yes
Villa Road / Haworth Avenue	Two-way Stop	**F**	> 1.0	> 50	Yes
Springbrook Street / Haworth Avenue	All-way Stop	**F**	> 1.0	> 50	Yes
5th Street / Dayton Street	Two-way Stop	**F**	> 1.0	> 50	Yes
Wynooski Street / 11th Street	Two-way Stop	B	0.17	13.8	No
Ore 219 / Wilsonville Road	Two-way Stop	F	> 1.0	> 50	Yes

1 While the level of service for the minor street approach at this two-way stop-controlled intersection is unacceptable, all other traffic movements through these intersections currently experience acceptable levels of service. In addition, there are alternative local street options to access the state highway at a signalized location, thereby providing an acceptable level of service for this movement.

Springbrook Street / Wilsonville Road	Two-way Stop	F	> 1.0	> 50	Yes

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only. Performance indicators shown in bold are above allowable thresholds.

LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

As shown in Table 4-1, the following study intersections are forecast exceed the applicable operating standards during the weekday p.m. peak hour.

Signalized Intersections

The following intersections are forecast to fail to meet the ODOT standard of v/c<0.75 but operate below capacity. Under these conditions, drivers experience little congestion.

- 1st Street / Main Street – v/c ratio of 0.85
- Hancock Street / Main Street – v/c ratio of 0.85
- Hancock Street / College Street – v/c ratio of 0.85

The following intersections are forecast to fail to meet the ODOT standard of v/c<0.75 and are forecast to approach capacity. Under these conditions, drivers experience moderate congestion.

- 1st Street/River Street – v/c ratio of 0.97

The following intersections are forecast to fail to meet the ODOT standard of v/c<0.75 and to operate above capacity. Under these conditions, drivers experience severe congestion and queuing.

- Ore 99W / Villa Road – v/c ratio exceeding 1.0
- Ore 99W / Elliot Road – v/c ratio exceeding 1.0
- Ore 99W / Springbrook Street – v/c ratio exceeding 1.0
- Ore 99W / Brutscher Street – v/c ratio exceeding 1.0

Unsignalized Intersections

The following intersections are forecast to fail to meet the applicable level-of-service and v/c ratio standards for the critical minor street movement. Additionally, they are expected to operate near or over capacity for the critical minor street movement. Under these conditions, drivers attempting to perform the critical movement will experience moderate to severe congestion and long delays. All other traffic movements through these intersections are forecast to experience acceptable travel conditions.

- 1st Street / Blaine Street – LOS F, v/c ratio of 0.98
- Hancock Street / Blaine Street – LOS F, v/c ratio exceeding 1.0
- Ore 99W / Vittoria Street – LOS F, v/c ratio exceeding 1.0
- South Aspen Way / Mountain View Drive – LOS F, v/c ratio exceeding 1.0
- Springbrook Street / Mountain View Drive – LOS F, v/c ratio exceeding 1.0

- Villa Road / Haworth Avenue – LOS F, v/c ratio exceeding 1.0
- Springbrook Street / Haworth Avenue – LOS F, v/c ratio exceeding 1.0
- 5th Street / Dayton Street – LOS F, v/c ratio exceeding 1.0
- Ore 219 / Wilsonville Road – LOS F, v/c ratio exceeding 1.0
- Springbrook Street / Wilsonville Road – LOS F, v/c ratio exceeding 1.0

4.3 TRANSPORTATION MODES AND FACILITIES

4.3.1 Pedestrian

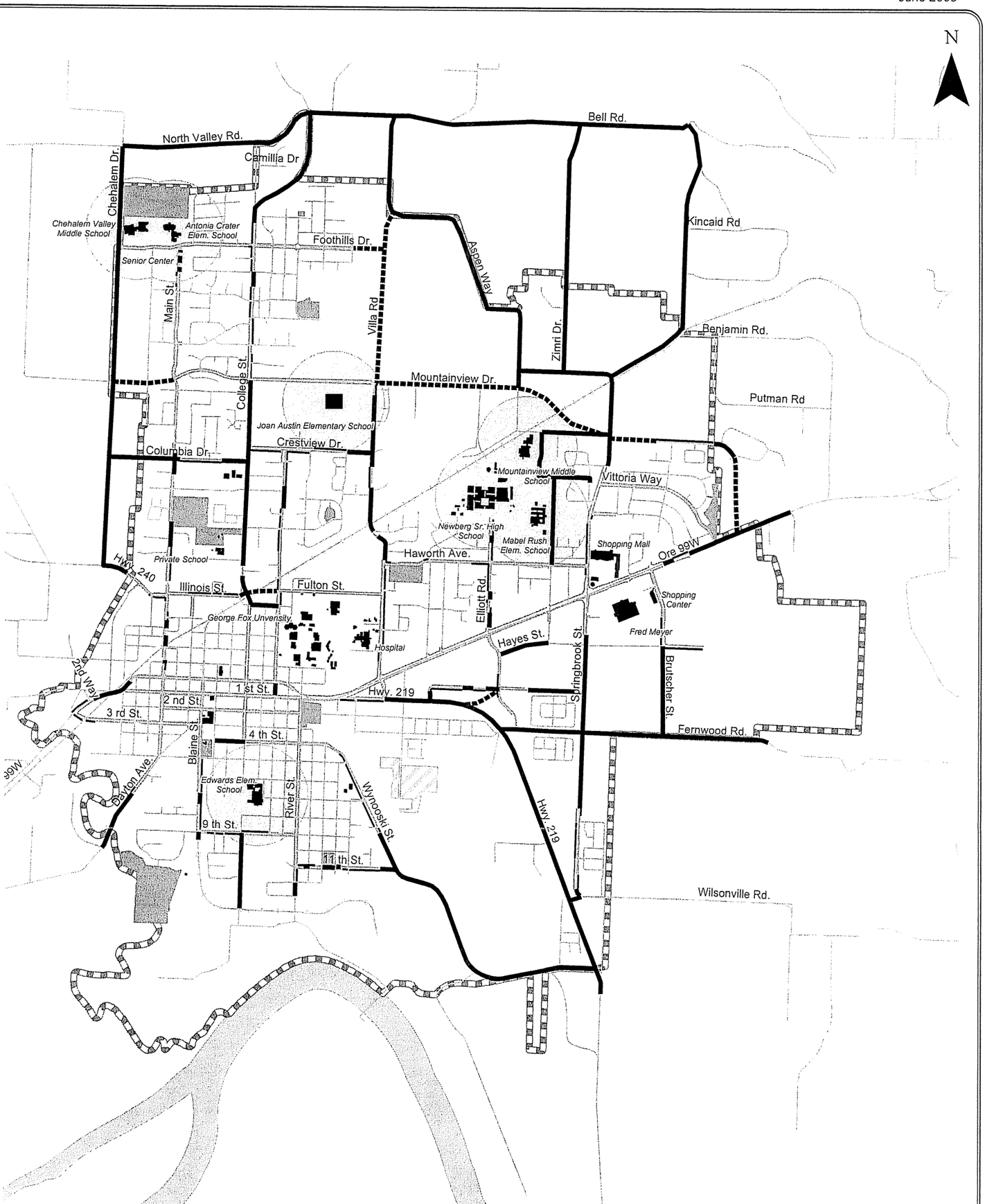
As identified through technical analysis and public comments, several pedestrian system improvements are needed to serve the following trip types: relatively short trips to major pedestrian attractors, recreational trips, access to transit, and commute trips. These improvements include the establishment of continuous sidewalks connecting neighborhoods with employment centers, pedestrian attractors and transit stops as well as designated pedestrian crossing locations.

New developments in the City of Newberg should provide adequate pedestrian facilities due to the City's policy of requiring developers to provide sidewalk connections along with other infrastructure. Therefore, the provision of missing pedestrian connections is largely a retrofitting task that should not grow beyond its current size. The major gaps in the existing pedestrian system identified by the community at Public Meeting #2 in April 2003 were:

- College Street north of Vermillion
- Main Street from Hancock Street to Lynn Drive
- Elliot Road north of Ore 99W.

An analysis of the existing pedestrian transportation system, described in *Section 3 Existing Conditions*, indicates that other pedestrian connectivity gaps also exist. The assumption in this analysis is that there is a fundamental pedestrian system that should be in place to facilitate walking to/from key pedestrian generators within the City. This basis system includes all arterial and collector streets. In addition, it is assumed that the streets that directly access schools should have sidewalks within 1,000 feet of the school. Based on this assumed fundamental pedestrian network, the gaps are highlighted below and shown in Figure 4-3.

- *Main Street*: The completion of the partial sidewalks along Main Street between Hancock Street and Lynn Drive would serve major pedestrian attractors such the downtown area, the Chehalem Valley Middle School, Antonia Crater Elementary School and the Seniors Center. It would also connect to the existing sidewalk system on the east-west streets such as Mountainview Drive and Foothills Drive and provide access to transit stops at the Senior Center on Foothills Drive and at Illinois and Main Streets.
- *Blaine Street*: The provision of sidewalks south from 4th Street to the skateboarding park would serve Edwards Elementary School and the skateboarding park and link these destinations to the broader pedestrian network. It would also provide access to transit stops at 5th Street/Blaine Street and 9th Street/Blaine Street.



LEGEND

- Gaps in Sidewalk
- New Sidewak with Future
- 1000' Buffer of Schools Facilities
- Urban Growth Boundry
- Activity Centers
- Parks
- Cemetery
- Sidewalks
- Railroad Tracks
- Streets
- River
- Flyer Bus Stops

GAPS IN EXISTING PEDESTRIAN FACILITIES NEWBERG, OR.

FIGURE 4-3

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- *College Street*: The completion of the partial sidewalk connections from Foothills Drive to Vermillion Street would serve the downtown area, Jaquith Park and a private school along a highly trafficked road. It would also connect to the other major destinations via the existing sidewalk system and provide access to transit stops at College Street/Pinehurst Drive and College Street/Foothills Drive. South of 8th Street, sidewalks would serve Edwards Elementary School and provide access to a transit stop at College Street/Andrew Street.
- *Meridian Street*: The provision of a sidewalk connection from Pinehurst Street to Hemlock Lane would create a continuous sidewalk link that serves the downtown area, George Fox University, Joan Austin Elementary School, and the George Fox University Sports Complex. It would also allow access to the transit stop adjacent to George Fox University.
- V*illa Road*: The completion of partial sidewalks from Ore 99W to Mountainview Drive would serve the Newberg medical clinic, Chehalem Aquatic Center and George Fox University, Joan Austin Elementary School, and the George Fox University Sports Complex. It would provide access to transit stops at Haworth Road/Villa Road, Laurel Drive/Villa Road, and Ore 99W/Villa Road.
- *Elliot Road*: The completion of the partial sidewalks from Ore 99W to Newberg High School would serve Newberg High School directly and enhance pedestrian access to Mabel Rush Elementary School and Mountainview Middle School.
- *Deborah Street – Emery Street*: The provision of sidewalks along these streets would allow pedestrians accessing Mountainview Middle School, Newberg Senior High School, and Mabel Rush Elementary School to be separated from vehicular traffic in the vicinity of the schools. They would also provide access to the transit stop opposite the Mabel Rush Elementary School. A possible off-street pedestrian and bicycle path could also be constructed to link the proposed Northern Arterial to Emery Street, providing a direct connection to this major east-west facility.
- *Douglas Avenue*: The provision of sidewalks between Emery Street and Springbrook Way would enable similar safety benefits to sidewalks along Emery Street and Deborah Street. It would also connect to the multi-use path (shared by cyclists and pedestrians) linking Douglas Street to Springbrook Street and Vittoria Way.
- *Springbrook Street*: The completion of the sidewalks from Middlebrook Street to Mountainview Drive and from Ore 99W to Wilsonville Road would serve Springbrook Plaza and the Fred Meyer shopping center as well as other key generators which are connected to east-west streets along Springbrook Street. It would permit access to transit stops at Vittoria Way/Springbrook Street, Haworth Avenue/Springbrook Street, and Fred Meyer.
- *Mountainview Drive*: The completion of sidewalks during the proposed upgrading of this road to form part of the proposed Northern Arterial would serve Joan Austin Elementary School and provide a continuous east-west pedestrian facility for the northern half of the City. The need for these sidewalks is enhanced further because the Northern Arterial would be the most logical place to connect future pedestrian links to new developments to the northeast of the existing urban area.
- *Columbia Drive*: The completion of the partial sidewalks along this road would not serve any major attractors directly. However, it would perform a valuable network function by providing the only east-west pedestrian link between Mountainview Drive and Illinois Street and acting as a westward extension of the existing sidewalks along Crestview Drive, which serves the George Fox University Sports Complex and Joan Austin Elementary School.
- *Crestview Drive*: The completion of the sidewalks from Aldersgate Lane to Villa Road on Crestview Drive West would serve Joan Austin Elementary School and the George Fox

University Sports Complex as well as providing pedestrian network connectivity benefits. The completion of sidewalks on Crestview Drive East would serve Mountainview Middle School and connect to the proposed Northern Arterial, which would take over part of the existing Crestview Drive East.

- *Illinois Street*: The provision of sidewalks to connect Illinois Street to Fulton Street, via either Vermillion Street or alongside a new direct road link between them would serve George Fox University and provide a key east-west pedestrian link just north of the downtown area.
- *Ore 99W*: The completion of sidewalks along both sides of the existing Ore 99W is needed in two locations. In the west, between the UGB and Harrison Street, pedestrian facilities are needed to connect existing properties to the downtown area pedestrian system. In the east, sidewalks are needed along Ore 99W between Brutscher Street and Vittoria Way to provide direct routes for pedestrians seeking to access Fred Meyer and Springbrook Plaza from the east.
- *First Street (Ore 219) – Sitka Street – Hancock Street*: The completion of sidewalks along this route would provide the most southerly east-west pedestrian connection on the network east of Hess Creek and would connect the residential and industrial uses along Hancock to the downtown area. It would also provide access to transit stops at Ore 219/Everest Road and Hancock Street opposite the courthouse annex.
- *4th Street*: The provision of sidewalks from Blaine Street to College Street would serve Memorial Park and provide a more direct connection to the activities along Blaine Street from the east.
- *11th Street*: The completion of the partial sidewalks between River Street and Wynooski Street would provide a more direct connection from the SP Mill and housing at the east end of 11th Street to the downtown area via Wynooski Street.

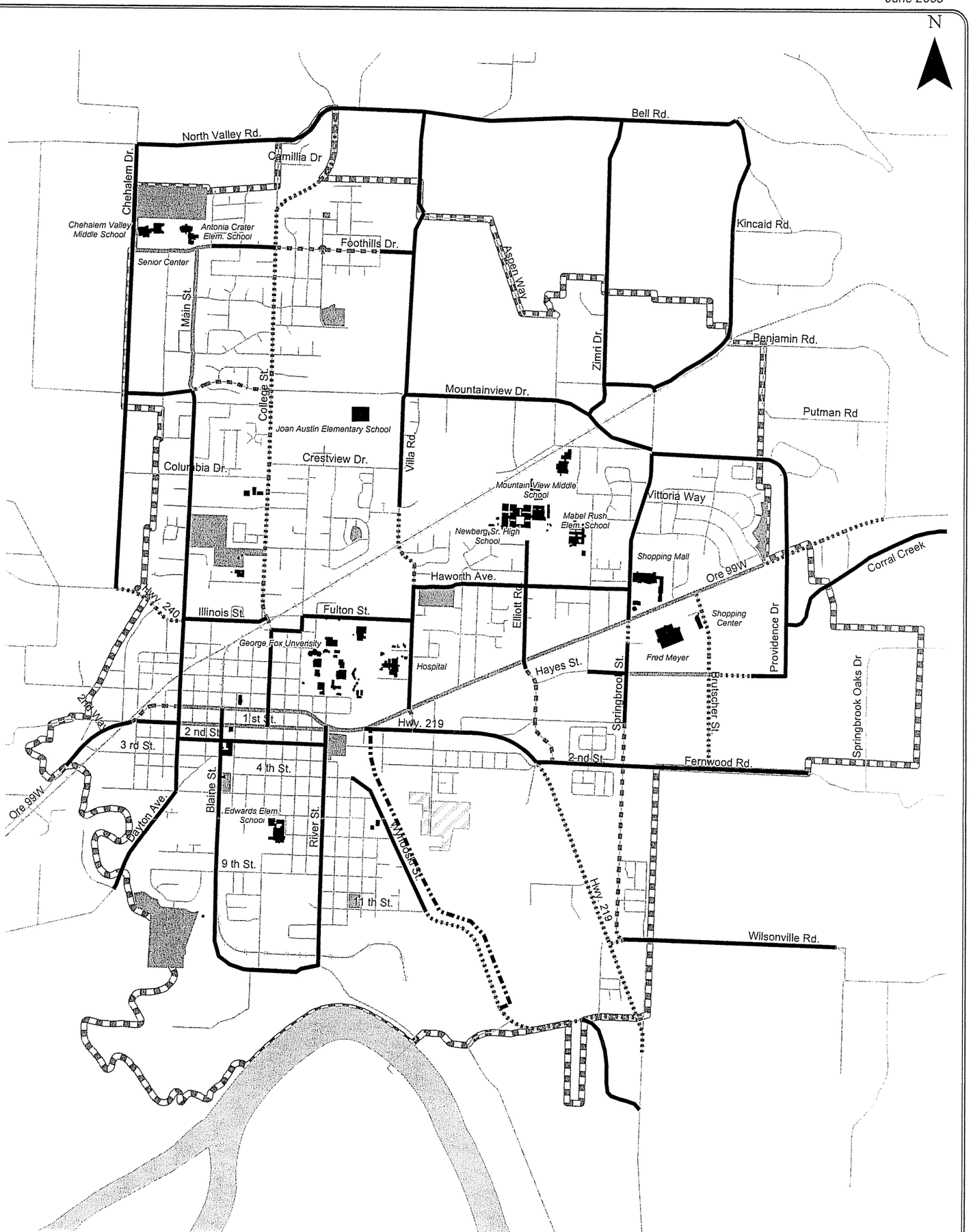
Discussion regarding whether the sidewalks indicated in Figure 4-3 will be needed on one or both sides of the street, as well as prioritization and estimated costing of these proposed pedestrian facilities will be undertaken in the future alternatives analysis.

4.3.2 Bicycle

A bicycle system should connect residential areas with schools, commercial areas, and employment centers. The following types of improvements are needed to support the use of bicycling for intra-city trips:

- Providing a network of bicycle lanes on major Newberg streets and signed routes on lower traffic streets to promote travel throughout the City and provide connections to the existing bicycle lanes on Ore 99W
- Improved signing

The local bicycle network should generally feature designated bicycle lanes on all arterials and on streets carrying in excess of 3,000 vehicles per day. In some cases, such lanes may be needed on local streets with lower volumes as well. Additionally, off-street multi-use paths may be desirable in some locations to provide recreational opportunities and network connectivity. To meet these requirements and network connectivity needs, a number of gaps were identified in the existing bicycle system described in Section 3. These gaps are outlined below and shown in Figure 4-4. They represent bicycle facilities that are either partially completed or do not currently exist.



LEGEND

Bicycle Network

- Existing Striped Lane
- Existing Shared Roadway
- Existing Shoulder Bikeway
- Proposed On-Street Bike Facilities
- Partially Complete On-Street Bike Facilities
- Proposed Off-Street Bike Facilities
- New Bike Facilities with Future Road Widening

- Urban Growth Boundary
- Activity Centers
- Parks
- Cemetery
- Railroad Tracks
- Streets
- River

GAPS IN EXISTING BIKE FACILITIES NEWBERG, OR.

FIGURE 4-4

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- *Main Street*: The completion of the bicycle facilities on Main Street between Dayton Avenue and Foothills Drive would serve major pedestrian attractors such the downtown area, the Chehalem Valley Middle School, Antonia Crater Elementary School and the Seniors Center. It would also connect with the existing bicycle facilities on the east-west streets such as Mountainview Drive and Foothills Drive and provide access to transit stops at the Senior Center on Foothills Drive and at Illinois and Main Streets. It would provide access to bicycle routes to Dundee along both Ore 99W and Dayton Avenue.
- *Blaine Street*: The provision of bicycle facilities from Hancock Street and 9th Street would serve the downtown area, Edwards Elementary School, and the skateboarding park and provide a link to the existing and proposed regional bicycle network. It would also provide access to transit stops at 5th Street/Blaine Street and 9th Street/Blaine Street.
- *College Street*: The completion of the partial bicycle facilities from Foothills Drive to 4th Street would serve the downtown area, Jaquith Park and a private school along a highly trafficked road. It would also connect to the other major destinations via other links in the bicycle system and provide access to transit stops at College Street/Pinehurst Drive and College Street/Foothills Drive. The need for bicycle paths on College Street was identified in Public Event #2.
- *Meridian Street*: The provision of bicycle facilities from Crestview Drive to 1st Street would serve the downtown area, George Fox University, Joan Austin Elementary School, and the George Fox University Sports Complex. It would also allow access to the transit stop adjacent to George Fox University.
- *River Street*: The provision of bicycle facilities between Ore 99W and 14th Street would serve the SP Mill and the downtown area and provide connections to existing and proposed regional bicycle facilities.
- *Wynooski Street*: The completion of the partial bicycle facilities between 4th Street and Ore 99W would serve the downtown area and provide more direct access from south of the downtown area to the inter-city bicycle facilities.
- *Hess Creek*: An off-street shared use path along Hess Creek from the Sportsman Airpark to Fulton Street would serve recreational and school cyclists, as well as pedestrians. It would provide access to George Fox University, Newberg Community Hospital, and Newberg Senior High School, Mountainview Middle School, and Mabel Rush Elementary School.
- *Villa Road*: The completion of the partial bicycle facilities from Ore 219 to College Street would serve the Newberg Community Hospital, Chehalem Aquatic Center and George Fox University, Joan Austin Elementary School, and the George Fox University Sports Complex. It would provide access to transit stops at Haworth Road/Villa Road, Laurel Drive/Villa Road, and Ore 99W/Villa Road and connect to the regional bicycle facilities on Ore 99W and Ore 219.
- *Elliot Road*: The completion of the partial bicycle facilities from 2nd Street across Ore 99W to Newberg High School would serve Newberg High School directly and enhance pedestrian access to Mabel Rush Elementary School and Mountainview Middle School. It would also connect to the regional bicycle facilities along ORE 99W.
- *Springbrook Street*: The completion of the partial bicycle facilities from Ore 219 to Mountainview Drive would serve Springbrook Plaza and Fred Meyer as well as other key generators, which are connected to east-west streets along Springbrook Street. It would permit access to transit stops at Vittoria Way/Springbrook Street, Haworth Avenue/Springbrook Street, and Fred Meyer and connect to the regional bicycle facilities along ORE 99W.

- *Deborah Street – Emery Street*: The provision of bicycle facilities along these streets would serve Mountainview Middle School, Newberg Senior High School, and Mabel Rush Elementary School; however, the lack of space prohibits the addition of striped bicycle lanes on Deborah Street, Emery Street, and Douglas Avenue.
- *Douglas Avenue*: The provision of bicycle facilities between Emery Street and Springbrook Way would provide similar access benefits to the proposed facilities along Emery Street and Deborah Street. It would also connect to the multi-use path (shared by cyclists and pedestrians) linking Douglas Street to Springbrook Street and Vittoria Way.
- *Foothills Drive*: The completion of the partial bicycle facilities between Foothills Drive and Chehalem Drive would serve Chehalem Valley Middle School, Antonia Crater Elementary School, and the Senior Center. It would form the key east-west bicycle link north of the proposed Northern Arterial and provide access to transit stops at Foothills Drive/College Street and the Senior Center.
- *Mountainview Drive*: The completion of bicycle facilities during the proposed upgrading of this road to form part of the proposed Northern Arterial would serve Joan Austin Elementary School and provide a continuous east-west bicycle facility for the northern half of the City. The need for these bicycle facilities is enhanced further because the Northern Arterial would be the most logical place to connect future bicycle links to new developments to the northeast of the existing urban area.
- *Columbia Drive*: The provision of bicycle facilities along this road would not serve any major attractors directly. However, it would perform a valuable network function by providing the only east-west pedestrian link between Mountainview Drive and Illinois Street.
- *Crestview Drive*: The provision of bicycle facilities from College Street to Villa Road would serve Joan Austin Elementary School and the George Fox University Sports Complex as well as providing bicycle network connectivity benefits.
- *Illinois Street and Fulton Road*: The provision of bicycle facilities between Ore 240 and Villa Road via either Vermillion Street or alongside a possible new direct road link between Illinois Street and Fulton Road would serve George Fox University, Chehalem Aquatic Center, Newberg Community Hospital and provide a key east-west bicycle link just north of the downtown area.
- *Ore 99W*: The completion of bicycle facilities along the existing Ore 99W between Main Street and the western boundary of the UGB. Bicycle facilities along Ore 99W between Vittoria Way and Main Street have already been completed. This would serve the downtown area, Hoover Park, Fred Meyer, and Springbrook Plaza directly and provide access to all of the north-south bicycle facilities in Newberg.
- *Hayes Street*: The completion of bicycle facilities would link future development along Hayes Street and the proposed eastward extensions of Hayes to the schools on Elliot Road and the Springbrook Plaza and Fred Meyer on Springbrook Street.
- *First Street (Ore 219) – Sitka Street – Hancock Street*: The completion of bicycle facilities along this route would provide the most southerly east-west bicycle connection on the network east of Hess Creek and would connect the residential and industrial uses along Hancock to the downtown area. It would also provide access to transit stops at Ore 219/Everest Road and Hancock Street opposite the courthouse annex.
- *4th Street*: The provision of bicycle facilities from College Street to Wynooski Street would serve Memorial Park and connect the bicycle facilities on Wynooski Street to the downtown area and College Street.

- *11th Street*: The provision of bicycle facilities between River Street and Wynooski Street would provide a more direct connection from the SP Mill and housing at the east end of 11th Street to the downtown area via Wynooski. Depending on the location of the bypass (currently being considered to be immediately adjacent to 11th Street), it may be necessary to relocate this east-west bicycle facility northward to 9th or 10th Streets.
- *Ore 219*: The completion of the existing partial bicycle facility from Ore 99W south to the UGB would provide a regional bicycle connection to the south-east and provide a connection between the downtown area and bicycle facilities to the south of Ore 99W and east of Hess Creek. It would also provide a connection to the proposed bicycle facility alongside the Newberg-Dundee Bypass.

A discussion regarding whether the connections shown in Figure 4-4 should be on-street bicycle lanes or shoulder bicycle lanes, as well as the prioritization and estimated costing of these proposed facilities will be undertaken in the future alternatives analysis.

4.3.3 Public Transportation

Future transit needs in the City of Newberg could include expanded regional and intercity commuter services, park-and-ride lots, and intra-city service, as well as more widespread awareness of the existing Mid-Valley Rideshare carpool program.

Table 4-2 discusses the various plans and proposals examined in the planning documents of the various jurisdictions that include and surround the City of Newberg. It summarizes information contained in the *Newberg-Dundee Alternative Modes - Transit Service Study* undertaken for the Newberg-Dundee Bypass Project.

TABLE 4-2
TRANSIT NEEDS OF CITY OF NEWBERG AND SURROUNDS

Jurisdiction/ Organization	Planning Document	Transit Needs Identified in the City of Newberg and Surroundings
Oregon Department of Transportation	2001 Oregon Regional Passenger Rail Policy Plan	This document indicated that it would be ODOT policy to "continue to investigate public transit possibilities" such as bus and rail links for Newberg and the surrounding areas.
Yamhill County	1996 Yamhill County Transportation System Plan	• Transit commuter service between Newberg and McMinnville (including Dundee) and from Newberg and McMinnville to Portland and Salem (intercity bus or rail) • Development of a County rideshare program to encourage carpooling and reduce unnecessary vehicle travel • Local enhancements to intermodal connectivity
Metro	Metro 2040 Regional Transportation Plan	A potential commuter rail service from Sherwood to Milwaukie is discussed a continuation of the service outside the Metro UGB to Newberg is noted as an area for "Potential Neighbor City Transit"
City of Dundee	2002 Dundee Transportation System Plan	This document includes a policy to investigate a commuter rail service from McMinnville through Dundee and Newberg that would tie into the proposed Washington County Commuter Rail service. The proposed rail service would eventually replace commuter bus service and is expected to operate in conjunction with increased transit services provided by other agencies.

City of McMinnville	1994 McMinnville Transportation Master Plan	Encourages mass transit systems in existing corridors, to include Ore 99W to the Portland metro area.

Although providing the services described in Table 4-2 is not solely or even principally the City's responsibility, the TSP should address actions the City can take to support these services. These actions could include developing transit-supportive street design standards that provide room for shelters and other transit amenities, improving corner radii at intersections, and supporting transit priority measures.

In addition, to reflect the general tenor of the planning documentation of the jurisdictions in and around the City of Newberg, the following public transportation matters will be addressed in upcoming sections of this document.

- Identification of sites appropriate for regional transit stations and park-and-ride lots.
- Development of between five and seven alternatives for local bus routes that connect activity centers, high-density residential neighborhoods, and potential park-and-ride lots.

4.3.4 Rail Freight

The rail line serving Newberg currently meets ODOT speed standards (25mph). One train uses it daily in each direction, with up to two additional smaller trains operating periodically. Potential future issues associated with the rail mode include the following:

- Safety improvements associated with the grade crossings, although no accidents have been reported in the past five years and trains are infrequent
- Potential for additional usage of existing lines
- The impact that additional passenger and/or freight trains will have on grade crossings in Newberg

No specific comments about rail freight issues have been received from the public thus far.

Changes to the number and location of the crossings of the rail line associated with potential new road links such as Northern Arterial and the Illinois Street to Fulton Street connection will be addressed in more detail during the detailed planning phase of those projects.

4.3.5 Air

The proximity of the Portland International Airport to Newberg satisfies the level of service goals for air service contained in the 1992 Oregon Transportation Plan. As several general aviation facilities are also located nearby, it can be said that Newberg has sufficient access to the air mode to meet future needs, based upon State standards.

4.3.6 Marine

No navigable waterways are located within Newberg. No future deficiencies have been identified through this analysis or by the public.

4.3.7 Pipeline and Transmission Systems

No deficiencies with electrical, natural gas, or water distribution systems in Newberg were identified. The City should work with the region and appropriate public and private utilities to ensure adequate supplies of electricity, natural gas, and water can continue to be provided in the future.

4.3.8 Truck Freight Transportation

No specific freight deficiencies have been determined through this analysis thus far, apart from those arising from the operational problems associated with inadequate capacity that affects all vehicular movement through Newberg. Congestion through Newberg and the Ore 99W corridor in general does have a negative economic impact on businesses that rely on truck freight. This issue is being comprehensively examined in the Newberg-Dundee Transportation Improvement Project which has identified a corridor for a future bypass of Ore 99W around the two cities.

Section 5

Alternatives Analysis

Alternatives Analysis

5.1 INTRODUCTION

This section presents and evaluates the alternatives available to address the transportation needs identified in the existing and future conditions and deficiencies analyses. Based on input from City staff, ODOT staff, the NTAC, Newberg Planning Commission and the general public, one or more of the alternatives presented here was chosen as the preferred alternative for future growth and incorporated into the City's Transportation System Plan. Selections were made from the alternatives presented in this section for incorporation into the City's TSP in Section 6.

5.2 FUTURE TRANSPORTATION DEMAND

5.2.1 Growth Forecasts

Future transportation demand within the City of Newberg was estimated based on an EMME/2 travel forecasting model developed by ODOT TPAU. For the purposes of the model, Newberg is divided into a number of traffic analysis zones (TAZs), which are intended to represent areas that contain similar land uses and access similar roadways.

5.2.2 Travel Forecasts

ODOT's TPAU generated No Build base and future year model forecasts using an EMME/2 model. To perform intersection capacity analyses, year 2025 traffic volume forecasts for intersection turning movements were derived using the procedures outlined in National Cooperative Highway Research Program (NCHRP) Report 2-55. This procedures accounts for a combination of existing turning movement counts, and base and future year model forecasts, as outlined below.

- Measured turning movement volumes and patterns are used as a starting point. For example, a particular movement at an intersection might have a volume of 50 vehicles per hour.
- The percentage change in the model's base and future year traffic volume for each movement is calculated. For example, if the model's base year volume is 25 vehicles per hour and the future year volume is 75 vehicles per hour, the movement's volume triples during that time. Tripling the measured volume would result in a 2025 volume of 150 vehicles per hour.
- The numerical change (delta) in the model's traffic volumes is also calculated. In the example above, the model's volume for the movement increased by 50 vehicles per hour, from 25 to 75. Increasing the measured volume by 50 vehicles per hour results in a 2025 volume of 100 vehicles per hour.
- The results obtained from the percentage and numerical change calculations are averaged to obtain the 2025 analysis traffic volume. In this example, 150 and 100 would be averaged to obtain a year 2025 volume of 125 vehicles per hour for analysis purposes.

This process was applied to the study intersections for each alternative road network configuration described below. The reasonableness of the averaging method was reviewed at each location, especially in instances in which the numerical and percentage change yielded very different results (i.e. dramatic volume increase between the base model and future model or a significant variation between existing and base model traffic volumes). In these occasions, the available data and travel

forecasts were reviewed to determine the appropriate year 2025 analysis volumes. In addition, traffic volumes were balanced between intersections where little or no opportunity for access exists.

5.3 ALTERNATIVES EVALUATION

5.3.1 Intersection Operations Standards

As mentioned previously in the existing conditions assessment section (Section 3), the acceptable intersection performance threshold for all City and County intersections is LOS "D" and LOS "E" for signalized and unsignalized intersections, respectively. Intersection performance standards at ODOT controlled intersections are based on volume-to-capacity ratios and not level of service. The ODOT controlled facilities in the study area are ORE 99W, ORE 219 and ORE 240.

The intersection performance standards vary between the future alternatives without the Bypass and alternatives with the Bypass due to the likely reclassification of the existing Ore 99W from a Statewide Freight Route to a District Highway. (While it has not been decided what the existing ORE 99W would be reclassified to in the event of a Bypass, it has been assumed in this analysis that it would become a District Highway). ORE 219 and ORE 240 are currently classified as District Highways and are assumed to remain so for all the alternatives analyzed. Table 5-1 summarizes the applicable operational standards for the intersections in the study area.

TABLE 5-1
APPLICABLE OPERATIONAL STANDARDS

Jurisdiction	Road Type	Intersection Type	Operational Standard
City of Newberg and Yamhill County	-	Signalized	LOS D
	-	Unsignalized	LOS E
ODOT	Statewide Freight Routes inside an UGB, with posted speed <45 mph	Signalized	V/C < 0.75
		Unsignalized	V/C < 0.85
	District Highway inside an UGB, with posted speed <45 mph	Signalized	V/C < 0.85
		Unsignalized	V/C < 0.85

LOS = Level-of-service V/C = volume to capacity ratio

In addition to the information provided in Table 5-1, any intersection operating at or above capacity ($v/c \geq 1.00$) should be considered to be operating unacceptably, even if LOS standards are met.

It is important to keep in mind that the future traffic figures dealt with in the following analyses are *demands,* indicating a motorist's desire to travel along a particular roadway, rather than *volumes.* This is an important distinction because a roadway can only serve a traffic volume corresponding to its capacity. Where traffic demands exceed a roadway's capacity, only a volume equal to that roadway's capacity would actually travel along that roadway; the remaining vehicles would accumulate as a queue that would extend back from the point where demand first exceeded capacity.

5.3.2 Road Network Alternatives

The road network alternatives considered in the Year 2025 traffic operations analysis are:

- Alternative 1: Year 2025 No Build
- Alternative 2: Year 2025 TSP plus Bypass and Related Improvements
- Alternative 3: Year 2025 TSP plus Bypass and Different Related Improvements
- Alternative 4: Year 2025 including Bypass & New Connectivity Improvements

With the exception of Alternative 1, all remaining alternatives considered in the following analysis were developed following discussions with the community at Public Meeting #2 in April 2003, the City of Newberg, and ODOT.

These alternatives identify potential solutions to serve the future demand for travel on the City of Newberg road network. The alternatives were developed using various road-building and transportation improvement measures for different areas in Newberg. The purpose of this analysis is to assess the effectiveness of these measures, and to develop a "preferred alternative" that takes the most effective measures and combines them in a symbiotic way to provide acceptable operations on future Newberg streets.

5.3.3 Transportation Demand Management

Transportation Demand Management (TDM) is a program that can help to reduce traffic demand on the transportation system, thereby potentially reducing the need to construct more roadways. Various TDM strategies have proven successful in communities throughout the United States. The City of Newberg should explore strategies that may be most appropriate. These strategies may include:

- *Transit Incentives:* The City may encourage employers to provide partially or fully subsidized transit passes, or at least information, to their employees about local and regional transit.
- *Carpooling:* The City may provide incentives for employers to initiate carpool programs.
- *Compressed Work Weeks and Alternative Work Schedules:* The City may encourage employers to adopt provisions for flexible work schedules for their employees. Employers may allow employees to work flexible hours, thereby reducing traffic demand during peak hours.
- *Emergency Ride Home Program:* The City may encourage employees using non-single-occupant-vehicle (non-SOV) modes to do so by ensuring an available and convenient ride home if needed for an emergency. This program could be implemented for public and private employers.
- *Bicycle Programs:* The City may encourage employers to implement programs to facilitate bicycle commuting.
- Other Incentives: The City may encourage alternative modes to the downtown, by implementing a program of charging for parking. This program would need to be fully discussed with downtown business owners, in recognition that, if not implemented correctly, it could potentially drive business away from the downtown. Other programs to encourage

alternative mode use may include: free tennis shoes to walkers, "alternative mode fairs" to educate citizens of their benefit, and increased use of taxi-cabs for employee trips.

The City should consider any of these programs for future implementation. Implementation of an effective TDM program requires extensive public input, considerable research, and careful consideration of the potential negative impacts, in order to ensure a successful program.

5.3.4 Year 2025 Traffic Operations Analysis

The analysis of key intersections for Alternative 1 consider the same 25 study intersections used to assess the existing conditions assessment (Section 3). However, Alternatives 2, 3, and 4 consider 12 key intersections for the purposes of comparison. The following analysis describes the road network alternatives, the expected travel demand and roadway capacity for each alternative, the operations of the study intersections for each alternative, highlights intersection capacity deficiencies, and identifies potential mitigation measures to address these deficiencies. All of the alternatives were assessed for the forecast year 2025 weekday p.m. peak hour traffic conditions.

Alternative 1: Year 2025 No Build

Alternative Description and Demand-to-Capacity Assessment

The No-Build alternative assumes the existing transportation network is unchanged under year 2025 conditions. Figure 5-1 shows the projected weekday p.m. peak hour traffic volumes for Alternative 1. The traffic volumes shown in Figure 5-1 represent an expected general growth of about 30-40 percent as compared to the existing conditions described in existing conditions assessment (Section 3), with significantly greater increases in areas of new development. Figure 5-2 shows the corresponding planning-level volume-to-capacity ratio for each highway, arterial and collector link in the Newberg system. Based on an analysis of the volume-to-capacity ratios, in the absence of a Bypass Ore 99W will operate well over Oregon Highway Plan standards. In the five-lane section of Ore 99W from Brutscher Street to Meridian Street, a minimum of seven lanes (three through plus center left turn lane) will be required to restore 2025 operations to acceptable levels. In many sections, four through lanes and additional turn lanes would be required. This expanded cross-section would result in an overall width that would be operationally infeasible, with severe, unacceptable impacts to adjacent land uses. This result is consistent with the findings in the Draft NDTIP Locational Environmental Impact Statement.

Figure 5-1 Alternative 1: Year 2025 P.M. Peak Hour Link Volumes

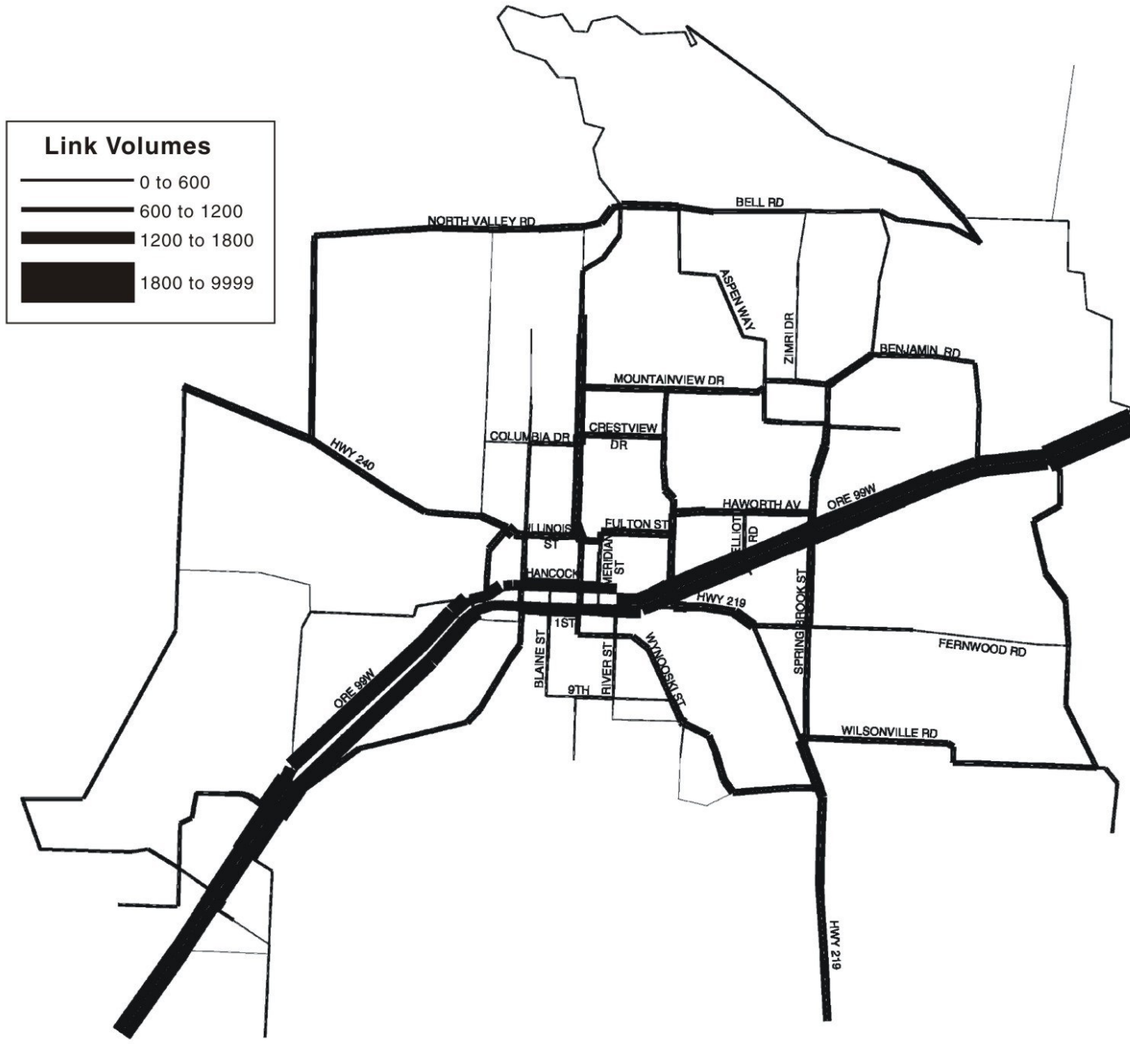
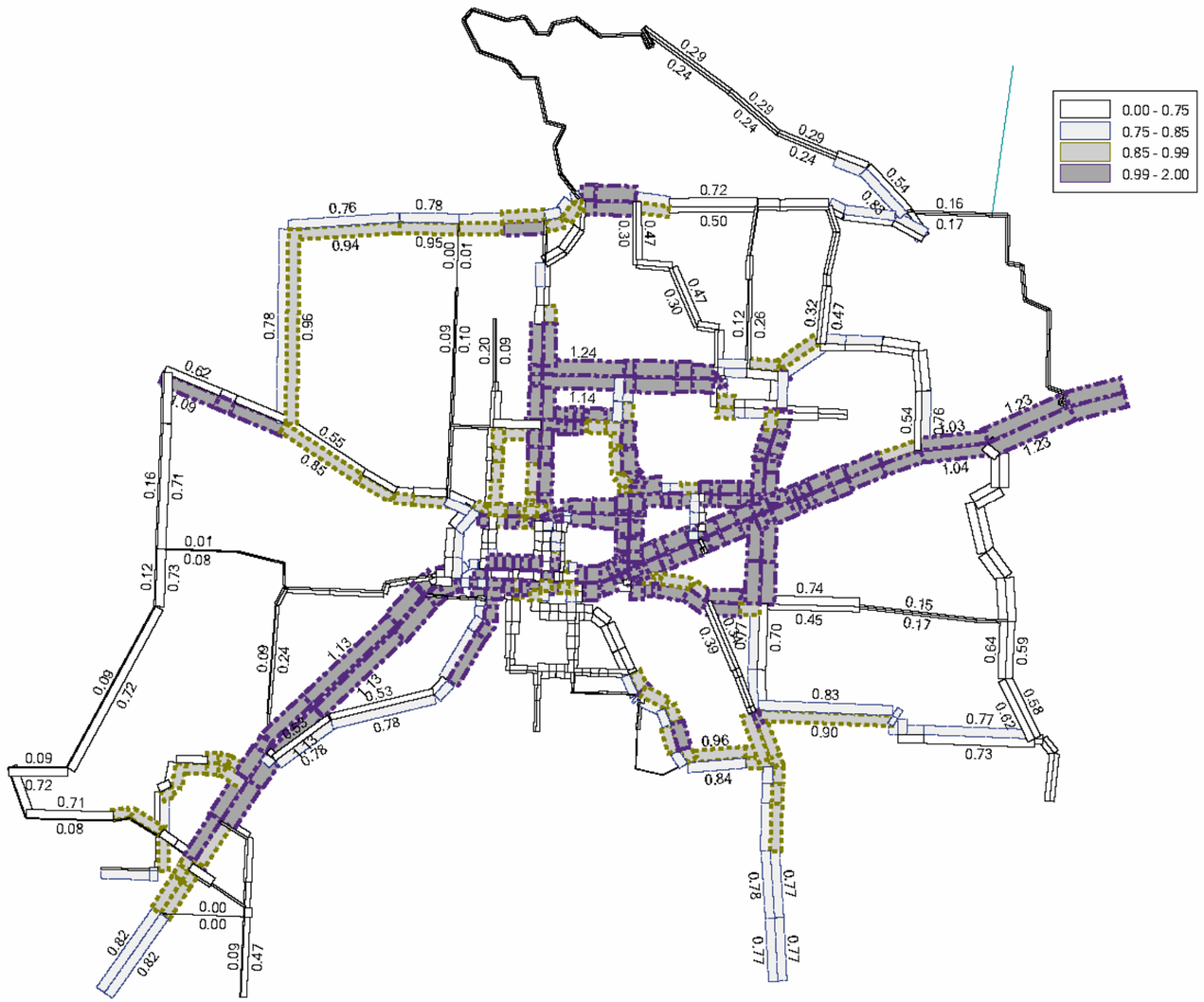


Figure 5-2 Alternative 1: Year 2025 P.M. Peak Hour Volume-to-Capacity Ratios



Intersection Operational Analysis

An operational analysis was carried out on the twenty-five study intersections previously identified in the *Section 3 Existing Conditions* under year 2025 traffic conditions. The results of this analysis are summarized in Table 5-2. Intersections in which the measure of effectiveness does not meet the relevant jurisdictional standard are identified in **bold**. For state highways, volume-to-capacity ratio is the relevant standard, and for city and county roads level-of-service is the relevant standard. *Appendix "F" provides the 2025 No-Build conditions operational results worksheets for each study intersection.*

TABLE 5-2
YEAR 2025 NO BUILD OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay	
Ore 99W / 3rd Street	Two-way	F	0.38	> 50	No [1]
Ore 99W / 2nd Way	Two-way	F	0.64	> 50	No [1]
1st Street / Harrison Street	Two-way	E	0.31	44.1	No
1st Street / Main Street	Signal	C	**0.85**	21.0	Yes
1st Street / Blaine Street	Two-way	F	**0.98**	>50	Yes
1st Street /College Street	Signal	B	0.60	12.9	No
1st Street / Meridian Street	Signal	A	0.57	9.6	No
1st Street / River Street	Signal	C	**0.97**	28.1	Yes
Hancock Street / Main Street	Signal	B	**0.85**	19.8	Yes
Hancock Street / Blaine Street	Two-way	F	**>1.0**	> 50	Yes
Hancock Street / College Street	Signal	B	**0.85**	19.1	Yes
Hancock Street / Meridian Street	Signal	B	0.69	10.0	No
Ore 99W / Villa Road	Signal	E	**> 1.0**	78.5	Yes
Ore 99W / Elliot Road	Signal	D	**> 1.0**	51.9	Yes
Ore 99W / Springbrook Street	Signal	E	**> 1.0**	76.3	Yes
Ore 99W / Brutscher Street	Signal	D	**0.98**	48.1	Yes
Ore 99W / Vittoria Street	Two-way	F	**> 1.0**	> 50	Yes
South Aspen Way / Mountain View	Two-way	**F**	> 1.0	> 50	Yes
Springbrook Street / Mountain View	Two-way	**F**	> 1.0	> 50	Yes
Villa Road / Haworth Avenue	Two-way	**F**	> 1.0	> 50	Yes
Springbrook Street / Haworth Avenue	All-way Stop	**F**	> 1.0	> 50	Yes
5th Street / Dayton Street	Two-way	**F**	> 1.0	> 50	Yes
Wynooski Street / 11th Street	Two-way	B	0.17	13.8	No
Ore 219 / Wilsonville Road	Two-way	F	**> 1.0**	> 50	Yes
Springbrook Street / Wilsonville Road	Two-way	**F**	> 1.0	> 50	Yes

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only. Performance indicators shown in bold are above allowable thresholds.

LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

1 While the level of service for the minor street approach at this two-way stop-controlled intersection is unacceptable, all other traffic movements through these intersections currently experience acceptable levels of service. In addition, there are alternative local street options to access the state highway at a signalized location, thereby providing an acceptable level of service for this movement.

As shown in Table 5-2, the following study intersections are forecast to exceed the applicable operating standards during the weekday p.m. peak hour.

Signalized Intersections

The following intersections are forecast to fail to meet ODOT's standard of v/c<0.75, but operate below capacity. Under these conditions, drivers experience little congestion.

- 1st Street / Main Street – v/c ratio = 0.85
- Hancock Street / Main Street – v/c ratio = 0.85
- Hancock Street / College Street – v/c ratio = 0.85

The following intersections are forecast to fail to meet ODOT's standard of v/c<0.75 and are forecast to approach capacity. Under these conditions, drivers experience moderate congestion.

- 1st Street/River Street – v/c ratio of 0.97

The following intersections are forecast to fail to meet ODOT's standard of v/c<0.75 and to operate above capacity. Under these conditions, drivers experience severe congestion and queuing.

- Ore 99W / Villa Road – v/c ratio > 1.0
- Ore 99W / Elliot Road – v/c ratio > 1.0
- Ore 99W / Springbrook Street – v/c ratio > 1.0
- Ore 99W / Brutscher Street – v/c ratio > 1.0

Unsignalized Intersections

The following intersections are forecast to fail to meet the applicable level-of-service and v/c ratio standards for the critical minor street movement. Additionally, they are expected to operate near or over capacity for the critical minor street movement. Under these conditions, drivers attempting to perform the critical movement will experience moderate to severe congestion and long delays. All other traffic movements through these intersections are forecast to experience acceptable travel conditions.

- 1st Street / Blaine Street – LOS F, v/c ratio = 0.98
- Hancock Street / Blaine Street – LOS F, v/c ratio > 1.0
- Ore 99W / Vittoria Street – LOS F, v/c ratio > 1.0
- South Aspen Way / Mountain View Drive – LOS F, v/c ratio > 1.0
- Springbrook Street / Mountain View Drive – LOS F, v/c ratio > 1.0
- Villa Road / Haworth Avenue – LOS F, v/c ratio > 1.0
- Springbrook Street / Haworth Avenue – LOS F, v/c ratio > 1.0
- 5th Street / Dayton Street – LOS F, v/c ratio > 1.0
- Ore 219 / Wilsonville Road – LOS F, v/c ratio > 1.0
- Springbrook Street / Wilsonville Road – LOS F, v/c ratio > 1.0

Mitigations

Table 5-3 summarizes the intersection improvements needed at existing signalized intersections to mitigate the previously identified operational deficiencies. *Appendix "G" contains the mitigated year 2025 Alternative 1: No Build operational analysis worksheets.*

TABLE 5-3
SIGNALIZED INTERSECTION MITIGATIONS

Intersection	Mitigation	Existing			Mitigated		
		LOS	V/C	Delay	LOS	V/C	Delay
1st Street/ Main Street	Additional northbound through lane	C	**0.85**	21.0	B	0.72	15.8
Hancock Street/ Main Street	Additional westbound through/right lane	B	**0.85**	19.8	B	0.70	14.6
Hancock Street/ College Street	Additional southbound through lane	B	**0.85**	19.1	B	0.72	14.3
1st Street/ River Street	Two additional eastbound through lanes	C	**0.97**	28.1	C	0.71	20.2
Ore 99W/ Villa Road	Additional northbound through lane Additional southbound left-turn lane and replace right-turn lane with a through/right lane. Two additional eastbound through lanes. Additional westbound through lane and replace right-turn lane with a through/right lane.	E	**> 1.0**	78.5	D	0.72	37.4
Ore 99W/ Elliot Road	Two additional eastbound through lanes. Two additional westbound through lanes.	D	**> 1.0**	51.9	C	0.74	25.5
Ore 99W/ Springbrook Street	Additional northbound through lane and replace right-turn lane with a through/right lane. Additional southbound through lane and replace right-turn lane with a through/right lane. Additional eastbound through lane and through/right-lane. Additional westbound through lane and through/right lane	E	**> 1.0**	76.3	D	0.72	41.2
Ore 99W/ Brutscher Street	Additional northbound right-turn lane. Additional southbound right-turn lane. Additional eastbound left-turn lane and through lane Additional westbound left-turn lane and through lane	D	**0.98**	48.1	C	0.72	29.9

*Utilizes a traditional future year peak hour factor assumption of 0.90. Performance indicators shown in bold are above allowable thresholds.
V/C = Volume-to-Capacity ratio
LOS = Level of Service

Table 5-4 summarizes the intersection improvements needed at existing unsignalized intersections to mitigate the previously identified operational deficiencies.

TABLE 5-4
UNSIGNALIZED INTERSECTION MITIGATIONS

Intersection	Mitigation	Existing			Mitigated		
		LOS	V/C	Delay	LOS	V/C	Delay
1st Street/ Blaine Street	Signal	F	**0.98**	>50	A	0.50	6.4
Hancock Street/ Blaine Street	Signal	F	**>1.0**	> 50	A	0.61	6.2
Ore 99W/ Vittoria Street	Signal Additional eastbound through lane Additional westbound through lane.	F	**> 1.0**	> 50	A	0.72	8.1
South Aspen Way/ Mountain View Drive	Signal Additional northbound left-turn lane Reconfigure eastbound approach to a left-turn lane and a right-turn lane	**F**	> 1.0	> 50	D	0.88	38.3
Springbrook Street/ Mountain View Drive	Signal Reconfigure westbound approach to a left-turn lane and a right-turn lane	**F**	> 1.0	> 50	B	0.83	19.8
Villa Road/ Haworth Avenue	Signal	**F**	> 1.0	> 50	C	0.93	32.9
Springbrook Street/ Haworth Avenue	Signal Additional northbound left-turn lane. Additional southbound through lane. Reconfigure eastbound approach to left-turn lane, through-and-right lane, and right-turn lane. Reconfigure westbound approach to through-and-left lane and right-turn lanes.	**F**	> 1.0	> 50	C	0.78	30.5
5th Street/ Dayton Street	Signal Close southwest Dayton approach to create 4-legged intersection Reconfigure westbound approach to left-turn and through-and-right lanes.	**F**	> 1.0	> 50	C	0.82	22.9
Ore 219/ Wilsonville Road	Signal Reconfigure northbound approach to through-and-left and through-and-right lanes. Reconfigure southbound approach to through-and-left and through-and-right lanes. Reconfigure eastbound approach to left and through-and-right lanes. Reconfigure westbound approach to two left-turn lanes and a through-and-right lane.	**F**	> 1.0	> 50	C	0.81	23.7

Springbrook Street/ Wilsonville Road	Signal Reconfigure southbound approach to a left and two right lanes. Reconfigure eastbound approach to right and through lanes. Reconfigure westbound approach to a right and two through lanes.	**F**	> 1.0	> 50	B	0.78	14.0

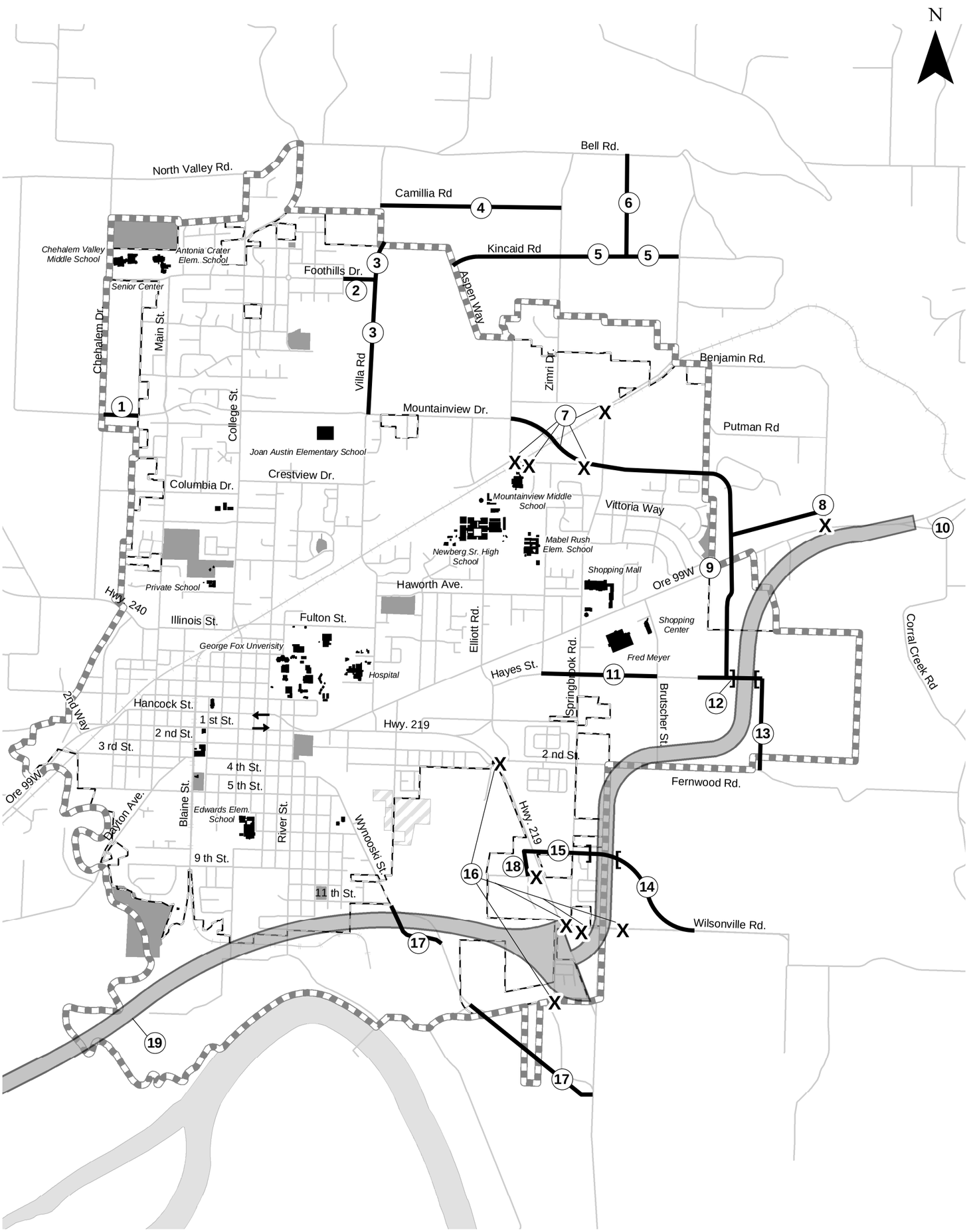
*Utilizes a traditional future year peak hour factor assumption of 0.90. Performance indicators shown in bold are above allowable thresholds.
V/C = Volume-to-Capacity ratio
LOS = Level of Service

Alternative 2: Year 2025 TSP plus Bypass and Related Improvements (including Bypass and related local network alterations, and Current TSP improvements)

Alternative Description

The transportation network assumed in Alternative 2, shown in Figure 5-3, is the same as that assumed in the Alternative 1 No-Build scenario examined in Future Conditions Assessment (Section 4), except that the following elements have been added:

1) Northern Arterial (Ore 99W to Chehalem Drive)
2) An extension of Foothills Drive to Villa Road
3) An extension of Villa Road to Aspen Way
4) A new east-west street connection between Aspen Way and Zimri Drive.
5) A new east-west street connection between Aspen Way and Springbrook Street.
6) A new north-south street connection between Bell Road and the number #5 new street connection.
7) Northern Arterial (Hayes Street Extension via 99W to College Street)
   The Northern Arterial involves the following additions to the transportation network.
   - A new connection between Mountainview Drive and Crestview Drive across the railway tracks will involve the closure of the existing railway level crossings on Crestview drive and Springbrook Street and a closure of the eastbound approach of the Crestview Drive/Springbrook Street intersection.
   - A southward extension of Crestview Drive that crosses Ore 99W and terminates in a T-intersection at the Hayes Street extension.
8) Benjamin Road is closed at Ore 99W and a new east-west frontage road parallel to Ore 99W, is constructed to connect Benjamin to the Northern Arterial.
9) The Vittoria Way/Ore 99W intersection is changed to a Right-in/Right-out only layout.
10) The Corral Creek/Ore 99W intersection is changed to a Right-in/Right-out only layout.
11) Hayes Street is extended east across Springbrook Street to meet with southern end of the Northern Arterial (see new street connection #7).



LEGEND

- NDTIP Bypass Route (Alternative 3J)
- Proposed Street
-] [Proposed Grade Separated Crossing
- X Proposed Street Closure
- Urban Growth Boundary
- City Limits
- Activity Centers
- Parks
- Cemetery
- Railroad
- Streets
- River

ALTERNATIVE 2: YEAR 2025 TSP PLUS BYPASS & RELATED IMPROVEMENTS
NEWBERG, OR

FIGURE 5-3

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12) Hayes Street is extended further east from southern end of Northern Arterial across the Bypass (without an interchange) connecting to a new north-south road (see new street connection #13).
13) A new north-south to connect #12 to Fernwood Road.
14) Wilsonville Road is rerouted to the north to cross the Bypass (without an interchange) and to intersect with Springbrook Street.
15) The Wilsonville Road diversion in new street connection #14 is extended from Springbrook Street to meet Ore 219 mid-way between 2nd Street/Ore 219 and the current Wilsonville/219 intersection.
16) The existing 2nd Street/Ore 219 intersection is closed and the existing street connections of Wilsonville Road, Wynooski and Springbrook Street to Ore 219 are eliminated.
17) The Wynooski Street connection to Ore 219 is moved to the south.
18) The 9th Street/Ore 219 intersection is shifted to the north to intersect with the rerouted Wilsonville Road intersection (see new street connections #14 and #15).
19) Bypass (as defined by NDTIP Alternative 3J)

Demand-to-Capacity Assessment

Figure 5-4 shows the projected weekday p.m. peak hour traffic volumes for Alternative 2. The traffic volumes shown in Figure 5-4 represent an expected general growth of about 30-40 percent as compared to the existing conditions described in Section 3, with significantly greater increases in areas of new development. Figure 5-5 shows the corresponding planning-level volume-to-capacity ratio for each highway, arterial and collector link in the proposed Alternative 2 road system.

In Figure 5-5, the volume-to-capacity shown for the future Newberg-Dundee Bypass is in the range of 0.75-0.85. This would indicate that this link would operate over the acceptable traffic level, based on the 1999 Oregon Highway Plan. However, it should be noted that the capacity used in the model is very conservative (2,400 vehicles per hour in two lanes), and hence, the v/c ratio for this link is likely unrealistically high and would really be within acceptable OHP standards. It is reasonable to assume a lane capacity of 1,800-2,000 vph based on the methodology prescribed in the *2000 Highway Capacity Manual (Institute of Transportation Engineers, 2000)*, thereby resulting in an overall directional capacity of 3,600-4,000 vph for the two lanes in each direction. Hence, using more realistic lane capacities, the projected v/c ratios would be well within acceptable standards for the Bypass as defined in the OHP. Further evidence for the adequacy of the existing Ore 99W configuration in Alternative 2 can be found in the fact that the intersections along Ore 99W, the key limiting factor for overall roadway capacity, will operate within applicable operational standards. Further analysis of key study intersections is contained below.

Careful examination of Figure 5-5 reveals that the existing Ore 99W will be largely relieved of traffic congestion by the presence of the Bypass. The majority of through traffic, especially trucks, will be carried on the Bypass, resulting in an overall reduction of 50-60 percent of average daily traffic on existing Ore 99W.

Figure 5-4 Alternative 2: Year 2025 P.M. Peak Hour Link Volumes

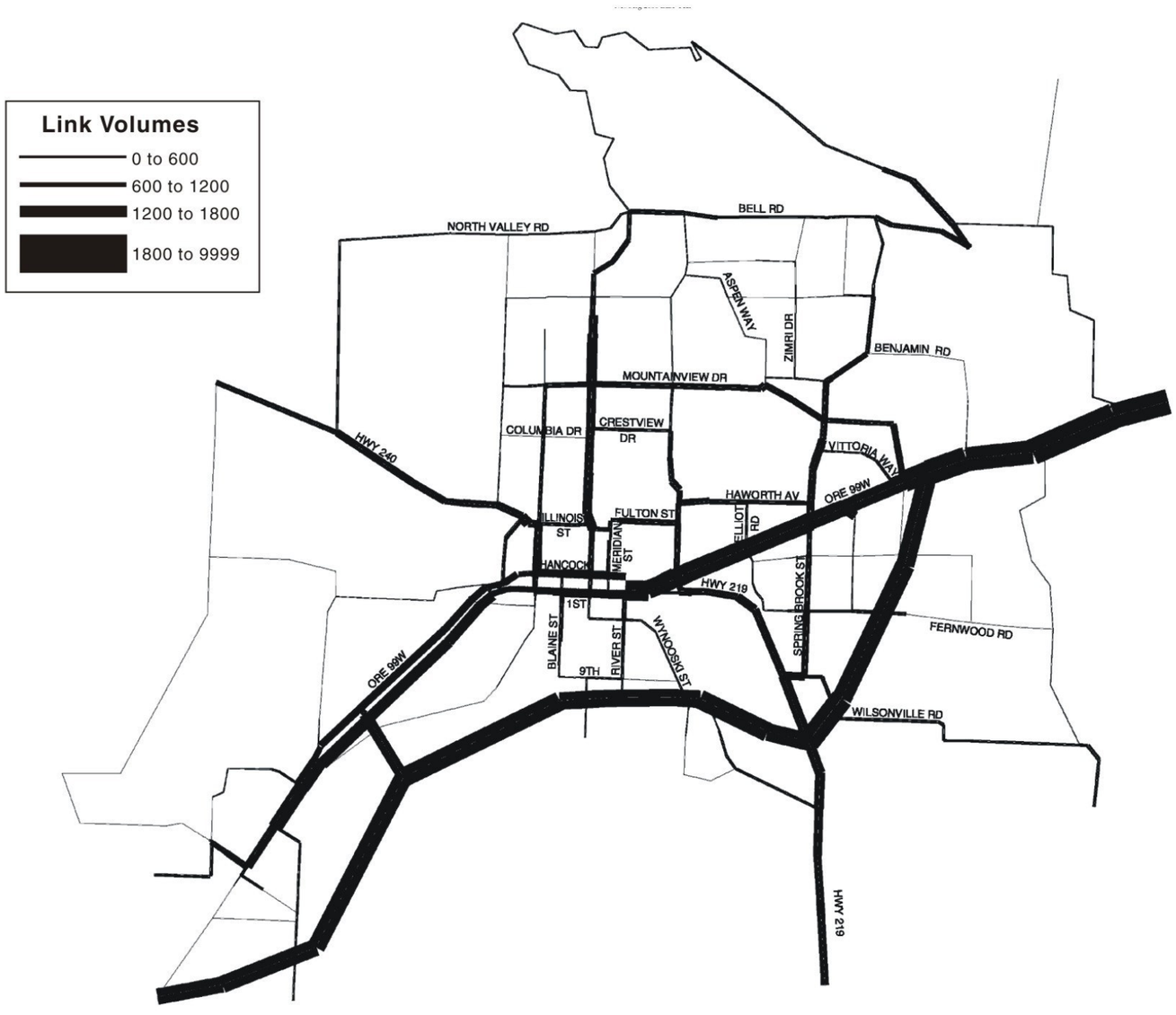
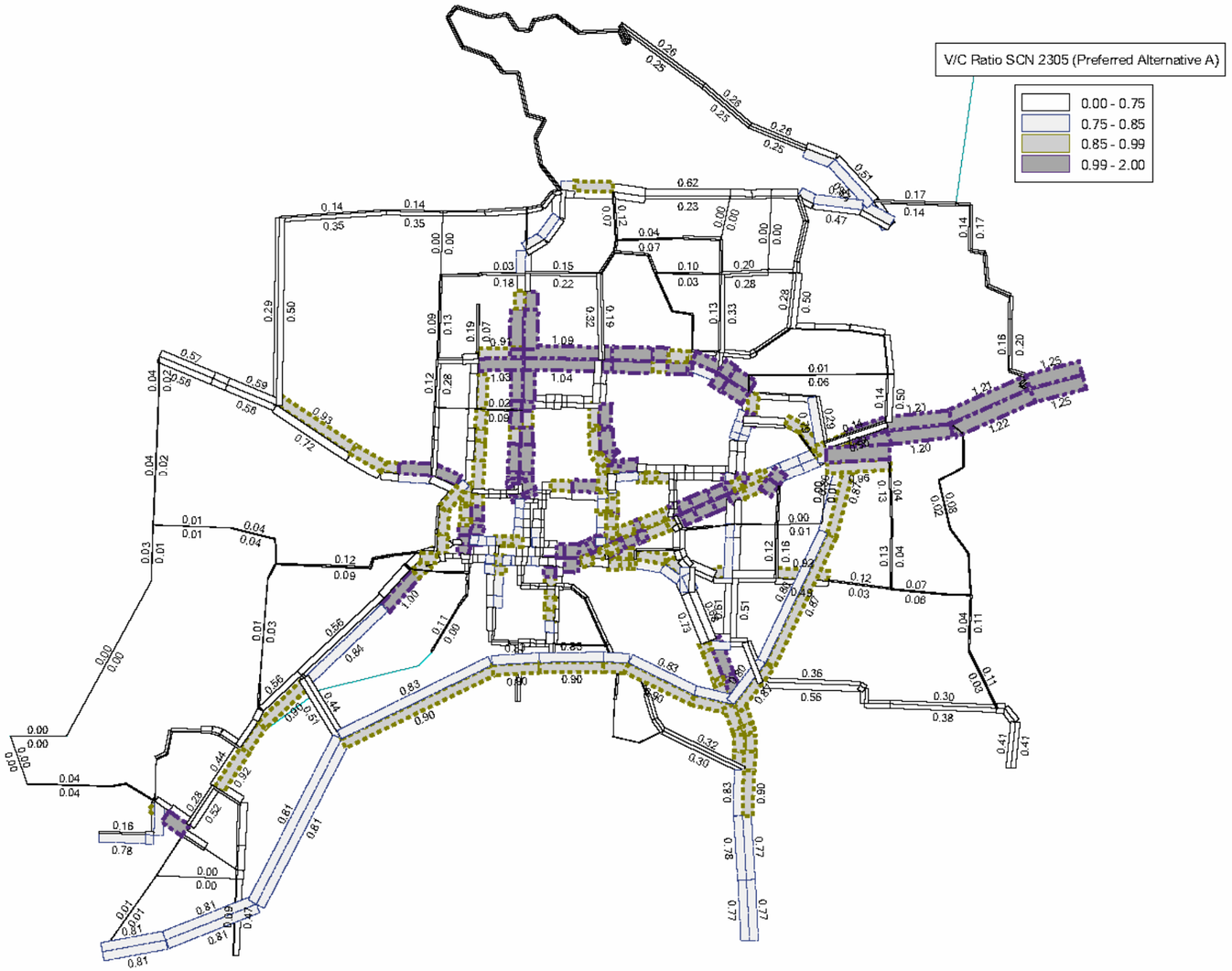


Figure 5-5 Alternative 2: Year 2025 P.M. Peak Hour Volume-to-Capacity Ratios



Ore 99W east of the Bypass connection in East Newberg is shown in Figure 5-5 as suffering a lack of capacity to cope with the predicted traffic. There are a number of operational and access issues with the existing configuration of the highway that need to be resolved by ODOT for this stretch of Ore 99W whether a Bypass is built or not. Given that this section of Ore 99W is outside the Newberg UGB, this analysis is outside the scope of this TSP. Nevertheless, the City of Newberg should coordinate with ODOT to facilitate traffic improvements in this section of Ore 99W.

The proposed Northern Arterial is shown in Figure 5-5 as operating over capacity. The model assumes the per-lane capacity of the Northern Arterial of 700 vph, while it is reasonable to assume that this facility will have a per-lane capacity is excess of 900 vph based on the methodology prescribed in the *2000 Highway Capacity Manual (Institute of Transportation Engineers, 2000)*. Hence, using this more higher, more realistic estimate for capacity results in a finding that this facility will operate within acceptable standards.

Figure 5-5 shows Springbrook Street operating over capacity north of Ore 99W. However, due to proposed lane and signalization improvements to the Haworth Avenue/Springbrook Street and Mountainview Drive (proposed Northern Arterial)/Springbrook Street intersections described below, this facility should operate at a suitable level-of-service.

The area around the proposed interchange between the Bypass and Ore 219 in Figure 5-5 shows Ore 219 as operating above capacity. However, the model does not take into account the comprehensive access control onto Ore 219 required by ODOT in the vicinity of the interchange. This access control will increase the capacity of Ore 219 in this area and is in the planning stage at the present time. It is likely that when the Bypass is constructed with an interchange at Ore 219, the Springbrook Street intersection will be replaced at a new location, and adequate capacity will be provided at this new intersection to meet OHP standards.

Figure 5-5 shows that College Street (Ore 219) north of Fulton Street will carry more traffic than desirable given the capacity and context of its current configuration. There are significant obstacles to increasing the capacity on College Street. Therefore, it may be appropriate to consider an alternative alignment for Ore 219 between Ore 99W and the proposed Northern Arterial. Springbrook Street and Villa Road are the two most likely alternatives. However, the access between Ore 219 and Springbrook Street will be made more difficult if the proposed Bypass is constructed due to access control requirements near the Ore 219/Bypass interchange. Therefore, an assessment as to whether Villa Road could be widened between Ore 99W and the Mountainview Drive (proposed Northern Arterial) should be undertaken, with further consideration as to whether Ore 219 should be redesignated to this street. Additional material regarding an alternative alignment of Ore 219, including the alternatives analysis and identification of a recommended alternative, is provided in the TSP chapter of this plan.

Intersection Operational Analysis

As for each of the three alternatives that follow, an operational analysis was carried out on twelve key intersections, listed in Table 5-5, under the Year 2025 traffic conditions forecast for this network. The results of this analysis are summarized in Table 5-5. Intersections in which the measure of effectiveness does not meet the relevant jurisdictional standard are identified in **bold**. For state highways, volume-to-capacity ratio is the relevant standard, and for city and county roads level-of-service is the relevant standard. *Appendix "H" provides the 2025 Alternative 2 operational analysis results worksheets for each study intersection.*

TABLE 5-5
YEAR 2025 ALTERNATIVE 2 OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay (sec/veh)	
Hancock Street / Main Street	Signal	B	0.73	15.5	No
1st Street / Main Street	Signal	B	0.53	14.3	No
Hancock Street / College Street	Signal	B	0.69	14.7	No
1st Street /College Street	Signal	B	0.59	15.4	No
Ore 99W / Villa Road	Signal	D	0.76	38.9	No
Ore 99W / Elliot Road	Signal	C	0.73	29.7	No
Haworth Avenue/Springbrook Street	Two-way Stop	**F**	> 1.0	> 50	Yes
Ore 99W / Springbrook Street	Signal	D	0.81	40.6	No
Ore 99W/Northern Arterial	Signal	D	0.74	39.1	No
Springbrook Street/Northern Arterial	Signal	C	0.66	24.8	No
Mountainview Drive/Villa Road	Two-way Stop	**F**	> 1.0	> 50	Yes
Ore 219/2nd Street-Fernwood Road	One-way Stop	D	0.29	31.7	No

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only.
Performance indicators shown in bold are above allowable thresholds.
LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

Signalized Intersections Capacity Deficiencies

As shown in Table 5-5, the Haworth Avenue/Springbrook Street intersection is forecast to fail to meet the City's level-of-service standard of D for signalized intersections and to operate above capacity. Under these conditions, drivers experience severe congestion and queuing.

Unsignalized Intersections Capacity Deficiencies

As shown in Table 5-5, the Mountainview Drive/Villa Road intersection is forecast to fail to meet the City's level-of-service standard of E for the critical minor street movement for unsignalized intersections and to operate over capacity for the critical minor street movement. Under these conditions, drivers attempting to perform the critical movement will experience moderate to severe congestion and long delays.

Mitigations

Unsignalized Intersections

The mitigations necessary to correct the deficiencies identified in the intersection operations analysis at the Haworth Avenue/Springbrook Street and the Mountainview Drive/Villa Road intersections are described in Table 5-6. *Appendix "I" contains the Year 2025 Alternative 2 Mitigations weekday p.m. peak hour operational analysis worksheets and an illustration of the mitigated intersection lane configurations and intersection controls.*

TABLE 5-6
YEAR 2025 ALTERNATIVE 2 MITIGATIONS

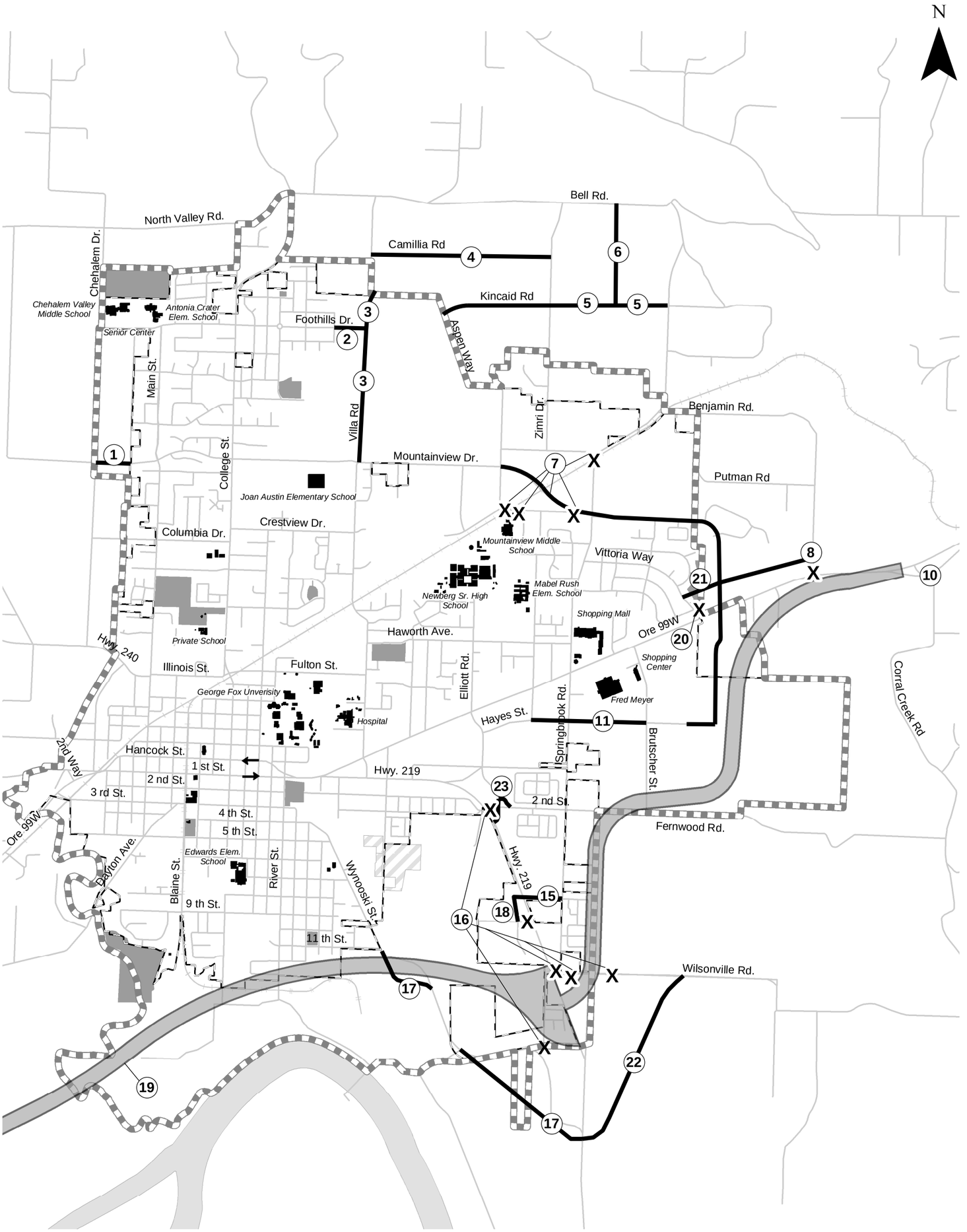
Intersection	Mitigations	Existing Lane Configuration			Mitigated Lane Configuration		
		LOS	V/C	Delay	LOS	V/C	Delay
Haworth Avenue/ Springbrook Street	Signal Coordination with Springbrook Street /Ore 99W signal	**F**	> 1.0	> 50	A	0.41	9.8
Mountainview Drive/ Villa Road	Signal	**F**	> 1.0	> 50	B	0.56	14.8

Alternative 3: Year 2025 TSP plus Bypass and Different Related Improvements

Alternative Description

The transportation network assumed in Alternative 3, shown in Figure 5-6, is the same as that assumed in the Alternative 2 except for the following modifications:

20) Vittoria Way is closed at Ore 99W.
21) A new east-west street connecting Vittoria Way to the Northern Arterial.
22) Wilsonville Road is rerouted to the south to line up with the new Wynooski Street, which was rerouted to the south in Alternative 2. This means that new street connection #14 from Alternative 2 should be removed and replaced with this connection.
23) 2nd Street/Ore 219 intersection is reconfigured: Elliot Road is extended to the south to connect with Ore 219 and the direct 2nd Street connection to Ore 219 is terminated and replaced with a T-intersection with Elliot Road.
24) Remove the Hayes Street connection across Bypass and the north-south street connection to Fernwood. This means that new street connections #12 and #13 from Alternative 2 should be removed.



LEGEND

- Bypass 2
- Proposed Street
-] [Proposed Grade Separated Crossing
- X Proposed Street Closure
- Urban Growth Boundary
- City Limits
- Activity Centers
- Parks
- Cemetery
- Railroad
- Streets
- River

ALTERNATIVE 3: YEAR 2025 TSP PLUS BYPASS & DIFFERENT RELATED IMPROVEMENTS
NEWBERG, OR

FIGURE 5-6

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Demand-to-Capacity Assessment

Figure 5-7 shows the projected weekday p.m. peak hour traffic volumes for Alternative 3. The traffic volumes shown in Figure 5-4 represent an expected general growth of about 30-40 percent in as compared to the existing conditions described in Section 3, with significantly greater increases in areas of new development. Figure 5-8 shows the corresponding planning-level volume-to-capacity ratio for each highway, arterial and collector link in the proposed Alternative 2 road system.

In Figure 5-8, the volume-to-capacity shown for the future Newberg-Dundee Bypass is in the range of 0.75-0.85. As discussed in the Alternative 2 section earlier, the volume-to-capacity ratios used in the model are unrealistically low, and when adjusted to more realistic levels indicate that this facility will operate well within acceptable standards. In addition, the Bypass provides sufficient additional capacity to relieve capacity constraints on existing Ore 99W. Evidence for the adequacy of the existing Ore 99W configuration can be found in the fact that the intersections along Ore 99W, the key limiting factor for overall roadway capacity, meet the applicable operational standards. Further analysis of the study intersections is contained below.

The proposed Northern Arterial is shown in Figure 5-8 as operating over capacity. This result occurs because of the same conservative modeling techniques as discussed in Alternative 2, and can be ignored for similar reasons.

Figure 5-8 shows Springbrook Street operating over capacity north of Ore 99W. However, due to upgrades to the Haworth Avenue/Springbrook Street and Mountainview Drive (proposed Northern Arterial)/Springbrook Street intersections described below, this facility should operate at a suitable level-of-service.

The area around the proposed interchange between the Bypass and Ore 219 in Figure 5-8 shows Ore 219 as operating above capacity. However, as discussed earlier in the Alternative 2 section, the model does not take into account the comprehensive access control onto Ore 219 required by ODOT in the vicinity of the interchange. This access control will increase the capacity of Ore 219 in this area and is in the planning stage at the present time. It is likely that when the Bypass is constructed with an interchange at Ore 219, the Springbrook Street intersection will be replaced at a new location, and adequate capacity will be provided at this new intersection to meet OHP standards.

Figure 5-8 shows that College Street (Ore 219) north of Fulton Street carrying more traffic than desirable given the capacity and context of its current configuration. There are significant obstacles to increasing the capacity on College Street, primarily involving the narrowness of the right-of-way (60 feet), presence of adjacent trees and built structures, and the residential character of adjacent land uses. Therefore, it may be appropriate to consider an alternative alignment for Ore 219 between Ore 99W and the proposed Northern Arterial. Springbrook Street and Villa Road appear to be the two most likely alternatives. However, the access between Ore 219 and Springbrook Street will be made more difficult if the proposed Bypass is constructed due to access control requirements near the Ore 219/Bypass interchange. Therefore, an assessment as to whether Villa Road could be widened between Ore 99W and the Mountainview Drive (proposed Northern Arterial) should be undertaken.

Figure 5-7 Alternative 3: Year 2025 P.M. Peak Hour Link Volumes

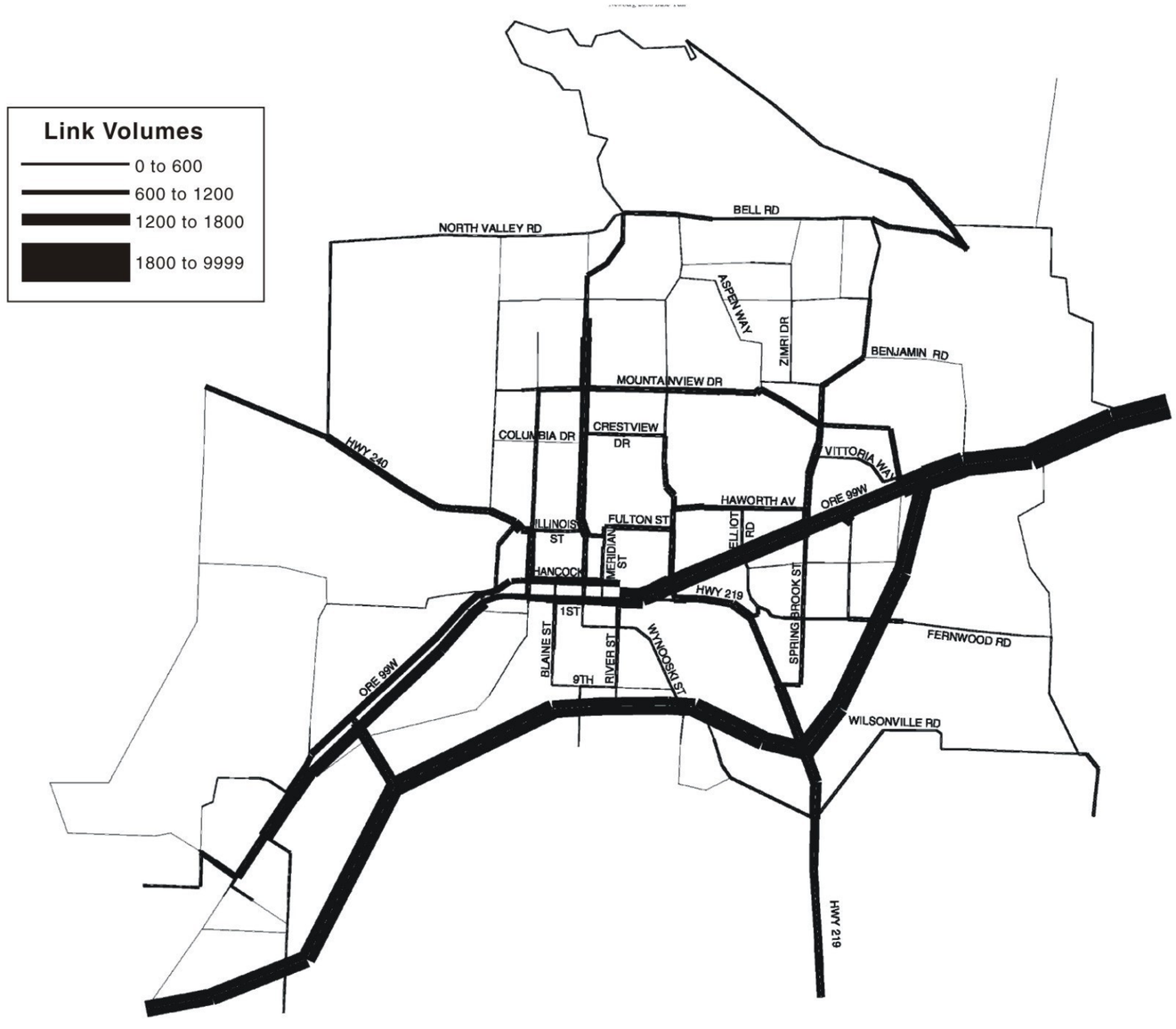
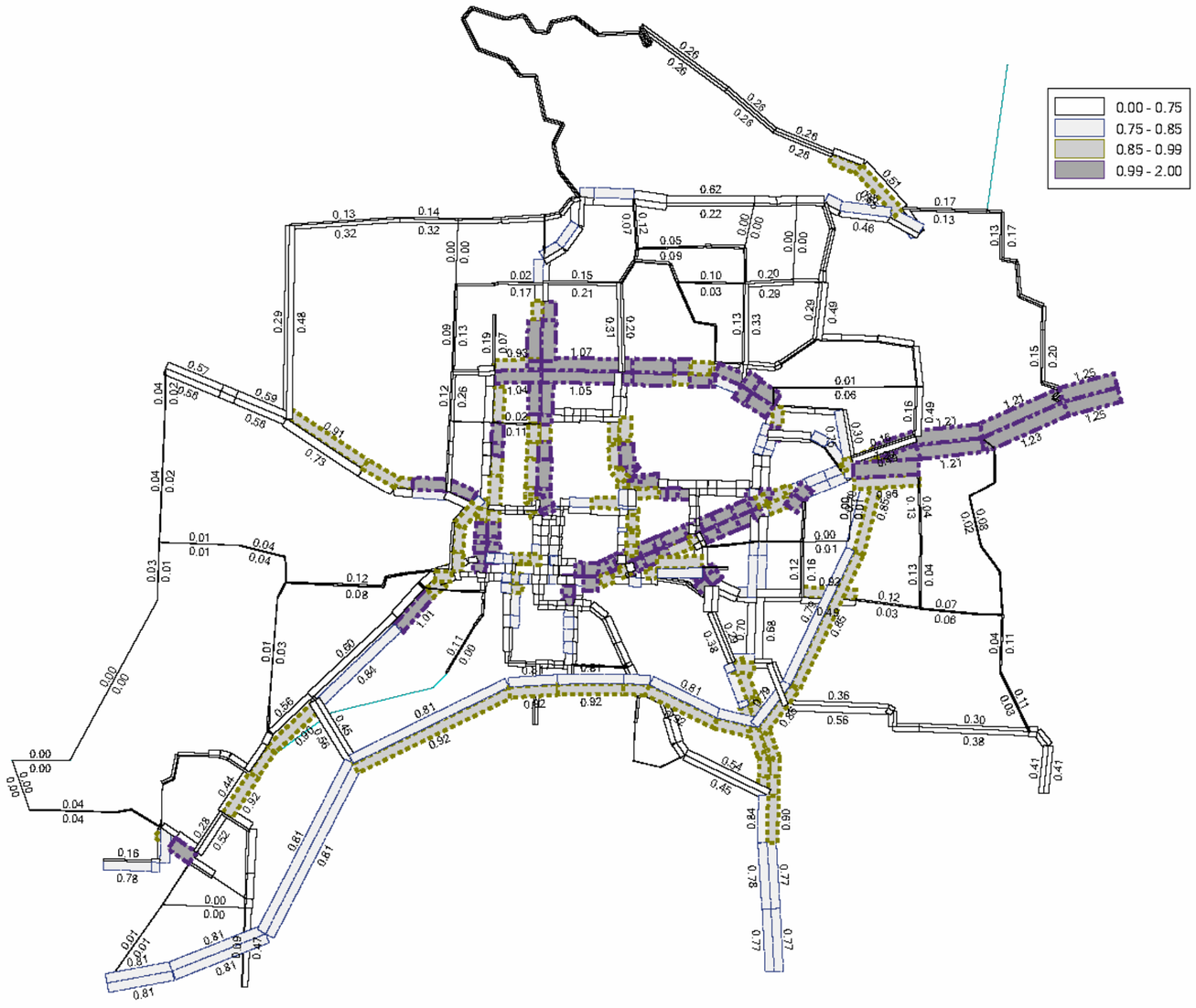


Figure 5-8 Alternative 3: Year 2025 P.M. Peak Hour Volume-to-Capacity Ratios



Ore 99W east of the Bypass connection in East Newberg is shown in Figure 5-8 as suffering a lack of capacity to cope with the predicted traffic. There are a number of operational and access issues with the existing configuration of the highway that need to be resolved by ODOT for this stretch of Ore 99W whether a Bypass is built or not.

Intersection Operational Analysis

An operational analysis was carried out on twelve key intersections, listed in Table 5-7, under the Year 2025 traffic conditions forecast for this network. The results of this analysis are summarized in Table 5-7. Intersections in which the measure of effectiveness does not meet the relevant jurisdictional standard are identified in **bold**. For state highways, volume-to-capacity ratio is the relevant standard, and for city and county roads level-of-service is the relevant standard. *Appendix "J" provides the 2025 Alternative 3 operational analysis results worksheets for each study intersection.*

TABLE 5-7
YEAR 2025 ALTERNATIVE 3 OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay (sec/veh)	
Hancock Street / Main Street	Signal	B	0.75	16.1	No
1st Street / Main Street	Signal	B	0.53	14.3	No
Hancock Street / College Street	Signal	B	0.70	15.1	No
1st Street /College Street	Signal	B	0.60	15.7	No
Ore 99W / Villa Road	Signal	D	0.76	38.8	No
Ore 99W / Elliot Road	Signal	C	0.73	32.1	No
Haworth Avenue/Springbrook Street	Two-way Stop	**F**	> 1.0	> 50	Yes
Ore 99W / Springbrook Street	Signal	D	0.85	41.1	No
Ore 99W/Northern Arterial	Signal	D	0.76	40.4	No
Springbrook Street/Northern Arterial	Signal	B	0.60	18.4	No
Mountainview Drive/Villa Road	Two-way Stop	**F**	> 1.0	> 50	Yes
Ore 219/2nd Street-Fernwood Road	One-way Stop	D	0.29	31.7	No

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only.

LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

Unsignalized Intersections Capacity Deficiencies

As shown in Table 5-7, the Haworth Avenue/Springbrook Street and the Mountainview Drive/Villa Road intersections are forecast to fail to meet the City's level-of-service standard of E for the critical minor street movement for unsignalized intersections and to operate over capacity for the critical minor street movement. Under these conditions, drivers attempting to perform the critical movement will experience moderate to severe congestion and long delays.

Mitigations

Unsignalized Intersections

The mitigations necessary to correct the deficiencies identified in the intersection operations analysis at the Haworth Avenue/Springbrook Street and the Mountainview Drive/Villa Road intersections are described in Table 5-8. *Appendix "K" contains the Year 2025 Alternative 3 Mitigations weekday p.m. peak hour operational analysis worksheets and an illustration of the mitigated intersection lane configurations and intersection controls.*

TABLE 5-8
YEAR 2025 ALTERNATIVE 3 MITIGATIONS

Intersection	Mitigations	Existing Lane Configuration			Mitigated Lane Configuration		
		LOS	V/C	Delay	LOS	V/C	Delay
Haworth Avenue/ Springbrook Street	Signal. Coordination with Ore 99W /Springbrook signal	F	> 1.0	> 50	B	0.41	10.2
Mountainview Drive/ Villa Road	Signal.	F	> 1.0	> 50	B	0.53	13.9

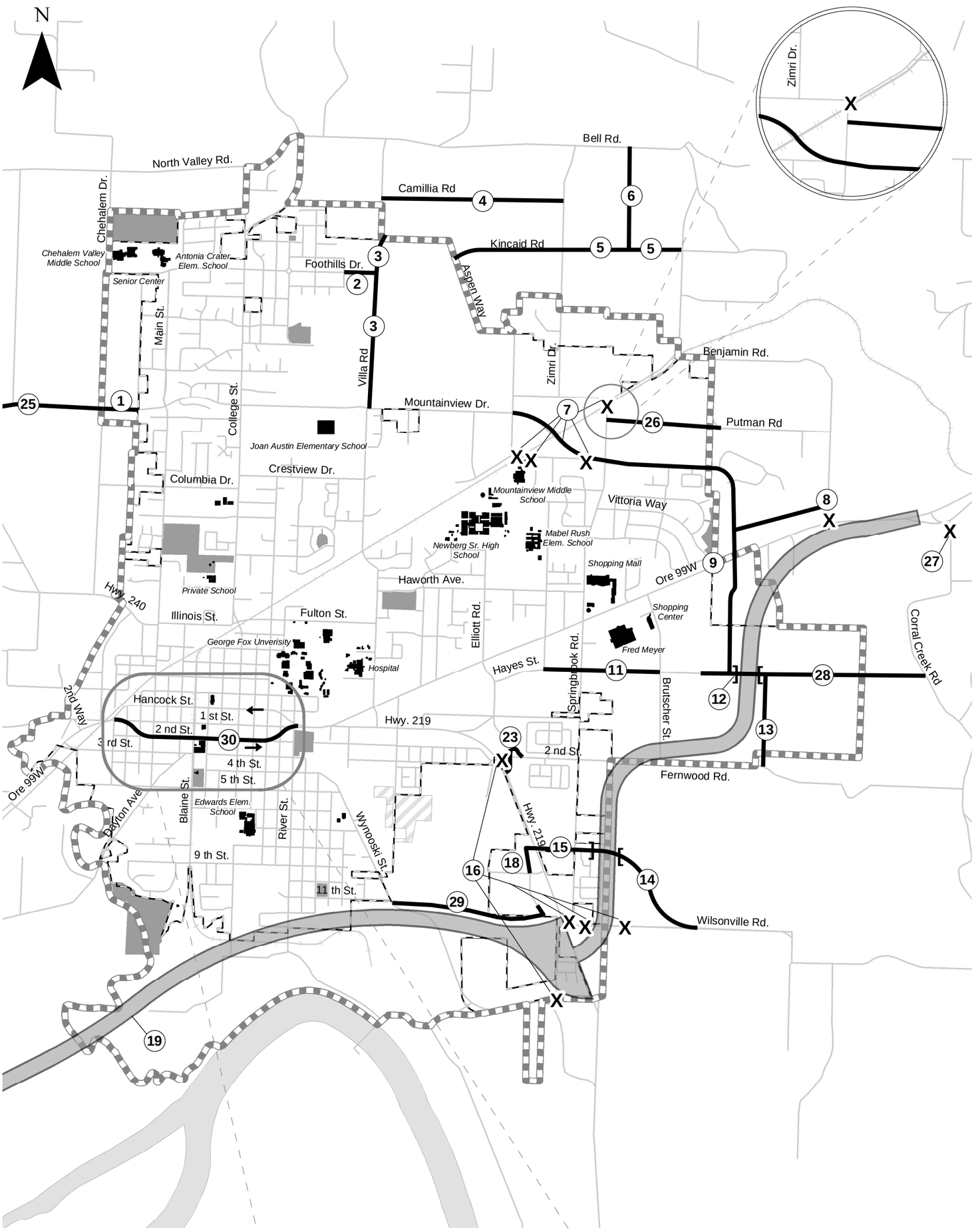
Alternative 4: Year 2025 including Bypass & New Connectivity Improvements

Alternative Description

The transportation network assumed in Alternative 4, shown in Figure 5-9, is the same as that assumed in the Alternative 2 except for the following modifications:

25) The Northern Arterial is extended westward to Ore 240.
26) Putnam Road is extended to connect to Springbrook Street south of the existing railway crossing.
27) Corral Creek Road is closed at Ore 99W.
28) Hayes Street is extended further eastward from its eastern terminus at the new north-south road (at junction of new street connections #12 and #13) to Corral Creek Road.
29) The Wynooski Street crossing of the Bypass is closed and it is rerouted to pass alongside just north of the Bypass as a frontage road and connect to 9th Street.
30) The existing one-way couplet of First Street and Hancock Street is modified. First Street will be returned to two-way operations while Second Street is converted to a one-way street. The conversion of Second Street to one-way operation involves creating two new street connections that connect 2nd Street to 1st Street at the approximate locations shown in Figure 5-9 (west of Main Street and east of Meridian Street).

Additionally, modification 23) featured in Alternative 3 was used in Alternative 4. This modification involves the reconfiguration of the 2nd Street/Ore 219 and the 2nd Street/Elliot Road intersections: Elliot Road is extended to the south to connect with Ore 219 and the direct 2nd Street connection to Ore 219 is terminated and replaced with a T-intersection with Elliot Road.



LEGEND

- Bypass
- Proposed Street
-] [Proposed Grade Separated Crossing
- X Proposed Street Closure
- Urban Growth Boundary
- City Limits
- Activity Centers
- Parks
- Cemetery
- Railroad
- Streets
- River

ALTERNATIVE 4: YEAR 2025 INCLUDING BYPASS & NEW CONNECTIVITY IMPROVEMENTS
NEWBERG, OR

FIGURE **5-9**

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Demand-to-Capacity Assessment

Figure 5-10 shows the projected weekday p.m. peak hour traffic volumes for Alternative 2. The traffic volumes shown in Figure 5-4 represent an expected general growth of about 30-40 percent, consistent with growth levels in previously discussed alternatives. Figure 5-11 shows the corresponding planning-level volume-to-capacity ratio for each highway, arterial and collector link in the proposed Alternative 4 road system.

In Figure 5-11, the volume-to-capacity shown for the future Newberg-Dundee Bypass is in the range of 0.75-0.85. As discussed in Alternatives 2 and 3 earlier, the volume-to-capacity ratios used in the model are unrealistically low, and when adjusted to more realistic levels indicate that this facility will operate well within acceptable standards. In addition, the Bypass provides sufficient additional capacity to relieve capacity constraints on existing Ore 99W. Evidence for the adequacy of the existing Ore 99W configuration can be found in the fact that the intersections along Ore 99W, the key limiting factor for overall roadway capacity, meet within the applicable operational standards. Further analysis of the study intersections is contained below.

The proposed Northern Arterial is shown in Figure 5-11 as operating over capacity. This result occurs because of the same conservative modeling techniques and can be ignored for similar reasons.

Figure 5-11 shows Springbrook Street operating over capacity north of Ore 99W. However, due to upgrades to the Haworth Avenue/Springbrook Street and Mountainview Drive (proposed Northern Arterial)/Springbrook Street intersections described below, this facility should operate at a suitable level-of-service.

The area around the proposed interchange between the Bypass and Ore 219 in Figure 5-11 shows Ore 219 as operating above capacity. However, the model does not take into account the comprehensive access control onto Ore 219 required by ODOT in the vicinity of the interchange. This access control will increase the capacity of Ore 219 in this area and is in the planning stage at the present time. It is likely that when the Bypass is constructed with an interchange at Ore 219, the Springbrook Street intersection will be replaced at a new location, and adequate capacity will be provided at this new intersection to meet OHP standards.

Figure 5-11 shows that College Street (Ore 219) north of Fulton Street will carry more traffic than desirable given the capacity and context of its current configuration. There are significant obstacles to increasing the capacity on College Street. Therefore, it may be appropriate to consider an alternative alignment for Ore 219 between Ore 99W and the proposed Northern Arterial. Springbrook Street and Villa Road are the two most likely alternatives. As discussed in a previous section, an assessment as to whether Villa Road could be widened between Ore 99W and the Mountainview Drive (proposed Northern Arterial) should be undertaken.

Ore 99W east of the Bypass connection in East Newberg is shown in Figure 5-11 as suffering a lack of capacity to cope with the predicted traffic. There are a number of operational and access issues with the existing configuration of the highway that need to be resolved by ODOT for this stretch of Ore 99W whether a Bypass is built or not.

Figure 5-10 Alternative 4: Year 2025 P.M. Peak Hour Link Volumes

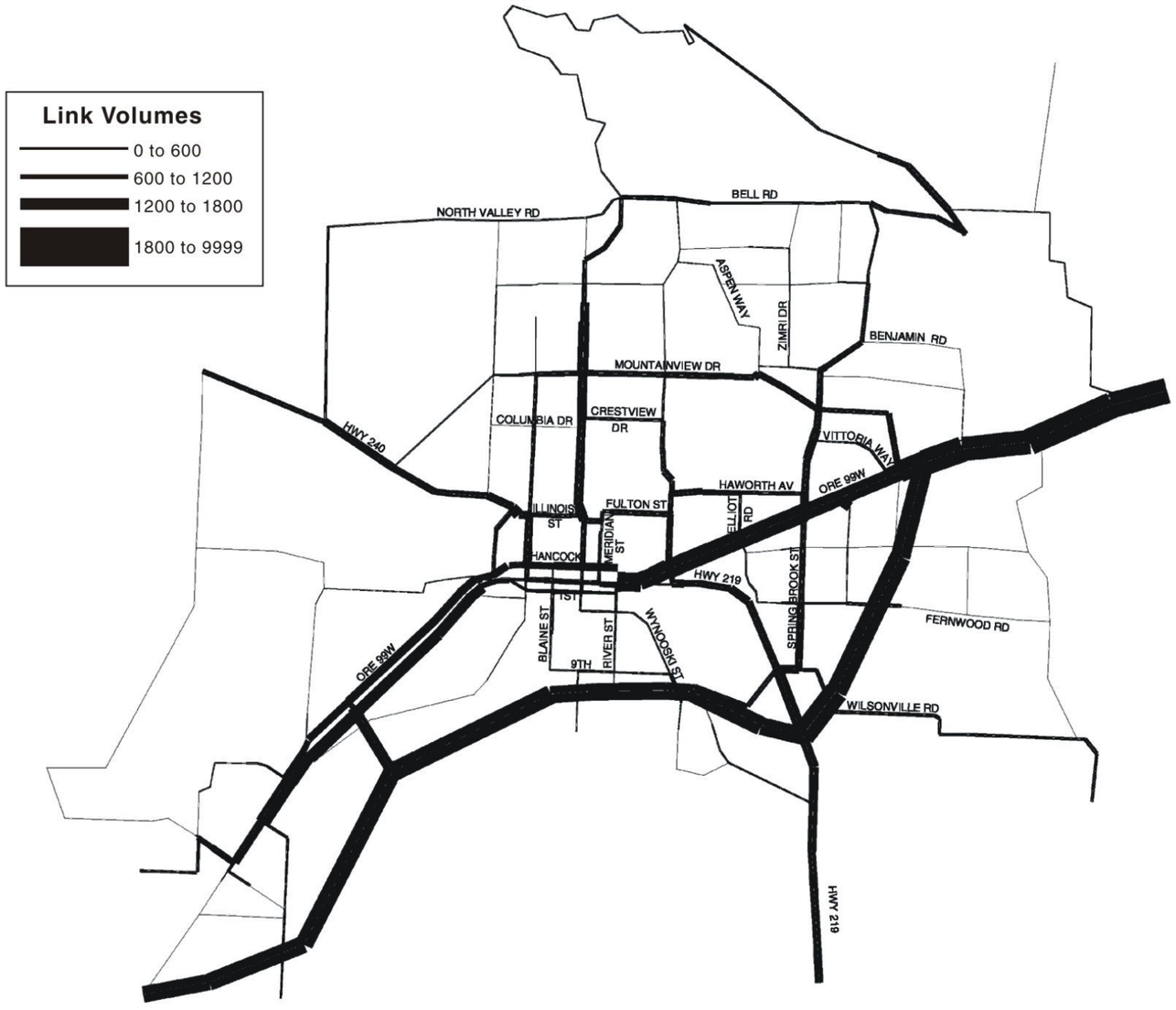
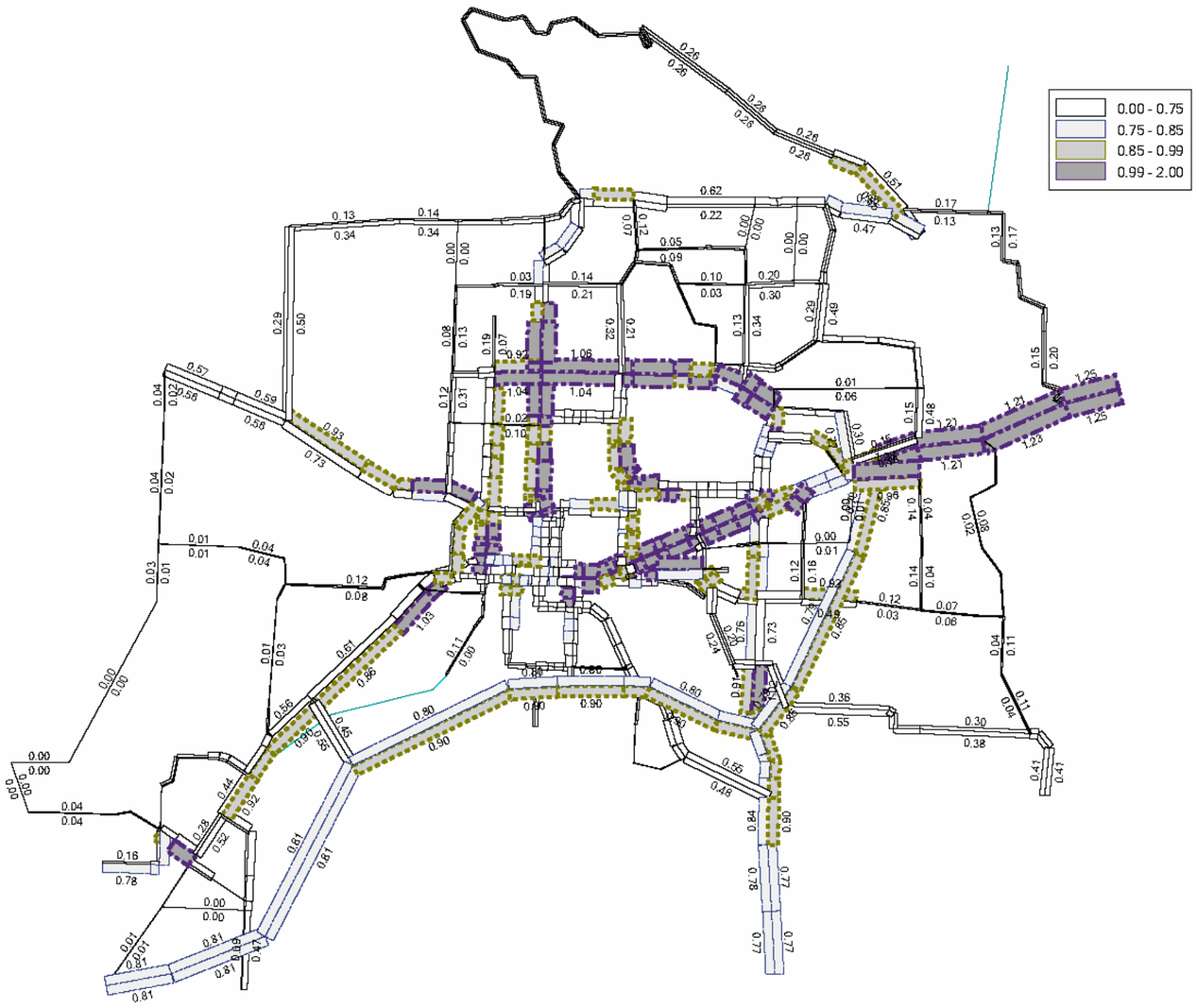


Figure 5-11 Alternative 4: Year 2025 P.M. Peak Hour Volume-to-Capacity Ratios



Intersection Operational Analysis

An operational analysis was carried out on twelve key intersections, listed in Table 5-9, under the Year 2025 traffic conditions forecast for this network. The results of this analysis are summarized in Table 5-9. Intersections in which the measure of effectiveness does not meet the relevant jurisdictional standard are identified in **bold**. For state highways, volume-to-capacity ratio is the relevant standard, and for city and county roads level-of-service is the relevant standard. *Appendix "L" provides the 2025 Alternative 4 operational analysis results worksheets for each study intersection.*

TABLE 5-9
YEAR 2025 ALTERNATIVE 4 OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay (sec/veh)	
Hancock Street / Main Street	Signal	C	0.84	21.4	No
1st Street / Main Street	Signal	B	0.41	13.1	No
Hancock Street / College Street	Signal	B	0.58	11.9	No
1st Street /College Street	Signal	B	0.39	12.4	No
Ore 99W / Villa Road	Signal	D	0.76	38.8	No
Ore 99W / Elliot Road	Signal	C	0.77	32.2	No
Haworth Avenue/Springbrook Street	Two-way Stop	**F**	> 1.0	> 50	Yes
Ore 99W / Springbrook Street	Signal	D	0.83	41.6	No
Ore 99W/Northern Arterial	Signal	D	0.72	38.5	No
Springbrook Street/Northern Arterial	Signal	C	0.65	24.5	No
Mountainview Drive/Villa Road	Two-way Stop	**F**	0.90	> 50	Yes
Ore 219/2nd Street-Fernwood Road	One-way Stop	D	0.29	31.7	No

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only. Performance indicators shown in bold are above allowable thresholds.

LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

Unsignalized Intersections Capacity Deficiencies

As shown in Table 5-9, the Haworth Avenue/Springbrook Street and the Mountainview Drive/Villa Road intersections are forecast to fail to meet the City's level-of-service standard of E for the critical minor street movement for unsignalized intersections. The Haworth Avenue/Springbrook Street intersection is also expected to operate over capacity for the critical minor street movement while the Mountainview Drive/Villa Road intersection is expected to operate near capacity. Under these conditions, drivers attempting to perform the critical movement will experience moderate to severe congestion and long delays.

Mitigations

Unsignalized Intersections

The mitigations necessary to correct the deficiencies identified in the intersection operations analysis at the Haworth Avenue/Springbrook Street and the Mountainview Drive/Villa Road intersections are described in Table 5-10. *Appendix "M" contains the Year 2025 Alternative 4 Mitigations weekday p.m. peak hour operational analysis worksheets and an illustration of the mitigated intersection lane configurations and intersection controls.*

TABLE 5-10
YEAR 2025 ALTERNATIVE 4 MITIGATIONS

Intersection	Mitigations	Existing Lane Configuration			Mitigated Lane Configuration		
		LOS	V/C	Delay	LOS	V/C	Delay
Haworth Avenue/ Springbrook Street	Signal. Coordination with Ore 99W/ Springbrook Street signal	F	> 1.0	> 50	A	0.45	9.6
Mountainview Drive/ Villa Road	Signal.	F	0.90	> 50	B	0.51	13.5

Evaluation of Road System Alternatives

This evaluation summarize the performance issues raised by each road network alternative and compares the effectiveness of the different possibilities for addressing the road network deficiencies identified in *Section 3 Existing Conditions* and *Section 4 Future Conditions* on a location-by-location basis. The conclusions from this comparison were used to identify a Preferred Road Network Alternative.

As demonstrated in the preceding sections, all of the alternatives described perform adequately in terms of roadway capacity. Additionally, the study intersections considered for each alternative either perform adequately or can be mitigated to perform adequately. Therefore, the decision as to the preferred method of addressing each area is to be based on a qualitative discussion concerning issues including intersection spacing standards, accessibility issues, sensitive land uses, cost, feasibility, jurisdictional limitations, and other requirements.

5.3.5 Area Specific Comparisons

Newberg-Dundee Bypass

As seen by the number and scale of the mitigations required for Alternative 1 compared to the other Alternatives 2, 3, and 4, a Bypass performs an essential function in reducing the traffic along Ore 99W below 2003 levels in 2025. Therefore, it is recommended that a Bypass, represented in Alternatives 2, 3, and 4 by facility number 19, be incorporated into the Preferred Road Network Alternative. The Bypass was included in the 1994 Newberg TSP. Moreover, the Bypass with a interchange at Ore 219 has been recommended in the Final Location Environmental Impact Statement for the Newberg-Dundee Transportation Improvement Project. This alternatives analysis reconfirms the need and appropriateness of this planned facility.

Northern Arterial

The Northern Arterial is considered in three different configurations by the various roadway system alternatives. Descriptions of these approaches, as well as discussion of the strengths and weaknesses of the approaches are contained in Table 5-11.

TABLE 5-11
COMPARISON OF NORTHERN ARTERIAL OPTIONS

Alternative	Description of Option	Strengths of Option	Weaknesses of Option
1	No build (includes Mountainview and Crestview as currently constructed)	No additional traffic on Mountainview Drive, thereby retaining this facility for local, non-regional travel.	No ability to provide a reroute of downtown for through traffic between Ore 99W and Ore 219 and between Ore 99W and Ore 240.
2 and 3	Ore 99W to Main Street (includes facilities 1 and 7).	Provides complete alternative route of downtown Newberg for traffic between Ore 99W and Ore 240 as well as between Ore 99W and Ore 219. Provides a continuous east-west arterial that performs an important network function of linking existing and proposed arterial streets together. Proposed facilities are within the Newberg UGB. Allows for connections to potential frontage road links to Vittoria Way and Benjamin Road that may be required in the event that accesses to Ore 99W are closed for these streets.	Additional traffic on Mountainview Drive. Existing Crestview Drive cul-de-sac becomes through road.
4	Ore 99W to Ore 240 (includes facilities 1, 7, and 25).	Provides complete alternative route of downtown Newberg for traffic between Ore 99W and Ore 240 as well as between Ore 99W and Ore 219. Provides a continuous east-west arterial that performs an important network function of linking existing and proposed collector streets together. Allows for connections to potential frontage road links to Vittoria Way and Benjamin Road that may be required in the event that accesses to Ore 99W are closed for these streets.	Extends beyond the Newberg UGB and so requires a goal exception (Facility 25). Additional traffic on Mountainview Drive. Existing Crestview Drive cul-de-sac becomes through road. Marginal increase in traffic does not warrant extending Northern Arterial westward to Ore 240.

General Issues for the Northern Arterial

Based on conversations with City staff, the Northern Arterial/Ore 99W intersection has been established. In addition, all east-west frontage roads that connect into the Northern Arterial north of Ore 99W should do so at least 500-feet away from Ore 99W to minimize interference with the operation of the Northern Arterial/Ore 99W intersection.

The consolidation of two at-grade railway crossings into one due to the construction of the segment of the proposed Northern Arterial between Mountainview Drive and Crestview Drive is assumed for Alternatives 2, 3, and 4. This section of the Northern Arterial is proposed to be perpendicular to the railway at the crossing and so should offer enhanced safety compared to the two existing crossings, which cross the railway at less favorable angles.

Recommendation for the Northern Arterial

Based on the analysis summarized in Table 5-11 and the discussion above, the Northern Arterial configuration shown in Alternatives 2 and 3 comprised of Facilities 1 and 7, is recommended for incorporation into Preferred Road Network.

Ore 219/Bypass Interchange Area

The area surrounding the proposed Ore 219/Bypass interchange has a number of issues that need to be addressed in the Preferred Road Network. The interchange management area, and short-range transportation improvements recommended on Wilsonville Road, Ore 219, Springville Road, 8th Street, 9th Street, and a new signal are shown in *Appendix "N"*.

Road Closures

In the event that the Newberg-Dundee Bypass is constructed a number of road closures in the vicinity of the Ore 219/Bypass interchange will be required to meet intersection spacing standards. These closures, shown in Alternatives 2, 3, and 4 as facility 16, include the complete removal of Sandoz Road and Adolf Road, as well as the closure of the existing Wilsonville Road and Springbrook Street connections to Ore 219. These road closures are recommended for incorporation into the Preferred Road Network.

Springbrook Street Connection to Ore 219

Since Springbrook Street is a major north-south road in the Newberg street network, it is desirable to maintain a connection between Springbrook Street and Ore 219. Alternatives 2, 3, and 4 maintain this connection via short east-west connecting road, which intersects with Ore 219 at the same location as the proposed 9th Street diversion and so meets ODOT's intersection spacing standards. This connection between Springbrook Street and Ore 219 is recommended for incorporation into the Preferred Road Network.

Wilsonville Road Connection to Ore 219

Since Wilsonville Road is an important east-west road in the regional road network and provides access to numerous farm properties, it is desirable to maintain a connection between Wilsonville Road and Ore 219. Two options for maintaining this connection were considered in the road network alternatives: a southerly diversion (facility 22) in Alternative 3 and a northerly diversion (facility 14) that connects to facility 15 in Alternatives 2 and 4. The strengths and weakness of these two options is summarized in Table 5-12.

TABLE 5-12
COMPARISON OF OPTIONS FOR MAINTAINING WILSONVILLE ROAD AND ORE 219 CONNECTION

Alternative	Description of Option	Strengths of Option	Weaknesses of Option
2 and 4	Facility 14	Maintains network connectivity between Wilsonville Road and the area north of the Ore 219/Bypass interchange that would otherwise be disrupted by the bypass. The alignment does not traverse sensitive environmental areas.	This option includes a potentially expensive crossing of the Bypass. Does not provide access to farm properties south of the interchange that have accesses to Ore 219 that are too close to the interchange. However, a small north-south frontage road parallel to Ore 219 should achieve the same objective.
3	Facility 22	Does not have to cross the Bypass. Provides access to farm properties south of the interchange that have accesses to Ore 219 that are too close to the interchange.	Has to traverse sensitive environmental areas.

Based on the analysis summarized in Table 5-12 and the discussion above, the northerly diversion of Wilsonville Road (facility 14) configuration shown in Alternatives 2 and 4 or a modified version of this concept is recommended for incorporation into the Preferred Road Network. This new connection of Wilsonville Road to Ore 219 via Springbrook, at 8th Street would include a new signalized intersection on Ore 219. *This recommended improvement is shown graphically in Appendix "N".*

Corral Creek Road

The Corral Creek Road/Ore 99W intersection needs to be closed since it is within 1320-feet of the East Newberg interchange between Ore 99W and the Bypass and so violates ODOT's access spacing standards. Therefore, Facility 27 should be included in the Preferred Road Network in preference to Facility 10, which involves only restricting this intersection to right-in/right-out. ODOT is carefully evaluating access alternatives for Corral Creek area, and based on this evaluation will decide the appropriate access onto Ore 99W. Given that this area is outside the Newberg Urban Growth Boundary, the eventual closure or limiting of access of Corral Creek Road onto Ore 99W should be ultimately decided by ODOT. Moreover, implementation of this recommendation will require the City to coordinate with ODOT and Yamhill County.

Vittoria Way

Vittoria Way is currently configured as a stop-controlled intersection with Ore 99W. This intersection is located less than ODOT's minimum access spacing standard from the future Northern Arterial access on Ore 99W. Moreover, the year 2025 traffic analysis reveals that motorists exiting Vittoria Way and attempting to turn southbound left onto Ore 99W experience unacceptable delays (greater than 50 seconds at LOS = F). Hence, some modification of the Vittoria Way/Ore 99W intersection will be required to ensure that the Northern Arterial/Ore 99W intersection can operate adequately. While the exact location of the Northern Arterial is not yet known, its location is known enough at this time to conclude that Vittoria Way will be too close.

Alternatives 2, 3, and 4, which featured a Bypass dealt two different methods of modifying the Vittoria Way/Ore 99W intersection to support adequate operations of the proposed Northern

Arterial/Ore 99W intersection. The strengths and weaknesses of these options are summarized in Table 5-13.

TABLE 5-13
COMPARISON OF OPTIONS FOR THE VITTORIA WAY/ORE 99W INTERSECTION

Alternative	Description of Option	Strengths of Option	Weaknesses of Option
2 and 4	Facility 9 Right-In/Right-Out Only	A right-in/right-out intersection permits some direct access between Ore 99W and Vittoria Way.	Direct access to Ore 99W is not possible for left-in/left-out movements. Permitting any access between Ore 99W and Vittoria Way so close to the proposed Northern Arterial/Ore 99W intersection may interfere with the operation of this major intersection.
3	Facilities 20 and 21. Close Vittoria Way and Provide Connection to Northern Arterial	Full and relatively direct access between Ore 99W and Vittoria Way via signalized intersections is permitted via the connection between the east-west frontage road (Facility 21) and the proposed Northern Arterial. Access between Benjamin Road and Vittoria Way without the use of Ore 99W is also possible with this option. So long as Facility 21 is spaced at least 300-feet north of Ore 99W, this option will not interfere with the operation of the proposed Northern Arterial/Ore 99W intersection.	There is no direct access between Ore 99W and Vittoria Way. Some parkland or residential property acquisition may be required to construct the frontage road connection (facility 21).

Recommendation for the Northern Arterial

Based on the analysis summarized in Table 5-13 and direction from City of Newberg staff, the reconfiguration of this intersection to right-in, right-out is recommended for incorporation into the Preferred Road Network.

9th Street/Ore 219 intersection

The 9th Street/Ore 219 intersection will need to be closed if a Bypass is constructed because it is within 1320-feet of the proposed Ore 219/Bypass interchange. The existing 9th Street alignment would need to be diverted north to intersect with Ore 219 more than 1320-feet from the interchange as described in Facility 18. The City already has an alignment reserved for this purpose (Facility 18) and preliminary analysis of this reservation indicates that it should be adequate to maintain access for the local street network east of the airport and north of the proposed bypass. It is therefore recommended that the Facility 18 road closure and diversion be included in the Preferred Road Network.

Wynooski Street

The following discussion concerning the most appropriate future configuration of Wynooski Street assumes that the Newberg-Dundee Bypass is constructed in the planning horizon. The Wynooski Street/Ore 219 intersection will need to be closed if a Bypass is constructed because it is within 1320-feet of the proposed Ore 219/Bypass interchange. Wynooski Street is an important north-south element of the Newberg transportation system. To maintain continuity of the network, the

connection between Ore 219 and Wynooski Street at 11th Street should be maintained. Two alternative approaches to maintaining this connection in the event that the Bypass is constructed were assessed in the road network alternatives: a southerly route across the Bypass (Facility 17) and a northerly route that does not cross the Bypass (Facility 29). The strengths and weaknesses of the two approaches to maintaining the connection between Wynooski Street at 11th Street and Ore 219 are summarized in Table 5-14.

TABLE 5-14
COMPARISON OF OPTIONS FOR MAINTAINING
WYNOOSKI STREET TO ORE 219 CONNECTION

Alternative	Description of Option	Strengths of Option	Weaknesses of Option
2 and 3	Facility 17 Southerly Connection	Facility 17 consists of two parts: the bypass crossing and the connection to Ore 219 more than 1320-feet from the Ore 219/Bypass interchange. The connection to Ore 219 can be built even if the Bypass crossing is not. Construction of the Bypass crossing maintains the important network function that Wynooski Street currently performs. This option maintains access to the Smurfit Mill for heavy vehicles and does not require passage through downtown Newberg and the residential area south of Ore 99W. This option maintains access to the Ridge Road area.	The crossing of the Bypass in this option, while feasible, will be difficult and expensive. This option will require a Goal Exception.
4	Facility 29 Northerly Connection	Maintains access to Ore 219 in conjunction with the recommended 9th Street diversion (Facility 18).	It will be very difficult to accommodate Facility 29 in between the Bypass and the airport particularly because of the need to depress any roads that pass through the take-off and landing zone. Therefore, there are feasibility concerns with this option. This option does not address the need to allow access to the Smurfit Mill for heavy vehicles and does not require passage through downtown Newberg and the residential area south of Ore 99W. This option does not address the need to allow access to the Ridge Road area

Recommendations for Wynooski Street

Based on the analysis summarized in Table 5-14 and the discussion above, the Wynooski Street configuration shown in Alternatives 2 and 3, is recommended for incorporation into the Preferred Road Network Alternative. This recommendation includes the closure of the existing Wynooski Street connection to Ore 219 and the construction of the full southerly diversion of (Wynooski Street) facility 17 including the crossing of the Bypass.

North Newberg Road System

The proposed new North Newberg roads (Facilities 4, 5, and 6) do not pose any intersection or connectivity problems. These proposed roads do lie outside the City of Newberg UGB, but are within the URA. Therefore implementation of this recommendation will not require the City to coordinate with Yamhill County.

Therefore, the City can incorporate these roads into the Preferred Road Network if it chooses but should be mindful of the actual authority to implement these connections with Yamhill County, until such time as these lands are annexed into the Newberg UGB.

Villa Road and Foothills Drive Extensions

The construction of the extensions to Villa Road and Foothills Drive (Facilities 2 and 3) that are proposed by the City will result in the need to signalize the Villa Road/Mountainview Drive (Northern Arterial) intersection due to increased traffic and the addition of a fourth leg to the intersection. These extensions are recommended for inclusion in the Preferred Road Network since they are already part of the City's planning and should not pose any other issues.

Benjamin Road

The Benjamin Road/Ore 99W intersection must be closed if the Bypass is constructed. To maintain access to Ore 99W for properties along Benjamin Road, an east-west frontage road parallel to the Bypass (Facility 8) should be constructed to intersect with the proposed Northern Arterial. This improvement appears to be feasible and would provide accessibility benefits and so is recommended for inclusion in the Preferred Road Network.

Putnam Road Extension

A westward extension of Putnam Road to connect to Springbrook Street (Facility 26) south of the existing railway crossing was proposed in Alternative 4. It is recommended that this extension be included in the Preferred Road Network.

East UGB/Springbrook Oaks Area

The area of East Newberg, called the Springbrook Oaks, is planned for approximately 300 homes east of the Springbrook Creek. Access is currently limited to the area east of the east fork of Springbrook Creek. Current access to this area is via Fernwood Road and Ore 99W. The effect of the bypass project will be to sever access of this area to Ore 99W, due to spacing requirements from the new Ore99/Bypass interchange. Access from Corral Creek Road to Ore 99W will likely be restricted or eliminated as well due to interchange spacing requirements, further exacerbating access to this area. Accordingly, the Springbrook Oaks plan envisions a creek crossing, which would provide a second crossing of Springbrook Creek. This additional crossing would augment the Fernwood Road creek crossing, providing necessary multi-modal connectivity to the Newberg Street system for the new development. Due to the relatively high expense of such a crossing (estimated cost of $2 million) and environmental problems associated with crossing the creek, the needed crossing is not feasible to be within the Springbrook Oaks boundary. The second crossing thus is planned as a frontage road, to be constructed in conjunction with the Bypass. The frontage road, located parallel and relatively close to Ore 99W, would have several advantages:

- In this location close to Ore 99W, the frontage road would limit environmental impacts by being located at same point as Bypass crossing
- ODOT would likely share in the cost of the frontage road, due to their obligation to provide access to Bypass-affected properties
- In case the Corral Creek Road access to Ore 99W is severed by the Bypass, the frontage road would provide alternate access from the Corral Creek area to the Newberg street system.

The new frontage road will be designated as a Major Collector, and will include bike lanes.

Hess Creek East Residential Area Local Street Access

The Hess Creek East Residential Area is the undeveloped residential area bounded by Wynooski Street on the west, Third Street on the north, Sportsman Airpark on the east, and the future Bypass on the south. This area has limited access due to topography, stream corridors, airport, and the Fernwood-Gar-Friends Cemetery. Currently, this vacant, developable area has access only to 3rd Street. Given the relatively large number of homes that could potentially be developed in this area, for general circulation and emergency access the area should have a minimum of two access points to the surrounding collector/arterial system. The options available appear to include the following:

- A second access to the north on 3rd Street
- Access to Wynooski south of the cemetery

It is recommended that a Specific Area Plan be developed for this area concurrent with development to ensure that adequate circulation is provided. This Specific Area Plan will include provision for a second access as described above.

Downtown Area Couplet Options

Currently, Newberg has a one-way couplet, with three lanes in each direction, traversing the downtown from Harrison Street (on the west) to River Street (on the east). The existing one-way couplet resides on Hancock Street (westbound) and 1st Street (eastbound). There are bike lanes and parking provided on both streets of the existing couplet. The current designated travel speed is 25 miles per hour.

A 1986 study for the City entitled *Downtown Development Plan: Newberg, Oregon (1986)* considered a "split couplet" through downtown Newberg as an alternative to the existing couplet arrangement. Figure 5-12 shows a downtown area couplet option that features a one-way couplet along Hancock Street and 2nd Street, which is split by a two-way 1st Street. The project would include curb extensions, planters, landscaping, improved crosswalks, two lanes in each direction on the couplet streets and a single lane in each direction on 1st Street. Based on an inflated cost estimate from the downtown study, the estimated cost of the project is $10-12 million.

The current street width on 2nd Street is 42 feet wide curb-to-curb, which would accommodate two travel lanes, bike lanes and parking on only one side of the street if this option were implemented. Creating the transition curves onto and off of 2nd Street would require acquisition of additional right-of-way and possible removal of some buildings.

Figure 5-12 Potential Revised Downtown Couplet

LEGEND

Westbound Travel Lanes

Eastbound Travel Lanes

As part of this transportation plan update, this split couplet option was analyzed from a traffic flow standpoint. The general finding was that implementing the split couplet after construction of the bypass would not present significant traffic capacity issues. Thus, from a traffic flow view, the split couplet could be implemented if the community desires.

The Newberg Planning Commission had a special workshop in January 2004 to discuss the "split couplet" option. The reaction of the Planning Commission and the general public that testified was mixed. There was some support for the idea, while there was also significant opposition from particularly those residents and business owners on 2nd Street.

Travel forecasts indicate that the Bypass will reduce downtown traffic volumes by 40-50%. Accordingly, once the Bypass in constructed, the existing downtown couplet could be reduced in capacity to two lanes, from the existing three lanes. This modification could provide numerous opportunities that could be further explored:

- Angled parking
- Wider sidewalks
- Planter strips or medians
- Additional crosswalks

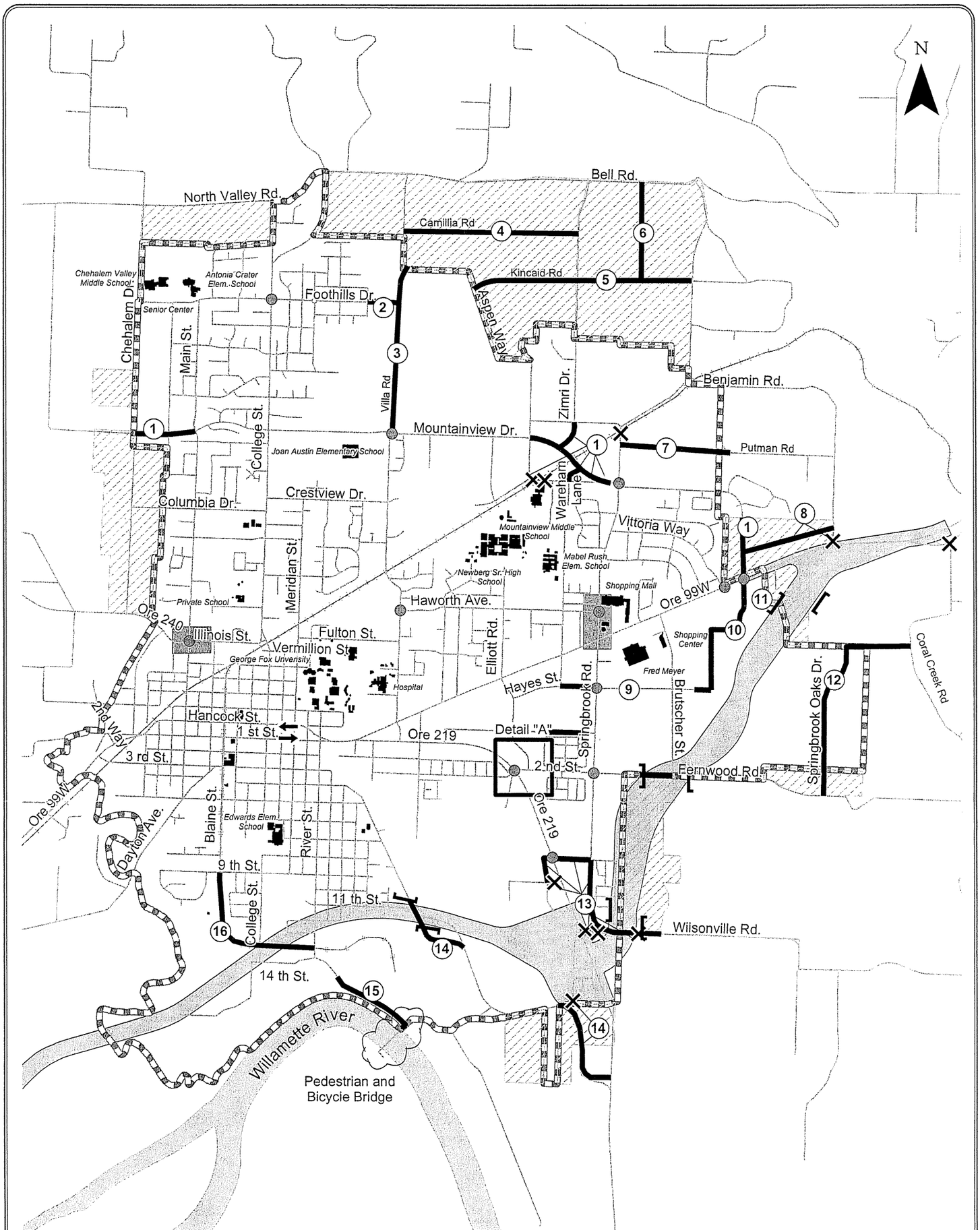
This plan recommends that a detailed plan be developed for downtown transportation improvements that may be constructed after construction of the bypass. That plan should explore both the split couplet option and the option reducing lanes and implementing the opportunities listed above. Creation of this plan should involve significant public involvement.

Springbrook Street between Ore 99W and Haworth Avenue

Under all four alternatives, the section of Springbrook Street between Ore 99W and Haworth Avenue was identified as having a capacity deficiency that required a traffic signal at the Haworth Avenue/Springbrook Street intersection. Careful coordination between this new signal and the existing signal at the Ore 99W/Springbrook Street intersection is crucial to the operational performance of each intersection due to the fact that they are closer together than is ideal. However, a detailed simulation model of the two intersections operating together revealed that such coordination could be achieved under Year 2025 traffic conditions for Alternatives 2, 3, and 4. This analysis reveals that a new Haworth traffic signal could be coordinated and operate in "slave mode" to the Springbrook/Ore 99W signal, thereby not negatively impacting the through carrying capacity of Ore 99W.

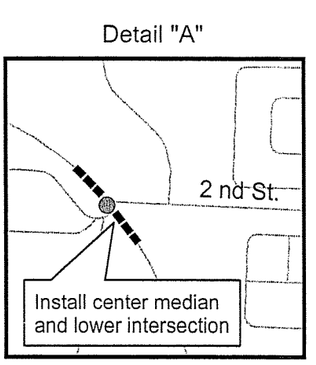
5.3.6 Identification of Preferred Road Network

The Preferred Road Network combines elements from Alternatives 2, 3, and 4 to provide a road network suitable for a more detailed performance, costing, and implementation assessment. The preferred road network is shown in Figure 5-13. The facilities featured in the Preferred Road Network are as follows:



LEGEND

- Bypass
- Proposed Street
- Intersection Improvements
- Proposed Grade Separated Crossing
- Proposed Street Closure
- Urban Growth Boundary
- Urban Reserve Area
- Special Study Area
- Railroad
- Streets
- River



PREFERRED ROAD NETWORK
NEWBERG, OR.

FIGURE **5-13**

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1. Mountainview Drive - Northern Arterial: Construct new street connections between Main Street and Chehalem Drive, Aspen Way and Springbrook Street, and eastern terminus of existing Crestview Drive to Ore 99W. In conjunction with this improvement, the following local street modifications will be required:
    a. Close Aspen Way and Crestview Drive across rail tracks and Crestview Drive at Springbrook Street
    b. Extend Wareham Lane northeasterly to intersect Northern Arterial as stop-controlled approach
    c. Extend Zimri Drive southwesterly to intersect Northern Arterial as stop-controlled approach
2. Foothills Drive Extension: Extend Foothills Drive east to Villa Road.
3. Villa Road Extension: Extend Villa Road north to Aspen Way.
4. New Camelia Drive (East-West Local Street): Construct a new street connection between Aspen Way and Zimri Drive.
5. New Kincaid Road Extension (East-West Local Street): Construct a new street connection between Aspen Way and Springbrook.
6. New North-South Local Street: Construct a new local street connection between Bell Road and New Kincaid Road extension (#5 above).
7. Putnam Road Extension: Extend Putman Road west to Springbrook Street.
8. Benjamin Road: Close Benjamin Road at Ore 99W and construct a new east-west frontage road parallel to Ore 99W to connect Benjamin Road to the Northern Arterial.
9. Hayes Street Extension: Extend Hayes Street east to connect with the southern street extension of the Northern Arterial (south of Ore 99W).
10. New North-South Minor Collector: Construct a new north-south connection from the intersection of Ore 99W/Northern Arterial to the Hayes Street extension (#9 above).
11. New East-West Bypass Connection: Construct a new east-west connection from North-South minor collector (#10 above) across the NDTIP Bypass to Greens Drive (#12 below).
12. New Greens Drive (North-South Street Within Springbrook Oaks): Construct a new street (hereafter called Greens Drive) between the East-West Bypass Connection (#11 above) and Fernwood Road.
13. Wilsonville Road Improvements: Construct a new section of Wilsonville Road northwest to cross the Bypass (without an interchange) and connect with Springbrook Street (see Appendix "N" for aerial plan of improvements). Construct a new east-west street between the Wilsonville Road-Springbrook Street connection and Ore 219. In conjunction with this improvement, the following local street modifications will be required:
    a. Close street connections of Wilsonville Road and Springbrook Street at Ore 219
    b. Close 9th Street at Ore 219 and construct a new street north from 9th Street to the new east-west street at approximately 8th Street
14. Wynooski Street: Close Wynooski Street at Ore 219 and construct a new street further south to Ore 219 to provide adequate spacing from the new Ore 219/Bypass interchange to assure good operation. Also, construct s new section of Wynooski Street south of the Bypass to accommodate for the Bypass crossing.

15. Blaine Street Extension: Extend Blaine Street south and east to College Street.

In addition to the above mentioned facility improvements, the following intersection improvements have been identified as part of the preferred road network.

- College Street / Foothills Drive: Pedestrian and vehicle safety improvements including a new signalized intersection).
- Mountainview Drive / Villa Road: Install new traffic signal.
- Mountainview Drive / Springbrook Street: Install new traffic signal.
- Mountainview Drive / Ore 99W: Install new traffic signal.
- Vittoria Way / Ore 99W: Modify this intersection to restrict turning movements to right-in/right-out only.
- Springbrook Street / Haworth Avenue: While in the 5-10 year future, modifying this intersection to four-way stop control will provide sufficient capacity, in the long range this intersection will need a traffic signal. This signal would need to be coordinated with the signal at Ore 99W/Springbrook Street.
- Villa Road / Haworth Avenue: Modify this intersection to four-way stop control.
- Ore 219 / 2nd Street: Modify this intersection to restrict turning movements to right-in/right-out only.
- Springbrook Street / Fernwood Road: Install new traffic signal.
- 8th Street / Wilsonville Road: Install new traffic signal.
- Ore 240-Illinois / Main Street: Perform special study to determine appropriate intersection improvements. Possible alternatives include traffic signal, roundabout, or four-way stop control. Realignment of the intersection may be required; alternatively, closure of either the north or east approach may be considered.

Demand-to-Capacity Assessment

Figure 5-13 shows the projected weekday p.m. peak hour traffic volumes for the Preferred Alternative. The traffic volumes shown in Figure 5-13 represent an expected general growth of about 30-40 percent as compared to the existing conditions described in Section 3, with significantly greater increases in areas of new development.

Similar to all of the alternatives, the existing Ore 99W will be largely relieved of traffic congestion by the presence of the Bypass. The majority of through traffic, especially trucks, will be carried on the Bypass, resulting in an overall reduction of 50-60 percent of average daily traffic on existing Ore 99W.

Intersection Operational Analysis

For the Preferred Alternative, an operational analysis was carried out on twenty-five key intersections, listed in Table 5-15, under the Year 2025 traffic conditions forecast for this network. The results of this analysis are summarized in Table 5-15. Intersections in which the measure of effectiveness does not meet the relevant jurisdictional standard are identified in **bold**. For state highways, volume-to-capacity ratio is the relevant standard, and for city and county roads level-of-service is the relevant standard. *Appendix "O" provides the 2025 Preferred Road Network operational analysis results worksheets for each study intersection.*

TABLE 5-15
YEAR 2025 PREFERRED ROAD NETWORK OPERATIONAL ANALYSIS RESULTS

Intersection	Traffic Control	Weekday PM Peak Hour			Mitigation Required
		LOS	V/C	Delay (sec/veh)	
ORE 99W/3rd Street	One-Way Stop	C	0.15	21.0	No
ORE 99W/2nd Way	One-Way Stop	D	0.29	25.2	No
1st Street/Harrison Street	Two-Way Stop	C	0.13	18.6	No
1st Street/Main Street	Signal	B	0.53	14.3	No
1st Street/Blaine Street	Two-Way Stop	C	0.30	21.1	No
1st Street/College Street	Signal	B	0.59	15.4	No
1st Street/Meridian Street	Signal	B	0.46	10.6	No
1st Street/River Street	Signal	C	0.81	20.9	No
Hancock Street/Main Street	Signal	B	0.73	14.5	No
Hancock Street/Blaine Street	**Two-Way Stop**	**F**	**0.64**	**> 50**	**Yes**
Hancock Street/College Street	Signal	B	0.69	14.7	No
Hancock Street/Meridian Street	Signal	A	0.57	9.9	No
ORE 99W/Villa Road	Signal	D	0.74	38.8	No
ORE 99W/Elliot Road	Signal	C	0.73	29.4	No
ORE 99W/Springbrook Street	Signal	D	0.81	40.6	No
ORE 99W/Brutscher Street	Signal	C	0.76	25.5	No
ORE 99W/Northern Arterial	Signal	D	0.73	35.8	No
Mountainview Drive/Villa Road	Signal	C	0.53	20.6	No
Mountainview Drive/Aspen Way	Two-Way Stop	E	0.50	43.2	No
Northern Arterial/Springbrook Street	Signal	C	0.66	24.8	No
Haworth Avenue/Villa Road	Two-Way Stop	D	0.52	28.3	No
Haworth Avenue/Springbrook Street	Signal	C	0.55	22.0	No
2nd Street/St Paul Highway (HWY 219)	Two-Way Stop	B	0.07	13.4	No
5th Street/Dayton Avenue/Main Street	All-Way Stop	B	0.55	14.7	No

Notes: Intersection LOS and V/C ratio for unsignalized intersection represent operations of critical movement only.

LOS = Level of Service, V/C Ratio = Volume-to-Capacity Ratio

Signalized Intersections Capacity Deficiencies

As shown in Table 5-15, all study intersections are forecast to operate acceptably with the exception of the northbound critical movement at the Hancock Street/Blaine Street unsignalized intersection. Although the northbound critical movement is forecast to operate at level of service "F", it is forecast to operate at an acceptable volume-to-capacity ratio. It is recommended that City and ODOT staff monitor this intersection in the long-term.

As a shared northbound through/left-turn lane, the northbound through drivers attempting to cross Hancock Street during peak traffic conditions will delay the northbound left-turning vehicles, thus creating moderate to severe congestion and long delays for the entire approach. To provide for

acceptable traffic operations at this intersection, possible mitigations include either providing a separate lane for the northbound left-turning traffic or installing a traffic signal. Further evaluation of this intersection is needed to determine whether either of these mitigation options is feasible.

5.4 TRANSPORTATION MODES AND FACILITIES

5.4.1 Pedestrian

The following discussion will examine the type of sidewalk facilities to be selected to address the future Newberg pedestrian network needs identified in Section 4 Future Conditions as well as the prioritization and estimated costing of these proposed facilities. Section 4 Future Conditions identified the pedestrian system gaps, which generally constitute disconnections in the collector/arterial street system and key local street accesses to major pedestrian generators. This is the system that was considered for future sidewalks in this analysis. Additional matters important to the success of the Newberg pedestrian network will also be discussed.

Given the limited nature of City resources, it is necessary to consider whether new pedestrian connections should be provided with sidewalks on both sides of the street (double sidewalk) or only on one side of the street (single sidewalk) within the 2025 future horizon. The answer to that question will depend on a number of factors:

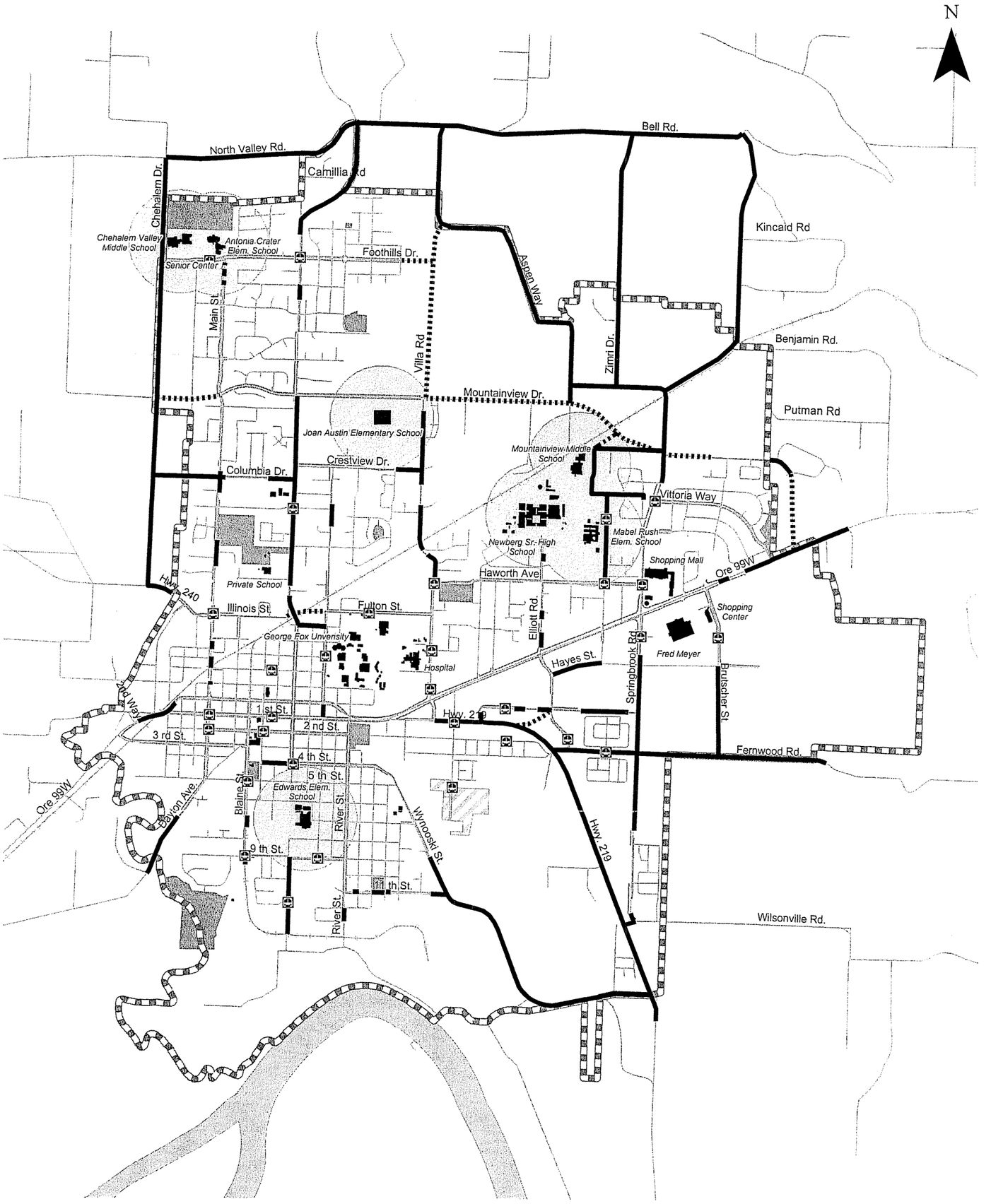
- The proximity of the proposed connection to trip attractors that create high pedestrian demand;
- Safety issues such as high vehicular traffic volumes or poor sight distances that may indicate the need for sidewalks on both sides of the street;
- The configuration of any existing sidewalks along the connection which may necessitate crosswalks to transition from sidewalks on each side of the street to sidewalks on only one side.

The total (no sidewalks) and partial (sidewalks on one side only) sidewalk gaps in the existing system are illustrated in Figure 5-14 and 5-15, respectively. The figures form the basis of the following discussion on possible pedestrian system policy alternatives for the City. The discussion relates to the recommended pedestrian network for Newberg that would result from connecting the gaps identified in Figure 5-14.

Pedestrian System Policy Alternatives

Several sidewalk options have been developed to assess the relative costs of potential City policies. These options are:

- **Minimal Pedestrian System**: In this option, new road construction, such as those proposed in Alternatives 2, 3, and 4 and the existing City policy requiring developer funded frontage improvements are relied upon to trigger improvements in the pedestrian system. The various proposed new road linkages would all be constructed to City standards, which require adequate pedestrian and bicycle accommodation. The Minimal Pedestrian System Option will require City funding to oversee the adherence of the new roads to City standards. However, this funding is part of the normal City expenditure on development oversight and so is not considered an additional cost attributable to this option. Because this option will result in new pedestrian facilities only coincident with new road or property development, under this option the sidewalk gaps in the existing urban area of Newberg illustrated in Figure 5-14 and 5-15 are in large part unaddressed.



LEGEND

- Gaps in Sidewalk (No Sidewalk Either Side)
- New Sidewalk with Future Road Improvement
- Proposed Off-Street Shared Use Facilities
- 1000' Buffer of Schools Facilities
- Urban Growth Boundry
- Activity Centers
- Parks
- Cemetery
- Existing Sidewalks
- Railroad Tracks
- Streets
- River
- Flyer Bus Stops

Total Gap Length	***28,730'***
Within 1000' of Schools	*5,094'*
Beyond 1000' of Schools	*23,636'*

TOTAL (NO SIDEWALK) GAPS IN EXISTING PEDESTRIAN FACILITIES NEWBERG, OR

FIGURE **5-14**

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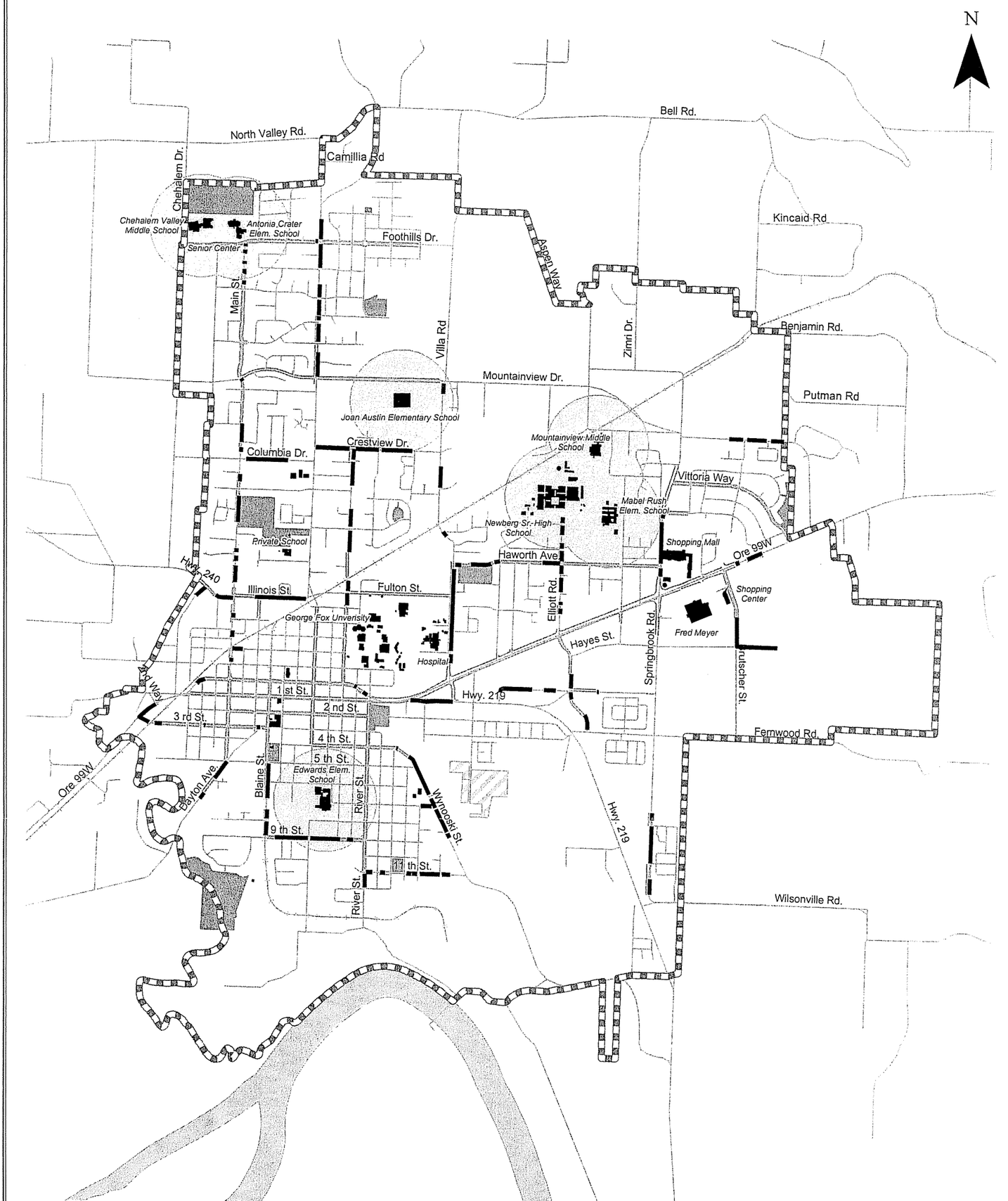

LEGEND

- Gaps in Sidewalk (Sidewalk on One Side Only)
- 1000' Buffer of Schools Facilities
- Urban Growth Boundry
- Activity Centers
- Parks
- Cemetery
- Existing Sidewalks
- Railroad Tracks
- Streets
- River
- Flyer Bus Stops

Partial Gap Length	***30,435'***
Within 1000' of Schools	*2,179'*
Beyond 1000' of Schools	*28,256'*

PARTIAL (SIDEWALK ON ONE SIDE ONLY) GAPS IN EXISTING PEDESTRIAN FACILITIES NEWBERG, OR

FIGURE **5-15**

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- **Moderate Pedestrian System**: This option addresses the gaps in the existing system identified in Figure 5-14 and 5-15 but in a limited way includes all of the actions that would be undertaken as part of the Minimum Pedestrian System Option. Under the Moderate Pedestrian System Option, all parts of the pedestrian network within 1,000-feet of a school would be provided with double sidewalks if they are not already present. This means that for the recommended sidewalk network within 1,000-feet of schools existing single sidewalks would be duplicated and total gaps in the sidewalk system would be bridged with double sidewalks. However, those total gaps in the network that lie more than 1,000-feet from a school would be provided with only single sidewalks and existing single sidewalks would not be duplicated. This alternative gives the City the opportunity to provide a connected system at lower cost, with the ability to augment that system with double sidewalks in the future as funds become available.
- **Maximum Pedestrian System**: This option involves the construction of double sidewalks over the entire recommended sidewalk network, including the duplication of the existing single sidewalks highlighted in Figure 5-15 and the bridging of the complete gaps identified in Figure 5-14 with double sidewalks in all instances.

Pedestrian System Alternative Cost Estimates

The costs for the implementation of the three pedestrian system options are based on the assumption of $35 per linear foot for a five-foot sidewalk. Other costs including $35 per linear foot to account for storm, sewer and other drainage issues that must be addressed when adding a curb and gutter to an existing roadway, a 30% design and engineering cost, and a 20% contingency are added to the basic assumption. In locations where drainage is not an issue, costs will be closer to $35 per linear foot (approximately one third of the estimated cost indicated). As part of the Moderate and Maximum Pedestrian System Options, the City should stage new projects strategically, perhaps by constructing the lower cost, higher use sidewalks first. Such a strategic approach would result in more linear feet per dollar expended. It is assumed for the purposes of Tables 5-16 and 5-17 that 50 percent of new sidewalks will require drainage alterations and so an average of $80 cost per linear foot of new sidewalk was used in this analysis.

TABLE 5-16
COST ESTIMATES FOR THE MODERATE PEDESTRIAN SYSTEM OPTION

Sidewalk Type	Description	Figure	Length of new sidewalk (feet)	Cost (000's)[1]
Single	Single sidewalks where no sidewalks exist at present.	5-14	23,635	1,891
Double	Double sidewalks where no sidewalks exist at present within 1000-feet of schools.	5-14	2 x 5,095	815
Double	Double sidewalks where single sidewalks exist at present within 1000-feet of schools.	5-14	2,180	174
Total			**36,005**	**2,880**

1. All sidewalk costs in this table are assumed to be attributable to the City but do not include sidewalks expected as part of future road improvements or off-street shared-use paths.

TABLE 5-17
COST ESTIMATES FOR THE MAXIMUM PEDESTRIAN SYSTEM OPTION

Sidewalk Type	Description	Figure	Length of new sidewalk (feet)	Cost (000's)[1]
Double	Double sidewalks where no sidewalks exist at present.	5-14	2 x 23,635	3,782
Double	Double sidewalks where no sidewalks exist at present within 1000-feet of schools.	5-14	2 x 5095	815
Double	Double sidewalks where single sidewalks exist at present within 1000-feet of schools.	5-14	2,180	174
Double	Double sidewalks where single sidewalks exist at present.	5-14	28,255	2,260
Total			**87,895**	**7,032**

1. All sidewalk costs in this table are assumed to be attributable to the City but do not include sidewalks expected as part of future road improvements or off-street shared-use paths.

As demonstrated in the discussion above and Tables 5-16 and 5-17, the estimated costs for the pedestrian system policy options are as follows:

- **Minimal:** administration costs only.
- **Moderate:** approximately $2.88 million
- **Maximum:** approximately $7.032 million

These cost estimates are supplied to provide guidance to the City in determining its preferred approach to the future development of the pedestrian system. As part of the preferred approach decided upon by the City, there are additional pedestrian issues to be considered. These issues are described below.

Additional Pedestrian Matters

Crosswalks are an important element in a properly functioning pedestrian system. In concert with the provision of the sidewalks identified above, the need for a crosswalk should be examined at all locations where a double sidewalk is reduced to a single sidewalk to prevent a pedestrian from being trapped with no alternative but to cross the street at a location where such a maneuver will not be anticipated by vehicular traffic. In addition, crosswalks should be considered on collector and arterial streets with high vehicular and/or pedestrian volumes.

Once new pedestrian facilities are provided for whichever of the three pedestrian system options is adopted by the City, a deliberate and constant program of monitoring and maintenance will be needed to ensure that facilities continue to operate adequately. Maintenance tasks, to be scheduled as part of the overall City maintenance program, will include the maintenance of adequate pavement surfaces on sidewalks and crosswalks and the maintenance of proper clearances from trees and other obstacles, particularly on off-road facilities.

5.4.2 Bicycle

The following discussion will examine the policy options for the City to address the future Newberg bicycle network needs identified in Section 4 Future Conditions. Additional matters important to the success of the Newberg bicycle network will also be discussed.

Several options have been developed to assess the relative costs of potential City policies. These options are:

- **Minimal Bicycle System:** This option involves the provision of no new bicycle facilities in the existing urban area of the City of Newberg. However, in a similar manner to the minimal option for the pedestrian system, the City should ensure that newly developed or upgraded roads, such as those outlined in road network alternatives, are constructed with the appropriate bicycle facilities.

- **Moderate Bicycle System:** This option involves the provision of bicycle route signage on each of the existing gaps in the proposed bicycle network where appropriate. Sections of the proposed bicycle network that currently lack bicycle facilities or have partially complete bicycle facilities will require a feasibility and safety inspection from a registered engineer before they are signed as bicycle routes. The Moderate Bicycle System Option also includes all of the features of the Minimal Bicycle System Option relating to the street network of the future urban area of the City of Newberg. It should be noted that this approach to the provision of bike routes is not consistent with guidelines included in the Oregon Bicycle Plan. In that plan, it is prescribed that bike routes should be provided only on facilities that have striped bike lanes.

- **Maximum Bicycle System:** This option involves the provision of exclusive bicycle lanes on all segments of the proposed bicycle network that are located on existing collector streets, arterial streets, and highways. These exclusive facilities include striped on-street bike lanes and shoulder bikeways. The Maximum Bicycle System Option also includes all of the features of the Minimal Bicycle System Option relating to the street network of the future urban area of the City of Newberg.

Determining the costs for the implementation of the Moderate and Maximum Bicycle System Options requires additional investigation due to the wide variations in the roadway cross-sections and available right-of-way along many of the routes.

The Minimal Bicycle System Option is similar to the minimal pedestrian system option in that the costs will generally be incurred on administrative oversight of construction undertaken or funded by others.

Additional Matters of Importance for the City of Newberg Bicycle Network

Regardless of whether the City adopts a minimal, moderate, or maximum approach to the provision of bicycle facilities, it needs to work with ODOT to provide suitable connections to the bicycle facility to be constructed in conjunction with the proposed Bypass. The elements of the proposed bicycle network directly relevant to the Bypass facility include the Blaine Street, River Street, Wynooski Street, Springbrook Street, Brutscher Street, and Ore 99W bicycle facilities and the proposed off-street shared use facility along the Hess Creek.

Signage has been noted as a key element in supporting bicycle use for intra-city trips. It is most important for shared roadway bicycle facilities where signage provides the only indication that a bicycle facility is present. However, it is also important for shoulder bicycle lanes, on-street bicycle lanes and off-street paths to provide information to cyclists, pedestrians, and drivers that will enhance the safety of the facility.

Once any new bicycle facilities are provided, a deliberate and constant program of monitoring and maintenance will be needed to ensure that facilities continue to operate adequately. Maintenance tasks, to be scheduled as part of the overall City maintenance program, will include the maintenance of adequate pavement surfaces on bicycle facilities, the replacement of any damaged or missing signage, and the maintenance of proper clearances from trees and other obstacles, particularly on off-road facilities.

Supporting bicycling, as a viable alternative to the automobile requires more than simply providing bicycle lanes and signage. Support facilities, such as secure parking and worksite changing facilities, are also needed before most potential users will consider the bicycle mode as a practical alternative. The City should consider whether it should take any action to foster such facilities.

5.4.3 Public Transportation (Transit and Passenger Rail)

The following summarizes the assumptions, findings and recommendations of the *Transit: Local Bus Routes, Park & Ride Lots, and Regional Transit Stations* Technical Memorandum prepared by Kittelson & Associates, Inc. *(see Appendix "P")*. The public transportations matters addressed include the selection of potential transit centers and park-and-ride lot locations to address the future Newberg regional public transportation needs and consideration of six intra-city fixed bus route options assembled into four distinct patterns to serve local activity centers and high-density neighborhoods, as well as the potential park-and-ride lots and regional transit stations.

In order to evaluate the most appropriate regional park-and-ride lot locations and the future local bus route options, it is necessary to understand the current and proposed future transit operations in the City of Newberg. The existing transit provision in the City of Newberg is operated by Chehalem Valley Senior Citizens Council, and includes commuter service, dial-a-ride service and an intra-city fixed-route bus service.

Potential Park-and-Ride Facilities for Regional Transit

As part of the NDTIP Bypass Project, establishing mainline transit service from McMinnville to the Portland area in the Ore 99W corridor was evaluated in the Location Phase and will be further studied in the Design Phase. Park and Ride facilities recommended in this plan that: 1) are located in the vicinity of the bypass and 2) match up with a service plan adopted by the Yamhill County Transit Committee, will be considered for inclusion in the Bypass project. This service should be coordinated with local bus service provided in Newberg.

The park-and-ride analysis identified the six most suitable candidate sites as potential future locations for park-and-ride facilities serving regional transit services. The proposed park-and-ride facilities would serve commuter-oriented ridership, and are located near an arterial street that is easily accessed by both the proposed transit service and the riders who will use it. The site location selection aimed to minimize time and effort for riders to reach facility, minimize deviation from Ore 99W, maximize passenger safety, and avoid environmentally sensitive areas. Each

location was analyzed in terms of three criteria: location, transit and site considerations, as well as additional criteria for future assessment. Figure 5-16 shows the location of the potential park-and-ride sites within the City of Newberg. Evaluations and ranking of relative merits of the various potential park-and-ride sites resulted in six top rankings for potential sites: Site C, Site D, Site O, Site P, Site Q, and Site V. It is recommended that the City undertake further investigations into these short-listed sites to determine the most suitable option for incorporation into the Newberg Transportation System Plan.

Future Local Bus Service

Six intra-city bus route options to service local activity centers and high-density neighborhoods and possibly the potential park-and-ride lots and regional transit stations were examined. The examination considered the existing local transit service and identifies four possible alternative route patterns for the future. Currently, Town Flyer is the only existing intra-city fixed bus service in the City of Newberg, and operates six hours a day Monday through Friday.

Determining the most appropriate local bus service pattern requires both a more detailed operational investigation and a community decision as to which types of users the local fixed route bus system should seek to serve. This decision will determine whether the preference is for speed and frequency, or for service coverage, and may influence the overall funding level for local transit.

In the absence of a clear community preference, Pattern 4, shown in Figure 5-17, is recommended as a starting point for a more detailed investigation since it provides the highest potential ridership per revenue mile and the successful existing dial-a-ride service should be able to adequately cater to senior citizens and persons with disabilities, who would be most disadvantaged by the lower geographic coverage of this option.

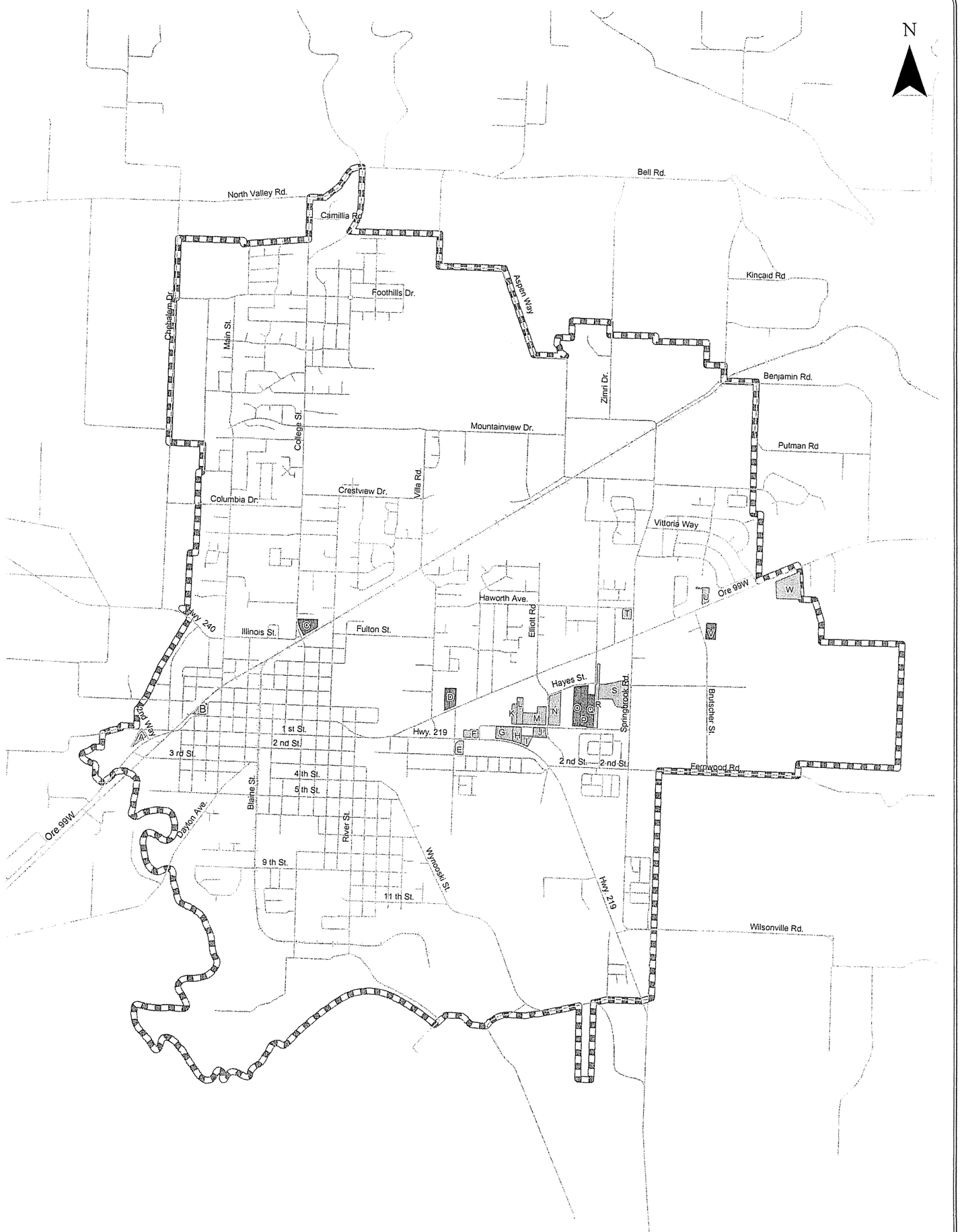
General Public Transportation Recommendations

The City should consult with the existing local and regional transit providers before pursuing any service changes. Further it should discuss any potential changes to the existing local bus services with other agencies and jurisdictions to avoid any unnecessary duplication of effort in the provision of local and regional transit services.

The City should seek to ensure that any future regional bus services utilize the existing Ore 99W to travel through Newberg. This provides maximum flexibility in the location of park-and-ride lots and also allows for a possible second stop within Newberg that provides a more cost-effective transfer between the local and regional bus networks.

5.4.4 Rail Freight

No future alternative scenarios have been considered since existing services are adequate to meet future needs. However, future City plans include the development of a rail/trolley system that will serve as a link between the downtown commercial sector and the Riverfront commercial development along the Willamette River.



LEGEND

- Potential Park and Ride Lot Locations
- Preferred Park and Ride Locations
- Other Park and Ride Locations
- Urban Growth Boundary
- Railroad
- Streets

POTENTIAL PARK AND RIDE LOT LOCATIONS
NEWBERG, OR

FIGURE **5-16**

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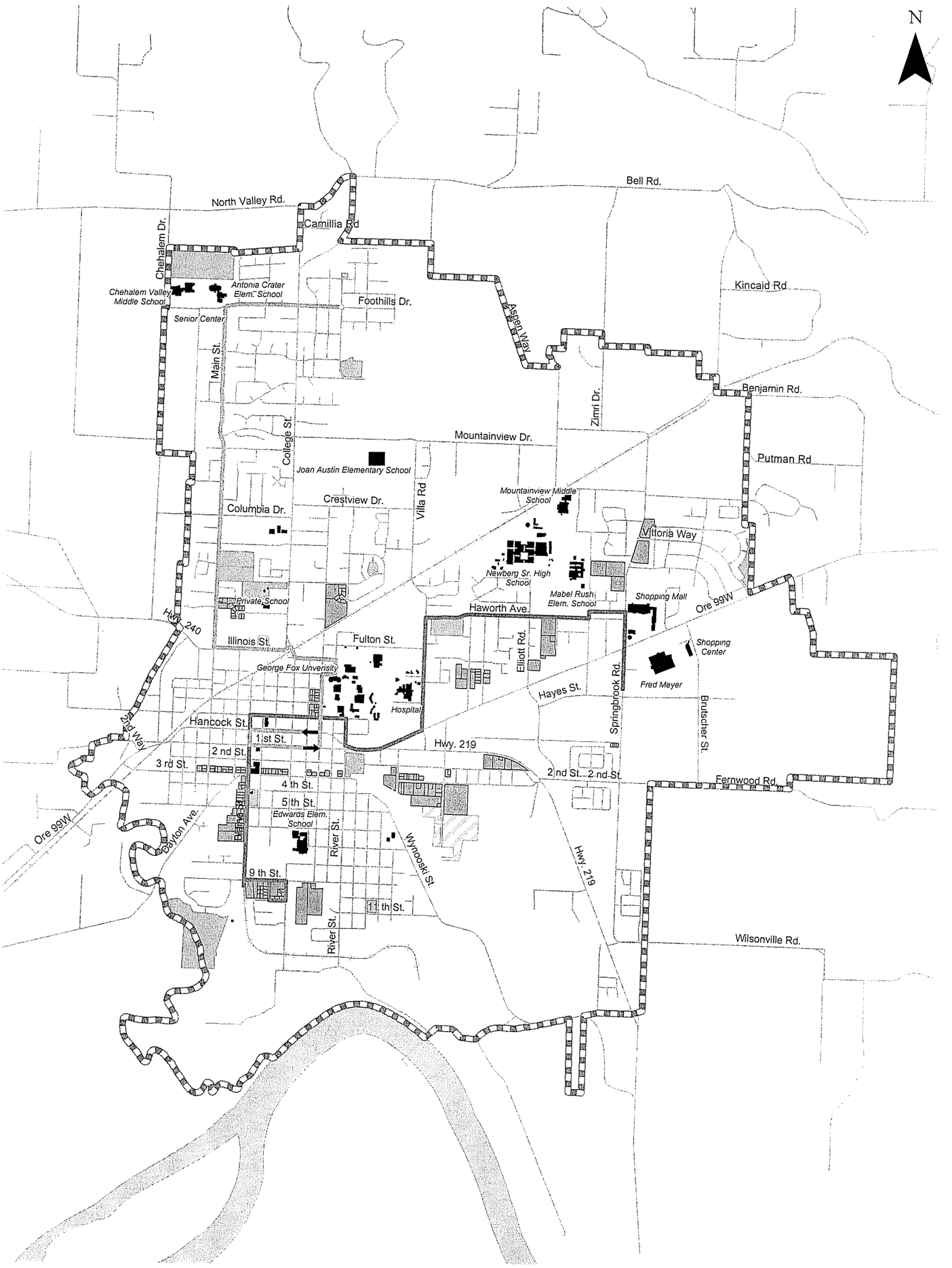

LEGEND

- Proposed Bus Route E
- Proposed Bus Route F
- High-Density Residential
- Urban Growth Boundary
- Activity Centers
- Parks
- Railroad
- Streets
- River

PROPOSED SERVICE PATTERN 4: MAXIMUM PRODUCTIVITY SERVICE
NEWBERG, OR

FIGURE **5-17**

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TRANSPORTATION PLANNING / TRAFFIC ENGINEERING

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5.4.5 Air

No future alternative scenarios have been considered since existing services are adequate to meet future needs.

5.4.6 Marine

The Willamette River serves as Newberg's only navigable waterway. As such, the City's Riverfront Master Plan envisions passenger paddleboats and aquatic-recreation vessels traversing the waters of the Willamette River in the vicinity of the City. In addition, the Riverfront Master Plan also calls for the development of commercial shops and offices along the Willamette River. These commercial shops and offices will serve as an extension of the downtown business sector.

5.4.7 Pipeline and Transmission Systems

No future alternative scenarios have been considered since existing services are adequate to meet future needs.

5.4.8 Truck Freight Transportation

No specific freight deficiencies have been determined through this analysis thus far, apart from those arising from the operational problems associated with inadequate capacity that affects all vehicular movement through Newberg. Congestion through Newberg and the Ore 99W corridor, which ODOT classifies as a freight route through the City of Newberg, in general does have a negative economic impact on businesses that rely on truck freight.

The discussions regarding the adequacy of the future road network within the City of Newberg implicitly address the congestion-related truck issues. Additionally, discussions regarding accessibility issues related to the future road network consider specific truck freight related issues such as access to the SP Newsprint. Therefore, no additional truck freight transportation analysis is required.

Section 6

Transportation System Plan

Transportation System Plan

6.1 INTRODUCTION

The City of Newberg Transportation System Plan incorporates the preferred future transportation alternative and street functional classification standards summarized above. The Transportation System Plan includes recommended plans for long-range transportation capacity and non-capacity improvements for the arterial/collector street system.

Also, as part of the recommended street plan, the City of Newberg Planning Commission has recommended a re-route of Ore 219. This recommendation has been included in the overall street improvements plan; however the need for a special study has been identified that should analyze the traffic impacts, neighborhood impact, and costs of the re-route. As a result, two separate *functional classification* and *street improvement* plans (with and without the Ore 219 re-route) are presented in the Transportation System Plan.

The costs of the transportation improvements presented in this chapter are estimated in 2004 dollars, and include:

- roadway construction/reconstruction (grading and paving);
- storm sewers;
- curbs, gutters and sidewalks (both sides);
- street lighting;
- right-of-way (where needed), and;
- engineering, surveying and inspection.

The Transportation System Plan also includes recommendations for public transportation, bicycle/pedestrian system, air service, rail service, and pipeline transportation improvements. A financial plan for these improvements includes an identification of potential funding sources and a recommended funding strategy. Finally, the identified transportation improvements are prioritized and a schedule for project implementation is developed.

Some of the transportation improvements identified in this transportation plan are on lands that are currently outside the Newberg Urban Growth Boundary (UGB). Accordingly, these transportation facilities are currently in Yamhill County, and are currently under the authority of the county. The City of Newberg does not have jurisdiction over these facilities until these lands are brought into the City's UGB. The City should coordinate with Yamhill County with regard to these transportation improvements, and it is the City's desire that Yamhill County's transportation system plan will be amended to include these future improvements.

6.2 COLLECTOR/ARTERIAL STREET PLANS

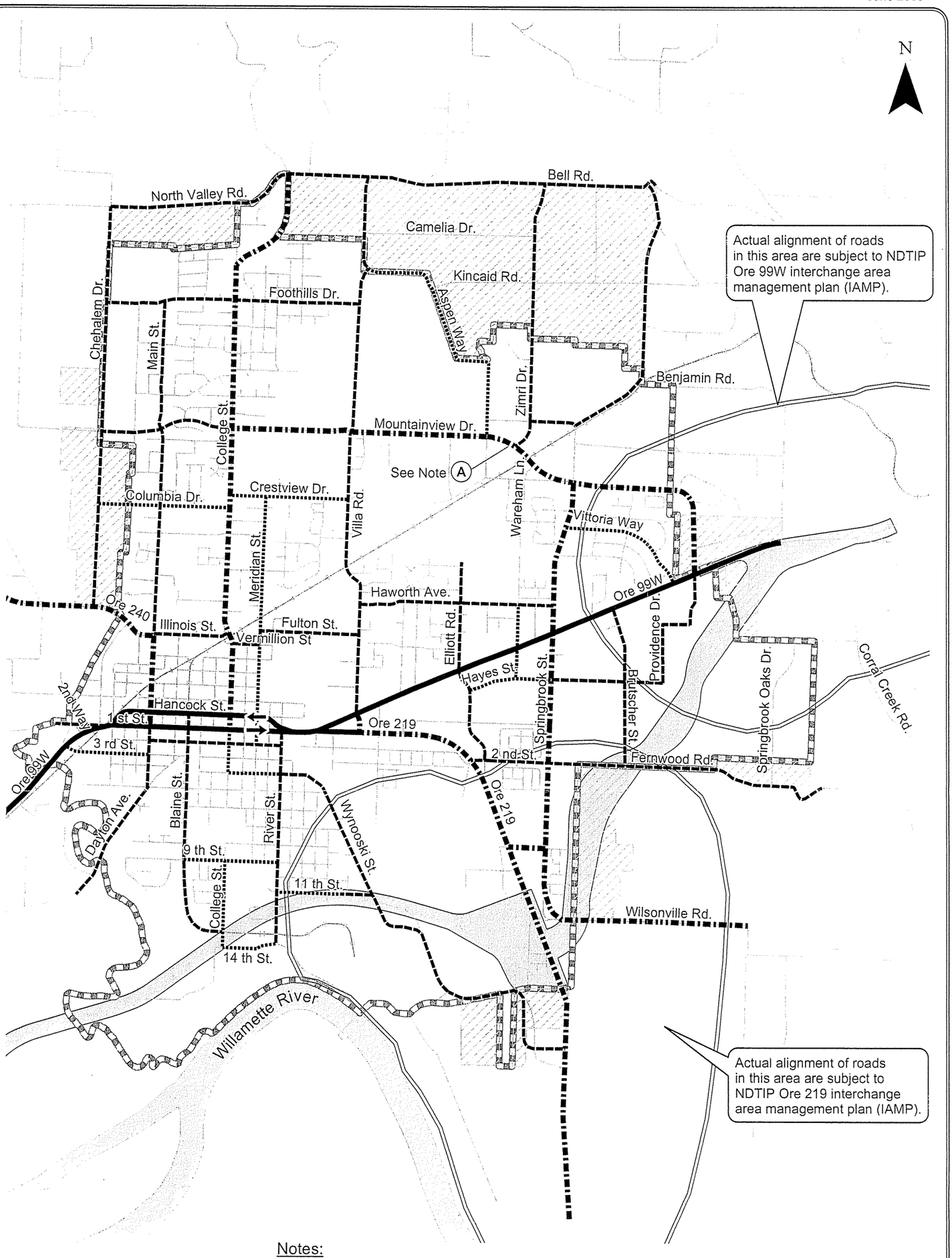
The long-range transportation plan for Newberg's collector/arterial street system is defined as those projects to be completed in a 20 year time frame. These projects encompass auto, pedestrian/bicyclist and public transportation modes. The long-term transportation improvements for the Newberg area collector/arterial street system include two categories of projects: capacity improvements and non-capacity improvements. Figure 6-1 shows the functional classification system assuming the exiting Ore 219 route and Figure 6-2 shows the Planning Commission recommended functional classification system assuming the Ore 219 re-route. Figure 6-3 shows the recommended cross-sections for each of the street classifications.

6.2.1 Street Design Standards

Street design standards are based on the functional and operational characteristics of streets such as travel volume, capacity, operating speed, and safety. They are necessary to ensure that the system of streets, as it develops, will be capable of safely and efficiently serving the traveling public while also accommodating the orderly development of adjacent lands.

The proposed street design standards are shown in Figure 6-2. This figure shows the typical design standards for major and minor arterials, major and minor collectors, and local streets. The only major arterial or statewide expressway in Newberg are Ore 99W and the Bypass, and both are ODOT facilities and must meet ODOT's design guidelines. The typical street cross sections comprise the following elements: right-of-way, number of travel lanes, bicycle and pedestrian facilities, and other amenities such as landscape strips. This figure is intended for planning purposes for new street construction, as well as for those locations where it is physically and economically feasible to improve existing streets. Table 6-1 presents the standards in tabular form.

There have been two categories of collector streets identified in the plan – major and minor collector. Each of these collector streets has a curb-to-curb cross-section of 34 feet, as described in Figure 6-2. The key difference between these collector types is that major collectors have space dedicated for two travel lanes and two striped bike lanes, while minor collectors have two travel lanes and parking on both sides. The street standard of 34 feet is insufficient to facilitate parking on streets designated as major collectors and bike lanes on streets designated as minor collector. In residential areas, there may be a desire to provide parking on at least one side of a street designated as major collector. Accordingly, such a major collector street would need to have a minimum of 40-feet curb-to-curb to allow parking on one side, and 48-feet curb-to-curb for parking on both sides. Inherent in the designation of a street as a major collector is the understanding that, when the street is improved consistent with its designation, on-street parking will not be provided. In recognition of this potential impact to adjacent land uses, it is important that the City carefully consider the designation of streets as major collectors in the City.



Notes:

(A) The configuration and alignment of Mountainview Drive in this area is subject to the major street alignment location review process as outlined in the development code.

- Street located outside of Urban Growth Boundary are outside of Newberg's jurisdiction. If a proposed roadway alignment extends outside the UGB, than a plan amendment is required. Improvements recommended would need to be coordinated with Yamhill County.

LEGEND

- Statewide Highway
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Interchange Area Management Plan Boundary
- Urban Growth Boundary
- Urban Reserve Area
- Railroad
- Streets
- River

FUNCTIONAL CLASSIFICATION PLAN NEWBERG, OR.

FIGURE **6-1**

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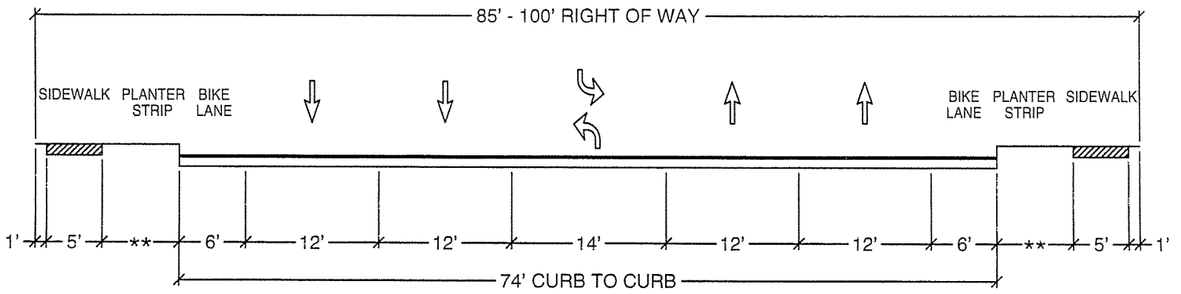
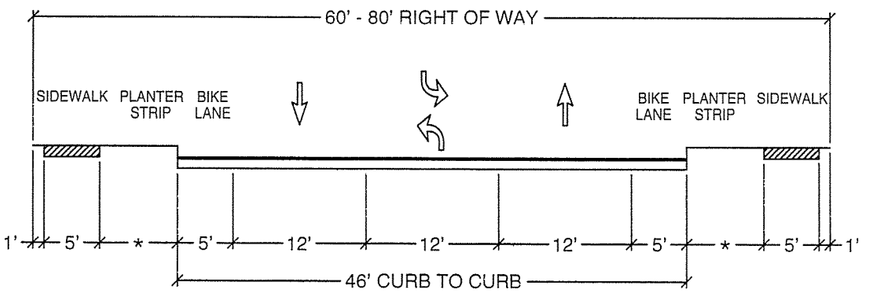
MAJOR ARTERIAL



*SUBJECT TO ODOT STANDARDS. IN SECTIONS WITH A ONE-WAY COUPLET, SAME MINIMUM WIDTHS APPLY FOR TRAVEL LANES, BIKE LANES. PLANTER STRIP AND SIDEWALK.

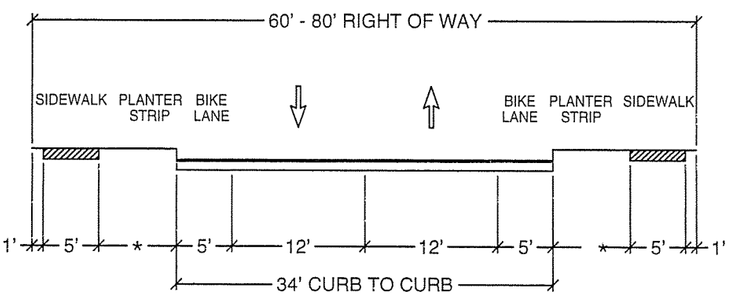
**DEPENDING ON RIGHT-OF-WAY.

MINOR ARTERIAL



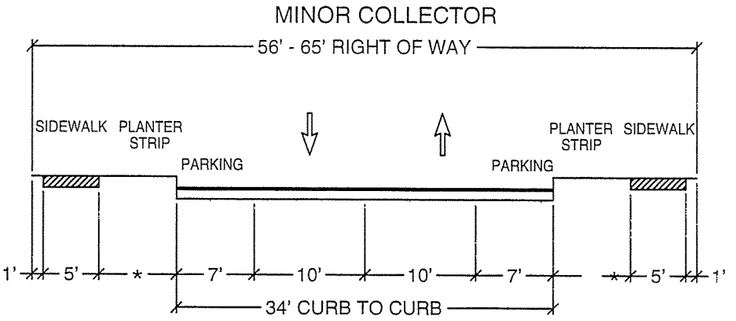
*DEPENDING ON RIGHT-OF-WAY.

MAJOR COLLECTOR



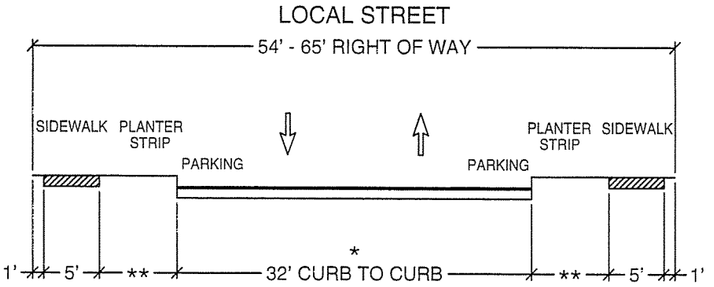
*DEPENDING ON RIGHT-OF-WAY.

MINOR COLLECTOR



*DEPENDING ON RIGHT-OF-WAY.

LOCAL STREET



*LOCAL RESIDENTIAL STREETS SHALL HAVE 32' CURB-TO-CURB SECTION. LOCAL COMMERCIAL STREETS SHALL HAVE 34' CURB-TO-CURB SECTION.

**DEPENDING ON RIGHT-OF-WAY.

NEWBERG STREET CROSS SECTIONS
NEWBERG, OR.

FIGURE **6-2**

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TABLE 6-1
FUNCTIONAL CLASSIFICATION DESIGN STANDARDS SUMMARY

Street Classification	Minimum R-O-W (a)	Median Type	Street Improvement (ft)	Travel Lanes	Bike Lanes	Sidewalk	On-Street Parking	Planter Strip
Statewide Expressway (b)	120-150	Separated	ODOT	4	Yes	No	No	ODOT
Major Arterial	ODOT	CL or Median	ODOT	ODOT	Yes	Yes	ODOT	ODOT
Minor Arterial	60-80	CL or Median	46	2	Yes	Yes	No	Yes
Major Collector	56-65	No Median	34	2	Yes	Yes	No	Yes
Minor Collector	60	No Median	36	2	No	Yes	(c)	Yes
Local (e)	54-65	No median	32	2	No	Yes	Yes	Yes

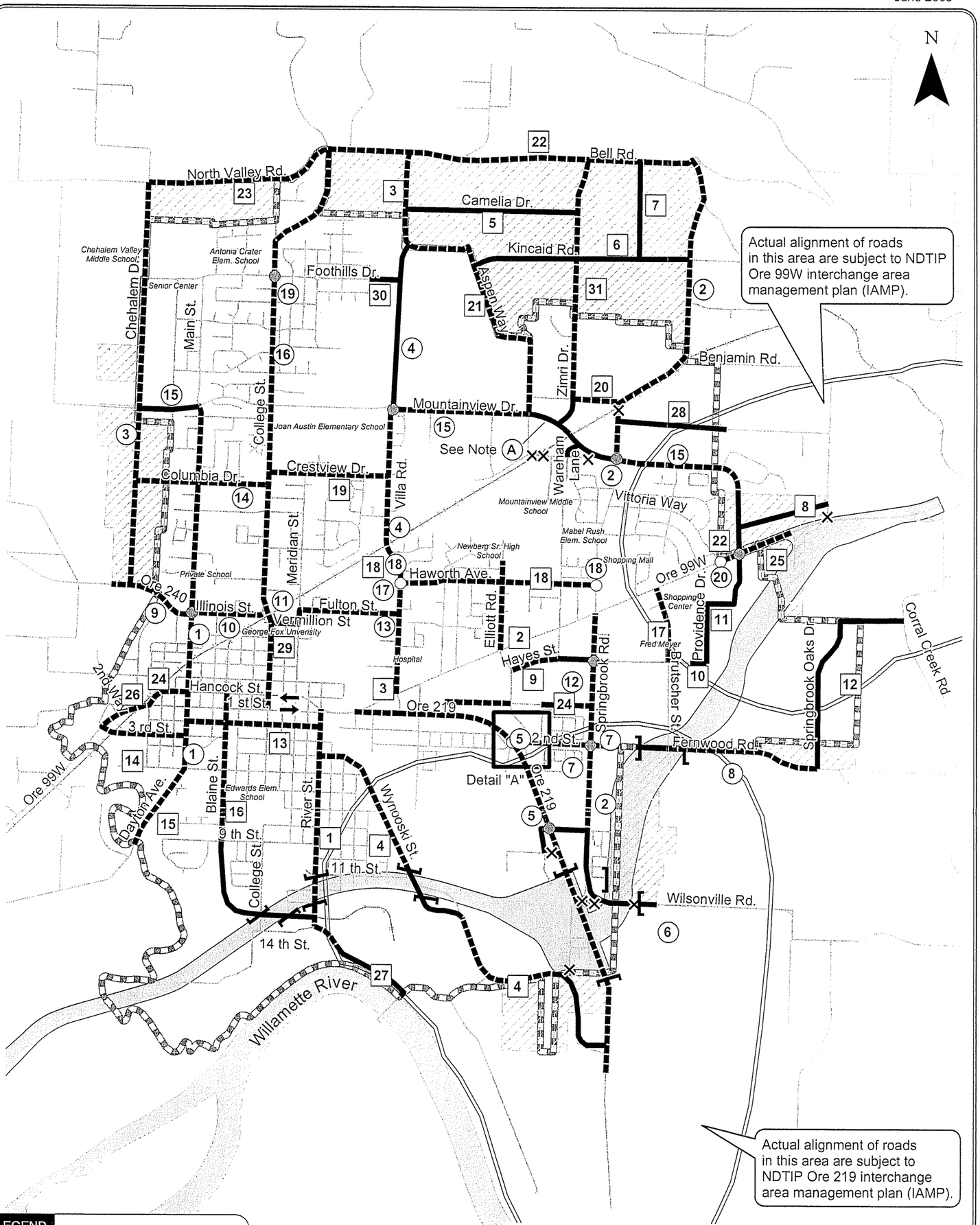
(a) Additional right-of-way may be necessary due to topographical constraints or to accommodate additional left- or right-turn lanes at intersections
(b) This classification reflects the design elements currently under consideration in the NDTIP process.
(c) Where on-street parking is provided, the bicycle lane shall be shared with the traffic lane.
ODOT = This is an ODOT facility and the final design authority rest with ODOT.
NA = Not applicable.
CL = Center Lane

6.2.2 Capacity Improvements

Future roadway capacity deficiencies were identified on collector and arterial streets based upon traffic generated by future land development as identified in the Newberg Comprehensive Plan and the preferred future transportation system alternative. Twenty-one projects have been identified that are under the category of roadway capacity improvements. These improvements are listed and defined individually below. Figure 6-3 shows the capacity and non-capacity related roadway improvements on the Newberg transportation system.

The facility improvements listed in the 21 capital projects in the next section include the following specific intersection improvements:

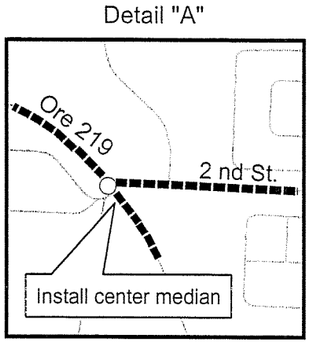
- *College Street / Foothills Drive:* Install new traffic signal.
- *Mountainview Drive / Villa Road:* Install new traffic signal.
- *Mountainview Drive / Springbrook Street:* Install new traffic signal.
- *Mountainview Drive / Ore 99W:* Install new traffic signal.
- *Springbrook Street / Fernwood Road:* Install new traffic signal.
- *8th Street / Wilsonville Road:* Install new traffic signal.
- *Springbrook Street / Haworth Avenue:* Install new traffic signal.
- *Vittoria Way / Ore 99W:* Modify this intersection to restrict turning movements to right-in/right-out only.
- *Villa Road / Haworth Avenue:* Modify to four-way stop control.
- *Ore 219 / 2nd Street:* Modify this intersection to restrict turning movements to right-in/right-out only.
- *Ore 240-Illinois / Main Street:* Perform special study to determine appropriate intersection improvements. Possible alternatives include traffic signal, roundabout, or four-way stop control. Realignment of the intersection may be required; alternatively, closure of either the north or east approach may be considered.



LEGEND

- (#) Capacity Project
- [#] Non-capacity Project
- Bypass
- Proposed Street
- Street Improvements
- Future Traffic Signals
- Other Intersection Improvements
- Interchange Area Management Plan Boundary
-] [Proposed Grade Separated Crossing
- Proposed Street Closure
- Urban Growth Boundary
- Urban Reserve Area
- Railroad
- Streets
- River

Detail "A"



Notes:

Ⓐ The configuration and alignment of Mountainview Drive in this area is subject to the major street alignment location review process as outlined in the development code.

- Street located outside of Urban Growth Boundary are outside of Newberg's jurisdiction. If a proposed roadway alignment extends outside the UGB, than a plan amendment is required. Improvements recommended would need to be coordinated with Yamhill County.
- Projects that are exclusively bike or pedestrian improvements are shown in figure 6-8 and 6-9.

STREET IMPROVEMENTS NEWBERG, OR.

FIGURE 6-3

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1. *Main Street:* Widen to full major collector street standards between Illinois and Mountainview to include sidewalks and bicycle lanes on each side of Main Street. A special study should be conducted to determine the appropriate mitigation for the poorly aligned intersection with Ore 240. For purposes of cost estimation, it was assumed that a new traffic signal would be installed at intersection of Ore 240. Total length of this improvement is approximately 0.80 miles and is estimated to cost $1.2 million.

   The section of Main Street from Illinois to Lynn has been funded in the City's 2004-2005 Capital Improvement Program for final design in 2004-2005. The estimated cost of design is $0.05 million.

   Reconstruct to minor arterial street standards between Illinois and 1st Street to include with three travel lanes, bike lanes and sidewalks. Total length of this improvement is approximately 0.37 miles and is estimated to cost $1.0 million.

   Reconstruct to major collector street standards between 1st Street and 5th Street to include sidewalks and bicycle lanes on each side of Main Street. Total length of this improvement is approximately 0.24 miles and is estimated to cost $0.02 million.

2. *Springbrook Street:* Install new traffic signal on Springbrook at new intersection with Mountainview Drive. The project is estimated to cost $200,000. No new right-of-way is needed for this improvement. In addition, a traffic signal is planned at the Springbrook Street/Hayes Street intersection at an estimated cost of $0.2 million.

   Widen Springbrook Street to major collector street standards between Old Mountainview Drive and Bell Road. Total length of road widening project is approximately 1.33 miles, and is estimated to cost $3.0 million. Approximately one-third of this segment is within the UGB. The remaining portion of this project is located outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

   In addition to providing capacity for growth in this area, Springbrook Street improvements will provide greater non-auto access from the Crestview and Springbrook neighborhoods to shopping and work locations along Ore 99W and Springbrook Street south of Ore 99W.

   Widen Springbrook Street south of Ore 99W to 8th Street as a minor arterial street, with three travel lanes, bike lanes and sidewalks. Total length of road widening project is approximately 0.84 miles, and is estimated to cost $2.9 million.

3. *Chehalem Drive:* Recommend that the City of Newberg and Yamhill County reconstruct those sections of Chehalem Drive under each respective jurisdiction, between Ore 240 and North Valley Road to major collector street standards to include bicycle lanes and sidewalks on both sides of the street. This project is approximately 1.57 miles, and is estimated to cost approximately $4.0 million. Approximately one-half of this segment is within the UGB; the remaining portion of this project is located outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

   Improvements to Chehalem Drive will provide adequate access for the area, thereby reducing the potential for arterial traffic traveling on nearby local streets, and provide better access for

bicyclists and pedestrians. Chehalem Drive is either inside the Newberg UGB or Urban Reserve Area. For purposes of cost attribution, it was assumed that the City would be responsible for the total cost of this project.

4. *Villa Road:* Widen to major collector street standards between Fulton Street and Mountainview Drive to include sidewalks and bicycle lanes on each side of Villa Road. Total length of this improvement is approximately 0.82 miles and is estimated to cost $2.2 million.

   Extend Villa Road north of Mountainview Drive to Aspen Way. New street to be constructed to full major collector street standards with sidewalks and bicycle lanes on each side of the street. Total length of new section of Villa Road is approximately 0.65 miles, and will cost an estimated $2.1 million.

5. *Ore 219:* Rerouting of Ore 219 through Newberg. The objective of this reroute is to minimize through traffic, including truck traffic, in downtown Newberg. The recommended route is to re-route Ore 219 to Mountainview Drive and Springbrook Road. A special study should be conducted to evaluate this re-route. The special study should analyze the traffic impacts, neighborhood impacts and costs of the re-route. The study should also plan for portions of the current 219 including (1) where it would change into Springbrook, (2) the intersection of Wilsonville Road and the new Ore 219, (3) what the improvements would be at the intersection of the 2nd Street with the current 219 *and* the new Ore 219 and (4) the impact on businesses and services along the new Ore 219 as well as the old Ore 219.

   Consideration was also given to reconstructing Ore 219 (St. Paul Highway) to minor arterial street standards between 1st Street and the UGB to include sidewalks and bicycle lanes on each side of Ore 219. Total length of this improvement is approximately 1.77 miles and is estimated to cost $5.9 million. This would reconstruct the intersection of Fernwood-2nd/Ore 219 to a right-in/right-out only for Fernwood and 2nd Street approaches (by installation of a center median). The median will be designed in consultation with the Newberg Fire Department to allow the southbound left-turn movement for emergency vehicles. Estimated cost of channelization improvements is $10,000.

6. *Wilsonville Road:* Wilsonville Road is to be rerouted to the north to cross the Bypass (without an interchange) and to intersect with Springbrook Street. Wilsonville Road will then extend westward from its intersection with Springbrook Street to a new signalized intersection with Ore 219 at about 8th Street. The reroute and extension of Wilsonville Road will be constructed to minor arterial street standards. The purpose of this project is to provide adequate spacing of intersections on Ore 219 from the proposed interchange with the bypass. The cost of this project is estimated at about $2.0 million, and will be funded by ODOT as a safety improvement project. The improvement will comply with spacing standards as defined in the NDTIP bypass project. Moreover, this project will be fully considered and potentially modified under the context of the NDTIP Bypass/Ore 219 Interchange Area Management Plan. This project is included as a Safety Project in the Statewide Transportation Improvement Program, 2002-2005, Key#09274. See Appendix "N" for a conceptual plan of this project.

7. *2nd Street:* Improve 2nd Street between Ore 219 and Springbrook Street to major collector standards to include bicycle lanes and sidewalks on each side of the street. Based on a qualitative assessment, the installation of a new traffic signal at Springbrook Street may be warranted in the long-term. It is recommended that City staff monitor the 2nd Street-Fernwood

Road/Springbrook Street intersection for future potential signalization. This roadway improvement is estimated to cost $0.8 million. For purposes of this plan, a traffic signal was assumed at an additional estimated cost of $0.2 million.

8. *Fernwood Road:* Improve Fernwood Road between Springbrook Street and Greens Drive to major collector standards to include bicycle lanes and sidewalks on each side of the street. This project is approximately 0.90 miles and is estimated to cost $2.4 million. Improvements to Fernwood will provide needed access for the area's industrial and residential land development, and provide better access for bicyclists and pedestrians. Since the eastern portion of Fernwood Road is outside the City's UGB, improvements would be under the jurisdiction of Yamhill County.

9. *Ore 240:* Reconstruct Ore 240 for approximately 0.36 miles between the west edge of the Urban Reserve Area and Main Street to full, 3-lane minor arterial street standards. Project includes bicycle lanes and sidewalks on both sides of the street and a yet-to-be-determined intersection improvement at Main Street (assumed herein for cost estimating purposes to be a new signalized intersection at Main Street). Reconstructed street to provide greater access for local (auto, truck, bike and pedestrian) and regional traffic. Total cost of the Ore 240 improvements are estimated at $1.4 million and should be borne by ODOT. In addition, install new traffic signal on Ore 240 at Chehalem Drive. The project is estimated to cost $200,000.

10. *Illinois Street:* Reconstruct Illinois Street between Main Street and College Street to major collector street standards to include bicycle lanes and sidewalks on each side of the street. Based on discussion with City staff, adjacent land uses have particular parking needs that warrant on-street parking on one side. This results in an overall need for a 40-foot curb-to-curb section. This project is approximately 0.28 miles, and is estimated to cost $ 0.7 million. Improvements to Illinois Street, in combination with east/west collector street improvements east of College, will provide needed capacity and access for local east/west travel demands in the north Newberg area until major state roadway capacity improvements (including a Newberg-Dundee Bypass) are completed. Improvements will also provide greater access for bicyclists and pedestrians, connecting residential lands in the east Newberg area with George Fox College and the Newberg Schools.

11. *Vermillion Street:* Improve Vermillion between Meridian and College to major collector standards to provide bicycle lanes and sidewalks on each side of the street. This project, in conjunction with Illinois and Meridian Street improvements, is intended to provide a continuous east/west major collector street connection for local traffic in the North Newberg area. These combined projects will also provide needed capacity and access for local east/west travel demands in the north Newberg area until major state roadway capacity improvements (including a Newberg-Dundee Bypass) are completed. Improvements will also provide greater access for bicyclists and pedestrians, connecting residential lands in the east Newberg area with George Fox College and the Newberg Schools. Total length of the street is approximately 0.11 miles and is estimated to cost $0.3 million.

12. *Hayes Street:* Hayes Street shall be extended from its eastern terminus at Deborah Street to Springbrook Street to minor collector street standards. The length of this improvement is 0.14 miles, with an estimated cost of $0.4 million.

13. *Fulton Street:* Improve Fulton Street between Meridian and Villa to major collector standards, providing bicycle lanes and sidewalks on each side of the street. Total length of the street is 0.38 miles and is estimated to cost $0.01 million.

14. *Columbia Drive:* Reconstruct Columbia Drive between Chehalem Drive and College Street to minor collector street standards to include a travel lane in each direction, and sidewalks and on-street parking on both sides of the street. This project is approximately 0.52 miles, and is estimated to cost approximately $1.4 million. Approximately three-fourths of this segment is within the UGB; therefore, the City's cost is $1.0 million. The remaining portion of this project ($0.4 million) is located outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility. Improvements to Columbia Drive will provide improved access and circulation to residential lands in north Newberg for all autos, bicyclists and pedestrians. The western portion of this improvement shall be coordinated with Yamhill County, in recognition that it is outside Newberg's urban growth boundary.

15. *Mountainview Drive-Northern Arterial*: Construct approximately 0.13 miles of new Mountainview Drive between Chehalem Drive and Crater Lane to major collector street standards. Project includes bicycle lanes and sidewalks on each side of Mountainview Drive and is estimated to cost $ 0.4 million.

    Improve approximately 0.10 miles of new Mountainview Drive between Crater Lane and Main Street to major collector street standards. Project includes bicycle lanes and sidewalks on each side of Mountainview Drive and is estimated to cost $ 0.3 million. Project is included in City's 2004-2005 Capital Improvement Program for construction in 2004-2005.

    Reconstruct existing collector street to full, minor arterial standards between Villa and Aspen Way, to include sidewalks and bicycle lanes on each side of Mountainview Drive. Total length of this improvement is approximately 0.53 miles and is estimated to cost approximately $1.8 million.

    The 0.4 mile section of new Mountainview Drive between Aspen Way and Springbrook Street is included on the City's 2004-2005 Capital Improvement Program to be constructed in 2005-2006 for an estimated $3.4 million.

    Reconstruct Mountainview Drive to minor arterial standards between Springbrook Street and Crestview Drive to include sidewalks and bicycle lanes on each side of the street. Total length of this improvement is approximately 0.57 miles and is estimated to cost approximately $1.9 million.

    Construct approximately 0.23 miles of new Mountainview Drive between Crestview Drive and Ore 99W to minor arterial street standards. Project includes bicycle lanes and sidewalks on each side of Mountainview Drive and is estimated to cost $ 0.90 million.

    A traffic signal will be needed at the Mountainview/Villa intersection, at an estimated cost of $0.2 million. In addition, a qualitative assessment indicated that a traffic signal will not be warranted at the Mountainview Drive/Aspen Way intersection.

In conjunction with the construction of the Northern Arterial between Aspen Way and Springbrook Street, the following local street modifications will be required:

- Close Crestview and Aspen Way across rail tracks
- Extend Wareham Lane northeasterly to intersect Northern Arterial as stop-controlled approach. Total length of this improvement is approximately 0.08 miles and is estimated to cost approximately $0.2 million.
- Extend Zimri Drive southwesterly to intersect Northern Arterial as stop-controlled approach. Total length of this improvement is approximately 0.12 miles and is estimated to cost approximately $0.4 million.

Mountainview Drive improvements will provide north Newberg with needed local vehicle access to the Newberg collector/arterial system, and provide full access for pedestrians and bicyclists.

16. *College Street*: Widen to minor arterial street standards between 1st Street and Bell Road to include sidewalks and bicycle lanes on each side of College Street. Total length of this improvement is approximately 2.28 miles and is estimated to cost $7.7 million. No additional right-of-way is needed for this improvement. College Street improvements will provide north Newberg with greater local vehicle access to downtown, and provide full access for pedestrians and bicyclists to the proposed Newberg School east of College Street.

    It is recommended that a special study be conducted on College Street from Hancock to Fulton to determine a feasible and acceptable way to improve this section to City standards. It is recognized that the physical character of this section, with pristine street trees, will limit the ability to widen this section in the traditional way.

17. *Villa/Haworth and Fulton Intersections*: The City has dedicated $0.1 million to construct an improvement to provide greater capacity to the Villa/Haworth intersection. The timing of this improvement is in 2006-2008, as described in the City's 2004-2005 Capital Improvement Program. This improvement will be identified through further study. Possible options include: four-way stop control, traffic signal or roundabout.

    Based on a qualitative assessment, the two-way stop controls at the Villa/Fulton intersection will accommodate projected traffic volumes. Hence, additional improvements would not be warranted at this intersection and no improvement was assumed.

18. *Springbrook/Haworth Intersection*: Installation of a traffic signal at this intersection. This traffic signal will be coordinated with the signal at the Ore 99W/Springbrook intersection, and will cost an estimated $0.3 million.

19. *Foothills/College Intersection:* The City has dedicated $10,000 to identify a pedestrian and vehicle safety improvement at this intersection. A possible improvement may be to provide signalization at this intersection. The City has also implemented a special SDC on adjacent properties to fund the remainder of this project. The estimated cost of a traffic signal is $0.2 million.

20. *Vittoria Way/Ore 99W intersection*: Modify this intersection to restrict turning movements to Right-in/Right-out only. The estimated cost is about $20,000, and the project will be implemented by ODOT concurrent with the construction of the new bypass east interchange.

21. *Newberg-Dundee Transportation Improvement Project:* The Oregon Department of Transportation (ODOT) has recently completed the Final Location Environmental Impact Statement for the proposed Newberg-Dundee (Bypass) Transportation Improvement Project (NDTIP). The LEIS concluded that: 1) Ore 99W experiences peak hour traffic problems today; 2) without improvements Ore 99W will experience unacceptable levels of service in the future (year 2025); and, 3) because a high percentage of trips on Ore 99W are through-trips in the Newberg/Dundee area; a bypass would be very effective in mitigating traffic congestion problems. Of the alternatives investigated in the study, a south bypass with interchange at Ore 219 most closely met the goals established by ODOT and was found to have local consensus through citizen review of the study. Other alternatives investigated included improving the existing Ore 99W route through Newberg and Dundee, and a north bypass route of Newberg.

    Recommendations in the LEIS include the possible provision of bicycle facilities in the Bypass project study area corridor. In addition, future transit provisions will be included for improved bus service from McMinnville to the Portland metropolitan area. Connection with local transit service and potential park-and-ride facilities are also identified. The level of traffic relief that the Bypass will provide to the existing Ore 99W will mitigate the safety deficiencies identified in Table 3-4 of this plan.

    As part of the City of Newberg Transportation System Plan it is anticipated that the full cost of the Newberg-Dundee Transportation Improvement Project will be funded by the State of Oregon.

    As part of the Newberg Transportation System Plan, the Technical Advisory Committee (TAC) expressed the following policy concerns with regards to the Newberg-Dundee Bypass Plan:

    - Maintain access to river area on all existing through-streets;
    - Provide frontage road along Bypass between River Street and Wynooski Street;
    - Provide for safe pedestrian and bicycle access to and across Bypass;
    - Separate grade of Bypass with existing rail lines;
    - Protect existing industrial access and expansion zone;
    - Minimize visual impacts;
    - Consider Bypass interchanges at Ore 99W and Ore 219; and,
    - Retain recommended State Highway routes in Newberg until Bypass plan is complete.

    Preliminary estimates reveal that the cost of the NDTIP Bypass is in the range of $310 million for the Newberg section, to be funded through ODOT.

Total cost for all capacity improvement projects, excluding the cost of the Newberg-Dundee Bypass, is estimated at $50.26 million.

6.2.3 Non-Capacity Improvements

The City of Newberg has a number of existing collector streets that, because of current conditions, do not conform to current City road standards and thus require roadway improvements. These improvements are needed to provide system-wide access for all modes of travel on the collector/arterial street system throughout the Newberg urban area. These streets present a special problem because most of them are located in areas that are developed.

The City of Newberg road standards call for a minimum paved street section of 36 feet with sidewalks and bicycle lanes or parking on both sides of identified collector streets (see Figure 6-2). In general, pavement width on these streets range from 20 to 34 feet, some have curbs and sidewalks, some have graveled shoulders with no sidewalks. Each of these collector streets should be reconstructed to conform to the City's road standards. The non-capacity collector street improvements are listed below.

1. *River Street*: Widen to major collector street standards between First Street and Rogers Landing Road to include sidewalks and bicycle lanes on each side of River Street. Project length is approximately 0.85 miles and is estimated to cost $ 2.3 million.

2. *Elliot Road*: Widen to full, major collector street standards between Ore 99W and Newberg High School to include sidewalks and bicycle lanes on each side of Elliot Road. Total length of this improvement is approximately 0.35 miles and is estimated to cost $0.9 million. Additional right-of-way is needed for this improvement; however, the cost of right-of-way is not included in this estimate. Improvement will provide greater mobility for all modes on Elliot Road.

3. *Villa Road*: Reconstruct Villa Road to major collector street standards between Ore 99W and Fulton Street to include sidewalks and bicycle lanes on each side of Villa Road. Total length of this improvement is approximately 0.31 miles and is estimated to cost $0.8 million.

   Reconstruct to major collector street standards between Aspen Way and North Valley Road to include sidewalks and bicycle lanes on each side of Villa Road. Total length of this improvement is approximately 0.34 miles and is estimated to cost $0.9 million. The cost of acquiring needed right-of-way is reflected in this estimate. Approximately 40% of this segment is within the UGB; therefore, the City's cost is $0.4 million. The remaining portion of this project ($0.5 million) is located outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

4. *Wynooski Street:* Reconstruct and new construction of Wynooski Street to major collector street standards between River Street and Ore 219 to include sidewalks and bicycle lanes on each side of Wynooski Street. Wynooski Street will cross the Bypass and connect to Ore 219 at a new intersection south of the interchange. This new location will provide adequate spacing from the new Ore 219/Bypass interchange to assure good operation. The cost of the Bypass crossing and new roadway segments to realign Wynooski will be borne by ODOT as part of the NDTIP Bypass project. The final alignment of Wynooski is subject to the Interchange Area Management Plan that ODOT will prepare in conjunction with the NDTIP Bypass project.

Reconstruct between River Street and the Bypass. Total length of this improvement is approximately 0.61 miles and is estimated to cost $1.6 million. The total cost of this improvement is attributable to the City.

Reconstruct between the Bypass and UGB. Total length of this improvement is approximately 0.52 miles and is estimated to cost $1.4 million. The total cost of this improvement is attributable to the City.

5. *New Camelia Drive (East-West Local Street):* Construct a new local street connection between Aspen Way and Zimri Drive, as development occurs. The length of this improvement is about 0.67 miles, with an estimated cost of $2.0 million. The new street will be constructed to local street standards, including sidewalks, and will be funded by local development. All of this segment is outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

6. *New Kincaid Road Extension (East-West Local Street):* Construct a new local street connection between Aspen Way and Springbrook, as development occurs. The new street will be constructed to local street standards, including sidewalks, and will be funded by local development. The length of this improvement is 0.85 miles, with an estimated cost of $2.6 million. All of this segment is outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

7. *New North-South Local Street*: Construct a new local street connection between Bell Road and New Kincaid Road extension (#6 above), as development occurs. The new street will be constructed to local street standards, including sidewalks, and will be funded by local development. The length of this improvement is approximately 0.38 miles, with an estimated cost of $1.2 million. All of this segment is outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

8. *Benjamin Loop*: Concurrent with the construction of the new Ore 99W interchange with the NDTIP Bypass, Benjamin Road to be closed at Ore 99W. A new east-west frontage road parallel to Ore 99W will be constructed to connect Benjamin to the Northern Arterial. The project is approximately 0.36 miles and includes sidewalks and on-street parking on each side of the street and is estimated to cost $ 1.1 million. This segment is outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

9. *Hayes Street*: Reconstruct Hayes Street to minor collector street standards between Elliott Road and Deborah Street to include sidewalks and on-street parking on each side of Hayes Street. Total length of this improvement is approximately 0.19 miles and is estimated to cost $0.02 million.

   Hayes Street shall be further extended from its eastern terminus east of Brutscher Street to connect with Providence Drive and the new east-west bypass connection (see #10 below). This street segment will be constructed to major collector street standards and will likely be built concurrent with development of adjacent parcels, and will be funded by development and system development charges. The length of this improvement is 0.05 miles, with an estimated cost of $0.2 million.

10. *New East-West Bypass Connection:* Construct new east-west connection from the eastern terminus of Hayes Street, northeasterly and across the NDTIP Bypass to Corral Creek Road. The street will be a major collector from the current terminus of Hayes Street, crossing the bypass, and to the edge of the Urban Reserve Area. The street will be a local street from the Urban Reserve Area boundary to Corral Creek Road. This street will be funded by development and possibly ODOT if the connector road directly enhances the state highway system or is needed as a frontage road to provide reasonable access to adjacent property, and complies with the Oregon Highway Plan, and is approved for funding by the OTC. Because of the relatively high cost of a bridge over Springbrook Creek, the cost of this improvement has been estimated at $4.0 million. Part of this segment is outside of the City's UGB, and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of that portion of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes this land into its UGB, this portion of the project would become the City's responsibility.

11. *Providence Drive*: Construct new north-south connection from the intersection of Ore 99W/Northern Arterial to the Hayes Street extension. This street will be constructed to major collector street standards, will be built concurrent with development of adjacent parcels, and will be funded by development and system development charges. The route alignment of Providence Drive has been determined through the development review process. The speed shall be limited to 25 mph, and shall include appropriate traffic calming, as approved by City staff in conjunction with Providence Hospital. The length of this improvement is 0.54 miles, with an estimated cost of $1.7 million.

12. New Greens Drive (North-South Street Within Springbrook Oaks): This new street (hereafter called Greens Drive) is to be constructed to local street standards. It will provide access from the Springbrook Oaks development to Fernwood Road and Corral Creek Road. This street will be built concurrent with development of the Springbrook Oaks development, and will be funded by development. The connection to Corral Creek Road is to be made only after safety improvements are made to Corral Creek Road and some combination of limiting the Corral Creek/99W intersection is made. The length of this new road is about 0.85 miles, with an estimated cost of $2.7 million. A portion of this segment is outside of the City's UGB and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of this street would be conducted under the authority of Yamhill County.

13. *2nd Street:* Reconstruct 2nd Street to major collector street standards between Main Street and River Street to include sidewalks, bicycle lanes, and on-street parking on each side of 2nd Street. Total length of this improvement is approximately 0.52 miles and is estimated to cost $0.02 million.

14. *3rd Street:* Reconstruct 3rd Street to minor collector street standards between Ore 99W and Main Street to include sidewalks and on-street parking on each side of 3rd Street. Total length of this improvement is approximately 0.33 miles and is estimated to cost $0.02 million.

15. *Dayton Avenue*: Reconstruct Dayton Avenue to major collector street standards between 5th Street and Newberg city limits to include sidewalks and bicycle lanes on each side of Dayton Avenue. Total length of this improvement is approximately 0.36 miles and is estimated to cost $0.01 million.

16. *Blaine Street*: Reconstruct Blaine Street to major collector street standards between Hancock Street and 9th Street to include sidewalks and bicycle lanes on each side of Blaine Street. Total length of this improvement is approximately 0.57 miles and is estimated to cost $1.5 million.

    Construct approximately 0.59 miles of new Blaine Street between 9th Street and River Street to major collector street standards. Project includes bicycle lanes and sidewalks on each side of Blaine Street and is estimated to cost $0.1 million.

17. *Brutscher Street*: Reconstruct Brutscher Street to major collector street standards between Ore 99W and Hayes Street to include sidewalks and bicycle lanes on each side of Brutscher Street. Total length of this improvement is approximately 0.30 miles and is estimated to cost $0.01 million.

18. *Haworth Avenue*: Reconstruct Haworth Avenue to major collector street standards between Villa Road and Springbrook Street to include sidewalks and bicycle lanes on each side of Haworth Street. Total length of this improvement is approximately 0.76 miles and is estimated to cost $0.02 million.

19. *Crestview Drive*: Reconstruct Crestview Drive to minor collector street standards between College Street and Villa Road to include sidewalks and on-street parking on each side of Crestview Drive. Total length of this improvement is approximately 0.46 miles and is estimated to cost $1.2 million.

20. *Old Mountainview Drive*: Reconstruct Old Mountainview Drive to major collector street standards between Aspen Way and Springbrook Street to include sidewalks and bicycle lanes on each side of Old Mountainview Drive. Total length of this improvement is approximately 0.34 miles and is estimated to cost $0.5 million.

21. *Aspen Way*: Reconstruct Aspen Way to minor collector street standards between Villa Road and Mountainview Drive (Northern Arterial) to include sidewalks and on-street parking on each side of Aspen Way. Total length of this improvement is approximately 1.38 miles and is estimated to cost $3.7 million.

22. *Bell Road*: Reconstruct Bell Road to major collector street standards between College Street and Springbrook Street to include sidewalks and bicycle lanes on each side of Bell Road. Total length of this improvement is approximately 1.41 miles and is estimated to cost $3.2 million. All of this segment is outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

23. *North Valley Road*: Reconstruct North Valley Road to major collector street standards between College Street and Chehalem Drive to include sidewalks and bicycle lanes on each side of North Valley Road. Total length of this improvement is approximately 0.75 miles and is estimated to cost $1.7 million. Approximately one-third of this segment is within the UGB; therefore, the City's cost is $0.7 million. The remaining portion of this project ($1.3 million) is located outside of the City's UGB and within its designated Urban Reserve Area, and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the construction of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

24. *Hancock Street*: Reconstruct Hancock Street to major arterial street standards between Harrison Street and Main Street to include sidewalks and bicycle lanes on each side of Hancock Street. Total length of this improvement is approximately 0.19 miles and is estimated to cost $0.1 million.

    Reconstruct Hancock Street to local street standards between Sitka Street and Elliott Street to include sidewalks and on-street parking on each side of Hancock Street. Total length of this improvement is approximately 0.26 miles and is estimated to cost $0.7 million.

    Construct approximately 0.15 miles of new Hancock Street between the existing terminus east of Elliott Street and the existing Hancock Street segment that begins west of Springbrook Street to local street standards. Project includes sidewalks and on-street parking on each side of Hancock Street and is estimated to cost $0.4 million.

    Reconstruct Hancock Street to local street standards between the eastern terminus of the new Hancock Street to Spingbrook Street. Total length of this improvement is approximately 0.05 miles and is estimated to cost $0.1 million.

25. *Ore 99W*: Reconstruct Ore 99W to major arterial street standards between Vittoria Way and Harmony Lane to include sidewalks and bicycle lanes on each side of Ore 99W. Total length of this improvement is approximately 0.30 miles and is estimated to cost $0.2 million.

26. *Ore 99W*: Reconstruct Ore 99W to major arterial street standards between Harrison Street and 3rd Street to include sidewalks and bicycle lanes on each side of Ore 99W. Total length of this improvement is approximately 0.20 miles and is estimated to cost $0.1 million.

27. *Rogers Landing Road:* Reconstruct Rogers Landing Road to major collector street standards between River Street and the Willamette River to include sidewalks and bicycle lanes on each side of the street. Total length of this improvement is approximately 0.16 miles and is estimated to cost $0.4 million.

Construct approximately 0.28 miles of new Rogers Landing Road between the Willamette River and the Urban Growth Boundary to major collector street standards. Project includes sidewalks and bicycle lanes on each side of the street and is estimated to cost $0.9 million.

28. *Putman Road:* Construct approximately 0.42 miles of new Putman Road between Springbrook Street and Putman Street to local street standards. Project includes sidewalks and on-street parking on each side of the street and is estimated to cost $1.2 million.

29. *Meridian Street:* Improve Meridian Street between Fulton and Vermillion to major collector standards, providing bicycle lanes and sidewalks on each side of the street. Total length of the street is 0.06 miles and is estimated to cost $0.2 million.

30. *Foothills Drive:* Reconstruct to major collector street standards between Main Street and Aldersgate Drive to include sidewalks and bicycle lanes on each side of Villa Road. Total length of this improvement is approximately 0.91 miles and is estimated to cost $2.4 million. The cost of acquiring needed right-of-way is not reflected in this estimate.

    Extend Foothills Drive to major collector standards from its eastern terminus (Aldersgate Drive) approximately 0.12 miles east to the new Villa Road and is estimated to cost $0.4 million. The exact alignment of this new major collector street will be determined through development review and site planning. The new street will include bicycle lanes and sidewalks. The cost of this new street will be funded by new development.

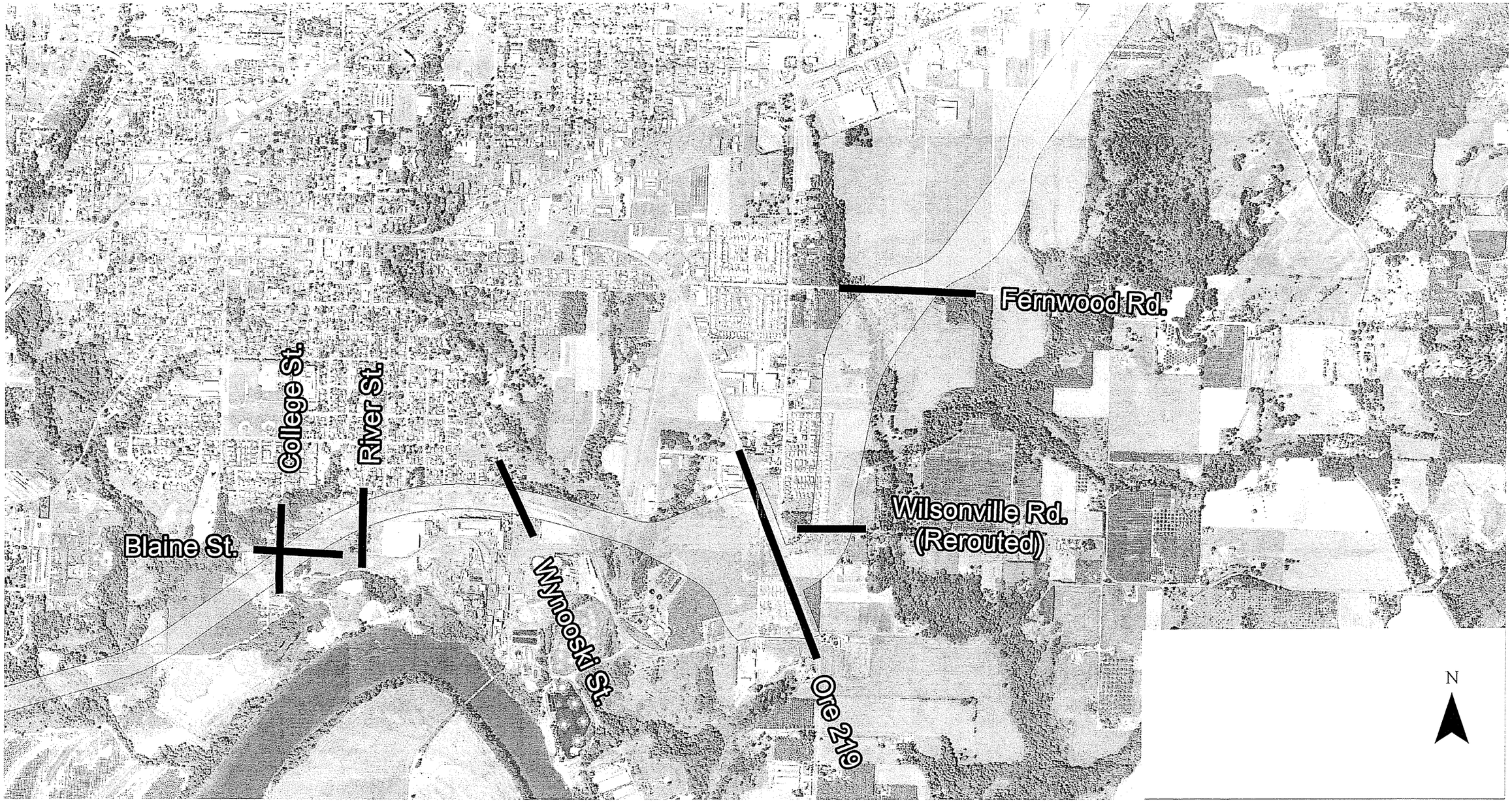
31. *Zimri Drive:* Improve Zimri Drive from Mountainview Drive to the UGB to major collector street standards, providing bicycle lanes and sidewalks on each side of the street. Total length of this section is 0.60 miles, and the estimated cost is $1.6 million. Zimri Drive to be reconstructed to major collector standards from the UGB to Bell Road, including bicycle lanes and sidewalks on both sides. The length of this section is approximately 1.14 miles at an estimated cost of $3.2 million. This section of Zimri Drive is outside the City's UGB (inside the City's designated Urban Reserves), and therefore is currently within the jurisdiction of Yamhill County. Hence, at this time the reconstruction of this street would be conducted under the authority of Yamhill County. At such time when Newberg annexes these Urban Reserves into its UGB, this portion of the project would become the City's responsibility.

32. *Ore 219 Street Closures:* The existing street connections of Wilsonville Road, Wynooski and Springbrook Street to Ore 219 are to be eliminated. The cost of this project will be borne by ODOT.

33. *NDTIP Bypass Roadway Crossings*: The following streets are planned to have eight grade-separated crossings of the new NDTIP Bypass (see Figure 6-4):

    - Blaine Street (WPRR)
    - College Street
    - River Street
    - Wynooski Street
    - Ore 219 (grade-separated interchange)
    - Wilsonville Road
    - Fernwood Street
    - Proposed East-West Street

    All other streets that currently cross the NDTIP Bypass corridor will be truncated.



LEGEND

- Bypass
- Bypass Roadway Crossings

BYPASS ROADWAY CROSSINGS
NEWBERG, OR.

FIGURE **6-4**

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34. *Downtown Street Redevelopment:* Prior to the development of the bypass, pedestrian enhancements should be considered on 1st Street and Hancock Street in the downtown such as improving crosswalks, providing pedestrian activation at existing signalized intersections, curb extensions, and sidewalk amenities. After the Bypass is implemented, traffic volumes on the downtown couplet could potentially allow reducing 1st Street and Hancock Street to two through lanes. This would allow the City the ability to explore opportunities on these streets including: angled parking, wider sidewalks, planter strips, and additional crosswalks.

    The City may choose to consider implementation of a split couplet, in which 1st Street would be converted to two-way and 2nd Street would be converted to one-way eastbound. If chosen, this would be implemented after the Bypass is constructed and operational. The length of the two-way 1st Street would be approximately 7-10 blocks — from approximately Main Street to approximately Edwards Street. In addition to two-way traffic on 1st Street, this project would provide wider sidewalks, increased landscaping and pedestrian amenities, thereby creating a more pedestrian-scale that would encourage walking and improve business in the downtown. The estimated cost of the project is $10-12 million. Based on its relatively high cost and potential impacts to local properties, it is recommended that substantial community input be provided prior to deciding to implement this option.

    ODOT may consider preparation of an Ore 99W Refinement Plan for the downtown section of the highway. This plan would consider future changes that may be made for the short- and long-range future (before and after the Bypass is constructed). Possible rerouting of Ore 99W though the downtown section (to 2nd Street for the eastbound direction) may be considered in that later study, but should not be considered for implementation until after the Bypass is constructed.

Total cost for all non-capacity improvement projects is estimated at $39.30 million. The total cost of all capacity and non-capacity roadway improvements is $89.56 million, including bicycle and pedestrian projects included in a later section.

6.3 PUBLIC TRANSPORTATION PLAN

Future public transportation (transit) improvements were identified as part of the Newberg Transportation System Plan for both local (Newberg intra-city service), commuter transit, intercity bus, and long range transit service.

The Oregon Transportation Plan (Multimodal System Element), adopted by the Oregon Transportation Commission (September 15, 1992), identifies statewide policy and a long-range plan for a coordinated transportation system. The plan is intended to meet requirements set forth by the Land Conservation and Development Commission (LCDC) in the Transportation Planning Rule (Goal 12) and the federal Interstate Surface Transportation Efficiency Act (ISTEA). The policy plan includes a network of facilities and service for air, rail, highways, public transit, pipeline, marine transport, bikeways, pedestrian and other modes to be developed over the next 20 years. The finance plan to implement the policy of the State plan is still being formulated. However, discussions with ODOT revealed that the State will likely participate in future funding of capital investment for transit service in areas like the Newberg-Portland corridor, but that they would not likely participate in the operation, or subsidy of operation, of local transit service.

Transit goals and strategies in the State plan that are specific to the City of Newberg and/or local transit service include the following:

Urban areas of 2,500 populations or more within 20 miles a major metropolitan area central city should have at least peak hour transit service to the metropolitan area (includes Newberg).

Local public transit services and elderly and disadvantaged service providers should connect to intercity passenger terminals.

6.3.1 Existing Transit Service

The Chehalem Valley Senior Citizens Council (CVSCC) currently operates the following public transportation services in Newberg. The details of the operation and performance are shown in Table 6-2.

LINKS, a commuter service that connects McMinnville with Meridian Park Hospital in Tualatin, which makes scheduled stops in Newberg. This service makes morning, afternoon, and evening round trips every weekday, with a transfer connection in Sherwood to the Tri-Met system serving the Portland urban area.

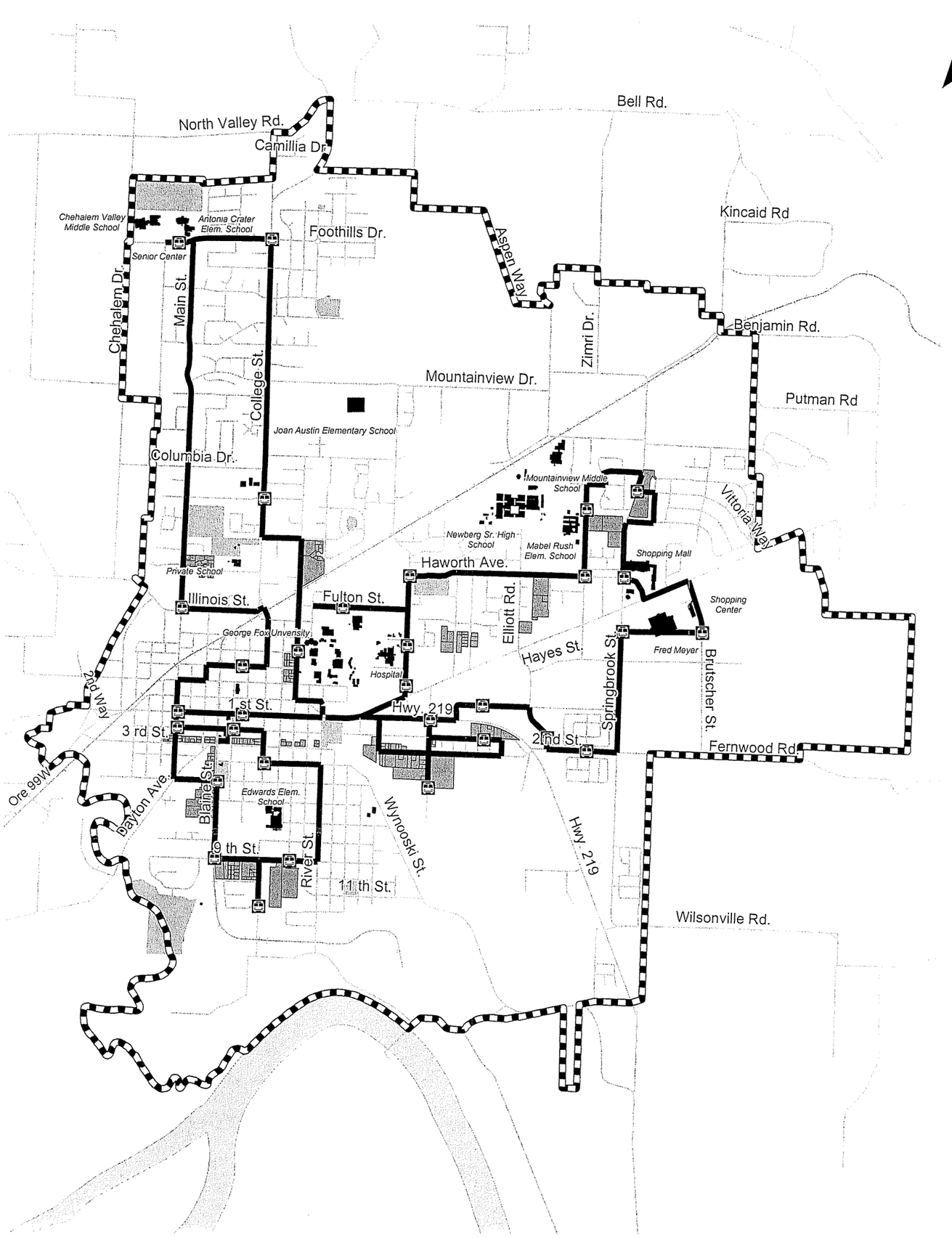
Link Express, a commuter service that provides service twice a day from Newberg (Nap's) to Hillsboro through Gaston, connecting to the light rail in Hillsboro.

Dial-a-ride service is offered to the transportation disadvantaged between 8:00 a.m. and 5:00 p.m., Monday through Friday.

The Town Flyer, an intra-city fixed-route bus service, operates approximately 6 hours a day (9:15 a.m.-3:12 p.m.), Monday through Friday. Figure 6-5 shows the route location and transit stops of the Town Flyer service.

TABLE 6-2
FEATURES OF TRANSIT SERVICES
OPERATED BY CHEHALEM VALLEY SENIOR CITIZENS COUNCIL

Name	Service Type	Patronage 2002-2003 (11 months)	Buses Used to Provide Service	Bus Capacity
LINKS	Regional Bus	15,895	1	17-20 passengers
Link Express	Regional Express Bus	Figures not available	Figures not available	Figures not available
Dial-a-ride	Demand Response	11,587	2	Figures not available
Town Flyer	Local Bus	4,475	1	15 passengers



LEGEND

- Existing Bus Route
- Bus Stops
- High-Density Residential
- Urban Growth Boundary
- Activity Centers
- Parks
- Railroad
- Streets
- River

EXISTING LOCAL BUS SERVICE PATTERN: TOWN FLYER ROUTE NEWBERG, OR.

FIGURE 6-5

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6.3.2 Planned Transit Facilities/Services as part of NDTIP Statewide Expressway

The recommended Bypass Alternative analysis included the following transit elements as part of the overall State Expressway NDTIP project:

- A moderate (30-minute peak, 60-minute off-peak) level of express bus service, including park-and-ride lots and local buses in the Ore 99W corridor. (Mid term implementation).
- Improvement of Ore 99W corridor bus system to serve express bus transit stops. (Mid term implementation).
- Concentrating park-and-ride lots to support express and local bus service in the Ore 99W corridor (Mid term implementation).
- Utilizing local buses to feed the inter-city express bus system.
- Considering a commuter rail line from McMinnville to the proposed Wilsonville / Beaverton commuter rail line. (This could replace express bus service over the long term).

Over the long range future, ODOT is working with Newberg, Dundee, Dayton and Yamhill County to assess the viability of local implementation of these services.

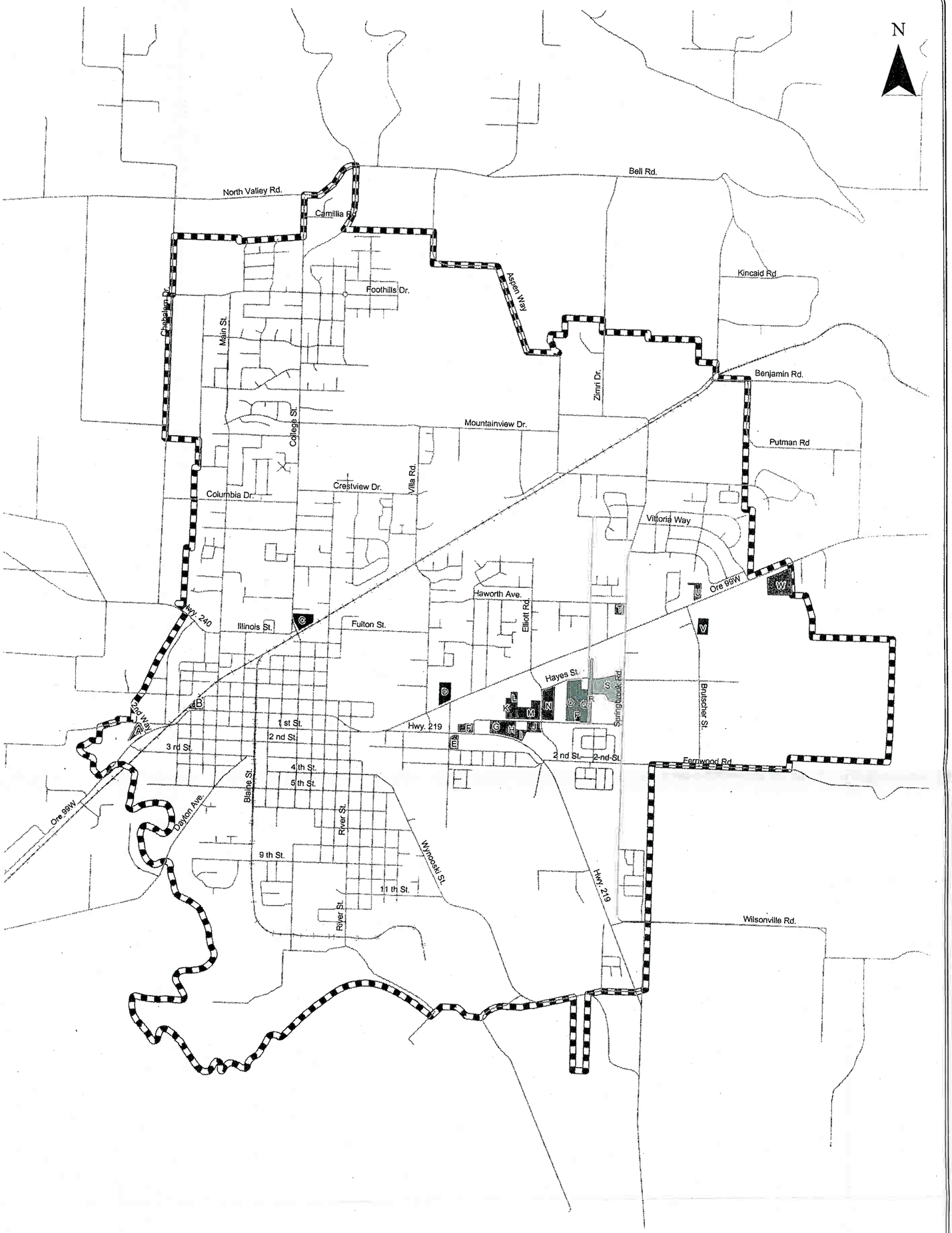
6.3.3 Commuter Transit

Currently, Chehalem Valley Senior Citizen Council (CVS) and the Yamhill Community Action Agency (YCAP) serve the Newberg area with limited commuter transit service during the weekday peak hours with connection to Sherwood and the Portland urban area transit system, operated by the Tri-Metropolitan Transit District (Tri-Met), as was described in Existing Conditions section of the Plan. Tri-Met currently has no plans for extending commuter bus service outside their service boundary to Newberg.

The transit element of the NDTIP identifies express bus service as being the most cost-effective means of providing regional commuter transit service between northeast Yamhill County and the Portland metropolitan area for the foreseeable future. Although not ruling out commuter rail as a longer-term option, the NDTIP analysis indicates that commuter rail would not be cost-effective based on its relatively modest ridership and high cost. Hence, the remainder of the discussion is focused on commuter bus provision.

Several different providers operate the existing regional transit services in the City of Newberg. Whether future regional commuter transit should be operated by one of the existing providers, a new provider at the local or County level, or some combination of the existing providers is not yet determined. However, identifying a service provider will be an important step in developing such a regional service. The NDTIP transit element considered how a County-level transit agency might be formed and recommended that, in the long term, a transit district with income taxing powers, be considered by Yamhill County to cover its northeast region.

Express transit service would originate to the west (either in McMinnville or Dundee), with stops in downtown Newberg and at a park-and-ride lot on the northeast side of Newberg. The park-and-ride lot would need to have 150-200 spaces, and Figure 6-6 shows potential locations. Figure 6-6 shows 23 potential locations that were considered. Based on the evaluation described in the Alternatives Analysis section of this plan, six locations were identified for further consideration (see Figure 6-6).



LEGEND

Potential Park and Ride Lot Locations
Preferred Park and Ride Locations
Other Park and Ride Locations
Urban Growth Boundary
Railroad
Streets

POTENTIAL PARK AND RIDE LOT LOCATIONS
NEWBERG, OR

FIGURE 6-6

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Initial capital expenditures of bus coaches, estimated at approximately $300,000 each, may be difficult for any one public jurisdiction to justify and afford. One means of affording this expense is for the City of Newberg to cooperate with the City of McMinnville, Yamhill County and the State of Oregon to establish a local transit district. A local transit district would likely stand a reasonable chance of receiving state and federal subsidy assistance in the purchase and operation of commuter bus service.

6.3.4 Local Transit

Competition for scarce local revenues will make continued funding of local fixed-route and dial-a-ride transit service in the Newberg area increasingly difficult. Funding for future service expansion of local transit will also be difficult within current fiscal programs. However, as the City of Newberg urban area continues to grow increased demand for transit service will likely result. In light of this dilemma, it is recommended that the operation of local transit service also be provided by a local transit service district. This will enable the local transit service provider a better means of capital and transit operation funding support through state and federal funding subsidy.

Based on the assessment of commuter and local transit service in the Newberg area it is recommended that the City of Newberg, along with the City of McMinnville, Yamhill County and the Oregon Department of Transportation investigate the following:

Establish a local transit service district to include, but not be limited to, the City of Newberg, City of McMinnville and Yamhill County. Transit service operations can be provided either directly by the local transit district or contracted through private service operations. The local transit district should include local transit in the Newberg area (dial-a-ride, fixed-route and disadvantaged rider) service and weekday commuter transit service between Newberg/McMinnville and the downtown Portland transit mall.

Establish long term funding base for local and commuter transit service within the local transit district to include federal and state funding resources for capital and operating expenses.

Develop policy agreement between local transit service district and Tri-Met for provision of service operations inside Tri-Met service district.

Ensure that all local and commuter transit service implement the accessible transportation requirements established by the Americans with Disabilities act of 1990, and be coordinated with future intercity bus service in the Newberg urban area.

The City needs to facilitate a community decisions as to which types of users the local fixed route bus system should seek to serve. This decision will determine whether the preference is for speed and frequency, or for service coverage, and may influence the overall funding level for local transit.

In the absence of a clear community preference, Pattern 4 is recommended since it provides the highest potential ridership per revenue mile and the successful existing dial-a-ride service should be able to adequately cater to senior citizens and persons with disabilities, who would be most disadvantaged by the lower geographic coverage of this option.

The City should consult with the existing local and regional transit providers before pursuing any service changes. Further it should discuss any potential changes to the existing local bus services

with other agencies and jurisdictions to avoid any unnecessary duplication of effort in the provision of local and regional transit services.

The City should seek to ensure that any future regional bus services utilize the existing Ore 99W to travel through Newberg. This provides maximum flexibility in the location of park-and-ride lots and also allows for a possible second stop within Newberg that provides a more cost-effective transfer between the local and regional bus networks.

6.3.5 Additional Transit Services

The City at this time chose to maintain the current transit services, all of which are provided by other entities than the City. The City further will promote the provision of additional transit services in conjunction with the County, ODOT, or other agencies. In addition, where possible the City will require design elements on arterials that facilitate the provision of supporting infrastructure for transit, in order to make expansion of existing services or startup of new services easier at some later date. The types of actions possible include transit-friendly designs of roadways, setting aside of properties for use as a transit center and/or regional park-and-ride facility, setting aside right-of-way and easements for bus shelters. Another possible planning measure is to set aside or zone for rail facilities along the rail line through town.

This prescribed transit plan carries no additional costs to the City.

6.4 BICYCLE/PEDESTRIAN PLAN

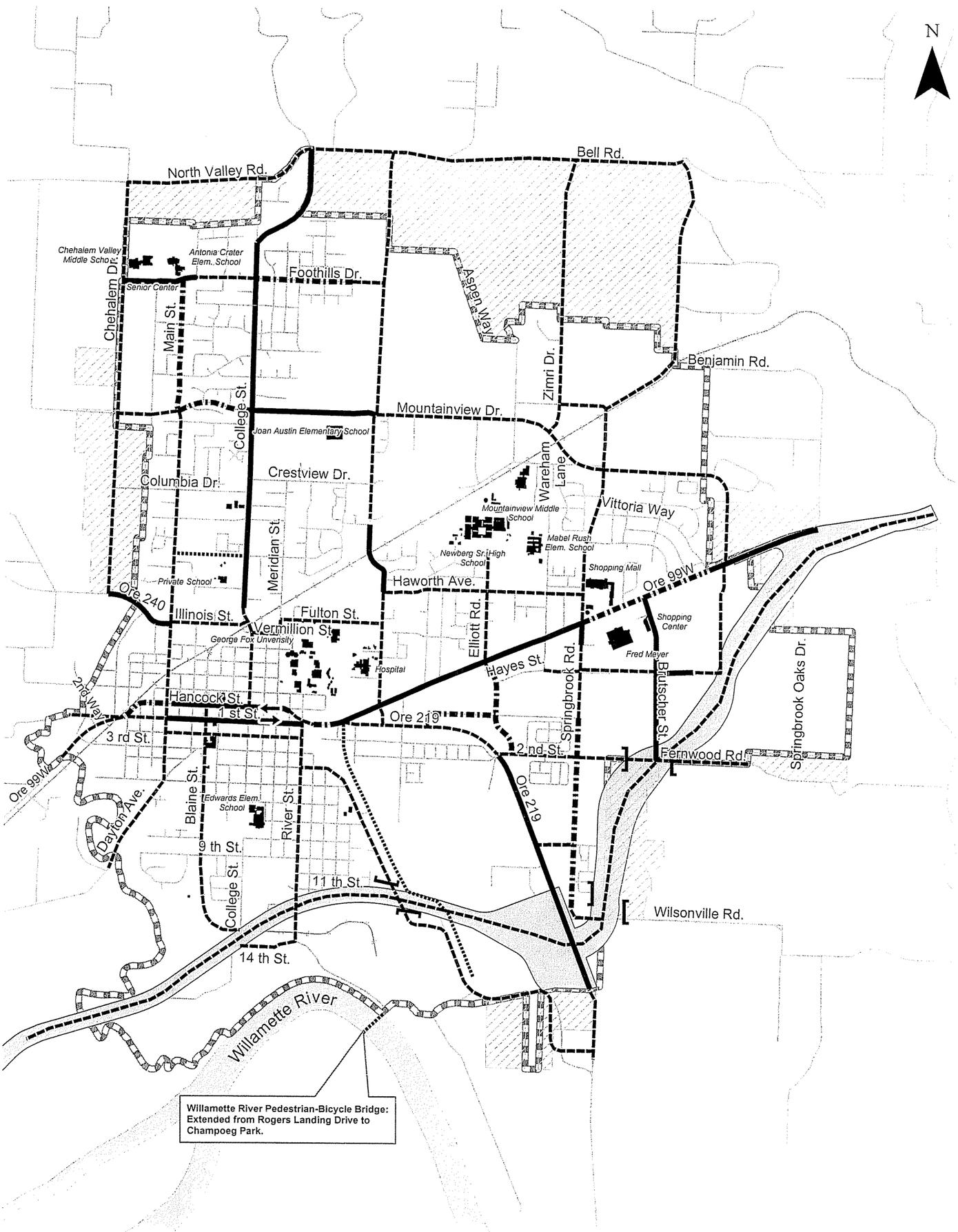
Future bicycle and sidewalk improvements identified in conjunction with roadway improvements are intended to provide bicyclists and pedestrians with a full accessibility on the City of Newberg's collector/arterial street system. The recommended bicycle route plan is illustrated in Figure 6-9. There are a number of additional bicycle/pedestrian facility locations that will provide for optimal circulation for the destination oriented bicyclist, especially for travel between residential areas and schools. These projects also providing unique routes with local environmental, social, and cultural/historical features for the recreational bicyclist, and result in a more balanced system providing direct routes for all users in the City of Newberg.

6.4.1 Bicycle/Pedestrian Facilities Projects

Bicycle Facilities

Figure 6-7 shows the on-street and off-street bicycle facilities that are planned for the City. Bicycle paths are planned for all major collectors, minor and major arterials, and in conjunction with the NDTIP Bypass. Many of the City's future bike facilities are planned to be constructed as part of street improvement projects, either as new facilities or widening of existing facilities. Those projects are identified on Figure 6-3. Those bicycle facilities that are not incorporated into street improvement projects were identified separately. Priorities for funding these projects are discussed in the Finance Plan section of this document.

Figure 6-8 and Table 6-3 below show the projects that are independent of associated street improvement projects. These projects have an estimated cost of $2,495,000.



LEGEND

Existing Bicycle System
- Completed Facilities
- Partially Completed Facilities

Proposed Additions to the Bicycle System
- Recommended On-Street Bicycle Facilities
- Recommended Off-Street Multi-use Path
- Recommended Pedestrian Bicycle Bridge
- Bypass
- Activity Centers
- Urban Growth Boundary
- Urban Reserve Area
- Railroad
- Streets
- River

BICYCLE FACILITIES PLAN NEWBERG, OR.

FIGURE 6-7

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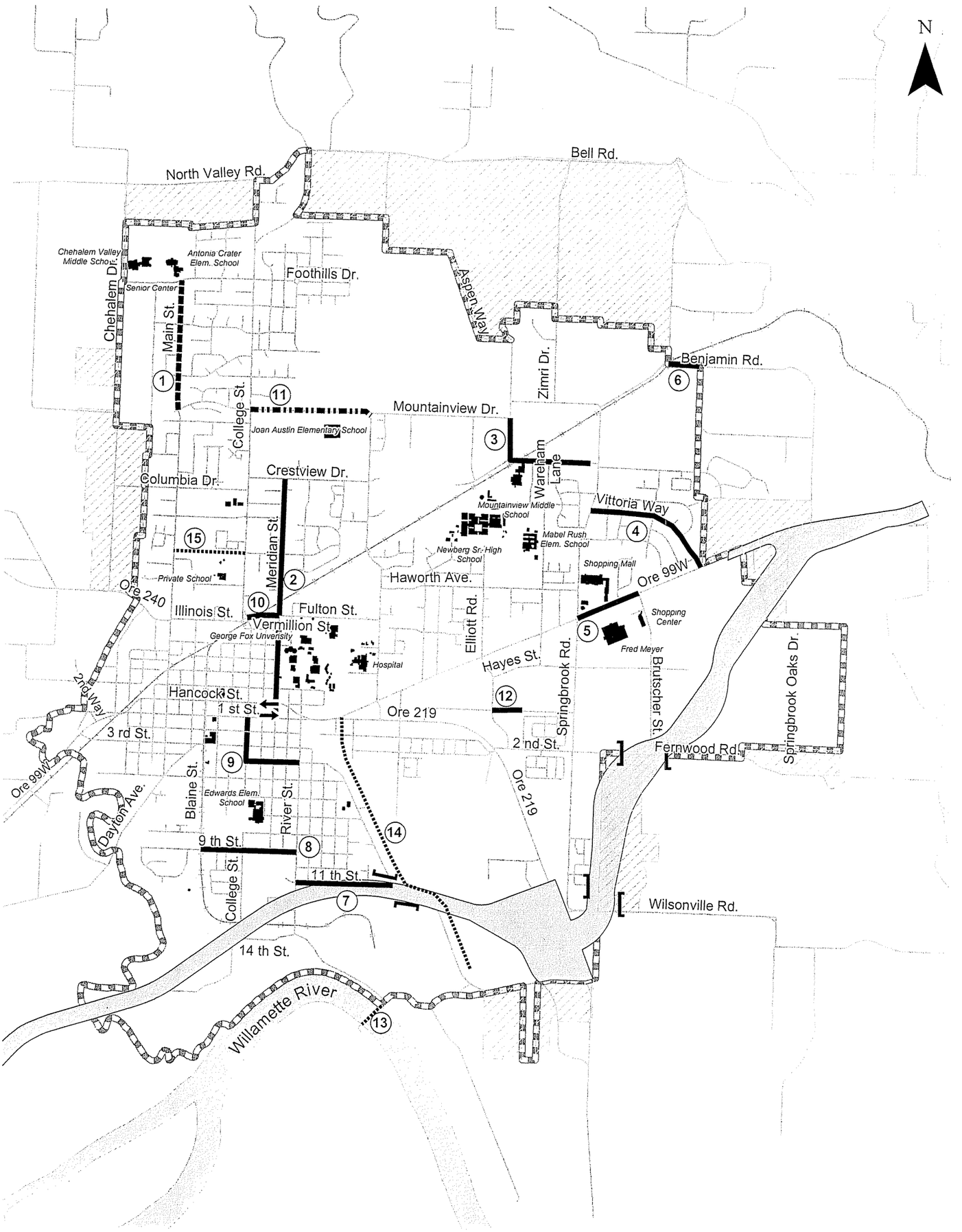

LEGEND

Missing Bicycle Link

- Wide Lane
- Striped Lane 1 Side
- Striped Lane on about 75% of Section
- Bypass
- Activity Centers
- Urban Growth Boundary
- Urban Reserve Area
- Railroad
- Streets
- River

Street located outside of Urban Growth Boundary are outside of Newberg's jurisdiction. If a proposed roadway alignment extends outside the UGB, than a plan amendment is required. Improvements recommended would need to be coordinated with Yamhill County.

Bicycle improvements on this figure show bike facilities needed for streets of major collector or above status that either do not have bike lanes or do not have planned streets improvements that would include bike lanes. In addition, two exclusive bike / ped multi-use paths are shown.

BICYCLE IMPROVEMENTS NEWBERG, OR.

FIGURE **6-8**

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TABLE 6-3
BICYCLE FACILITY IMPROVEMENTS

Project No.	Street	Segment	Length	Width	Percent Improvement	Unit Cost	Cost
1	Main Street	Between Foothills Drive & Mountainview Dr	2652	6	100%	$13.00	$207,000.00
2	Meridian St.	Between Crestview Dr & 1st Street	2795	12	25%	$13.00	$109,000.00
3	Aspen Way	Between Mountainview Dr. & Springbrook	2488	12	25%	$13.00	$97,000.00
4	Vittoria Way	Between Springbrook & ORE 99W	2758	12	25%	$13.00	$108,000.00
5	Ore 99W	Between Brutscher & Springbrook	1358	12	25%	$13.00	$53,000.00
6	Benjamin Rd	Between RR & UGB	720	12	25%	$13.00	$28,000.00
7	11th Street	East of River Street	1985	12	25%	$13.00	$77,000.00
8	9th Street	Between Blaine Street & River Street	1947	12	25%	$13.00	$76,000.00
9	College Street	Between 1st & River Street (L shaped section)	1685	12	25%	$13.00	$66,000.00
10	Fulton Street	Between College Street & Meridian St	660	12	25%	$13.00	$26,000.00
11	Mountainview Dr	East of College Street	2482	6	100%	$13.00	$194,000.00
12	Hancock St	West of Springbrook	613	12	25%	$13.00	$24,000.00
13	Rogers Landing Bike Bridge	Across Willamette River	600	12	100%	$125.00	$900,000
14	Hess Creek Trail	N. of Wynooski to Ore 99W	6000	12	100%	$6.00	$430,000
15	Jacquith Park	Main St. to College	1400	12	100%	$6.00	$100,000
16	Newberg-Dundee Bypass Bicycle Facility	West of Newberg to East of Newberg	-	-	-	-	-
Total							**$2,495,000.00**

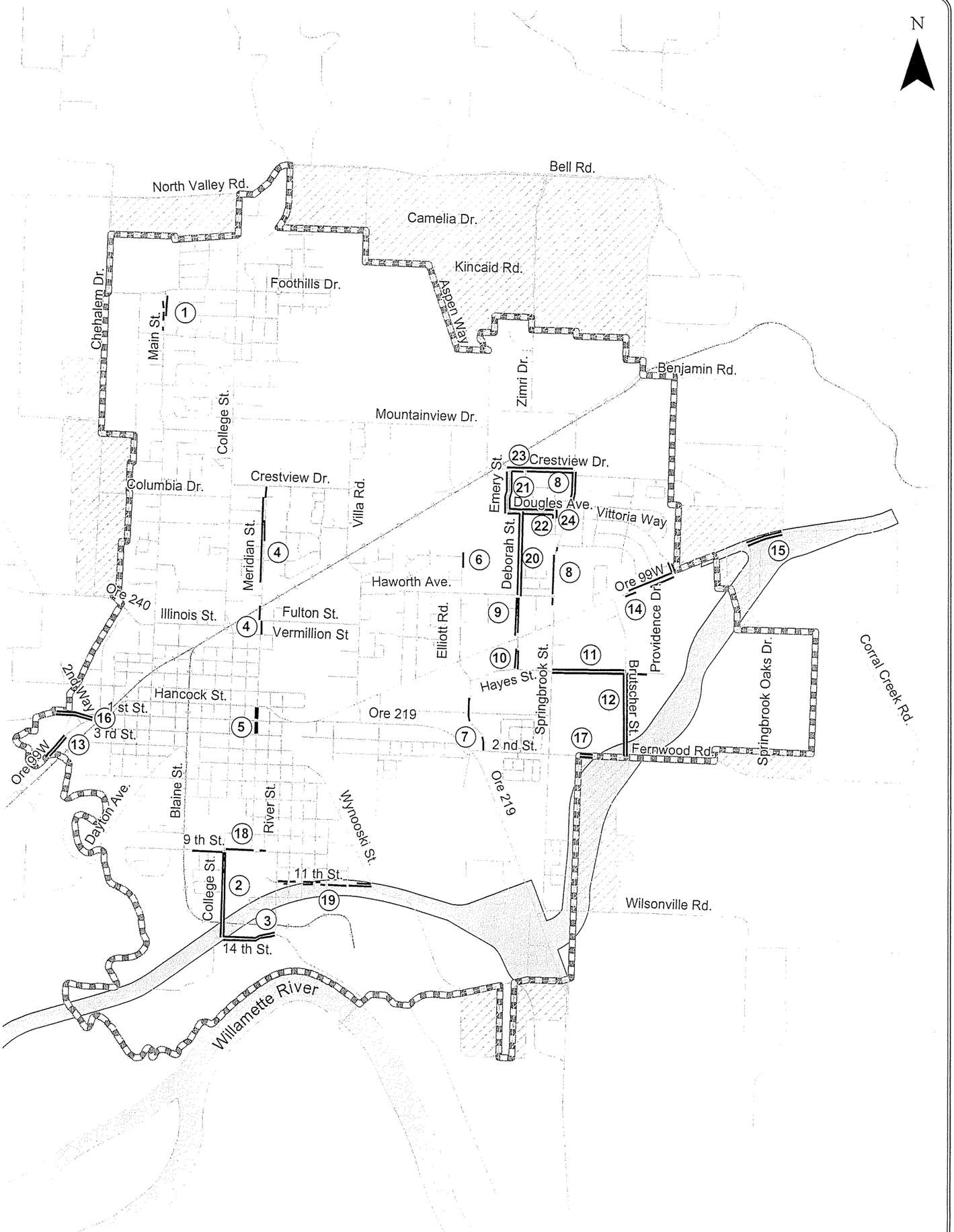
Included with the on-street facilities shown in Table 6-2 above (projects 1-12), there are four off-street bicycle facilities that are included in this plan. These facilities are shown described below and are shown in Figure 6-7. The bicycle facility associated with the Newberg-Dundee Bypass project has not been included in the cost table because its total cost will be borne by ODOT.

- *Hess Creek:* New pedestrian/bicycle pathway along Hess Creek can serve recreational and school bicyclists and pedestrians. The proposed project begins near Wynooski Street south of Sportsman Airpark and ends at Ore 99W. This project can also serve as an environmental education tool. This multi-use path would be an estimated 1.14 miles in length, and would cost an estimated $430,000 ($72/linear foot).
- *Jaquith Park:* New pedestrian/bicycle pathway adjacent to Jaquith Park between Main Street and College Street will also serve recreational and school bicyclists and pedestrians. The proposed project begins near Main Street north of Markris Way traverses Jaquith Park, and ends at College Street across from Sierra Vista Street. The length of this multi-use path is approximately 1,400 feet, and would cost an estimated $100,000 ($72/linear foot).
- *New Willamette River Pedestrian-Bicycle Bridge:* Extended from Rogers Landing Drive across to Champoeg Park. This new connection would link the Newberg bicycle-pedestrian system with that of Champoeg Park and Marion County. This desired bridge is outside the Newberg UGB, and hence, would require coordination with Marion County. The construction of this facility would require a state land use goal exception. The cost of this bridge is estimated to be about $900,000.
- *Newberg-Dundee Bypass:* New bicycle facility to be developed in conjunction with the Newberg Dundee Bypass. Bike route to provide access to regional recreation and commuter bicyclists, and will generally follow the proposed bypass route. This route could be located in the Bypass right-of-way, or alternatively, could use City streets all or part of its length. It is the City's recommendation in this plan that a bicycle path be provided along or near the bypass. In any case, this route will provide for regional bicycle movements though Newberg in the general Bypass corridor, and will be further planned, designed, and funded as part of the Bypass project.

Design of these facilities should conform to Guide for Development of New Bicycle Facilities by the American Association of State Highway and Transportation Officials (AASHTO). In addition the State of Oregon Bicycle Facilities Master Plan (Reference 4) is also of valuable assistance. Bicycle pathway signing should conform with the Manual on Uniform Traffic Control Devices (Reference 5) and the Oregon Supplement to the aforementioned document. Design of bicycle facilities shall conform to regulations established in the American Disabilities Act (ADA).

Pedestrian Facilities

Missing pedestrian links have been identified in this plan. While it is the hope of the City that eventually all streets will have sidewalks on both sides, it was assumed in this plan that all streets of collector designation and above should have sidewalks. Based on this assumption, those collector/arterial/highway facilities that either do not have sidewalks on both sides, or do not have street improvement projects that would include sidewalks, have been identified as missing pedestrian links. Accordingly, these missing links have been mapped on Figure 6-9 as Pedestrian Improvements. Priorities for funding these projects are discussed in the Finance Plan section of this document.



LEGEND

- Missing Pedestian Link
- Statewide Highway
- Urban Growth Boundary
- Urban Reserve Area
- Railroad
- Streets
- River

Street located outside of Urban Growth Boundary are outside of Newberg's jurisdiction. If a proposed roadway alignment extends outside the UGB, than a plan amendment is required. Improvements recommended would need to be coordinated with Yamhill County.

Missing pedestrain links have been identified as those streets of collector streets and above that either have no sidewalks (one-side or both) or have no street improvements projects that would include sidewalks

PEDESTRIAN IMPROVEMENTS NEWBERG, OR.

FIGURE **6-9**

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Table 6-4 below and Figure 6-9 show the pedestrian projects that are independent of associated street improvement projects. These projects have an estimated cost of $1,383,000.

TABLE 6-4
PEDESTRIAN FACILITY IMPROVEMENTS

Project No.	Facility	From	To	Length (ft)	Cost
1	Main Street	Foothills Drive	Mountainview Dr	850	$30,000.00
2	College St	9th Street	14th Street	3550	$127,000.00
3	14th Street	College Street	River Street	2150	$78,000.00
4	Meridian Street	Crestview Drive	Fulton Street	2750	$99,000.00
5	Meridian Street	Hancock Street	2nd Street	950	$34,000.00
6	Elliot Road	Hawthorne Drive	Haworth Avenue	350	$12,000.00
7	Elliot Road	Ore 99W	2nd Street	800	$28,000.00
8	Springbrook Street	Crestview Drive	Ore 99W	2300	$83,000.00
9	Wareham Lane	Haworth Avenue	Ore 99W	1750	$63,000.00
10	Wareham Lane	Ore 99W	Hayes Street	800	$29,000.00
11	Hayes Street	Springbrook Street	Providence Drive	3400	$123,000.00
12	Brutscher Street	Hayes Street	Fernwood Road	3400	$122,000.00
13	Ore 99W	UGB	3rd Street	3600	$129,000.00
14	Ore 99W	Brutscher Street	Vittoria Way	1800	$64,000.00
15	Ore 99W	East of UGB		1550	$55,000.00
16	1st Street	UGB	Ore 99W	1550	$55,000.00
17	Fernwood Rd	Springbrook Street	Brutscher Street	550	$19,000.00
18	9th Street	Blaine Street	River Street	1350	$49,000.00
19	11th Street	River Street	Wynooski Street	1200	$44,000.00
20	Deborah Street	Douglas Avenue	Haworth Avenue	3900	$47,000
21	Emery Street	Crestview Drive	Douglas Avenue	2150	$26,000
22	Douglas Avenue	Emery Street	Springbrook Wy	2400	$29,000
23	Crestview Drive	Emery Street	Springbrook St	3100	$37,000
24	Springbrook Way	Douglas Street	100' s. Douglas	100	$1,000
Total					**$1,383,000.00**

All pedestrian facilities should conform to ADA access policy as follows:

- All sidewalks, corner ramps, and other transportation improvements shall meet applicable standards of the Americans with Disabilities Act.
- Sidewalks should be provided whenever there is development of abutting properties.

- Sidewalks should be constructed when any new road is constructed.
- When existing roads are widened or improved, sidewalks should be provided.

6.4.2 Additional Matters of Importance for the City of Newberg Bicycle Network

Regardless of the aggressiveness of the City's bicycle program, it needs to work with ODOT to provide suitable connections to the bicycle facility to be constructed in conjunction with the proposed Bypass. The elements of the proposed bicycle network directly relevant to the Bypass facility include the eight proposed crossings of the bypass (Blaine Street, College Street, River Street, Wynooski Street, Ore 219, Wilsonville Road, Fernwood Street, and the new Proposed East-West Street).

Signage has been noted as a key element in supporting bicycle use for intra-city trips. It is most important for shared roadway bicycle facilities where signage provides the only indication that a bicycle facility is present. However, it is also important for shoulder bicycle lanes, on-street bicycle lanes and off-street paths to provide information to cyclists, pedestrians, and drivers that will enhance the safety of the facility.

Once any new bicycle facilities are provided, a deliberate and constant program of monitoring and maintenance will be needed to ensure that facilities continue to operate adequately. Maintenance tasks, to be scheduled as part of the overall City maintenance program, will include the maintenance of adequate pavement surfaces on bicycle facilities, the replacement of any damaged or missing signage, and the maintenance of proper clearances from trees and other obstacles, particularly on off-road facilities.

Aside from the Hess Creek and the Jaquith Park multi-use pedestrian-bicycle paths (mentioned above), all new sidewalks will be provided in conjunction with new adjacent development or street construction projects. The cost of these new pedestrian facilities will not be borne by the City.

6.5 AIR/RAIL/WATER/PIPELINE PLAN

6.5.1 Air Service

An Airport Site Selection study was conducted for the City of Newberg by CH2M Hill, Inc. and was finalized in March 1990. The findings of the study are summarized here.

6.5.2 Background

The Airport Site Selection Study looked at the feasibility and economic viability for the City of Newberg to own a small, general aviation aircraft airport. The City had an opportunity to purchase a privately owned and operated airport one mile east of the City (Sportsman Airpark).

The first step of the site selection study was to identify possible alternatives to the existing Sportsman Airpark. Numerous alternatives were considered and then narrowed down to one using a weighted set of evaluation criteria that included such items as topography, access, growth potential, runway orientation, obstructions, land use and environmental impacts.

The next step was an evaluation of the costs associated with each of the two final alternatives; 1) purchase of Sportsman Airpark including rehabilitation, upgrades to FAA standards, and off-site

improvements such as land acquisition and public facilities improvements and, 2) purchase of land and the construction of a new facility. The financial analysis of the two options shows the airport would have to be subsidized by the City. The final recommendation of the report was that the City of Newberg not purchase Sportsman Airpark or pursue development of a new airport facility at the time of the report.

6.5.3 Airport/Transportation Plan Issues

The Airport Site Selection Study identified several key items that apply to the Transportation/Land Use System Plan. First, the report concluded that an airport facility is justifiable based on current and projected demand forecasts. Second, the report identified that Sportsman Airpark was operating at a profit. These two items lead to the conclusion that the City should encourage private ownership and operation of the existing facility. It is the servicing of the debt and upgrades required of the City that made the airport unprofitable. If the airport is lost to development, current users will likely relocate to the nearby McMinnville Airport.

If the facility remains an airport, it would be wise to not preclude its eventual upgrade. The FAA will only fund the development of an airport facility that would eventually meet Basic Utility Stage II criteria (an upgrade to slightly larger private, small business and air taxi facility). There are several upgrade options that have impacts to the surrounding transportation facilities, including:

- Purchase of the land at the north end of Hwy 219 for expansion.
- Realignment of Hwy 219 to direct traffic to Springbrook and some realignment at the north end to provide access to homes and businesses.
- Purchase of Climax portable machine tools and land to provide a roadway loop for access to buildings currently along Ore 219.
- Improvements to Springbrook to handle the increased traffic and to bring it up to standards and intersection improvements with Hwy 219, Hwy 99.

At the time of the Airport Site Selection Study, the Newberg-Dundee bypass was being considered by the Oregon Department of Transportation. However, the bypass was not in ODOT's six year plan and, therefore, was not included in selecting a realignment alternative.

During the NDTIP Bypass Locational Environmental Impact Statement process, numerous discussions were held with the proprietors of the Sportsman Airpark. It was determined through these discussions that the Sportsman Airpark is a viable, necessary component of Newberg's transportation system and should be retained for the foreseeable future.

6.5.4 Water-Borne Transportation Service

The only use of the Willamette River for water-born transportation is for barge shipment of sand and gravel and recreational boating. The Newberg Transportation System Plan recognizes water-borne transportation as an important mode for the movement of goods, and recommends that future use of the Willamette River be preserved as a transportation system resource, especially for the shipment of large and heavy, bulk commodities.

6.6 RAIL SERVICE

6.6.1 Freight

Current use of the Southern Pacific Railroad provides weekly (sometimes daily) rail service in and through the Newberg area for the shipment of goods. Southern Pacific R.R. recently leased operations of the line to Willamette and Pacific, Inc. (W&P), a private operator. W&P's immediate plans are to upgrade the Southern Pacific south of McMinnville to Independence, and ship commodities daily to\from Newberg through Eugene instead of Portland. W&P will continue to ship steel products between Portland and McMinnville at an estimated three days per week, with short-term plans of daily service.

6.6.2 Passenger

As mentioned previously, the State of Oregon Transportation Plan identified long-range passenger rail transportation improvement options that include a high speed rail line between Eugene, Salem, Portland and Seattle, and a Willamette Valley interurban rail connection west of the Willamette River between Eugene and Portland. Options for future passenger rail service in the Newberg area include the use of the existing Southern Pacific Railroad line to connect with the Portland area and the Willamette Valley serving as part of a future Willamette Valley interurban rail line. As described in the transit sub-section, cost feasibility studies have indicated that commuter rail in this corridor is not feasible at this time.

State and regional policy and plans affecting future rail passenger plans in the Newberg area are listed below.

6.6.2.1 Oregon Rail Passenger Policy Plan (1992)

The Oregon Rail Passenger Policy and Plan was adopted by the Oregon Transportation Commission on November 17, 1992, providing a comprehensive long-range plan for railroad passenger service in Oregon in coordination with the Oregon Transportation Plan. Future long-range rail passenger service between Eugene and the greater Portland area is identified in the State Plan with recommendations for high-speed rail service in the Willamette Valley along the Southern Pacific R.R. Valley Line.

As an alternative, the State Plan investigated long-range interurban electric rail service between Portland and Eugene along Southern Pacific R.R. West Side Branch (through Newberg and McMinnville) to capitalize on short-haul riders. The initial phase of the State long-range interurban electric rail plan option called for single-track, electric rail service between McMinnville and Tualatin with transfer connection to "MAX" light rail service through either Tigard or Lake Oswego. This plan is dependent on the Portland/Vancouver Regional Transportation Plan for LRT ("MAX") connections into downtown Portland. Total capital cost of providing electric rail service was estimated at nearly $115 million, and annual operating costs were estimated at $9.6 million. Annualized over 30 years, electric rail service between McMinnville and Tualatin was estimated to range between $18 and $32 per rider.

The State Plan recommends that interurban electric rail service between McMinnville and Portland be considered in greater detail as part of the on-going Willamette Valley transportation planning process (sponsored by ODOT). The Plan also recommends that interurban electric rail service be evaluated in

comparison (costs and benefits) against intercity bus service, while also considering impacts on land use and economic development.

6.6.2.2 Portland/Vancouver Regional Transportation Plan (1992)

The Portland metropolitan area Regional Transportation Plan identifies transit capital (light rail or exclusive busway) improvements for the Ore 99W corridor between downtown Portland and Tigard. The regional plan prioritizes these transit improvements in a 10-20 year time frame. Neither the Portland Region or the Sate of Oregon have any adopted short- or long-range plans for light rail transit service extension in the Ore 99W corridor between Tigard and Newberg. The cost of extending light rail transit by "MAX" (Metropolitan Area Express) from downtown Portland to Tigard, approximately 8 miles, was estimated at $280 million; and excludes the cost of right-of-way needs. Assuming a conservative per-mile cost of $40 million, it would cost nearly $ 650 million to extend light rail service from Tigard to Newberg (approximately 16 miles). These cost estimates may vary significantly depending upon such variables as right-of-way, environmental conditions, bridges, etc.

The cost of extending interurban electric or "MAX" (light rail transit) service to Newberg is clearly beyond the City of Newberg's current financial capabilities. Significant federal, state and local resources will be required to fund these improvements. Additional investigation of retrofitting the Southern Pacific Railroad is needed to determine if rail operations are feasible for passenger service. In the context of the Newberg Transportation System Plan, however, it is recommended that the City of Newberg recognize the importance of future rail passenger service in the Newberg area with connection to Portland, Salem and Eugene. As such, the plan encourages the City of Newberg to:

Participate with the State of Oregon and all other affected jurisdictions in the investigation of future interurban rail passenger service between Eugene and Portland.

Participate with the State of Oregon and all other affected jurisdictions in the preservation of existing rights-of-way (in particular the Southern Pacific Railroad line) and the identification of future transportation corridors (such as the Newberg Dundee Bypass) for rail passenger service until such time when such service becomes feasible.

6.6.3 Pipeline Service

Current pipeline transportation in and through the Newberg area includes transmission lines for electricity, cable television and telephone service; and pipeline transport of water, sewer and natural gas. The Newberg Transportation System Plan encourages continued use of these services to move goods in and through the City of Newberg.

In addition, "telecommuting" is becoming an increasingly popular method of working at home using telephone communications and home computers. Use of telecommuting technology may result in the reduction or even elimination of some auto and transit work travel; travel that typically occurs during the heaviest traveled time periods. The Newberg Transportation System Plan recognizes this expanding mode of telecommuting as an effective means of decreasing the need for expanded or new conventional transportation system infrastructure. As such, the Newberg Transportation System Plan encourages, through land use policy and plans, the use of telecommunications as an alternative mode to the automobile for work travel commuting.

6.7 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) programs seek to improve the efficiency of the transportation system by shifting single-occupant vehicle trips to other modes, or away from times of peak traffic volumes. When implemented by a number of employers, TDM measures may help to avoid the need for some roadway capacity improvement projects, or at least defer the need further into the future. Examples of these measures may include:

- Having employers subsidize the cost of transit passes and tickets for their employees.
- Establishing carpool matching programs for ridesharing.
- Providing reserved spaces near building entrances for carpools.
- Allowing employees to work at home one day a week.
- Scheduling shift changes to occur outside of peak travel periods.
- Establishing neighborhood commercial and mixed-use nodes within the City. As part of these developments, provide direct sidewalk connections, bus stop provisions and proper building orientation to provide opportunities for trips to be made via walking or cycling or short driving distances.
- Establishing zoning and land use plans that allow people to both live and work within Newberg.

These types of strategies can be adopted into the Newberg Development Code in the form of requirements for new developments, or other incentives that could be made to encourage employers or other high traffic generators to implement these measures.

6.8 COORDINATION WITH STATE OF OREGON & YAMHILL COUNTY

The City of Newberg should participate with the Oregon Department of Transportation and Yamhill County in the development of their transportation system plans in order to provide for a coordinated and consistent policy and plan, especially for those transportation facilities that cross jurisdiction lines. Furthermore, as land outside of the Newberg is developed, a coordinated transportation/land use plan will help to ensure a transportation system that serves the need for all users.

Section 7

Transportation Finance Plan

Transportation Finance Plan

7.1 TRANSPORTATION FUNDING OPTIONS

There are a variety of options available to the City of Newberg to fund its transportation improvements. Each of these options have certain advantages and disadvantages. The following discussion outlines these options and evaluates them with respect to the City's anticipated financial needs. It is likely that the transportation program in Newberg will be funded by a combination of funding sources, in recognition that any one funding source will be insufficient to fund the entire program. The purpose of this section is to assist the City in its decision for funding its transportation system, and not to present a final recommended funding plan. Thus, this section presents alternative funding sources, potential revenues, and their respective applicability in the City. A final course of action will be taken by the City once the costs and revenues can be more accurately estimated.

To meet the requirements of the Transportation Planning Rule, the Newberg Transportation System Plan must have a transportation financing program that includes the following:

- A list of planned transportation facilities and major improvements
- A general estimate of the priority or timing of planned facilities and improvements
- Determination of rough conceptual capital cost estimates
- A discussion of existing and potential financing sources

7.1.1 Planned Transportation Facilities & Major Improvements

Based on the modal elements included in the plan, the total capital costs associated with transportation improvements in Newberg over the next twenty years will be an estimated $89.56 million excluding the planned Newberg-Dundee Bypass project. This finance section has excluded the cost of the Newberg-Dundee Bypass Project, in recognition that a financial strategy for the project has not been developed or approved. Funding for this facility has not been determined, but could come from a combination of federal, state, local and/or private funding sources. This analysis also includes the majority of the cost of transportation projects needed in areas outside of the City's UGB; these projects have been attributed primarily to the City (95%) and secondarily to Yamhill County (5%). However, it should be recognized that these projects are currently outside the jurisdiction of the City of Newberg, and within the jurisdiction of Yamhill County. This County portion of transportation costs amounts to an estimated $1.75 million within those areas studied. Of the $89.56 million in transportation projects, an estimated $31.93 million (36%) would be constructed as part of new developments, and an additional $23.83 million (26%) would be eligible to be covered by revenues collected from the City's existing System Development Charge (SDC). An estimated $20.18 (23%) million of improvements are located on ODOT facilities. Funding for these facilities has not been determined but could come from federal, state, local and/or private funding sources. An estimated $3.37 million of capital costs would be borne by abutting properties (4%), and Yamhill County's estimated share is $1.75 million (2%). Hence, the City of Newberg would be responsible to fund the remaining $8.50 million (9%) of these improvements from funding sources other than those currently available to the City. This finance section attempts to provide funding sources that may be available to the City to pay for these remaining transportation infrastructure costs. A list of planned transportation improvements is included in the Transportation System Plan section of this document. These improvements are shown in this list, and illustrated in Figure 6-3 of the TSP section.

7.1.2 Priority & Timing of Planned Facilities & Improvements

As shown in Table 7-1, there are an estimated $67.63 million in transportation infrastructure costs that the City would be responsible for over the planning horizon (subtracting out the $20.18 million under ODOT's jurisdiction and the $1.75 million under the County's jurisdiction). Approximately $8.50 million are costs not covered by current funding mechanisms available to the City.

TABLE 7-1
TOTAL NEWBERG TRANSPORTATION SYSTEM COSTS ($ MILLIONS)

Improvement Type	Estimated Cost ($mil)	Jurisdiction					
		City of Newberg				Yamhill County	ODOT
		City	Abutting Properties	New Development	SDC		
Capacity Improvement	50.26	0.92	2.40	11.60	17.46	0.50	17.38
Non-Capacity Improvement	39.30	7.58	0.97	20.33	6.37	1.25	2.80
Total	89.56	8.50	3.37	31.93	23.83	1.75	20.18

* While many bicycle and pedestrian improvements are included in street improvement projects, those included here are exclusively bike or ped projects not included in another street project.

Tables 7-2 and 7-3 itemize the projects by type for which the City has responsibility for funding. Of the $67.63 million in capital projects attributable to the City, $32.38 million (48%) are required by a capacity or safety need. The timing of project implementation is discretionary for these projects, and is likely based on when the City is able to acquire funding. In order to put the implementation schedule in context, an effort was made to assign the likely time horizon during which each City-funded improvement would be needed.

In recognition that those improvements assigned to the "New Development" and "SDC" category above will be funded by those funding sources, and those funds will be collected and the projects constructed concomitantly, then this effort is focused on those project costs ascribed to the "City of Newberg". The $8.50 million of projects identified as "City" are those that currently have no specific source for funding. Conservatively, this amounts to a funding need of about $400,000-500,000 per year. Tables 7-2 and 7-3 show the likely time that each of the capacity and non-capacity projects will be needed, respectively. It will be the City's responsibility to match the funding sources to best match the needs, thereby meeting system demands in a timely way.

TABLE 7-2
NEWBERG TRANSPORTATION SYSTEM COST BREAKDOWN: CAPACITY PROJECTS
($ MILLIONS)

Project	Improvement	Cost	Jurisdiction						Anticipated Timing
			City of Newberg				Yamhill County	ODOT	
			Abutting Properties	New Development	SDC	City			
1	Main Street (Mountainview to Ore 240)	1.2	0.2	-	1.0	-	-	-	M
	Main Street (Ore 240 to 1st)	1.0	0.1	-	-	-	-	0.9	M
	Main Street (1st to 5th)	0.02	-	-	-	.02	-	-	M
	Main Street/Ore 240	0.5	-	-	0.25	-	-	0.25	S
2	Springbrook Street (Bell to Mountainview)	3.0	-	2.0	0.8	-	0.2	-	M
	Springbrook Street Ore 99W to 8th)	2.7	-	0.7	2.0	-	-	-	M
	Springbrook Street/ Mountainview Drive	0.2	-	-	0.2	-	-	-	M
3	Chehalem Drive (North Valley to Ore 240)	4.0	-	2.5	1.4	-	0.1	-	M
4	Villa Road (Aspen to Mountainview)	2.1	-	1.4	0.7	-	-	-	L
	Villa Road (Mountainview to Fulton)	2.2	0.2	0.1	1.9	-	-	-	L
5	Ore 219 (1st to URA)	5.9	-	-	-	-	-	5.9	M
	Ore 219/2nd Street	0.01	-	-	-	-	-	0.01	S
6	Wilsonville Road (Ore 219 to URA)	2.0	-	-	-	-	-	2.0	S
7	2nd Street (Ore 219 to Springbrook)	0.8	0.1	-	0.7	-	-	-	M
	2nd Street-Fernwood/ Springbrook	0.2	-	-	0.2	-	-	-	M

Project	Improvement	Cost	Jurisdiction						Anticipated Timing
			City of Newberg				Yamhill County	ODOT	
			Abutting Properties	New Development	SDC	City			
8	Fernwood Road (Springbrook to Greens Dr)	2.4	-	1.6	0.8	-	-	-	S
9	Ore 240 (URA to Main)	1.4	0.2	-	-	-	-	1.2	M
10	Illinois Street (Main to College)	0.7	-	-	0.7	-	-	-	L
11	Vermillion Street (College to Meridian)	0.3	-	-	0.3	-	-	-	L
12	Hayes Street (Deborah to Springbrook)	0.4	-	-	0.4	-	-	-	S
13	Fulton Street (Meridian to Villa)	0.01	-	-	0.01	-	-	-	L
14	Columbia Drive (Chehalem to College)	1.4	0.1	0.7	0.5	-	0.1	-	L
15	Mountainview Drive (Chehalem to Crater)	0.4	-	0.3	0.1	-	-	-	S
	Mountainview Drive (Crater to Main)	0.3	0.2	-	0.1	-	-	-	S
	Mountainview Drive (Villa to Aspen)	1.8	0.2	0.6	0.9	-	0.1	-	S
	Mountainview Drive (Aspen to Springbrook)	3.4	-	-	2.0	0.9	-	0.5	S
	Mountainview Drive (Springbrook to Robin Court)	1.9	-	1.1	0.8	-	-	-	M
	Mountainview Drive (Robin Court to Ore 99W)	0.9	-	0.6	0.3	-	-	-	M

Project	Improvement	Cost	Jurisdiction						Anticipated Timing
			City of Newberg				Yamhill County	ODOT	
			Abutting Properties	New Development	SDC	City			
15	Zimri Drive (Old Mountainview to Mountainview)	0.4	-	-	0.4	-	-	-	S
	Wareham Lane (Crestview to Mountainview)	0.2	-	-	0.2	-	-	-	S
	Mountainview Drive/ Villa Road	0.2	-	-	0.2	-	-	-	L
16	College Street (Bell to 1st)	7.7	1.1	-	-	-	-	6.6	S
17	Villa Road/Havorth Street	0.1	-	-	0.1	-	-	-	S
18	Springbrook Street/ Havorth Street	0.3	-	-	0.3	-	-	-	L
19	Foothills Drive/ College Road	0.2	-	-	0.2	-	-	-	M
20	Vittoria/Ore 99W	0.02	-	-	-	-	-	0.02	L
TOTAL		**50.26**	**2.4**	**11.6**	**17.46**	**0.92**	**0.5**	**17.38**	

S = Short Term (0 – 6 years), M = Medium Term (7 – 13 years), L = Long Term (14 – 20 years)

TABLE 7-3
NEWBERG TRANSPORTATION SYSTEM COST BREAKDOWN: NON-CAPACITY PROJECTS
($ MILLIONS)

Project	Improvement	Cost	Jurisdiction						Anticipated Timing
			City of Newberg				Yamhill County	ODOT	
			Abutting Properties	New Development	SDC	City			
1	River Street (1st to Rogers Landing)	2.3	0.3	-	-	2.0	-	-	L
2	Elliott Road (Newberg High to Ore 99W)	0.9	0.1	-	-	0.8	-	-	S
3	Villa Road (Bell to Aspen)	0.9	-	0.5	0.3	-	0.1	-	L
	Villa Road (Fulton to Ore 99W)	0.8	-	-	-	0.8	-	-	M
4	Wynooski Street (River to Bypass)	1.6	0.2	0.1	-	1.3	-	-	L
	Wynooski Street (Bypass to UGB)	1.4	-	0.2	-	-	-	1.2	L
5	Camelia Drive (Aspen to Zimri)	2.0	-	2.0	-	-	-	-	L
6	Kincaid Road (Aspen to Springbrook)	2.6	-	2.6	-	-	-	-	L
7	New Street (Bell to Kincaid)	1.2	-	1.2	-	-	-	-	L
8	Benjamin Loop (Mountainview to Benjamin)	1.1	-	0.1	-	-	-	1.0	L
9	Hayes Street (Elliott to Deborah)	0.02	0.01	-	-	0.01	-	-	M
10	Hayes Street (East of Brutscher to New E-W Bypass Connector)	0.2	-	0.14	0.06	-	-	-	M
11	Providence Drive (Ore 99W to Hayes)	1.7	-	1.1	0.6	-	-	-	M
12	Greens Drive (Fernwood to Corral Creek)	2.7	-	2.7	-	-	-	-	S

Project	Improvement	Cost	Jurisdiction						Anticipated Timing
			City of Newberg				Yamhill County	ODOT	
			Abutting Properties	New Development	SDC	City			
13	2nd Street (Main to River)	0.02	-	-	-	0.02	-	-	L
14	3rd Street (Ore 99W to Main)	0.02	0.01	-	-	0.01	-	-	L
15	Dayton Avenue (5th to UGB)	0.01	-	-	-	0.01	-	-	L
16	Blaine Street (Hancock to 9th)	1.5	-	-	-	1.5	-	-	M
16	Blaine Street (9th to River)	0.1	0.09	-	-	0.01	-	-	M
17	Brutscher Street (Ore 99W to Hayes)	0.01	-	-	-	0.01	-	-	S
18	Haworth Avenue (Villa to Springbrook)	0.02	0.01	-	-	0.01	-	-	M
19	Crestview Drive (College to Villa)	1.2	-	0.1	-	1.1	-	-	M
20	Old Mountainview (Aspen to Springbrook)	0.5	-	0.3	0.15	-	0.05	-	L
21	Aspen Way (Villa to Mountainview)	3.7	-	2.3	1.2	-	0.2	-	L
22	Bell Road (College to Springbrook)	3.2	-	1.2	1.6	-	0.4	-	L
23	North Valley Road (Chehalem to College)	1.7	-	0.7	0.8	-	0.2	-	L
24	Hancock Street (Harrison to Main)	0.1	-	-	-	-	-	0.1	M
24	Hancock Street (East of Elliott to West of Springbrook)	0.4	0.05	0.2	0.15	-	-	-	M

Project	Improvement	Cost	Jurisdiction						Anticipated Timing
			City of Newberg				Yamhill County	ODOT	
			Abutting Properties	New Development	SDC	City			
	Hancock Street (West of Springbrook to Springbrook)	0.1	-	0.1	-	-	-	-	M
25	Ore 99W (Vittoria to Harmony)	0.2	0.2	-	-	-	-	-	M
26	Ore 99W (3rd to Harrison)	0.1	-	-	-	-	-	0.1	M
27	Rogers Landing Rd (River to Willamette River)	0.4	-	-	-	-	-	0.4	L
28	Putman Road (Springbrook to Putman Road)	1.2	-	1.2	-	-	-	-	L
29	Meridian Street (Fulton to Vermillion)	0.2	-	-	0.2	-	-	-	L
30	Foothills Drive (Aldersgate to Villla)	0.4	-	0.39	0.01	-	-	-	L
31	Zimri Drive (Mountainview to UGB)	1.6	-	1.0	0.5	-	0.1	-	L
	Zimri Drive (UGB to Bell)	3.2	-	2.2	0.8	-	0.2	-	L
TOTAL		**39.30**	**0.97**	**20.33**	**6.37**	**7.58**	**1.25**	**2.8 - 4.8**	

S = Short Term (0 – 6 years), M = Medium Term (7 – 13 years), L = Long Term (14 – 20 years)

Bicycle Facilities

Figure 6-7 shows the on-street and off-street bicycle facilities that are planned for the City. Bicycle paths are planned for all major collectors, minor and major arterials, and in conjunction with the NDTIP Bypass. Many of the City's future bike facilities are planned to be constructed as part of street improvement projects, either as new facilities or widening of existing facilities. Those projects are identified on Figure 6-3. Those bicycle facilities that are not incorporated into street improvement projects were identified separately. These projects would need to be funded separately, and would need to be prioritized for future funding.

The City will develop a capital improvement program for providing bicycle paths planned in the transportation plan. Priority shall go to:

- Areas near schools, parks, commercial areas, or other bicycle traffic generators (i.e. schools, parks, and libraries).
- Areas frequently used by bicyclists.
- Areas where small gaps need to be filled to provide continuous bicycle paths.
- Areas where modest improvements are needed to provide planned bicycle paths, such as roads where additional pavement width is not needed to stripe bike lanes.
- Roads with high traffic volumes and/or narrow shoulders.

Table 7-4 below and Figure 6-8 show the projects that are independent of associated street improvement projects. These projects have an estimated cost of $2,495,000.

TABLE 7-4
BICYCLE FACILITY IMPROVEMENTS

Project No.	Street	Segment	Length	Width	Percent Improvemt[1]	Unit Cost	Cost
1	Main Street	Between Foothills Drive & Mountainview Dr	2652	6	100%	$13.00	$207,000.00
2	Meridian St.	Between Crestview Dr & 1st Street	2795	12	25%	$13.00	$109,000.00
3	Aspen Way	Between Mountainview Dr. & Springbrook	2488	12	25%	$13.00	$97,000.00
4	Vittoria Way	Between Springbrook & ORE 99W	2758	12	25%	$13.00	$108,000.00
5	Ore 99W	Between Brutscher & Springbrook	1358	12	25%	$13.00	$53,000.00
6	Benjamin Rd	Between RR & UGB	720	12	25%	$13.00	$28,000.00
7	11th Street	East of River Street	1985	12	25%	$13.00	$77,000.00
8	9th Street	Between Blaine Street & River Street	1947	12	25%	$13.00	$76,000.00
9	College Street	Between 1st & River Street (L shaped section)	1685	12	25%	$13.00	$66,000.00
10	Fulton Street	Between College Street & Meridian St	660	12	25%	$13.00	$26,000.00
11	Mountainview Dr	East of College Street	2482	6	100%	$13.00	$194,000.00

Project No.	Street	Segment	Length	Width	Percent Improvemt[1]	Unit Cost	Cost
12	Hancock St	West of Springbrook	613	12	25%	$13.00	$24,000.00
13	Rogers Landing Bike Bridge	Across Willamette River	600	12	100%	$125.00	$900,000
14	Hess Creek Trail	N. of Wynooski to Ore 99W	6000	12	100%	$6.00	$430,000
15	Jacquith Park	Main St. to College	1400	12	100%	$6.00	$100,000
Total							**$2,495,000.00**

1. Based on the City's inventory of bicycle facilities, many streets are partially improved with bicycle lanes. This column shows the estimated percentage of bike facilities needed for completion.

Pedestrian Facilities

Table 7-5 below identifies gaps in pedestrian systems, which include gaps in access for disabled persons. These projects, which include missing links on all collector roads and above that either have missing links currently or have no street improvement projects that would include sidewalks. The City should develop a priority for funding the sidewalk improvement projects identified in Table 7-5 below. Priority shall go to:

- Areas near schools or other pedestrian traffic generators.
- Areas frequently used by pedestrians or disabled persons.
- Areas where modest improvements are needed to create continuous pedestrian systems.
- Roads with high traffic volumes and/or narrow shoulders.

TABLE 7-5
PEDESTRIAN FACILITY IMPROVEMENTS

Project No.	Facility	From	To	Length (ft)	Cost
1	Main Street	Foothills Drive	Mountainview Dr	850	$30,000.00
2	College St	9th Street	14th Street	3550	$127,000.00
3	14th Street	College Street	River Street	2150	$78,000.00
4	Meridian Street	Crestview Drive	Fulton Street	2750	$99,000.00
5	Meridian Street	Hancock Street	2nd Street	950	$34,000.00
6	Elliot Road	Hawthorne Drive	Haworth Avenue	350	$12,000.00
7	Elliot Road	Ore 99W	2nd Street	800	$28,000.00
8	Springbrook Street	Crestview Drive	Ore 99W	2300	$83,000.00
9	Wareham Lane	Haworth Avenue	Ore 99W	1750	$63,000.00
10	Wareham Lane	Ore 99W	Hayes Street	800	$29,000.00
11	Hayes Street	Springbrook Street	Providence Drive	3400	$123,000.00
12	Brutscher Street	Hayes Street	Fernwood Road	3400	$122,000.00
13	Ore 99W	UGB	3rd Street	3600	$129,000.00
14	Ore 99W	Brutscher Street	Vittoria Way	1800	$64,000.00
15	Ore 99W	East of UGB		1550	$55,000.00
16	1st Street	UGB	Ore 99W	1550	$55,000.00
17	Fernwood Rd	Springbrook Street	Brutscher Street	550	$19,000.00
18	9th Street	Blaine Street	River Street	1350	$49,000.00
19	11th Street	River Street	Wynooski Street	1200	$44,000.00
20	Deborah Street	Douglas Avenue	Haworth Avenue	3900	$47,000
21	EmeryStreet	Crestview Drive	Douglas Avenue	2150	$26,000
22	Douglas Avenue	Emery Street	Springbrook Wy	2400	$29,000
23	Crestview Drive	Emery Street	Springbrook St	3100	$37,000
24	Springbrook Way	Douglas Street	100' s. Douglas	100	$1,000
Total					**$1,383,000.00**

All pedestrian facilities should be designed and constructed to conform to standards identified in the American Disabilities Act (ADA).

7.1.3 Transportation Financing & Funding Overview

Transportation projects are often paid for using a combination of funding and financing. Funding describes methods that generate revenue for transportation projects. Financing refers to how projects are paid for over time.

Funding for transportation improvement projects is typically derived from federal, state, and local governments. A description of the funding sources from each of those three categories follows. In some cases, funds may come from one level of government (such as ODOT) to be spent by another level of government (i.e., City of Newberg).

For each of the funding alternatives listed below, there is a brief description, a listing of the existing application (i.e., who is presently using this method), and a short discussion of the potential for implementing the alternative in Newberg. No effort has been made to screen alternatives according to their political or legal feasibility. The intent is to provide an overview of a number of alternative revenue sources. The decision on how the funds are spent is ultimately a policy issue to be decided by the Newberg City Council.

7.1.3.1 State Gasoline Tax

The City could obtain state gasoline tax revenues to fund the identified improvements. These gasoline taxes would essentially spread the cost of the improvements to gasoline purchasers throughout the state. The advantage to Newberg of doing so is that the residents of the City would not have to pay the full costs of the improvements. Therefore, the net costs to the community would be minimized.

A related advantage of this alternative is that it would probably be relatively widely accepted within the City because of the limited financial impacts on local residents. Public acceptance is a desirable feature of infrastructure financing, and it is usually closely correlated with the cost burden borne by the community.

On the other hand, there are clearly not sufficient funds available to fund all the improvements that are required. State gasoline tax revenues, to some degree, are somewhat uncertain because they are allocated by formula to local jurisdictions. Furthermore, local jurisdictions cannot directly apply to the State using gas tax revenues for certain projects. The City would compete with other communities having transportation projects needing funding. Therefore, this source would likely have to be supplemented with other revenue sources to fund a program of significant size. The probable inadequacy of this funding source is a disadvantage unless it is combined with other alternatives.

Currently, state gasoline tax revenues are used for street maintenance in Newberg. The City receives an estimated $1million in state gasoline taxes annually.

7.1.3.2 Local Gasoline Tax

The City could use revenues from a local gasoline tax to fund the improvements. There is currently no local gasoline tax in Newberg. It is estimated that there are approximately 700,000 gallons of gasoline pumped each month in Newberg. Thus, a one-cent per gallon gas tax would generate approximately $7,000 per month in revenue, or $84,000 per year, assuming there is no decline in total

volume distributed due to the tax. The imposition of such a tax would probably require voter approval. If voter approval is unlikely, this option should probably not be relied upon. The uncertainty of voter approval is a disadvantage of this funding mechanism in the financial planning for the improvements.

Further, there is the possibility that even if voters generally support a local gasoline tax, the support might not extend to a tax large enough to finance the complete program. Therefore, it is likely that the local gasoline tax would have to be supplemented with other funding sources.

A disadvantage of a local gasoline tax is that users of the streets and roads in Newberg include vehicles from outside the City. A local gasoline tax would result in minimal contribution by these non-local vehicles to the funding of improvements that benefit them. To some extent, local residents would subsidize other non-local users. On the other hand, some non-local passers-by that purchase gasoline in Newberg would contribute to the funding of improvements that may have minimal benefit to them.

However, if there would be support for such a tax, then the City could effectively use this approach alone or in combination with another funding source, depending on the size of the tax and the improvements that may be required.

A benefit of a local gasoline tax is that the funding source would be relatively stable and reliable once it was approved and implemented. This stability would only be threatened if severe gasoline shortages occurred or if the voters decided to revoke the tax. The converse of this advantage is that the tax would be inflexible to changing financial needs in the future, assuming a fixed tax per gallon.

7.1.3.3 User Fees

Communities are increasingly turning to transportation user fees to fund street operations and improvements. Properties would be assessed fees based on the traffic generation by type of land use or business activity. These user fees are primarily used for operations, but sometimes the fees are set to recover certain capital costs.

An advantage of user fees is that they provide a steady revenue base for the transportation program of a community. A fixed charge per quarter or per year for each type of property generates stable, adequate revenues if the fees are based on the long term costs of improvements.

Another advantage is that the fees can be developed to closely follow the costs of service for each major type of property. This feature means that the charges are equitable in the traditional ratemaking sense that subsidies among user groups are minimized, if the user fees are properly calculated. The only significant inequity of user fees results from non-local users, who do not pay for their share of the improvements because they are not located in the City. This aspect of user fees sometimes limits public acceptance in the local community, especially if it is perceived that a significant level of use is by non-local vehicles. In recognition that the majority of through traffic in Newberg uses the state highway system, this potential inequity should not be an issue to the residents of Newberg.

The City of Newberg has considered a Street Maintenance Fee (SMF) to fund maintenance of the transportation system. The concept of the SMF is that it would fund the maintenance of the system, and state gasoline taxes (which are currently used to fund maintenance of the system) would be used for capital projects. A SMF recognizes that streets are utilities used by citizens and businesses just

like a public water or sewer system. Fees are typically assessed by usage (e.g., average number of vehicle trips per development type). Such a fee is used in several Oregon cities through a $2.00 to $12.00 monthly fee charged on local dwelling units and businesses. In Newberg, a $10.00 monthly fee charged to the estimated 7,000 households and a similar fee assessed to Newberg businesses would generate approximately $1,000,000 per year in revenue. As the number of households and businesses grow by an estimated 60% in 2025, revenues would grow to $1,600,000 annually.

In 2002, the Newberg City Council considered the concept of a Street Maintenance Fee. The City Council did not take action at that time; however, the City still considers a SMF as a viable option for funding street maintenance. Inception of a SMF would free up the estimated $1,000,000 of funds collected annually from the state gasoline tax so that they could be used for capital projects.

The City of Newberg has also considered a Sidewalk Fee (SF), to be included monthly with resident's water bills. This fee would generate funds to be used to build highest priority sidewalks in the City. The City Council's acceptance of the concept of a Sidewalk Fee was mildly favorable, and it is felt that significantly more analysis is necessary to provide the level of support necessary for such a fee.

7.1.3.4 Property Taxes

Certainly property taxes could be used to fund a transportation capital program. The taxes could be set to a specific level, and adequate funds would be generated. The revenues are known, stable, and reliable. If property taxes are approved, they are a highly reliable source of revenue for capital programs, such as a transportation capital program. Voter approval would be necessary for implementation of property taxes, thereby reducing the effectiveness of this approach. The uncertainty of voter approval severely affects the assurance of adequate program funding until such approval occurs.

Property taxes tend to be controversial and often unpopular. This means that the public acceptance criterion is anticipated to be a disadvantage of this option.

Finally, property taxes, like user fees and local gasoline taxes are often viewed as inequitable to the extent that non-local users do not contribute to the cost of the program. In addition, inequities are expected because the value of each property is unrelated to the use of the transportation facilities in the City. Therefore, equity concerns represent a disadvantage of this approach.

7.1.3.5 Local Sales Taxes

The City could obtain voter approval to impose a local sales tax to fund new transportation improvements. If so, the funding would be obtained from both local residents and individuals from other areas who make purchases in Newberg. This approach would spread the funding beyond just the residents of the City, and thereby help obtain a financial contribution from non-local users of the improvements. This aspect is an advantage of this option.

If local sales were reasonably stable, the revenues to finance the improvements would also be stable. Stable, adequate revenues are an advantage of this approach.

Local sales taxes would require voter approval to implement. Approval of a local sales tax is highly uncertain, and public acceptance is probably lower than for other methods. Therefore, the availability of this method for Newberg is questionable.

Relatively equity of this funding mechanism is also a problem because local purchases of goods and services are unrelated to the use and benefit of transportation improvements. Therefore, there is both a perceived inequity that adversely affects public acceptance and a real inequity in terms of costs borne by residents and benefits they may receive.

7.1.3.6 Debt Funding

The City could issue bonds to finance improvements. This approach would spread the cost of the improvements over the life of the bonds and lower the annual expenses in the construction years. If revenue bonds were issued, voter approval would probably not be needed. On the other hand, general obligation bonds would require voter approval, and if the debt service were paid by property taxes, this method would have the same disadvantages as the property tax option described above.

Debt financing is merely an interim funding solution. The debt needs to be repaid, and one of the other funding approaches must be relied upon to do so. Also, the additional expense associated with interest on the bonds adds to the overall costs. Therefore, this approach may be a useful option in combination with other methods, but it is not a complete solution to the funding issue by itself.

Because debt funding spreads the costs over time, the financial impacts on the community in any given year are lessened. This aspect tends to enhance public acceptance and affordability in the community. Many communities use debt financing as part of their funding programs for local infrastructure improvements.

7.1.4.7 Economic Development Funding

To the extent that local transportation improvements are an integral element in an economic development plan or activity, the City might be able to obtain economic development grants or loans. Revenues from state lottery funds or economic development grants might be available. If so, the costs to local residents would be minimized. The availability of such funding and eligibility requirements is potential obstacles to the use of this approach. Therefore, the financial adequacy of this approach depends on the availability of development funds, which tend to be in high demand and in limited supply.

Public acceptance of this alternative is relatively good because individuals outside the community pay a significant portion of the costs and the local financial burden is minimized.

A cost-of-service inequity occurs because nonusers pay for many of the costs, but usually this is just a conceptual issue that is of little concern to the local community.

A more significant problem is that even if development funds are initially available, they may not be available in subsequent years. Therefore, any program that would require obtaining these development funds more frequently than a one-time basis would face the potential of lack of funding the remaining improvements even if initial funding was provided. This instability could be a major problem if a community was left with a major financial commitment in the later years of a transportation capital program.

7.1.3.8 System Development Charges

The City of Newberg enacted a System Development Charge (SDC) for transportation in 1995. This funding source helps to pay for new transportation capacity improvements, which are required to accommodate new development. The amount of SDC collected is entirely dependent on the level of new development. Typically, the City receives an estimated $0.5 million per year in SDCs for transportation. The amount collected by the City from SDCs will need to increase substantially from the current rate to fund those system improvements identified in the plan (estimated at $23.83 million). Given the 20-year horizon of this plan, it can be estimated that approximately $10 million would be collected by the SDC. Hence, the City should re-evaluate its SDC to determine whether its rates should be increased.

7.1.3.9 Local Improvement Districts (LIDs)

Through a local improvement district (LID), a street or other transportation improvement is built and adjacent properties that benefit are assessed a fee to pay for the improvement. LID programs have wide application for funding new or reconstructed streets, sidewalks, water/sewer or other public works projects. The LID method is used primarily for local or collector roads, though arterials have been built using LID funds in certain jurisdictions. It is more difficult to fund a transportation improvement that has a more far-reaching beneficiary pool (i.e. an arterial road vs. a local street), simply because the magnitude and complexity of creating and administering the LID is so much greater.

LIDs continue to offer a good mechanism for funding projects such as new sidewalks and street surface upgrades. An example of a good application for an LID may be for sidewalk projects on collector streets. In the developed areas of Newberg where there are no sidewalks in front of existing developed properties, the City may be able to fund the cost of sidewalks on one side of collector streets to provide a connected pedestrian system for current and future residents. The City of Newberg is creating an LID to fund the widening and improvement of Mountainview Drive (from Main to Crater Lane). Accordingly, all adjacent property owners signed non-remonstrance agreements to contribute their fair share toward the improvement at the point in which they develop their properties. In this way, the City will eventually collect the funds needed to construct this planned improvement.

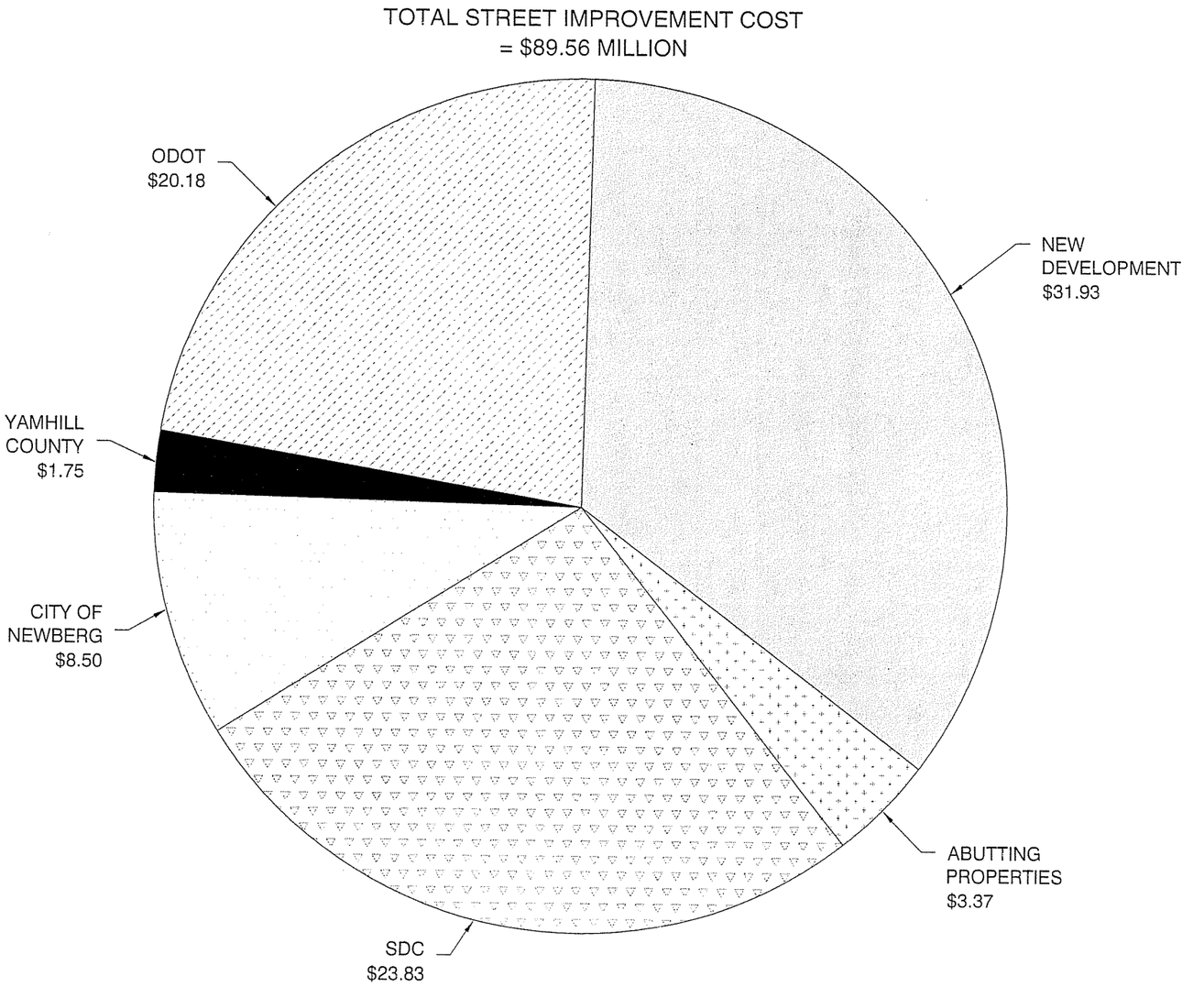
7.2 FINANCIAL PLAN RECOMMENDATIONS

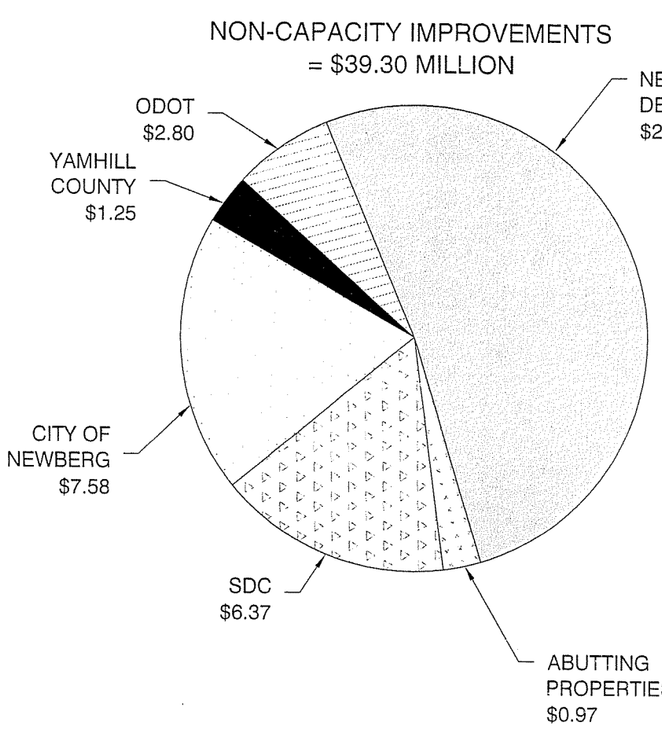
7.2.1 Cost Assessment Summary

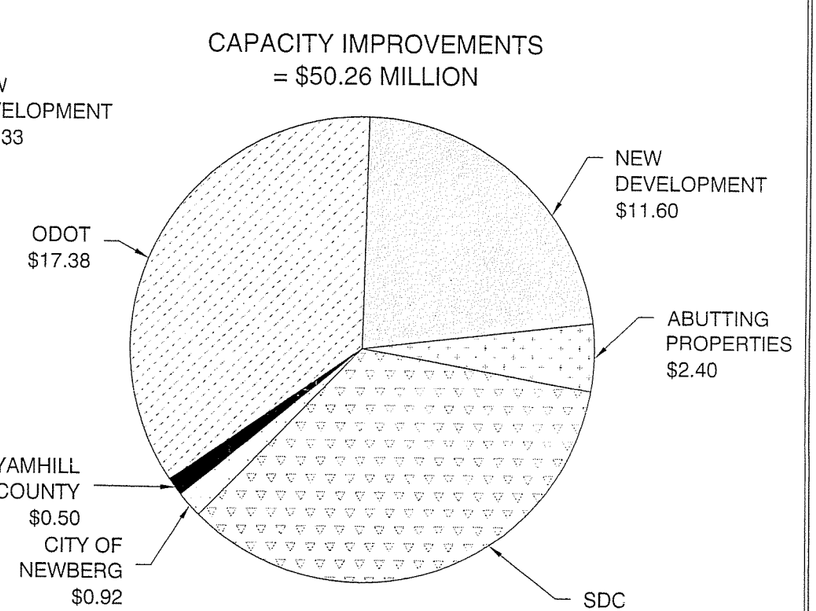
The costs associated with future transportation improvements in Newberg have been estimated and assessed. This assessment attributes the improvement costs as shown in Figure 7-1. As shown in Figure 7-1, the total transportation costs amount to $89.56 million, excluding the cost of the Newberg-Dundee Bypass project and County-related projects. (The estimated cost of the Newberg portion of the NDTIP Bypass is $310 million. A financial strategy will be developed and approved to fund the construction of the bypass and interchanges which established the financial obligations. In addition, an estimated $20.18 million of additional improvements are planned for the state system. The funding source for these projects has not been determined. An estimated $1.75 million are projects in Yamhill County, and would be funded by the County. The remaining $67.63 million of project costs are for improvements within the City of Newberg. Of these, new development would be responsible to fund $31.93 million for improvements within or adjacent to their developments, $3.37 million would be constructed by abutting properties, and $23.83 million would be funded through

Systems Development Charges collected. The remaining $8.5 million are transportation costs directly attributable to the City, and costs for which funding would need to be identified.

(NO SCALE)







NEWBERG STREET CROSS SECTIONS
NEWBERG, OR.

FIGURE 7-1

The costs estimated for the State of Oregon include costs to all state highways (Ore 99W, Ore 219 and Ore 240) within Newberg, excluding the NDTIP Bypass project. The costs assessed to Yamhill County include the roadways outside the City's jurisdiction (not state highways) that are not developer funded projects. Costs assessed to new development or SDC relate to a portion of the costs of construction or reconstruction of various collector and local streets.

This assessment of costs is assumed for the financial plan to be an accurate determination of the cost responsibility of the respective entities and groups.

7.2.2 Financing Approach

7.2.2.1 Direct Assessment

The costs assessed to adjacent land use will be financed directly by those assessments. No significant additional financing measures are required, assuming assessment payments are received on a timely basis and with a minimum of delinquent payments. If the assessed properties are offered a multi-year payment option in order to ease the financial burden of the assessments, the City might need to undertake short term borrowing in order to meet cash flow requirements of the projects. If payment terms were not offered, this borrowing would not be necessary.

Under direct assessment, the partial cost of reconstructing existing substandard collector streets (to include bicycle lanes and sidewalks) adjacent to residential lands will be assessed as follows:

- cost of new pavement equal to the difference in pavement width of a standard local street (32 feet wide) and the existing pavement width;
- cost of new sidewalks; and,
- cost of new curbs.

The partial cost of reconstructing existing substandard collector streets adjacent to commercial and industrial lands will be assessed as follows:

- cost of new pavement equal to the difference in pavement width of a standard collector street (34 feet wide) and the existing pavement width;
- cost of new sidewalks; and,
- cost of new curbs.

It is assumed in this financial plan the costs assessed to Yamhill County and the State of Oregon will be paid directly by those entities and that the payments will be made in a timely manner so as to avoid any cash flow problems. It is also assumed that certain improvements that directly benefit new development will be paid directly by those benefiting properties. Therefore, the City will not be responsible for financing these improvements.

7.2.2.2 System Development Charges

A total of about $23.83 million of transportation improvements are identified as being attributable to general new development and growth (as distinct from improvements that benefit only specific properties to be developed). Under Oregon law, these costs may be charged to new development through system development charges (SDCs). The SDC legislation allows the recovery of a

reimbursement fee, an improvement fee, or both. The reimbursement fee recovers the costs of transportation improvements that have already been made in support of growth. The improvement fee recovers future improvements that will benefit new development. Only costs incurred to meet growth needs are recoverable through SDCs.

It is the current practice in Newberg that all costs related to new development be financed from SDCs. This philosophy is legally defensible, and should be continued. This method has the advantages of equity (because growth pays for growth-related costs) and minimizing the financial impacts on current Newberg residents.

There are two disadvantages of using SDCs. First, if anticipated development does not occur or occurs more slowly than planned, the revenues from SDCs will be less than anticipated.

Second, SDCs have an inherent cash flow problem. For new development to occur (and the SDC revenues to be generated), the new infrastructure needs to be in place. New transportation, water, sewer, and other infrastructure improvements usually need to be made before the new development will occur. Further, new development occurs slowly over time, whereas the new improvements are generally made over shorter time periods. Therefore, the costs of transportation and other improvements related to growth will be incurred before most of the SDC revenues are received.

This situation means that SDC financing will need to be accompanied by another interim financing source to cover cash flow requirements. Usually this interim financing method is either the use of existing fund balances that a city may have available or the issuance of bonds that are fully or partially paid back by the SDC revenues over time. It is recommended that the City of Newberg use borrowed funds in conjunction with SDC revenues to overcome this cash flow problem. The SDC revenues could be dedicated to repayment of the debt incurred in support of these development-related transportation improvements.

7.2.2.3 City of Newberg Improvements

Nearly $8.50 million of the transportation improvements are assessed to the City of Newberg. It is recommended that the City seek economic development funding for as many of the projects as possible. It is also recommended that the City seek additional state gasoline tax revenues to finance the identified improvements. If state gasoline taxes are increased, additional funds may be available to the City. However, the City needs a funding plan to implement in the likely event that economic development funding and additional state gasoline taxes are not received or are insufficient to meet the financial requirements of the plan. In this situation, it is recommended that the City consider a Street Maintenance Fee, which will allow state gas tax monies to be spent on capital projects.

Another option is that the City consider issuing bonds to finance the City's portion of the plan's costs (in addition to the SDC portion of the plan costs, as discussed above). Although debt-financing results in interest costs being added to the overall plan requirements, it has the advantage of spreading the costs over time and thereby limiting the financial burden on current residents. Without the benefit of spreading costs over time, it is probable that the financial requirements on a current-revenue basis would be unaffordable to the community.

Any debt issue is inherently an interim funding source. The debt service requirements need to be repaid from another financing mechanism. The primary options include user fees, property taxes, state or local gasoline taxes, and local sales taxes. Funding from a State gasoline tax is judged to be

highly unlikely. None of the other options is expected to receive a high degree of acceptance in the City.

7.2.2.4 Measure 5 Considerations

Any new financing program needs to be prepared with consideration of the Measure 5 property tax limitation in mind. If charges that fall under the Measure 5 definition of a tax are used to finance the transportation plan, there is the potential that the tax limits would result in insufficient funding of the plan. This would particularly apply to the use of property taxes, user fees, and other fixed charges that are not "incurred charges" as defined in Measure 5. System development charges and gasoline taxes are not property taxes in this context. Voter approval of general obligation bonds would exempt the associated property taxes from Measure 5 limitations. Therefore, the proposed financing plan would not be affected or limited by Measure 5. In this sense, the proposed plan is implementable.

7.2.2.5 Public Input

Prior to moving forward with this financing strategy, the City should obtain citizen input to verify that voter approval is possible and that other realistic options are not preferred. Such public input is critical in developing a consensus about the best financing methods for Newberg's transportation needs. Nearly all of the financing options would require public approval, and even the remaining approaches would benefit from public input and comment.

Section 8

Transportation System Plan Policies

Transportation System Plan Policies

8.1 INTRODUCTION

Based on the recommendations provided in this transportation system plan, there are several policies and ordinances on the statewide, regional, and local levels that have been addressed and modified to help fulfill these recommendations. The policies referenced in this section have been adopted by the Newberg City Council as part of their consideration of the transportation system plan.

8.2 LOCAL PLANS

8.2.1 Newberg Development Code

This TSP, as the transportation element of the City's comprehensive plan, presents the City's transportation policy. This policy is implemented through revisions to the Newberg Development Code (NDC), which is the legal document that provides the City's development standards and regulations.

Final versions of code language have been adopted as part of the adoption of this TSP. Proposed amendments to the Newberg Development Ordinance, as adopted by the Newberg City Council in Ordinance 2005-2619 are included in Appendix "Q".

8.2.2 Newberg Comprehensive Plan Text Amendments

On May 16, 2005, the Newberg City Council adopted a series of changes to the goals, objectives and policies within the Newberg Comprehensive Plan. *Appendix "Q" includes the amendments to the Newberg Comprehensive Plan.*

8.3 TRANSPORTATION IMPROVEMENTS OUTSIDE OF NEWBERG

The following is a list of transportation improvements recommended in the TSP that fall outside of the City of Newberg's city limits and within Yamhill County's jurisdiction.

- Chehalem Drive
- Villa Road
- Fernwood Road
- Benjamin Loop
- Greens Drive
- Columbia Street
- Wynooski Street
- Camelia Drive
- New E-W Bypass Connection
- Kincaid Road
- New N-S Local Street between Ball and Kincaid
- Ore 240
- Wilsonville Road

Although these improvements all lie partially or fully outside of Newberg's city limits, the City of Newberg strongly recommends that the County provide for these improvements and that the City shall provide support to the County in implementing these recommendations.