CITY OF
MONMOUTH

TRANSPORTATION SYSTEM PLAN

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. TGM grants rely on federal Intermodal Surface Transportation Efficiency Act and Oregon Lottery funds.

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Memorandum

Date: November 13, 1997

To: Project Participants and Interested Parties

From: Jeanne Fromm, Planner

Subject: **Monmouth Transportation System Plan: Final**
(TGM Agreement #14160)

The Mid-Willamette Valley Council of Governments (MWVCOG) received a grant from the Oregon Department of Transportation (ODOT) to assist the city of Monmouth in developing a Transportation System Plan (TSP) for the community.

The enclosed TSP document was adopted by the Monmouth City Council on October 7, 1997. Enlarged or additional plots of the Street Network map, (following page 46), can be obtained from Julie Fetzer, ODOT Reprographic and Design Services Unit, (503) 986-3695.

Thank you for your assistance and/or interest in the Monmouth TSP. Please call me if you have any questions or comments.

Enclosure: Adopted Monmouth TSP

Acknowledgments

The following persons are acknowledged for their contributions to this document and to the transportation system planning process in Monmouth:

Transportation Advisory Committee

Jim Beaird ..... Planning Commission
Don Burcells ..... Traffic Safety Committee
Linda Macmillan ..... Traffic Safety Committee
Dan Fricke ..... Oregon Department of Transportation
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Executive Summary

This document describes and implements a plan to provide an economical, efficient, safe, accessible, and multi-modal transportation system for the community of Monmouth, Oregon. The Transportation System Plan (TSP) satisfies state and federal transportation planning requirements under the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Oregon Transportation Planning Rule (TPR). The TPR, adopted in 1991 and amended in 1995, implements State Planning Goal 12 - Transportation.

The Monmouth TSP was developed by city staff and a Transportation Advisory Committee composed of interested citizens and transportation planning specialists. Public involvement and interagency/interjurisdictional coordination occurred during all phases of TSP development and adoption. The Monmouth TSP was developed in six steps: (1) Review existing plans, policies, standards and laws; (2) Inventory the existing transportation system; (3) Identify the current and future transportation needs; (4) Develop and evaluate transportation alternatives; (5) Produce a transportation system plan; and (6) Review and adopt the plan.

Monmouth Comprehensive Plans and Periodic Reviews; dated 1972, 1979, and 1988; the Independence-Monmouth Comprehensive Master Bicycle Plan; the Western Oregon University (WOU) Campus Plan; and relevant state and county plans were reviewed for content and recurring transportation issues. Most of the city's transportation plans and policies were consistent with new state requirements. Recurring transportation concerns included elimination of the "S" curves on Highway 51 and a reduction of pedestrian and auto conflicts on the WOU campus. The need for close coordination with the adjacent city of Independence was noted in all previous planning documents.

About 88 percent of land inside Monmouth city limits (1,013 acres) is zoned residential and public service lands, and 31 percent of city land was undeveloped (Comprehensive Plan, 1988). WOU, located on lands zoned public use, occupies 12 percent of total city lands and is a major employer in the city and Polk County. Land in the urbanizable area (911 acres between city limits and Urban Growth Boundary (UGB)) are zoned to reflect current land use distributions, e.g. mainly designated for residential/public service use. The location and amount of lands zoned for commercial use does not change as the city develops the urbanizable area. Lands inside city limits currently zoned for industrial use are vacant. Growth in Monmouth is likely to occur evenly around the existing city, with growth in the eastern direction constrained by the city of Independence.

The TSP covers a 20-year planning interval (2020), during which Monmouth is projected to grow from a population of 6,288 to 11,389, given a 2 percent annual growth rate. Recent growth rates have been very high (17 percent between 1990 an 1995 for an annual growth rate of 3.3

percent) but are unsustainable in the long term given the existing capacity and planned improvement rates of sewer and water services. About 36 percent of the current population are students at WOU. About 25 percent of the current workforce are employed in the educational service sector. Workforce travel times and modes are similar to other cities, but a relatively high proportion (18 percent) walk to work.

Natural and cultural restraints affecting the transportation system are soil limitations (wetness and low strength), flood hazards along the forks of Ash Creek, historic properties, and existing capital facilities.

An inventory of the existing transportation system identified the function, type, capacity, and conditions of facilities in Monmouth. Monmouth streets are generally in good to fair shape. Most traffic is concentrated on the arterials, State Highways 99W and 51, and enters the city from the north and east directions. Most through traffic is accommodated by Highway 99W and other traffic flows to downtown Monmouth and the WOU campus. Existing Level of Service on roadways is mostly good to excellent, except for a few isolated turning motions at the busier intersections. The most accident-prone locations on Monmouth arterials are Highway 99W and the intersections with Hoffman, Clay, and Jackson; and the north-south segment of the "S" curve on Highway 51.

Most of the existing bicycle and pedestrian facilities in Monmouth are associated with the WOU campus and Highways 99W and 51. Bicycle facilities are in good to fair condition. Monmouth has a limited number of roadway structures and most are in good condition. Monmouth has no fixed-route, fixed schedule public transportation facilities, but transportation-disadvantaged patrons are served by a countywide public service called "Wheels." Monmouth has no air, rail, freight, water, or pipeline transportation modes inside the UGB. Adjacent Independence does have rail and air modes.

Current and future transportation needs were identified by growth and capacity analyses. Population in 2020 at maximum build out (4.8 percent annual growth rate) is 25,394, and at the planned growth rate (2 percent annual growth rate) is 11,389. At the 2 percent growth rate, arterial traffic is projected to approximately double for Highway 99W and increase by 50 percent for Highway 51 by 2020. Level of Service will decline at all intersections and will be unacceptable at some collector and local street crossing of Highways 99W and 51. The capacity analysis for the street network indicated that accommodating cross-town and through traffic will be one of Monmouth's principal transportation needs and will require close coordination with the Oregon Department of Transportation (ODOT), because they have jurisdiction over the arterials.

Monmouth developed two transportation alternatives, the no-build and the roadway network alternative, for evaluation. Using the new transportation goal as a criteria, the roadway network alternative was selected for the TSP. This alternative includes: (1) a list of system improvements, (2) additional traffic studies, and (3) a future street network plan and design standards. The purpose of the roadway network alternative is to ventilate traffic on existing arterials by developing a system of collectors and local roads that provide intra-city north-south alternatives to Highway 99W and promote focused east-west (crossing Highway 99W) travel.

System improvements include realignment of the "S" curves, extending Madrona Street, and supporting realignment of Talmadge Road, and extension of 16th Street in Independence. A comprehensive traffic study, coordinated with ODOT and focusing on the Highway 99W corridor, is recommended for the next five-year period. The future street network plan was derived from the existing Capital Improvement Plan (CIP) and identifies conceptual locations and classifications of new streets as they are built to access property during development. Hoffman Road is envisioned as a minor arterial (previously designated a collector street) and an important local east-west facility. Street design standards identified access spacing, permitted direct access users, minimum right-of-way width, minimum paved width, travel lane number, parking, sidewalk, and bike lane requirements for each functional classification. Goals and policies for all relevant transportation elements were reviewed, or developed where lacking.

Monmouth will cooperate with regional efforts to develop and operate future public transportation system. The Independence-Monmouth Comprehensive Master Bicycle Plan will guide planning and development of the bicycle and pedestrian system in Monmouth. Pedestrian transportation is addressed in policies in the TSP and implemented by new code amendments. Monmouth will support efforts to protect and maintain the Independence Airport Site.

The Monmouth TSP follows the cost and timing schedule shown in the existing CIP. The CIP was modified to reflect needs identified by the TSP. The TSP included a review of the funding mechanisms available from federal, state, and local sources.

The TSP was implemented by a review and coordination process that involved Monmouth city staff, Polk County, the city of Independence, ODOT, and the Department of Land Development and Conservation (DLCD). The Monmouth Subdivision and Partitioning Ordinance and Zoning Ordinance were reviewed for consistency with the standard set forth in the TSP and revised to implement the TSP. The revisions are included as an appendix to this document. The TSP, and implementing ordinances, were reviewed by the Monmouth Planning Commission and City Council, and adopted on October 7, 1997.

All inventory data, capacity analyses, TAC meeting notes, review comments, and code amendments are included as appendices to this document.

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Transportation System Plan Checklist

Transportation System Plan Element	Completed
PUBLIC AND INTERAGENCY INVOLVEMENT	
Establish advisory committee	x
Develop informational material	x
Schedule meetings for public involvement	x
Coordinate plan with other agencies	
REVIEW EXISTING PLANS, POLICIES, STANDARDS, AND LAWS	
Review and evaluate existing comprehensive plan, OTP, Bicycle Master Plan, and other	x
Land use analysis: existing land use , vacant lands	x
Review existing ordinances, zoning, subdivision, engineering standards	x
Review existing significant transportation studies	x
Review existing capital improvements programs/public facilities plans	x
Review Americans with Disabilities Act requirements	x
Determine Clean Air Act relevance and impact	NA
INVENTORY EXISTING TRANSPORTATION SYSTEM	
Inventory of arterial and collector streets: lane number, width, level of service, traffic signals, pavement conditions, structures, and functional classification required.	x
Inventory of truck & hazardous materials routes, number and locations of accesses, safety and accident areas, and substandard geometry recommended.	x
Inventory of **bicycle ways**: type, location, map, width, and capacity required.	x
Inventory of **pedestrian ways**: type, location, map, width, and capacity required.	x
Public transportation services: volumes, routes, stops, fleet	x
Intermodal and private connections	x
Air transportation	x
Freight rail transportation	NA
Water transportation	NA
Pipeline transportation	NA
Environmental constraints: natural and cultural	x
Existing population and employment	x
DETERMINE TRANSPORTATION NEEDS	
Forecast population and employment	x
Determine transportation capacity needs: trending forecast, cumulative analysis, transportation gravity model	x
Other roadway needs: safety, bridges, reconstruction, maintenance/reconstruction	x
Freight transportation needs	NA
Public transportation needs	x
Bikeway needs	x
Pedestrian needs	x
DEVELOP AND EVALUATE ALTERNATIVES	
Update community goals and objectives	x
Establish evaluation criteria	x
Develop and evaluate alternatives	
•No-build system	x
•Elements common to all build alternatives: safety, completion of certain facilities	x
•Transportation system management	x

•Transportation demand management	NA
•Transit alternative	NA
•Improvements/additions to roadway system	x
•Land use plan alternative	x
•Combination alternatives	x
Select recommended alternative	x
PRODUCE A TRANSPORTATION SYSTEM PLAN	
General goals, objectives, and policies	x
Streets plan element •Functional street classification, street design standards, service capacities	x
•Proposed facility improvements	x
•Access management plan	x
•Truck plan; hazardous material and truck routes	
•Safety improvements	x
Public transportation element	
•Transit route service	
•Transit facilities	
•Special transit services	x
•Inter-city bus and passenger rail	
Bikeway system element	x
Pedestrian system element	x
Airport element	
•Land use compatibility	x
•Future improvements	x
•Accessibility/connections/conflicts with other modes	x
Freight rail element	NA
•Terminals, safety	
Water transportation element	NA
•Terminals	
Pipeline element	NA
Parking Plan	Recommended
Transportation system management	
Transportation Demand Management Element	NA
PLAN REVIEW AND COORDINATION	
Consistency with ODOT and other applicable plans	x
ADOPTION	
Date	planned 10/6/97
IMPLEMENTATION	
Ordinances	
•Facilities, services, and improvements not ordinarily subject to land use regulations	x
•Facilities, services, and improvements permitted outright or subject to clear objective standards	x
•Facilities, services, and improvements having a significant impact on land use or subject to standards that require interpretation or judgment:	x
••Review and approval process consistent with 660-12-050	x
••Consolidated review of land use decisions required to permit a transportation project	x

NA not applicable

Introduction

Transportation System Plans

This document presents the Transportation System Plan (TSP) for Monmouth, Oregon. The purpose of a TSP is to identify a system of transportation facilities and services that will provide for local transportation needs and meet state and federal transportation planning requirements. A successful plan will contribute to an efficient travel infrastructure, clean air, travel mode options, and economical and timely travel for the community of Monmouth. Explanations of terms and acronyms that are commonly used in transportation planning are included in Appendix A.

Transportation System Plans are required by federal and state legislation. The Intermodal Surface Transportation Efficiency Act (ISTEA) was passed by Congress in 1991 and Oregon passed the Transportation Planning Rule (TPR) (OAR 660 Division 12) in 1991 and revised it in 1995. The TPR guides regional and local transportation planning for Land Conservation and Development Commission (LCDC) Goal 12 - Transportation. The state TSP is called the Oregon Transportation Plan, adopted in 1992, and was developed by the Oregon Department of Transportation (ODOT).

The TPR establishes different requirements for TSPs depending on the population, transportation needs, and location of each jurisdiction. Monmouth is required to include the following components in its TSP:

- A road plan for a network of arterial and collector streets
- A public transportation plan
- A bicycle and pedestrian plan
- An air, rail, water, and pipeline plan
- Policies and land use regulation implementing the plan
- Financing program.

A detailed list of TSP elements is found in the TSP checklist, placed after the List of Figures in this document.

The Monmouth TSP must coordinate with the Polk County TSP and the Oregon Transportation Plan and be incorporated into the Monmouth Comprehensive Plan. Monmouth is adjacent to the city of Independence, and therefore the two cities' TSPs are closely coordinated. The deadline for plan completion is May, 1997, and plan adoption is October, 1997.

The key achievements of the Monmouth TSP are:

- Public and interagency involvement
- Plan consistency

- Consistency with State and Regional Plans
- Reduced auto reliance
- Network of streets
- Transportation accessibility
- Safety
- Efficient transportation management
- Safe and convenient walking and bicycling
- Minimizing adverse economic, social, environmental (ESEE) consequences
- Intermodal linkage and passenger services coordination
- Minimizing conflicts between modes
- Fundable plan
- Enabling ordinances
- Facility/Corridor protection ordinances
- Development ordinances to encourage alternate mode usage

A determination was also made regarding the relevance and impact of the Clean Air Act. Ambient air quality is monitored by the Oregon Department of Environmental Quality (DEQ) with a statewide air quality surveillance network. Air Pollution Index (API) values, based on the monitoring information, are calculated for Portland, Eugene, Medford, and Bend. The monitoring stations closest to Monmouth are located in Salem. These stations continuously monitor for carbon monoxide, ozone, and particulate levels. Lead samples have also been obtained in Salem. Ambient air quality is related to the amount and types of discharged pollutants and meteorological events (DEQ, 1994).

Available data from Salem stations indicates that air quality is generally good (DEQ, 1996). DEQ monitoring records indicate that air quality standards in Salem were not exceeded for ozone, fine particulate matter, or lead; and exceeded for carbon monoxide twice, in 1991 and 1993. Presently, the Monmouth area is in conformance with air quality standards; therefore, the requirement to demonstrate compliance with the Clean Air Act has not been triggered.

Monmouth

Monmouth is located in the central part of the Willamette Valley, a broad lowland area lying between the Coast Range and Cascade Mountains. The majority of Oregon population and industry is clustered into this region of the state. Population estimates (1996) indicate that about 7,385 people reside in Monmouth and the community grew by 17 percent between 1990 and 1995. Monmouth is the third largest city in Polk County following Salem, west of the Willamette River (14,325 people), and the county seat, Dallas (11,360 people). The city lies immediately to the west of Independence (4,985 people) and the capital of Oregon, Salem, is located about 14 miles to the northeast of Monmouth.

Figure 1. Location Map of Monmouth and Independence, Oregon.
(from Monmouth Quadrangle, United States Geological Survey, 7.5 minute topographic series, photorevised 1986)

Monmouth is located on relatively flat terrace and floodplain areas between the South and Middle/North Forks of Ash Creek (Figure 1). Elevation ranges from about 321 (Cupid's Knoll) to 170 feet and drainage is to the east. The Willamette River is about 1.5 miles to the east of Monmouth and receives flow from Ash Creek. The area inside the city limits is 1,012 acres, with another 912 acres in the urbanizable area lying between the city limits and the urban growth boundary.

The town—named after Monmouth, Illinois—was established on 640 acres of land donated by several landowners. Proceeds from sale of town lots were to be used to establish a college, originally under the supervision of the Christian Church, called Monmouth University (charter granted in 1856). Today, the institution is public and called Western Oregon University (WOU). WOU employs 670 people, making it the largest employer in the city and in Polk County. In 1997, 4,025 students attended WOU and 1,077 students were living in residence halls on campus, (Jim Adams, oral communication, 1997). Monmouth is a college and bedroom community for people attending, or employed by, WOU or commuting to nearby cities. Surrounding land use is predominantly agricultural (Figure 1).

The Monmouth street system is a grid pattern typical of many cities in the country (City of Monmouth, 1972). Monmouth is bisected into east and west sections by State Highway 99W, a highway designated with a Regional Level of Importance. Highway 99W is the main north/south route through town and is a popular alternative route between the Salem metropolitan area and Corvallis/Albany. In addition, the city is bisected into north and south sections by State Highway 51, a highway designated with a District Level of Importance. Highway 51 is the primary east/west route between the cities of Independence and Monmouth. Both 99W and 51 provide access to State Highway 22 which receives a significant volume of commuter traffic to and from the city of Salem.

Transportation System Plan Development

Public Involvement and Interagency Coordination

The Monmouth TSP was developed cooperatively with an advisory committee made up of city officials, interested citizens, and ODOT representatives. The committee met monthly during some phases of the process and meeting notes are included in Appendix B. Surveys (Appendix B) were also distributed to Monmouth residents to gain additional insight into the community's concerns and goals regarding transportation issues.

Review of Relevant Background Information

Review and Evaluation of Existing Plans, Policies, Standards, & Laws

The TSP process began with an evaluation of existing plans and policies. These documents form the basis for the present land use pattern and transportation system, and provide direction for the planning of transportation improvements and future facilities. A brief summary of transportation-related goals, policies, and plans given in Monmouth Comprehensive Plans (1972, 1979, and 1988) revealed a variety of transportation issues and indicated several recurring issues and concerns regarding transportation needs and planning in the community. Of the three plans reviewed, the 1979 Comprehensive Plan contained the most complete and detailed discussion of the Transportation Element.

1972 Comprehensive Plan

The Comprehensive Plan lists the following goals relevant to the transportation system planning process:

- Provide for maximum efficiency in the movement of people and goods with safety, speed, and convenience; and do so with the maximum economy in the expenditure of city funds;
- Encourage, within new developments, a total environmental design: street trees, underground utilities, curvilinear and cul-de-sac street patterns;
- Encourage a functional and efficient central business area as the primary commercial activity center of the community; and
- Capitalize on the city's position with regard to Highway 99W and regional traffic.

A list of specific policies, intended to accomplish these goals, included:

- Encourage development of off-street parking, landscaping, and pedestrian access to the downtown area;
- Encourage the limited development of highway and tourist-oriented commercial facilities adjacent to Highway 99W;
- Encourage sufficient setbacks to allow construction of a frontage road system along Highway 99W where none presently exists;
- Encourage the development of access to, and better traffic circulation within, the downtown area via completion of the recommended street improvements; and
- Soften the effect of wide expanse of asphalt associated with commercial development by requiring perimeter and internal landscaping in all new developments.

A description of the existing transportation system, and a list of perceived problems and opportunities was developed. Problems identified included pedestrian/auto conflicts on the WOU campus along Monmouth Avenue, congestion and accidents at the right-angle curves on Highway 51, and the need to route through traffic away from the central business district to reduce congestion and improve travel time (Figure 1). Lastly, a prioritized list of specific improvements to the existing system was provided:

- Eliminate the "S" curve on Independence-Monmouth Highway at the eastern city limits;
- Provide four lanes or left turn refuges on Highway 51 from Highway 99W to eastern city limits;
- Construct one of the three alternatives to the existing Monmouth Avenue through the WOU campus;
- Construct the northwest college circumferential route, according to campus plan; and
- Construct extensions of the Falls City Highway (Highway 51) to South Warren Street and Highway 99W.

1979 Comprehensive Plan

The Transportation Element began with the following goal:

- Provide and encourage a safe, convenient, and economical transportation system.

The stated objective was to:

- Provide planning to consider various modes of transportation including mass transit, automobile, bicycle, and pedestrian modes.

A description of streets (arterial and collector), functionality of the circulation system, railroad transportation, air transportation, pedestrian traffic, transportation disadvantaged needs, mass transit, and bike paths was given. Problem identification, recommendations for system changes,

and transportation element policies were included. In 1979, Monmouth was concerned about the following transportation issues:

- Truck traffic carrying log and plywood loads through town on Highway 51;
- Congestion along Highway 51;
- System inaccessibility;
- Reduced traffic circulation due to cul-de-sacs;
- Loss of rail service resulting in increased truck traffic through town;
- High pedestrian-to-auto traffic ratios on the WOU campus and at Monmouth Elementary;
- Providing for the transportation disadvantaged;
- Possible need for a mass transit district;
- Development of additional bike paths to link existing facilities; and
- Providing a viable alternative to the automobile mode.

A list of specific policies addressing each element was included. Street and road policies were:

- New routes shall avoid existing houses and structures unless no other feasible alternative exists;
- New routes are to follow, where possible, existing property lines;
- New streets and roads will consider foundation soil and address required construction criteria for poor soil areas;
- Cul-de-sacs shall be discouraged;
- No building shall be located or constructed without prior city council approval in such a manner as to prevent the natural extension of streets;
- A future plan shall divert through traffic on the arterials from the central downtown area, particularly heavy equipment, freight hauling, log trucks, and farm machinery; and
- The city shall, in cooperation with the State Highway Division, attempt to provide off-street parking for oversized vehicles.

Pedestrian traffic policies were:

- Low curb sidewalks shall be used at all intersections to facilitate use by the transportation disadvantaged, the elderly, and the handicapped;
- As feasible, the city shall allow no physical obstruction of sidewalks such as utility poles, sign posts, or guy wires;
- Visibility and unobstructed views shall be promoted for all areas of high pedestrian use; and
- Bicycle traffic on sidewalks shall be prohibited.

Other transportation element policies stated that the city would:

- Support the efforts of the city of Independence, Polk County, and the State Aeronautics Division to protect and maintain the Independence airport;
- Consider bike paths as part of new subdivisions;
- Develop a long-range plan for bike path improvement; and
- Enter into a mass transit district with governmental and private agencies, ensure that a given level of service is adequate for the costs incurred, and work with other governmental units to develop a mass transit system.

Specific planning recommendations to address community concerns about transportation included:

- Improve traffic (eliminate "S" curve) along the Monmouth-Independence corridor (Highway 51) by building a "Y" merge of an extended "B" Street and Highway 51 in Independence into Main Street in Monmouth; and
- Plan for the development of a major arterial built along the southern margin of the UGB to ultimately connect with the Independence bridge over the Willamette (River Road South).

1988 Comprehensive Plan

The 1988 revision of the Comprehensive Plan updated the inventory of transportation elements described in 1979, identified desired system improvements, and included a street capital improvement program. No new policies or objectives were given and the discussion of issues and improvements was very limited.

The inventory of the existing transportation system was brief and mainly discussed changes in the system since 1979. Streets were categorized by functional class as arterial, minor arterial/collector, and local; and overall conditions were assessed as fair to poor. Federal Aid Urban System (FAUS) streets were shown on the streets map. The Independence State Airport was open and Monmouth still had no operating railroads within city limits. The number of railroads serving Independence had declined to one, the Southern Pacific. No discussion of pedestrian traffic, transportation disadvantaged, mass transit, and bike path elements or issues was included. A street system plan, complete with a map, was recommended and included:

1. Replacing the proposed south arterial with a system of collector streets;
2. Eliminating the plan to remove "S" curve on the Monmouth-Independence Highway;
3. Developing a Main-Clay couplet (Main one-way westbound, Clay one-way east-bound); and
4. Excluding the Gentle Avenue connection to Pacific Highway (Highway 99W).

Some of the plan changes were related to the lower-than-expected growth rates. It was also noted that accesses to Pacific Avenue (Highway 99W), such as Gentle Avenue, are controlled by ODOT and likely to be more limited in number than indicated in the 1979 plan (two instead of four). The south arterial plan was evaluated as unneeded if the Main-Clay couplet is built and

industrial development occurred in the northwest portion of the urbanizable area. The Plan also recognized that elimination of the "S" curve was a low priority with ODOT and would require local effort and close coordination with Independence to be implemented.

In 1988, the city recognized that improved bicycle routes and facilities were needed. Existing routes were acknowledged to be poorly marked, unlinked, and generally in need of improvement. Some discussion of the Independence State Airport, related to control surfaces extending upward and outward from the runway, was included. Existing zoning ordinances were judged to be adequate in restricting building height in the control areas overlying Monmouth.

WOU submitted a Campus Development Plan to the Monmouth Planning Commission. This plan included transportation components and was approved in May, 1987, with certain conditions. Conditions relevant to this study included:

- Improvements to west and east roadways required when, and if, Monmouth Avenue or Church Street are closed;
- Standards for emergency access routes and roadways;
- Procedures required prior to vacation of Monmouth Avenue or Church Street; and
- WOU required to undertake a parking needs study when the number of full-time staff and students reached 3,750.

The most recent planning and policy document relevant to the TSP process is the Independence-Monmouth Comprehensive Master Bicycle Plan (Falcon Architecture & Planning, 1991). The purpose of the plan was to address the specific needs of bicyclists, promote bicycling, and outline the tasks and responsibilities of involved agencies and jurisdictions. The plan provided introductory and background material, goals and objectives, a proposed facilities plan, and an implementation strategy. The goals of the Independence-Monmouth Master Bicycle Plan were:

- Provide and maintain a safe, convenient, and pleasing citywide bicycle system that is integrated with other transportation systems;
- Encourage and support bicycle safety, education, and enforcement programs; and
- Develop a comprehensive system of through routes, a perimeter beltline loop, secondary connecting routes, and recreational routes.

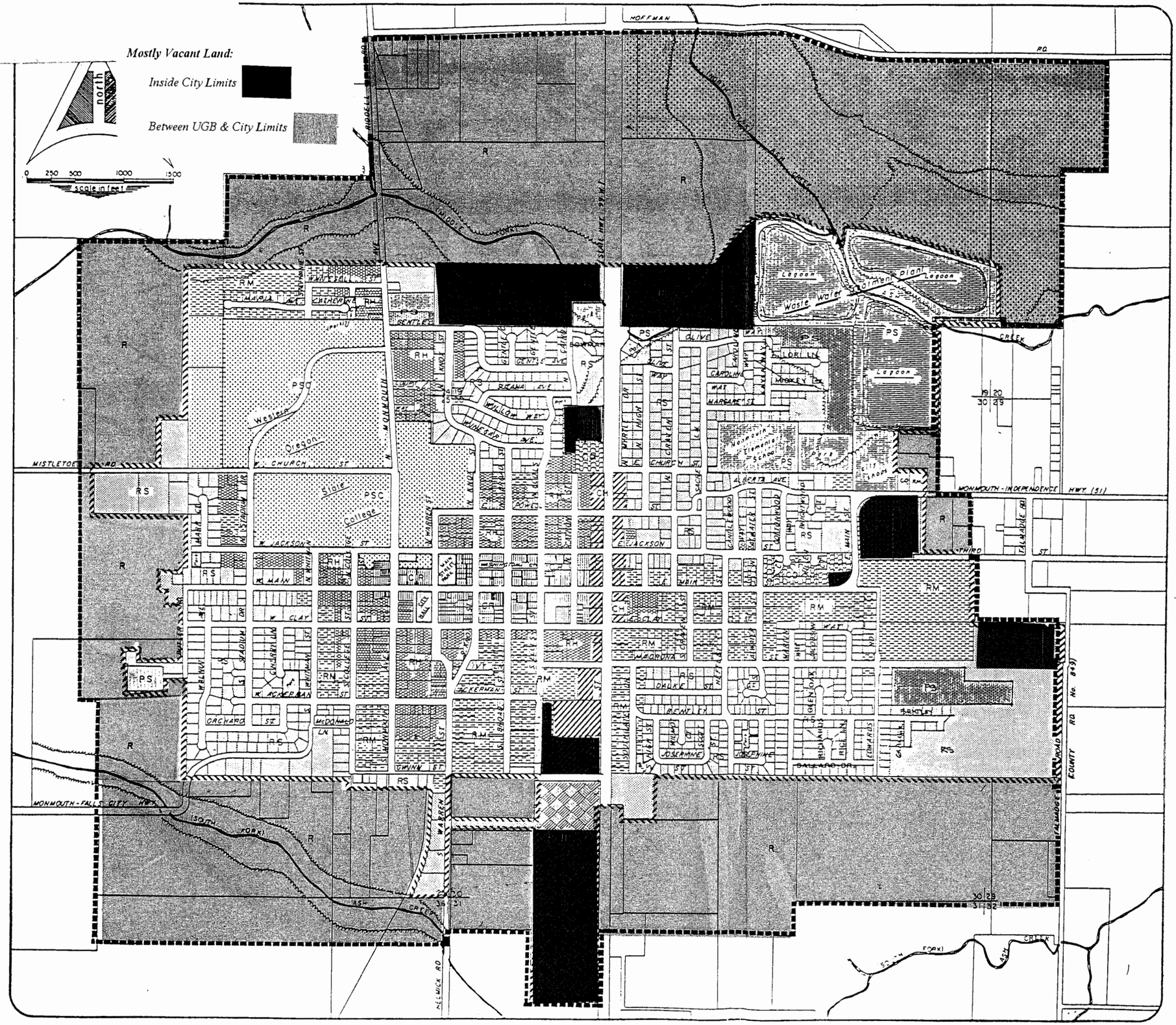
The goals list was followed by thirteen objectives. Plan appendices contained bikeway design and construction specifications, an implementation plan, and a map of existing and proposed routes.

The examination of previous Comprehensive Plans shows the following recurring transportation concerns:

- Eliminate the "S" curves on Highway 51, and
- Reduce pedestrian and auto conflicts on the Western Oregon University campus.

The city's transportation plans and policies appear to be generally consistent with Statewide Planning Goal 12, though certain revisions are necessary to update these plans and bring them into conformance with new state and federal standards for transportation planning.

Review also included all related regional and state plans including the following: Oregon Transportation Plan, Oregon Highway Plan, Oregon Bicycle and Pedestrian Plan, and Polk County Comprehensive Plan. A review of the Americans with Disabilities Act (ADA) requirements was undertaken to ensure plan consistency with the Act. The Monmouth TSP has been coordinated with the TSP that Polk County is developing.



LEGEND

- MONMOUTH CITY LIMITS (FEB. 1, 1986)
- U.G.B. (URBAN GROWTH BOUNDARY)
- SECTION CORNER

LAND USE DESIGNATIONS

OUTSIDE CITY LIMITS INSIDE URBAN GROWTH BOUNDARY

- R — FUTURE RESIDENTIAL
- I — FUTURE INDUSTRIAL

ZONING

- RS — LOW DENSITY RESIDENTIAL (0 to 6 D.U. per Acre)
- RM — MEDIUM DENSITY RESIDENTIAL (UP to 12 D.U. per Acre)
- RH — HIGH DENSITY RESIDENTIAL (UP to 20 D.U. per Acre)
- CR — COMMERCIAL RETAIL
- CO — COMMERCIAL OFFICE
- CH — COMMERCIAL HIGHWAY
- PS — PUBLIC SERVICE
- IP — INDUSTRIAL PARK
- PSC — PUBLIC SERVICE - COLLEGE
- CRT — COMMERCIAL RETAIL TRANSITIONAL

NOTE:

1.) FOR FLOOD PLAIN INFORMATION SEE "ASH CREEK, FLOOD PLAIN MANAGEMENT STUDY," U.S. SOIL CONSERVATION SERVICE, DECEMBER 1985.

DESCRIPTION:	BY:	DATE:	APPROVED BY:
REVISED	MW	11.25.92 / 8.20.94	
ADDED CRT ZONE	RWF	9-22-87	ORD 922
LAND USE & ZONING DATA	G.S.	2-3-86	RWF - 2-4-86
BASE MAP	G.S.	1-22-86	R.W.F.

Figure 2. Land Use and Zoning Map

CITY OF MONMOUTH
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Drawings Prepared By:
William I. Peterson Engineering, Inc.
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Sheet No. 1-2

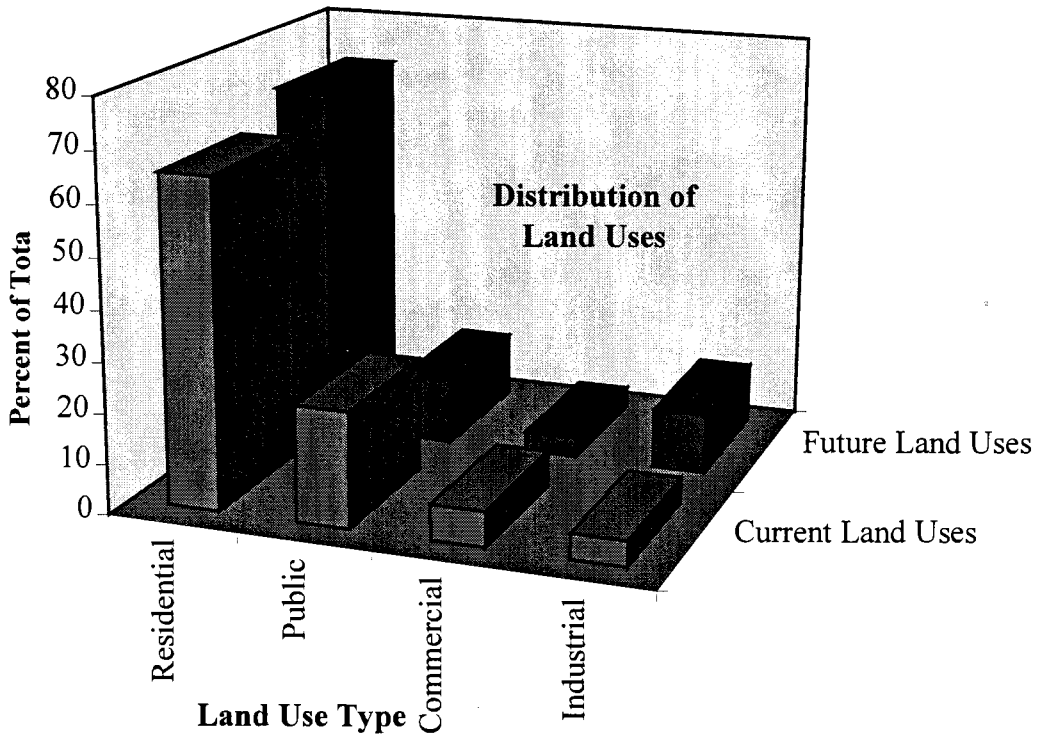
Analysis of Existing Land Uses and Vacant Lands

Two sources were used to characterize existing land uses and vacant lands in Monmouth: (1) the 1988 Comprehensive Plan, and (2) Potential Development Impact Analysis (PDIA): City of Monmouth (Oregon Department of Transportation, 1994).

Current land use patterns inside city limits are shown in Figure 2. Monmouth land area is mainly allocated to residential use (65%), followed by public (23%), commercial (7%), and industrial (5%) uses (City of Monmouth, 1988). Residential zoning has three categories based on density of dwelling units (DU): low density (0-6 DU per acre), medium density (up to 12 DU per acre), and high density (up to 20 DU per acre). Public use zoning includes two subcategories: public service and public service college. Three large wastewater treatment lagoons, parks, and schools are located on lands zoned public service. The lagoons are located in the northeast corner of the city near the confluence of North and Middle Forks of Ash Creek (Figs. 1 and 2). The Western Oregon University (WOU) campus is located in the northwest corner of the city and occupies 12% of city land area. Commercial use is subdivided into three categories: retail, office, and highway. Commercial land uses are located mainly in the center of the city along Highway 99W and Jackson, Main, and Clay Streets. Highway 51 is called Main Street inside Monmouth city limits. Land zoned for industrial park use is located on the west side of Highway 99W in the southern part of the city. In 1988, 31% (319 acres) of the area inside the city limits was open, vacant, or in agricultural use (City of Monmouth, 1988).

An analysis of existing and potential development for residential, commercial, and industrial land use was performed to characterize existing land use and provide development scenarios for the Monmouth urban area (ODOT, 1994). This study concluded that in 1990, 2,250 residential units were located on 444 acres zoned for residential use, and 107 units were located in areas with nonresidential zoning. Land inside the city limits allocated for residential use is 64 percent low density, 21 percent medium density, and 15 percent high density, based on acres of each zoning type. About 53 acres of lands zoned for commercial use was utilized (73 percent), leaving about 20 acres available for development. About 96 percent of the land zoned for industrial use was vacant.

Figure 3. Current and Future Land Uses in Monmouth
Columns in the foreground show how land use types are presently distributed for the area inside city limits. The background columns show how land use types will be distributed as the urbanizable area is developed under existing zoning.



The Monmouth Comprehensive Plan indicates the following distribution of future land uses for the area inside the UGB: residential (71%), public (13%), industrial (12%), and commercial (4%). Figure 3 illustrates the changes in the land use pattern distribution given existing zoning, as the city expands into the urbanizable area. Over time, the percentage of land used for residential and industrial uses increases, while the percentage of land allocated to public and commercial uses declines. The percentage of land allocated to industrial use increases from 5% to 12%. The area zoned for commercial use and public service college stays constant, so the percentage of total land area zoned for these uses declines slightly as Monmouth expands into its urbanizable area.

Planned land use patterns will promote more growth in the north and south areas over growth in the east and west areas. In fact, growth to the east is limited by Independence. Most of the urbanizable area is designated for future residential use and is located in a band surrounding the existing city limits (Figure 2). The biggest planned change is the relative increase in, and new

location for, industrial land uses. The northeast corner of the urban growth area, just north of waste water treatment lagoons, is zoned for a new industrial park. The location of lands zoned for commercial and public service college does not change.

City staff, in 1997, indicated that Monmouth is not actively pursuing new industry for the land zoned industrial. In fact, it is likely that some of these lands will be rezoned for residential use as the principal "bedroom community" nature of the town continues.

Population and Employment Forecasts

Census information (1990), previous Comprehensive Plans, and a Potential Development Impact Analysis: City of Monmouth (ODOT, 1994) were reviewed to identify current conditions, past trends, and forecast future conditions. This information was used in conjunction with the previous discussion of current and future land uses in Monmouth to forecast traffic volume. A more detailed discussion of population and employment forecasts is deferred to the section which inventories existing conditions.

Existing Zoning, and Subdivision and Partitioning Ordinances

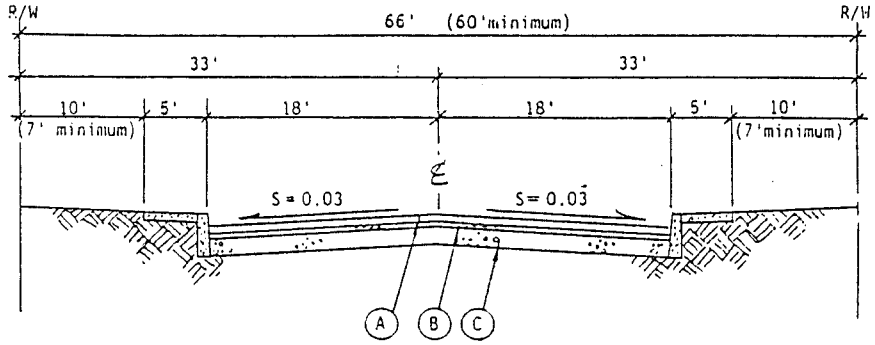
Minimum acceptable standards for design and construction of streets performing various functions were first discussed in the 1972 Comprehensive Plan. Currently, streets are classified as arterial, collector, industrial other than arterial, local commercial/residential and cul-de-sacs, and circular ends of cul-de-sacs. Classification is based on street purpose, location, and traffic volume; and design and construction standards are given for each type (Figure 4).

In 1984, the city required full improvement, to current city standards, of public facilities such as streets, sewers, water lines, and electrical lines by those who develop or redevelop land in ways that increase demand on the public facilities.

A review of the Subdivision and Partitioning Ordinance, adopted May 2, 1989, and the city of Monmouth Zoning Ordinance, Chapter 91 Monmouth City Code showed that Monmouth needs to revise ordinances to meet the following requirements:

- Provide bicycle parking in multi-family residential, commercial, industrial, and institutional, and transit facility development;
- Provide safe, convenient pedestrian and bicycle access in all types of new development;
- Provide internal pedestrian circulation in commercial developments;
- Protect transportation facilities for their intended functions; and
- Insure a well connected network of arterial, collector, and local streets that provide for all modes of transportation.

Figure 4. Existing Street Section Standards



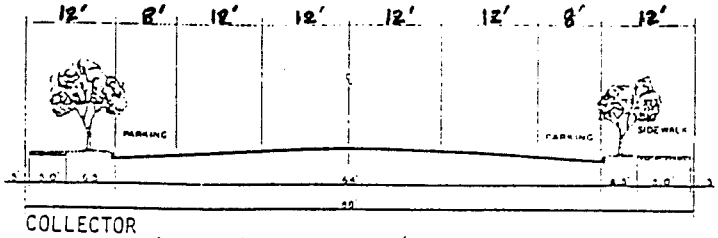
		*Collector Streets	*Arterial Streets
Pavement (Asphaltic Concrete)	(A)	2½" Class C mix	4" Class C mix
Leveling Course (Rock)	(B)	2" 3/4-0	3"-4" 3/4-0
Base Course (Rock)	(C)	9" 2"-0 Quarry rock	12" 2"-0 Quarry rock

*Additional wearing courses of 1½" Class C mix added in future as required.

TYPICAL MONMOUTH STREET SECTION

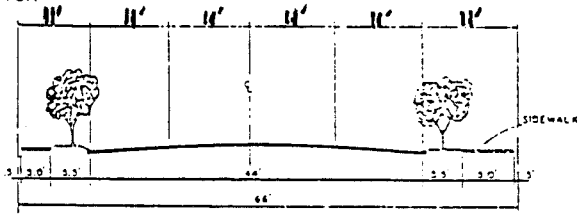
CITY OF MONMOUTH
DEPARTMENT OF PUBLIC WORKS

ARTERIAL



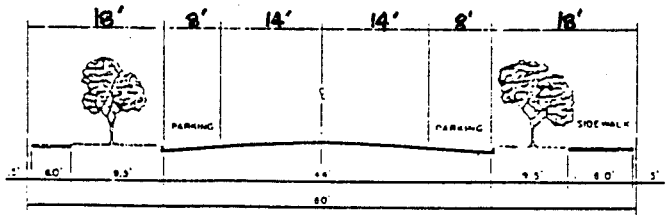
Section A

COLLECTOR



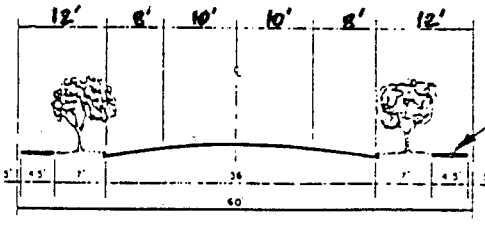
Section B

INDUSTRIAL



Section C

RESIDENTIAL - COMMERCIAL



Section D

Boulevard sidewalks as shown to be discouraged.

A detailed presentation of existing ordinances and standards can be found in a staff report identifying inconsistencies between the TSP and current city policies (Appendix E). The staff report also includes recommendations (changes in existing language and new language) for resolving the inconsistencies.

Existing Transportation Studies

In 1975, a study of the Monmouth-Independence corridor found that most inbound traffic was destined for Monmouth. About 82% of the arterial traffic bound for Monmouth came from the north and east. The central business district was identified as the most hazardous area in town for automobile traffic during peak hour traffic (City of Monmouth, 1979).

WOU obtained a study to evaluate the level of traffic and pedestrian use along Monmouth Avenue and propose solutions to minimize or eliminate pedestrian/automobile conflicts (Carl H. Buttke, Inc., 1987). This report noted that 5,000 to 7,000 daily pedestrian crossings of Monmouth Avenue occurred at twelve marked locations. This was the heaviest crossing use in the city. Enrollment at this time was about 3,000 students. Traffic volume measurements were taken at several streets on, or adjacent to, the WOU campus (Table D-2, Appendix D). Campus-related and through traffic on Monmouth Avenue was determined and 1997 volumes were projected. In 1987, the average weekday volume on Monmouth Avenue was 5,100 and through traffic was 42% of the total usage. Average weekday volume was projected to be 7,200 in 1997. Pedestrian crossings were estimated to increase to 8,000 to 11,000 per day by 1997.

Several alternative solutions intended to reduce traffic volume and vehicle/pedestrian conflicts on Monmouth Avenue were evaluated. The recommended alternative would close Monmouth Avenue on the WOU campus and divert through traffic east of the campus via an internal campus road to Knox. A western diversion would utilize this same internal campus road system and route traffic to Stadium Avenue. The preferred alternative was to be implemented in phases, beginning with construction of the needed diversionary streets, followed by closure of portions of Monmouth Avenue and Church Street.

The WOU campus area transportation study included observations of traffic flow at the intersection of Main Street and Pacific Avenue (average of 9,500 vehicles per day) and indicated a high level of service (LOS) and a capability to handle nearly twice the observed volume at a satisfactory LOS.

A traffic impact study was performed when a Bi-Mart store was built on the west side of Pacific Avenue, about three blocks south of Main Street The study included measurements of traffic volume and turning motions and capacity analysis at the intersection of Pacific Avenue and Main Street for current and future conditions (additional traffic generated by the store). Evening peak hour was found to occur between 4:15 and 5:15 p.m. and existing level of service was B/C. Level of service was forecast to be C, after the addition of traffic to and from the new business.

Another source of general information about travel patterns in Monmouth is the 1990 U.S. Census. This information was used to characterize work force travel modes and times and then compare this data to neighboring cities and rural Polk County (Table F-2, Appendix F).

In Monmouth, most people (65%) drove alone to work, followed by walking (18%), and carpooling (10%) (Table 1). Compared to Independence, Dallas, and rural Polk County, a much higher percentage of the Monmouth work force walked to their place of employment. About 1 to 2 percent of the work force bicycled to work (Table F-2, Appendix F).

TABLE 1. COMPARISON OF MOST COMMON TRAVEL MODES

Community	Primary Travel Mode (Percent of total work force in parentheses)	Secondary Travel Mode (Percent of total work force in parentheses)	Tertiary Travel Mode (Percent of total work force in parentheses)
Monmouth	Drove Alone (65)	Walked (18)	Carpooled (10)
Independence	Drove Alone (78)	Carpooled (18)	many at similar percentages
Dallas	Drove Alone (73)	Carpooled (15)	Walked (8)
Rural Polk County	Drove Alone (73)	Carpooled (14)	Walked (6)

In Monmouth, 55 percent of the work force is at their place of employment after 15 minutes of travel. Table 2 shows that the majority of the Monmouth work force takes relatively less time to get to work when compared to neighboring cities and rural areas (more data in Table F-3, Appendix F).

TABLE 2. COMPARISON OF MOST COMMON WORK FORCE TRAVEL TIMES

Community	Percentage at Work Within 5 Minutes	Percentage at Work Within 15 Minutes	Percentage at Work Within 30 Minutes	Percentage at Work Within 60 Minutes
Monmouth	13	55	78	93
Independence	5	34	74	96
Dallas	9	44	64	91
Rural Polk County	7	40	71	90

The relatively high proportion of the work force walking to work and shorter travel times noted in Monmouth probably reflect the influence of students and staff employed by WOU. More work force employment characteristics, including the WOU component, are contained in the existing conditions inventory section.

Existing Capital Improvements Programs and/or Public Facilities Plans

The city of Monmouth's Capital Improvement Plan was reviewed for information about transportation system improvement and public facilities projects. Proposed improvements are grouped based on the scheduled time-of-implementation: 1 to 5 years, 5 to 10 years, and more than 10 years. Monmouth has $8,605,000 of proposed improvements to the street, bicycle, and other transportation system elements in the transportation system. An addition of 40,920 linear feet of streets (34% increase) is proposed. These improvements are summarized below and detailed information is included in Appendix F.

1995 to 1999

- Improvements to Catron Street, Gwinn Street, Madrona Avenue, Ecols Street, Edwards Road, and Alberta Avenue.
- Traffic signal will be placed at the intersection of Madrona and Pacific Highway.
- Realignment and left turning lanes for Edwards Road and Alberta Avenue.
- Bikeway improvements, as identified in the Monmouth-Independence Bicycle Master Plan, include projects on Riddell Road, Monmouth Avenue, Hoffman Road, Gentle Avenue, and Stadium Drive. Improvements to Fir Oaks and Ecols Park and the Ash Creek Trail bike path.
- Extend Ash Creek Trail extends from Pacific Avenue to the eastern UGB (includes a bridge crossing).

2000 to 2004

- Improvements to Main Street, Whitman Street, Monmouth Avenue, South Ash Creek Road, Ecols Street, and Southgate Drive.
- Placement of traffic signal at Pacific Avenue and Gwinn Street
- Bikeway improvements for Olive Way and Church Street.
- Improvements to Monmouth Recreational Park and Main Street Park.
- Expand Ash Creek Trail from Pacific to Monmouth Avenue.

2005 and later

- Improve Knox Street, Catron Street, Middle Ash Creek Road, North Ash Creek Road, and Craven Street.
- Add planned bikeway elements and an alternative modes facility.
- Add a pool and a sports field complex.

Inventory of Existing Transportation System

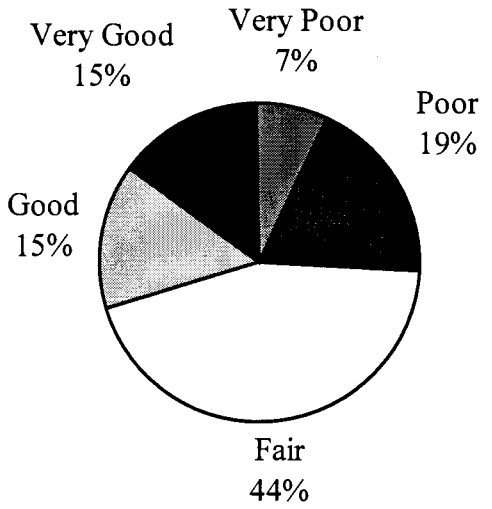
The inventory includes information about the existing physical facilities, services, and conditions; and evaluates how the existing system currently functions. This information serves as the basis of forecasting growth and future system functional behavior. The process identifies system changes needed to meet current and future community transportation needs.

Jurisdictions may determine the appropriate level of inventory detail for some elements (see TSP checklist). Monmouth balanced the expense and time required to collect data and the need to acquire sufficient data to understand the existing system and plan for future needs when choosing the level of inventory detail. In general, system elements must be inventoried and assessed by function, type, capacity, and condition (OAR 660-12-020). Tables and maps are used to present inventory information in a clear and concise manner.

Streets

The Monmouth Street Index, Maintenance Summary, and Condition Evaluation (August, 1994) is the basis for the TSP streets element inventory. Data shows that about 117,970 linear feet (22.34 miles) of roadway, worth an estimated $16 million (1992), are located in the city. An analysis of the condition of all Monmouth streets was performed in 1991 and indicated that about 75% of the roadway was in fair to very good condition (Figure 5). In 1992, street improvement needs totaling $2,033,625, or 13% of street value, were identified. Monmouth completed some street repairs, so the current condition of the street network is better than what was shown in the 1991 inventory (Gary Wilson, oral communication, 1997).

Figure 5. Monmouth Street Conditions



Highways overlie local streets when they run through a city, which can create a confusing array of names. In addition to this, the state has two highway numbering systems. On the maps and discussion of street elements the following names are often used interchangeably:

- Highway 99W: Pacific Highway West, Pacific Avenue, and Highway 1W.
- Highway 51: Falls City Highway (No. 194) and Monmouth-Independence Highway (No. 43). Highway 51 overlies Main and Whitman Streets.

The streets element inventory is restricted to roads classified as collectors and arterials (defined in Appendix A). Collectors and arterials comprise about 39% (44,485 linear feet) of the existing street network (Figure 6). Table 3 summarizes available information showing street name, functional class, level of service, length, jurisdiction, pavement width, surfacing material, condition, and lane number. More detailed inventory information about the streets element, given segment by segment, is found in Appendix D.

TABLE 3. INVENTORY OF EXISTING ARTERIAL/COLLECTOR STREETS

Street	Functional Class	Level of Service (Road Intersections*)	Length (ft)	Jurisdiction	Pavement Width (ft)	Surface	Condition	# of Lanes
Catron	Collector	(5)	2,000	City	36	AC (asphaltic concrete)	Fair to very good	2
Church	Collector	(3)	3,680	City	22	AC	Good to very good	2
Clay	Arterial	C (7)	2,900	City	36	AC	Very Good	2
Craven	Collector	(6)	3,525	City	Mostly 36	AC	Fair	2
Ecols	Collector	(2)	1,570	City	36	AC	Built in 1992	2
Edwards	Collector	(2)	2,000	City	36	AC	Built in 1990	2
Falls City Hwy.	Arterial	(0)	1,480	ODOT	31	AC	Fair	2
Gentle	Collector	(3)	2,050	City	34 to 53	AC	Good	2
Gwinn	Collector		650	City		AC		
Jackson	Collector	(4)	3,525	City	36 to 49	AC	Poor to Very Good	2
Madrona	Collector	(7)	3,350	City	36	AC	Poor to Very Good	2
Main	Arterial	A (13)	6,275	ODOT	35 to 44	AC	Poor to Very Good	2
Mon-Ind Hwy..	Arterial	(3)	1,750	ODOT	36	AC	Poor	2
Monmouth Avenue	Collector	A (7)	5,400	City	24 to 51	AC	Fair to Good	2
Pacific Ave. (Hwy. 99W)	Arterial	A (6)	5,700	ODOT	?	AC	unrated	2 or 3
Stadium	Collector	(2)	2,875	WOU	36	AC	Fair	2
Whitman	Arterial	(3)	1,625	ODOT	25-29	AC	Good to Very Good	2

*Intersection number did not include the crossroads at the ends of the segments evaluated

Most of the streets in Monmouth have two lanes except at the following locations:

- The intersection at Highway 99W and Hoffman has through, and right and left turning lanes for traffic on Highway 99W.
- The intersection at Highway 99W and Main has a center lane for left-turning vehicles for traffic on Main and Highway 99W .
- Highway 99W has a center turning lane between Main and Gwinn.
- Main has a center turning lane at the west end of the "S" curves near Edwards Road and Price Lane.
- The west approach of Clay to Highway 99W provides an extra lane for left-turning and through traffic, and right-turning traffic.

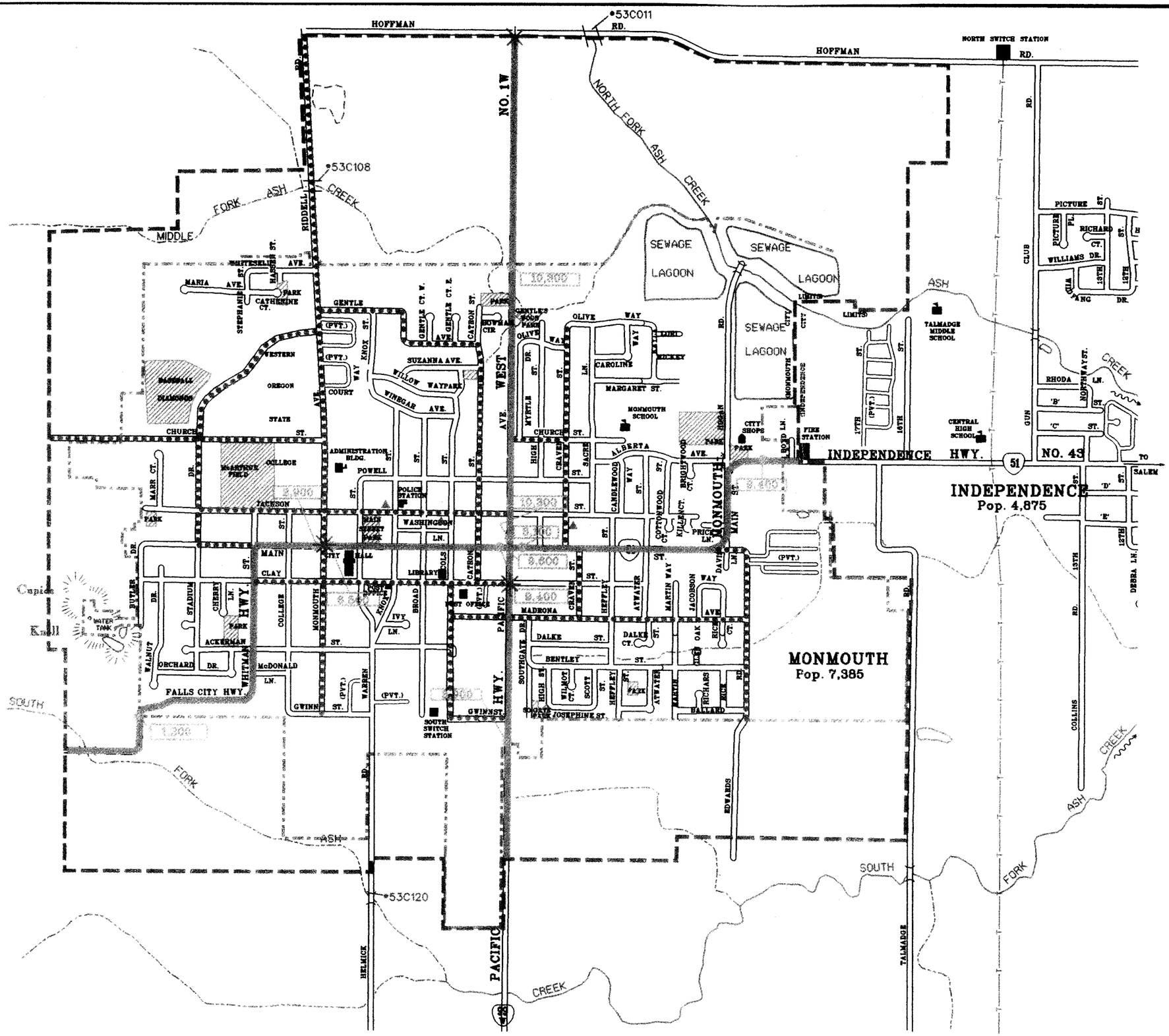
Table 4 characterizes existing traffic volumes entering into Monmouth from the north and east: Highway 99W, at the north Monmouth city limits, and Highway 51, at the east Monmouth city limits from 1990 to 1995. Volume is shown as Average Daily Traffic and the percentage change from the previous year is in parentheses. The traffic monitoring locations are shown on Figure 6 and additional current and historical traffic volume information is contained in Appendix D.

TABLE 4. TRAFFIC VOLUME AS AVERAGE DAILY TRAFFIC (ADT)

Location	1990	1992	1993	1994	1995
Highway 99W, north city limits	8,200	9,400	9,600 (+2%)	10,000 (+4%)	10,300 (+3%)
Highway 51 east city limits	10,700	12,000	9,000 (-25%)	9,300 (+3%)	9,400 (+1%)

The following description of traffic flow in Monmouth is based on 1995 ADT data (Appendix D, Figure 6). Traffic volumes at the north and east city limits are 10,300 ADT and 9,400 ADT, respectively, and are higher than volumes at the south and east city limits. Traffic on Highway 99W at the southern city limits is 86 percent of the volume at the north city limits. Traffic on Highway 51 at the western city limits is 13 percent of the volume at the eastern city limits. Highway 99W loses volume (700 ADT) south of the intersection of Main and Pacific, while Highway 51 gains volume (1,300 ADT) west of the intersection. However, this gain in volume is substantially decreased after the intersection of Monmouth and Main (2,900 ADT). This information suggests that much of the traffic flows to the downtown Monmouth and WOU campus areas, and that through traffic is accommodated by Highway 99W.

Level of service is a quantitative measure of the effect of a number of factors on transportation service including speed and travel time, traffic interruptions, freedom of movement, safety, driving comfort, and convenience. Table 5 describes level of service criteria for arterial roadways.



SCALE

0 .25 MILE

- URBAN GROWTH BOUNDARY
- CITY LIMITS
- ARTERIALS
- COLLECTORS
- NATIONAL HISTORIC REGISTER PROPERTIES
- PARKS
- 1990 VOLUME ADT — TRAFFIC VOLUME MEASUREMENT LOCATION (AVERAGE DAILY TRAFFIC)
- LEVEL OF SERVICE CALCULATION LOCATION

Title

FIGURE 6.

MONMOUTH EXISTING STREET NETWORK & TRAFFIC VOLUME MEASUREMENT LOCATIONS

Mid-Willamette Valley Council of Governments

Revisions	Date	Scale	Initials
2	AUG 97	AS SHOWN	LEH

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Reference File(s)

In 1987, average traffic volumes at the intersection of Main and Pacific Avenue was 9,500 ADT (Buttke, 1987). The intersection was described as operating "at a very high level of service and could accommodate nearly twice the volume" (Buttke, 1987). In general, level of service in Monmouth under existing conditions is good.

TABLE 5. LEVEL OF SERVICE CRITERIA

Service Level	Typical Traffic Flow Conditions
A	Relatively free flow of traffic with some stops at signalized or stop sign controlled intersection. Average speeds would be at least 30 miles per hour.
B	Stable traffic flow with slight delays at signalized or stop sign controlled intersections. Average speed would vary between 25 and 30 miles per hour.
C	Stable traffic flow but with delays at signalized or stop sign controlled intersections. Delays are greater than at level B but still acceptable to the motorist. The average speeds would vary between 20 and 25 miles per hour.
D	Traffic flow would approach unstable operating conditions. Delays at signalized or stop sign controlled intersections would be tolerable and could include waiting through several signal cycles for some motorists. The average speed would vary between 15 and 20 miles per hour.
E	Traffic flow would be unstable with congestion and intolerable delays to motorists. The average speed would be approximately 10 to 15 miles per hour.
F	Traffic flow would be forced and jammed with stop and go operating conditions and intolerable delays. The average speed would be less than 10 miles per hour.

Note: the average speeds are approximations observed at the various levels of service but could differ depending on actual conditions.

Accident statistics were obtained from ODOT's Continuous System Accident Listing from January 1, 1992 through October 31, 1996 (Appendix D); and the Accident Summary Database/Safety Priority Index System (SPIS) from 1990 though 1992. Information from SPIS for Hwys. 99W and 51 inside the Monmouth city limits is summarized in Table 6 and shown on Figure 7.

TABLE 6. SPIS ACCIDENT STATISTICS

Location	Number (1990-92)	Intersection Accidents	Other Information
Hwy. 99W: north to south city limits	20	70%	60% rear end, 25% angle, and 10% turning accidents, no fatalities, and 50% injury accidents
Hwy. 51: West city limits to Hwy. 99W	20	70%	30% rear end, 30% angle, 15% turning, 10% backing accidents; no fatalities; 50% injury accidents; and one pedestrian accident at Broad Street.
Hwy. 51: Hwy. 99W to east city limits	18	55%	50% rear end, 28% turning accidents; no fatalities; and 100% injury accidents.

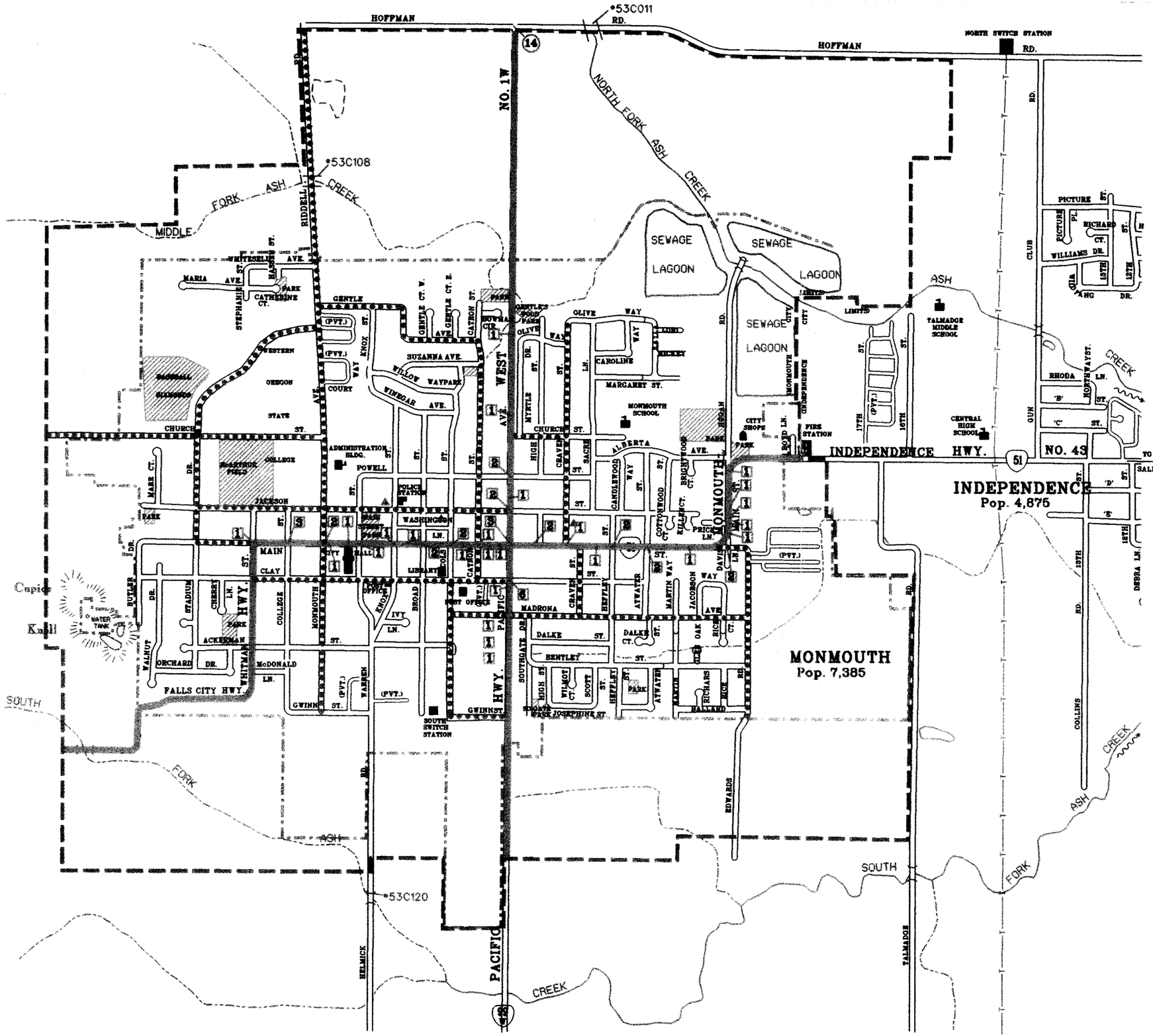
Accident data from SPIS for Highway 51 shows a fairly even distribution of accidents, mainly at intersections along the corridor, with the exception of a cluster of six accidents where the "S" curve on the east side of town joins Main Street (Figure 7). The other most accident-prone intersections appear to be at Main and Pacific (3), and College and Main (3). The Highway 51 corridor has about twice the number accidents as occurred along Highway 99W, even though traffic volume is roughly similar on the east side of town and at the intersection of Main and Pacific. Rear end accidents were the most common type of accident. No fatalities occurred but most events were injury accidents. An accident involving a pedestrian occurred at the intersection of Main and Broad.

Accident data from SPIS for Highway 99W showed a fairly even distribution of accidents, mainly at intersections, along the north-south corridor with the exception of 6 accidents at the intersection of Clay and Pacific (Figure 7). These accidents were rear-end and angle types caused mainly by failure to yield. Rear end accidents were the most common type (60%) of accident. No fatalities occurred, but 50 percent of the events were injury accidents.

Another set of accident data for Highway 99W, collected from 1992 to 1996, included road segments between the city limits and UGB. This information indicated that the most accident-prone intersection was Highway 99W and Hoffman (14 accidents), followed by the intersections with Clay (10 accidents), Jackson (7 accidents), and a segment between Jackson and Main (5 accidents). Accidents at the alley/parking lot crossings of Highway 99W accounted for 12 of the 53 accidents (23 percent) (Appendix D). These accidents included no fatalities.

The previous information indicates that the most accident prone locations on the arterials in Monmouth are:

- Intersection of Hoffman and Highway 99W,
- Intersection of Clay and Highway 99W.,
- Intersection of Jackson and Highway 99W.,
- Curve at Main and Edwards (part of "S" curve), and
- Between Jackson and Main and Highway 99W (business driveway/parking lot).



Title

FIGURE 7.

MONMOUTH EXISTING STREET NETWORK & ACCIDENT LOCATIONS

Mid-Willamette Valley Council of Governments

Revisions	Date	Scale	Initials
2	AUG 97	AS SHOWN	LEH

File Location\Name: D:\STORAGE\USTNDGN\MONMIND\MONM.LAM

Reference File(s):

Monmouth presently has three lighted traffic control devices located at:

- Intersection of Highway 99W and Hoffman Road,
- Intersection of Highway 99W and Main Street, and
- Intersection of Monmouth Avenue and Main Street.

A blinking caution light at a crosswalk near the intersection of Main Street and Heffley is activated when children are going to and from Monmouth Elementary School. A traffic light stops traffic on Hoffman and cautions traffic on Highway 99W. This light will be replaced with a signal in 1999 (project in State Transportation Improvement Program for Polk County) Traffic at the intersection of Highway 99W and Main is controlled by a signal including a left turn arrow. Traffic at the intersection of Main and Monmouth is controlled by a flashing red light that stops movement in all directions. The signals are under the jurisdiction of the ODOT.

TABLE 7. ROAD STRUCTURES

Structure	Location	Construction Date	Condition
Bridge	Hwy. 99W & Middle Fk. Ash Ck.		
Bridge	Hwy. 51 & S. Fk. Ash Ck.		
Concrete culvert #53C108	Riddell Rd (Monmouth Ave.) & Middle Fk Ash Ck.	1955	81.7[1]
Bridge #53C011	Hoffman Rd. & N. Fk. Ash Ck.	1982	96.4
Bridge #53C120	Helmick Rd. (Warren St.) & S. Fk. Ash Creek	1955	79.9
Raised crosswalks (4) and landscaped medians	Monmouth Avenue between Jackson and Stadium.		Excellent

[1]Numerical sufficiency rating

Table 7 shows the types, locations, and conditions of road structures in the Monmouth area. Most of the structures are located outside city limits or on arterials owned by the state and, therefore, are not the city's responsibility. As Monmouth annexes land in the urbanizable area, some of these facilities will become part of the city system. Condition of structures is mainly good.

Monmouth presently has no designated truck or hazardous materials routes, although it is presumed that the arterials through town, Highway. 99W and 51, serve in these capacities. Clay Street is closed to truck traffic.

Bicycle Ways

The inventory of bicycle ways is required to include information about type, location, width, and condition of bicycle facilities. It is recommended that the inventory include information about facility ownership and jurisdiction.

The inventory of bicycle ways in Monmouth is based on the Independence-Monmouth Comprehensive Master Bicycle Plan and some additional information from the street inventory

(Appendix D). Existing information is summarized in Table 8 and shown in Figure 8. Most of the existing bicycle facilities are associated with the WOU campus and the main highways, Highway 99W and Highway 51.

TABLE 8. BICYCLE FACILITIES

Location	Segment Location	Type [1]	Width (feet)	Condition	Ownership/ Jurisdiction
Church St.	W. end to Monmouth and Pacific to Craven	SR	5-10	Good	City
Monmouth Ave. (becomes Riddell Rd. going north)	Hoffman to Main	BL	varies	Fair	City/County
Main Street	Hwy. 99W to Independence city limits	BL		Good	ODOT
Pacific St. (Highway 99W)	Hoffman Rd. to Church St.	BP		Good	ODOT
Gentle Ave.	Hwy. 99W to Monmouth Ave.	SR	1-5	Good	City

[1]Type: BL - bike lane, BP - bicycle path, SR - shared roadway

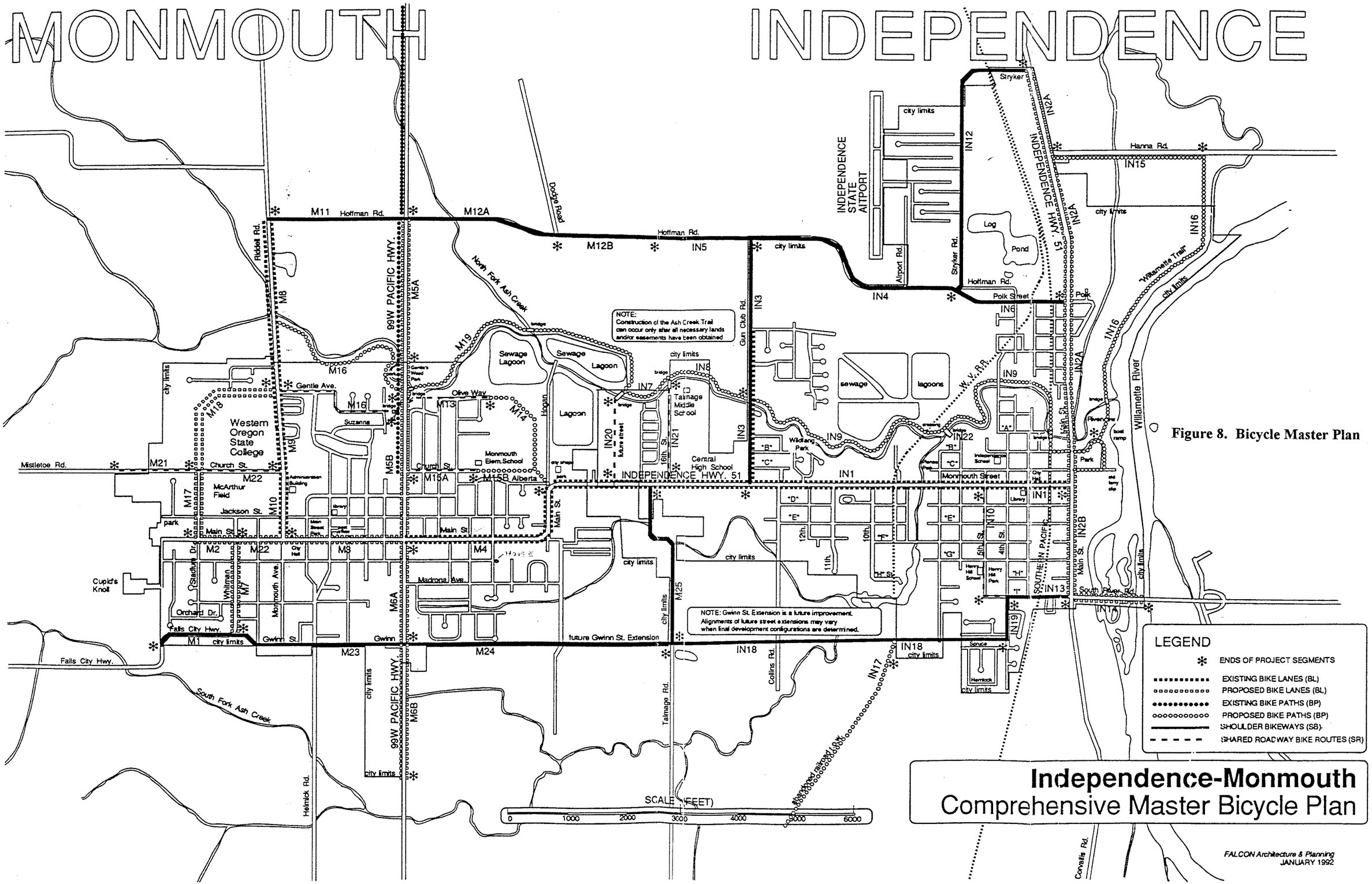


Figure 8. Bicycle Master Plan

Pedestrian Ways

The inventory of pedestrian ways is required to include information about sidewalk location, width, and condition; location of wheelchair ramps; and crosswalk closures.

The inventory of pedestrian ways in Monmouth is based on information in the street inventory and is contained in Appendix D. Most of the arterials and collectors have sidewalks. Little information is available about pedestrian facility conditions. A paved pedestrian and bicycle facility provides access from Ecols Street to the Bi-Mart store on Highway 99W.

Recreational facilities are numerous on the WOU campus and include McArthur Field and four baseball diamonds. In addition, jogging along Mistletoe Road (Church Street in Monmouth) is common.

Public Transportation

Public transportation, operating on a fixed route and schedule, does not presently exist in Monmouth. Monmouth is served by a community transportation service called "Wheels". "Wheels" offers local service, between 8:00 a.m. to 4:00 p.m., in Monmouth and Independence on Monday, Tuesday, and Wednesday; and service into Salem on Thursday. Available services include subscription and scheduled types. Subscription service provides ongoing service on a daily or weekly basis for riders in need of transportation to work, counseling, or medical needs. Scheduled service provides transportation on an on-call basis (1-800-422-7723) for qualified riders who need transportation to medical or dental appointments and shopping or social activities. Wheels is operated by the Oregon Housing and Associated Services. Services are provided to eligible patrons on a donation-only basis.

A regional transportation system demand management program, Salem Rideshare Program, offers carpooling coordination services to commuters in the Monmouth area.

Air, Freight, Rail, Water, and Pipeline Transportation

Monmouth does not currently have air, rail, water, or pipeline transportation modes within the UGB. No freight service nodes are located in Monmouth. However, some of these modes are available in nearby Independence and are described below.

The Independence State Airport is located northeast of Monmouth in Polk County, some 3.1 road miles from the center of the city. The airport is operated by the State Aeronautics Division and has a capacity of 103,000 aircraft operations per year. The single north-south paved runway, about 3,000 feet long, is lighted. Approximately 30 to 40 general aviation aircraft are based at Independence. No instrument landing system exists so operations are limited to visual flight rules (VFR) and there is no scheduled service provided by commercial air carriers. McNary Field in Salem provides for both VFR and instrument flight rules (IFR) operations.

Two railroads have served nearby Independence, but since 1986 only one line, the Southern Pacific, was operating. This line provides service to forest products manufacturing facilities in Independence.

Natural Environmental and Other Constraints

Natural environmental constraints affecting the transportation system plan in Monmouth are mainly soil limitations, flood hazards, and wetlands; although one could argue that climate constrains travel mode choice! Other constraints include properties with historic significance, and important community facilities such as schools, parks, post offices, fire stations, and emergency routes.

The Soil Survey of Polk County has mapped the soils in the Monmouth area and characterized their suitability for a variety of development activities including construction of local roads and streets (United States Department of Agriculture (USDA), 1982). Table 9 summarizes the information regarding limitations for local roads and streets. A severe limitation indicates that one or more of the soil properties or site features are unfavorable or so difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. A moderate limitation indicates that soil properties and site features are unfavorable for the specified use, but limitations can be overcome or minimized by special planning and design (USDA, 1982).

TABLE 9. SOIL LIMITATIONS FOR ROAD DEVELOPMENT

Map Unit	Soil Name	Limitation for Roads and Streets	Hydric Soil*
3	Amity silt loam	Severe: wetness, low strength	NO
15E	Chehulpum silt loam	Severe: slope	NO
18	Coburn silty clay loam	Severe: low strength	NO
20	Concord silt loam	Severe: low strength, wetness, shrink-swell	YES
21, 22	Cove silty clay loam	Severe: **floods**, wetness, low strength	YES
25	Dayton silt loam	Severe: wetness, low strength, shrink-swell	YES
33	Holcomb silt loam	Severe: wetness, low strength, shrink-swell	NO
57	Philomath silty clay	Severe: slope, low strength, depth to rock	NO
72	Waldo silty clay loam	Severe: wetness, low strength, shrink-swell	YES
73	Wapato silty clay loam	Severe: **floods**, wetness	YES
75	Willamette silt loam	Severe: low strength	NO
77	Woodburn silt loam	Moderate: low strength	NO

*Indicative of wetlands

The table information refers to local roads and streets that have an all-weather surface that can carry light to medium traffic all year. Roads have a subgrade of the underlying soil material; a base of gravel, crushed rock fragments, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. The roads are graded with the soil material at hand, and most cuts and fills are less that six feet deep (USDA, 1982).

Table 9 shows that most of the soils in the Monmouth area have severe limitations for local streets and roads. Limitations are due to soil wetness, low strength, high shrink-swell potential, flooding, slope, and/or depth to rock. This information suggests that Monmouth should examine its existing design and construction standards with respect to subgrade and road base requirements. Poorly constructed roads will result in higher maintenance costs.

Figure 2 shows the locations of the flood hazards in Monmouth and Table 9 indicates those soils with flood hazards. Areas with a 1% chance of flooding in any given year (100-year floodplain) are located along the South, Middle, and North Forks of Ash Creek. Transportation system elements in these locations must be designed and constructed to withstand this hazard. Emergency management plans and routes are also affected by locations known to flood.

The occurrence of wetlands in the Monmouth area is another natural constraint on development and function of a transportation system. Table 9 lists those soils in Monmouth that are hydric. Hydric soils are strongly associated with wetlands. In Monmouth, these soils are located in the drainages and along the forks of Ash Creek. Another resource, the National Wetland Inventory (NWI Monmouth Quadrangle, USDI, 1994) shows some wetlands located inside the Monmouth UGB. Mapped wetlands are the forested (PFO), wet meadow (PEM), emergent (PUB), and streamside (R) types. The mapped wetlands are located mainly in swales, drainages, creeks, and excavated ponds.

The NWI is developed solely from interpretation of aerial photos and, therefore, provides only preliminary information about wetlands in the Monmouth area. The soils map and NWI suggest that determining the presence and extent of wetlands on a site-specific basis will be required when new elements of the transportation system are designed and constructed.

TABLE 10. OTHER CONSTRAINTS

Type	Name	Location
Historically Significant Property*	Grave-Fisher-Strong House	391 E Jackson St.
Historically Significant Property*	Howell House	212 N. Knox St.
Historically Significant Property*	Sherman House	175 N. Craven St.
Elementary School	Monmouth Elementary School	
College	Western Oregon University	Northwestern Monmouth, approximately bounded by Jackson and Knox Streets
Government Services	City Hall	151 W. Main
Government Services	Police Station	238 E. Jackson
Government Services	Fire Station	Near the border of Monmouth and Independence on Main St.
Local Services	Post Office	437 E. Clay
Local Services	Monmouth Public Library	168 S. Ecols
Public Recreation	11 city parks	See Figure 6
Sewage Facility	Wastewater Treatment Facilities	Northeastern Monmouth, off Hogan St.
Electrical Facility	South Switch Station	South end of Broad St.
Electrical Facility	North Switch Station (BPA Substation)	Near Hoffman & Gun Club Rd.

*Listed in Oregon State Historical Preservation Office National Register Properties

Existing cultural features also constrain the transportation system plan to varying degrees. These features include parks, educational facilities, local services and governmental facilities, and historically significant properties. These features are shown on Figure 6 and summarized in Table 10.

An inventory of historic properties has been completed and 97 entries from Monmouth are included in the Statewide Inventory of Historic Resources Database. Only those properties on the National Register of Historic Properties are shown in Table 10. The existence of Native American campground sites along Ash Creek was noted, along with the need for further investigation, in the 1979 update of the Comprehensive Plan.

Population and Employment

This section characterizes the existing population and employment types in Monmouth using information from the 1990 census and the Comprehensive Plan and will serve as a basis for forecasting future conditions.

Selected characteristics of the Monmouth population, relevant to transportation planning, are taken from 1990 census information (Table 11). Information from the adjacent city of Independence and Polk County are presented to illustrate how Monmouth resembled, and differed, from its neighbors. Table information shows some of the effects of WOU on the town of Monmouth.

In 1990, about 6,288 people lived in Monmouth and the average household size was 2.6 people. About 36 percent of the city population was enrolled in college and 14 percent of the city population resided in dormitories on the WOU campus. These percentages are much higher than in Independence and Polk County as a whole, and transportation concerns and the transportation system plan should accommodate these unique traits.

TABLE 11. SELECTED INFORMATION FROM 1990 CENSUS

	Monmouth	Independence	Polk County
Population	6,288 (9% of county)	4,425 (6% of county)	70,476 (cities & rural areas)
Number of Households	2,164	1,454	18,022 (rural only)
Average Household Size	2.6	3.0	2.7 (rural only)
Total Housing Units	2,272 (5% vacant)	1,539 (4% vacant)	26,805 (rural only, 4% vacant)
People Living in Group Quarters	867 (14% of city pop.) college dormitory	55 (1% of city pop.) institutionalized	2,792 (4% of county pop.) college dormitory, nursing home, other
Per Capita Income in 1989	8,872	7,989	12,405 (rural only)
Enrollment in Elementary or High School	778 (12% of city pop.)	945 (21% of city pop.)	8,985 (17% of total county population)
Enrollment in College	2,278 (36% of city pop.)	271 (6% of city pop.)	7,589 (11% of total county population)

In 1990, Monmouth had a total work force of 2,793 people. Most people living in Monmouth are employed in educational services (25%), retail trades (20%), and public administration (10%) industries. The remaining Monmouth workers are distributed fairly uniformly amongst other industries (Table E-1, Appendix E). Compared to Independence and rural Polk County, Monmouth has proportionally more (2 to 3 times) workers in the educational services industry and proportionally fewer (1/2 to 1/3) workers in the durable goods, manufacturing, and health services industries. Distribution of remaining workers in the other industries is fairly similar to distribution patterns seen in the communities (Table E-1, Appendix E).

A review of the 1995 Oregon Index of Manufacturing Industries shows three sawmills/planing mills, two wineries, one computer service (prepackaged software) firm, one medicinal and botanical drug manufacturer, one meat products plant, one sausage/meat preparation business, one commercial printing business, and one newspaper publisher with Monmouth addresses. Some of these industries are located outside the UGB. All industries employed 0 to 19 people.

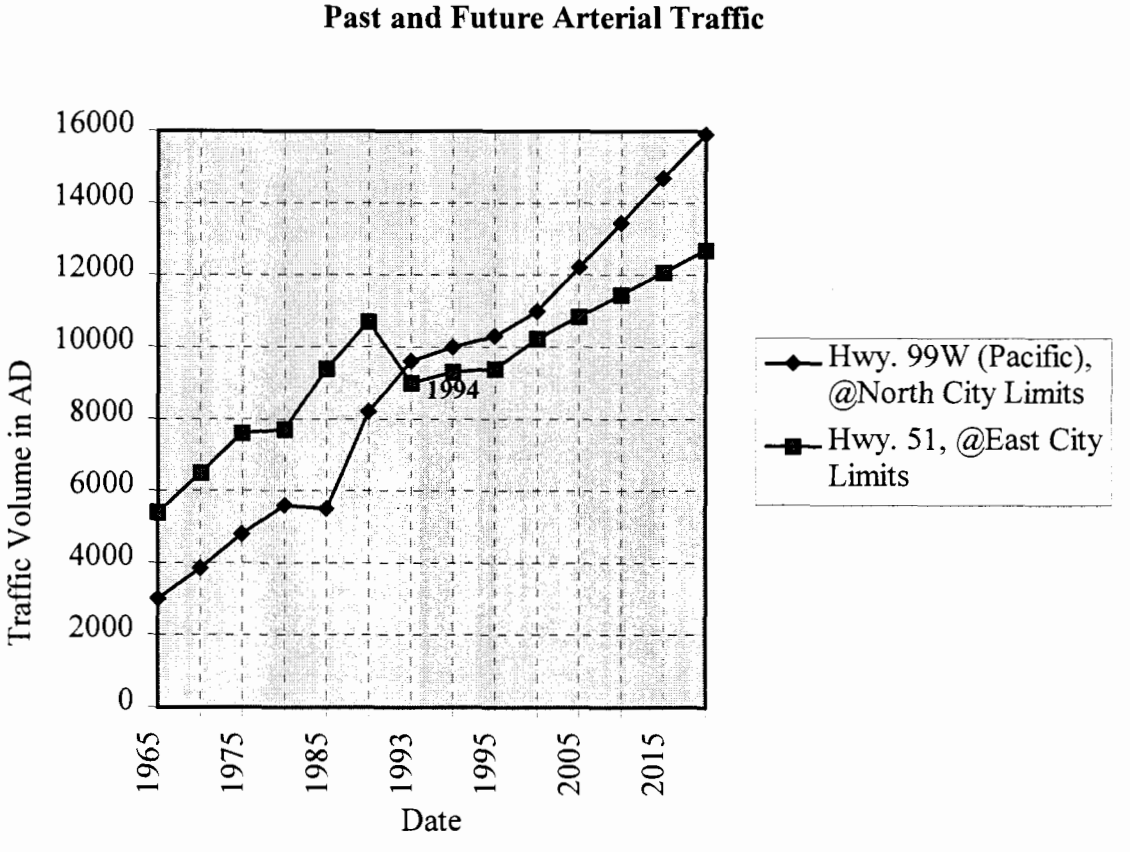
Although Monmouth has 230 acres within the UGB zoned for industrial use, no industry is currently located on this property (City of Monmouth, 1987; ODOT, 1994). As previously noted, the city has no plans to recruit new industry and foresees a future residential use for some of the area.

Determination of Transportation Needs

Capacity Needs

Determination of transportation needs combines an assessment of existing conditions with a forecast of future traffic demand. Future needs can be estimated by predictions of population and business growth, and development patterns. This information is translated into estimates of future traffic demand in order to determine the associated impact on the existing transportation system.

Figure 9. Past and Future Arterial Traffic.
Note that volume data is given in 5-year increments, except for 1993-95 when annual volumes are plotted.



Methodologies include growth forecasts based on past traffic volume trends, selected annual growth rates, and full development of vacant residential, commercial, and industrial lands under existing standards. These methods all give approximate results and are based on a variety of assumptions. Methodology details and attendant assumptions are shown in Appendix F. Assigning increased traffic volumes to specific locations in the transportation system is also an approximation based on assumptions.

Table 12 compares the future population and traffic volumes for Monmouth in 2020 given by the methods described in Appendix F. The lowest volumes (best scenario) are given by the forecast based on traffic volume trends and the highest volumes (worst scenario) are associated with the full build out situation. City staff believes that a 2 percent annual growth rate is a reasonable rate to use for long-term modeling. The city's current infrastructure, and planned improvement schedule, can not support the estimated current annual growth rate (3.3%) indefinitely, or support the annual growth rate (4.8%) associated with full build out by 2020. Associated traffic volumes lie between the lowest and highest volume forecasts in Table 12.

Figure 9 (previous page) illustrates the apparent change in the pattern of arterial traffic as volume on Highway 99W exceeds volume on Highway 51. City staff could not identify any specific activity or event that might have caused the change in volumes noted between 1990 and 1993. It is possible that some change in how the volume measurements were made occurred during this interval.

TABLE 12. COMPARISON OF POPULATION AND TRAFFIC FORECASTS IN 2020

Forecast Method	Population Estimate	Forecast Traffic Volume on Hwy. 99W	Forecast Traffic Volume on Hwy. 51
Traffic Volume Trends	NA	15,910 ADT	12,700 ADT
Maximum Build out (4.8% annual growth rate)	25,394	43,340 ADT	34,670 ADT
Lower Build out (2.0% annual growth rate)	11,389	20,530 ADT	16,430 ADT

The two percent growth rate was used to derive future level of service (LOS) at key points in the city. Location of these points is shown in Figure 6. The forecast level of service assumes no changes to the intersection configuration or traffic controls.

TABLE 13. LEVEL OF SERVICE (LOS) INFORMATION

Intersection	Control	1997 LOS	2020 LOS	Notes
Hoffman Rd. & Hwy. 99W	Stop on Hoffman	Hoffman - F left turn Hwy. 99W - A	Hoffman - F left turn Hwy. 99W - E left turn	Traffic signal scheduled for installation in 1998-2001 STIP
Clay St. & Hwy. 99W	Stop on Clay	Clay - D left turn Hwy. 99W - A	Clay - E left turn Hwy. 99W - B left turn	
Monmouth Ave. & Hwy. 51	Four-way stop	Both - A	Both - C	

Highway 99W, at its intersection with Hoffman Road, decreases to a LOS E for southbound left turns while LOS for northbound left turns decreases to B. Both the east and west approaches of Hoffman are forecast with a LOS F for left turns. Right turns from the east approach of Hoffman to Highway 99W decreased to LOS E.

Highway 99W, at its intersection with Clay Street, decreases to a LOS B for left turns for northbound bound traffic turning west on Clay. LOS for traffic on Clay Street, west of Highway 99W, turning right (south) decreases to C, and turning left (north) decreases to F.

Highway 51 (Main Street), at the four-way stop with Monmouth Ave., will drop from a LOS A to LOS C.

In general, the capacity analysis indicates that LOS on city and county roads will decline to unacceptable levels for traffic turning off of, or onto, Highway 99W from intersecting local and collector streets. Accommodating cross-town and through traffic travel is one of Monmouth's principal transportation needs and will require close coordination with ODOT.

Other Roadway Needs

The inventory of traffic accident data indicated the most accident-prone locations in Monmouth. On-site observations suggest the following deficiencies occur at these locations:

1. At the "S" curves it is difficult to accurately gauge the speed of approaching vehicles and safe turning motions require scanning a large area and several intersections.

2. At the intersection of Highway 99W and Hoffman Rd, traffic volume and speed on Highway 99W are high.

3. At the intersection of Clay and Highway 99W, right turning motions from Clay to Highway 99W (west side of Highway 99W) obscure the vision of motorists at the same location turning left onto Highway 99W. Additionally, right-turning vehicles on Clay are rolling through the stop sign.

4. On the west side of the intersection of Jackson Street and Highway 99W, vehicles turning left (north) onto Highway 99W have difficulty seeing northbound traffic on Highway 99W due to the back up of cars at a signalized intersection (Hwys. 99W and 51) one block south of Jackson.

Monmouth is a college town and 36% of population; or 2,280 people; are students at WOU (Table 11). Students share housing scattered throughout town and in many of these living arrangements each student owns a car, resulting in relatively high demand for long-term on-street parking in Monmouth. This need for extra long-term parking must be factored into street width standards.

Monmouth intends to follow the reconstruction and construction needs outlined in the capital improvement program (Appendix F). The bridges located inside the Monmouth UGB are generally in good condition and are not owned by the city.

Public Transportation Needs

The combined estimated population of Monmouth and Independence is 12,370, placing the cities slightly above the population (10,000) generally believed to be the minimum required to support a fixed-route, public transit system.

Presently, the demand for fixed-route transit between Monmouth and Independence is judged to be low. The commuter traffic between Monmouth/Independence and Dallas is fairly low, according to the 1990 Census. Approximately 204 (118 peak hours) commute from Dallas to Monmouth, and approximately 276 (106 peak hour) in the reverse direction. A more significant number, 1,158 (655 peak hour) commute to the Salem-Keizer area. In Monmouth, 10% of the total work force carpools to work (Table F-4). The Salem Rideshare Program is available to coordinate carpooling. "Wheels" meets the needs of some of the transportation disadvantaged in Monmouth. It is recommended that a private enterprise, such as a taxi service, be encouraged in the area.

Bikeway Needs

The Monmouth-Independence Master Plan addresses bikeway needs.

Development and Evaluation of Transportation Alternatives

Past experience with the transportation system, as documented in the previous Comprehensive Plans, TSP Committee members' familiarity with the current transportation system and funding limitations, the existing Capital Improvements Program, and the results of the public survey were used to develop the simple transportation alternatives.

The alternatives were evaluated using the following criteria:

> Provide for and encourage a safe, convenient, and economic transportation system, which includes adequate accessibility to all planned land uses, alternatives to the automobile, and good infrastructure maintenance.

No-Build Alternative

The simple capacity analysis indicated that as Monmouth grows, the need for timely cross-town travel will conflict with the current primary purpose of Highway 99W, the transport of through traffic, and the LOS at critical intersections will become unacceptable. The no-build alternative will also result in more congestion on Highway 51.

Roadway Network Alternative

Monmouth has developed the roadway network alternative to meet city transportation needs. This alternative includes: (1) System improvements, (2) Traffic studies, and (3) Future streets network. Monmouth will also continue to work closely with the city of Independence in the development of the network of local and arterial streets and list of improvements to specific sites. The purpose of the roadway network alternative is to ventilate traffic on the existing arterials by developing a system of collectors and local roads that provide intracity north-south alternatives to Highway 99W and collectors that promote focused east-west (crossing Highway 99W) travel. This alternative is outlined in the existing Capital Improvements Program (Appendix F) and shown in Figure 10.

The no-build alternative is unacceptable because it will result in delays and congestion and fail to meet the evaluation criteria. Monmouth chooses the roadway network alternative.

System Improvements:

1. Realignment of Highway 51 "S" curves at intersection of Edwards and Hogan Roads.

   State Highway 51 (Main Street) makes two, slow speed, right-angle curves at the eastern city limits of Monmouth. The curves contribute to traffic congestion and accidents and have been the cause of constant public concern. Realignment, resulting in the flattening of these curves, provides the most reasonable and cost effective alternative for improvement of the roadway. Meetings were held with ODOT to examine preliminary design alternatives. Three alternatives were studied that included variations in the degree of realignment and the accommodation of necessary intersections. The preferred alternative would provide for the most significant realignment of the curves and would provide the greatest overall long-term benefit. It is essential that this project be a priority for the city. The land necessary for the realignment is currently for sale and may not remain undeveloped for long. This project requires close coordination between the cities of Monmouth and Independence. Funding for this improvement is a low-priority with ODOT and the city must try to incorporate the

desired improvements into a private development project or find other local funding sources. As this TSP was finalized, discussions were occurring with a developer interested in the vacant property along the "S" curve and the city was negotiating for the desired improvements to the road.

2. Madrona Street Extension:

   The extension of Madrona Street between Highway 99W and Ecols provides important multi-modal access to and from the new library, post office, multi-family development and commercial development. Madrona Street, which is also planned for extension east to Talmadge Road, provides an important east-west alternative to Highway 51 that will be especially important to bicyclists and pedestrians as development occurs.

3. Talmadge Road Realignment/16th Street Extension:

   Monmouth has a special interest in the city of Independence's plans to realign Talmadge Road with 16th Street and the extension of 16th Street through to Hoffman Road. This project is included in the Independence Street Network Plan and is supported by the city of Monmouth. The realignment and street extension will serve to vastly improve access to Central High School and Talmadge Middle School, and will reduce peak hour congestion on Highway 51. Further, the combination of these two streets will create an important additional north-south transportation corridor between the two cities providing an important alternative to Hwy. 99W for local traffic.

Additional Traffic Studies

The Level of Service calculations at city street crossings of, and connections to, state highways is intended to provided a sketch-level analysis of needs at all intersections along the highway corridors. It is probable that all city street intersections with Hwy. 99W will exhibit behavior similar to those for which the calculations were made. Because isolated improvements at these selected intersections will increase negative impacts on city streets at adjacent intersections, and reduce the level of service on the state facility to below acceptable levels, this TSP cannot adequately address the complex factors necessary to recommend a specific list of good improvements. Therefore, a more comprehensive study of the Hwy. 99W corridor through the urban area will be needed by the city.

Beginning in 1998, the city will initiate work with State agencies to develop a scope of work for a detailed study, and obtain funding. The scope of work may include items such as simple modeling, and/or micro-simulation of traffic behavior. This TSP anticipates the study will begin in 2002, and will cost between $45,000 and $100,000, depending on the area included. Completion of the Highway 99W corridor strategy (Hwy. 18 to Eugene), expected to be initiated within 18 months, will aid in developing the scope.

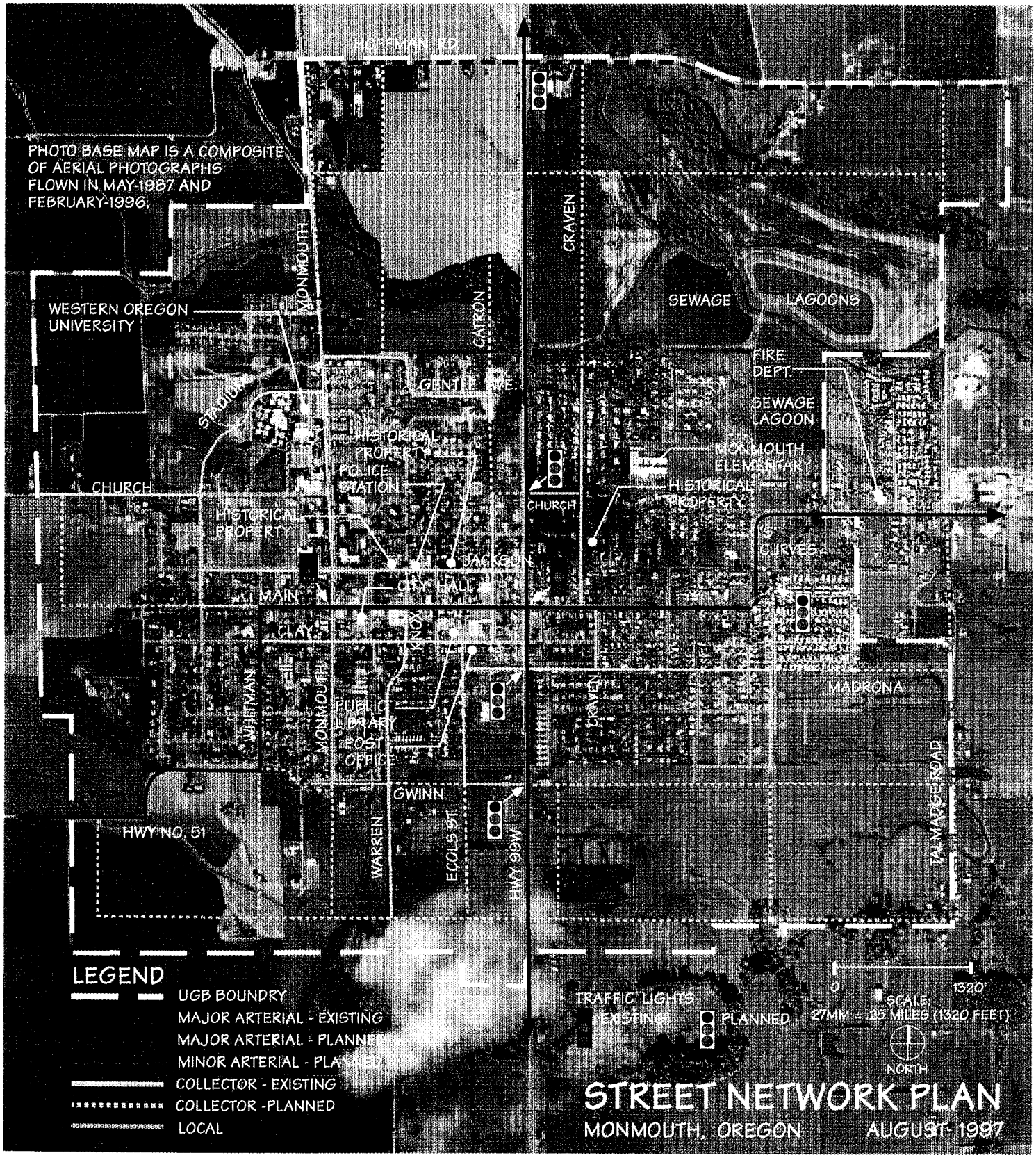
Future Streets

Future streets, constructed to access property and provide travel routes as Monmouth develops, will also be planned and built so as to ease arterial traffic on Highways 51 and 99W, reduce congestion on the WOU campus, encourage pedestrian and bicycle use, and ensure modal connectivity. Figure 10 is a composite of 1987 and 1996 aerial photography and shows the planned street network.. Dashed lines indicate either street segments that are not yet built (e.g. southern extension of Monmouth Ave.) or changes in functional classification (e.g. Hoffman Rd. reclassified as a minor arterial). The following is a brief description of some of the more important planned streets (Figure 10).

A number of the planned street extensions identified on the street network plan are designed to ventilate arterial traffic and provide alternative routes for local trips. Streets such as Catron, Craven, S. Ecols and Southgate will provide alternatives to Highway 99W for many local trips. The extension of Madrona Street to Talmadge Road will serve a similar purpose and is consistent with plans to realign Talmadge Road with 16th Street.

Gwinn Street, which is envisioned as a collector, will provide a valuable connection between Monmouth and Independence eventually linking Falls City Highway and River Road in Independence. This road, in association with other streets planned to the south, will serve to collect and distribute traffic from the undeveloped residential land in the southern portions of the UGB.

The street network plan also proposes a number of logical future streets for the undeveloped residential land west of Highway 99W and south of Hoffman Road. These planned streets will insure that good alternatives are provided concurrent with development. The connections both east-west and north-south will help to further reduce the traffic load on Monmouth Avenue through the WOU Campus.


HORSEMAN RD.
PHOTO BASE MAP IS A COMPOSITE OF AERIAL PHOTOGRAPHS FLOWN IN MAY-1987 AND FEBRUARY-1996.
MONMOUTH
CATRON
CRAVEN
WESTERN OREGON UNIVERSITY
SEWAGE LAGOONS
FIRE DEPT.
SEWAGE LAGOON
GENTLE AVE.
STADIUM
HISTORICAL PROPERTY
POLICE STATION
MONMOUTH ELEMENTARY
CHURCH
HISTORICAL PROPERTY
CHURCH
HISTORICAL PROPERTY
S. CURVES
JACKSON
MAIN
CITY HALL
CLAY
KNOX
WHITMAN
MONMOUTH
PUBLIC LIBRARY
POST OFFICE
CRAVEN
MADRONA
GWINN
HWY NO. 51
WARREN
ECOLS ST.
HWY 99W
TALMAGE ROAD
LEGEND
UGB BOUNDRY
MAJOR ARTERIAL - EXISTING
MAJOR ARTERIAL - PLANNED
MINOR ARTERIAL - PLANNED
COLLECTOR - EXISTING
COLLECTOR -PLANNED
LOCAL
TRAFFIC LIGHTS
EXISTING
PLANNED
0'
1320'
SCALE:
27MM = .25 MILES (1320 FEET)
NORTH
STREET NETWORK PLAN
MONMOUTH, OREGON
AUGUST 1997

A single west-east street is planned to serve the undeveloped land south of Hoffman Road with a conceptual future extension to 16th Street. This road would primarily serve the area planned for industrial development, but is likely to also serve a limited amount of local traffic.

Other Local Streets

While the street network plan identifies certain future collector, minor arterial, and arterial streets of particular importance for traffic circulation, most local streets will be built as development occurs. It is important that the city require local streets to connect with existing and planned streets wherever possible. Multiple access points, achieved through a well connected street network, are important to ensure that emergency services are not cut off and that local access is not eliminated or greatly lengthened in the event that one access is closed. Further, a well connected street network, with numerous alternative routes, reduces the volume of traffic on any one route and provides a more bicycle/pedestrian friendly environment.

The TPR requirements related to the layout of local streets are addressed through both the street network plan and the city's land development regulations. While key local streets are identified in the street network plan, the primary means of achieving a well connected street network is through the city's Subdivision Procedure, No. 1403. Amendments to the city's land development regulations are provided Appendix E.

Transportation System Plan

A review of existing community transportation goals and objectives resulted in some revision and expansion of language which is shown in this chapter- Transportation System Plan. In addition to the revised transportation goals and objectives, the TPR requires (OAR 660-12-035) that the TSP accomplishes the following:

1. *The transportation system shall support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve the land uses identified in the acknowledged Comprehensive Plan.*
2. *The transportation system shall be consistent with state and federal standards for protection air, and, and water quality included in the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan.*
3. *The transportation system shall minimize the adverse economic, social, environmental, and energy consequences.*
4. *The transportation system shall minimize conflicts and facilitate connections between modes of transportation.*
5. *The transportation system shall avoid principal reliance on any one mode of transportation and shall reduce principal reliance on the automobile.*

General Transportation Goals, Objectives, and Policies

New goals and policies have been developed based on the review of transportation goals and policies in the existing Comprehensive Plan, new state and federal legislation, and growth-related changes that have occurred in the city over the last few years. The general goals and objectives, representing the community's vision for a system of transportation facilities and services, are presented in this section; and goals and objectives specific to the various TSP elements are listed with those elements. The goals and policies already included in the Comprehensive Plan are shown in normal type, deletion of existing language is shown with strikeout, and changes are shown as **bold and highlighted**

GOAL: To provide for and encourage a safe, convenient, and economic transportation system, which includes adequate accessibility to all planned land uses, alternatives to the automobile, and good infrastructure maintenance.

Objectives:

1. **Monmouth will develop and maintain a transportation system plan that encourages alternatives to, and reduces reliance, upon the automobile.**

2. **Monmouth will develop land use regulations and subdivision ordinances that allow needed transportation facilities and improvements and encourage development patterns that enhance opportunities for pedestrian travel, bicycle travel, and forms of public transportation.**

3. **Monmouth shall strive to coordinate planning actions, provide transportation services, and implement the ODOT State Transportation Improvement Program (STIP) with affected jurisdictions in order to best serve the city's residents.**

4. **Monmouth shall utilize the Transportation System Plan for guidance in all land use planning and project development activities.**

5. **Monmouth shall protect transportation facilities, corridors, and sites for the functions identified in this plan.**

Streets Plan Element

The TPR requires (OAR 660-12-020) the city of Monmouth to produce a Street Plan Element as a part of the TSP which includes:

"A road plan for a network of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classification of roads in regional and local TSPs shall be consistent with functional classifications of roads in state and regional TSPs and shall provide for continuity between adjacent jurisdictions. The standards for the layout of local streets shall provide for safe and convenient bike and pedestrian circulation necessary to carry out OAR 660-12-145(3)(b). New connections to arterials and state highways shall be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets which are needed to provide reasonably direct routes for bicycle and pedestrian travel. The standards for the layout of local streets shall address:

(A) Extensions of existing streets;
(B) Connections to existing or planned streets, including arterials and collectors; and
(C) Connections to neighborhood destinations."

The following objectives for roads and streets are included in the city's TSP:

1. New routes shall avoid existing houses and structures unless no other feasible alternative exists.

2. New streets and roads will consider foundation soils and address construction criteria for poor soil areas.

3. Cul-de-sacs shall be discouraged.

4. No building without prior authorization by City Council shall be located or constructed in such a manner as to prevent natural extension of the streets.

5. The transportation system shall strive to reduce the principle reliance on the automobile and promote other modes of transportation.

Figure 10 is the street network plan and incorporates the previous plan for arterials and collectors (Monmouth Comprehensive Plan, 1986). The network plan accounts for current conditions and provides for the future development of the city. The plan identifies both improvements to the existing system as well as future facilities to be constructed as development occurs.

The street network plan is intended to be used as a guide to assure the dedication, or in some cases, the acquisition of adequate rights-of-way for streets and related facility improvements in appropriate locations. While exact alignments may require more detailed refinement studies, this plan identifies the general alignments and connections that need to be made in order for the city to provide a safe, convenient, and economic transportation system with adequate access to all planned land uses.

Functional Classification and Street Design Standards

Streets serve a variety of needs ranging from transportation through an area to direct access to adjacent property. In order to serve this wide range of uses effectively, streets should be designed to serve a primary function within a hierarchical network. As defined by the Federal Highway Administration, functional classification is "...the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide." The street network plan (Figure 10) is based on the methodology developed by the Federal Highway Administration. This method of functional classification, which attempts to achieve a balance between the competing demands for mobility and access, has been tailored to suit the needs of the Monmouth urban area. The classifications identified are consistent with Polk County and State of Oregon classifications and are coordinated with city of Independence classifications.

Monmouth uses four general classifications to describe its existing and future network of streets. The following four functional classifications effectively differentiate the range of streets needed to satisfy local and regional needs:

Major Arterial

This is a major facility for moving large volumes of inter-area traffic primarily carrying through traffic. An arterial is intended to provide for the majority of regional travel passing through an area as well as the majority of local trips entering and leaving the urban area. It should also provide continuity for all rural arterials which intercept the UGB and should include connections to all rural collectors. Arterials generally emphasize mobility over land access. Access to arterials should be managed to protect the mobility function of the street as much as possible.

Minor Arterial

This is a two-lane facility that is designed to carry "through" traffic, places more emphasis on land access; and offers a lower level of traffic volume and mobility than major arterials. Although a minor arterial is intended to provide more access than a major arterial, mobility is still the primary function of the street, and should be preserved as much as possible.

Collector

This facility connects intra-area traffic to the arterial system. Collectors provide links between an area or neighborhood and the arterial system. They supply abutting property with the same degree of land service as a local street but are usually given priority over local streets in any traffic control installations. Collectors penetrate into all areas of a city, gathering traffic, and channeling it to arterials or rural collectors.

Local

This type of street primarily provides access to abutting properties and is protected from "through" traffic. Local streets entail all those not otherwise defined as arterials or collectors. While connectivity is encouraged for all streets, through traffic movement is not the intended purpose of a local street.

Street Design

Consistent with the identification of streets by functional classification is the need to develop design standards that differentiate between the four classes in terms of street dimensions and amenities. Street standards provide a city with a means of insuring consistency, safety, and aesthetic quality in roadway design. In addition, design standards provide for ease of administration when new roadways are planned and constructed.

The street design standards shown in this plan were developed through the consideration of a wide range of design alternatives from various street widths to curb vs. property-line sidewalks. The development of street standards utilized a wide range of policies and publications including the following:

- Best Management Practices for Transportation/Land Use Planning, Oregon Department of Transportation, Transportation Development Branch;
- Recommendations for Pedestrian, Bicycle and Transit Friendly Development Ordinances,
  Oregon Chapter American Planning Association;
- Traffic Engineering for Neo-Traditional Neighborhoods, Institute of Transportation Engineers;
- A Policy on Geometric Design of Highways and Streets, AASHTO;
- Guidelines for Residential Subdivision Street Design, Institute of Transportation Engineers;

- Residential Streets, Second Edition, American Society of Civil Engineers, National Association of Home Builders, and the Urban Land Institute; and
- Transportation Plan: Street Design Standards, city of Salem.

The following street design standards (Figure 11) will help the city to achieve compatibility and consistency in the development of the street network. Although it is important to have recognized street design standards, major street projects often need to be evaluated on an individual basis. Strict adherence to these standards may not be practical in all situations considering existing development or other social, economic, and environmental constraints. Furthermore, there are other considerations that need to be evaluated when designing specific streets including distance between intersections, access points, and adjacent land uses.

Major Arterial

This is a major facility for moving large volumes of inter-area traffic primarily carrying through traffic. Major arterial streets serve as primary routes for travel between major urban areas and activity centers.

1. Access

   (a) Access Spacing: Access spacing on major arterials will be coordinated with ODOT. ODOT has sole responsibility for approval and permitting of access to state Highways (Appendix D). The state applies different access management standards for Highway 99W, designated with a Regional Level of Importance, and Highway 51, designated with a District Level of Importance (Appendix D). The city will work with ODOT and property owners to minimize the number of accesses and provide optimum access spacing. Regulatory language implementing the current standards is shown in Appendix E.

   The city and ODOT may develop access management guidelines that enable the city and ODOT to achieve certain operational and safety objectives for specific roadway segments.

   (b) Uses Permitted Direct Access: The following will be permitted direct major arterial access when they conform with spacing requirements.

      (1) Commercial
      (2) High school
      (3) Major public or private development

   (c) Uses Prohibited Direct Major Arterial Access:

      (1) Single-family residential
      (2) Duplex

(3) Multi-family
(4) Elementary or middle schools
(5) Parks

2. Minimum Right-of-Way: 84 feet

3. Minimum Curb-to-Curb Width: 60 feet

4. Travel Lanes: 2 to 4

5. On-street Parking: Prohibited

6. Sidewalks: Required, both sides, six feet minimum width.

7. Bikelanes: Required, both sides.

Additional Major Arterial Street Design Considerations: Additional right-of-way and roadway improvements may be required at major intersections to provide for turn lanes. Where the pre-existing patterns of land ownership precludes the application of the spacing standard, the city will encourage property owners to share private drives or access local and collector streets whenever possible.

Minor Arterial

This is a two-lane facility that is designed to carry "through" traffic, places more emphasis on land access, and offers a lower level of traffic volume and mobility than major arterials. Minor arterials have 1) lower design standards than major arterials, 2) serve less concentrated traffic-generating areas, 3) distribute traffic from neighborhood collector streets to major arterials as well as between major arterials, and 4) should not penetrate identifiable neighborhoods, where possible.

1. Access

(a) Access Spacing: Minimum spacing between access points (streets or driveways) is 300 feet centerline to centerline (+/- 20% discretion).

(b) Uses Permitted Direct Access: The following will be permitted direct major arterial access when they conform with spacing requirements.

(1) Commercial
(2) Major public or private development

(c) Uses Prohibited Direct Minor Arterial Access:

(1) Single-family residential
(2) Duplex

(3) Multi-family

2. Minimum Right-of-Way: 66 feet

3. Minimum Curb-to-Curb Width: 36 feet

4. Travel Lanes: 2

5. On-street Parking: Prohibited

6. Sidewalks: Required, both sides, six feet minimum width.

7. Bike Lanes: Required, both sides.

Additional Minor Arterial Street Design Considerations: Additional right-of-way and roadway improvements may be required at major intersections to provide for turn lanes. Where the pre-existing patterns of land ownership precludes the application of the spacing standard the city will encourage property owners to share private drives or access local and collector streets whenever possible.

Collector

A facility that allows intra-area traffic to connect to the arterial system. Collectors provide links between an area or neighborhood and the arterial system. They supply abutting property with the same degree of land service as a local street but are usually given priority over local streets in any traffic control installations.

A. Design Requirements:

1. Access Spacing: Access to collectors will be permitted by both streets and private drives. The city will encourage property owners to minimize collector street access according to the following guidelines: on-site vehicle turn-arounds, adequate off-street parking, safe intersection sight distance, and safe off-set distance between intersections on opposing sides of the collector. The city will encourage combined access or access to local streets wherever practical.

2. Minimum Right-of-Way: 66 feet

3. Minimum Curb-to-curb Width: 36 feet

4. Travel Lanes: two

5. On-street Parking:
   Phase 1: Permitted, both sides.
   Phase 2: Prohibited

6. Sidewalks: Required, both sides, five feet minimum width.

7. Bikeways: Yes
   Phase 1*: Shared roadway
   Phase 2*: Bike lane required, both sides

*Collectors may exist in two phases. Collector streets with less than 2,000 ADT can accommodate on-street parking and bicyclists on the roadway, functioning more as a local than as a collector street. As development occurs and traffic volumes begin to exceed 2,000 ADT, the city will begin to study the need to eliminate on-street parking and provide designated bike lanes. This strategy provides the city with the flexibility to easily increase the capacity of a collector street at minimal cost, based on need.

As collector streets are restriped to meet increased traffic volumes, additional right-of-way and roadway improvements may be required at major intersections to provide for turn lanes.

Local Street

Local streets serve traffic within neighborhoods and facilitate access between the collector system and land uses adjoining local streets.

A. Design Requirements:

1. Minimum Right-of-Way: 60 feet

2. Minimum Curb-to-Curb Width: 36 feet

3. On-street Parking: Allowed, both sides

4. Sidewalks: Required, both sides, five feet minimum width.

5. Bikeways: Shared roadway

Additional Local Street Design Considerations: A well connected local street network is important for convenient bicycle and pedestrian access. Cul-de-sac streets will continue to be discouraged in favor of connection with existing or planned streets. Because local streets serve a wide range of uses, including neighborhood play areas, the city will explore options that discourage "through" traffic and speeds in excess of 25 mph. Local streets that include design features such as curves and "T" intersections may be a useful means of reducing conflicts and discouraging through traffic.

Monmouth recognizes that, in certain circumstances and situations, narrower street design standards may be appropriate and desirable. The city intends to revisit the local street standards

issue during Periodic Review. At that time, alternative local street standards, and the conditions under which they may be applied, will be developed.

The previously listed street design standards incorporate requirements for bicycle facilities given in the Independence Monmouth Master Bicycle Plan. The following requirements must be considered when evaluating bicycle facility standards for existing and new roads.

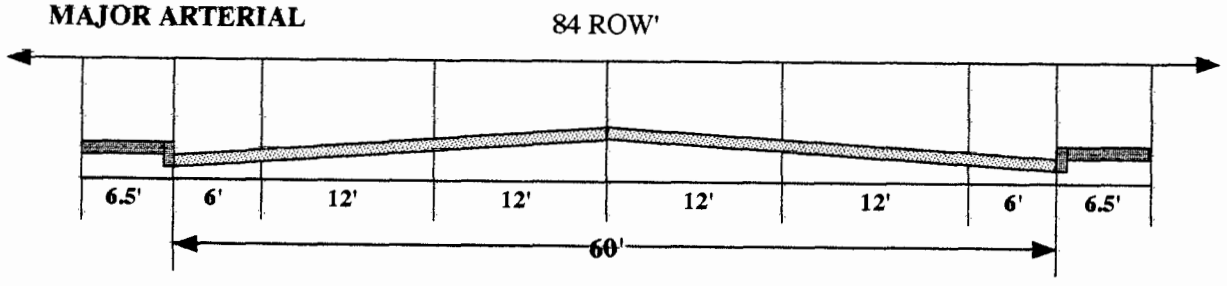
New construction of arterials and collectors that lie substantially within the Urban Growth boundary shall include bike lanes. Existing arterials and collectors shall be upgraded as soon as is practical and shall, in the interim, use the best available facility or alternate route.

Bike lanes shall be provided on all new construction of urban arterials and collectors and on rural routes designated as bicycle routes where bicycle ridership exceeds 50 bicycles per day.

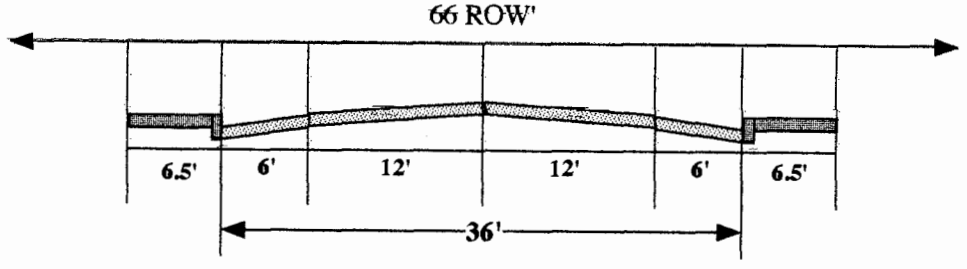
Except when mandated by a federal or state agency having jurisdiction over the bikeway, the width shall be measured from the center of the bike lane stripe to the edge of the pavement, face of guardrail or face of curb, whichever is the lesser. Bike lanes shall not be less than the following width:

- Posted or basic-rule speed in excess of or equal to 40 mph — 6-foot width
- Posted or basic-rule speed less than 40 mph — 5-foot width
- Existing roadway, travel lane not greater than 11 feet — 4-foot width
- Rural minor arterial or collector without curbs — 4-foot width

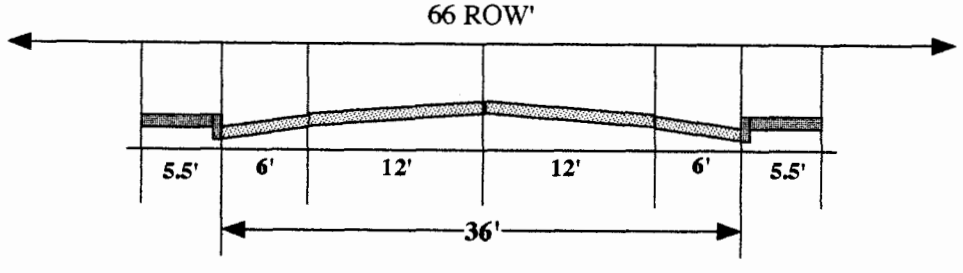
MAJOR ARTERIAL



MINOR ARTERIAL



COLLECTOR



LOCAL

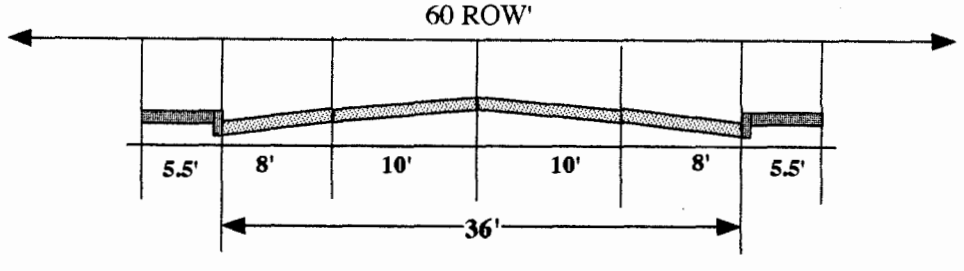


Figure 11. Street Design Standards

Access Management

The TPR contains the following requirements related to access management (OAR 660-12-020):

> *(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions. Such regulations shall include:*
>
> *(a) Access control measures, for example, driveway and public road spacing, median control and signal spacing standards, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;*
>
> *(b) Standards to protect future operation of roads, transitways and major transit corridors;*
>
> *(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;*
>
> *(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites.*
>
> *(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of:*
>
> *(A) Land use applications that require public hearings;*
> *(B) Subdivision and partition applications;*
> *(C) Other applications which affect private access to roads;*
>
> *(g) Regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, and capacities and levels of service of facilities identified in the TSP.*

The goal of access management is to protect a street for its intended function. In Monmouth, access management is primarily a tool that can be used to insure that objectives of mobility and safety are preserved for the city's arterial and collector system. Highways 99W and 51 present important challenges related to reconciling the needs of past and future commercial development along the roadway with their intended function of carrying through traffic. In light of these competing demands on the arterial, the city will work with adjacent property owners to develop creative approaches to access management.

Although the state has jurisdiction over the highway itself, the city has control over land adjacent to the highway, and thus, has significant influence over access demands. Because of the overlapping jurisdictions, all development proposals that impact the state highways will be submitted to ODOT for review.

Hoffman Road, designated a minor arterial, is another street where access management is of particular importance. The city of Independence already has specific policies intended to manage access on Hoffman Road. Preserving the future mobility of Hoffman Road will require a coordinated commitment to managing access by Polk County, Independence, and Monmouth.

The city, in cooperation with ODOT, Polk County, and Independence can achieve the following objectives through a coordinated approach to access management:

- Maintain an acceptable level of service (good mobility).
- Minimize capital costs.
- Improve safety by minimizing potential conflict points.
- Improve bicycle/pedestrian mobility.

Guidelines for access management are previously defined in the street design standards. The city achieves access management objectives through application of its subdivision and partitioning ordinance (Appendix E). While existing spacing may already vary from recommended guidelines, the city will require the standards described in the TSP of all new development and encourage the consolidation of accesses wherever possible.

The following are examples of access management techniques that will be used to accomplish the above objectives:

- Common driveways (sharing access with adjacent properties);
- Providing access to collector and local streets;
- Encourage connections between adjacent properties;
- Construct local service roads;
- Offset opposing driveways.

The city will remain flexible in its response to future development proposals on its arterial/collector streets, considering creative access solutions but maintaining a firm commitment to negotiating agreements that uphold the objectives of safety and mobility.

The following other policy recommendations are included:

1. **The city will manage the supply, operations, and demand for parking in the public right-of-way to encourage the economic vitality, traffic safety, and livability.**

2. **The city will consider the use of traffic management devices (signs, signals, curb extensions, and markings), consistent with sound engineering and planning practices, to improve safety and livability in neighborhoods and in the commercial district.**

Public Transportation Element

The TPR requires (OAR 660-12-020) the city of Monmouth to produce a Public Transportation Plan as a part of the TSP which:

A) Describes public transportation services for the transportation disadvantaged and identifies service inadequacies.

B) Describes inter-city bus and passenger rail service and identifies the location of terminals.

The following objectives for ~~mass transit~~ **public transportation** are included in the city's TSP:

1. The city shall ~~prepare to enter into a mass transit district~~ **coordinate** with governmental and private agencies **in the planning and provision of public transportation services** and shall ensure that a given level of service is adequate for the costs incurred.
2. **The city will coordinate with other jurisdictions when the need for park-and-ride facilities is studied.**

~~3. The city shall work with other governmental units to develop a mass transit system.~~

Essentially, this component of the TPR requires Monmouth to provide an inventory of available transportation services and identification of needs that are not met by existing services. The available services have been described in the inventory of the existing transportation system. Inadequacies and needs have been discussed in the determination of need section. The draft Polk County TSP proposes a commuter service between Monmouth and Salem. The city will coordinate with Polk County in the development and operation of the service if the recommendation is adopted. The city will participate in the Polk County Transit Study being conducted by Polk County Human Services.

Bikeway System Element

The TPR requires (OAR 660-12-020) the city of Monmouth to produce a Bikeway System Element as a part of the TSP:

A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area. The network and list of facility improvements shall be consistent with the requirements of ORS 366.514.

Also, under Implementation of the Transportation System Plan (OAR 660-12-045):

In developing a bicycle and pedestrian circulation plan as required by 660-12-020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas. Appropriate improvements will provide for more direct, convenient and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e. schools, shopping , transit stops). Specific measures include, for example, constructing walkways between cul-de-sacs and adjacent roads, providing walkways between buildings, and providing direct access between adjacent uses.

The TSP's bikeway system element is described in detail in the Independence-Monmouth Comprehensive Master Bicycle Plan (1991) and shown as Figure 8. Network and facility improvements are described in the Master Bicycle Plan and the city of Monmouth's Capital Improvement Plan (Appendix F). The Plan provides a detailed analysis of existing conditions and need related to bicycle travel. The Plan developed goals and objectives that formalize the city's policy on bicycle use and the development of a more bicycle friendly transportation system. Further, the Plan contains detailed descriptions of facilities, education and implementation plans and includes bicycle parking policies consistent with the TPR. The Plan identifies bikeways on all arterials and major collectors and does not prohibit bicycle use on any public streets.

The following three goals and thirteen objectives for the bikeway system are taken from the Master Bicycle Plan:

GOAL: To provide and maintain a safe, convenient, and pleasing citywide bicycle system that is integrated with other transportation systems.

1. Develop a bicycle facility plan that meets the needs of bicyclists in all city areas and within the urban growth boundary.

2. Balance the plan with a variety of facilities to meet the needs of different bicyclists.

3. Provide bicycle access between the city's urban and undeveloped areas.

4. Develop a routing system, to be updated yearly and including a map for the public, that describes the opportunities for bicycling in Independence and Monmouth.

5. Provide uniform bicycle route signs, markings, and design standards that meet state and national standards.

6. Establish priorities for facility construction and maintenance based on need and resource availability.

7. Evaluate the plan regularly to see how well the facilities meet the objectives.

8. Continually seek opportunities to further extend the Bikeway System through abandoned rights-of-way or through private developments.

GOAL: To encourage and support bicycle safety, education, and enforcement programs.

1. Encourage and support education and safety programs for all ages to improve bicycle skills, observance of traffic laws, and overall safety.

2. Analyze and monitor bicycle accident data to identify safety problem areas.

GOAL: To develop a comprehensive system of through routes, a perimeter beltline loop, secondary connecting routes, and recreational routes.

1. Develop improved through bike routes as striped bike lanes that are components of the statewide bikeway system.

2. Develop a beltline bikeway system as shared roadway or shoulder bikeways around the perimeter of Independence-Monmouth.

3. Develop a system of secondary connecting bike routes as shared roadway or shoulder bikeways.

4. Develop a system of recreational and mountain-bike routes connecting parks, and following creeks, rivers and abandoned railroad rights-of-way, initially unpaved, and eventually paved bike paths.

The preceding objectives replace the existing objectives which are:

~~1. Bikepaths shall be considered as a part of new subdivisions.~~
~~2. The city shall develop a long range plan for bikepath improvements.~~

Pedestrian Transportation Element

The requirements for pedestrian element were given in the bikeway system element.

The following objectives for pedestrian traffic are included the city's TSP:

1. Low curb crosswalks shall be used at all intersections, consistent with ADA guidelines, to facilitate use by the transportation disadvantaged, the elderly, and the handicapped.

2. As feasible, the city shall allow no physical obstruction of sidewalks such as utility poles, sign posts or guy wires (consistent with ADA guidelines).

3. Visibility and unobstructed views shall be promoted for all areas of high pedestrian use.

4. Bicycle traffic on sidewalks shall be prohibited.

The joint Independence-Monmouth Comprehensive Master Bicycle Plan was adopted in December of 1991. While the report focuses on bicycle use and does not specifically address pedestrian needs, it does appear to satisfy the requirements of the TPR. Because the city currently requires sidewalks on all city streets, pedestrian needs will be adequately addressed. Further, the bikeway design and construction specifications provided in the plan indicate that new bike paths should be designed for multiple users.

Air, Freight, Rail, Water, and Pipeline Transportation Elements

The TPR requires (OAR 660-12-020) the city of Monmouth to produce a TSP that includes:

An air, rail, water, and pipeline plan which identifies where public use airports, mainline and branchline railroads and railroad facilities, port facilities, and major regional pipelines and terminals are located or planned within the planning area. For airports, the planning area shall include all areas within airport imaginary surfaces and other areas covered by state and federal regulations.

Monmouth has no freight, rail, water, or pipeline facilities within the urban growth area. The following objective for air transportation is included the city's TSP:

1. The city of Monmouth shall support the efforts of the city of Independence, Polk County, and the State Aeronautics Division to protect and maintain the Independence airport site.

Monmouth is not located on a watercourse with historical or current use as a transportation facility. Adjacent Independence is located on the Willamette River, which has functioned as transportation facility in the past. Currently, no freight shipping or passenger service occurs on the river, but Independence is investigating the possibility of recreational passenger use of the river. If the feasibility study supports establishment of a water taxi, or other passenger service, Monmouth should coordinate with Independence and support linkages with the service.

Transportation System Demand and Management Element

Due to its size (<25,000 people) and location (not part of a Metropolitan Planning Organization area), Monmouth is not required to develop a TSP that includes a Transportation System Demand and Management Element.

Implementation of Transportation System Plan

Review & Coordination

The TSP has been reviewed by city of Monmouth staff, Polk County, ODOT, and the Department of Land Development and Conservation (DLCD) for consistency with other plans and compliance with the TPR. Review comments and related changes to the TSP are included in Appendix D.

Adoption Process

The Monmouth Planning Commission and City Council has reviewed and adopted the plan October 7, 1997.

Implementing Ordinances

The TPR requires cities to adopt policies and land use regulations for implementing the TSP as provided for in OAR 660-12-045.

A review of Monmouth's Comprehensive Plan and related ordinances has been completed and changes and additions made. The existing ordinances, and indicated changes and additions, are shown in Appendix E. The implementing ordinances were reviewed and adopted during review and adoption of the TSP.

Financing & Capital Improvement Program

The city of Monmouth has a Capital Improvement Program that covers many of the planned improvements to the roadway system (Appendix F). This portion of the TSP describes methods that the city may use, and in some cases does use, to fund proposed projects. These finance methods may be used individually or in combination to fund projects, or contribute the city's share, to transportation projects.

Transportation improvement projects are funded from three sources: (1) federal, (2) state, and (3) local governments. A brief overview of the funding mechanisms available from each source is given.

Federal

Transportation Efficiency Acts

Federal funds were available under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. This act terminated in 1997 and a new funding bill (NEXTEA) will be authorized. Funding categories and levels under the new bill are unknown at this time, but Monmouth will stay current with the progress of this bill and its applicability to Monmouth transportation needs. The Surface Transportation Program (STP) and National Scenic Byways Program were previous programs potentially useful for Monmouth.

Community Development Block Grants

The Federal Department of Housing and Urban Development administers a program called the Community Development Block Grant Program (CDBG). Funds are allocated based on city size and demographics such as income levels and housing standards. In some areas, street reconstruction projects in older neighborhoods have been funded by this program.

State

State Motor Vehicle Fund

The State of Oregon collects gas taxes, vehicle registration fees, overweight/overheight fines and weight/mile taxes and distributes a portion of these revenues to counties and cities using an allocation formula. The State distributes a local share to cities based on a per capita rate. Revenues vary from year to year as the allocation formula can vary. Funds can be used for capital improvements or maintenance.

Special Public Works Funds (Spwf- Lottery Program)

The Special Public Works Fund provides grants and loans for public works that support private projects resulting in creation or retention of permanent jobs. Loans are emphasized in this program and are available for amounts up to $11,000,000 for a maximum of 25 years unless the project life is shorter. The maximum grant amount is $500,000 and may not exceed 85% of the project cost.

Toll Roads Or Bridges

This method builds certain facilities by charging a fee per use and statutes provide the option to ODOT and "private" bridge projects. Toll roads are provided for on a more limited basis, for example, the Newberg bypass.

Local

City Gas Tax

The city could levy a per gallon tax on fuel sold in Monmouth. Typical taxes range from $0.01 to 0.03 per gallon and Woodburn, Tillamook, and The Dalles are examples of a communities with such a tax. The city could contract with the State Fuel Tax Branch to collect and administer the tax.

Local Vehicle Registration Fee

This would operate similarly to the existing statewide system. Although the method has been discussed, no city or county governments have implemented such a program.

System Development Charges

The method collects an equitable share from new developments to help pay for the capital costs of improvements needed to support growth. Cities that use this System Development Charge (SDC) method are required (ORS 223.297) to complete a plan that lists the capital improvements that can be funded by SDCs and the estimated timing and cost for each improvement. SDCs are limited to those capital improvements that will be or were required to increase capacity because of increased demand due to current or expected development. This method is commonly acceptable to the public because new residents, rather than current residents, pay for the improvements. The method is less acceptable to developers because it is argued that it makes new development unaffordable. Revenues provided by this method are variable because they are linked to the amount of new development.

Street Bonds

This method is typically used to fund road improvements that will benefit an entire community. General obligation bonds are supported by a property tax levy on assessed value of property. This method requires voter approval of bond issues and is the least expensive borrowing mechanism for municipalities.

Local Improvement Districts

This method assesses property owners in an area where capital improvements, such as road and utility projects, are required. Local Improvement Districts (LIDs) have typically been applied in developing new industrial areas but could be used to fund improvements in developed areas through increases in property taxes or other assessments. LIDs can be initiated by property owners or the city, and the collected funds are usually used to service debt on bonds incurred to undertake the improvements. Costs can be determined based on road frontage or square footage. LIDs are most suitable for individual local street improvement projects.

Road User, Or Street Utility, Fees

This method would charge city residents and nonresidential users a monthly or yearly fee for use of the city road system, similar to water and sewer utility fees. User fees go to maintenance activities and are instituted in LaGrande and Ashland.

Traffic Impact Fees

This method is used to finance required road improvements associated with new development. The fee, which can vary for different land uses, is calculated based on the estimated number of vehicle trips generated by the proposed development. Revenues generated in this manner must be used for capital improvements and not maintenance activities.

Full/Partial Private Contributions

Under this method the developer builds the road to city standards and then deeds the road to the city as a condition of development.

Grants are available from some economic development programs. The Immediate Opportunity Grant program, managed by ODOT, provides a maximum of $500,000 for public road work associated with an economic development related project of regional significance, provided the project creates primary employment. Additionally, although lesser shares will be considered, the grantee should provide an equal local match.

It should be noted that the state has begun to require contributions from local jurisdictions for some projects when development has significant traffic impacts. An example of this are improvements on U.S. Highway 101 near Lincoln City, and Highway 18 near Valley Junction. Cost sharing may become more common if federal funds decrease in the future. It is expected that local contribution to or cost sharing for projects such as interchanges and bridges will continue.

References

Associated Transportation Engineering & Planning, Inc., Traffic Safety Management Program for Independence-Monmouth, 1981.

Carl H. Buttke, Inc., Traffic Circulation and Impact, Western Oregon University Monmouth, Oregon, April 30, 1987.

Center For Population Research and Census, Portland State University; Demographic, Housing & Socioeconomic Characteristics of Marion, Polk, and Yamhill Counties: Their Cities and Census Tracts;

CH2M, Engineers and Planners, Preliminary Street Planning and Design Study; 1971.

City of Monmouth; Comprehensive Land Use Plan, Monmouth Oregon; 1979.

City of Monmouth; Comprehensive Plan, Monmouth Oregon; May 1972.

City of Monmouth; Local Review Order; May, 1988.

City of Monmouth; Monmouth Zoning Ordinance.

Falcon Architecture & Planning, Independence-Monmouth Comprehensive Master Bicycle Plan, December, 1991.

Lancaster, T., Bi-Mart Store Traffic Impact Study, Monmouth, Oregon, April, 1994.

Oregon Department of Environmental Quality-Air Quality Division, 1994 Oregon Air Quality Annual Report, 1995.

Oregon Department of Environmental Quality-Air Quality Division, 1995 Oregon Air Quality Data Summary, 1996, Report Number 92871.

Oregon Department of Transportation, Monmouth-Independence Traffic Corridor, February, 1975.

Oregon Department of Transportation, Potential Development Impact Analysis City of Monmouth, May 1994.

Oregon Department of Transportation; Transportation System Planning Guidelines; August, 1995.

Oregon Department of Transportation; 1991 Oregon Highway Plan; June 1991.

Oregon Department of Transportation; Oregon Transportation Plan: The New Oregon Trail Leading into the 21st Century; Plan; September 1992.

Oregon Department of Transportation; Demographic and Economic Forecasts 1990-2030, 199?.

Western Oregon University; Interim Update: Western Oregon University Campus Master Plan; June, 1995.

Wineberg, Howard; Population Estimates For Oregon: July 1, 1995; Portland State University.

Appendices

Appendix A: Definitions and Acronyms

Access Management: Measures regulating access to streets, roads, and highways from public streets or roads and private driveways. Measures may include, but are not limited to, restrictions on the siting of interchanges, restrictions on the type and amount of access to roadways; and the use of physical controls, such as signals and channelization including raised medians to reduce impact of approaching traffic on the main facility.

ADA: Americans with Disabilities Act of 1990

Arterial Highway: A highway primarily for through traffic, usually on a continuous route.

Average Daily Traffic (ADT): The annual average two-way traffic volume. It represents the total traffic for the year divided by 365.

Comprehensive Plan: A local document that guides a community's land use, conservation of natural resources, economic development, and public services. Plans contain data and information called the inventory, and the policy element. The policy element sets forth the community's long-range objectives an the policies by which they will be achieved. The plan in adopted by ordinance and has the force of law.

Demand Management: Actions which are designed to change travel behavior in order to improve performance of transportation facilities and to reduce need for additional road capacity. Methods may include but are not limited to the use of alternative modes, ridesharing and vanpool programs, and trip reduction ordinances.

DLCD: Department of Land Conservation and Development, the State of Oregon's land use planning agency.

Divided Highway: A two-way highway on which traffic traveling in opposite directions is physically separated by a median.

Frontage Road (Local Service Road): A local street or road located parallel to an arterial highway for service to abutting properties for the purpose of controlling access to the arterial highway.

Implementing Measures: The mechanisms used to accomplish the goals, policies, and objectives contained in a comprehensive plan. There are a variety of measures and two common examples are zoning and land-subdivision ordinances.

Intermodal: Connecting individual modes of transportation and /or accommodating transfers between such modes.

ISTEA: the federally enacted Intermodal Surface Transportation Efficiency Act of 1991 which provided authorizations for highway, highway safety, and mass transportation for the following six years.

Level of Service: A quantitative measure of the effect of a number of factors on transportation service including speed and travel time, traffic interruptions, freedom of movement, safety, driving comfort, and convenience.

Modes of Transportation: Mass transit, air, water, pipeline, rail, highways, bicycle, pedestrian types of travel and transport. The terms "modes", mode connectivity", and intermodal refer to these types of travel.

Periodic Review: A broad reevaluation of the comprehensive plan that occurs every four to ten years.

Public Transit: Bus , van, light rail and other surface transportation systems open to the general public which operate frequently and on predetermined routes and schedules.

PDIA: Potential Development Impact Analysis: Estimates existing and potential development for residential, commercial, and industrial land based on U.S. Census data, local zoning ordinances, and aerial photos. Designed to help answer the question, How many vehicle trips would be produced if every vacant, buildable parcel of property were developed at maximum density?".

OAR: Oregon Administrative Rules. A body of law that describes how legislation and other laws will be implemented.

ODOT: Oregon Department of Transportation

Rural: Any area not included in a business, industrial, or residential zone of moderate or high density, whether or not it is within the boundaries of a municipality.

TPR: The State Transportation Planning Rule contained in Oregon's Administrative Rule, Chapter 660, Division 12, which implements the statewide planning Goal 12: Transportation.

Urbanizable area: Area between the Urban Growth Boundary and city limits that will eventually be developed.

UGB: Urban Growth boundary. A line which drawn around a geographic area which separates urban use lands from resource, or rural, use lands; and shows where the city intends to grow.

Urban: Any territory within an incorporated area or with frontage on a highway which is at least 50 percent built-up with structures devoted to business, industry, or residences for a distance of a quarter mile or more.

Urbanizing: Areas within an urban growth boundary that are undeveloped

WOU: Western Oregon University, previously called Western Oregon State College, Oregon College of Education, and Monmouth University.

Appendix B: TAC and Other Committee Meeting Notes, and TSP Review Comments

Minutes: **Monmouth Transportation System Planning Meeting**
November 16, 1994 7:30pm
(Planning Commission Meeting Final Agenda Item)

Planning Commission Members Present:
Chair: Jim Beaird
Suzanne Lamon
Curtis Cryer (Long Range Planning Committee)
Kenneth Lindsay
Richard DeLauder
Charles Caldwell

Traffic Safety Committee should be invited to attend all TSP meetings.

The newspaper should make clear that the public are invited, and encouraged to attend, all Planning Commission/Advisory Group meetings.

The Planning Commission would like a staff report that identifies the specific requirement of the TPR that the city of Monmouth must comply with. A copy of the complete rule should be on file with the city (Martha has a copy). A work program proposal would also be helpful.

Work with city staff to produce a proposal for PC review and than have some sort of public open house, workshop or hearing.

Minutes: **Monmouth TAC #1**
February 21, 1995
7:30 PM

Attendance: Curtis Cryer, Planning Commission
Jim Beaird, Planning Commission
Don Burcells, Traffic Safety Committee
Linda McMillian, Traffic Safety Committee
Dan Fricke, ODOT
Gary Wilson, Public Works Staff

Discussion of Network Plan:

Issues related to Highway 51 "S" curves.
Interest in a cost comparison of two alternatives (1) realignment of Highway 51 (2) frontage road serving Hogan, Alberta and proposed development east.
Are there Dolan issues related to placing future realignment on a plan map? This would at least provide the City/State with greater authority to condemn property necessary for future realignment.
Hogan is very congested during little league games.

Issues related to WOU Campus Master Plan.
The committee believes it is important that Monmouth retain its current functional classification as a collector. That designation reflects its current use. The committee also agreed that as development occurs north of the campus, and the street network is expanded, the traffic volume on Monmouth will decline.

The city would be more considerate of a phased lowering of the functional classification of Monmouth as alternative routes are improved or developed and use of the street declines to volumes acceptable for a local street. Concurrent with the street redesignation as a local street would be the opportunity to redesign the street in an effort to achieve a greater level of traffic calming. The street should probably still remain open in order to provide emergency access and to serve a limited volume of local traffic.

The committee is open to recommending the reclassification of Church between Stadium and Monmouth to Local. The committee suggested that this change would need to be accompanied by upgrading Stadium Drive from Church to Jackson and Jackson from Stadium to Monmouth to Collector.
The committee also proposed a second east/west connection between 16th and Gun Club south of Hoffman Road
Gary mentioned his desire to extend Madrona west of 99W. He also mentioned the long range intention of signalizing Highway 99 at its intersection with Gwinn, Madrona, and Church Street

Review of Transportation Goals, Policies and Objectives.

Gary suggested replacing language that states "reducing reliance on the automobile" with "providing alternatives to the automobile" or including both for better clarification.
Policy 3: Replace "the ODOT Six Year Highway Improvement Program" with "STIP."
Policy 4: Follow or replace "affected transportation facility or service providers" with "(ODOT, Polk County, and Independence). Eliminate "significantly" let effected jurisdiction determine what is "significant" to them.
Curtis suggested eliminating Roads and Streets Policy #5.
Dan Fricke recommended adding "Consistent with ADA Guidelines to Pedestrian Traffic Policy #2.
Change title of "Mass Transit" section to "Public Transportation"

Schedule of Future Meeting Dates:

March 14 (Review Survey Proposal)
March 29
April 26
May 9
May 24
June 28

Minutes: **Monmouth TAC #2**
March 14, 1995
7:30 PM

Attendance: Linda McMillian, Traffic Safety Committee
Gary Wilson, Public Works Staff
Martha Wiebe, City Planner

Discussion of survey questionnaire.

- revise ordinance per TAC comments and fax to Gary for review by Stan Kenyon
- Gary will see if the survey can go in this months water bill

Future Meeting Dates.

- April 10, 26
  May 9, 24
  June 28

Review Gary's proposals for realignment of Highway 51 "S" curves. Set up meeting with ODOT.

LID projects mentioned by Gary include Warren Street. Widen street to 36 feet, curbs, sidewalks.

Minutes: **Monmouth TAC #3**
April 10, 1995
7:30 PM

Attendance: Linda Macmillan, Traffic Safety Committee
Gary Wilson, Public Works Staff
Martha Wiebe, City Planner

Discussion of survey questionnaire.

- Revise questionnaire and get to city by Wednesday. Gary will give a copy to the parks board and Martha will get a copy to the Planning Commission.
- Write a brief notice for the newspaper, needs to be in by Thurs., informing people that the survey is at city hall and that meetings are open to the public.

Review Gary's proposals for realignment of Highway 51 "S" curves.

Encourage Independence to examine alignment of "S" curves on Hoffman Road.

LID projects mentioned by Gary include Warren Street. Widen street to 36 feet, curbs, sidewalks. Gary will send me a copy of the city's LID language.

- currently being challenged on LID

The city is working on a sidewalk improvement program!

Martha and Gary will make note of any bicycle improvements they know of so that I can summarize the improvements in the Plan.

- Bikeway projects identified in CIP
- SDC's also used for bicycle improvements/Ped improvements
- Stadium; removing parking on one side to facilitate bikes

Update arterial and collector inventory per Gary's comments.

Set up meeting with Mike Danko and Gary to develop a recommendation on street standards that can be presented to the TAC's (together) for approval.

- Consistent pavement width, vary lane use according to city needs
- Phasing plans
- downtown needs to retain parking

Minutes: **Monmouth TAC #4**
May 9, 1995
7:30 PM

Attendance: Gary Wilson, Public Works Staff
Martha Wiebe, City Planner

Review Street Network Plan

Designate Clay as a Collector Street; Functions the same as Jackson and Madrona

#2 Madrona Street Extension: Post Office is also an important destination

#3 Eliminate "outside of the city limits." Present the Talmage/16th street project more as an interjurisdictional effort. This project will create a very important north/south transportation corridor between the two cities.

Future Streets: Mention realignments to past proposals, these should be straitened out where ever possible.

Extend Craven Street through to Hoffman Road

The city will start to work on the Finance Portion of the Plan; Would like to have everything adopted by August-September.

Minutes: **Monmouth Planning Commission Workshop**
June 4, 1997
7:30 PM

Attendance: Nelda Meyers, Planning Commission
Robert Canning, Planing Commission
Gerald Girard, Planning Commission
Jim Beaird, Planning Commission
Martha Wiebe, City Planner
Wayne Rickert, Mid-Willamette Valley Council of Governments

The workshop concentrated on a review of goals and policies in the draft Transportation System Plan for the city of Monmouth, and resulted in some changes. Discussion of street standards occurred and it was noted that the plan calls for a collectors paved width of 36 feet which is a reduction of 8 feet from the existing street standard. It was also noted that the wider local streets are necessary for the high concentration of students' parking needs. During the general discussion the observation was made that Monmouth has a very high percentage of people who walk to work so additional parking has not diluted use of alternate modes.

The Planning Commission had two minor additions to the proposed street network. A third change regarding the functional classification of Monmouth Avenue will be discussed at the next planning Commission meeting and a final recommendation of that change be submitted for vote.

Minutes: **Monmouth City Council Meeting Minutes**
August 5, 1997
7:30 PM

Attendance: Nelda Meyers, Planning Commission
Robert Canning, Planing Commission
Gerald Girard, Planning Commission
Jim Beaird, Planning Commission
Martha Wiebe, City Planner
Wayne Rickert, Mid-Willamette Valley Council of Governments

TSP Review Comments

The draft TSP was distributed to members of the Monmouth City Council and Planning Commission, Monmouth City Planner and Public Works Director, ODOT, and DLCD for review. All written review comments are summarized in the following section, or shown in their entirety, and the steps taken to address the comments are described *(italics)*.

Oregon Department of Transportation, Peter Idema

- Paving widths for collectors AND local streets are 36 feet. Earlier in the plan it is stated that the collectors will have bike lanes. Why would the city want local streets without bike lanes to have the same pavement width as collectors with them? Or is this an unaddressed area of the plan to date? A 60 foot wide ROW and 36 foot wide travel surfaces for local streets and collectors will not meet the TPR requirements. I can give you a local street standards table that shows what other communities are adopting is you would like. *(Included in Appendix B). Gary Wilson's (Monmouth Public Works Director) letter in this appendix summarizes the rationale behind the local street standards which is mainly a desire to preserve future flexibility and maximize parking capacity needed by the high student population at WOU.*
- The city is coming on pretty strong about discouraging cul-de-sacs, which is fine if it works politically. But from my somewhat more conservative point of view on this topic, I think it is important that cul-de-sacs are not allowed where through streets would provide better circulation (but not a short-cut for non-local traffic). In other cases, they are (in my opinion)OK. I am a little concerned that cities are coming on so strong that the development community might strongly object, because people do tend to like living on dead-end streets. The plan states that cul-de-sacs are allowed in the presence of a freeway and since there are no freeways in Monmouth, it seems like this should not be here. *Reference to freeway removed from text.*
- Block sizes- The plan states that blocks shall be no more than 1,200 feet in length between corner street lines....and the recommended minimum length of blocks along an arterial I 1,800. I recommend you check with DLCD. The 1,200 feet in length seems to me very long. The definition of "unusually long block" is 600 feet. The 1,800 feet is even longer, which is great from an ODOT standpoint of minimizing accesses onto the highway, but not very pedestrian friendly. Again, I would seek out help on this from DLCD. One way would be to allow pedestrian connections more frequently. *The reference to 1,800 feet block lengths has been removed.*
- Include the entire funding explanation. *Corrected on title page.*
- Does the show a local street that will serve Bi-Mart? If so, how and when will that get built. *No such street is shown, partly because the Street Network shows only future locations of collectors and arterials. A paved pedestrian and bicycle facility does connect to B-Mart from Ecols Street, probably off Ackerman, the only local street that could be extended to provide an alternative access (access other than Highway 99W) to Bi-Mart. City has reservations an extension of Ackerman because the abutting property is zoned RM.*

Local Street Standards

Jurisdiction	Street Classification	R-O-W	Pavement Width (C-C)	Travel Lanes	Parking Lanes	Sidewalk & Planting Strip	Design Criteria	Source
Ashland	Residential	47	36	2	2	11		
Albany	Local <1,000'	45	32	2	2	13	Permitted but not required.	
	Local >1,000 '	55	36	2	2	19		
Beaverton	Residential Local	42	24	1+	1	18	< 200 ADT	
	Residential Local	46	28	2	2	18	200 - 500 ADT	
	Residential Local	50	32	2	2	18	500 - 1000 ADT	
Brookings	Residential	45	30	2	2	15	< 20 dwelling units	
	Residential Collector	50	36	2	2	14		
Central Point	Minor	50	36	2	2	14		
Coburg	Local	50	28	2	2	22		
Corvallis	Local	50	28	1+	2	22	< 2,000 ADT	
	Local	56	34	2	2	22	< 2,000 ADT	
Eugene	Local	50	28	2	2	22	< 750 ADT	
	Local	60	32	2	2	18	500 - 1,000 ADT	
	Local	60	36	2	2	24	> 750 ADT	
Florence	Minor	50	34	2	2	16	< 2,400' which cannot be extended	
	Feeder	50-60	34	2	2	16-26	Continuous Minor Streets	
Forest Grove	Local	58	32	2	2	26		
Grants Pass	Local (w/o parking)	35	24	2	0	11	1 space/d.u. of additional off-street parking required	
	Local (parking 1 side)	42	30	2	1	12	1 space/d.u. of additional off-street parking required	
	Local (parking 2 sides)	50	36	2	2	14		
Gresham	Local	50	32	2	2	18		
Happy Valley	Local	40	26	1+	2	14	< 15 d.u.	
	Local	40	28	2	2	12	15 - 30 d.u.	
	Local	50	30	2	2	20	> 30 d.u.	
Hillsboro	Local Residential	60	32	2	2	28		
Keizer	Cul-de-sac (mini subdiv)	30						
	Cul-de-sac	50						
	Local	60						
Klamath Falls	Minor	60	36	2	2	24		
LaGrande	Local (no parking)	?	24	2	0	?	Permitted with adequate off-street parking for PUDs.	
	Local (parking 1 side)	?	30	2	1	?	Permitted with adequate off-street parking for PUDs.	
	Local (parking 2 sides)	60	36	2	2	24	Sidewalks on only one side.	
Lebanon	Cul-de-sac	40						
	Local < 1,200'	50						
	Local >1,200'	60						
Lincoln City	Local Residential	50	28	2	2	22		
McMinnville	Local	50	28	2	2	22		

Post-it® Fax Note 7671
To Jeanne Fremm
Co./Dept. MWV COG
Phone #
Fax # 588-6094
Date 6-6-97
From Peter
Co.
Phone # 757-4211
Fax #

FYI... Jeanne

City of Monmouth

Gary Wilson, Public Works Director

- Concerns about the historical, and 1995, traffic volume data on Highways 51 and 99 W. He recalls no local events or projects which would have reduced traffic volume so dramatically on Highway 51 after 1990. Also, his perception is that traffic volume is higher on Highway 51 than on Highway 99W, which is the reverse of what ODOT data shows. *Consultations with ODOT staff (Craig Black) do not reveal an obvious answer. Traffic is actually counted about once every three years. Volume estimates are made for the other years based on permanent count stations and ODOT professional judgment. Craig Black knew of no specific changes in how the volume data was obtained that might explain the 25% reduction in traffic volume between 1990 and 1993. These kinds of seemingly random fluctuations in the volume measurements have been observed elsewhere, for example Seaside, Oregon.*
- Overall road conditions in Monmouth are better than what is shown in the 1991 street condition survey because of resurfacing projects, though no subsequent conditions survey has been performed. *So noted in the text in the inventory of existing conditions.*
- A letter from Gary Wilson, summarizing the rationale behind the local street width standards, is enclosed. Main points are that standards allow for maximum flexibility in the system, accommodate the large on-street parking needs associated with the student population, and accommodate the parking demand that can not occur on the relatively narrow collector streets.

151 West Main Street
Monmouth, Oregon 97361-2199
(503) 838-0722
FAX (503) 838-0725

CITY OF
MONMOUTH

 Promoting pride, progress, and friendly hometown values.

MEMO
July 7, 1997

TO: Jeanne Fromm, Planner

FROM: Gary Wilson, Public Works Director/Engineer

SUBJECT: MONMOUTH TRANSPORTATION SYSTEM PLAN

Thank you for forwarding ODOT's comments regarding local street width's. I would like to respond to the comments as they were relayed in your memo.

COMMENT #1

ODOT **"Why would the City want local streets without bikelanes to have the same pavement width as collectors with them?"**

Response The collector street section contains two 12' travel lanes and two 6' bikelanes. The local street section contains two 10' travel lanes and two 8' parking lanes. The math works out to be 36' feet wide for both.

Monmouth is a fairly symmetrical city with flat topography. The UGB is also fairly symmetrical with the developed area in its center. There are few natural barriers which prevent the development of a functional grid transportation system. This is the basis of the Monmouth's transportation plan. Monmouth's UGB also contains a very large number of small parcels of land. These small parcels often develop independently. With fringe development Monmouth is unable to predict, with any degree of accuracy, the direction of development. The ability to maintain a large degree of system flexibility is a very valuable tool. Holding the same street width's for local and collector streets provides very useful flexibility.

Comment #1 Response (continued)

The building of this flexibility has not resulted in the building of unused or excessively wide local streets. Being a college town, Monmouth is highly impacted by student housing. Some of this student housing is found in apartment complexes, however the impact is greatest in our low density residential areas. Single family and duplex homes which are housing 4-6 independent students have a very heavy impact on the local street system. Parking 4-6 cars in the two car parking space provided with each unit is impossible. On-street parking is relied on very heavily. A 36 foot wide street is not excessively wide when parking is utilized consistently on both sides of the street. In our judgement, 36 feet is a minimum local street width for two way traffic and on-street parking.

The argument made for local street width could also be made to widen the collector street section to include parking. For safety and traffic flow, we prefer to not provide on-street parking on collector streets. We feel that the local street system will meet the on-street parking needs. Had Monmouth's collector street width been 44 feet instead of 36 feet, with parking on one side, maybe the local street width would not be an issue. I hope Monmouth's decision to utilize a relatively narrow collector street does not become an argument for change in a community which needs a wider collector street standard.

An incidental, but valuable, benefit of having the same street width for local and collector streets is the ability to transition to collector status and function when traffic warrants. Many of our collector streets start out with very low traffic volumes. During these periods, these streets look and feel like local streets. During the early stages of collector street growth we are able to allow on-street parking and shared roadway bicycle facility. As traffic volume increases, parking is removed and the bike lane is created.

The table provided by ODOT is an indication of other city's needs. It appears these needs are variable. Local street widths vary from 24' to 36' with a number of them being 36' wide. Local street right-of-ways also vary from 42'to 60' with a number of them being 60'wide. It would appear that Monmouth is not unique in its standards. Street standard needs are best identified by the local government. I see no justification for change based on the needs of another community.

COMMENT #2

ODOT "A 60 foot wide ROW and 36 foot wide travel surface for local and collector streets will not meet TPR requirements."

Response Amazing! It is hard to believe that the TRP requirements do not permit a 60 foot wide right-of-way and 36 foot wide street. Or do they only allow only one street classification to be 36 feet wide? If only one classification can be 36 feet wide, which one? How much width difference do we need? What about a 36 foot local and a 37 foot collector?

I will not recommend a Transportation Plan to Monmouth City Council which does not meet the needs of the community. We have worked together with our Council of Governments to prepare a plan which, based on my professional judgement, meets these needs. I will not support changes in the plan which do not meet the community's needs. I will not support changes which are detrimental to the plan and are imposed from outside the community. In short, the plan must work for Monmouth. I cannot believe that the criteria for plan approval would handicap the community officials by restricting or limiting the plans beneficial elements.

I expect street width standards to be discussed at the hearing for plan adoption. There are many pros and cons to be evaluated and Council may wish to make adjustments to the recommendations contained in the draft plan. It is my experience that Monmouth Council will adjust the plan to best fit the present and future needs of Monmouth.

Oregon Department of Transportation, Dan Fricke

Six comments were received from Dan Fricke, Senior Transportation Planner (see letter). The following responses to review comments were incorporated into the TSP.

#1
The LOS calculations were presented in table format. Location of LOS calculations were added to Figure 6 and base year/projection year information was added.

#2
Recommending a corridor planning process to identify specific improvements has been removed from the TSP and replaced with a recommendation to initiate a comprehensive traffic study including modeling capability, in 1998-99. This TSP does not have the resources to identify specific improvements in a complex traffic network.

#3
Language added to System Improvement #2 that emphasizes the unlikelihood that ODOT will identify funding sources for this project.

#4
More active language, from "should be" to "is" supported, was used in System Improvement #3 and other such changes were made throughout the document where appropriate.

#5
Language regarding "reduced reliance upon the automobile" retained in Objective 1 of Transportation Goal in order to be consistent with other plan objectives and comply with the TPR.

#6
Language emphasizing ODOTs authority to manage access on state highways was added to the indicated section.

July 29, 1997

RECEIVED
JUL 31 1997
MID WILLAMETTE VALLEY
COUNCIL of GOVERNMENTS

Oregon
DEPARTMENT OF
TRANSPORTATION
REGION 2

Ms. Jeanne Fromm
Mid-Willamette Valley Council of Governments
105 High Street SE
Salem, OR 97301

SUBJECT: Comments on Draft Monmouth Transportation Systems Plan

FILE CODE:

Thank you for sending the Draft Monmouth Transportation Systems Plan (TSP) to the Oregon Department of Transportation (ODOT) for review and comment. The plan is generally well done and contains the elements required by the Transportation Planning Rule (TPR). The following specific comments are provided for the city's consideration.

Pages 36-37

#1 The level of service analysis should present the data in a tabular format for ease in understanding. It would also be helpful to provide a map or maps showing the locations where level of service was calculated. The analysis also must state the base year and projection year to provide a basis for comparison (i.e., statements that level of service decreases to a specific level must include a description of the level of service in the base year to provide a meaningful comparison).

Page 39 – Roadway Network Alternative

#2 The need for a corridor planning process to identify improvements at a specific intersection is questionable. ODOT expects to initiate corridor strategy development for Highway 99W from Highway 18 south to Eugene within the next 18 months. The strategy will not likely identify specific improvements at any intersection necessary to maintain level of service. This plan should provide a projection of when level of service will drop below an acceptable level and suggest improvements.

Page 39 – Realignment of Highway 51 'S' Curves

#3 The plan should note, realistically, it is unlikely that ODOT will identify funding for this project. Based on discussions between ODOT, the city, and a developer, the realignment of the 'S' curves will probably be completed as part of a private development project. The city of Independence has been involved in these discussions as well.

Page 40 – Talmadge Road Realignment

#4 The project description reads like a third party suggestion to the city rather than a component of the plan (i.e., "...should be supported..."). The extension will provide an additional parallel route which will potentially remove some local traffic from Highway 99W and should be included in the plan.

2960 State Street SE
Salem, OR 97310
(503) 986-2600
FAX (503) 986-2630

Page 43 – Goal 1

#5 The draft plan suggests removing language related to reduced reliance on the automobile from Goal 1. On Page 45, however, Objective 5 of the Street Plan Element retains this language. This conflict must be resolved. In order to assure compliance with the TPR, the language in the goal should be retained.

Page 47 – Major Arterial

#6 Under access, this section must state that ODOT has sole responsibility for the approval and permitting of access to state highways.

Thank you again for providing ODOT with an opportunity to comment on this draft TSP. I hope that you and the city find these comments useful in your consideration of the plan. Please contact me at 986-2663 if you have any concerns or questions about any of these comments.

Sincerely,

Daniel L. Fricke
Senior Transportation Planner

DLF:
cc: Dave Bishop, Mid-Willamette Valley Area Manager
Don Jordan, District 3 Manager
Elizabeth Ledet, DLCD

Oregon Department of Land Conservation and Development (DLCD), Elizabeth Ledet

Ten compliance recommendations/comments were received from Elizabeth Ledet, Senior Transportation Planner, DLCD. (see following letter). The following responses to review comments were incorporated into the TSP.

#1. *The basis for projecting future traffic needs is described in Appendix F and includes the growth rate, projected population increase by 2020, projected dwelling units needed, increase in traffic volume, projected impact on the roads. Figure 2 has been modified to show the existing large vacant parcels inside the Monmouth UGB. These parcels were identified by Martha Wiebe, Monmouth City Planner. As has been noted, underdeveloped areas exist in Monmouth. However, the PDIA does not indicate the location of these areas and the city does not have a current inventory of buildable lands. Monmouth expects to perform an inventory of buildable lands during upcoming Periodic Review of their Comprehensive Plan. Once the location and amount of undeveloped land is known, traffic volume and population growth projections can be adjusted. A summary of the state and local plans that influence the Monmouth TSP has been included in Appendix D.*

#2
The following discussion of roadway needs and system improvements was developed and added to the TSP. Cost and schedule information was also added to the CIP. The modifications to table in Appendix F will be made to improve clarity with respect to improvements already in the CIP and those identified in the TSP.

The Level of Service calculations at city street crossings of, and connections to, state highways is intended to provided a sketch-level analysis of needs at all intersections along the highway corridors. It is probable that all city street intersections with Hwy. 99W will exhibit behavior similar to those for which the calculations were made. Because isolated improvements at these selected intersections will increase negative impacts on city streets at adjacent intersections, and reduce the level of service on the state facility to below acceptable levels, this TSP cannot adequately address the complex factors necessary to arrive at good improvements. Therefore, a more comprehensive study of the Hwy. 99W corridor through the urban area will be needed.

Beginning in 1998, the city will initiate work with State agencies to develop a scope of work for a detailed study, and obtain funding. The scope of work may include items such as simple modeling, and/or micro-simulation of traffic behavior. This TSP anticipates the study will begin in 2002, and will cost between $45,000 and $100,000, depending on the area included. Completion of the Highway 99W corridor strategy will aid in developing the scope.

#3
Working with Martha Wiebe, Monmouth City Planner, the recommended reduction in block length; 1,200 to 600 feet; was made and entered into the regulations. See Appendix E.

#4

Information is being obtained from paratransit service providers to determine capacity and service sufficiency. Language has been added to the Public Transportation Element narrative and policy calling for coordination with Polk County in development and operation of a commuter service between Monmouth and Salem if the proposed recommendation in the Polk County TSP is adopted.

#5

The modifications to table in Appendix F will be made to improve clarity with respect to bicycle and pedestrian improvements already in the CIP and those identified in the TSP. The Independence-Monmouth Comprehensive Master Bicycle Plan guides the type and timing of improvements to the bicycle facilities.

#8

As mentioned previously, Monmouth believes that the TSP standards for local streets meet the particular needs of their community. However, the city does recognize that some situations may be suited for narrower streets, warranting a mix of local street standards. The city will address this issue as a part of the Periodic Review process and language has been added to the TSP to indicate this intention.

#10

The TSP will be reviewed and words like proposed and recommended will be replaced with will and shall, where appropriate. The TSP will be coordinated into the Comprehensive Plan as a part of the adoption process and a schedule for adoption of the amended regulations will be established.

Oregon

DEPARTMENT OF
LAND
CONSERVATION
AND
DEVELOPMENT

July 30, 1997

Jeanne Fromm
Associate Planner
Mid-Willamette Valley Council of Governments
105 High Street SE
Salem, OR 97301

Re: Monmouth Transportation System Plan
May 20, 1997 Draft

Dear Ms. Fromm:

The Department of Land Conservation and Development has completed its review of the above referenced material. Our review is intended to assist the city complete its Transportation System Plan (TSP) and meet the requirements of the Transportation Planning Rule (OAR 660-12). Our review identifies major deficiencies and recommends appropriate actions.

The following Compliance Recommendations are provided to note additional actions needed to meet Transportation Planning Rule (TPR) requirements; Comments are of an advisory nature to strengthen the TSP's usefulness as a local planning document.

1. **Determination of Transportation Needs (660-12-030)**
Compliance Recommendations: The draft element does a good job of assessing current traffic conditions and demand. However, the basis for future traffic projections needs to be made clearer to demonstrate compliance with TPR 660-12-030 (3)(a). Modify Figure 2 (or include a new figure) to show vacant lands within the city limits as well as unincorporated areas inside the Urban Growth Boundary (UGB). Additionally, expand the discussion in *Analysis of Existing Land Uses and Vacant Lands* (pg. 11) to establish the relationship between the results of the 1994 Potential Development Impact Analysis (PDIA), anticipated 20 year population and employment growth, and projected traffic volumes. For example, the narrative indicates that 846 acres of residential lands within the city are currently vacant. Appendix F could include the PDIA analysis, note the quantity and location of land likely to develop within the next 20 years based on projected population growth, and indicate how this development will affect the transportation system, particularly volumes in the vicinity of the probable development.

John A. Kitzhaber
Governor

1175 Court Street NE
Salem, OR 97310-0590
(503) 373-0050
FAX (503) 362-6705

The analysis of city plans in *Review of Existing Plans, Policies, Standards and Laws* is excellent and provides the policy and technical background necessary to allow the reader to ascertain how local needs are accommodated in the TSP. A summary of state and county plans should also be included to ascertain how state and regional needs are met per TPR 660-12-030(1)(a) and -030(2).

2. **Road Plan for a System of Arterials and Collectors (660-12-020)**
Compliance Recommendations: The proposed system of arterials and collectors shown in Figure 10 provides good circulation to allow travel throughout town without needing to use the state highways. However, the projected level of service at a number of intersections on Highway 99W is below the acceptable standards and intersection improvements are not proposed for these locations; the TSP needs to address these deficiencies.

For clarity, we recommend the TSP modify the table in Appendix F to include a listing of all proposed improvements in the *Discussion and Evaluation of Transportation Alternatives* and those previously committed in the Capital Improvements Plan (CIP). The listing should include what change is being proposed (e.g. Craven Street - extension of two lane collector with sidewalks on both sides and signed as bike route) and the estimated cost of the improvements listed as required per TPR 660-12-020(3)(c) and -040(2).

3. **Standards for the Layout of Local Street and Other Important Non-Collector Street Connections (660-12-020)**
Compliance Recommendations: The proposed changes in Appendix E to the Subdivision and Partition Ordinance to require through street connections (Chapters 90.60 and 90.90), and limit cul-de-sacs (90.90) will provide additional automobile and non-vehicular opportunities consistent with TPR 660-12-020(2)(b) and 660-12-045(3). The City should further strengthen Section 90.90.015 by reducing the allowed block length from 1,200 feet; we generally recommend a maximum length of no more than 600 feet with criteria under which longer blocks are allowed. Longer block lengths such as the city allows results in a pattern of streets which makes non-vehicular movement inconvenient and routes cars to fewer streets rather than dispersing traffic throughout a neighborhood.

4. **Public Transportation Plan (660-12-020)**
Compliance Recommendations: TPR 660-12-020(2)(c) requires that the services provided to the transportation disadvantaged be described; the city's description is sufficient. However, TPR 660-12-020(3) additionally requires a capacity analysis. To determine if the service provided is sufficient to meet local needs now and in the future, include information from the paratransit service regarding bus occupancy rates, calls per day that cannot be filled, or similar measures.

The draft Polk County TSP proposes commuter service between Monmouth and Salem. Modify the *Public Transportation Element* narrative and Policy 2 to reflect the need for coordination with the County in the development and operation of the service if the recommendation is adopted.

5. Bicycle and Pedestrian Plan (660-12-020)

Compliance Recommendations: The TSP does a good job of analyzing needed connections to major activity centers and proposes changes to subdivision standards to require accessways and street connections. As noted in **2.** above, the City should provide greater detail of the type of system improvements - committed in the CIP and newly proposed in the TSP - and their costs.

6. Air, Rail, Water, and Pipeline Transportation Plan (660-12-020)

Comments: The City's description is sufficient. The City's policy to support the Independence Airport furthers intergovernmental coordination.

7. System Alternatives and Evaluation of Impacts (660-12-035)

Comments: The analysis of constraints - particularly soils - is very innovative. A map showing the general locations of the constraints would be useful.

8. Policies and Land Use/Subdivision Regulations (660-12-045)

Compliance Recommendations: The TPR requires local governments to"minimize pavement width and total right-of-way " in 660-12-045(7). We note the City has reduced its standards for arterials and collectors. However, the standard right-of-way and pavement widths for local streets has not decreased, nor have alternate sections been provided, to meet the TPR requirement We recommend that a 28 foot curb-to-curb width with parking on both sides be the standard section within the UGB and lesser widths be allowed subject to local conditions. Sufficient off-street parking is generally provided in newer residential neighborhoods and there is rarely much use of on-street spaces to hinder automobile and emergency vehicle travel. The enclosed *Skinny Streets* details a number of benefits from narrower streets including lower maintenance costs, reduced traffic speeds, and improved aesthetics.

Comments: The proposed access management standards on Highway 99W could be strengthened to better protect the highway function and mitigate projected level of service deficiencies. Stronger shared access requirements would limit driveways and reduce side friction. The City could further consider an access management strategy on the highway that would require all commercial and industrial parcels to access side streets only or share only one mid-block access. The parcel and street pattern along the highway as shown in Figure 2 would appear to allow such a strategy in the area south of Main Street.

As currently drafted, the proposed bicycle parking requirements in the Zoning Ordinance (73.025) appear to require separate bicycle spaces even in single family units. Most cities exempt single family homes and multi-family developments with less than four dwelling units.

9. Transportation Financing Program (660-12-040)

Comments: Prioritizing improvements based on the likely funds would increase the TSP's effectiveness in setting direction for the city.

10. Adoption (660-12-015)

Compliance Recommendations: TPR 660-12-015(4) states "Cities and counties shall adopt regional and local TSPs ... as part of their comprehensive plans." Language changes throughout the plan to eliminate words like "proposed" and "recommended" to reflect its status as part of the city's guiding document would be appropriate. Incorporation of the TSP into the Comprehensive Plan should be done as part of the TSP adoption process. Amendments to regulations may be done subsequently but a schedule for their consideration/adoption should be established as part of the TSP adoption ordinance.

The Department appreciates the opportunity to comment on the draft element. Please contact me if you have any questions about our comments and recommendations.

Sincerely,

Elizabeth L. Ledet, AICP
Transportation/Land Use Planner

Enclosure
cc: Martha Wiebe, City of Monmouth, w/enclosure
Dan Fricke, ODOT
Jim Knight, DLCD
Jim Sitzman , DLCD
Mark Radabaugh, DLCD
Mark Fancey, Polk County

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Appendix C: Transportation System Planning Survey

TRANSPORTATION SYSTEM PLANNING SURVEY

Please respond to the following questions as briefly or as comprehensively as you like. If you need more space, use the back of this page or feel free to attach additional paper.

The following list identifies improvements to public streets and other transportation issues. Please indicate how important you think each improvement or issue may be to the Monmouth transportation System.

	Not Very Important	Fairly Important	Very Important
Streets:			
Sidewalks	_____	_____	_____
Curb and Gutter	_____	_____	_____
Bikelanes	_____	_____	_____
Park/Planting Strip	_____	_____	_____
On-street Parking	_____	_____	_____
Street Lights	_____	_____	_____
Other:			
Public Transportation	_____	_____	_____
Park & Rides	_____	_____	_____
Public Parking Lots	_____	_____	_____

What modifications to the street system, if any, would you suggest? (i.e. intersections improvements, reduced congestion, wider or narrower streets, etc.)

What modifications to the bicycle system, if any, would you suggest? (i.e. bike lanes, paths, bike racks, etc.)

What modifications to the pedestrian network, if any, would you suggest? (i.e. sidewalk improvements, safety, crosswalks, lighting, etc.)

What other transportation issues do you feel should be addressed?

Thank you!!!

(Optional)
Name: **Phone (day number):**
Address:

The Transportation Advisory Committee meetings are open to the public.

Meeting Schedule: April 26
May 9
May 24
June 28

All meetings take place at 7:30 PM at Volunteer Hall (old fire station).
Questions may be referred to:
Gary Wilson, City of Monmouth, 838-0722 or
Sean Loughran, Council of Governments, 588-6177

CITY OF MONMOUTH
LONG-RANGE TRANSPORTATION STUDY

The city of Monmouth is conducting a long-range planning study to address existing and future transportation issues and conditions within the city's Urban Growth Area. The study will help the city to develop a Transportation System Plan consistent with state guidelines. The study will recommend solutions to current problems and future needs which might include: street system safety improvements; enhanced pedestrian and bicycle opportunities; access and traffic management measures.

The city is interested in your comments and suggestions. Surveys are available at City Hall and Transportation Advisory Committee Meetings are open to the public.

Meetings are scheduled for 7:30pm at Volunteer Hall (old fire station) on April 26, May 9, May 24 and June 28.

For more information call: Gary Wilson, City of Monmouth, 838-0722 or
Sean Loughran, Council of Governments, 588-6177

Appendix D: Inventory of Existing Transportation System

APPENDIX D-1
SUMMARY OF RELEVANT STATE AND POLK COUNTY PLANS

OREGON HIGHWAY PLAN

State highways have been classified by Level of Importance (LOI) to prioritize highway improvement needs and define operational objectives (ODOT, 1991). Monmouth is bisected in to quadrants by two state highways: Highway 99W and Highway 51. These highways are the only arterials in the Monmouth street network. The following information describes the LOI classification, management objectives, and access management categories for Hwys. 99W and 51.

Access management categories have also been developed for state highways and include full control, limited control, and partial control categories. Access and signal spacing at less than the recommended distances indicated will only be considered "where safety and operations effectiveness can be retained or improved based on clear traffic analysis evidence" ODOT, 1991.

HIGHWAY 99W

Hwy. 99W has been classified as a regional highway (LOI) whose primary function is to "provide connections and links to areas within regions of the state, between small urbanized areas and larger population centers, and to higher level facilities" (ODOT, 1991). Serving land uses within the vicinity of the highway is a secondary function.

Management objectives of regional highways are:

- Provide safe and efficient high-speed (~50 mph), continuous flow (LOS C) in rural areas (allowing for environmental constraints).
- Provide moderate to low-speed (~45 mph) operation in urban and urbanizing areas with moderate interruptions to flow (LOS D in urban and LOS C in urbanizing areas.

The conditions above represent the minimum tolerable conditions (ODOT, 1991) for a regional highway.

Access management standards for regional highways in urban areas include:

- Minimum spacing between public road intersections of 1/4 mile.
- Minimum spacing between private road intersections of 300-500 feet.
- Minimum spacing between traffic signals of 1/4 to 1/2 mile.
- Partial to none median control of left turning.

HIGHWAY 51

Hwy. 51 has been classified as a district highway (LOI) whose primary function is to "serve local traffic and land access" (ODOT, 1991).

Management objectives of district highways are:

- Provide safe and efficient moderate to high-speed (~35 - 45 mph), continuous flow (LOS C) in rural areas (allowing for environmental constraints).
- Provide moderate to low-speed (~35 - 45 mph) operation in urban and urbanizing areas with a moderate to high level of interruption to flow (LOS E in urban and LOS E in urbanizing areas.

The conditions above represent the minimum tolerable conditions (ODOT, 1991) for a regional highway.

Access management standards for district highways in urban areas include:

- Minimum spacing between public road intersections of 500 feet to 1/4 mile.
- Minimum spacing between private road intersections of 150 - 300 feet.
- Minimum spacing between traffic signals of 1/4 mile.
- No median control of left turning.

POLK COUNTY TSP

The Polk County TSP is in the process of being written. Goals, policies, functional classifications, public transportation, and bicycle routings are being drafted. Plan completion and adoption is scheduled for 1998.

Monmouth's arterials, collectors, and local streets are compatible with Polk County's functional classifications in the draft TSP. The County's determination of classification included evaluation of city classification and strove for continuity between the jurisdictions.

Polk County has not yet decided on road design standards, but is considering procedures which will use Monmouth, or other city, street standards for county road segments located inside the UGB. These procedures are already in effect in West Salem through an Intergovernmental Agreement.

The section of the Polk County TSP which addresses needs is not developed sufficiently to consider addressing those needs in the Monmouth TSP.

TABLE D-1 DETAILED INVENTORY OF ARTERIALS & COLLECTORS IN MONMOUTH

Street	Section	Functional Class	Jurisdiction	Length	Pavement Width (ft)	Surface	1991 Condition	Lane Number	Right* Sidewalk	Left* Sidewalk	Right* Curb	Left* Curb	Right* Bikeway	Left* Bikeway	Other
Catron	Gentle to Suzana	Collector	City	300	36	AC	Fair	2	Y	N	Y	Y			
Catron	Suzana to S of Suzana	Collector	City	100	36	AC	Very Good	2	Y	Y					Extend south
Catron	N of Powell to Powell	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			Extend north
Catron	Powell to Jackson	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			
Catron	Jackson to Main	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			
Catron	Main to Clay	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			
				2000											
Church	W end to Stadium	Collector	City	1600	22	AC	Good	2	N	N	N	N	5 to 10	5 to 10	Reduce function to local
Church	Stadium to Monmouth	Collector	City	1430	37	AC	Very Good	2	Y	Y	Y	Y	5 to 10	5 to 10	
Church	Pacific to Myrtle	Collector	City	100	36	AC	Poor	2	N	Y	Y	Y	5 to 10	5 to 10	
Church	Myrtle to High	Collector	City	250	36	AC	Fair	2	N	Y	Y	Y	5 to 10	5 to 10	
Church	High to Craven	Collector	City	300	36	AC	Fair	2	N	Y	Y	Y	5 to 10	5 to 10	
				3680											
Clay	Whitman to College	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			
Clay	College to Monmouth	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			
Clay	Monmouth to Warren	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			
Clay	Warren to Knox	Collector	City	400	36	AC	Very Good	2	Y	1/2	Y	Y			
Clay	Knox to Broad	Collector	City	325	36	AC	Very Good	2	Y	N	Y	Y			
Clay	Broad to Ecols	Collector	City	325	36	AC	Very Good	2	N	N	Y	Y			
Clay	Ecols to Catron	Collector	City	325	36	AC	Very Good	2	1/2	1/2	Y	Y			

Clay	Catron to Pacific	Collector	City	325	36	AC	Fair	2	N	1/2	Y	Y			
				2900											
Craven	N end to Olive Wy	Collector	City	175	36	AC	Fair	2	N	N	Y	Y			
Craven	Olive Wy to Church	Collector	City	1300	36	AC	Poor/Good	2	N	N	Y	Y			
Craven	Church to Powell	Collector	City	450	34	AC	Fair	2	N	N	Y	Y			
Craven	Powell to Jackson	Collector	City	400	44	AC	Fair	2	Y	Y	Y	Y			
Craven	Jackson to Main	Collector	City	400	36	AC	Fair	2	Y	N	Y	Y			
Craven	Main to Clay	Collector	City	400	36	AC	Fair	2	N	N	Y	Y			
Craven	Clay to Madrona	Collector	City	400	36	AC	Fair	2	N	N	Y	Y			
				3525											
Ecols St.	Clay to Madrona	Collector	City	400	36	AC	Very Good	2	Y	Y	Y	Y			Built in 1992
Ecols St.	Madrona to Ackerman	Collector	City	330	36	AC	Very Good	2	Y	Y	Y	Y			
Ecols St.	Ackerman to Gwinn	Collector	City	840											
				1570											
Edwards Rd	Main to Madrona	Collector	City	800	36	AC	Very Good	2	Y	y	Y	Y			
Edwards Rd	Madrona to S. end	Collector	City	1200	36	GR	Very Poor	2	N	N	N	N			Built in 1990
				2000											Probably upgraded
Falls City Hwy	McDonald to W end	Arterial	ODOT	1480	31	AC	Fair	2	N	N	Y	Y			
Gentle	Monmouth to Knox	Collector	City	625	34	AC	Good	2	N	N	Y	Y	1 to 5	1 to 5	
Gentle	Knox to Gentle Ct W	Collector	City	850	53	AC	Good	2	1/2	1/2	Y	Y	1 to 5	1 to 5	
Gentle	Gentle Ct W to Gentle Ct E	Collector	City	300	53	AC	Good	2	Y	Y	Y	Y	1 to 5	1 to 5	
Gentle	Gentle Ct E to E End	Collector	City	275	53	AC	Good	2	Y	1/2	Y	Y	1 to 5	1 to 5	
				2050											
Gwinn	Ecols to Pacific	Collector	City	650											
Jackson	Stadium to Whitman	Collector	City	650	36	AC	Poor	2	N	Y	Y	Y			
Jackson	Whitman to College	Collector	City	400	36	AC	Poor	2	N	Y	Y	Y			

Jackson	College to Monmouth	Collector	City	400	48	AC	Very Good	2	Y	Y	Y	Y			
Jackson	Monmouth to Warren	Collector	City	400	49	AC	Very Good	2	Y	Y	Y	Y			
Jackson	Warren to Knox	Collector	City	400	36	AC	Good	2	Y	Y	Y	Y			
Jackson	Knox to Broad	Collector	City	300	46	AC	Very Good	2	Y	Y	Y	Y			
Jackson	Broad to Ecols	Collector	City	325	36	AC	Very Good	2	Y	Y	Y	Y			
Jackson	Ecols to Catron	Collector	City	325	36	AC	Good	2	Y	Y	Y	Y			
Jackson	Catron to Pacific	Collector	City	325	36	AC	Very Good	2	Y	Y	Y	Y			
				3525											
Madrona	Ecols to Pacific	Collector	City	650											
Madrona	Pacific to Southgate	Collector	City	250	36	AC	Poor	2	Y	N	Y	Y			
Madrona	Southgate to Craven	Collector	City	575	36	AC	Poor	2	N	N	Y	Y			
Madrona	Craven to Heffley	Collector	City	375	36	AC	Poor	2	N	N	Y	Y			
Madrona	Heffley to Atwater	Collector	City	375	36	AC	Fair	2	1/2	1/2	Y	Y			
Madrona	Atwater to Martin Wy	Collector	City	325	36	AC	Very Good	2	Y	Y	Y	Y			
Madrona	Martin Wy to Jacobson Wy W	Collector	City	275	36	AC	Very Good	2	Y	Y	Y	Y			
Madrona	Jacobson Wy W to Jacobson Wy E	Collector	City	275	36	AC	Very Good	2	Y	Y	Y	Y			
Madrona	Jacobson Wy E to Edwards	Collector	City	250	36	AC	Very Good	2	Y	Y	Y	Y			
				3350											
Main	Stadium to Whitman	Collector	ODOT	625	35	AC	Very Good	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Whitman to College	Arterial	ODOT	400	40	AC	Very Good	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	College to Monmouth	Arterial	ODOT	400	40	AC	Very Good	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Monmouth to Warren	Arterial	ODOT	400	40	AC	Poor	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Warren to Knox	Arterial	ODOT	400	40	AC	Poor	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Knox to Broad	Arterial	ODOT	325	40	AC	Poor	2	Y	Y	Y	Y	Proposed	Proposed Bikelanes	

													Bikelanes		
Main	Broad to Ecols	Arterial	ODOT	325	40	AC	Very Good	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Ecols to Catron	Arterial	ODOT	325	40	AC	Very Good	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Catron to Pacific	Arterial	ODOT	325	40	AC	Very Good	2	Y	Y	Y	Y	Proposed Bikelanes	Proposed Bikelanes	
Main	Pacific to High	Arterial	ODOT	350	44	AC	Very Good	2	Y	Y	Y	Y	Bikelane	Bikelane	
Main	High to Craven N	Arterial	ODOT	300	44	AC	Very Good	2	Y	Y	Y	Y	Bikelane	Bikelane	
Main	Craven N to Craven S	Arterial	ODOT	175	44	AC	Very Good	2	Y	Y	Y	Y	Bikelane	Bikelane	
Main	Craven S to Heffley	Arterial	ODOT	375	44	AC	Very Good	2	Y	Y	Y	Y	Bikelane	Bikelane	
Main	Heffley to Atwater	Arterial	ODOT	400	36	AC	Poor	2	N	N	N	Y	Bikelane	Bikelane	
Main	Atwater to Mon-Ind Hwy	Arterial	ODOT	850	36	AC	Poor	2	N	N	N	N	Bikelane	Bikelane	
Main	Mon-Ind Hwy to Edwards	Collector	City	300	36	AC	Very Good	2	Y	Y	Y	Y	Bikelane	Bikelane	
				6275											
Monmouth-Independence Hwy.	Main to Hogan	Arterial	ODOT	1000	36	AC	Poor	2	N	N	N	N	Bikelane	Bikelane	
Monmouth-Independence Hwy.	Hogan to E end	Arterial	ODOT	750	36	AC	Poor	2	N	N	N	N	Bikelane	Bikelane	
				1750											
Monmouth	N end to Whitesell	Collector	City	250	24	AC	Good	2	N	N	N	N	1 to 5	1 to 5	
Monmouth	Whitesell to Gentle	Collector	City	450	36	AC	Good	2	Y	Y	Y	Y	1 to 5	1 to 5	
Monmouth	Gentle to Stadium to Church	Collector	City	1500	44	AC	Good	2	Y	Y	Y	Y	1 to 5	1 to 5	
Monmouth	Church to Jackson	Collector	City	850	48	AC	Good	2	Y	Y	Y	Y	1 to 5	1 to 5	
Monmouth	Jackson to Main	Collector	City	400	48	AC	Good	2	Y	Y	Y	Y	1 to 5	1 to 5	
Monmouth	Main to Clay	Collector	City	400	51	AC	Good	2	Y	Y	Y	Y			
Monmouth	Clay to Ackerman	Collector	City	800	36	AC	Fair	2	Y	Y	Y	Y			
Monmouth	Ackerman to Gwinn	Collector	City	750	36	AC	Fair	2	Y	Y	Y	Y			
				5400											
Pacific (Hwy 99W)	N end to Church	Arterial	ODOT	2125		AC	unrated	2					Bikepath		
Pacific (Hwy 99W)	Church to Powell	Arterial	ODOT	475		AC	unrated	2					Proposed	Proposed Bikelanes	

													Bikelanes	
Pacific (Hwy 99W)	Powell to Jackson	Arterial	ODOT	400		AC	unrated	2					Proposed Bikelanes	Proposed Bikelanes
Pacific (Hwy 99W)	Jackson to Main	Arterial	ODOT	400		AC	unrated	2					Proposed Bikelanes	Proposed Bikelanes
Pacific (Hwy 99W)	Main to Clay	Arterial	ODOT	400		AC	unrated	2					Proposed Bikelanes	Proposed Bikelanes
Pacific (Hwy 99W)	Clay to Madrona	Arterial	ODOT	400		AC	unrated	2					Proposed Bikelanes	Proposed Bikelanes
Pacific (Hwy 99W)	Madrona to S end	Arterial	ODOT	1500		AC	unrated	2					Proposed Bikelanes	Proposed Bikelanes
				5700										
Stadium	Monmouth Ave to Church	Collector	WOU*	1650	36	AC		2	N	N	Y	Y	Proposed bikelane	Proposed bikelane
Stadium	Church to Jackson	Collector	WOU	825	36	AC	Fair	2	N	N	Y	Y	Proposed bikelane	Proposed bikelane
Stadium	Jackson to Main	Collector	WOU	400	36	AC	Fair	2	N	N	Y	Y	Proposed bikelane	Proposed bikelane
				2875										
Whitman	Main to Clay	Arterial	ODOT	400	29	AC	Good	2	Y	N	N	N	Proposed Bikelane	Proposed Bikelane
Whitman	Clay to Ackerman	Arterial	ODOT	800	25	AC	Very Good	2	N	Y	N	N	Proposed Bikelane	Proposed Bikelane
Whitman	Ackerman to McDonald	Arterial	ODOT	275	29	AC	Good	2	Y	N	1/2	N	Proposed Bikelane	Proposed Bikelane
Whitman	McDonald to Fall City St.	Arterial	ODOT	150	29	AC	Good	2	Y	N	Y	N	Proposed Bikelane	Proposed Bikelane
• At date of TSP, Stadium Road was under the jurisdiction of Western Oregon University • June 24, 1997 version. •			Total Arterial & Collectors	50355 44% of total										*Left or right is determined by following the direction of travel indicated by the sequence of segments

TABLE D-2 TRAFFIC OVUM DATA FOR HIGHWAYS 99W & 51, MONMOUTH URBAN AREA

Street and Mile Post	1965 Volume ADT	1970 Volume ADT	1975 Volume ADT	1980 Volume ADT	1985 Volume ADT	1987 Volume ADT [1]	1990 Volume ADT	1993 Volume ADT	1994 Volume ADT	1995 Volume ADT
Hwy. 99W (Pacific), North City Limits, MP 62.81	3000	3850	4,800	5600	5500	6500	8200	9,600	10,000	10,300
Hwy. 99W (Pacific), North of Intersection with Hwy. 51, MP 63.41	3700	4700	5700	6700	8000	9400	9900	9,700	10,100	10,300
Hwy. 99W (Pacific), South of Intersection with Hwy. 51, MP 63.43	4000	4600	5000	5400	6000	7000	8200	9,200	9,600	9,600
Hwy. 99W (Pacific), South City Limits, MP 63.85	3200	3750	4200	4350	5700		7300	7,700	8,000	8,900
Hwy. 51 East City Limits, MP 0.77	5400	6500	7600	7700	9400		10700	9,000	9,300	9,400
State Hwy 51 East of Intersection w/ Hwy. 99W, MP 0.01	5600	6500						7,800	8,000	8,100
State Hwy. 51 West of Intersection w/ Hwy 99W, MP 7.55	4000	7200				9600		10,000	9,300	9,400
State Hwy 51 East of Intersection w/ Monmouth Av., MP 7.18	3550	6400				6800		6,600	6,400	6,500
State Hwy 51 West of Intersection w/ Monmouth Ave., MP 7.16	1600	2900				3600		2,900	2,900	2,900
State Hwy. 51 South & East City Limits, MP 6.44	600	770						1,100	1,200	1,200
Monmouth, north of Hoffman						1900				
Monmouth, Hoffman to Gentle						2900				
Monmouth, Gentle to Church						5100				
Monmouth, Church to Jackson						5900				
Monmouth, Jackson to Main						4800				
Hoffman, Monmouth to Pacific Hwy.						1600				
Gentle, Monmouth to Catron						900				
Church, west to Stadium						800				
Church, Stadium to Monmouth						2800				
Jackson, Stadium to Monmouth						2200				
Jackson, Monmouth to Warren						2500				
		1965-70	1970-75	1975-80	1980-85	1985-90	1990-95			
Highway 99W Traffic % increase @ N city limits		28	25	17	-2	49	26			
Highway 51 Traffic % increase @ E city limits		20	17	1	22	14	-12			

(1) From Buttke, 1987

TABLE D-3 ACCIDENT DATA FROM THE CONTINUOUS SYSTEM ACCIDENT LISTING: 1992-1996

Location	Number	1995 ADT	Contributing Factors & Other Information
Hwy. 99W / Hoffman (MP 62.31)	14	10,300	8 no yield, 8 injury accidents
Hwy. 99W (MP 62.7-63.13)	2		Left roadway and rolled over, driving too fast, injury accidents
Hwy. 99W / Church St. (MP 63.19)	2		1 injury accident
Hwy. 99W / Powell (MP 63.27)	1		No yield
Hwy. 99W alley between Powell & Jackson (MP 63.32)	1		
Hwy. 99W / Jackson (MP 63.34)	7		4 no yield and 3 injury accidents
Hwy. 99W, alley between Jackson & Main (MP 63.39)	5		2 no yield and 2 injury accidents
Hwy. 99W / Main (MP 63.42)	3	10,300	Property damage only accidents
Hwy. 99W, alley between Clay & Main (MP 63.43)	3	9,600	Property damage only accidents
Hwy. 99W / Clay (MP 63.49)	10		7 no yield and 5 injury accidents
Hwy. 99W (MP 63.50)	1		Property damage only
Hwy. 99W / Madrona (MP 63.52)	1		Injury accident
Hwy. 99W (alleys between MP 63.59-64.29)	3	8,900	1 injury accident

Appendix E: Review of Comprehensive Plan and Related Ordinances

CITY OF MONMOUTH
DEVELOPMENT ORDINANCE REVISIONS

As part of compliance with the Transportation Planning Rule (TPR) the city of Monmouth has reviewed its development ordinances for consistency with the specific standards set forth in the rule. This staff report identifies which standards apply to the city of Monmouth and indicates revisions to carry out the requirements. The documents which were reviewed for amendment include the Subdivision and Partitioning Ordinance, adopted May 2, 1989, and the City of Monmouth Zoning Ordinance, Chapter 91 Monmouth City Code.

The TPR requires local governments to: "adopt land use and subdivision ordinances or amendments required by OAR 660-12-055(3), (4)(a)-(e) and (5)(d)." These standards are intended to encourage multi-modal travel and provide alternatives to the single occupancy automobile. There are three discrete requirements in this section of the TPR that apply directly to Monmouth:

1. Bicycle parking facilities as part of new multi-family residential developments of four unites or more, new retail, office and institutional developments, and all transit transfer stations and park and ride lots.

Bicycle parking standards were adopted in the Independence-Monmouth Comprehensive Master Bicycle Plan. These policies are incorporated into the appropriate land use regulations.

2. Facilities providing safe and convenient pedestrian and bicycle access within and from new subdivisions, planned developments, shopping centers and industrial parks to nearby residential areas, transit stops and neighborhood activity centers, such as schools, parks and shopping. This shall include:

- *Sidewalks along arterials and collectors.*

Sidewalks are currently required on all public streets concurrent with the issuance of building permits. The Department of Public Works includes the provision of sidewalks on all new street construction and major reconstruction projects.

- *Bikeways along arterials and major collectors.*

Bikeways are defined in the 1995 Oregon Bicycle and Pedestrian Plan as follows: Any road, path, or way which is open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are shared with other transportation modes.

Monmouth appears to comply with this standard because it does not prohibit the use of bicycles on any public road. In the TSP the city will better represent the intent of this standards with the requirement to build bike lanes on any new or reconstructed arterials and collector streets.

- *Where appropriate, separate bike or pedestrian ways to minimize travel distances within and between the areas and developments listed above.*

The subdivision and partitioning ordinance provides the Planning Commission with the authority to require public accessways "to connect to cul-de-sacs, to pass through oddly shaped or unusually long blocks, to provide for networks of public schools, parks or other public areas of such design, width , and location as reasonable required to facilitate public use.

3. Provision of internal pedestrian circulation in new office parks and commercial developments through clustering of buildings, construction of pedestrian ways, skywalks, where appropriate, and similar techniques.

The city will achieve this through the amendments to the site plan review process outlined in the TSP.

The amendments to the city of Monmouth Subdivision and Partitioning Ordinance and Zoning Ordinance are necessary not only for compliance with the TPR, but also to insure consistency between the Comprehensive Plan and the Development Code. A number of proposed changes are not specifically required by the TPR, but are included to better represent the "intent" of the Rule and to create development patterns that facilitate multi-modal travel. The following text consists of existing language shown in normal type, deletion of existing language identified by ~~strikeout~~, and added language shown as **bold and highlighted**.

SUBCHAPTER 90.30
Land Division Action Procedure

90.30.26 **NOTICE TO PUBLIC AGENCIES** **The City Manger shall give notice to: (1) the Oregon Department of Transportation (ODOT) regarding any land use action on, or adjacent to, a State transportation facility; and (2) the public works department of affected jurisdictions (for example, Polk County) when any action by the City could potentially affect another jurisdictions' transportation facilities.**

A. Information conveyed to the reviewers will include the project location, proposed land use action, and location of project access points.

SUBCHAPTER 90.40
Minor Partitioning Regulations

90.40.010 MINOR PARTITIONING PROCEDURE FOR APPROVAL. Land division other than subdivision or major partitioning wherein there is the creation of a street shall be approved under the following procedure:

1. There shall be submitted to the City Manager eighteen copies of a sketch map 8 1/2 by 11 inches, or 18 by 24 inches in size with the following information:

G. Lot layout, showing size and relationship to existing or proposed streets, **bikeways and pedestrian facilities** and utility easements.

90.60.030 TENTATIVE PLAN, INFORMATION. The following information shall be shown on the tentative plan:

E. Location of the subdivision sufficient to define the location and boundaries of the proposed tract **and its relation to surrounding land uses and existing and proposed transportation facilities.**

G. The location, width, names, approximate grades and radii of curves of streets, bikeways and pedestrian facilities. The relationship of streets**, bikeway and pedestrian facilities,** to any **existing or** projected streets**, bikeways and pedestrian facilities** as shown ~~on~~ **in the transportation system element of the comprehensive land use plan** or any development plan adopted by the Planning Commission or City Council or as may be suggested by the Planning Commission in order to assure adequate traffic circulation.

L. A vicinity map, showing existing subdivisions and unsubdivided land ownerships adjacent to the proposed subdivision, and showing how proposed streets**, bikeways, pedestrian facilities** and utilities may be extended to connect to existing **and proposed** streets and utilities.

N. Approximate center line profiles with extensions for a ~~reasonable~~ distance **of 200 feet** beyond the limits of the proposed land division showing the finished grade of streets and the nature and extent of street**, bikeway, and sidewalk** construction.

W. A cross-section of each street**, bikeway and pedestrian facilities** proposed including roadway pavement, curb, sidewalk, **designated bikeway,** gutters and planter strips.

90.60.040 PARTIAL SUBDIVISION PLAT/MASTER PLAN. If the subdivision plat pertains to only part of the tract owned or controlled by the subdivider, the subdivider shall provide a sketch of a tentative layout for streets**, bikeways, pedestrian facilities** and lots in the unsubdivided portion.

90.60.050 EXISTING CONDITIONS. The following existing conditions shall be shown on the tentative plan:

1. The location, widths and names of both opened and unopened streets, **bikeways and pedestrian facilities** within or adjacent to the tract, together with easements and other important features, such as section lines, corners, city boundary lines and monuments.

8. Locations and widths of streets, ~~and~~ roads**, bikeways and pedestrian facilities** held for private use, and all reservations or restrictions relating to such private roads and streets.

9. Existing uses of all abutting parcels, including the location of existing structures, roads, streets**, bikeways and pedestrian facilities** and **other** easements contiguous to the parcel to be subdivided.

90.60.060 HEARING. Within the period prescribed by Subchapter 90.30 of this chapter, the Planning Commission shall hold a hearing on the proposed plan in accordance with Subchapter 90.30 of this chapter, review the reports of appropriate officials and governmental agencies and begin deliberation on the application. The Planning Commission shall approve, deny, or when further information is required, postpone a decision on the application. If the application is for a subdivision containing 15 or more lots, the Planning Commission shall not take final action on tentative approval but shall make a recommendation of approval or denial to the City Council. The City Council shall hold a hearing on the question of tentative approval and shall approve or deny the application.

Approval must include affirmative findings that:

1. Approval does not impede the future best use of the remainder of the property under the same ownership or adversely affect the safe and healthful development of such remainder or any adjoining land or access thereto **as provided for in the city's transportation plan and policies**; and

2. The tentative plan complies with the requirements for its submittal, land use **and transportation** policies and plans, and the intent and purposes of this chapter; and

3. All streets, alleys, pedestrian facilities and bikeways connect to other streets within the development and to existing and planned streets outside the development. Streets terminate at other streets or at parks, schools, or other public land within a neighborhood unless exceptions for such connections are provided for in the ordinance.

90.60.075 FINAL APPLICATIONS. The application provided for in 90.60.070 of the proposed subdivision plat or the major partition map must contain the following information with respect to the subject area:

15. The locations, names and widths of all streets**, bikeways and pedestrian facilities**, existing or created, and the width and location of all existing easements for public utilities and such easements being created, and also all reserve strips required as provided for by Section 90.90.010 of this chapter.

19. Designation of all donations to the public of all common improvements, including but not limited to streets, roads**, bikeways and pedestrian facilities**, parks, sewage disposal and water systems, the donation of which was made a condition of approval of the tentative plan for the subdivision or major partition.

90.60.090 TECHNICAL REVIEW. Upon receipt of the final plat or map and accompanying data, the City Manager or designate shall review the final map or plat and documents to determine that the plan conforms with the approved tentative map or plat, and that there has been compliance with provisions of the law and of this Chapter.

Within the period provided in Subchapter 90.30, the City Manager or designate shall recommend final approval, denial, or when further information is required, postpone a decision on the application. Approval shall be granted provided that:

1. Streets, roads**, bikeways and pedestrian facilities**, and alleys for public use are dedicated without any reservation or restriction other than reversionary rights upon vacation of any such street~~—or~~, road**, bikeway and pedestrian facility** and easements for public utilities.

2. Streets~~—and~~, roads**, bikeways and pedestrian facilities** held for private use and indicated on the tentative plan of such subdivision or major partition have been approved by the city.

5. The plat or map contains a donation to the public of all common improvements, including but not limited to streets, roads**, bikeways and pedestrian facilities**, parks, sewage disposal and water supply systems, the donation of which was made a condition of the approval of the tentative plan for the subdivision or major partition.

SUBCHAPTER 90.65
Mobile Home Subdivisions

90.65.020 DEVELOPMENT STANDARDS.

D. Public Roadways. All public roadways**, bikeways and pedestrian facilities** within the mobile home subdivision shall be improved to the standards of Subchapter 90.90.

SUBCHAPTER 90.80
Improvements

5. Pedestrian Ways. Sidewalks shown on the street section shall be installed as located on those sections as a result of the subdivision or major partition.

6. Bikeways. Bikeways consistent with the Bicycle and Pedestrian Plan shall be installed as located on those sections as a result of the subdivision or major partition.

~~6~~7. Monuments. Monuments shall be installed in accordance with city standards and Section 92.060 of the Oregon Revised Statutes.

~~7~~8. Service Utilities. Before approval shall be given of any plat or plan of any subdivision, the subdivider shall provide for the installation of all service utilities in underground conduits and for easements therefore in the manner as hereby set forth and subject to the conditions set forth in this ordinance.

~~8~~9. Above-Ground Utility Prohibited. In all new subdivisions in the city of Monmouth hereafter approved by the Commission, it shall be unlawful for any service utility or utilities to be installed or used above the surface of the ground except on a temporary basis upon a special permit issued by the Building Official but no use under such a six months from the date of issue of the first permit therefore.

~~9~~10. Manner of Installation. All service utilities installed as herein provided shall be installed at a depth and in the manner conforming to city specifications.

SUBCHAPTER 90.90
Design and Development Standards

90.90.010 ~~STREETS~~ TRANSPORTATION FACILITIES

1. General. The location, width, and grade of streets, **bikeways and pedestrian facilities** shall be considered in their relation to existing and planned streets, **bikeways and pedestrian facilities,** to topographical conditions, to public convenience and safety, and to the proposed use of the land to be served by the streets. **All streets, bikeways and pedestrian facilities shall connect to other said facilities within the development and to existing and planned streets, bikeways and pedestrian facilities outside the development.** Where location is not shown in **the transportation plan or other** development plan, the arrangement of streets in a subdivision shall either:

   A. Provide for the continuation or appropriate projection of existing **and planned** ~~principal~~ streets**, bikeways and pedestrian facilities** in surrounding areas; or

   B. Conform to a plan for the neighborhood approved or adopted by the Planning Commission to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets**, bikeways and pedestrian facilities** impractical.

2. Widths of street rights-of-way and paving design for streets shall be not less than those set forth in the table below, except that for a street abutting land not in the subdivision or partition area, a lesser width may be allowed as a variance where the applicant presents a satisfactory plan as to when such street will be expanded to the required width.

3. The width of street rights-of-way provided in the table below shall be the minimum widths of rights-of-way for streets existing along and adjacent to any boundary of the subdivision or partition which is the natural or planned continuation of the alignment of the existing or proposed streets, and the applicant shall dedicate additional rights-of-way, as determined by the City Manager or his designate in accordance with such table, for any such adjacent street where the existing width of rights-of-way for such street is less than the minimum in said table.

4. Where existing conditions, such as the topography or the size or shape of land parcels, make it otherwise impractical to provide buildable lots, the Planning Commission may accept a narrower right-of-way of not less than 50 feet. If necessary, special slope easements may be required.

5. Street Standards.

Type of Street	ROW Width	Paving Width
Arterial	~~88~~ 84 ft.	~~64~~ 60 ft.
Minor Arterial	66 ft	36 ft
Collector Streets	66 ft.	~~44~~ 36 ft.
Industrial other than Arterial	66 ft.	~~44~~ 36 ft.
Local Commercial, Residential Streets and Cul-de-sacs	60 ft.	36 ft.
Circular ends of Cul-de-sacs	114 ft.	90 ft. diameter.

6. Slope Easements. Slope easements shall be dedicated in accordance with the specifications adopted by the City Council.

7. Reserve Strips or Block. The City Manager or designate may require the land divider to create a reserve block controlling the access to a street, said block to be placed under the jurisdiction of the Council:

A. To prevent access to abutting land at the end of a street in order to assure the proper extension of the street pattern and the orderly development of land lying beyond the street.

B. To prevent access to the side of a street on the side where additional width is required to meet the right-of-way standards provided in the above table.

C. To prevent access to land abutting a street of the partition or subdivision, but not within the partition or subdivision itself.

D. To prevent access to land unsuitable for building development.

8. Alignment. As far as practical, streets shall be in alignment with existing streets by continuations of the center lines thereof. Staggered street alignment resulting in "T" intersections shall, wherever practical, leave a minimum distance of 200 feet between the center lines of streets having approximately the same direction and otherwise shall not be less than 125 feet.

9. Future Extension of Streets, Bikeways & Pedestrian Facilities. ~~Where necessary to give access to or permit a satisfactory future subdivision of adjoining land~~ **Where the subdivision or partition is adjacent to developable land greater than 2 acres in size with a frontage of more than 200 feet, streets, bikeways and pedestrian facilities** shall be extended to the boundary of the subdivision and the resulting dead-end streets may be approved without a turnaround. Reserve strips or blocks may be required to preserve the objectives of street extensions.

For the purposes of this section:

1) "developable land" is land that is vacant or underutilized and can be serviced by water and sewer.

10. Intersections of Streets.

A. Angles. Streets shall intersect one another at right angles as is practicable considering topography of the area and previous adjacent layout. Where not practicable, the right-of-way and street paving within the acute angle shall have a minimum of 30 feet centerline radius where such angle is not less than 60 degrees. In the case of streets intersecting at an angle of less than 60 degrees, then of such minimum as the City Manager or his designate may determine in accordance with the purpose of Section 90.10.010 of this Chapter.

B. Offsets. Intersections shall be so designed that no offset dangerous to the traveling public is created as a result of staggering of intersections; and in no case shall there be an offset of less than 125 feet centerline to centerline.

11. Topography. The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of Section 90.10.010.

~~12. Future Extension of Streets, Bikeways & Pedestrian Facilities. Where the subdivision or partition is adjacent to land likely to be divided in the future, streets, bikeways & pedestrian facilities shall continue through Boundary lines to provide for the orderly division of such adjacent land or the transportation and access needs of the community.~~

~~13~~**12.** Existing Streets. Whenever existing streets adjacent to or within a tract are of inadequate width, additional right-of-way shall be provided at the time of subdivision.

~~14~~13. Half Streets. Half streets, while generally not acceptable, may be approved if at least 33 feet wide, where essential to the reasonable development of the subdivision, when in conformity with the other requirements of these regulations, and when the Planning Commission finds it will be practical to require the dedication of the other half of the street shall be platted within such tract, reserve strips and street plugs may be required to preserve the objectives of half streets.

~~15. Cul-de-sac. There shall be no cul-de-sacs more than 400 feet long or serving more than 20 single family dwellings. Each cul-de-sac shall have a circular end with a minimum diameter of right-of-way width and paving as shown in the table in this subchapter. The use of cul-de-sacs shall be discouraged and may only be approved upon a showing by the applicant of unusual or unique circumstances justifying the cul-de-sac.~~

~~15~~14. Cul-de-sac. The use of cul-de-sacs shall be discouraged and shall only be approved upon a showing by the applicant of unusual or unique circumstances justifying the cul-de-sac. In cases where cul-de-sacs are determined to be justified they shall only be permitted subject to the following conditions:

a) **There shall be no cul-de-sac more than 400 feet long or serving more than 20 single-family dwellings.**
b) **Each cul-de-sac shall have a circular end with a minimum diameter of right-of-way width and paving as shown in the table in this subchapter.**
c) **An accessway shall be provided consistent with standards for accessways. Hammer-head turnarounds may be allowed consistent with current standards of the Department of Public Works.**

For the purposes of this section:

1. **"unusual or unique circumstances" exist when one of the following conditions prevent a required street connection:**
   a) **excess slope (12% or more)**
   b) **presence of a wetland or other body of water which can not be bridged or crossed; and**
   c) **existing development on adjacent property prevents a street connection.**

~~16~~15. Street Names. Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for streets that are not in alignment with existing streets are subject to approval by the Planning Commission and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city.

~~17~~16. Grades and Curves. Grades shall not exceed six percent on arterial, 10 percent on collector streets, or 12 percent on all other streets. Centerline radii on curves shall not be less than 300 feet on arterial, or 230 feet on all other streets and shall be to an even 10 feet. Where existing conditions, particularly the topography, made it otherwise impractical to provide buildable lots, the Planning Commission may accept steeper grades and sharper curves. In flat areas allowance shall be made for finished street grades having a minimum slope, preferable, or at least 0.33 percent.

~~18~~17. Streets Adjacent to Railroad Rights of Way. Wherever the proposed subdivision contains or is adjacent to a railroad right-of-way, provision may be required for a street approximately parallel to and on each side of such right-of-way at a distance suitable for the appropriate use of the land between the streets and the railroad. The distance shall be determined with due consideration at cross streets of the minimum distance required for approach grades to a future grade separation and to provide sufficient depth to allow screen planing along the railroad right-of-way.

~~19~~18. Marginal Access Streets. Where a subdivision abuts or contains an existing or proposed arterial street, the Planning Commission may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or other treatment necessary for adequate protection of residential properties and to afford separation of through and local traffic.

~~20~~19. Alleys. Alleys shall be provided in commercial and industrial districts, unless other provisions for access to off-street parking and loading facilities are approved by the Planning Commission. The corner of alley intersections shall have a radius of not less than 12 feet.

A. Dedication. The Planning Commission may require adequate and proper alleys to be dedicated to the public by the land divider of such design and in such location as necessary to provide for the access needs of the subdivision or partition in accordance with the purpose of Section 90.10.010 of this Chapter.

B. Width. Width of right-of-way and paving design for alleys shall be not less than 20 feet. Slope easements shall be dedicated in accordance with specifications adopted by the City Council.

C. Corner Cut-Offs. Where two alleys intersect, 10 feet corner cut-offs shall be provided.

D. Grades and Curves. Grades shall not exceed 12 percent on alleys, and centerline radii on curves shall be not less than 100 feet.

E. Other Requirements. All provisions and requirements with respect to streets in this subchapter shall apply to alleys the same in all respects as if the word "street" or "streets" therein appeared as the word "alley" or "alleys" respectively.

20. Access Management. New access to arterials and collectors shall be limited, shared, or consolidated access shall be required for development or land divisions adjacent to these facilities unless demonstrated to be infeasible.

***A.* Number of Access Points.**

All proposed development shall meet the following standards for vehicular access and circulation:

***1.* All projects shall have access to a public right-of-way. The separation between access points onto arterial and collector roadways, or between and access point onto arterial and collector roadways, or between an access point and an intersection of an arterial or collector with another road, shall be as shown in the following two tables:**

Access Management Requirements (State Highways)

			Intersection				
			Public Road		Private Drive		
Functional Class	ODOT Category*	ODOT LOI**	Type	Spacing	Type	Spacing	Signal Spacing
Arterial Hwy. 99W	5	Regional	At Grade	¼ mile	Lt./Rt. turns	300 feet	¼ mile
Arterial Hwy. 51	6	District	At Grade	500 feet	Lt./Rt. turns	150 feet	¼ mile

***ODOT Category refers to Highway Access Management Categories established by the Oregon Department of Transportation to classify access management needs for state highways.**

****ODOT LOI refers to the "Level of Importance" classification system established by the Oregon Department of Transportation to prioritize highway improvement needs and define operational objectives for state highways.**

Access Management Requirements (City Streets)

Functional Class	Minimum Posted Speed	Minimum Spacing Between Driveways and/or Private Streets	Spacing Between Intersections
Major Arterial	35-50	300 feet	¼ mile
Minor Arterial	35-50	300 feet	300 feet

***B.* The distance between access points shall be measured from the centerline of the proposed driveway or roadway to the centerline of the nearest adjacent roadway driveway.**

C. **Frontage on Service Road and Common Drives**

1. **Projects proposed on arterials shall include frontage or service road and shall take access from the frontage road rather than the arterial. Frontage road design shall conform to ODOT standards. This access requirement may be met through the use of interconnecting parking lots which abut the arterial or major collector facility.**

2. **Adjacent uses may share a common driveway provided that appropriate access easements are granted between or among the property owners.**

D. **Alternative Designs**

Where natural features or spacing of existing driveways and roadways cause the foregoing access requirements to be physically unfeasible, alternate designs may be approved.

E. **Access to Residential Lots**

1. **Access to nonresidential uses shall not be through an area designed, approved, or developed for residential use.**

2. **All lots in a proposed residential subdivision shall have frontage on and access from an existing street meeting the requirements of this code.**

3. **Access to all lots in a proposed residential subdivision shall be by way of a residential access or collector street.**

F. **Marginal Access Streets. Where a subdivision abuts or contains an existing or proposed arterial street, the Planning Commission may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or other treatment necessary for adequate protection of residential properties and to afford separation of through and local traffic.**

G. **Through Lots. Lots which front on two parallel streets shall be avoided except where they are essential to provide separation of residential development from major traffic arteries or adjacent nonresidential activities or to overcome specific disadvantages or topography and orientation. A planting screen easement at least 10 feet wide and across which there shall be no right of access except for pedestrian facilities and bikeways may be required along the line of lots abutting such a traffic artery or other incompatible use.**

21. **Bicycle Requirements**

A. **Bike lanes shall be provided during the construction, reconstruction, or relocation of arterial and collector streets. Design and construction of bikeways, or other public paths shall conform to the requirements of the American Association of State Highway and Transportation Officials**

(AASHTO) manual "Guide for the Development of Bicycle Facilities 1991", as revised and adopted in the 1994 "Oregon Bicycle and Pedestrian Plan."

22. **Pedestrian Requirements.**

A. **Sidewalks shall be constructed along all arterial, collector, and local service streets.**

B. **The design and construction of sidewalks and other public paths shall conform to the requirements of the 1994 "Oregon Bicycle and Pedestrian Plan" and shall be consistent with ADA requirements.**

23. Accessways

Where required:

A. **Accessways shall be located to provide a reasonably direct connection between likely pedestrian and cyclist destinations. A reasonably direct connection is a route which minimizes out-of-direction travel for most of the people likely to use the multi-use path considering terrain, safety, and likely destinations.**

B. **The design and construction of accessways shall conform to the requirements for "Multi-use Paths" defined in the 1994 "Oregon Bicycle and Pedestrian Plan" and shall be consistent with all ADA requirements.**

24. **Lighting**

Illumination of all sidewalks and bicycle paths will be provided in conjunction with all new development. Adequacy of the lighting plan will be consistent with AASHTO and approved by the public works director.

90.90.015 BLOCKS.

1. General. The length, width and shape of blocks shall take into account the need for adequate lot size, ~~and~~ street width, **access needs** and shall recognize the limitations of the topography.

2. Size. No block shall be more than 1,200 feet in length between street corner lines unless it is adjacent to an arterial street or unless the topography or the location of adjoining streets justifies an exception. Size. No block shall be more than ~~1,200~~ **600** feet in length between street corner lines unless it is adjacent to an arterial street or unless the topography, **presence of wetlands and waterbodies**, or the location of adjoining streets justifies an exception.

2.

3. Public accessways. When necessary for public convenience and safety, the planning Commission may require the land divider to dedicate to the public accessways to connect to cul-de-sacs, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans, or to provide access to schools, **shopping centers, industrial parks, nearby residential areas** parks or other public areas of such design, width, and location as reasonably required to facilitate public use. Where possible, said dedications may also be employed to accommodate users as included in Subsection 4 of this section.

For the purposes of this section:
"Public convenience and safety" requires that bicycle and pedestrian routes meet the travel needs of cyclists and pedestrians considering destination and length of trip; and considering that the optimum trip length of pedestrians is generally 1/4 to 1/2 mile.

"Unusually long blocks" are blocks greater than 600 feet in length.

4. Easements for Utilities. Dedication of easements for storm water sewers, and for access thereto for maintenance, in order to safeguard the public against flood damage and the accumulation of surface water, and maintenance, and dedication of easement for other public utilities, may be required of the land divider at sufficient widths for their intended uses, by the Planning Commission along lot or parcel rear lines or side lines, or elsewhere as necessary to provide needed facilities for present or future development of the area in accordance with the purpose of this chapter. Such easements shall be dedicated to the public as a right-of-way for the underground installation and maintenance of all service utilities that may be required.

90.90.020 LOTS.

1. Size. Where property is zoned, lot sizes shall conform to the zoning ordinance. Depth and width of properties reserved or laid out for commercial and industrial purposes shall be adequate to provide for the off-street parking and service facilities required by the type of use contemplated.

2. Access. Each lot shall abut upon a street other than an alley for a width of at least 25 feet.

3. Through Lots. Lots which front two parallel streets shall be avoided except where they are essential to provide separation of residential development from major traffic arteries or adjacent nonresidential activities or to overcome specific disadvantages or topography and orientation. A planting screen easement at least 109 feet wide and across which there shall be no right of access may be required along the line of lots abutting such a traffic artery or other incompatible use.

4. Lot Side Lines. The side lines of lots, as far as practicable, shall run at right angles to the street upon which the lot or parcel faces except that on curved streets they shall be radial to the curve. Where incident solar radiation is a consideration a side lot line may vary from the above requirement if the variation will improve solar access.

5. General Requirements.

A. Width. Widths of lots shall conform to the standards of the zoning ordinance.

B. Depth. Each lot and parcel shall have an average depth between the front and rear lines of not more than 2 1/2 times the average width between side lines. Widths of lots shall conform to the standards of the zoning ordinance.

C. Area. Lot sizes shall conform to the standards of the zoning ordinance.

90.90.040 FUTURE SUBDIVISION OR PARTITION OF LOTS OR PARCELS. Where the subdivision or partition will result in a lot or parcel one-half acre or larger in size, which in the judgment of the Planning Commission is likely to be further divided in the future, the Planning Commission may require that the location of lot and parcel lines and other details of layout be such that future division may readily be made without violating the requirements of this Chapter, and without interfering with orderly extension of **adjacent streets bikeways and pedestrian facilities.** Any restriction of buildings within future street locations shall be made a matter of record.

10.090 Public Facility Improvement Requirements

The Building Official shall not issue any required building permit for any proposed construction, reconstruction, or development for which the public facilities serving such development are not fully improved to current City Standards. Public facilities include streets, sidewalks, **bikeways,** curbs, storm drains, sanitary sewers, water mains, electrical lines and any necessary rights of way.

20.056 Parking

Parking in the RM Zone shall be provided in accordance with the requirements of Chapter 73, "Parking."

22.056 Parking

Parking in the RH Zone shall be provided in accordance with the requirements of Chapter 73, Parking.

42.040 Site Review

A. Proposals shall include the following information:

1. Vicinity Map: The vicinity map shall indicate the subject property, all surrounding properties within 1,000 feet, streams or drainage ways, ~~and~~ roads, **bikeways and pedestrian facilities;**

60.055 Outline Plan Option

B. The outline plan may be submitted in a general schematic form adequate to convey the following information:

4. The approximate location of streets, **bikeways, pedestrian facilities,** alleys and other public ways;

60.060 Tentative Plan for PUD

C The tentative plan for a PUD shall include the following:

1. A map showing street systems, **bikeways, pedestrian facilities,** lot lines, and other divisions of land for management, use or allocation;

2. A map showing areas proposed to be conveyed, dedicated or reserved for public streets, **bikeways, pedestrian facilities,** parks, parkways, playgrounds, school sites, public parkways, playgrounds, school sites, public buildings and similar public and semi-public uses;

8. The following plans and diagrams may be required if the Planning Commission finds that the PUD creates special problems of traffic, parking, landscaping or economics:

b. A circulation diagram indicating proposed movement of vehicles, goods ~~and~~ pedestrians and **cyclists** within the PUD and to and from the surrounding neighborhood, including any features and traffic regulation devices features and traffic regulation devices needed to facilitate traffic circulation;

73.025 Parking of Bicycles

Any apartment, dormitory, fraternity, sorority, student home, or other multiple-family residential structure having more than six dwelling units or more than 12 residents shall provide a parking area for bicycles. Such a parking area shall include the following:

A. A sheltered area having direct access to an adjacent sidewalk or parking area. The bicycle parking area need not be fully enclosed but shall provide shelter from precipitation.

B. A parking surface of asphaltic concrete or Portland cement concrete.

C. Racks, frames, posts, or other devices of metal, concrete, wood, or other durable material. Such devices shall be adequate to hold and permit the locking of one bicycle for every 4 persons residing in the building, whichever requirement is less.

D. The City Planner or Public Works Director are available to recommend to appropriate facility to match a particular parking need consistent with the Bicycle and Pedestrian Element of the Comprehensive Plan and the 1994 "Oregon Bicycle and Pedestrian Plan". At a minimum, bicycle parking facilities shall be consistent with the following design guidelines:

1. **Bicycle parking shall be convenient and easy to find. Where necessary, a sign shall be used to direct users to the parking facility.**
2. **Each bicycle parking space shall be at least 2 feet by 6 feet with a vertical clearance of 6 feet.**
3. **An access aisle of at least 5 feet shall be provided in each bicycle parking facility.**
4. **Parking facilities shall offer security in the form of either a lockable enclosure in which the bicycle can be stored or a stationary object, i.e., a "rack", upon which**

the bicycle can be locked. Structures that require a user-supplied lock shall accommodate both cables and U-shaped locks and shall permit the frame and both wheels to be secured (removing the front wheel may be necessary.) Note: businesses may provide long-term, employee parking by allowing access to a secure room within a building, although additional short-term customer parking may also be required.

5. **The rack shall support the bicycle in a stable position without damage.**
6. **Long-term parking shall be sheltered so that bicycles are not exposed to the sun, rain, and snow.**

Appendix F: Relevant Background Material and Travel Demand Forecasting

TABLE F-1. INDUSTRY FOR EMPLOYED PERSONS (1990 Census)

	Monmouth	Independence	Polk County (rural)
Agriculture, Forestry, Fisheries	144 (5%)	110 (7%)	1470 (7%)
Mining	0	11 (1%)	62 (<1%)
Construction	86 (3%)	139 (8%)	1054 (5%)
Manufacturing, nondurable goods	97 (3%)	63 (4%)	819 (4%)
Manufacturing, durable goods	113 (4%)	255 (15%)	2547 (12%)
Transportation	79 (3%)	45 (3%)	604 (3%)
Communications and Public Utilities	39 (1%)	25 (2%)	305 (1%)
Wholesale Trade	50 (2%)	35 (2%)	693 (3%)
Retail Trade	577 (20%)	208 (13%)	3399 (16%)
Finance, Insurance, Real Estate	143 (5%)	72 (4%)	1147 (5%)
Business & Repair Service	109 (4%)	66 (4%)	684 (3%)
Personal Services	72 (3%)	38 (2%)	476 (2%)
Entertainment, Recreational, Professional Services	77 (3%)	26 (2%)	239 (1%)
Health Services	146 (5%)	171 (10%)	1722 (9%)
Educational Services	710 (25%)	142 (9%)	2689 (13%)
Other Services	104 (4%)	121 (7%)	1435 (7%)
Public Administration	298 (10%)	128 (8%)	1970 (9%)

Compare the table values to average employment type for Oregon cities from 8,000 to 150,000 developed by ODOT (ODOT, 1995):

- Industry (industrial, manufacturing), 27%
- Retail (retail stores, restaurants) 24%

- Service (medical, offices, hotels) 26%
- Education (schools, colleges), 8%
- Government (city, county, state, federal), 9%
- Other (transportation, agriculture, wholesale), 6%

This comparison indicates that Monmouth has a relatively large employment in education and a relatively low employment in industry.

TABLE F-2. WORK FORCE TRAVEL MODE (1990 Census)

Work Transportation for Workers 16+ Years	Monmouth People (% of total city workers)	Independence People (% of total city workers)	Dallas People (% of total city workers)	Rural Polk County People (% of total rural county workers)
Drove Alone	1810 (65%)	1267 (78%)	2640 (73%)	15,374 (73%)
Carpooled	272 (10%)	291 (18%)	534 (15%)	2,869 (14%)
Public Transportation	7 (<1%)	0	0	77 (<1%)
Motorcycle	13 (<1%)	14 (1%)	19 (1%)	67 (<1%)
Bicycle	44 (2%)	10 (1%)	22 (1%)	140 (1%)
Walked	508 (18%)	25 (2%)	293 (8%)	1187 (6%)
Other means	38 (1%)	15 (1%)	8 (<1%)	158 (1%)
Worked at Home	101 (4%)	7 (<1%)	111 (3%)	1065 (5%)
TOTAL WORKERS	2,792	71	3,619	20,936

TABLE F-3. WORK FORCE TRAVEL TIME (1990 Census)

Work Transportation Time for Workers 16+ Years	Monmouth People (% of total city workers)	Independence People (% of total city workers)	Dallas People (% of total city workers)	Rural Polk County People (% of total rural county workers)
Less than 5	367 (13%)	82 (5%)	328 (9%)	1381 (7%)
5 to 9	799 (29%)	198 (12%)	866 (24%)	3435 (16%)
10 to 14	362 (13%)	279 (17%)	402 (11%)	3500 (17%)
15 to 29	650 (23%)	635 (40%)	737 (20%)	6,389 (31%)
30 to 59	418 (15%)	358 (22%)	988 (27%)	4,073 (19%)
60 to 89	63 (2%)	39 (2%)	84 (2%)	711 (3%)
90 or more	33 (1%)	31 (2%)	111 (3%)	383 (2%)
Worked at home	101 (4%)	7 (<1%)	111 (3%)	1065 (5%)
TOTAL	2,792	1,628	3,627	20,936

TABLE F-4. Existing Capital Improvements Program and Public Facilities

1995-1999			
Streets Element	**Section**	**Length**	**Estimated Cost**
Catron	Powell to Suzanna	720	$108,000
Gwinn	College to Warren	900	$135,000
Gwinn	Warren to Pacific	1,500	$270,000
Gwinn	Pacific to Edwards	2,700	$486,000
Gwinn	Edwards to Talmadge	1,900	$342,000
Madrona	***Ecols to Pacific***	***600***	***$108,000***
Madrona	Edwards to Talmadge	2,000	$360,000
Madrona	Traffic signal at Pacific		$150,000
Ecols	Madrona to Gwinn	1,200	$216,000
Edwards	Realignment, lft turn ln		$50,000
Alberta	Realignment, lft turn ln		$75,000
Main	***Realignment of "S" curves***		***$800,000***
TOTALS		**11520**	**$3,100,000**
Bikeways Element			
Riddell	Hoffman to N city limits		$78,000
Monmouth	Church to Main		$39,000
Hoffman	Riddell to Pacific		$72,000
Hoffman	Pacific to Dodge		$81,000
Gentle	Monmouth to Pacific		$2,600
Stadium	Main to Church		$36,000
TOTALS		**12,300**	**$308,600**
2000-2004			
Streets Element	**Section**	**Length**	**Estimated Cost**
Main	Westerly extension to Church	2,000	$360,000
Whitman	Fall City Hwy to S. Ash Ck Rd.	1,500	$270,000
Monmouth	Gwinn to S. Ash Ck. Rd.	1,300	$234,000
S. Ash Ck. Rd.	Fall City Hwy to Whitman	2,500	$450,000
S. Ash Ck. Rd.	Whitman to Monmouth	800	$144,000
S. Ash Ck. Rd.	Monmouth to Warren	600	$108,000
S. Ash Ck. Rd.	Warren to Ecols	900	$162,000
S. Ash Ck. Rd.	Ecols to Pacific	700	$126,000
S. Ash Ck. Rd.	Pacific to Southgate	300	$54,000
Ecols	Gwinn to S. Ash Ck. Rd.	900	$162,000
Southgate Drive	Gwinn to S. Ash Ck. Rd.	600	$108,000
Gwinn	Traffic signal at Pacific		$150,000
Traffic Study	***Refinement study of traffic on Hwys. 99W and 51.***		***$75,000***
TOTALS		**12,100**	**$2,403,000**

Bikeways Element			
Olive Wy	Pacific to end of Olive Wy		$1,800
Olive Wy	Olive Wy extends to Monmouth Elementary		$66,000
Church	Pacific to Monmouth Elementary		$1,300
Church	Through Monmouth Elementary		$18,000
Church	W city limits to Stadium		$900
Church	Stadium to Monmouth		$1,400
TOTALS		**8,800**	**$89,400**
2005 and later			
Knox	Gentle to Middle Ash Ck Rd	1,100	$198,000
Knox	Middle Ash Ck. Rd. to N Ash Ck Rd	800	$144,000
Knox	N. Ash Ck. Rd. to Hoffman	1,000	$180,000
Catron	Bowman Cir to Middle Ash Ck Rd	1,000	$180,000
Catron	Middle Ash Ck. Rd. to N Ash Ck Rd	900	$162,000
Catron	N. Ash Ck. Rd. to Hoffman	1,100	$198,000
Middle Ash Ck. Rd.	Monmouth to Gentle	800	$144,000
Middle Ash Ck. Rd.	Gentle to Catron	1,100	$198,000
Middle Ash Ck. Rd.	Catron to Pacific	300	$54,000
Middle Ash Ck. Rd.	Pacific to Craven	600	$108,000
N. Ash Ck. Rd.	Monmouth to Gentle	900	$162,000
N. Ash Ck. Rd.	Gentle to Catron	1,100	$198,000
N. Ash Ck. Rd.	Catron to Pacific	300	$54,000
N. Ash Ck. Rd.	Pacific to Craven	500	$90,000
N. Ash Ck. Rd.	Craven to Hoffman	3,900	$702,000
Craven	Olive Wy to Middle Ash Ck	1,000	$180,000
Craven	Middle Ash Ck. Rd. to N Ash Ck Rd	900	$162,000
TOTALS		**17,300**	**$3,114,000**
Bikeways Element	On Street Bikeways from Master Plan	**10,500**	$315,000
Other	Alternative Modes Facility		$150,000
TOTALS			**$465,000**
GRAND TOTAL			**$9,480,000**
Entries in bolded italics are system improvements identified in TSP.	***Total additional linear feet of streets***	***40,920***	
	Total additional linear feet of bikeways	***31,600***	

PROJECTING FUTURE TRAFFIC DEMAND

The historical population growth behavior of Monmouth is shown in Table F-4. Census data indicated that Monmouth has grown by a factor of 6.5 during the 1940-90 interval. Monmouth has more than doubled in size during some census intervals (1940-50 and 1960-70), corresponding to annual growth rate of 7.3 and 8.9 percent, respectively. Outside of the intervals of very rapid growth, the measured rate of population increase in Monmouth has ranged from 7 to 12 percent per decade (0.7 to 1.2 percent annual rate). The 1996 population was estimated at 7,385 people, and represents a 17% increase from 1990 levels and suggests that the current annual growth rate is 3.3 percent.

TABLE F-4. HISTORICAL POPULATION GROWTH IN MONMOUTH

Time Interval	Population	Percent Increase From Previous Census (annual growth rate in parentheses)
1940	965	
1950	1,956	103 (7.3%)
1960	2,229	14 (1.3%)
1970	5,237	135 (8.9%)
1980	5,594	7 (0.7%)
1990	6,288	12 (1.2%)
*1996**	*7,385*	*17 (3.3%)*

*Estimated by Center for Population Research and Census, Portland State University.

Historic data shows how widely population growth rates in Monmouth have varied and illustrates the limitations of forecasts based on past trends. The growth rate during the interval between 1960 and 1970 was very high, fourth largest in Oregon, and was due to an increase in enrollment and staffing at WOU and a change in census taking methods that counted students living on the campus as community residents (City of Monmouth, 1972). WOU did grow substantially during the 1960s, when enrollment went from 987 to 3,688 (an annual growth rate of 14 percent). It is not known what, if any, special circumstances surrounded the dramatic population increase during 1940-50.

Historic data illustrates the linkage between growth in Monmouth and WOU. WOU anticipates enrollment will climb from current enrollment of 4,025 to 5,000 full time equivalent students (FTE) by 2005 (WOU, 1995) and an annual growth rate of 2.2 percent during the next 10 years.

The range of historical growth rates, and the growth rate based on current estimates, was used to forecast several possibilities for the population of Monmouth in 2020. Using the observed range of annual growth rates, 0.7 to 8.9 percent, and the 1990 census population figure as a base, Monmouth population is forecast to range from 7,665 to 80,531 by 2020 (Table F-5). Clearly, the range defined in this manner is not very useful, because the lower number is close to the

current population estimate and the higher number exceeds the maximum build out population (Table F-5).

TABLE F-5. COMPARISON OF POPULATION AND HOUSEHOLD INCREASE PROJECTIONS

Projection Method	Population in 2020[1]	Additional Residents	Additional Household Units[3]
Annual Growth Rate Used in 1987 Periodic Review (2%)	11,389	5,101	1,962
Historical Low Annual Growth Rate (0.7%)	7,665	1,377	530
Historical High Annual Growth Rate (8.9%)	80,531	74,243	28,555
Current Estimated Annual Growth Rate (3.3%)	16,422	10,134	3,898
Maximum Build out (PDIA)	25,394[2]	19,344	7,440
Compromise Annual Growth Rate (2.5%)	13,190	6,902	2,655

[1] Based on a population of 6,288 and 2,250 dwelling units in 1990.
[2] Represents the maximum population, not necessarily the population in 2020, given existing zoning, vacancy rates, and development standards. This population in 2020 corresponds to an annual growth rate of 4.8 percent.
[3] Based on the 1990 census measure of 2.6 people per household

A second population forecast method is based on potential build out estimates of residential, commercial, and industrial lands within the Monmouth UGB and is available from the Potential Development Impact Analysis (PDIA) (ODOT, 1994). The study made the same observation noted by the city in the 1988 update of the Comprehensive Plan- that vacant, buildable land was common within city limits. The study concluded that potential estimated build out on vacant residential land inside the UGB (845.9 acres) would result in 7,440 additional dwelling units, for a total of 9,690 dwelling units in Monmouth. At 2.6 people per unit, the total population at build out would be 25,194 (Table F-5). If this type of build out occurred by 2020 it would correspond to an annual growth rate of 4.8% over the next 23 years.

Previous Periodic Reviews have used annual growth rates of 2 and 3 percent for population forecasts. Current population estimates put the annual rate at 3.3 percent and WOU plans for a student growth rate of 2.2 percent during the nest 10 years. Estimates based on an annual growth rate of 2.5 percent are also shown in Table F-5.

Given the range of possibilities, a practical approach is to eliminate the unlikely and choose rates that would bracket the most likely low and high populations in 2020. The low and high annual growth rates are identified as 2.0 and 4.8 percent, respectively. A 2.0 percent annual growth rate results in a 2020 population of 11,389 and requires an additional 1,962 dwelling units. A 4.8 percent annual growth rate results in a 2020 population of 25,194 and requires an additional 7,440 dwelling units. Major assumptions are that the average number of people per dwelling

unit, and existing development patterns and standards do not change. Monmouth has also used an annual growth rate of 2 percent to plan for other infrastructure improvements such as water and sewer service and could not accommodate sustained growth in excess of this rate.

The historical changes in traffic volume on Highway 99W and Highway 51 are shown in Table F-6 and Figure 9. Travel volume changes and pattern changes were examined for trends which could be useful in forecasting travel demand. The data shows that travel volume has mainly increased on both arterials over time. The rate of change (every 5 years) on Highway 99W at the north city limits has been positive, except from 1980-85 when ADT dropped by 100. The rate of change (every 5 years) on Highway 51 at the east city limits has been positive, except from 1990-95 when ADT dropped by 1300. In general, the growth rate in traffic on Highway 99W has exceeded the growth rate on Highway 51.

TABLE F-6. TRAFFIC VOLUME CHANGES

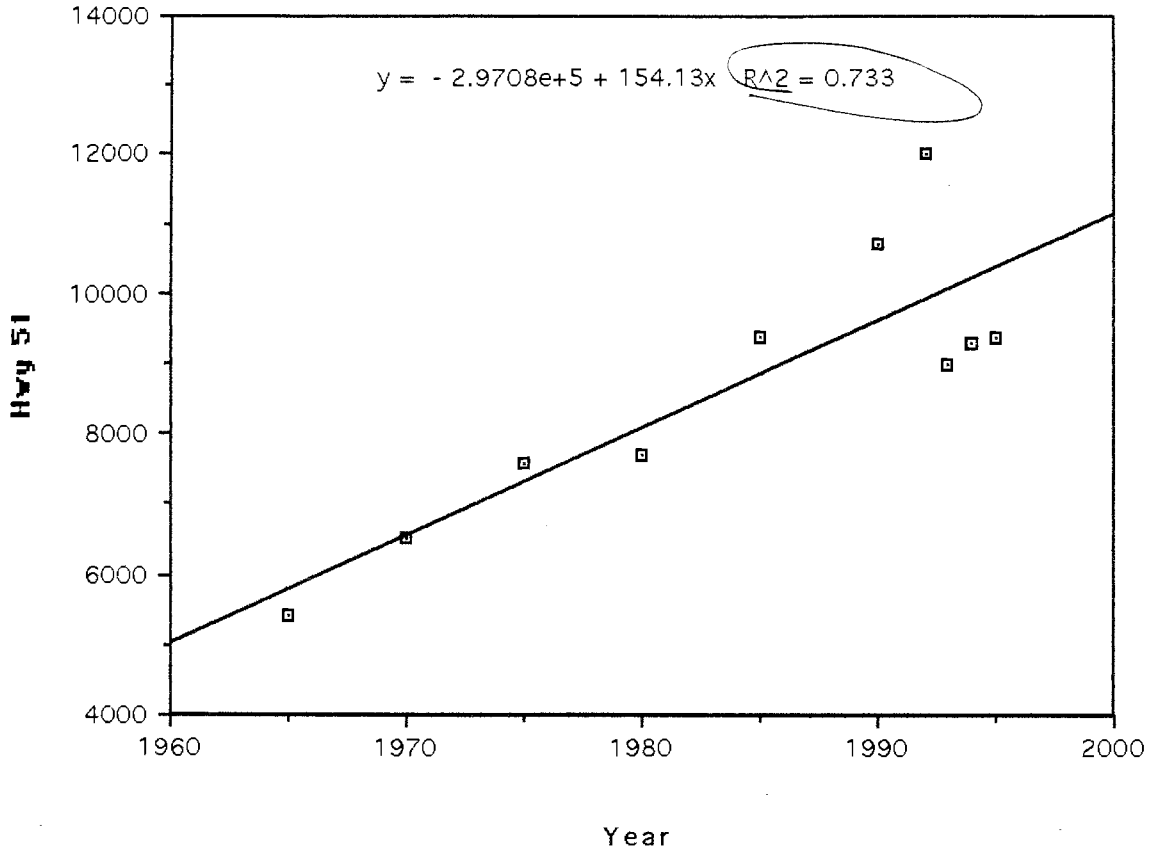
Interval	Traffic Changes Hwy. 99W, north city limits (% Change in ADT)	Traffic Changes Hwy. 51, east city limits (% Change in ADT)
1965-70	850 ADT (+28%)	1100 ADT (+20%)
1970-75	950 ADT (+25%)	1100ADT (+17%)
1975-80	800 ADT (+17%)	100 ADT (+1%)
1980-85	-100 ADT (-2%)	1700 ADT (+22%)
1985-90	2700 ADT (+49%)	1300 ADT (+14%)
1990-95	2100 ADT (+26%)	-1300 ADT (-12%)

Regression analyses of historical traffic data were used to estimate future traffic volumes from 2000 to 2020 for Hwys. 99W and 51. Results are shown in Figure F-1 and Table F-7 shows the predicted volumes based on the regression analyses. The regression analysis on Highway 51 excluded data from 1990 and 1992 because they appeared to be anomalous counts.

TABLE F-7. PROJECTED TRAFFIC VOLUMES

Year	Traffic (ADT)on Highway 99W	Traffic (ADT) on Hwy. 51
2000	10,990	10,230
2005	12,220	10,850
2010	13,450	11,460
2015	14,680	12,080
2020	15,910	12,700

Figure F-1. Regression Analyses of Traffic Volume Data on Highways 99W and 51.



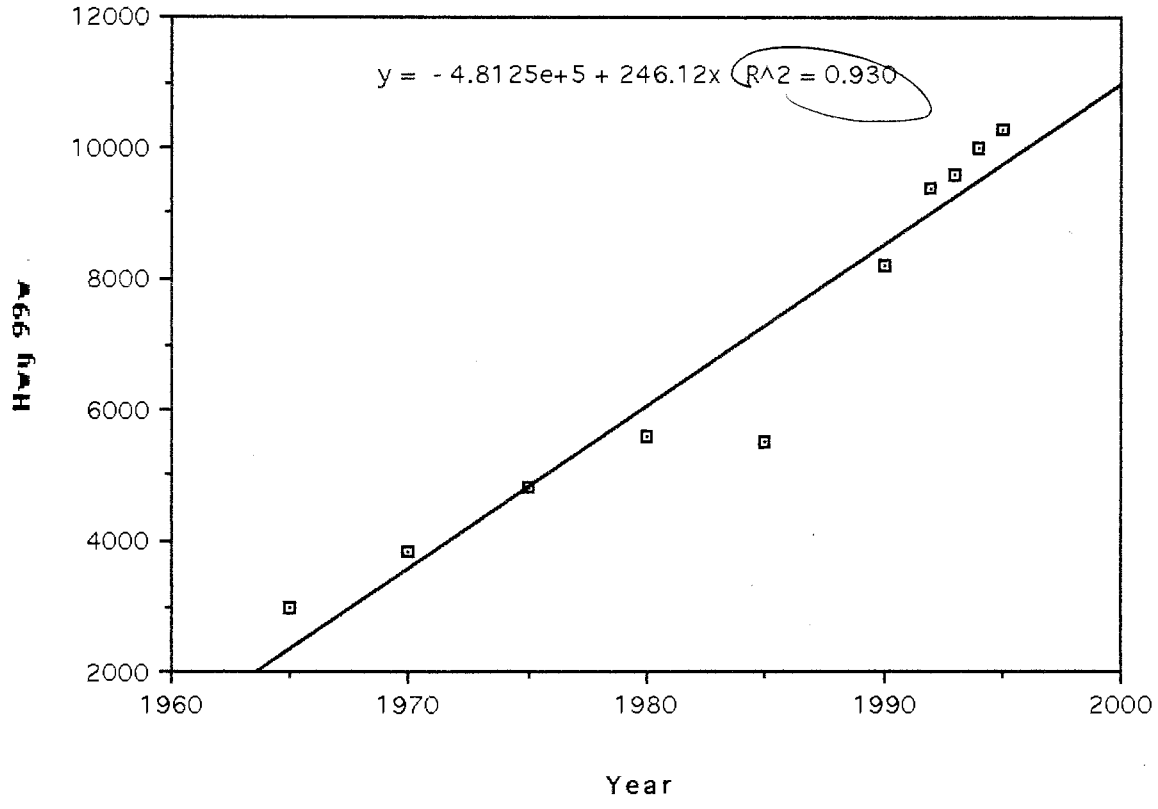


Figure 9 also shows apparent changes in traffic pattern on Monmouth arterials. In the past, traffic volume has been heavier on Highway 51 than Highway 99W. Between 1990 and 1995 a pattern change occurred as Highway 99W traffic volume exceeded volume on Highway 51 and the regression analyses indicate that this change continues into the future. In 2020 the predicted ADT for Highway 99W is 1.25 times the ADT on Highway 51.

Finally, future traffic volumes are predicted based on complete build out of the residential area (total dwelling units estimated at 9,690) and the build out associated with the lower population growth rate (total dwelling units estimated at 4,217). Dwelling units were translated into total traffic volume and then allocated to Hwys. 99W and 51.

The PDIA predicted that Monmouth would have 9,690 dwelling units; distributed among areas zoned for low, medium, and high residential development; at build out. The PDIA did not indicate how the dwelling units were allocated by type of residential zoning which is required for estimation of daily trips. Therefore, the allocation of dwelling units at build out, by density of development, was estimated using the distribution pattern observed in 1987 (City of Monmouth, 1987) and discussed previously. The acres of land zoned for RS, RM, and RH were recast as dwelling units, assuming that all the area was developed to the maximum allowable density.

Other information for Monmouth indicates that some of the existing developed land is underdeveloped, so the information in Table F-7 could represent minimum traffic volumes if infill and redevelopment occurs. The lands zoned for industrial use in the urbanizable area were not included in this projection. Monmouth expects to see some of this land be rezoned for residential use in the next twenty years and this possibility again suggests the traffic volume projections are minimums.

TABLE F-8. FUTURE TRAVEL DEMANDS BASED ON BUILDOUT

Residential Zoning	Density (maximum dwelling units per acre)	Percent of dwelling units in 1987	Estimated number of dwelling units	Average Trip Generation per Unit[1]	Total Daily Trips
Maximum Population			At buildout (4.8% growth rate)		
RS	6	64	3,876	9.55	37,016
RM	12	21	2,616	8.00[2]	20,928
RH	20	15	3,101	6.47	20,063
Totals			**9,690**		**78,006**
Lower Population			At 2.0% growth rate		
RS	6	64	2,699	9.55	25,775
RM	12	21	886	8.00[2]	7,088
RH	20	15	633	6.47	4,096
Totals			**4,217**		**36,959**

[1] Weekday data, from the Institute of Transportation Engineers, 1991

[2] Residential, medium density, is a mix of the apartments, single-family homes, and condominiums. Average trip generation was estimated at 8.00, a value midway between RS and RH.

The number of dwelling units, by residential type, are used are used to calculate total trips by taking table values of average trips generated (Institute of Traffic Engineers, 1991) per dwelling and multiplying them by the total number of dwellings (Table 16). A total of 78,006 and 36,959 trips per day were estimated as originating from residential dwellings in Monmouth at maximum build out and the lower population estimate, respectively. This analysis assumes that Monmouth will remain essentially a bedroom community and WOU will remain the primary employer of Monmouth workers (no new industry locates in the industrially zoned area).

The last step is to predict the future pattern of traffic volume on the existing road network. Land use zoning shows that future residential development is generally planned to occur as a band around the existing city. Residential growth on the east side and northeast corner is somewhat limited by Independence and land allocated for industrial use, respectively. This equantly distributed growth suggests that future traffic flow will rely on the existing arterials for east-west and north-south travel unless other corridors are specifically designed for this purpose.

Traffic is allocated to the arterials based on the regression analyses that indicate the traffic on Highway 99W will be 1.25 time the volume on Highway 51 in 2020. Traffic volume under the maximum build out scenario would be:

- 43,340 ADT on Highway 99W and
- 34,669 ADT on Highway 51.

Traffic volume under the lower build out scenario would be:

- 20,533 ADT on Highway 99W and
- 16,426 ADT on Highway 51.

This method does not distinguish through traffic and, as mentioned, does not include traffic associated with industrial development.