

Wasco County Comprehensive Plan

**GEOGRAPHICALLY ACKNOWLEDGED
BY LCDC August 25, 1983**

***EFFECTIVE**

9 May 1984
4 April 1984
6 November 1985
9 July 1986
11 September 1986
7 January 1987
15 April 1987
11 January 1989
12 April 1989
3 May 1989
4 October 1989
7 March 1990
20 June 1990
15 May 1991
2 June 1993
7 June 1993
4 October 1993
15 December 1993
28 February 1995
17 June 1996
13 November 1996
20 December 1996
10 October 1997
17 November 1997
16 June 1998
26 August 1998
7 October 1998
27 April 1999
3 June 1999
30 June 1999
7 July 1999
24 November 1999
9 February 2000
28 May 2003

*Some early effective dates may be missing

25 February 2004
5 January 2005
9 June 2005
22 November 2006
27 December 2006
28 February 2007
27 March 2008
25 June 2008
16 December 2009
1 June 2010

PREPARED BY THE
Wasco County Planning and Development Office

STAFF

Todd R. Cornett	Director
A. Gary Nychyk	Senior Planner
Brenda Jenkins	Planning Coordinator
Dawn M. Baird	Associate Planner
Jeanette Montour	Associate Planner
Benjamin Hoey	Planning Assistant
Keith Cleveland	Code Compliance Officer

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	
Scope of the Plan	1
Generalized Planning Process	1
Planning Intent	3
Comprehensive Plan Definition	3
Citizen Involvement	3
 CHAPTER 1 - HISTORY	 1-1
 CHAPTER 2 - PHYSICAL CHARACTERISTICS	
A. General Location	2-1
B. Topography	2-3
C. Climate	2-5
D. Water Resources	2-9
1. <u>Surface Water</u>	2-9
2. <u>Ground Water</u>	2-13
3. <u>Water Rights and Usage</u>	2-16
4. <u>Municipal Watersheds</u>	2-20
E. Geology	2-21
F. Natural Hazards	2-23
1. <u>Geologic Hazards</u>	2-23
2. <u>Flood Hazards</u>	2-24
3. <u>Volcanic Hazards</u>	2-25
G. Mineral & Aggregate Resources	2-27
1. <u>General Information</u>	2-27
2. <u>Inventory</u>	2-28
3. <u>Application of the Goal 5 Process for Mineral Resources</u>	2-28
H. Soils	2-49
I. Vegetation	2-53
J. Natural Areas	2-57
K. Forest Resources	2-63
L. Land Use and Ownership	2-65
M. Fish and Wildlife Resources	2-71
1. <u>Wildlife Habitat</u>	2-71
2. <u>Wildlife Species</u>	2-71
3. <u>Sensitive Wildlife Habitat Areas</u>	2-71
4. <u>Unique Habitats</u>	2-80
5. <u>Land Use Conflicts and Resolutions</u>	2-81
6. <u>Fisheries Habitat</u>	2-84
N. Environmental Considerations	2-93
1. <u>Air Quality</u>	2-93
2. <u>Water Quality</u>	2-93

3. <u>Land Resources Quality</u>	2-96
4. <u>Noise Pollution</u>	2-97
O. Energy	2-99
1. Sources	2-99
2. Consumption	2-103
CHAPTER 3 - POPULATION	3-1
CHAPTER 4 - POLITICAL STRUCTURE	4-1
CHAPTER 5 - COMMUNITY FACILITIES AND SERVICES	
A. Police Protection	5-1
B. Fire Protection	5-2
C. Medical Services	5-3
D. Schools	5-4
E. Postal Services	5-6
F. Televisions and Radio	5-6
G. Telephone	5-7
H. Newspapers	5-7
I. Libraries	5-7
J. Parks and Recreation and Scenic Areas	5-9
1. <u>Current Supply of Recreational Facilities</u>	5-9
2. <u>Future Recreational Needs</u>	5-17
3. <u>Outstanding Scenic and Recreational Areas</u>	5-18
K. Cultural Resources	5-19
1. <u>Historic Areas</u>	5-19
2. <u>Archaeological Areas</u>	5-22
L. Social Services	5-24
M. Utilities	5-24
1. <u>Natural Gas</u>	5-24
2. <u>Electricity</u>	5-37
3. <u>Public Water and Sewer Systems</u>	5-25
4. <u>Solid Waste Disposal Facilities</u>	5-29
CHAPTER 6 - TRANSPORTATION	
A. Road Systems	6-1
B. Other Modes of Transportation	6-4
1. <u>Pedestrian and Bicycle Travel</u>	6-4
2. <u>Transit Facilities and Service</u>	6-5
3. <u>Marine Transport</u>	6-5
4. <u>Air Transport</u>	6-5
C. Freight, Pipeline and Transmission Facilities and Needs	6-6
CHAPTER 7 - HOUSING	
A. Existing Housing	7-1
1. <u>Standard Units</u>	7-1

2. <u>Marginal Units</u>	7-1
3. <u>Substandard Unit</u>	7-1
B. Housing Needs	7-6
C. Financing Housing	7-9
CHAPTER 8 - ECONOMICS	
A. Agriculture	8-2
1. <u>Tree Fruits</u>	8-5
2. <u>Small Grains</u>	8-9
3. <u>Livestock</u>	8-11
B. Forestry	8-13
C. Manufacturing	8-14
D. Tourism and Education	8-14
E. Non-Basic	8-14
F. Labor Force Statistics	8-15
G. Future Economic Outlook	8-19
CHAPTER 9 - LITERATURE CITED	9-1
CHAPTER 10 - SUMMARY AND ANALYSIS	
A. History	10-1
B. Physical Characteristics	10-1
C. Population	10-6
D. Political Structure	10-6
E. Community Facilities and Service	10-6
F. Transportation	10-9
G. Housing	10-10
H. Economics	10-11
CHAPTER 11 - REVISION PROCESS	
A. Intent and Purpose	11-1
B. Comprehensive Plan Amendment May Take the Following Forms	11-1
C. Who May Apply For a Plan Revision	11-1
D. Legislative Revisions	11-1
E. Quasi-Judicial Revisions	11-2
F. Urban Growth Boundary Revisions	11-2
G. Urban Growth Area Management	11-2
H. General Criteria	11-2
I. Transportation Planning Rule Compliance	11-3
J. Procedure for the Amendment Process	11-4
K. Appeals	11-5
L. Review	11-5
CHAPTER 12 - DEFINITIONS	
A. Definitions – Existing Land Use Map	12-1

B. Purpose Definitions of Map Classifications on the Comprehensive Plan Map	12-2
CHAPTER 13 - EXCEPTIONS TO GOAL 3	
A. Introduction	13-1
B. Wasco County Committed Lands Process	13-3
C. Summary of Wasco County Exception Areas	13-4
CHAPTER 14 - FINDINGS AND RECOMMENDATIONS	
A. Justification of Minimum Lot Sizes	14-1
1. <u>A-1(20)</u>	14-1
2. <u>A-1(80)</u>	14-3
3. <u>F-2(40) and F-2(80)</u>	14-5
4. <u>F-1(80)</u>	14-6
5. <u>F-F(10) and F-F(40)</u>	14-6
B. Goal 5 Issues	14-8
1. <u>Land Needed or Desirable for Open Space</u>	14-8
2. <u>Mineral and Aggregate Resources</u>	14-9
3. <u>Energy Resources</u>	14-9
4. <u>Fish and Wildlife Areas and Habitats</u>	14-10
5. <u>Ecologically and Scientifically Significant Natural Areas, Including Desert Areas</u>	14-10
6. <u>Outstanding Scenic Views and Sites</u>	14-10
7. <u>Water Areas, Wetlands, Watersheds and Groundwater Resources</u>	14-10
8. <u>Wilderness Areas</u>	14-10
9. <u>Historic Areas, Sites, Structures and Objects</u>	14-10
10. <u>Cultural Areas</u>	14-11
11. <u>Potential and Approved Oregon Recreation Trails</u>	14-11
12. <u>Potential and Approved Federal Wild and Scenic Waterways and State Scenic Waterways</u>	14-11
CHAPTER 15 - GOALS AND POLICIES	
A. Goal # 1 - Citizen Involvement	15-1
B. Goal # 2 - Land Use Planning	15-3
C. Goal # 3 - Agricultural Lands	15-5
D. Goal # 4 - Forest Lands	15-9
E. Goal # 5 - Open Spaces, Scenic and Historic Areas and Natural Resources	15-13
F. Goal # 6 - Air, Water and Land Resources Quality	15-21
G. Goal # 7 - Areas Subject to Natural Disasters and Hazards	15-23
H. Goal # 8 - Recreational Needs	15-25
I. Goal # 9 - Economy of the State	15-27
J. Goal #10 - Housing	15-29

K. Goal #11 - Public Facilities and Services	15-31
L. Goal #12 - Transportation	15-35
M. Goal #13 - Energy Conservation	15-39
N. Goal #14 - Urbanization	15-41

APPENDIX

A. Historical Landmarks Advisory Committee - Order	1
B. Citizen Involvement Program	3
C. Groundwater Study	7

TABLES

TABLE NO. **TITLE** **PAGE**

CHAPTER 2 – PHYSICAL CHARACTERISTICS		
1	Annual Temperatures, Precipitation and Growing Seasons	2-6
2	Surface Water Resources in Wasco County	2-9
3	Estimated Average Annual Surface Outflow by Areas, 1932-61	2-11
4	Surface Water Rights Summary - Sub-Basin 3, Lower Deschutes River	2-17
5	Surface Water Rights Summary for Hood Basin	2-19
6	Ground Water Rights Summary for Hood Basin	2-19
7	Estimated Consumption in the Hood Basin	2-19
8	Wasco County Aggregate Inventory	2-33
9	Soil Associations	2-50
10	Soil Suitability and Limitations	2-51
11A	Natural Areas as Identified by the Nature Conservancy	2-58
11B	Natural Areas	2-62
12	County Ownership	2-68
13	Major Habitat Types	2-71
14	Animal Species in Wasco County	2-73
15	Fish Species and Habitats	2-86
16	Air Pollution Sources	2-93
17	Non-Point Source Pollution	2-95
18	Average Wind Power Density and Speed Class	2-101
19	Wind Energy Production – Advantages and Disadvantages	2-102
CHAPTER 3 - POPULATION		
1	Population Growth in Wasco County: 1900 – 2000	3-1
2	2005-2026 Wasco County Coordinated Population Forecast	3-1
3	2000 US Census – Census Designated Places	3-2
CHAPTER 5 – COMMUNITY FACILITIES AND SERVICES		
1	Crime Statistics	5-1
2	School Districts	5-2
3	Park and Recreation Facilities	5-8

4	Deschutes River Angler Effort	5-10
5	1972 State Comprehensive Outdoor Recreation Plan	5-11
6	Acres of Developed and Undeveloped	5-15
7	Wasco County Designated Scenic Areas	5-17
8	Wasco County Recreation Needs	5-18
9	District IX - Outdoor Recreation Demand	5-18
10	Locally Expressed Recreational Needs	5-19
11	Outstanding Scenic and Recreational Areas	5-19
12	Historic Sites in Wasco County	5-20
13	Average Electricity Price Projections	5-25
14	Community Water Systems	5-26
15	Community Sewer Systems	5-29
16	Probable Ground Water Sources	5-29
CHAPTER 6 – TRANSPORTATION		
1	Current And Projected Future Performance Of State Facilities	6-2
2	Current And Projected Future Performance Of County Facilities	6-2
CHAPTER 7 - HOUSING		
1	Housing Statistics	7-2
2	Building Permit Count	7-4
3	Housing - 1970 Census Data	7-5
4	Housing Census Data - 1960, 1970 & 1980	7-6
5	Buildable Land Limitations	7-7
6	Buildable Lands - The Dalles Urban Area	7-8
7	Adjusted Gross Income	7-10
8	Effective Buying Income	7-10
9	Affordable Housing Computation (1975)	7-10
10	Mobile Home Affordability	7-11
CHAPTER 8 - ECONOMICS		
1	Covered Employment and Payrolls	8-2
2	Wasco Full-Time Agricultural Employment Estimates	8-3
3	Agricultural Statistics	8-4

4	Farms by Size	8-4
5	Operator Characteristics	8-4
6	Tree Fruit Acreage and Value - Wasco County	8-5
7A	Tree Fruit Values	8-6
7B	Harvested Acreage	8-6
8	Cost and Revenues for Tree Fruits	8-6
9	Hired Seasonal Agricultural Labor	8-7
10	Total Value of Small Grains	8-9
11	Small Grain Farms	8-9
12	Total Estimated Income	8-11
13	Return on Capital Investment from Beef-	8-11
14	Cow Herds on Wheat Livestock Farms Size Classification for Cropland	8-12
15	Manufacturing Employment by Quarter (1975)	8-14
16	Changes in Labor Force, Employment and Unemployment - Wasco & Sherman Counties	8-15
17	Seasonal Fluctuations in Unemployment as a Percentage of Civilian Labor Force for Wasco & Sherman Counties (1975)	8-15
18	Occupations of Employed Persons, by Sex and Minority Status, 1970 & 1976	8-17
19	Employment Projections, 1975-2000	8-20

FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
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<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
INTRODUCTION		
1	Comprehensive Plan Planning Process	2
CHAPTER 2 – PHYSICAL CHARACTERISTICS		
1	Average Annual Precipitation in Inches	2-5
2	Extreme Winds – 100 Year Mean Recurrence Interval (Wind Speed in Miles/Hours)	2-7
3	Drainage Basins	2-11
4	Generalized Ground Water Geology	2-14
5	Generalized Geologic Cross Section Along the Deschutes River	2-15
6	Ground Water in the Deschutes River Basin	2-16
7	Generalized Water Geology in the John Day River Basin	2-18
8	Diagrammatic section showing the major rock units of the Deschutes River Basin	2-21
9	Geologic Hazards	2-24
10	Flood Hazard Areas	2-25
11	Mineral Resources	2-47
12	Soil Capability Classifications	2-53
13	Timber Site Productivity	2-64
14	Generalized Existing Land Use	2-67
15	General Ownership Patterns	2-69
16	Sensitive Wildlife Habitats	2-82
17	Wildlife Resources	2-84
18	Periodic Chart, Steelhead Trout, Rainbow Trout and Chinook Salmon, Lower Deschutes River	2-90
19	Annual Average Wind Power	2-100
20	Historical Percentage of Total Energy Consumption by Sector	2-104
21	Residential Energy Uses – Oregon 1970	2-105
22	Oregon Energy Consumption by Source	2-106
23	Wasco Elective Cooperative, System Use Growth	2-106
CHAPTER 5 – COMMUNITY FACILITIES AND SERVICES		
1	Rural Fire Protection Districts	5-3
2	School District Boundaries	5-5

3	Recreation Areas	5-9
4A	Lower Deschutes River – Popular Trout Angling Areas	5-12
4B	Lower Deschutes River – Popular Steelhead & Salmon Angling Areas	5-13
5	Percentage Distribution by Monty, Estimated Sport Catch of Steelhead and Salmon, Lower Deschutes River	5-14
6	Oregon Scenic Waterways	5-16
7	Historic Areas	5-21
8	Archeological Density	5-22
CHAPTER 7 - HOUSING		
1	Windshield Housing Survey	7-3
2	Building Permits – Unincorporated Wasco County	7-5
CHAPTER 14 – FINDINGS AND RECOMMENDATIONS		
1	Graph of Ownership and Planted Orchard	14-3
2	Non-Orchard Ownerships	14-5

INTRODUCTION

Wasco County citizens are fortunate to live in an area with abundant natural resources which form the basis of the viable economic system. However, poorly considered land use decisions leading to a disorderly and uneconomic land use pattern can threaten this way of life. We must consider land a resource which must be managed, and not merely a commodity which may be sold and purchased. Once land has been committed to a particular use, it is usually physically impossible, or economically impractical, to reclaim it. Therefore, all options must be carefully considered prior to a land use decision. This is the purpose of planning.

Scope of the Plan

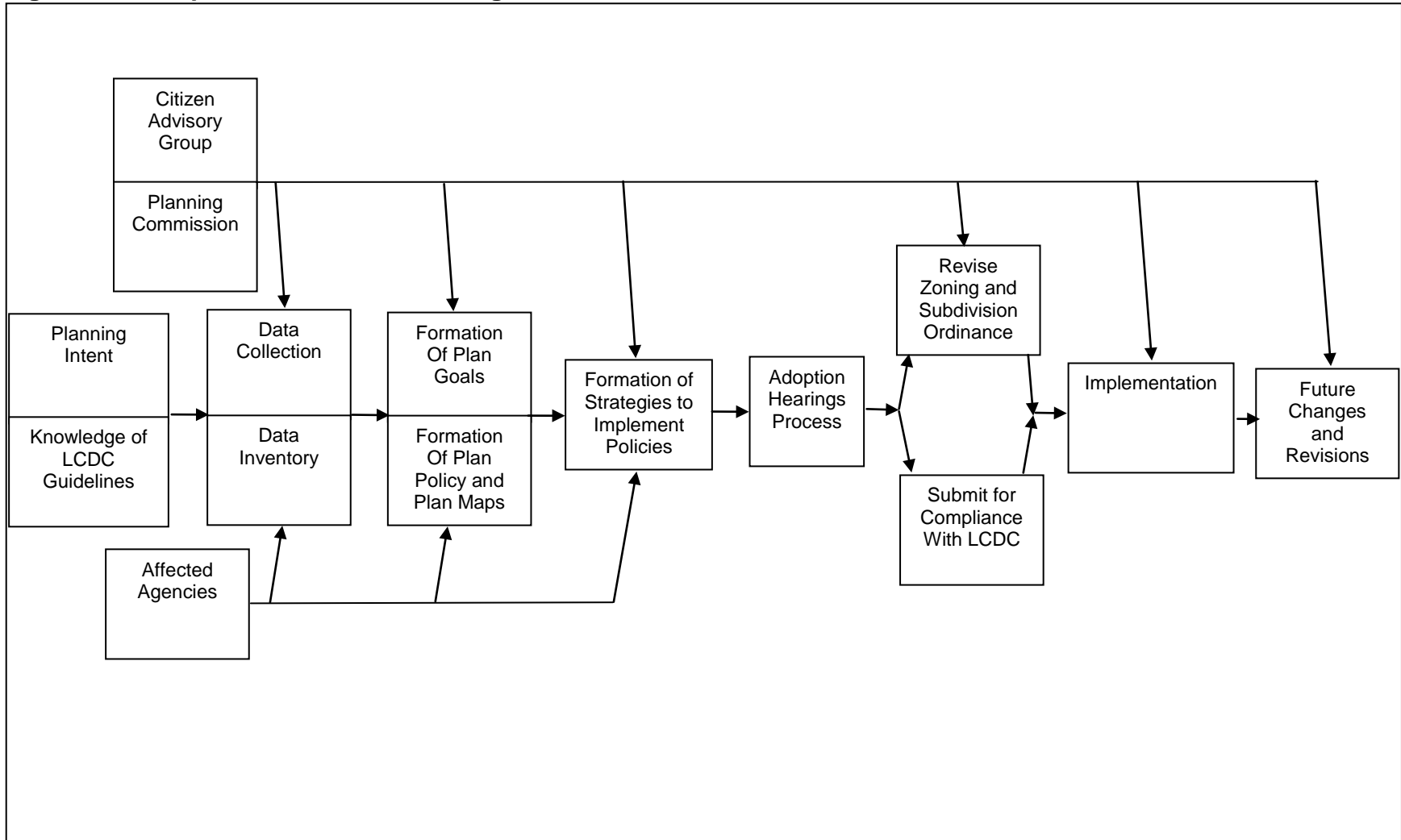
In the effort to achieve a viable citizen involvement program at the inception of the planning process in Wasco County, the County was divided into seventeen planning units; each unit representing a specific geographic area. Changes in staff personnel prompted the reformation of the seventeen units into five units, known as the Western, Eastern, Central, Southern, and The Dalles Urban Units. Plans for the Western, Eastern, Central and Southern Units were adopted by the County Court in January of 1980 and taken to the Land Conservation and Development Commission for acknowledgement. Due to an excess of repetitive information and the difficulties presented in correlating, reviewing, and utilizing four separate county plans, it was decided, based on comments and suggestions from the Land Conservation and Development Commission staff and reviewing agencies, that they would be combined into one Comprehensive Plan. The Dalles Urban Plan remains as the Plan for the City of The Dalles and surrounding urban area. The county-wide approach to planning will continue to allow active citizen participation while giving a clear and concise picture of the County's goals and avenues for achieving those goals.

Since this plan attempts to address all topics of interest to the citizens of Wasco County, an extensive amount of detail must be avoided. Such detail is not needed in a plan which assigns future general land uses. More detailed information may be necessary when considering specific developments and projects on the land, and should be provided by the developers.

Generalized Planning Process

The planning process, as shown on the following schematic, is a continual process. It begins with a knowledge of the intent of land use planning and the Land Conservation and Development Commission's (L.C.D.C.) 14 Goals and Guidelines.

Figure 1 – Comprehensive Plan Planning Process



Data is collected and gathered into an inventory document which will become the factual basis for the plan. An analysis of the data is then undertaken. This becomes a complex consideration of the physical, social, economic, energy, and environmental data with respect to future land use. Goals and policies, to accommodate data analysis and the direction of the area's future, are then made. The plan is adopted through a hearings process, and the zoning and subdivision ordinances reflect the comprehensive plan. The plan must also be submitted to the Land Conservation and Development Commission for compliance with the state-wide goals. Citizen advisory groups, the Planning Commission, and a variety of governmental agencies are involved throughout the process. The comprehensive plan is not a static document but can be revised and updated as needed.

Planning Intent

The intent of the plan is to establish a single, coordinated set of policies which will act to provide for orderly development of Wasco County. These policies will give a direction to planning, establish priorities for action, serve as a basis for future decisions, provide a standard by which progress can be measured, and promote a sense of community for an improved quality of life. It will also help all levels of government and private enterprise to understand the wants and needs of Wasco County citizens.

Comprehensive Plan Definition (Oregon Revised Statute 197.015)

"Comprehensive plan" means a generalized, coordinated land use map and policy statement of the governing body of a state agency, city, county, or special district that interrelates all functional and natural systems and activities relating to the use of lands, including but not limited to, sewer and water systems, transportation systems, educational systems, recreational facilities, and natural resources and air and water quality management programs.

"Comprehensive" means all inclusive, both in terms of the geographic area covered and functional and natural activities and systems occurring in the area covered by the plan.

"General nature" means a summary of policies and proposals in broad categories and does not necessarily indicate specific locations of any area, activity or use. A plan is "coordinated" when the needs of all levels of governments, semi-public and private agencies and the citizens of Oregon have been considered and accommodated as much as possible.

"Land" includes water, both surface and subsurface, and the air.

Citizen Involvement

Citizen involvement is an integral part of the overall planning process. It encompasses not only the review and acceptance of the comprehensive plan, but requires citizens to be involved in each phase of plan development.

To ensure continued meaningful citizen involvement and influence in the development of various plans and ordinances the County will organize staff and work with a number

of citizen advisory groups. The County's planning program (and state law) has continued to progress to a point where clear topic areas have developed. It is critical the Planning Department be able to seek the expertise and opinions of individuals with knowledge and interests in these various subjects. For this reason the pre existing regionally defined citizen advisory group format of citizen involvement is now being organized around specific planning topics and tasks. The advisory groups will be set up to represent issues including but not limited to the following subjects:

- Transitional Lands Study Area
- Goal 3 Lands
- Goal 4 Lands
- Rural Communities
- National Scenic Area

This arrangement provides input on specialized topic areas while also representing regional interests as they align themselves with the topics and their related planning tasks. Citizens serving on these committees will focus in depth on projects within their focus area. They will meet regularly on at least a bi-annual basis to review the workings of adopted ordinances and plan provisions affecting their immediate interests. In addition to these regular meetings, they will coordinate with staff, as needed, to provide input on suggested revisions and critical issues prior to bringing these issues before the Planning Commission.

Advisory group members shall also be charged with seeking and bringing to the planning process the broader input of the citizens with whom they live and work. Members represent or have affiliation with groups that have special knowledge (or interest) regarding the focus subject. In addition to bringing input to the planning process, advisory groups will also carry the knowledge they gain back to those same citizens. The County will continue to encourage input from the broader public throughout its planning process at the advisory group level, before the Planning Commission and before the County Court.

Citizen Advisory Group membership will be by appointment of the County Court. Group size will vary depending on interests to be represented. Terms of appointment will be determined by the advisory group members.

CHAPTER 1 HISTORY

Wasco County derives its name from the Wasco tribe of Indians. These early Indians were attracted by the abundance of the Columbia River fishing grounds. Indians existed continuously in this area from 10,000 B.C., until the 1800's.

In 1805, Meriwether Lewis and William Clark became the first white men to enter the region. Fur trappers, traders, and other expeditions also had occasion to pass through the area in the early 1800's. The first white people to settle permanently in Wasco County were the missionaries in 1838. A survey of lands in eastern Oregon was made by John Fremont of the Army Engineers in 1843. Little was known about rural Wasco County before this time.

Overland migrations on the Oregon Trail began in the 1840's. These large migrations greatly increased the populations of Oregon, which had been inhabited by only a few traders, trappers, and missionaries. At The Dalles, a natural barrier was created by the cliffs of the Columbia Gorge. From The Dalles, the travelers were forced to raft the treacherous Columbia River, or go inland across the Cascade Mountains. The Barlow Road was established as the route over the mountain range. During the late 1840's and 1850's, thousands of immigrants used this road.

The county of Wasco was organized by the territorial legislature in 1854. This 250,000 square mile county was the largest ever established in the United States. It included all the land between the Cascade and Rocky Mountains, south of the Columbia River and north of the California-Nevada borders. Wasco County was reduced in 1859 to the land in Oregon east of the Cascades. The county was eventually broken into the eighteen counties which now exist.

The discovery of gold in the 1860's in eastern Oregon and Idaho attracted prospectors. This influx of people created a market for cattle and sheep. The grasses of the county were conducive to cattle and sheep production. Gradually, the range operations gave way to wheat farming. Wheat production began when wheat seed accidentally got mixed with other seeds in a field near Dufur. Today, wheat is a major product of Wasco County.

The fruit industry began production in Mill Creek Valley; the first fruit being shipped in 1890. The lower valley bottoms south of The Dalles and Mosier became productive fruit districts. By 1897, about 6,000 acres of land were in orchard use. The success of the area as a fruit district-inspired numerous land development schemes at the 'turn of the century. Subdivisions were platted and sold to eastern purchasers as prime orchard lots. Numerous old plats on record at the County Courthouse evidence the enthusiasm generated for these projects. The most extensive development of the time was the town of Ortle. At one time, this town contained over 300 residents and a developed commercial district.

The early 1900's saw the coming of the railroad. A major line up the Columbia and extensions into the forests of Western Wasco County and south along the Deschutes River allowed the forest industry to become an important part of the local economy. In addition, equipment and agricultural produce was also more easily transported.

The mid-1900's was an era of large government dam projects. Over 4,000 people were employed at the height of construction in the 1960's. This number was greatly reduced upon completion of The Dalles Dam. Approximately 150 people are employed at The Dalles and John Day Dams at present. Many of them reside in The Dalles and other parts of Wasco County.

CHAPTER 2 PHYSICAL CHARACTERISTICS

A. General Location

Wasco County lies east of the Cascade Range along the Columbia River. It is bounded on the west by the forests of Mt. Hood National Forest, on the north by the Columbia River, and on the east by the Deschutes and John Day Rivers. A large portion of the southern half of the county lies within the Warm Springs Indian Reservation. The line between Township 8 and 9 South forms the southern boundary of the county.

B. Topography

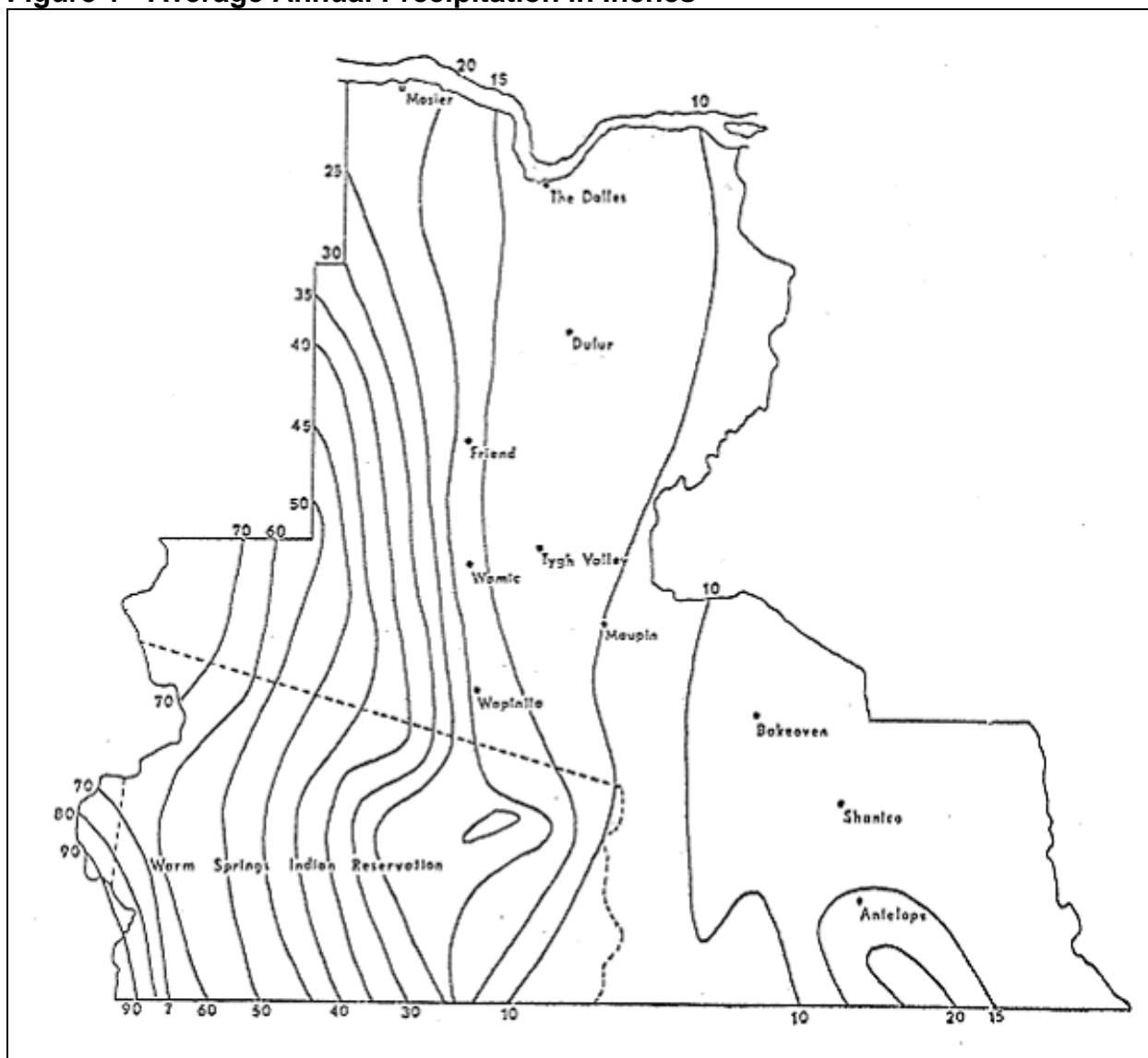
Steep rolling hills and sharp cliffs and canyons are characteristic landforms in Wasco County. Elevations vary from 5,700 feet at Flag Point in the western part of the county to 150 feet on the Columbia River. A general slope occurs to the north and east from the higher elevations of the Cascade range. Tributary streams dissect steep canyons as they make their way to the Columbia, Deschutes and John Day Rivers.

C. Climate

Wasco County lies in a transitional zone between western and eastern Oregon climates. Maritime air patterns are characteristic of western Oregon, while the drier continental air patterns dominate eastern Oregon. The Cascade Mountain Range forms a barrier which creates the climatic difference. The transition between these two major climates can be evidenced within the county.

The western portions of the county have higher amounts of precipitation with lower temperatures. Snowfalls as great as 14 to 20 feet can be found at the higher elevations near the Cascade Mountains. Rainfall amounts are also higher in the western portions of the county. The Cascade Mountains create this "rain shadow" effect, making the climate drier progressively to the east. (See Figure 1). The growing season in the western elevations is only thirty days. Temperatures are cooler, with a 43 degree Fahrenheit annual average at Friend.

Figure 1 - Average Annual Precipitation in Inches



Warmer temperature averages can be found at lower elevations.

A drier, warmer climate is found in the eastern portions of the county. Precipitation amounts average less than fourteen inches per year. Average annual temperatures are greater than 50 degrees Fahrenheit. Precipitation decreases and temperatures increase at the lower elevations near the Columbia River and other river valleys. **Table 1** shows the annual temperature and precipitation ranges and growing season for several areas in Wasco County.

The eastern and lower portions of the county have a longer growing season. The average number of days without killing frost in Antelope is approximately 130 days. The normal frost-free season is from early May to late September.

Highly unstable climatic conditions are found in the Columbia Gorge and nearby areas. The contact between continental and maritime air masses produces strong wind patterns. The Dalles receives wind over fifty percent of the time. Sustained westerly winds above 65 miles per hour have been recorded. Prevailing winds are north-westerly in summer and northeasterly in winter. Winds are less dominant away from the Columbia Gorge. Western Wasco County is generally protected from winds by mountains in the west. The rolling topography makes local differences in wind patterns. Wind patterns are shown

The topography of the county forms microclimates. The higher portions of rolling hills have higher soil temperatures because they are exposed to the sun and drying winds. The creek bottoms and canyons have lower soil temperatures and retain a greater amount of moisture. Differences in microclimates can be seen in the changes of vegetation. Trees and bushes are found in the canyons, while bunchgrass dominates the tops of rolling hills.

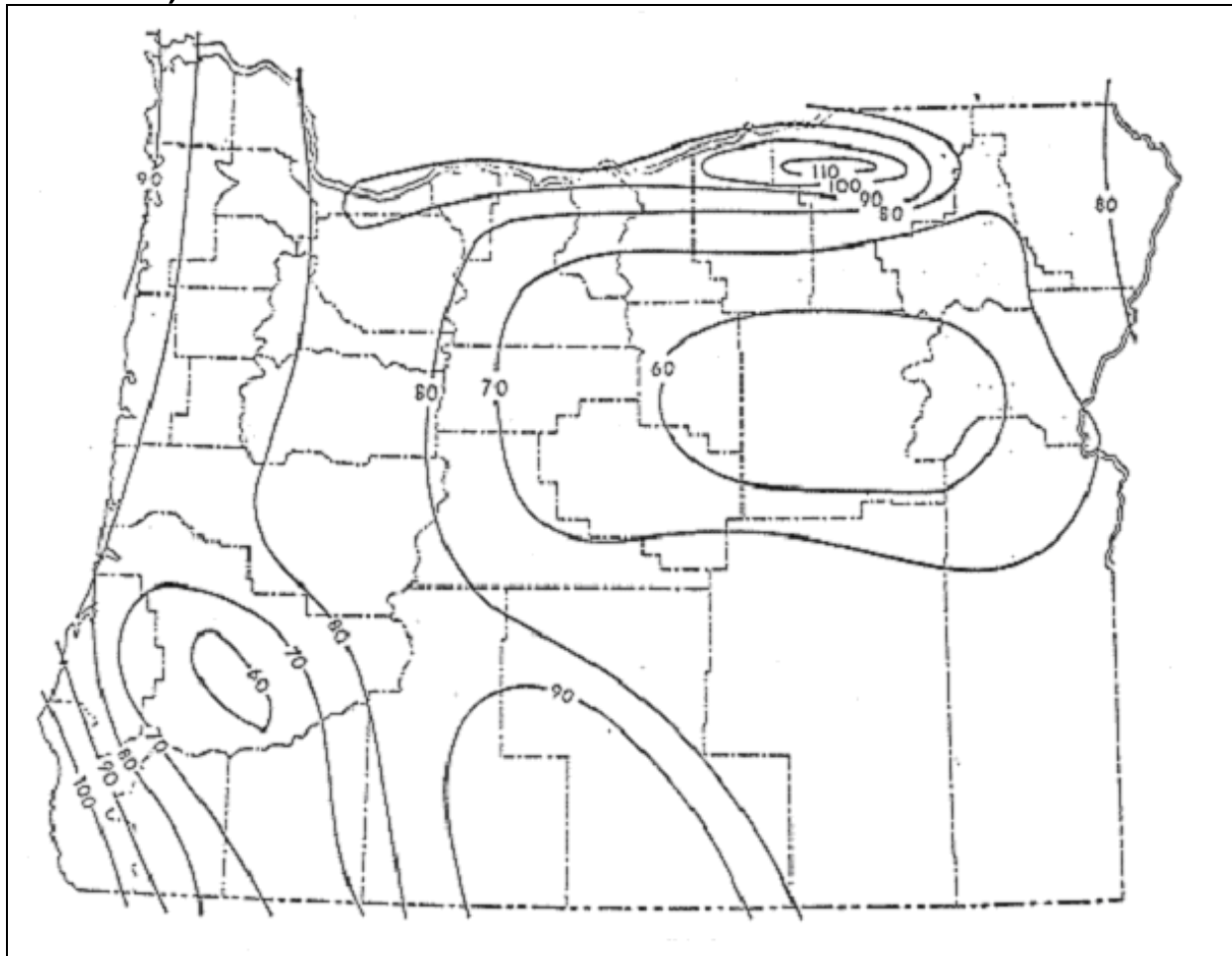
Overall, the climate in Wasco County is temperate and semi-arid. Low annual precipitation, low winter temperatures, and high summer temperatures are typical. Seasonal differences in temperature are greater than daily changes. However, daily differences are usually greater than those in western Oregon. Extremes of temperature most often occur when a continental air mass dominates the area with an east wind.

Table 1 – Annual Temperatures, Precipitations & Growing Seasons

Annual Temperature					
	The Dalles	Friend	Dufur	Big Eddy	Antelope
Avg. Max	64	58	63	64	63
Avg. Min	43	33	37	43	35
Mean	54	43	50	54	48
Highest	115	109	110	115	109
Lowest	-30	-28	-28	-26	-27
Annual Precipitation					
Least	6	9	5	7	7
Greatest	44	23	19	24	18
Mean	14	17	12	14	13

Growing Season	
Location	Average Number of Days without Killing Frost
Wasco Co. overall	100 to 217 (depending upon location and elevation)
Western Wasco Co. (higher elevations)	30
The Dalles	180
Wamic	110
Antelope	130

Figure 2 – Extreme Winds – 100 Year Mean Recurrence Interval (Wind Speed in Miles/Hour)



Source: "Distribution of Extreme Winds In the BPA Service Area" (Portland, U.S. Department of the Interior, Bonneville Power Administration). (Mimeographed)

D. Water Resources

1. Surface Water

Surface water resources are important in Wasco County. The county does not have an over abundance of these resources. Therefore, they must be utilized properly.

Wasco County lies within three major drainage basins, the Hood, Deschutes River and John Day River Basins. These are shown in Figure 3. The major rivers which drain these areas include the Columbia, Deschutes and John Day Rivers.

Table 2 lists surface water resources within Wasco County and give their yearly average quantity. In addition to those named, there are many unnamed seasonal streams and small reservoirs.

Table 2 – Surface Water Resources in Wasco County

<u>Lakes</u> Tooley Lake * Hog Lake (McClure) * Lake Camp Baldwin Salisbury Slough * Pullens Pond Wassen Pond Ketchum Pond Badger Lake Boulder Lake Cearl Lake Cody Ponds Frog Lake Green Lake Little Boulder Lake Twin Lakes (2)	<u>Average Quantity</u> 35 surface acres 60 surface acres 4 surface acres 120 surface acres --- --- --- 45 surface acres 2 surface acres 555 surface acres 10 surface acres 20 surface acres 2 surface acres 7 surface acres 63 surface acres
<u>Reservoirs</u> (over three acres in size) Evans Reservoir Wicks Reservoir Dufur City Reservoir Ketchum Reservoir Crow Creek Reservoir Gray Reservoir Merrel Reservoir Miller Reservoir Pine Hollow Reservoir Robert Reservoir No. 1-3 Rock Creek Reservoir Smarts Reservoir Tygh Valley Log Pond	<u>Average Quantity</u> 25 surface acres The Dalles City Water Supply Dufur City Water Supply 14 surface acres 31 surface acres-Municipal Water Supply 3 surface acres 12 surface acres 11 surface acres 235 surface acres 9 surface acres 105 surface acres 1 surface acre 16 surface acres

Chase Reservoir	4 surface acres
<u>Streams</u> Mosier Creek and Tributaries Mill Creek and Tributaries Threemile Creek Fivemile Creek Eightmile Creek Fifteenmile Creek Dry Creek Currant Creek Muddy Creek Rock Creek Chenowith Creek Brown Creek Rowena Dell Rowena Creek Japanese Hollow Ramsey Creek Larch Creek Barlow Creek Frog Creek Clear Creek Crane Creek Badger Creek Tygh Creek Gate Creek Wapinitia Creek Nena Creek	<u>Average Quantity</u> 16,000 acre feet/year 20,000 acre feet/year 3,000 acre feet/year 12,000 acre feet/year 12,800 acre feet/year - near Boyd 20,900 acre feet/year - near Dufur 1,000 acre feet/year - estimated 3,000 acre feet, year - estimated 17,000 acre feet/year – estimated **Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream Annual Stream
<u>Rivers</u> Columbia River Deschutes River John Day River White River	<u>Average Quantity</u> Average discharge of 194,600 cubic feet per second--141,000,000 acre feet/year Average discharge 4,213,000 acre feet/year Average discharge 1,410,000 acre feet/year Average discharge 315,230 acre feet/year

* These are actually parts of the Columbia River.

**Annual streams flow during periods of high runoff, normally in the Spring and Fall. Measurement on these streams is difficult because of flow differences.

Table 3 shows the annual run-off in the Hood Basin. It is interesting to compare the amounts of run-off in the Hood and Wasco County portions of this basin.

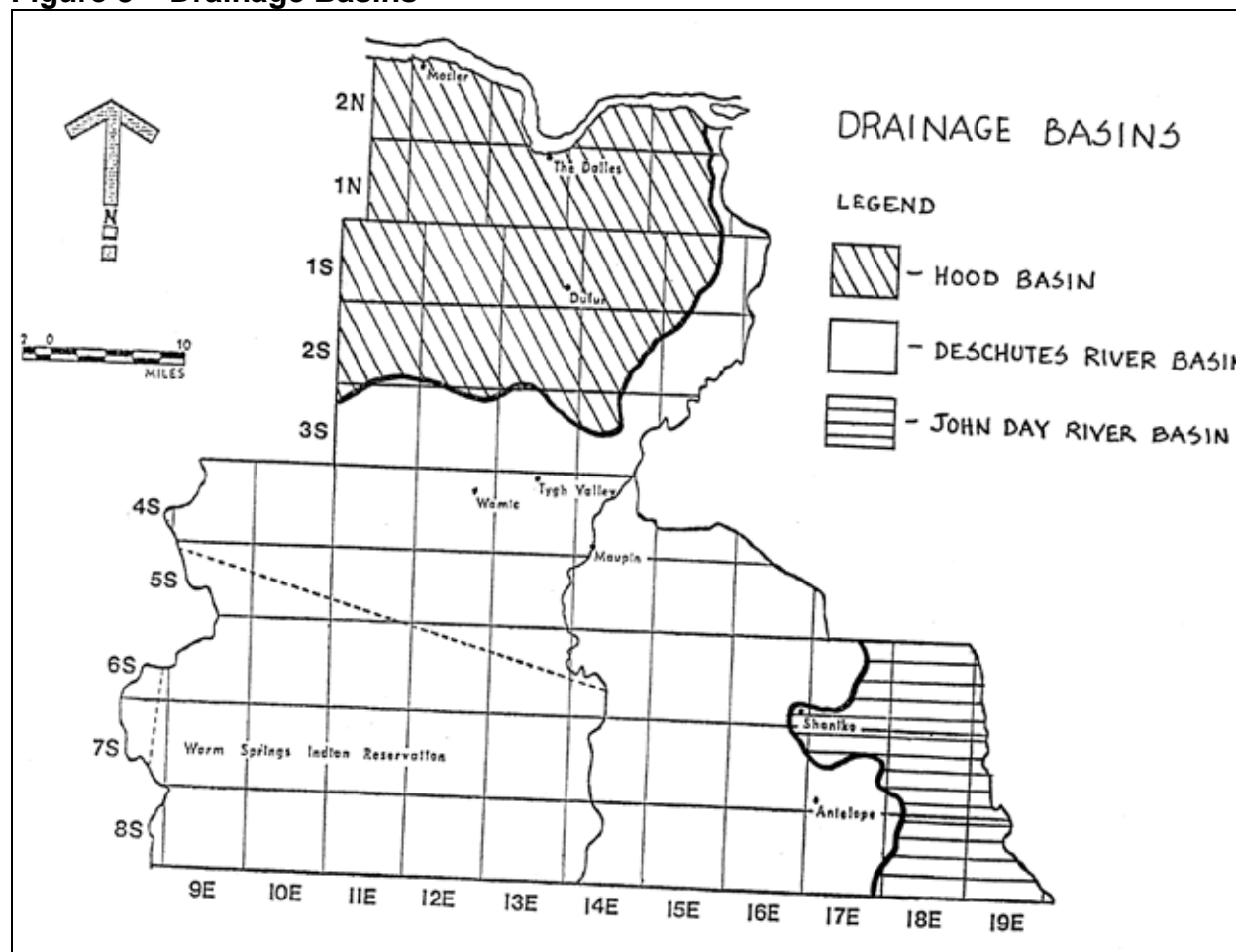
Table 3 – Estimate Average Annual Surface Outflows by Areas, 1932 - 1961

AREA	AVERAGE ANNUAL OUTFLOW		
	Square Miles	Acre Feet	Inches Per Acre
Hood	482	1,250,000	48.6
Wasco	540	130,000	4.5
Total or Average	1,022	1,380,000	26.6

Data Source: USGS records and SWRB correlations

Many of the streams in Wasco County (those in the Hood and Deschutes River Basins), begin in the Cascades and run northeasterly with relatively steep profiles. Mosier Creek, for example, descends 3,000 feet in approximately eleven miles. Drainage patterns in these areas are characteristic of a youthful stage or early mature stage of stream development, with large, flat erosion surfaces incised by narrow stream channels. Topographic relief is quite pronounced.

Figure 3 – Drainage Basins



Source: State Water Resources Board

Stream flows are rapid during early winter rain-storms, before the heavy snowfall and freezing conditions prevail. This is the case with all streams in the county. Spring run-off due to snow melt greatly increases stream flow. Again, Mosier Creek can be used as an example. The maximum discharge on this creek has varied from a maximum of 4,790 cubic feet per second (cfs) in 1964, to a minimum of 0.60 cfs in the summer of 1968.

There are several gauging stations on rivers in Wasco County. Stations on the John Day River are maintained by the United States Geological Survey at Service Creek, Wheeler County, at river mile 156.7, approximately thirty-six miles upstream from the county border, and at McDonald Ferry, Sherman County, at river mile 20.9, approximately 125 miles downstream from Maupin.

The average discharge recorded at Service Creek for forty-six years was 1,327,000 acre/feet per year (Geological Survey, 1974). The estimated average discharge of the John Day River at its mouth for thirty-three years was 1,410,000 acre/feet per year (State Water Resources Board, 1962).

Gauging stations on the Deschutes River are maintained by the United States Geological Survey near Madras, Jefferson County, at river mile 100.1, approximately ninety miles upstream of Wasco/Jefferson County line; and at Moody, Sherman County, at mile 1.4, approximately eighty-five miles downstream of Maupin.

The average discharge recorded near Madras for fifty-one years was 3,225,000 acre/feet per year. The average discharge recorded at Moody for seventy years was 4,218,000 acre/feet per year (Geological Survey, 1974).

The Deschutes and John Day Rivers, as with most streams that drain arid basins, are subject to extreme flow variations. The John Day River has had periods when no flow was recorded. Seasonal variations are quite pronounced. The high water months normally are March, April, May, and June during snow melt.

A partial record station has been maintained within Wasco County on a small tributary stream of the John Day since 1969. The station is located approximately five miles west of Clarno along State Highway 218. In 1970, the gauge recorded an annual maximum discharge of thirty-seven cubic feet per second. In 1971, an annual maximum discharge of sixty-five cubic feet per second was recorded. In 1972, the recorded annual maximum discharge was fifty-four cubic feet per second. No flow was observed in 1973 (Geological Survey, 1970, 1971, 1972, 1973).

The White River is a major watershed in Wasco County. It is a tributary of the Deschutes River and has a drainage area of 238,080 acres in Wasco and Hood River Counties. It drops 830 feet per mile in its upper four miles, 96 feet per mile between miles 45 and 20, and averages 48 feet per mile between river mile 20 and its mouth. The White River originates at the White River Glacier on the east side of Mt. Hood and flows in an easterly direction through Tygh Valley to the

Deschutes River. The river often carries heavy loads of glacial silt, making the water a chalky, white color. This material is emptied into the Deschutes as the White River joins it just north of Maupin.

2. Ground Water

a. Hood Basin:

The Dalles Ground Water Reservoir, or "The Dalles Pool", extends slightly beyond The Dalles Urban Area. This reservoir has been declared a Critical Ground Water Area by the State Engineer, because of declining water levels. It has been shown; however, that artificial recharge of this ground water source is practical by diverting surface water. Artificial re-charge means that a stream was diverted into the ground water reservoir to raise its level. A secondary ground water reservoir exists in lower Three-mile Creek Valley and is also a Critical Ground Water Area. There are no other Critical Ground Water Areas in Wasco County. Declines have been so severe in these areas that it is estimated the water supplies are near exhaustion. Fault impounded ground water reservoirs also exist in upper Mosier Creek Valley and along the North Fork of Mill Creek. Figure 4 shows the generalized ground water geology and the groundwater yield capabilities of each geologic unit.

Well depths in the Hood Basin vary from 50 to 1,000 feet. The average well depth for all completed wells is approximately 270 feet. The yield of these wells is highly variable. Some produce enough water for irrigation, while others barely supply water for domestic uses. Minimum well spacing of approximately', 1,500 feet has been found advisable for deep wells tapping the aquifer in the Columbia River basalt under steady pumping conditions. Five to ten million gallons per day is the maximum depletion recommended for a two square mile area. Large industrial users like Martin Marietta Aluminum in The Dalles use twenty million gallons of water per day. Average use users Dalles City residents equals 233 gallons per household.

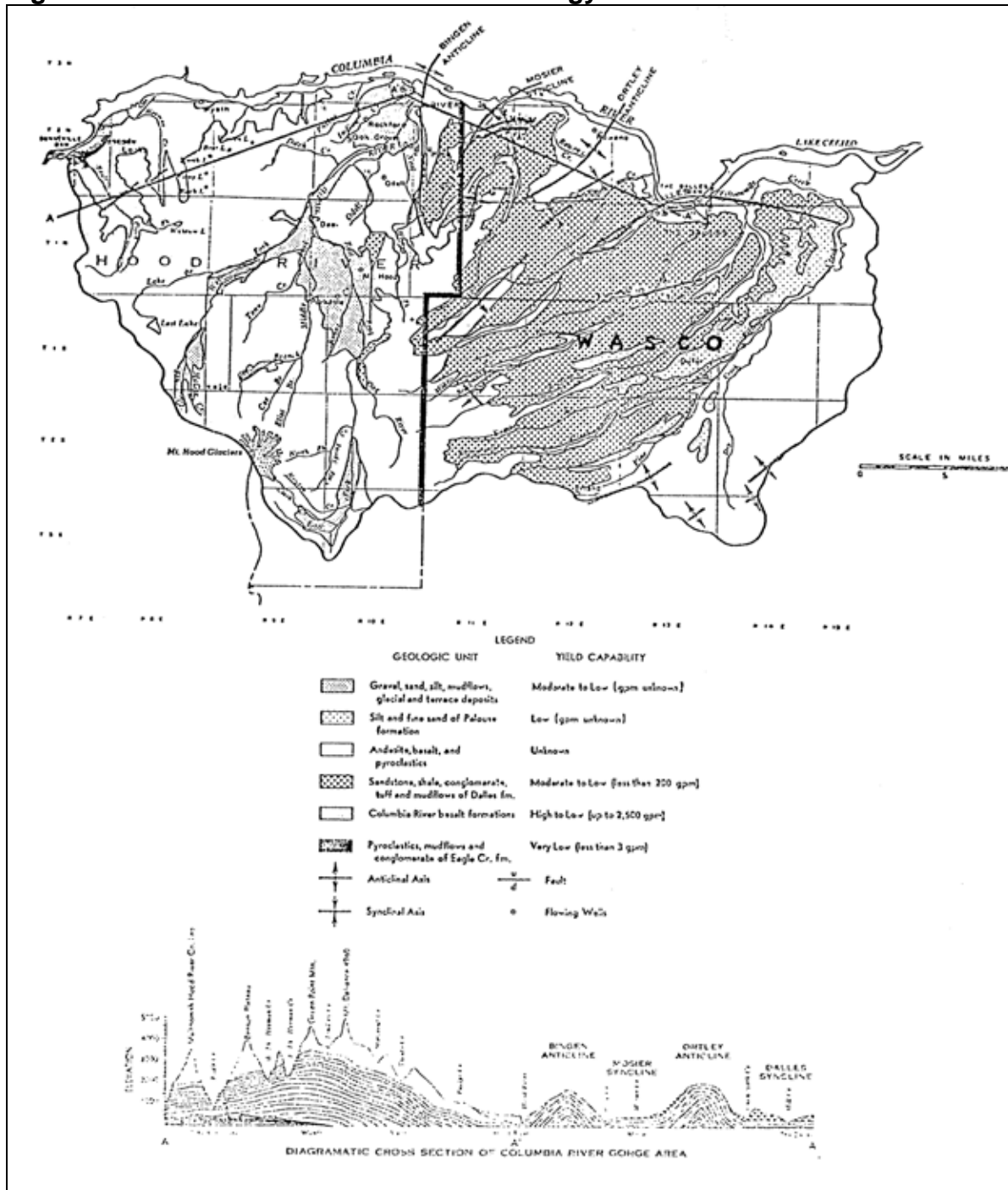
Tests indicate that a range of flows between 1½ and 300 gallons per minute are derived from these wells that are not artesian. Average well flows are approximately 100 gallons per minute, with artesian wells to 300 gallons per minute and greater.

Ground water is used in varying amounts to supplement surface irrigation supplies along parts of Mosier, Chenowith, Mill, Threemile, Fivemile, and Fifteenmile Creeks. Around Friend, ground water is insufficient to supply even domestic needs. Most wells drilled in this area are dry.

The Dalles geologic formation, overlying much of this area, has low permeability and is a source of domestic water only. Moderate supplies of ground water are furnished along Chenowith Creek by gravel zones at the base of this formation. Wells show no indication of declining water levels.

Analysis of the quality of the ground water of selected wells of the area has been studied in Geological Survey Water-Supply Paper 1999-N (see Literature Cited). This publication reveals that ground water of the basalt is satisfactory without treatment for most ordinary uses of water. The water varies from moderately hard to hard, and has a slightly basic pH composition. Other chemical factors do not greatly affect the quality of the water.

Figure 4 – Generalized Ground Water Geology



One of the principal ground water problems is that much of the plateau land in the northwestern part of the county lies above the regional water table and necessitates high pumping lifts. Wells over 1,000 feet in depth have been drilled in this area. In the upper areas of Threemile, Fivemile, and Eight-mile Creeks, however, geologic fault barriers in the basalt cause ground water to accumulate at higher elevations than it would otherwise.

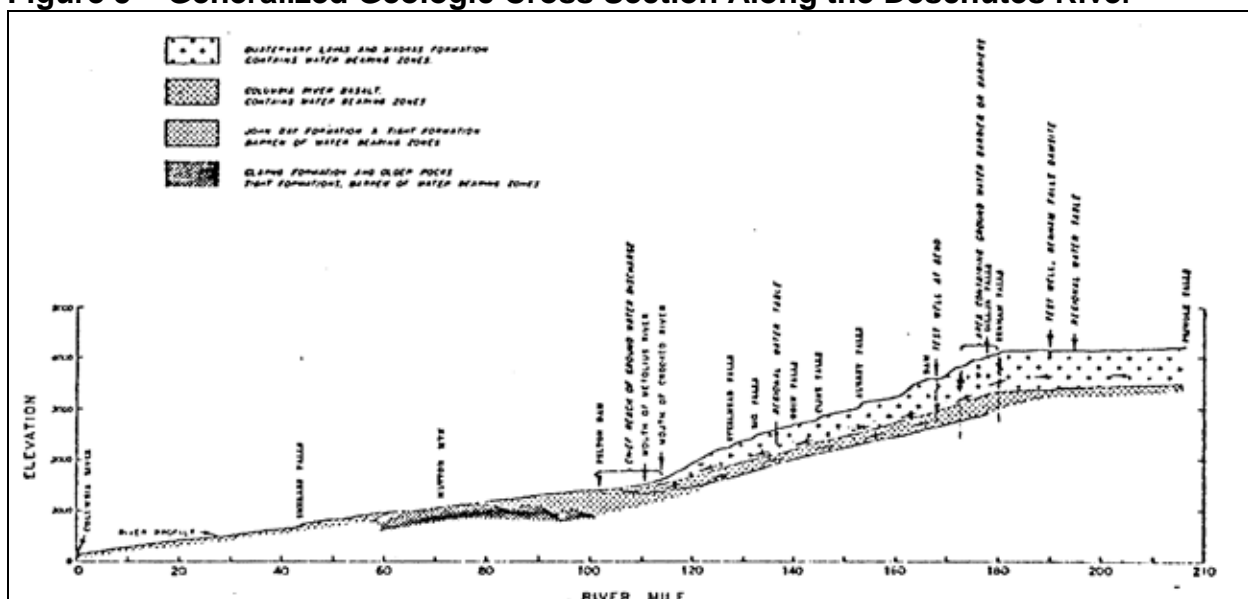
b. Deschutes Basin:

According to the report titled, Deschutes River Basin, (State Water Resources Board, 1961), very little is known about ground water resources in the northern part of the Deschutes Basin. Existing well logs are inadequate in number and coverage to determine ground water characteristics or occurrence. Figure 6 gives a general overview of ground water supplies for this portion of Wasco County.

Based on the location of springs identified by the U.S. Geological Survey on topographic quadrangles, it would appear that most springs occur between the elevation of 3,400 feet and 3,700 feet. Many springs are located at the contact between the John Day Formation and the Basalts of the Columbia River Group.

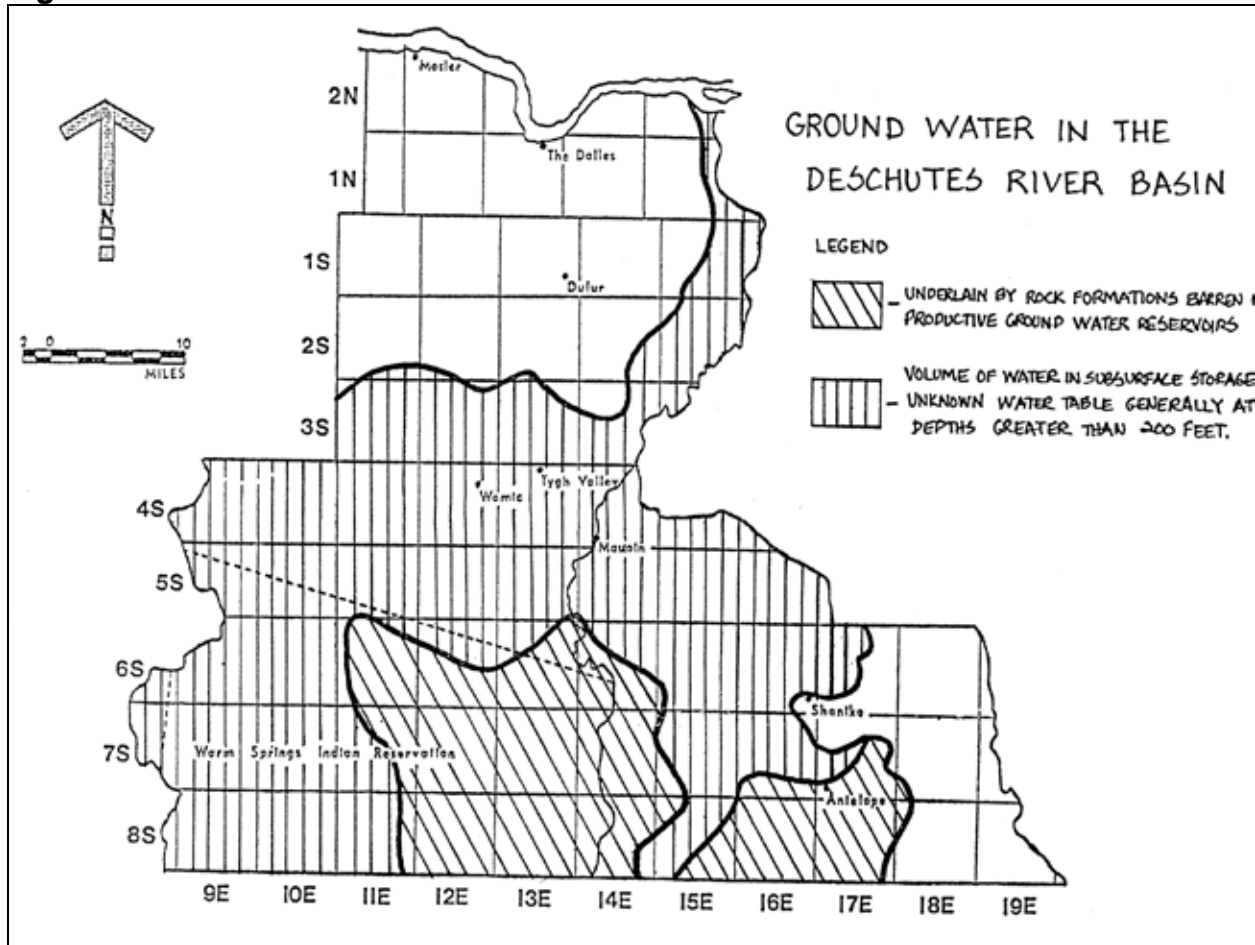
Figure 6 shows a cross section of the Deschutes River from Pringle Falls to the Columbia. The river cuts through layers of Columbia River basalt, which is generally a good water-bearing formation.

Figure 5 – Generalized Geologic Cross Section Along the Deschutes River



Source: Deschutes River Basin, State Water Resource Board, January 1961.

Figure 6 – Ground Water in the Deschutes River Basin



Source: State Water Resources Board

c. John Day River Basin:

No general ground water studies have been made in the John Day River Basin. Figure 7 shows generalized ground water geology and corresponding yield capabilities.

3. Water Rights and Usage

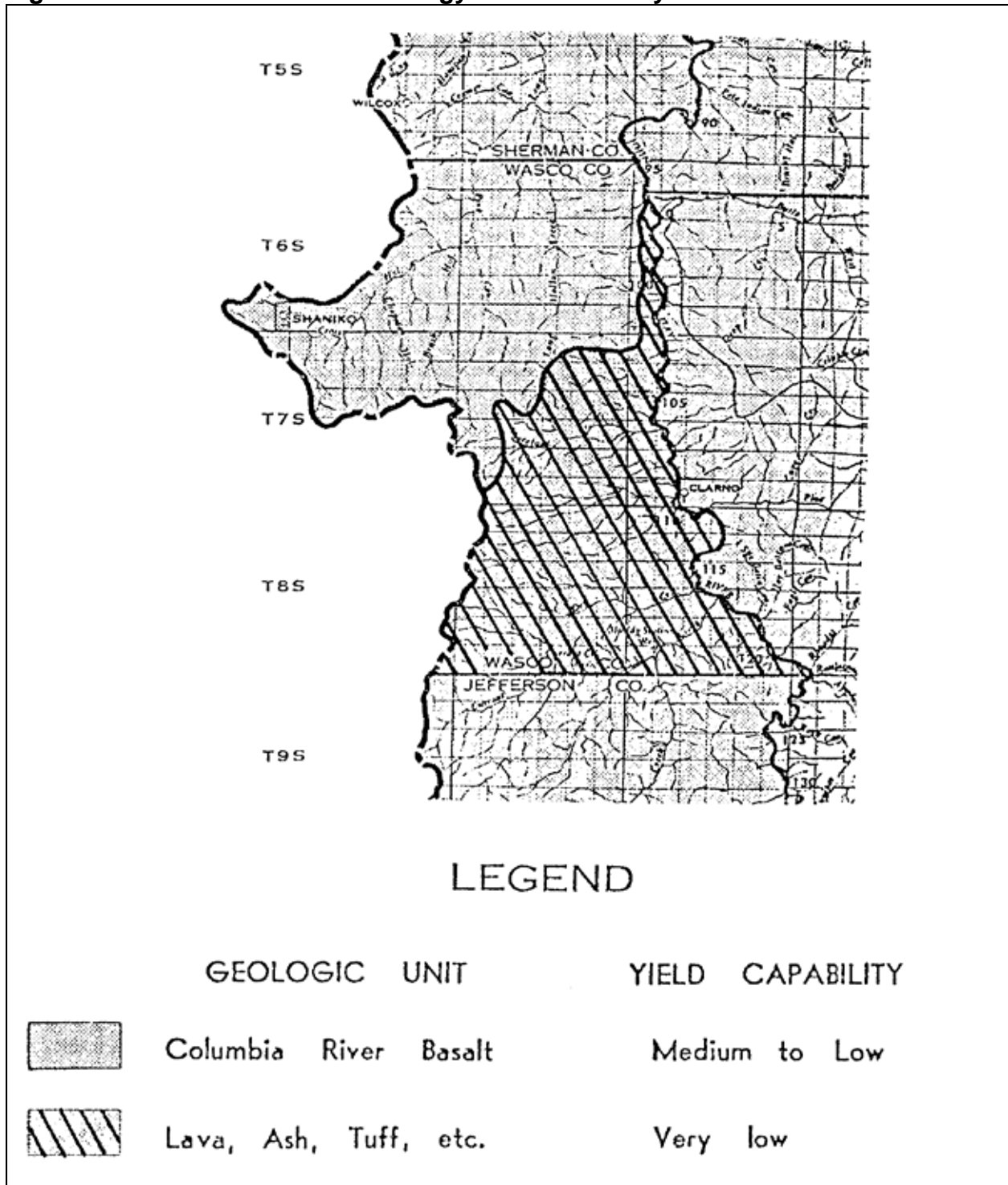
The following Tables (4-6) show water rights for the Wasco County portions of the Hood and Deschutes River Basins. This information could not be extracted for the small portion of the county that lies within the John Day River Basin.

Table 4 – Surface Water Rights Summary, Sub-Basin 3 – Lower Deschutes River

USE	STREAM	CFS	TOTAL RIGHTS
Domestic	Antelope Creek	0.2	4.6
	Badger Creek	0.4	
	Clear Creek	1.0	
	Deschutes River	1.2	
	Hay Creek	0.6	
	Rock Creek	0.1	
	Threemile Creek	0.2	
	Trout Creek	0.3	
	Tygh Creek	0.1	
	Wapinitia Creek	0.1	
	Warm Spring River	0.1	
	White River	<u>0.3</u>	
	TOTAL		
Irrigation	Antelope Creek	6.2	338.2
	Badger Creek	55.8	
	Buck Hollow Creek	1.6	
	Clear Creek	52.7	
	Columbia River	1.0	
	Deschutes River	8.1	
	Hay Creek	43.7	
	Rock Creek	12.0	
	Threemile Creek	26.6	
	Trout Creek	50.6	
	Tygh Creek	36.8	
	Wapinitia Creek	0.5	
	White River	<u>42.6</u>	
TOTAL			
Municipal	Antelope Creek	0.2	8.7
	Badger Creek	1.0	
	Deschutes River	6.5	
	Threemile Creek	<u>1.0</u>	
	TOTAL		
Industrial	Columbia River	0.1	4.8
	Deschutes River	3.5	
	Tygh Creek	1.0	
	White River	<u>0.2</u>	
	TOTAL		
Recreation	Warm Springs River	0.5	0.5
	TOTAL		
Power	Badger Creek	1.3	283.4
	Clear Creek	0.1	
	Deschutes River	20.0	
	White River	<u>262.0</u>	
	TOTAL		
Mining	Deschutes River	51.0	51.0
	TOTAL		
Fish	Deschutes River	71.4	71.4
	TOTAL		
GRAND TOTAL			762.6

Source: State Water Resources Board

Figure 7 – Generalized Water Geology in the John Day River Basin



Source: John Day River Basin State Water Resources Board, 1962

Table 5 – Surface Water Rights Summary for Hood Basin As of January 1, 1964

AREA & STREAM	CONSUMPTIVE						NONCONSUMPTIVE				Total Rights Cfs
	Domestic Cfs	Municipal Cfs	Irrigation		Industrial Cfs	Total Cfs	Power Cfs	Fish Cfs	Recreation Cfs	Total Cfs	
			Cfs	Acres							
Wasco Area											
-Fifteen Mile Area											
Fifteen Mile Creek	2.09	1.58	47.32	3,813		50.99	16.69			16.69	67.68
Ramsey Creek	0.01		2.76	220		2.77					2.77
-Eightmile Area											
Eightmile Creek	1.45		13.95	1,112	0.28	15.68			0.10	0.10	15.78
Fivemile Creek	0.19		2.47	205	0.50	3.16					3.16
-The Dalles Area											
Threemile Creek & Misc.	1.04		11.29	854		12.33	0.10			0.10	15.78
Mill Creek & Misc.	3.78	2.00**	13.47	1,074		19.25**					19.25**
Chenoweth Creek & Misc.	1.37		2.72	170		4.09					4.09
Columbia River Misc.	0.43		42.49	3,393	13.50	56.42					56.42
Mosier Area											
Mosier Creek & Misc.	4.43	*	5.62	383		10.05	1.88	0.10		1.98	12.03
TOTAL	14.79	3.58*	142.09	11,224	14.28	174.24**	18.67	0.10	0.10	18.87	193.61**
GRAND TOTAL	25.25	51.68*	710.50	53,534	60.08	847.49**	215.62	193.15	0.16	408.93	1,256.42**

Note: *Excludes two springs for municipal to the City of Mosier with no amount given.

**Excludes 4.55 Cfs for ground water recharge of The Dalles Ground Water Pool

Data Source: Oregon State Engineer & USGS

Table 6 – Ground Water Rights Summary – Hood Basin As of January 1 1964

Area	Use	Claimed Cfs	Inchoate Cfs	Perfected Cfs	Area Total Cfs
Wasco	Domestic	1.77	0.28	0	2.05
	Municipal	5.10	34.41	2.68	42.19
	Industrial	0.37	14.38	0.53	15.28
	Irrigation (acres)	1.89 (170)	15.58 (1277)	25.30 (2350)	42.77 (3797)
Subtotal		9.13	64.65	28.51	102.29
Basin Total		9.13	64.65	29.00	102.78

Note: Cfs for irrigation is based on a rate of 1/80 Cfs per acre and 3 acre-feet per acre per irrigation season.

Data Source: Oregon State Engineer

Table 7 Shows the estimated use of water in the Hood Basin (in 1964). This information was not available for other basins.

Table 7 – Estimated Water Consumption

Area	Surface Water Acre Feet	Ground Water Acre Feet	Total Consumed Acre Feet
Hood	46,000	0	46,000
Wasco	10,000	8,000	18,000
Total	56,000		64,000

Further information on water and its uses in Wasco County can be found in the following publications: Hood Basin, (1965); Deschutes River Basin, (1961); and, John Day River Basin, (1962), (State Water Resources Board).

4. Municipal Watersheds

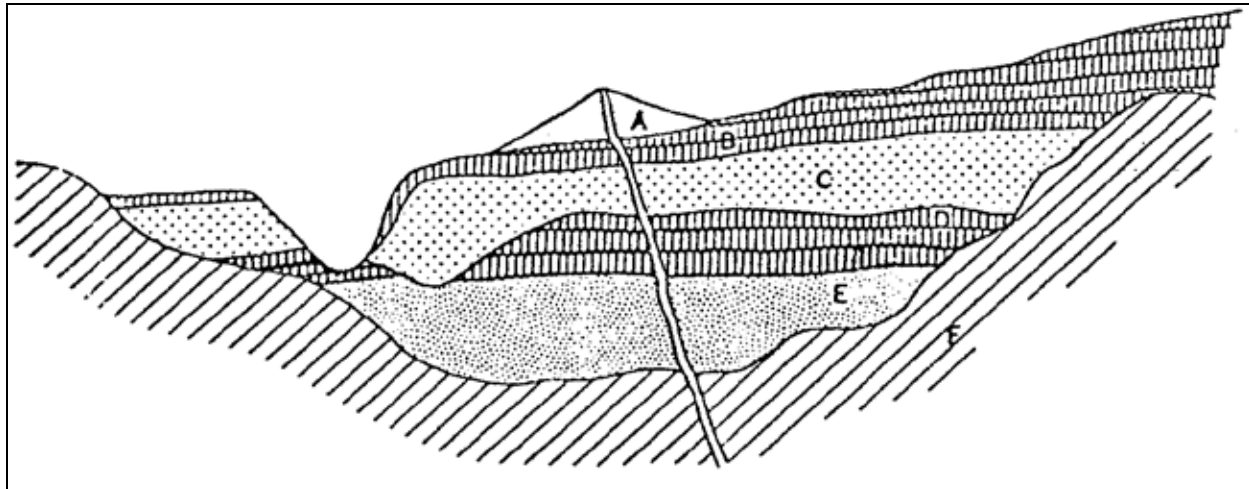
The Dalles Watershed: "The Comprehensive Management Plan for The 'Danes Municipal Watershed'", December, 1972, is the guiding document for planning in this area. This document will be considered as the inventories, analysis, and policies for this watershed.

Dufur Watershed: This watershed supplies domestic water for the city of Dufur. This water from Fifteenmile Creek is the main source of domestic water, supplemented by two wells located inside the city limits. The wells producing approximately 350 and 1080 gallons per minute, respectively, supplement low summer flows in Fifteenmile Creek. The watershed is utilized at approximately 300 to 900 g.p.m. depending on the season. Turbidity is the major water quality problem, with occasional fecal coliform contamination due to grazing.

E. Geology

Figures 4, 5, and 7 have shown the basic geologic formations in the Wasco County portions of the Hood, Deschutes River and John Day River Basins. Figure 8 (below) shows the major rock units in the Deschutes River Basin.

Figure 8 - Diagrammatic section showing the major rock units of the Deschutes River Basin



Designation in Figure	Unit Name	Character	Water Bearing Characteristics
A	Quaternary Pyroclastic Deposits	Chiefly cinders associated with cinder cones.	Rocks of this unit are generally well drained and not sources of good ground water. Where saturated they are capable of yielding large supplies of ground water.
B	Quaternary Lavas	Chiefly basaltic lava flows associated with Newberry Crater, and volcanic eruptions in the Cascade Range.	Contains numerous porous lava flows. At most places are well drained and are unproductive. Where they are saturated, they are capable of yielding moderate to large supplies of ground water.
C	Madras Formation	Chiefly stratified layers of sand, silt, ash, pumice with some gravel with some lenses. Contains some interbedded lava flows.	This formation is in large part fine grained and not a productive aquifer. At places it contains permeable lenses of gravel that are capable of yielding moderate supplies of ground water. Some of the interbedded volcanic rocks are permeable and are capable of yielding large supplies of ground water.
D	Columbia River Basalt	Series of basaltic lava flows.	Contact zones between individual lava flows serve as aquifers. This formation is generally capable of yielding moderate to large supplies of ground water.
E	John Day Formation	A sedimentary formation composed of silt, sand, and volcanic ash.	The fine grained character of this formation precludes it from being a productive source of ground water.
F	Clarno Formation & Older Rocks Unidentified	Chiefly consolidated sedimentary rocks, volcanic rocks and associated pyroclastics.	All of these rocks are believed to be of low permeability and not capable of furnishing more than meager supplies of ground water

Generally, the county is underlain with expansive flows of Columbia River Basalt. Layers of ash, tuff, and other volcanic material have been deposited in many areas as have erosional materials from the Cascades, such as sand and silt. The flows of Columbia River Basalt are very obvious in the cliffs along the Columbia River Gorge and other parts of the county.

F. Natural Hazards

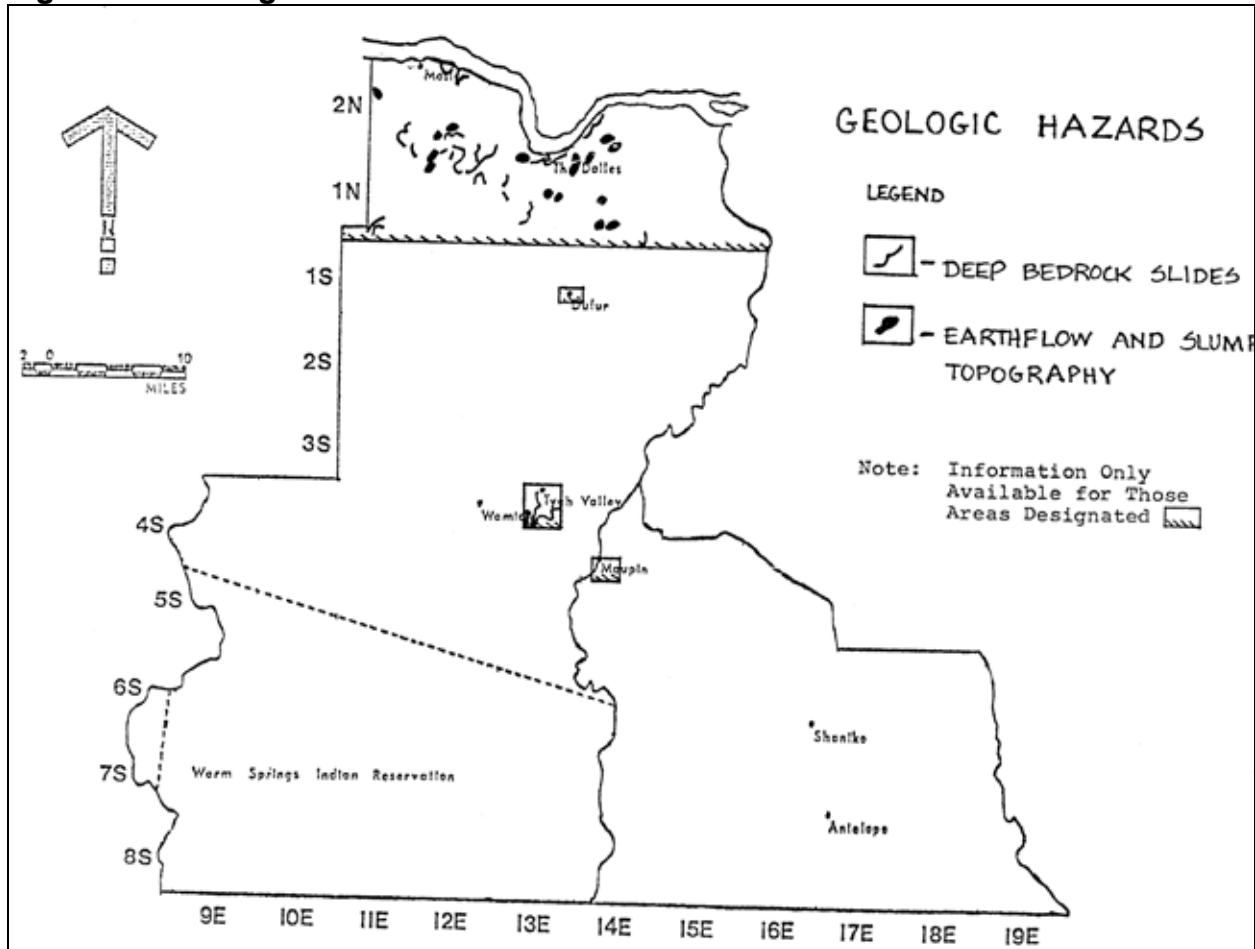
Natural hazards include phenomena such as floods, earth-quakes, high winds, erosion, etc., which may be detrimental to human health and/or property values. There has only been a limited amount of study of natural hazards within Wasco County.

1. Geologic Hazards: Slopes, slide and slump areas, erosion areas, fault lines, and geologic units have been identified by the Oregon Department of Geology and Mineral Industries. Reference is made to Geologic Hazards of Parts of Northern Hood River, Wasco and Sherman Counties, Oregon, 1977. A complete explanation and maps showing the natural hazards and geologic units can be found in this document; however, this document should not be mistaken as a site-specific study. It shows generalized first approximations of actual conditions as they occur on specific parcels of land. Engineering solutions to problems should be considered in any of the identified hazard areas.

Following is a list of the specific types of areas identified as geologic hazards. Figure 9 shows the slide and slump areas that have been identified in the county.

- a. Average regional slopes - slopes of varying degrees are identified; hazards increase with slope.
- b. Deep bedrock slides - possible hazards include continued sliding, variable foundation strength, variable cutbank stability, poor drainage, and others; potential for development variable.
- c. Earthflow and slump topography - (areas greater than ten to twenty acres) possible hazards may include continued movement, low cutbank stability, poor drainage, and others; development possible locally, but generally may reactivate or accelerate sliding.
- d. Steep slope mass movement - areas subject to localized debris flow, rock fall or rockslide.
- e. Thick talus - associated hazards include shallow sub-surface run-off, low cutbank stability especially in wet season, and debris flows either in talus or emanating from upslope canyons; deep cuts and development generally not recommended.
- f. Critical stream-bank erosion - (not including torrential flood channels) - mitigation may include riprap, channel modification, and land use restriction depending on local hydraulics, desired land use, and erosion rates.
- g. Lowland and torrential flooding - areas of historic or probable flooding shown in a generalized manner.
- h. Potential future mass movement - certain areas have potential for future hazards based on known occurrences; delineation requires detailed mapping.

Figure 9 – Geologic Hazards



Source: Department of Geology and Mineral Industries

- i. Faults - There appear to be no active faults in the Study area. It must be remembered that these geologic hazards have been identified in a general manner and boundaries are approximate. Evaluations of development require on-site investigation by a geologist.
 - j. Slope erosion - loss of soil material by moving water on slopes.
2. Flood Hazards: The Flood Insurance Rate Maps covering most of the unincorporated portions of Wasco County was published by the Federal Emergency Management Agency and became effective on September 24, 1984. The maps are on a scale of one inch equals 2,000 feet (1:24,000), and are revised and/or modified as needed. Figure 10 indicates areas within Wasco County that are designated as "Areas of Special Flood Hazard". The detailed maps are available at the Wasco County Planning Office. They are referred to when decisions are made concerning development near creeks, streams or rivers.

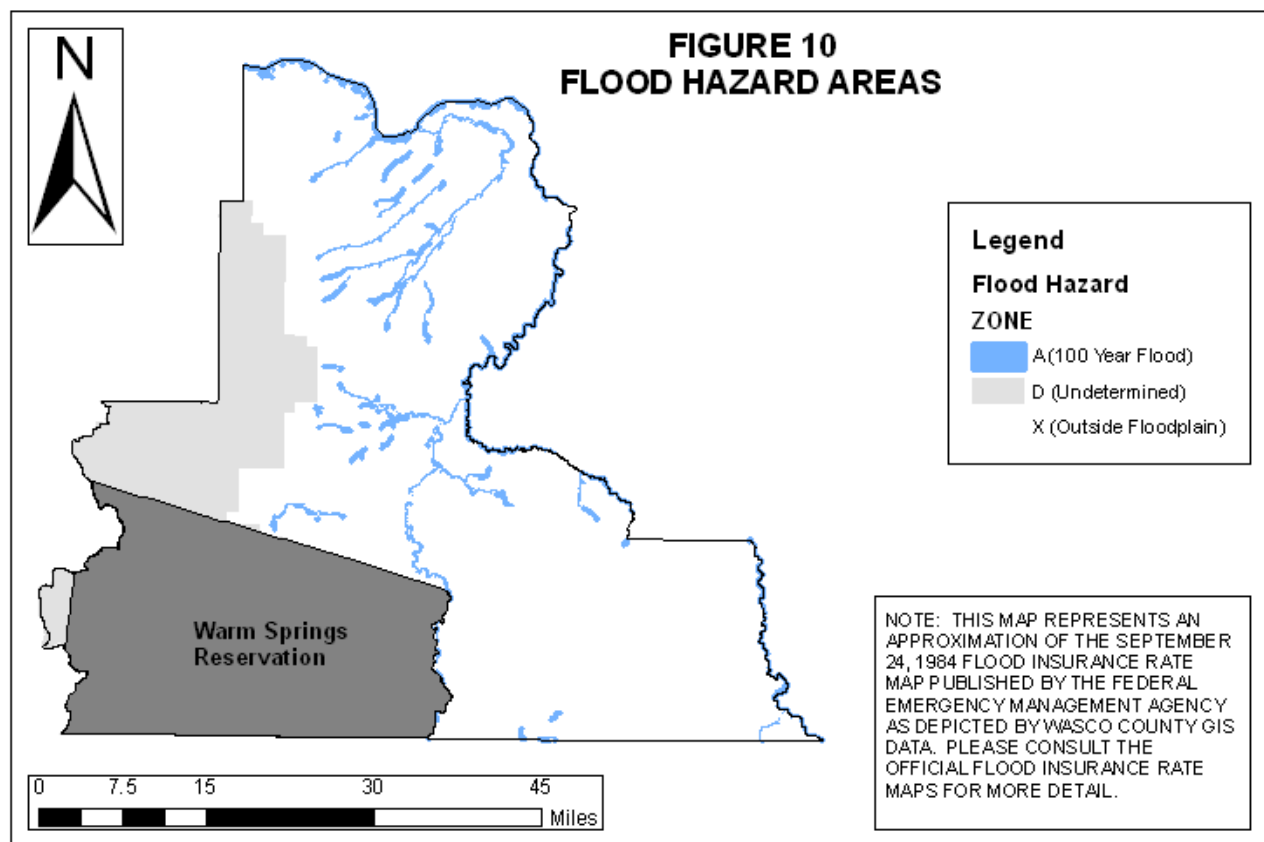
No slope studies have been initiated for the entire county. However, "7 1/2 - minute" (1:24,000) topographic maps are available from the United States Geologic Survey. These maps can be used to determine areas of excessive

slope which may have high erosion potential or other geologic hazards. A map showing areas of excessive slope, (20% and over), should be prepared and included in the Plan during the updating process.

Neither of the above sources of natural hazard information should be mistaken as site-specific proof of incidence or non-incidence of a natural hazard. They only indicate generalized first approximations of actual conditions on specific parcels of land.

The summer of 1980 has brought another type of natural hazard sharply into focus; volcanic eruption and the resulting ash fall-out, flooding, debris flows and fires.

Figure 10 – Flood Hazard Areas



3. **Volcanic Hazards:** Although ash fall-out in Wasco County from the eruptions of Mount St. Helens has been minor, an eruption of Mount Jefferson or Mount Hood could cause vast destruction. The County Sheriff's Department would cooperate with state and local police, the National Guard and the Civil Defense (A Commission in case of national or widespread local emergency).

Local radio stations test the National Warning System frequently. In case of an actual emergency, these stations would broadcast pertinent information and instructions.

G. Mineral & Aggregate Resources

1. General Information: Wasco County has few economically important mineral deposits. Some limited mining activity has occurred in the past. There are no active mineral mines in Wasco County.

Most of the county is underlain with recent basalt flows which precludes the possibility of extensive mineral resources. The highest potential for minerals would be in the older geologic formations, found in other parts of Oregon or bordering counties. The primary minerals found in Wasco County are discussed below.

- a. Bauxite: Evidence suggests that there may be some potential low grade bauxite found in the Columbia River basalt group but no investigations have been undertaken in the County.
- b. Copper and Lead: These minerals have been mined in the Ashwood-Oregon King Mine located in Jefferson County to the south. Some deposits may occur in the County.
- c. Mercury and Molybdenum: No economically important deposits are located within the County.
- d. Semi-precious Gems: These are attractive to "rock hounds", rather than for their mineral value. The highest concentrations of these stones are indicated on Figure 11.
- e. Perlite: Mining was undertaken south of Maupin near the Deschutes River between 1945 and 1950. High quality acoustic and insulating tile was produced for a number of years from this perlite. It became unprofitable to mine at this location and the operation was discontinued. A large deposit still exists in the area and may become important in the future.
- f. Volcanic Tuffs: The Rainbow Rock Quarry, about five miles south of Pine Grove, has produced brightly colored and banded tuff since 1949. Rock of similar appearance has been uncovered but not developed on a nearby flat east of the quarry. Tuffs are utilized for decorative building stone and ceramic art.
- g. Peat: According to the U.S. Geological Survey, Mineral and Water Resources of Oregon, 1969, there are widely scattered minor deposits of peat in the Cascade region of the County and coal in the southeastern region. They have never been mined commercially.
- h. The Ka-Nee-Ta Stone Quarry: On the Warm Springs Indian Reservation. This quarry produces rough pieces of rhyolite. The stone is multi-colored and valuable for decoration. Other stone quarries include the Indian Candy, and Sorenson Quarry.

- i. Quarry Rock: Quarry rock increases in importance as the more desirable deposits become depleted. Transportation costs are high so that quarries must be located within ample reserves of good quality crushing rock, those reserves are not always located conveniently with respect to present markets or proposed projects. The best rock for crushing generally is Columbia River basalt.
2. Inventory: Wasco County's cumulative demand projection for all aggregate material by the year 1995 was between four and six million tons (Wasco County Aggregate Site and Aggregate Demand Analysis (1976) Montagne and Associates). Total resources as inventoried in that document are 6.3 million tons. The demand projection was based on a per capita average.

Available information was sufficient to identify 135 resource sites in Wasco County. A study done in 1976 by Montagne and Associates, Wasco County Aggregate Sites and Aggregate Demand Analysis (1976), provided the basis for this information. However additional information requested by and received by the County for these sites seldom revealed site-specific location and never indicated quality of the material. Location and quality information should be augmented whenever a use is proposed within the proximity of a mapped site. Reclamation permits issued through the Oregon Department of Geology and Mineral Industries (DOGAMI) provided an additional source of information for mineral sites. During 1990-1991 additional information, to supplement the 1976 survey information, was gathered from individual owner/operators and from the DOGAMI Mined Information Layer (MLR) database to provide the County a more thorough and accurate record of sites in the County (Appendix A).

Available information was not sufficient to determine the specific location, quality and quantity for the majority of the 135 mineral sites identified. Most every source contained only general locational information. Quantity information was sometimes available, quality information was nearly always lacking. All Wasco County sites listed in the County Inventory and DOGAMI Mined Information Layer (MLR) database shall be incorporated into the County inventory and designated "Potential Sites" until further information is available to determine whether or not the site is significant. See Table 7B below for current inventory.

3. Application of the Goal 5 Process for Mineral Resources
 - a. Potential Conflicting Use in Zone Categories Applicable to Mineral Resource Sites: All except one currently inventoried resource site fall into three resource zones employed by the County: A-1, Agriculture; FF, Farm - Forest; F-2, Forest. One site is in an Industrial zone (Sun Pit). Conflicting uses are generally those which, if allowed to locate within the specific site identified, would render the resource unrecoverable and those activities on surrounding lands which affects or is affected by aggregate operation. Most of the conflicting uses are structural improvements which commit the site to another use. Other less intensive uses such as recreation facilities, public parks and playgrounds, and golf courses which are conditional uses in some zones may conflict because, once established, they tend to diminish the value of the resource. Some

competing uses, such as water impoundments or power generation facilities, may be determined to be of sufficient importance as to preempt the mineral resource value.

Specific potentially conflicting uses contained within the A-1, FF, and F-2 zones are;

Zone	Permitted Uses	Conditional uses
A-1	Farm dwelling	Additional Farm Dwelling
	Utility facility (public)	Nonfarm dwelling
		Commercial activities in conjunction
		Private recreation facilities
		Churches
		Schools
		Public parks and playgrounds
		Golf courses
		Utility facilities (commercial)
		Personal use airport
		Home occupations
	Solid waste disposal site	
F-F	Same as A-1 Zone except boarding of horses for profit.	Same as A-1 zone except for kennels
F-2	Utility Facilities (public)	Forest Farm Dwelling

b. Economic, Social, Environmental and Energy Consequences of Conserving Mineral Resources

(1) Economic Consequences: Aggregate is a crucial resource for nearly all types of structural development. As a basic building material, its relative abundance can exert either a positive or negative influence on the development of a local economy. It provides the building blocks for development, and the removal, transport and use provides jobs upon which a substantial part of the economy depends.

To protect mineral resource sites through the resolution of conflicts between mineral extraction and other competing uses (as identified) will help ensure a strong economic future. The economic consequences of not protecting mineral sites could be costly to the local economy through increased costs for basic building materials.

(2) Social Consequences: The consequence of protecting mineral resource sites is necessary in order for public and private construction projects. The characteristics of sand and gravel operations may be a nuisance in that they do contribute to noise, dust, and visual blight.

The negative social consequence of applying regulations is similar to the negative economic consequences in that the same individuals may be inconvenienced in their building plans.

- (3) Environmental Consequences: The importance of any mining activity lies within its economic value and the relative scarcity of the resource. State agencies regulate mining activities and require that reclamation plans be submitted prior to permit approval. Reclamation plans provide for productive uses of property following a mining operation and can include recreational features such as lakes and wildlife habitats.

Because the natural environment will, of necessity, be disturbed by mining, the protection of mineral resource sites may not result in positive environmental consequences (mineral extraction is temporary in nature). Farming, forestry and recreation can and do occur before and after a mining operation. In case of important mineral resource sites, the positive economic and social benefits must be weighed against the environmental consequences.

- (4) Energy Consequence: Because of transportation costs, the deposits nearest to developing areas are, of necessity, the best ones in order to remain economically viable. As a result, the energy consequence of protecting the best mineral resource site (those close to construction areas) is entirely positive.

- (5) Conclusion: In Wasco County decisions to protect aggregate sites for Goal 5 will be on a site by site basis. The consequences of establishing requirements which limit conflicting uses in identified mineral resource sites should prove to be of substantial benefit to the economic, social, and energy systems within which we live. As long as provision for reviewing extenuating circumstances is included, the limitation of conflicting uses within identified mineral resources sites is warranted.

- c. A Program to Conserve Mineral Resource Sites: The program to conserve significant mineral resource sites is designed to limit some conflicting uses and prohibit others through the use of an overlay zone. The overlay will ensure that most structural development will not preempt the use of a needed mineral resource.

Based on a site specific ESEE analysis, the County shall make a determination on the level of protection to be afforded each significant site. The County shall make one of the following determinations:

- (1) Protect the site fully and allow mining. To implement this decision the county shall apply the Mineral and Aggregate Overlay zone. Development of the significant site shall be governed by the standards in Section 3.835 of the Wasco County Land Use and Development Ordinance. As part of the final decision, the County shall adopt site-specific policies prohibiting the establishment of conflicting uses within the Impact Area.
- (2) Allow conflicting uses, do not allow surface mining. To implement this decision the county shall not apply the Mineral and Aggregate Overlay zone.

The significant site will not be afforded protection from conflicting uses, and surface mining shall not be permitted.

- (3) Balance protection of the significant site and conflicting uses, allow surface mining.** To implement this decision the county shall apply the Mineral and Aggregate Overlay zone, and identify which uses in the underlying zone will be allowed, allowed conditionally, or prohibited. Development of the significant site shall be governed by the standards in Section 3.835 of the Wasco County Land Use and Development Ordinance and any other site-specific requirements designed to avoid or mitigate the consequences of conflicting uses and adopted as part of the final decision. Development of conflicting uses within the Impact Area shall be regulated by Section 3.845 of the Wasco County Land Use and Development Ordinance and any other site-specific requirements designed to avoid or mitigate impacts on the resource site and adopted as part of the final decision.

Any uses not mentioned below will be allowed as specified in the Land Use and Development Ordinance.

Under the Mineral Resource Overlay, the following uses, by zone, will be prohibited:

Zone	Prohibited Use
F-2	Single Family Dwelling
A-1	Churches
	Second farm dwelling
	Schools
	Additional farm dwellings
	Nonfarm dwellings
F-F	Churches
	Second farm dwelling
	Schools
	Additional farm dwellings
	Nonfarm dwellings

The following uses by zone, will require a conditional use permit.

Zone	Conditional Use
F-2	Public recreational facilities
	Water impoundments
	Private recreation facilities
A-1	Public utility facilities
	Solid waste disposal site
	Water impoundments
	Commercial activities in conjunction with farm use
	Private recreation facilities
	Public parks and playgrounds

	Golf courses
	Commercial utility facilities
	Personal use airport
	Boarding horses for profit
	Farm Dwellings
F-F	Placement of power generation facilities
	Kennels
	Public utility facilities
	water impoundments
	Commercial activities in conjunction with farm use
	Public parks and playgrounds
	Golf courses
	Commercial utility facilities
	Personal use airport
	Boarding horses for profit
	Private recreation facilities
	Solid waste disposal sites
	Farm Dwelling

Table 8 - Wasco County Aggregate Inventory

Inv. #	Current Map/Tax Lot	Former Map & Tax Lot	Owner Name & Address	Application #'s	DOGAM I #	Goal 5	Zone
1	2N 11E 2 D 200	2N 11E 0 1400	Hood River Sand & Gravel 2630 Columbia River Dr. HR OR 97031	CUP 92-110	33-0055	No	Mosier UGA
2	2N 11E 11 900	2N 11E 11 2800	ODOT – Bend Region 4 63034 O.B. Riley Road Bend OR 97701		33-0060	No	NSA A-2(80)
3	2N 11E 2 D 300	2N 11E 11 200	ODOT – Bend Region 4 63034 O.B. Riley Road Bend OR 97701		33-0057		Mosier UGA
4	2N 11E 1 D 200	2N 11E 1 D 200	Hood River Sand & Gravel 2630 Columbia River Dr. HR OR 97031	CUP 92-136	33-0076	No	NSA A-1(40)
5	2N 11E 13 600	2N 11E 3500	Ken & Joan Hudson 1020 Mosier Creek Rd. Mosier, OR 97040			No	F-2(80)
6	2N 11E 24 500	2N 11E 6001	Ken Thomas PO Box 156 Dufur, OR 97021			No	F-2(80)
7	2N 12E 19 1200	2N 12E 19 600	Tony Heldstab 2175 Mosier Creek Road Mosier OR 97040	CUP 92-126 94-111	33-0088	No	F-2(80)
8	2N 12E 29 1801	2N 12E 29 1800	Ken Thomas PO Box 156 Dufur, OR 97021			No	F-2(80)
9	2N 11E 11 800	2N 11E 11 2700	Jayson & Julie Sprague (Weisfield Pit) 195 Hood River Rd Mosier, OR 97040	CUP 92-101 - Exp. 1997	33-0079	No	NSA A-2(80)
10	2N 12E 0 4300		Ardyce Edling Chenoweth Air Park			No	F-F(10) & R-R(10)

			6200 Chenowith Rd. The Dalles, OR 97058				
11	2N 13E 19 1600	2N 13E 19 100	Ulrich Wingens 1525 Norland Dr. Sunnyvale, CA 94087			No	NSA A-1(160)
12	2N 13E 19 600	2N 13E 19 800	Yvonne Walton 4900 Seven Mile Hill Rd The Dalles, OR 97058		33-0009	No	NSA A-1(160)
13	2N 12E 0 1300	2N 12E 24 12500	Jim Ellett 5693 Chenoweth Road The Dalles OR 97058	CUP 90-124 & C90-0249	33-0056	Yes	NSA A-1(160)
14	2N 12E 16 D 1900	2N 12E 16 D 1700	William Ringlbauer 2244 Dell Vista Drive The Dalles OR 97058			No	F-F(10)
15	2N 12E 0 100		Mayer State Park (Rowena Loops)			No	NSA SMA Open Space
16	2N 13E 17 B 200	2N 13E 17 1801	US Forest Service 902 Wasco Ave Ste 200 Hood River OR 97031			No	NSA SMA Open Space
17	2N 13E 20 300	2N 13E 20 1000	Wayne & Jana Webb P O Box 692 The Dalles OR 97058	CUP-98-122 <i>Exp. 1-2000</i>	33-0064	No	NSA A-1(160)
18	2N 12E 13 20 ROW Site Not Identified		ODOT Gooseberry Springs			No	NSA A-1(160)
19	2N 12E 13 20 ROW Site Not Identified		ODOT Gooseberry Springs			No	NSA A-1(160)
20	2N 14E 0 500 & 2N 14E 0 2300		Dalles Dam - State of Oregon Gard Fulton			No	NSA A-1(160)

			3775 Fifteen Mile Road The Dalles, OR 97058				
21	2N 13E 0 20 700, 600	2N 13E 20 600	(Sun Pit) - Munsen Paving & Excavating 1022 W 9th Street The Dalles OR 97058	CUP 91-101 SPR 91-103	33-0011 33-0083	No	NSA A-1(160)
22	2N 15E 0 500	2N 15E0 700	Celilo - State of Oregon Sandra Richard 7240 SW Benz Park Ct Portland, OR 97225			No	NSA A-1(160)
23	Fifteen Mile Road ROW Site Not Identified		Wasco County 511 Washington St. The Dalles, OR 97058			No	
24	2N 14E 25 ROW	2N 14E 0 25	Wasco County 511 Washington St. The Dalles, OR 97058			No	A-1(160)
25	2N 14E 0 1100	2N 14E 0 1000	Jacob Kaser 4550 Fifteen Mile Road The Dalles OR 97058			No	A-1(160)
26	2N 14E 0 2200	2N 14E 28 2700	Donna E. Ashbrook et al 75 Heimrich St. Dufur OR 97021		33-0014	No	A-1
27	2N 14E 33 500	2N 14E 33 400	Judith F. Bayley et al 6331 SW Radcliff St Portland OR 97219			No	A-1
28	2N 14E 0 2400	2N 14E 33 3000	C Gard Fulton 3775 Fifteen Mile Rd. The Dalles OR 97058		33-0023	No	A-1(160)
29	1N 14E 0 300	1N 14E 0 400	William Johnson 4800 McCoy Rd The Dalles OR 97058			No	A-1(160)
30	1N 14E 2000	1N 14E 0 3500	Sylvia Weimer			Yes	A-1(160)

			2230 Five Mile Road The Dalles, OR 97058				
31	1N 14E 0 2300	1N 14E 0 3300	William & Sheli Markman/Wasco County 4800 Eight Mile Road The Dalles OR 97058			No	A-1(160)
32	1N 15E 0 3700	1N 15E 3700	William & Carmen Eddins 1312 W 10 th St Unit 17 The Dalles OR 97058			No	A-1(160)
33	1N 14E 0 500	1N 14E 0 6700	Mike Byers 3693 Fifteen Mile Rd, The Dalles, OR 97058			No	A-1(160)
34	1S 13E 0 100	1S 13E 0 100	Tom May 5650 Eight Mile Rd. The Dalles, OR 97058		33-0013		A-1(160)
35	1S 14E 17 300	1S 14E 3100	Miller Ranch Co. 110 NE Greenwood Ave. Bend OR 97701			No	A-1(160)
36	1S 14E 0 3000	1S 14E 0 3401	Paul & Velma Limmeroth 2520 Ward Road The Dalles OR 97058			No	A-1(160)
37	1S 14E 18 100	1S 14E 18 100	Miller Ranch Co. 110 NE Greenwood Ave. Bend OR 97701			No	A-1(160)
38	1S 14E 0 3200	1S 14E 0 3600	Mary Sylvester 3813 Faith Home Road Ceres CA 95307			No	A-1(160)
39	1S 14E 20 Site Not Identified	1S 14E 20	Dufur			No	
40	2S 13E 0 100	2S 13E 35 100	Richard Neil 4820 Davis Cut-Off The Dalles, OR 97058		33-0050	No	A-1(160)

41	2S 13E 0 5000	2S 13E 35 5200	ODOT - 33-025-4 Tygh Ridge Quarry		33-0071	Yes	A-1(160)
42	3S 13E 0 100	3S 13E 0 100	William Hulse 61906 Dufur Gap Rd. Dufur OR 97021			No	A-1(160)
43	3S 13E 0 2300	3S 13E 0 2500	Frances Limmeroth Trust 63439 Dufur Gap R. The Dalles OR 97058			No	A-1(160)
44	3S 13E 0 2300	3S 13E 0 2500	Frances Limmeroth Trust 63439 Dufur Gap R. The Dalles OR 97058			No	A-1(160)
45	3S 13E 0 2700	3S 13E 0 3200	Tygh Ridge Ranch 82859 Hwy 216 Tygh Valley OR 97063	CUP 96-101	33-0054	No	A-1(160)
46	3S 13E 33 100	3S 13E 33 3500	Tygh Ridge Ranch 82859 Hwy 216 Tygh Valley OR 97063		33-0047	No	A-1(160)
47	2N 11E 36 100	2N 11E 7600	Hattie Schmidt 2050 State Rd. Mosier OR 97040		33-0081	No	F-2(80)
48	2N 12E 30 1100	2N 12E 9139	David McKinney PO Box 291 Georgetown, ME 04548		33-0088	No	F-2(80)
49	2N 13E 31 B 600	2N 13 31 600	Leroy Greenway 3323 Sandlin Rd. The Dalles OR 97058			No	R-R(5)
50	1N 11E 25 100	1N 11E 0 900	Ketchum Ranch Inc 6282 Chenowith Road W The Dalles OR 97058			No	F-2(80)
51	1N 13E 0 1300	1N 13 0 4490	John Skirving Trust 809 W. 9 th St The Dalles OR 97058			No	A-1(160)
52	1N 13E 32 200	1N 13E 0 5300	Orchard Meadow LLC			No	A-1(160)

			3573 Olney Rd. The Dalles OR 97058				
53	1N 13E 0 700	1N 13E 25 700	Munsen Paving LLC 1022 W. 9 th St. The Dalles OR 97058	CUP 90-113	33-0082	No	A-1(160)
54	1N 15E 0 3500	1N 15E 0 2900	Joanne Brewer Et Al 5854 Robert Mkts Road The Dalles OR 97058			No	A-1(160)
55	1S 15E 0 700	1S 15E 0 402	James Q Johnson 6352 Roberts Market Road The Dalles OR 97058			No	A-1(160)
56	1S 15E 0 2000	1S 15E 0 1400	Julia Testa Living Trust 8604 Buckboard Dr. Alexandria, VA 22308			No	A-1(160)
57	1S 15E 0 2601	1S 15E 0 2600	Carleton & Pam Clausen 85681 Adkisson Rd. Dufur OR 97021			No	A-1(160)
58	2S 14E 0 1900	2S 14E 0 1600	Martin Underhill P O Box 266 Dufur OR 97021			No	A-1(160)
59	2S 14E 0 2000	2S 14E 0 1800	Martin Underhill P O Box 266 Dufur OR 97021			No	A-1(160)
60	2S 14E 0 2300	2S 14E0 2000	Robert & Nancy Hammel 62250 Tygh Ridge Road Tygh Valley OR 97063			No	A-1(160)
61	1N 15E 0 2200	1N 15E 21 2100	William & Barbara Hammel 7075 Fifteen Mile Road The Dalles OR 97058			No	A-1(160)
62	1N 15E 0 2200	1N 15E 0 2100	William & Barbara Hammel 7075 Fifteen Mile Road The Dalles OR 97058			No	A-1(160)
63	1N 15E 0 2900	1N 15E 20 2700	Joanne Brewer			No	A-1(160)

			5854 Roberts Mkt Rd. The Dalles OR 97058				
64	1S 14E 0 4500	1S 14E 0 4900	Martin & Beverly Underhill PO Box 266 Dufur OR 97021			No	A-1(160)
65	1S 14E 0 5100	1S 14E 31 5600	Pamila Ruthorford 720 E. Scenic Dr. The Dalles, OR 97058			No	A-1(160)
66	1S 14E 0 2800	1S 14E 0 1900	William Bolton 66447 Bolton Rd. Dufur OR 97021			No	A-1(160)
68	2N 12E 4 1100 2N 12E 5 100	2N 12E 4/5	Wasco County 511 Washington St. The Dalles, OR 97058			No	NSA A-1(160)
70	2S 12E 0 1700	2S 12E 12 3000	Charlotte West 80852 South Valley Rd Dufur OR 97021			No	A-1(160)
71	2S 12E 0 5100	2S 12E 23 5700	Martin & Beverly Underhill P O Box 266 Dufur OR 97021			No	A-1(160)
72	3S 12E 0 1000	3S 12E 3	Wasco County 511 Washington St. The Dalles OR 97058			No	A-1(160)
73	3S 12E 25 300	3S 12E 25 3700	Russell & Wanda Sinclair 80624 Shadybrook Rd. Tygh Valley OR 97063			No	A-1(160)
74	2S 13E 0 5200	2S 13E 32 4900	Keith & Mary Smith 60538 Dufur Gap Rd. Dufur OR 97021			No	A-1(160)
75	4S 13E 0 2800	4S 13E 12 6800	Robert Ashley Trust 4120 River Rd. The Dalles, OR 97058		33-0015	No	R-I
76	3S 13E 0 3800	3S 13E 31 4000	Jonnie Justesen	<i>Cancelled</i>	33-0051	No	A-1(160)

			59720 Twin Lakes Rd Grass Valley OR 97029	1976			
77	4S 13E10 600	4S 13E 10 600	Wasco County 511 Washington St. The Dalles, OR 97058			No	TV-RR
78	4S 12E 0 2300	4S 12E 0 2700 Formerly Cody Logging	Michelle Detwiler 2513 NE Dunckley St. Portland, OR 97212		33-0048	No	A-1(160)
79	4S 13E 0 7100	4S 13E 31 10800	Joanne Gutzler 81610 Victor Rd. Maupin OR 97037			No	A-1(160)
80	5S 12E 0 400	5S 12E 0 400	FJR LLC PO Box 189 Boring, OR 97009			No	A-1(160)
81	5S 12E 0 800	5S 12E 4 800	Blue Pearl LLC ET AL 36855 Hauglum Rd Sandy, OR 97055			No	A-1(160)
82	5S 12E 0 2300	5S 12E 12 2100	Loren & Sandra MCLeod 1208 Toliver Rd. Mollala, OR 97038			No	A-1(160)
83	5S 13E 0 1400	5S 13E 6 1400	Eugene H. Walters 8050 Hwy 216 Maupin OR 97037			No	A-1(160)
84	5S 13E0 6300	5S 13E 28 5200	Lorraine Gabel 913 Cessna St. Independence, OR 97351			No	A-1(160)
85	5S 12E 0 7100	5S 12E 35 5400	Kenneth Hein 948 NE 175 th Ave. Portland, OR 97230			No	A-1(160)
86	5S 11E 0 5100	5S 11E 35 4802	Wasco County 511 Washington St. The Dalles, OR 97058		33-0074	No	A-1(160)
87	6S 11E 0 1000	6S 11E 9	Mickey Snodgrass			No	Warm springs

			PO Box 325 Maupin, OR 97037				Reservation
88	4S 13E 11 100 4S 13E 0 2700	4S 13E 11 100 4S 13E 0 2700	Robert Ashley	CPA-01-101 CUP-01-112			A-1(160)
101	Site Not Identified		Port of The Dalles				
102	Site Not Identified		Interpretative Center				
150	4S 14E 0 3700		BLM 3050 NE 3 rd St. Prineville, OR 97754		33- 0093(?)	No	A-1(160)
151	4S 14E 0 2700	4S 14E 0 2400	Connolly Land & Livestock Inc. - Bakeoven Pit 412 W. 4th St. The Dalles OR 97058	CUP 93-110	33- 0093(?)	No	A-1
152	4S 15E 0 800	4S 15E 30 800	Ruth Lindley 87670 Bakeoven Rd. Maupin OR 97037			No	A-1(160)
153	4S 15E 0 1000	4S 15E 30 1200	BLM 3050 NE 3 rd St. Prineville, OR 97754			No	A-1(160)
154	5S 16E0 2000	5S 16E 20 2200	Janis Brown 91443 Hinton Rd. Maupin, OR 97037			No	A-1(160)
155	5S 16E 0 3300	5S 16E 32 3300	Lonny & Pamela Brown 91443 Hinton Rd Maupin, OR 97037			No	A-1(160)
156	5S 16E 0 3400	5S 16E 32 2401	Warnock Ranches Inc. 91440 Bakeoven Rd Maupin, OR 97037			No	A-1(160)
157	6S 19E 0 900	6S 16E 5 106	BLM 3050 NE 3 rd St. Prineville, OR 97754			No	A-1(160)

158	6S 16E 0 900	6S 16E 5 106	Warnock Ranches Inc. 91440 Bakeoven Rd. Maupin, OR 97037			No	A-1(160)
159	6S 16E 0 2100	6S 16E 21 101	ODOT - 33-051-4 Bakeoven Quarry		33-0017	No	A-1(160)
160	7S 17E 0 1700	7S 17E 31 1990	Richard & Betty Baker 5200 SW Meadows Rd Ste. B-100 Lake Oswego, OR 97035		33-0032	No	A-1(160)
161	8S 17E 0 600	8S 17E 4 692	Eagle Valley Ranch LLC P O Box 70 Antelope OR 97001			No	A-1(160)
162	8S 17E 0 1400	8S 17E 14 1500	Wilton & Francis Dickson PO Box 156 Antelope, OR 97001			No	A-1(160)
163	8S 16E 0 4300	8S 16E 36 3400	James McNamee P O Box 99 Antelope OR 97001			No	A-1(160)
164	8S 17E 0 2000	8S 17E 35 2100	Herbert McKay P O Box 5 Antelope OR 97001			No	A-1(160)
165	8S 18E 0 900	8S 18E 34 800	Young Life Washington Family Ranch PO Box 20 Antelope, OR 97001			No	A-1(160)
166	8S 19E 0 1600	8S 19E 31 1900	BLM 3050 NE 3 rd St. Prineville, OR 97754			No	A-1(160)
167	8S 14E 0 1400	8S 14E 13 101	Wasco County 511 Washington St. The Dalles, OR 97058			No	A-1(160)
168	8S 14E 0 2200	8S 14E 21 1900	BLM 3050 NE 3 rd St.			No	A-1(160)

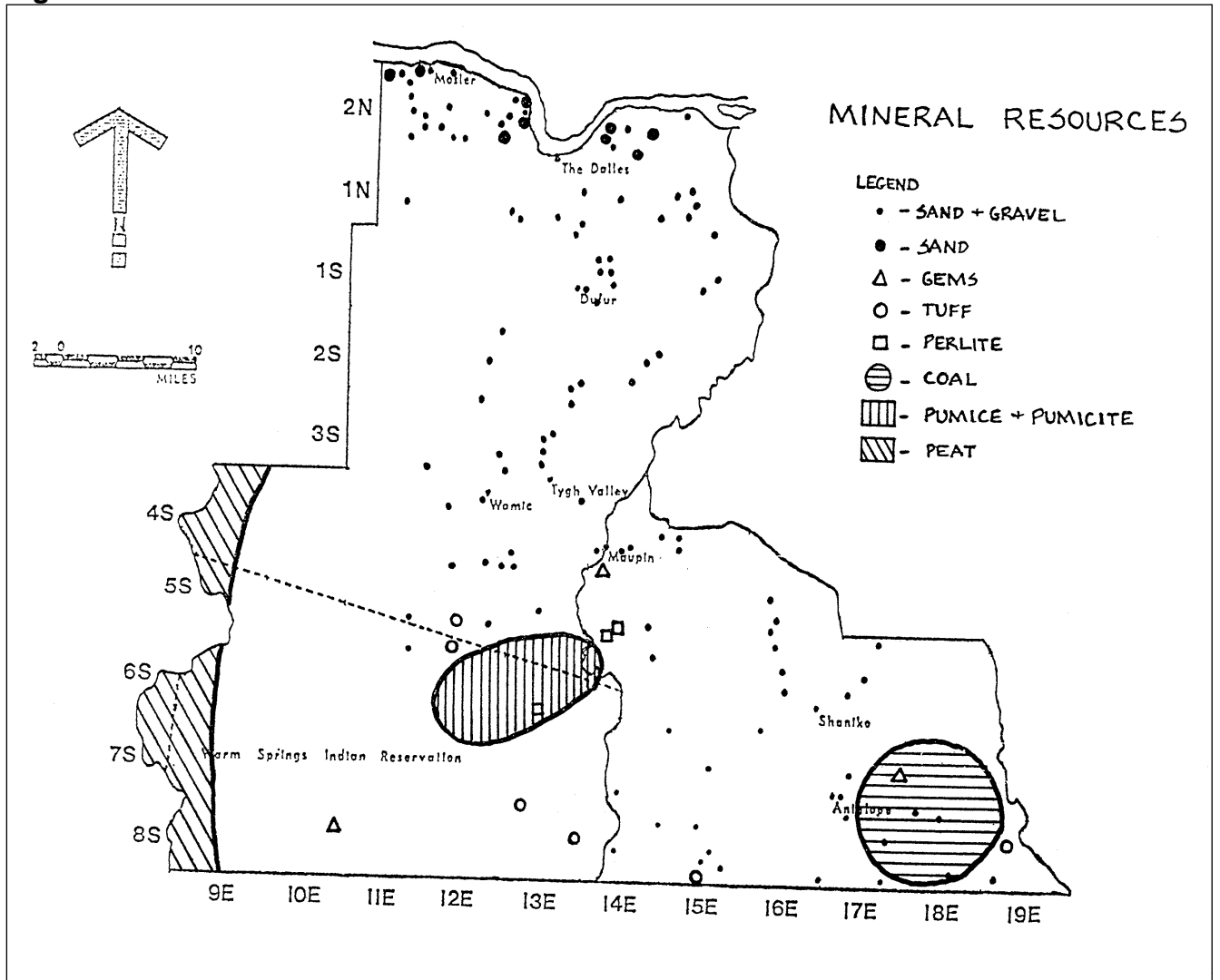
			Prineville, OR 97754				
169	7S 14E 0 3100	7S 14E 32 3000	Kaskela Farms 21180 S Leland Rd Oregon City, OR 97045			No	A-1(160)
170	3S 13E 0 4000	3S 14E 0 2800	Jack Stevens 56100 Smock Road Wamic, OR 97063	CPA-06-102 CUP-06-112 Added 12/28/06	33-0051		A-1
200	4S 14E 0 3700	4S 14E 33 3800	BLM 3050 NE 3 rd St. Prineville, OR 97754			No	A-1(160)
201	5S 14E 35 C 400	5S 14E 35 4400	ODOT - 33-036-4 Maupin Pit		33-0004	Yes	A-1(160)
202	6S 14E 0 700	6S 14E 11 100	ODOT			Yes	A-1(160)
203	7S 14E 0 200	7S 14E 12 1200	ODOT - 33-038-4 Criterion Sum Pit		33-0078	Yes	A-1(160)
204	6S 17E 3 400	6S 17E 3 500	ODOT - 33-049-4 County Line Quarry		33-0102	Yes	A-1(160)
205	6S 17E 0 2000	5S 17E 0 2000	Wasco County 511 Washington St. The Dalles, OR 97058			No	A-1(160)
206	6S 17E 0 2300	6S 17E 19 1800	ODOT- 33-050-4 Hinton Quarry		33-0100	Yes	A-1(160)
208	7S 16E 0 1300	7S 16E 6 1000	ODOT - 33-053-4 Identifier Quarry		33-0024	Yes	A-1(160)
209	7S 15E 0 1600	7S 15E 22 1600	ODOT - 33-059-4 Garbage Pit Quarry		33-0097	Yes	A-1(160)
211	8S 15E 0 2200	8S 15E 22 1701	Marie Winkler Trust 18140 Couch Market Rd. Bend, OR 97701			No	A-1(160)
212	8S 15E 0 2000	8S 15E 27/28 1701	Robert Pamplin 805 SW Broadway #2400			No	A-1(160)

			Portland, OR 97205				
213	8S 15E 0 3500	8S 15E 26 2900	John Priday 89037 Hwy 293 Madras OR 97741 Priday Quarry	CPA 96-101	33-0094	Yes	A-1(160)
214	7S 17E 0 1500	7S 17E 20 2000	ODOT - 33-062-4 Shaniko Rock Production		33-0065	Yes	A-1(160)
215	8S 18E 0 600	8S 18E 6 501	ODOT - 33-064-4			Yes	A-1(160)
216	8S 18E 0 400	8S 18E 4 400	ODOT - 33-065-4 Antelope Rock Product		33-0069	Yes	A-1(160)
217	5S 12E 0 8500	5S 12E 33 7200	Richard Dodge 78888 Walters Rd. Maupin, OR 97037	CUP 87-104 Added 3/93	33-0080	No	A-1(160)
218	4S 12E 0 2800	4S 12E 17 1900	Everett Metzentine PO Box 615	CUP 91-102 Added 3/93	33-0086	No	A-1(160)
219	2N 11E 0 900	2N 11E 2 900	SDS Co LLC PO Box 266 Willard, WA 98605 Rock Creek Quarry 33-002			No	
220	2N 13E 20 800	2N 13E 20 800	ODOT - 33-007 Shooting Range Quarry			No	NSA A-1(160)
221	2N 13E 20 ROW Site Not Identified	2N 13E 20/21 500	ODOT - 33-008				NSA A-1(160)
222	1S 14E 0 3300	1S 14E 20 3700	ODOT Boyd Quarry - 33-021			No	A-1(160)
223	3S 13E 33 200	3S 13E 33 4100	ODOT - 33-028-4 Butler Canyon Quarry		33-0062	No	A-1(160)
224	5S 14E 6 200	5S 14E 6 200	ODOT - 33-032 Maupin Maintenance Yard			No	Maupin City Limits
225	7S 15E 0 2000	7S 15E 29 2100	ODOT - 33-039 Filler Pit			Yes	A-1(160)

226	8S 15E0 2000	8S 15E 15	ODOT - 33-040			Yes	A-1(160)
227	8S 15E 0 3100	8S 15E 22 2800	ODOT - 33-041 Cow Canyon Quarry		33-0075	Yes	A-1(160)
228	5S 11E 36 1600	5S 11E 36 5300	ODOT - 33-045-4 Pine Grove Quarry		33-0074	Yes	A-1(160)
229	Site Not Identified	5S 12E 30 200	ODOT			Yes	A-1(160)
230	6S 12E 2 700	6S 12E 2 300	ODOT 33-048-4 Paquet Gulch Quarry		33-0101	Yes	A-1(160)
231	7S 17E 0 600		Shaniko Ranch	CUP 93-106	33-0092	No	A-1(160)
232	1N 13E 0 1000		Marilyn Phetteplace 2028 Steel Rd. The Dalles, OR 97058	CUP 98-113 CPA 98-103	33-0098	No	A-1(160)
233	6S 17E 0 2400		Jonnie Justesen 59720 Twin Lakes Rd. Grass Valley, OR 97029	CUP 99-105 CPA-99-104	33-0072	No	A-1(160)
234	1N 13E 0 600	1N 13E 0 2900	Charles & Irene Kornegay 2880 Five Mile Rd. The Dalles, OR 97058	CUP 94-135	33-0096	No	A-1(160)
235	2N 12E 0 2000		Mueller Seven Springs Ranch 6300 Seven Mile Hill Rd. The Dalles, OR 97058	CUP 90-107	33-0081	No	A-1(160) & F-2(80)
625	1S 13E 36 200	1S 13E 36 102	Wasco County 511 Washington St. The Dalles, OR 97058 Dufur County Pit			No	A-1(160)
649	4S 12E 0 6100	4S 12E 36 7400	Wasco County 511 Washington St. The Dalles, OR 97058 Kennedy Pit			No	A-1(160)
673	8S 14E 0 101	8S 14E 13 101 a portion of	Wasco County 511 Washington St.			No	A-1(160)

			The Dalles, OR 97058 South Junction Pit				
713	5S 11E 35 4802	5S 11E 35 4802	Wasco County 511 Washington St. The Dalles, OR 97058 Kelly Springs Pit			No	A-1(160)
790	2S 14E 0 2700	2S 13E 33 2900 a portion of	Robert & Nancy Hammel 62250 Tygh Ridge Rd. Dufur, OR 97021 Hilgen Pit (Wasco County)			No	A-1(160)
800	8S 17E 0 400	8S 17 4 500	Wasco County 511 Washington St. The Dalles, OR 97058 Helyer Pit			No	A-1(160)
833	3S 12E 0 800	3S 12 3 1101	Wasco County 511 Washington St. The Dalles, OR 97058 Schindler Pit			No	A-1(160)
850	2S 12E 0 1700	2S 12E 12 3000	Charlotte West 80852 South Valley Rd. Dufur, OR 97021 West Pit (Wasco County)			No	A-1(160)
870	3S 12E 25 100	3S 12E 25 1102	Wasco County 511 Washington St. The Dalles, OR 97058 Shadybrook Pit			No	A-1(160)
871	2N 12E 0 1000 & 2N 13E 19 400	2N 12E 0 1000	Wasco County 511 Washington St. The Dalles, OR 97058 Harvey Pit		33-0009	Yes	NSA A-1(160)
872	2S 13E 0 4400 & 4900		Filbin Family RLT 61906 Dufur Gap Rd. Dufur, OR 97021	CUP-99-102 CPA-99-101	33-0099	No	A-1(160)

Figure 11 – Mineral Resources



Source: U.S Geological Survey

H. Soils

The soils in Wasco County have formed in a variety of parent materials. In the northeastern part of the county soils have developed from loess deposits. These deposits range from a few inches to more than fifteen feet in thickness. In a southerly direction, the deposits become finer textured and thinner. Where a thin deposit of loess occurs, the soils developed from a mixture of loess and basalt. In the western part of the area, soils have developed from volcanic ash deposited over sediments. Soils in the southern part of the area have developed in fine textured sediments. These soils are predominantly fine textured with high percentages of coarse fragments. Water deposited soils formed in recent alluvium also occur along the major drainages in the county. Small amounts of volcanic ash occur throughout the county (General Soil Map with Soil Interpretations for Land Use Planning, Wasco County, Oregon, Soil Conservation Service, U.S.D.A., June, 1972; (pp. 1 & 2)).

The Soil Conservation Service has prepared a general soils map showing soil associations. A soil association is a group of soils that are geographically associated in a repeating pattern on the landscape. It consists of one or more major soils and at least one minor, often contrasting, soil and is named for the major soils. The soils in one association may occur in another but in a different pattern and proportion. ^{ibid}

These maps depict not only soil associations, but their suitability for agriculture and their limitations for septic tank absorption field and as building sites. These maps may be seen at the Wasco County Planning Office or at the Soil Conservation Service office in The Dalles.

Table 9 lists the various soil associations that occur in Wasco County and gives a brief description of each one. Table 10 rates the various soil associations on their suitability and limitations for various types of uses.

Soils have been classified into eight capability groupings by the Soil Conservation Service. These classifications show in a general way the suitability of soils for most kinds of field crops. The soils are grouped (a) according to their limitations when used for field crops; (b) the risk of damage when they are so used; and (c) the way they respond to treatment. The grouping does not take into account major and generally expensive land-forming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops that require special management.

Statewide Goals and Guidelines as adopted by the Land Conservation and Development Commission mandate the retention of areas which are predominantly Class I, II, III, IV, V, and VI soils, in farm use. Lands in other classes which are necessary to permit farm practices to be undertaken on adjacent or nearby lands, shall be included as agricultural land. Areas which are predominantly class VII and VIII soils are generally unsuited to intensive agricultural production.

Figure 12 shows the soil capability classifications for soils in Wasco County. These are general classifications; more detailed information may be necessary when

making site-specific decisions on land use. This information' is available from the Soil Conservation Service.

Table 9 – Soil Associations

Areas dominated by well drained soils formed in lacustrine material with 1 to 20 percent slopes	
1.	<u>Chenoweth-Cherryhill association</u> . Very deep loam soils with 1 to 20 percent slopes; and deep soils with a silt loam surface layer, loam subsoil and sandy clay loam substratum over semi-consolidated sediments and with 1 to 20 percent slopes.
Areas dominated by well drained soils formed in loess and well drained, very shallow, stony soils with 0 to 35 percent slopes	
2.	<u>Walla Walla association</u> . Very deep silt loam soils over basalt with 3 to 35 percent slopes.
3.	<u>Cantala-Condon association</u> . Deep silt loam soils over basalt with 1 to 35 percent slopes; and moderately deep silt loam soils over basalt with 1 to 7 percent slopes.
4.	<u>Wapinitia-Stony land association</u> . Moderately deep soils with a silt loam surface layer and heavy loam to silty clay loam subsoil over basalt and 0 to 12 percent slopes; and outcrops of basalt with 0 to 12 percent slopes.
5.	<u>Maupin-Stony land association</u> . Moderately deep loam soils over basalt with 0 to 12 percent slopes; and outcrops of basalt with 0 to 12 percent slopes.
6.	<u>Bakeoven-Condon association</u> . Very shallow soils with a very cobbly loam surface layer and very gravelly clay loam subsoil over basalt and 2 to 20 percent slopes; and moderately deep silt loam soils over basalt and with 1 to 20 percent slopes.
Areas dominated by well drained, very stony or rocky, shallow or moderately deep soils over basalt	
7.	<u>Lickskillet-Wrentham association</u> . Shallow soils with a very to extremely stony loam surface layer and very to extremely cobbly heavy loam or clay loam subsoil and with 15 to 70 percent south slopes; and moderately deep soils with a silt loam surface layer and very cobbly silt loam, clay loam or silty clay loam subsoil and with 35 to 70 percent north slopes.
Areas dominated by well drained soils formed in fine sediments with 1 to 70 percent slopes	
8.	<u>Simas-Tub association</u> . Moderately deep soils with a cobbly silty clay loam surface layer and calcareous silty clay subsoil over sediments and with 8 to 40 percent slopes; and Moderately deep soils with a gravelly clay loam surface layer and gravelly clay subsoil over sediments and with 1 to 40 percent slopes.
9.	<u>McNeen association</u> . Moderately deep soils with a silt loam surface layer and silty clay loam subsoil over very cobbly hardpan and with 1 to 12 percent slopes.
10.	<u>Simas-Curant-Tub association</u> . Moderately deep soils with a very stony silty clay loam surface layer and calcareous silty clay subsoil over sediments and with 35 to 70 percent slopes; deep soils with a silt loam surface layer, heavy silt loam subsoil and loam substratum and 40 to 70 percent slopes; and moderately deep soils with a very stony clay loam surface layer and gravelly clay subsoil over sediments and with 40 to 70 percent slopes.
Areas dominated by well drained soils formed in materials high in volcanic ash with 1 to 70 percent slopes	
11.	<u>Hesslan-Frailey-Skyline association</u> . Moderately deep soils with a stony loam surface layer and cobbly loam subsoil over semi-consolidated sediments and with 40 to 65 percent slopes; deep soils with a loam or stony loam surface layer and loam or cobbly loam subsoil over semi-consolidated sediments and with 30 to 70 percent north slopes; shallow very cobbly loam surface layer and cobbly loam subsoil over semi-consolidated sediments and with 40 to 65 percent slopes.

12.	<u>Wamic-Ortley association.</u> Deep loam soils over basalt bedrock and with 1 to 20 percent slopes; and deep soils with a loam surface layer and silt loam subsoil and with 1 to 20 percent slopes.
13.	<u>Ketchly-Bins association.</u> Deep soils with a loam surface layer and clay loam subsoil and sub-stratum and with 3 to 30 percent slopes; and deep soils with a very friable gravelly loam surface layer, firm, clay loam subsoil and heavy loam substratum and with 1 to 30 percent slopes.

Source: Soil Conservation Service

Table 10 – Soil Suitability & Limitations

Soil Associations	Area		Land Capability	Soil Suitability for:		
	%	Acres		Topsoil	Sand & Gravel	Road Fill
Chenowith-CherryHill	2	16,000	II, III, IV & VI	Good to Fair	Unsuitable	Fair
Walla Walla	6	63,000	II, III, IV, VI, VII & VIII	Good to Poor	Unsuitable	Fair
Cantala-Condon	14	140,000	I, II, III, IV, VI & VII	Good	Unsuitable	Fair
Wapanitia-Bakeoven	4	39,000	II, III, IV & VII	Fair to Good	Poor	Poor
Maupin-Bakeoven	3	33,000	I, II, III, IV, VI & VII	Good	Unsuitable	Fair
Bakeoven-Condon	16	153,000	I, II, III, IV, VI & VII	Fair	Unsuitable	Poor
Licksillet-Wrentham	20	195,000	I, II, III, IV, VI, VII & VIII	Poor	Unsuitable	Poor
Simas-Tub	13	127,000	I, II, III, IV, VI, VII & VIII	Poor	Unsuitable	Poor
McKeen	1	7,000	I, II, III, IV, VI, VII & VIII	Fair	Unsuitable	Poor
Simas-Currant-Tubl	3	33,000	I, II, III, IV, VI, VII & VIII	Poor	Unsuitable	Poor
Hesslan-Fraily-Skyline	5	45,000	III, VI & VIII	Poor	Unsuitable	Poor
Wamic- Ortley	10	98,000	III, IV, VI & VII	Good	Unsuitable	Poor
Ketchley-Bins	3	30,000	III, VI and VII	Poor	Unsuitable	Poor
Soil Limitations For:						
Soil Association	Pond Embankment & Dikes	Terraces & Diversions	Playgrounds	Camp Areas	Picnic Areas	Paths & Trails
Chenowith-CherryHill	Mod	Mod	Sev	Sev To Mod	Sev To Slight	Slight
Walla Walla	Mod	Slight	Sev	Sev To Slight	Sev To Slight	Slight
Cantala-Condon	Mod	Slight	Mod	Slight	Slight	Slight
Wapanitia-Bakeoven	Mod	Mod	Sev	Mod	Sev	Slight
Maupin-Bakeoven	Mod	Mod	Sev To Mod	Slight	Slight	Slight
Bakeoven-Condon	Sev	Sev	Sev	Sev	Sev	Sev
Licksillet-	Sev	N/A	Sev	Sev	Sev	Sev

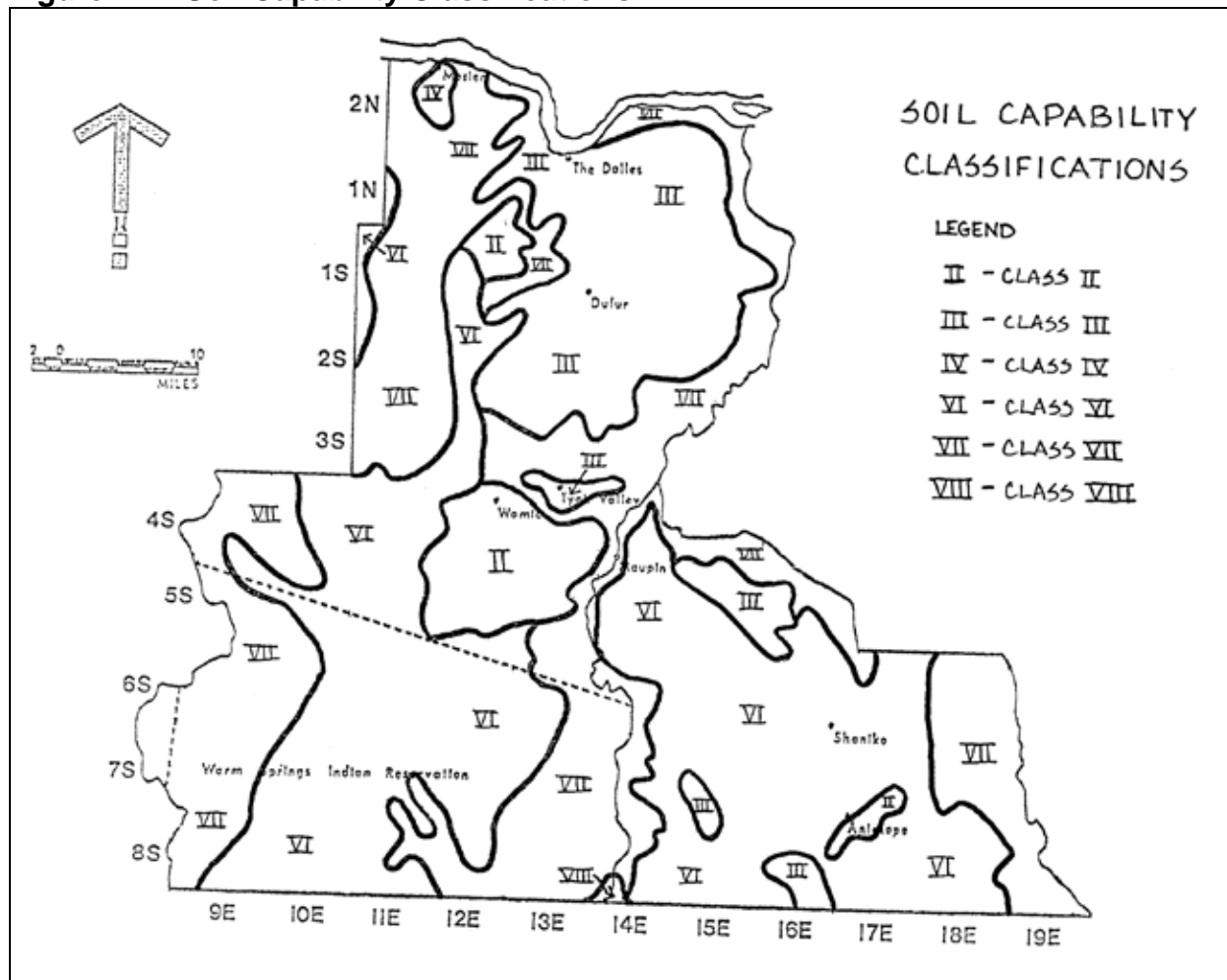
Wrentham						
Simas-Tub	Sev	Sev	Sev	Sev	Sev	Mod
McKeen	Mod	Mod	Sev	Mod	Mod	Slight
Simas-Currant-Tubl	Sev	Sev	Sev	Sev	Sev	Sev
Hesslan-Fraily-Skyline	Sev	N/A	Sev	Sev	Sev	Sev
Wamic- Ortley	Mos	Sev	Mod To Sev	Mod	Slight	Slight
Ketchley-Bins	Sev	Sev	Sev	Mod	Mod	Mod
Sev = Severe			Mod = Moderate			
Soil Limitations For:						
Soil Association	Dwellings w/o Basements	Septic Tank Absorption Field	Sewage Lagoons	Sanitary Landfills (Trench Type)	Local Roads & Streets	Pond Reservoir
Chenowith-CherryHill	Mod	Sev	Sev	Mod	Mod	Sev
Walla Walla	Mod	Sev	Sev	Slight	Mod	Sev
Cantala-Condon	Mod to Slight	Sev	Sev	Slight	Mod	Sev
Wapanitia-Bakeoven	Mod	Sev	Sev	Sev	Sev	Sev
Maupin-Bakeoven	Mod	Sev	Sev	Sev	Mod	Sev
Bakeoven-Condon	Sev	Sev	Sev	Sev	Sev	Sev
Licksillet-Wrentham	Sev	Sev	Sev	Sev	Sev	Sev
Simas-Tub	Sev	Sev	Sev	Sev	Sev	Sev
McKeen	Mod	Sev	Sev	Mod	Mod	Sev
Simas-Currant-Tubl	Sev	Sev	Sev	Sev	Sev	Sev
Hesslan-Fraily-Skyline	Sev	Sev	Sev	Sev	Sev	Sev
Wamic- Ortley	Mod	Sev	Mod to Sev	Mod	Mod	Mod to Sev
Ketchley-Bins	Mod	Sev	Sev	Mod	Mod to Sev	Sev
Sev = Severe			Mod = Moderate			

Source: Soil Conservation Service

I. Vegetation

The major vegetation species in each association are listed on the following page. The plant associations from east to west are grassland communities, chaparral-oak associations, ponderosa pine-white oak associations, Douglas fir-ponderosa pine association and forest land in higher elevations. These generalized categories have transitional zones between them which varies with topography, soil moisture, etc., and man's influences. Understory vegetation could occur in any of the tree covered areas as secondary vegetation. The main types of commercial vegetation are also listed.

Figure 12 – Soil Capability Classifications



Source: Soil Conservation Service

Natural Vegetation

Grassland Communities:

Bluebunch wheatgrass
Bitterbrush
Idaho fescue

Sandberg's bluegrass
Cheatgrass

Shrub-Oak Association:

Oregon white oak
Elk sedge
Common snowberry
Oceanspray
Heartleaf arnica
Ceanothus
Woods rose

Wild strawberry
Blue wildrye
Bluebunch wheatgrass
Cheatgrass
Needlegrass
Saskatoon serviceberry

Ponderosa Pine - White Oak Association:

White oak
Ponderosa pine
Douglas fir
Elk sedge
Common snowberry
Oceanspray
Heartleaf arnica
Ceanothus

Woods rose
Wild strawberry
Blue wildrye
Hairy lupine
Woolly lupine
Ornate lupine
Poison oak

Douglas fir - Ponderosa Pine Association:

Douglas fir
Ponderosa pine
Grand fir
Western hemlock
Western red cedar
Willows

Black cottonwood
Bigleaf maple
Western larch
Incense cedar
Western white pine

Higher Elevation Forest:

Sub-Alpine fir
Noble fir
Pacific silver fir
Engelmann spruce

Mountain hemlock
Lodgepole pine
Whitebark pine

Understory Vegetation:

Small golden chinkapin
Vine maple
Snowbrush

Redstem ceanothus
Deerbrush
Prickly currant

Understory Vegetation:

Big Huckleberry
Wild rose

Queencup beadlilly
Hawkweeds Arnicas

Columbia brome
 Bedstraw
 Twinflower
 White trillium
 Poison oak

Common thistle
 Bracken fern
 Pacific rhododendron
 Beargrass

Introduced Vegetation

Commercial:

Sweet cherries -
 Cultivars include:
 Lambert
 Bing
 Royal Anne
 Black Republican
 Apples

Pears
 Peaches
 Apricots
 Alfalfa
 Clover
 White wheats

Other

Cheatgrass
 Yellow star thistle
 Diffuse knapweed
 Whitetop
 Canada thistle
 Puncture vine
 Sand bur
 St. Johnswort
 Crested wheatgrass
 Intermediate wheatgrass
 Bluestem wheatgrass
 Slender wheatgrass
 Pubescent wheatgrass
 Alta fescue
 Western fescue
 Pacific fescue
 Big bluegrass
 Bulbus bluegrass
 Canada bluegrass
 Kentucky bluegrass
 Prairie junegrass
 Orchardgrass
 Redtop
 Mountain brome

Velvetgrass
 Alaska oniongrass
 Timothy
 Sagebrush
 Scab-land sagebrush
 Hoary sagebrush
 Wild onions
 Yarrow
 Locoweed
 Balsamroot
 Rattlesnake grass
 Russian knapweed
 Rabbit brush
 Golden cleome
 Meadow larkspur
 Fleabone
 Tarweed
 Western iris
 Western juniper
 Biscuitroot
 Prairie clover
 Lewis mockorange
 Phlox
 Smooth sumac

Soft brome

Tumbling mustard
 Thurber needlegrass

Many vegetative associations in the rangelands of the; county, especially in the southern part, have been disturbed by fire, grazing, trampling, and the effects of some types of introduced plants. For example, species such as sagebrush and bitterbrush are sensitive to fire, while many grasses are not as sensitive. A range fire will usually kill the brush without destroying the grass understory. This results in almost pure stands of bunch-grass. Overgrazing in rangelands and along streams have caused the reduction of vegetation in these areas, and has allowed new types of vegetation to become established. These new species of vegetation may greatly alter the ecology of the affected area, often in a detrimental way.

J. Natural Areas

Areas in Wasco County which appear to have ecological and scientific value have been identified by the Oregon Natural Heritage Program, Nature Conservancy. Personal interviews, extensive literature search, field investigations, and aerial photography were the basis of this inventory list of natural areas. The list does include some areas which have not yet been verified by research or field study, but are considered potentially significant. Table 11-A gives the list of natural areas in Wasco County as identified by the Nature Conservancy. These areas are shown in Figure 12.5.

A "site" as it appears in Table 11-A is the geographic location of one or more noteworthy element occurrences. An element is any one natural feature of the landscape; for example, a bald eagle nest or an age-old forest, and the site is where it occurs. A site may have only one feature, such as a nest, or it may include several features, such as a stretch of river surrounded by an old growth forest with a rare plant species and nesting areas for endangered bird species. Descriptions accompanying the site on the inventory list have been written to point out features at the site.

Not all lands identified by the Nature Conservancy are being considered as natural areas. Many of the elements have not been verified. Many of the ones that have been verified have not been located specifically. The attempt has been made to locate the most significant natural areas and identify them with specific boundaries. Ownerships, conflicts of use, location, surrounding uses, size of the area and citizen input were taken into account when designating natural areas: Additional sites not listed by the Nature Conservancy have been included as natural areas. Table 11-B lists these sites.

All natural areas have been identified on the zoning map by placement of an environmental protection district overlay zone, (Division 4). This zone is described in the Wasco County Zoning Ordinance in Section; 3.700.

Table 11A- Natural Areas as Identified by the Nature Conservancy (4/78)

REF NO.	*SR	**REFERENCE NAME	LOCATION Township, Range & Section	***PS	ELEMENT NO.	****VO	ELEMENT NAME
WC-4	+	Oak Springs (B)	-4S, 14E, SE1/4 17	3	1.18.986 2.02.402 2.02.402 4.11.110	V V V V	Wetland shrubland Rough-skinned newt Pacific giant salamander Cold spring
WC-6	+	Confluence of White River & Tygh Creek to Deschutes River (B)	-4S, 13E, 1, 2, 11, 12 -4S, 14E, 5 - 8	3	1.08.912 4.04.120 4.04.450 4.04.460 5.14.596	V V V V V	Wetland forest Low stream segment, low gradient reach River island Waterfalls Great blue heron rookery
WC-8	+	Lawrence Memorial Grassland Preserve (The Nature Conservancy) (B)	-7S, 16E, 15, 22	2	1.18.931 1.28.910 1.28.911 1.28.920 3.01.049 6.01.000	V V V V V V	Stiff sage/Sandberg's bluegrass Bluebunch wheatgrass-Idaho fescue Bluebunch wheatgrass-Sandberg's bluegrass Sandberg's bluegrass communities <i>Lomatium minus</i> Geologic feature
WC-11		Tygh Ridge Summit (C)	-3S, 14E, 16, 17, 20	3	1.28.910	V	Bluebunch wheatgrass-Idaho fescue
WC-13		Hollow Creek Area (A)	-7S, 18E, NW1/4 1 -8S, 17E, NE1/4 1	3	2.02.642	V	Golden eagle (2 nests)
WC-14		Mission Hollow (A)	-2S, 15E, 6	3	2.02.642	NV	Golden eagle
WC-15		Butler Canyon (B)	-3S, 13E, 14, 23	3	1.18.931 1.28.910 1.28.911	V V V	Stiff sage/Sandberg's bluegrass Bluebunch wheatgrass-Idaho fescue Bluebunch wheatgrass-Sandberg's bluegrass
WC-20		Buck Hollow Creek (C)	-6S, 17E, W1/2 16	3	1.18.931 1.28.910 1.28.911	V V V	Stiff sage/Sandberg's bluegrass Bluebunch wheatgrass-Idaho fescue Bluebunch wheatgrass-Sandberg's bluegrass
WC-28		Black Rock/Rotten Lake Basin (B)	-7S, 18E, 1-3, 10-15 -7S, 19E, 5-8, 18	3	2.02.642 4.07.110 4.10.100 6.01.000 6.02.000	NV NV NV NV NV	Golden eagle Low lake, permanent Lowland pond Geologic feature Paleontologic feature
WC-30		White River Canyon (B)	-4S, 5S, 11-13E	3	3.04.800	V	Isolated population, Douglas fir
WC-34		Camas Prairie (C)	-5S, 10E, 16, 17	3	1.25.118 3.04.000	V V	Marshland Wildflower area
WC-37		Mill Creek Falls (C)	-1S, 12E, NW1/4 5, NE1/4 6	3	1.05.620 4.04.460	NV V	Douglas fir forest Waterfalls

WC-38		Mill Creek Drainage (C)	-1S, 11E, NW1/4 3	3	3.01.037 3.02.000	V V	<i>Hydrophyllum capitatum var. thompsonii</i> <i>Lomatium columbianum</i>
WC-40		Nena Ranch (B)	-6S, 13E, 1, 12	3	1.05.913	NV	Wetland forest
WC-44		Oak Canyon (C)	-2S, 14E, 35, 36	3	1.05.621 1.05.911 1.25.114	V V V	Douglas fir-ponderosa pine Oregon white oak/grassland Bluebunch wheatgrass-Idaho fescue
WC-47		Boulder Creek Drainage (C)	-8S, 9S, 9-11E	3	1.05.600	V	Old growth Douglas fir forests
WC-50	+	Rowena Dell (The Nature Conservancy Preserve, part) (B)	-2N, 12E, 3, 4	2, 3	2.02.636 3.01.037 3.02.000 3.04.700 4.10.110 4.10.120 6.01.000 6.04.000	NV NV V V V V V V	Osprey <i>Hydrophyllum capitatum var. thompsonii</i> <i>Lomatium Columbianum</i> Wildflower area Lowland pond/wetland, permanent Lowland pond/wetland, intermittent Geologic feature Historic feature
WC-51		Mosier Area (C)	-2N, 11E, 2	3	1.05.912 3.04.700	NV V	East Col. Gorge rockfall with forest complex Wildflower area
WC-52		Seven Mile Hill Area (A)	-2N, 12E, 11	3	1.05.912 1.25.110	V V	East Col. Gorge rockfall with forest complex East slopes Cascade grassland
WC-56		Memaloose Island (B)	-3N, 12E, 32	3	2.02.636	V	American osprey
WC-61		Mill Creek Research Natural Area (B)	-1S, 11E, 4, 8, 9, 16, 17	2	1.05.621 1.05.911 1.25.114	V V V	Ponderosa pine-Douglas fir Oregon white oak/grassland Bluebunch wheatgrass-Idaho fescue
WC-62		Persia M. Robinson Research Natural Area (C)	-6S, 10E, 10, 11	2	1.05.621 1.05.630 4.04.120	V V V	Ponderosa pine-Douglas fir Mixed conifers Lowland stream segment, low gradient reach
WC-65		Wapanitia Warm Springs (C)	-6S, 12E, 2, 11	3	4.11.120	V	Hot spring
WC-67		Deschutes Island (C)	-2S, 16E, 5	3	5.14.596	V	Great blue heron rookery
WC-69		Antelope Creek (A)	-8S, 15E, 25, NW1/4 35 -8S, 16E, NE1/4 4	3	2.02.642	V	Golden eagle (7 nests)
WC-70		Antelope Valley (C)	-S1/2 7S, 17E -N1/2 8S, 17E	3	2.02.640	V	Swainson's hawk (8 nests)
WC-71		Tygh Creek (C)	-3S, 12E, 26	3	2.02.643	V	Northern bald eagle
WC-72		White River Wildlife Management Area (B)	-4S, 5S, 11E, 12E	2	2.02.643 2.02.510 2.02.513 2.02.641 2.02.642	V V V V V	Northern bald eagle Ring-necked duck Bufflehead Ferruginous hawk Golden eagle

					2.02.654	V	Western burrowing owl
					2.02.752	V	Gray-crowned rosy finch
					2.02.881	V	White-tailed jackrabbit
					2.02.902	V	Sagebrush vole
					5.14.621	V	Band-tailed pigeon mineral springs
					5.17.806	V	Elk critical winter range
WC-74	Sunflower Flat (C)	-6S, 11E, SW1/4 2, S1/2 3, NW1/4 11	3		1.05.710	NV	Ponderosa pine
					1.05.810	NV	Western juniper woodland
					1.05.911	NV	Oregon white oak/grassland
WC-75	Abbot Pass (proposed Research Natural Area (C)	-5S, 9E, 17	3		1.05.310	NV	Mountain hemlock
WC-76	Four Hills Grassland (C)	-8S, 17E, 2, 3, 10, 11	3		1.28.910	V	Blubunch wheatgrass-Idaho fescue
					3.04.700	NV	Wildflower area
WC-77	Antelope Watershed (C)	-7S, 17E, 30	3		1.08.814	V	Western juniper/big sage/bitterbrush
WC-80	Unnamed (C)	-7S, 17E, 18	3		3.01.049	V	<i>Lomatium minus</i>
WC-81	Unnamed (C)	-7S, 16E, 5	3		3.01.049	V	<i>Lomatium minus</i>
					3.02.000	V	<i>Allium macrum</i>
					3.02.000	V	<i>Allium tolmiei</i> var. <i>tolmiei</i>
					3.02.000	V	<i>Claytonia minus</i>
WC-82	Unnamed (B)	-4S, 14E, 20, SW1/4 29	3		3.02.000	V	<i>Mimulus jungermannioides</i>
WC-83	Dinger/Clear Lake proposed Research Natural Area (A)	-5S, 81/2E, W1/2 1	3		1.05.310	V	Western hemlock zone
WC-84	Wasco Lookout (C)	-2N, 12E, SE1/4 32	3		3.01.037	V	<i>Hydrophyllum capitatum</i> var. <i>thompsonii</i>

*SR = Site Report

**Areas Marked with:

- (A) have been designated as natural areas using locational description given.
- (B) have been designated as natural areas, although the area descriptions have been altered.
- (C) have been removed from the list because they are not considered unique or significant natural areas.

***PS = Protection Status

- 1 = Preserved
- 2 = Legally Protected
- 3 = Unprotected

****VO = Verification of Occurrence

- V = Verified
- NV = Not Verified

Application of Statewide Planning Goal # 5 To Inventoried Natural Areas in Forest Lands

In the May 20, 1982, Land Conservation and Development Commission's "in order to comply statement", Wasco County was directed to analyze the economic, social, environmental and energy (ESEE) consequences of the conflicts between forest operations and inventoried natural areas and develop a program to achieve the goal (3). Wasco County has identified three natural areas that are within forested areas. These areas include: the western end of the White River Canyon, site "WC-30"; the Mill Creek Research Natural Area, site "WC-61"; and the Dinger/Clear Lake Proposed Natural Research Area, site "WC-83".

Sites "WC-30" and "WC-83" are within the "F-2 (80)" zone and are also within the Environmental Protection District, Division 4 (EPD-4) overlay zone which permits the following uses which are identified as conflicting ESEE uses:

Permitted:

- Management, production and harvesting of forest products, including primary wood processing and operations.
- Utility facility necessary for public service.

Conditional:

- Single family residences and mobile homes in conjunction with a farm or forest use.
- Public facilities
- Personal-use airports
- Public and private parks
- Mining
- Sanitary Landfill

The prime factor in analyzing the ESEE consequences on these sites is ownership. There are no private holdings involved within these sites. Site "WC-30" is owned by the Oregon State Game Commission and is being managed for Big Game Winter Range and other wildlife habitat. The conflicting uses identified above, except for timber harvesting, will not occur on state lands. Any timber harvesting will be controlled by the Oregon Department of Fish and Wildlife under their program for wildlife habitat. The conflicting uses are, therefore, controlled and limited by the Department of Fish and Wildlife's program for habitat improvement.

Site "WC-83" is owned by the United States Forest Service and is part of the Mt. Hood National Forest. Again, timber harvesting would be the only conflicting use and that activity is controlled by the Forest Service. Compliance with local plans is not mandatory of federal agencies, although their co-operation is encouraged by Wasco County.

Site "WC-61" is within the "F-1 (80)" zone. This zone includes only those lands within The Dalles Watershed. The EPD-4 over-layer zone permits only conditionally the following uses which are identified as conflicting ESEE uses:

- Management, production and harvesting of forest products, including primary wood processing and operations.
- Mining
- Utility facilities necessary for public service.

Site "WO-61" is totally owned by the United States Forest Service and is within The Dalles Watershed. The watershed is managed through an agreement between The Dalles and the Forest Service called. "Comprehensive Management Plan for The Dalles Municipal Watershed". 1972. Forest harvesting activities as well as other uses is strictly controlled by both federal programs and regulations and by the cooperative agreement with The Dalles. The conflicting uses are, therefore, controlled and limited and no other measures need to be taken to protect the natural area.

Table 11B – Natural Areas

#	Site Name	Location	VO	Element Name
1	Cedar Island	T3S, R15E, Sec. 4	UV	River Island with a distinct population of incense cedars. (B.L.M.)
2	Sharps Island	T1S, R16E, Sec. 5	UV	Great Blue Heron rookery and riparian habitat.
3	Fall Creek Island	T1N, R16E, Sec. 31	UV	Great Blue Heron Rookery
4	Underhill Site	T2S, R11E, Sec. 15	UU	Environmental education site for children. Natural vegetation and habitats, trails, and historic sites are preserved (U.S. Forest Service)
5	Postage Stamp Lookout	T3S, R13E, Sec. 18, 19, & 20	UV	Laboratory research site. (State of Oregon)

VO = Verification of Occurance:
 -UV = Unsurveyed, verified.
 -UU = Unsurveyed, unverified.

K. Forest Resources

In accordance with Goal #4, lands suitable for forest uses have been inventoried by forest site class. The site class inventory is an estimate of the productive potential of forest land for wood growth. It is de-fined as the "height of a freely growing tree at age 100". The site class can be translated to cubic feet/acre/year. Generally, forest site classes less than VII are considered to be of commercial quality. (Refer to "Field Instructions for Integrated Forest Survey and Timber Management Inventories", United States Forest Service Manual; Oregon, Washington and California, 1974). Figure 13 shows the timber site productivity ratings for forest lands in Wasco County. A more detailed site class map can be found in the Planning' Office; the map on page 60 is highly generalized.

The following tables illustrate the land area and timber volume for forest land in Wasco County.

Land Area

Forest		
-Commercial	414,000 Acres	27%
-Unproductive	135,000 Acres	9%
-Reserve	1,000 Acres	0%
Non-Forest	974,000 Acres	64%
Total	1,524,000 Acres	100%

Commercial Forest - By Ownership (1973)

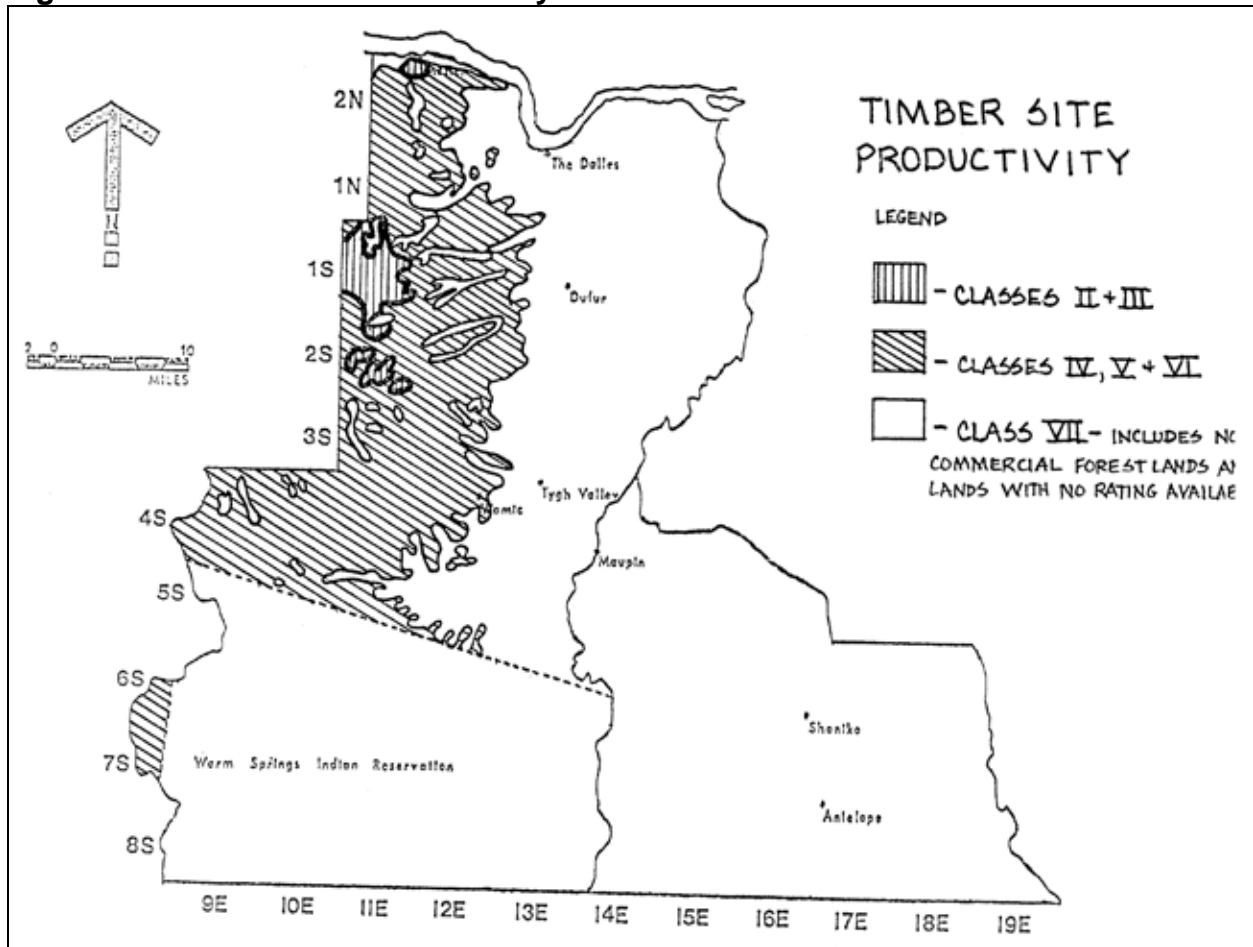
National Forest	153,000 Acres	37%
Other Public	199,000 Acres	48%
Forest Industry	15,000 Acres	4%
Other Private	47,000 Acres	11%
Total	414,000 Acres	100%

Commercial Forest – Net Volumes by Ownership (1973)

National Forest	3,521 Acres	53%
Other Public	2,855 Acres	42%
Forest Industry	78 Acres	1%
Other Private	266 Acres	4%
Total	6,720 Acres	100%

The U.S. Forest Service and other public agencies administer about 95 percent of the commercial timber volume. These public lands are characterized by large inventories of old growth timber. On the other hand, private lands contain a considerable amount of timber in the younger classes (less than 40 years old). These; stocking characteristics indicate that the public lands must absorb future timber supply demands. Intensified management of all timber lands may increase yields in eastern Oregon in the long run.

Figure 13 – Timber Site Productivity



Source: S.C.S Aerial Photos – Mt. Hood National Forest-Soil Resource Inventory

L. Land Use and Ownership

Land use information for Wasco County was obtained from aerial photographs and by field surveys. Figure 14 shows the generalized existing land use in Wasco County (*See Chapter 12 for legend definitions. Most of the county is in agricultural and, forestry uses, and urban development is concentrated in the Dalles Urban Area.

Existing land use is not shown within the boundaries of the Warm Springs Indian Reservation, nor are specific ownerships given. Due to their status as a nation, separate and independent from the jurisdictions of Wasco County, the State of Oregon or the U.S. Federal Government, the Warm Springs Reservation is included in this plan only briefly. Further information on the Confederated Tribes of Warm Springs Indians may be obtained through the Tribal Council and in the "Comprehensive Plan - Warm Springs Reservation, (1970)".

The exact boundaries of the Warm Springs Reservation had been disputed from 1871 until 1972 when Congress finally passed Public Law 92-427 ending the controversy. Following is a list of important dates describing the legal actions which have occurred regarding the disputed land. Wasco County fully recognized the McQuinn Strip as part of the Warm Springs Reservation.

- 1855 - The Warm Springs Reservation was established by treaty.
- 1871 - T.B. Handley made the first survey; the Tribes protested that the northern line of the survey was further south than agreed.
- 1886 - Congress authorized a resurvey.
- 1887 - John A. McQuinn completed the resurvey, establishing a line farther north than the Handley line.
- 1888 - The Commissioner of Indian Affairs approved the McQuinn line.
- 1890 - A commission appointed at the request of white settlers recommended the Handley line.
- 1894 - Congress approved the Handley line and established it as the reservation's boundary.
- 1917 - Fred Mensch made a study in response to continuing Indian protests, found the McQuinn line correct, but recommended revision with cash compensation to the Tribes in lieu of lands on which settlers had located.
- 1919 - The General Land Office approved the Handley line.
- 1921 - The Tribes refused to approve the Mensch Report.

- 1930 - Congress authorized the Tribes to sue in the Court of Claims.
- 1941 - The court accepted the McQuinn line except for a small triangle at the extreme northeast but said the Tribes should re-cover the value of the land and not the land itself.
- 1943 - Sen. Charles McNary and Rep. Lowell Stockman introduced a bill fixing the modified McQuinn line as the boundary; the bill failed.
- 1945 - The Court of Claims, setting the value under its 1941 decision, said the Tribes should get \$80,925 as the 1855 value of the 80,000 acres plus \$160,159. interest. However it applied an "offset" rule, said the government had expended more than that on the Tribes. It said this wiped out the claim, and it dismissed the suit.
- 1948 - Congress passed a bill by Sen. Guy Cordon providing that the Tribes should receive the net revenues from the 61,360 acres of government land within the disputed area.
- 1971 - Rep. Al Ullman introduced in the House and Sens. Mark Hatfield and Bob Packwood in the Senate a bill establishing the McQuinn line, as modified by the Court of Claims, as the north and west boundary of the reservation.
- 1972 - The bill ending the McQuinn Strip dispute became law.

Table 12 gives a listing of public and private land ownerships in Wasco County. The Assessor's records were the major source of information. Federal agencies were contacted for current ownerships.

It must be taken into account that ownerships, both public and private, are constantly changing. Figure 15 shows the ownerships in Wasco County as of July, 1980.

Figure 14 – Generalized Existing Land Use

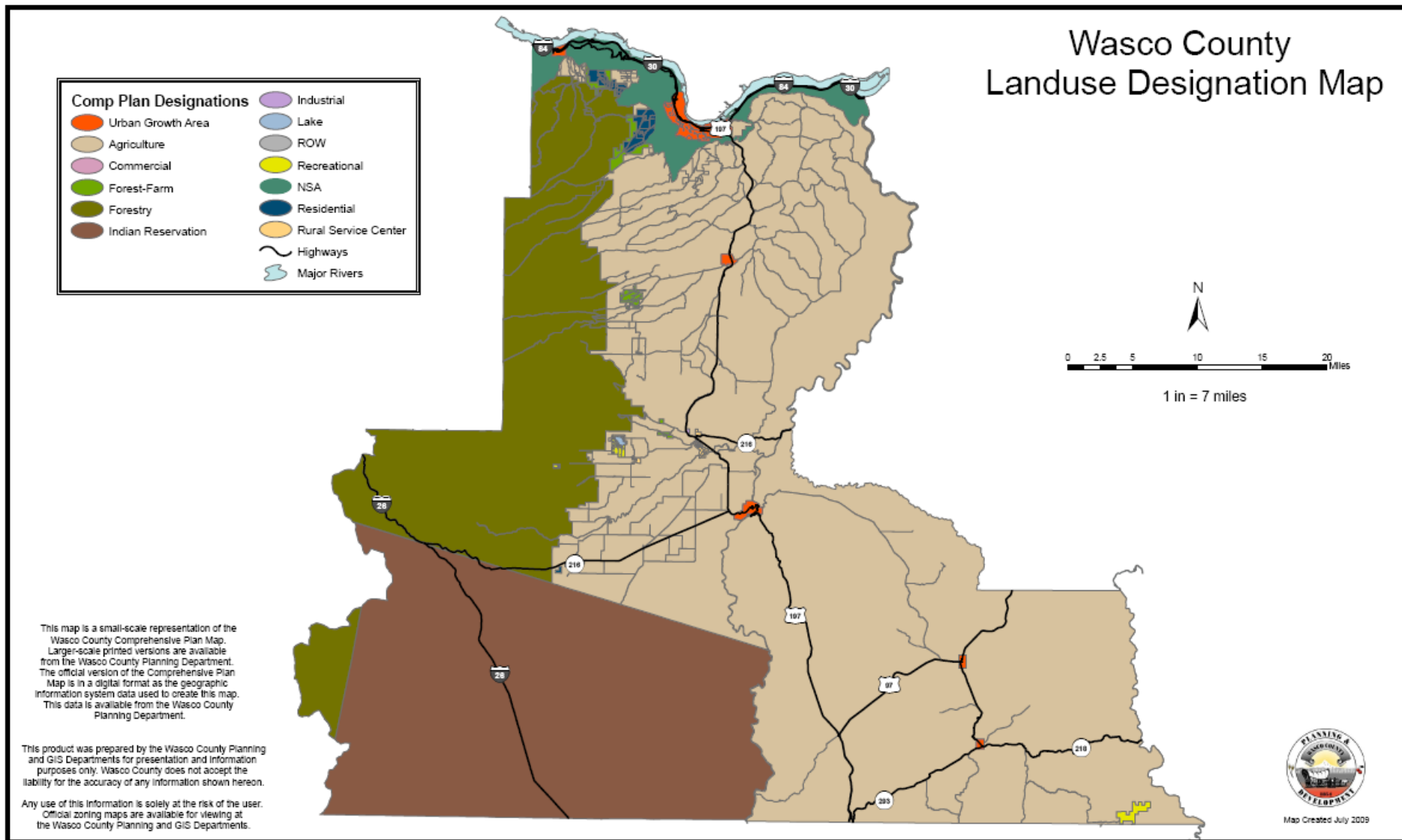
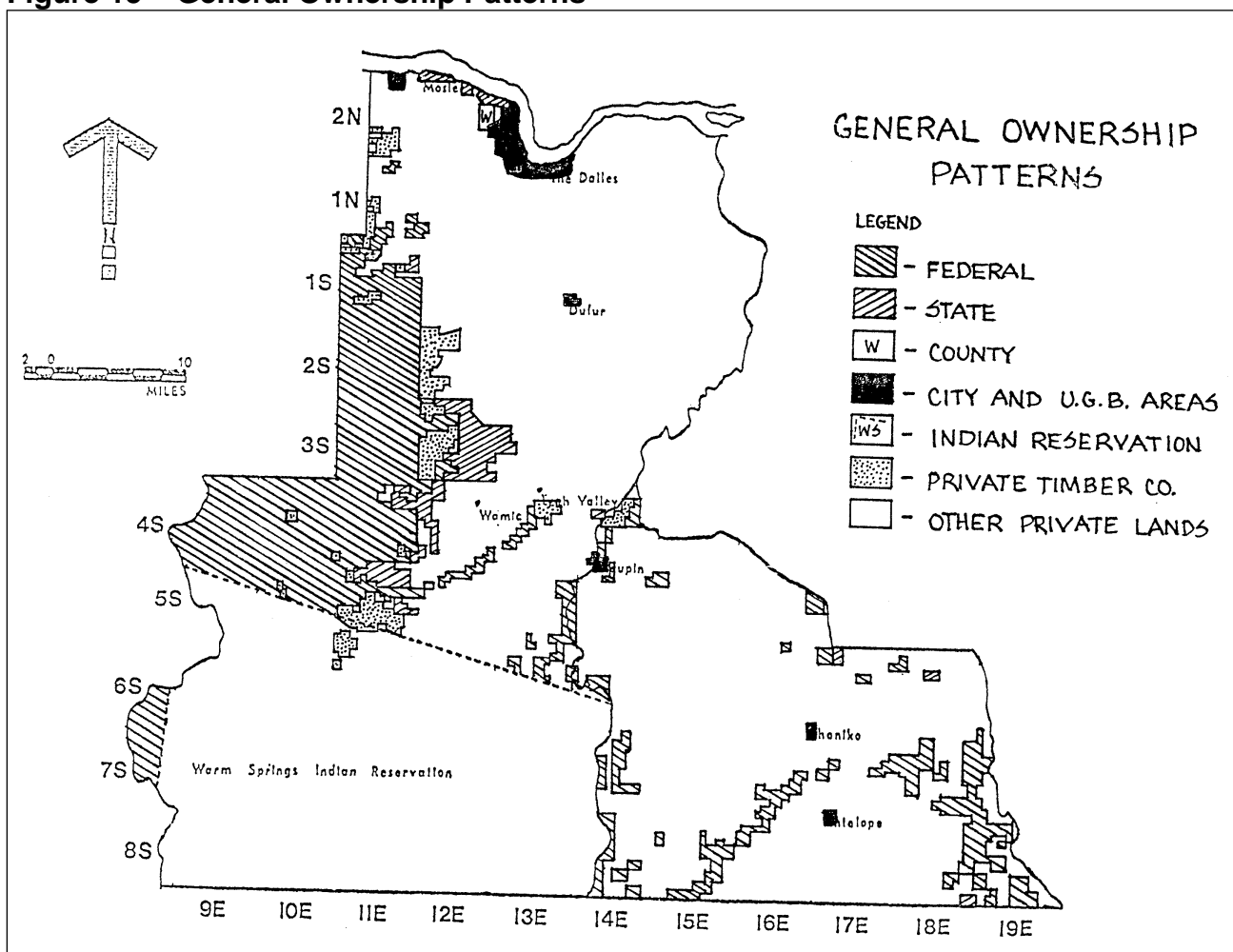


TABLE 12 COUNTY OWNERSHIP

OWNERSHIP	# ACRES	% of
Federal:		
U.S. Forest Service	177,888	
Bureau of Land Management	20,476	
Army Corps of Engineers	2,656	
Bonneville Power Administration	786	
	201,806	13.2
State:		
State of Oregon	1,566	
Highway Commission	1,285	
Forestry Department	3	
Fish and Wildlife	21,979	
State Parks	1,296	
State Land Board	1,760	
	27,889	1.8
County:		
Wasco County	200	
	200	
Incorporated Cities:(Includes all lands within City Limits)		
Antelope	288	
Dufur	367	
Maupin	795	
Mosier	401	
Shaniko	320	
The Dalles	3,300	
	5,471	0.4
School Districts:		
Hood River # 1	1	
Chenoweth # 9	38	
The Dalles # 12	81	
Petersburg # 14	155	
Dufur # 29	2	
Tygh Valley # 40	5	
# 42	2	
# 48	17	
Antelope # 50	1	
# 53	1	
	303	
Utilities:		
Telephone	5	
Water	8	
Electric	1,611	
Gas	1	
Railroad	17	
	1,642	0.1
Other Semi-Public and Public:		
Hood River Port	80	
Land Bank	10.	
Boy Scouts of America	793	
Cemetery	10	
The Dalles General Hospital	14	
	907	0.1

Private Lands:		
Union Pacific	151	
OWR & N Company	9,279	
Boy Scouts of America	793	
Warm Springs Indian Reservation	387,113	
Mountain Fir Lumber Company	16,284	
Champion International	4,309	
Other Privately Owned Lands	871,533	
	1,289,462	84.4
TOTAL PUBLIC AND SEMI-PUBLIC LANDS	238,218	15.6
TOTAL PRIVATELY OWNED LANDS	1,289,462	84.4
TOTAL COUNTY LANDS	1,527,680	100.0

Figure 15 – General Ownership Patterns



Source: Appropriate State & Federal Agencies and County Assessor Records

M. Fish and Wildlife Resources

The variety of vegetation and the abundance of streams and lakes in Wasco County provide good habitat for many types of fish and wildlife. These animals are an integral part of the environment and provide enjoyment for both wildlife enthusiasts and sportsmen. Their populations can only be maintained if their habitats are not greatly disturbed or destroyed. Careful management of these habitats can maintain and even improve wildlife populations.

1. Wildlife Habitat

Wildlife species are a product of vegetative community's water, and cover afforded by vegetation and geological features. Within the County each species of wildlife has its own habitat which is a complex and specific set of conditions to which it is adapted and without it, cannot survive. Destruction of the habitat need not be total to exclude a species from a given area. Loss of only one element which fills a critical need within the habitat is enough to render it inhospitable. Table 13 outlines the major habitat types found in the county, their general location and their relative importance to wildlife.

2. Wildlife Species

There are up to an estimated 230 different species of mammals, birds, reptiles and amphibians in different parts of Wasco County. More species are generally found in the western portions of the county, where habitats are varied and more diverse. Table 14 is a list of species, their habitats and the periods of usage.

3. Sensitive Wildlife Habitat Areas

All wildlife habitats can be considered sensitive to some degree as they all are affected by the impacts of man's use of the land. Changes brought about through soil tillage, livestock grazing, clear-cutting, and development have produced new landscapes, and with few exceptions, original vegetative cover has been altered.

Table 13 – Major Habitat Types

Habitat Name	Description	Wildlife Value
Mixed Conifer	Dense cover, natural open space and mountain meadows (generally in public ownership). Located in higher elevation in western part of county.	Summer range, cover for rearing young. Deer, elk, black bear, cougar, migratory birds.
Mixed Conifer Oak	Dense cover—mixed locations and ownerships in northwestern part of county.	Summer range and cover for all big game species. Cover and nesting areas for migratory and game birds.
Pine Oak	Mid-elevation areas of central and southwestern portion of county. Grass and browse provides excellent cover for Merriam turkeys.	Winter range for big game, Merriam turkey, Lewis woodpecker, silver grey squirrel.
Oak	Ponderosa Pine, oak. Located generally in Township 1 South, 2 South, and 3 South, Range 12.	Deer, elk winter range. Year round habitat for wild turkey. Feeding and nesting areas for Lewis woodpecker.
Oak Grass	Located in Sevenmile Hill areas of northwestern Wasco County. Tall grass and scrub oak.	Provides cover and food for various types of big game animals, smaller animals, and birds.

Brush Grass	Occurs mainly on steep slopes and in dry drainage bottom. Dominated by big sagebrush, rabbit brush, horsebrush, cheatgrass, with lesser amounts of bitterbrush, bluebunch, wheatgrass and Idaho fescue.	Brush areas provide important habitat for deer, upland game and non-game wildlife.
Grass Shrub	Cheatgrass, blue grass, bluebunch, wheatgrass, bitterbrush, sagebrush, snowberry, wild rose, sunflower, paintbrush, Balssmorphiza, Eriogonum, Lomatium and wester Juniper; generally found in the southern portion of the County, east of the Deschutes River.	Deer range, bobcat, porcupine, packrat, cliff swallow, rock and canyon wrens, rattlesnakes, chukar partridge, bald and golden eagle, osprey.
Riparian	Vegetation along streams, streambeds and lakes. Found in all parts of the county. Consists of forbs and grasses, shrubs and trees.	Nesting, perching and feeding for many species of birds. Cover, feeding, and shade for all types of wildlife. Water quality is dependent upon the condition of riparian vegetation.
Cultivated Agricultural Land	Wheatland, grazing, hay, alfalfa and other commercial agricultural crops.	Deer, upland birds, waterfowl, raptors, small birds and mammal species. Use occurs mainly around field edges near areas of more substantial cover.
Rural Residential and Abandoned Homesites	Old tree plantings.	Utilized by several bird species including scarce nesting areas for several species of hawks and owls.

Table 14 – Animal Species in Wasco County

A = Abundant F = Few C = Common R = Rare U = Unknown											
	Habitat Types							Use Period			
	Mixed Conifer	Mixed Conifer Oak	Pine - Oak	Oak - Grass	Grass – Shrub Juniper	Riparian	Agricultural	Spring	Summer	Fall	Winter
Bird Species											
Killdeer					C	C		X	X	X	X
Mallard Duck						C	C	X	X	X	X
Wood Duck						F		X	X	X	X
Turkey Vulture	C	C	C	C	C	C	C	X	X		
Bald Eagle	F	F	F	F	F	F	F	X		X	X
Rough-legged Hawk	F	F	F	F	C	F	C			X	X
American Kestrel	C	C	C	C		C	C	X	X	X	X
Long-eared owl	C	C	F	C	F	F	F	X	X	X	X
Screech owl	F	C	F	C	F	F	F	X	X	X	X
Great-horned owl	C	C	C	C	C	C	C	X	X	X	X
Merriam's Turkey	C	C	C	C		C		X	X	X	X
California Quail	C	C	C	C	C	C	C	X	X	X	X
Ring-necked Pheasant		F	F	F	F	C	C	X	X	X	X
Mourning Dove		C	C	C	C	C	C	X	X	X	X
Rock Dove		C	C	C		C		X	X	X	X
Common Nighthawk	C	C	C	C	C	C	C	X	X		
Belted Kingfisher					F	C		X	X	X	X
Common Flicker	C	C	C	C	F	C	C	X	X	X	X
Lewis Woodpecker	C	C	C	C	F	C	C	X	X	X	X
Downy Woodpecker	C	C	C		F	C		X	X	X	X
Yellow Bellied Sapsucker	F	F	F			F		X	X	X	X
Western Kingbird	F	F	F		F	F	F	X	X		
Western Flycatcher	F	F	F		F	F	F	X	X		
Ash-throated Flycatcher	F		F		F	F	F	X	X		
Western Wood Pewee	F	F	F		F	F	F	X	X		
Horned Lark			C	C	C	C	C	X	X	X	X
House Wren	C	C	C		C	C	C	X	X		
Winter Wren	C	C	C			C	C			X	X
Bewick's Wren	F	F	F			F		X	X		
Rock Wren	F	C	F	C	C	F	F	X	X		
Hermit Thrush	C	C	F			F		X	X		

Fox Sparrow	F	C	C			C	C	X	X	X	X
Song Sparrow	F	C	C			C	C	X	X	X	X
Canada Goose						C	C	X	X	X	X
Pintail						F	F			X	X
American Widgeon						C	C			X	X
Blue Winged Teal						F	F			X	X
Cinnamon Teal						F	F	X	X	X	X
Green-winged Teal						F	F	X	X	X	X
Common Goldeneye	F					F		X	X	X	X
Bufflehead						F		X	X	X	X
Harlequin Duck						F		X	X	X	X
Common Merganser						C		X	X	X	X
Hooded Merganser						F		X	X	X	X
Goshawk	F	F				F		X	X	X	X
Coopers Hawk	C	F	C	F	F	C	C	X	X	X	X
Sharp-skinned Hawk	C	F			F	C	F	X	X	X	X
Osprey						F		X	X		
Ruffed Grouse	C	C	C			C		X	X	X	X
Blue Grouse	C	C	C			C		X	X	X	X
Spotted Owl	R							X	X	X	X
Great Blue Heron						C	C	X	X	X	X
American Coot						C		X	X	X	X
Common Snipe						F				X	X
Poor-will	F		F			F	F	X	X		
Hairy Woodpecker	F	F	F					X	X	X	X
Alder Flycatcher	F					F	F	X	X		
Bank Swallow			C	C		C	C	X	X		
Clark's Nutcracker	F	F	F			F				X	X
Townsend's Solitaire	C					C	C	X	X		
Loggerhead Shrike			F		F		F	X	X	X	X
House Finch		C	C	C	C	C	C	X	X	X	X
Western Grebe						C		X	X	X	X
Marsh Hawk					F	F	F	X	X	X	X
Hungarian Partridge					F	F	C	X	X	X	X
Ferruginous Hawk					R	R	R			X	X
Swainson's Hawk					F	F	F	X	X	X	X
Golden Eagle	F		F		F	F	F	X	X	X	X
Chukar Partridge					C	C	C	X	X	X	X

Prairie Falcon					F	F	F	X	X	X	X
Sparrow Hawk		F	C	C	C	C	C	X	X	X	X
Burrowing Owl					F	F	F	X	X		
Red-shafted Flicker	F	C	C	C	F	C	F	X	X	X	
Red-Tailed Hawk	C	C	C	C	C	C	C	X	X	X	X
Eastern Kingbird				F	F	F	F	X	X		
Say's Phoebe				F	F	F	F	X	X		
Sage Thrasher					F			X	X		
Yellow Warbler	C	C	F			F	F	X	X		
Common Yellowthroat	C	C				F		X	X		
MacGillvray's Warbler	C	C				F	F	X	X		
Wilson Warbler	C	C				F	F	X	X		
Nashville Warbler	F					F	F	X	X		
Yellow-rumped Warbler	F					F	F	X	X		
Black-throated Gray Warbler	F					F	F	X	X		
House Sparrow	C	C	C	C	C	C	C	X	X	X	X
Western Meadowlark		C	C	C	C	C	C	X	X	X	X
Red-winged Blackbird		C	F	F	C	C	C	X	X	X	X
Brewer's Blackbird	F	C	F	F	C	C	C	X	X	X	X
Brown-headed Cowbird		C	F	C	C	C	C	X	X	X	X
Northern Oriole		C	F			F	F	X	X	X	X
Western Tanager	F					F	F	X	X		
Evening Grosbeak	C	F				C	C	X	X	X	X
Lazuli Bunting	F	F	F		F	F		X	X		
Purple Finch	F	F	F	F		F	F	X	X		X
American Goldfinch	C	C	F	C	F	F	F	X	X		
Rufous-sided Towhee	C	C	C	C	C	C	C	X	X	X	X
Savannah Sparrow		C	F	C	C	F	F	X	X		
Vesper Sparrow		C	F	C	C	F	F	X	X	X	
Lark Sparrow		C	F	C	F	F	F	X	X	X	
Dark-eye Junco	C	C	C		F	C	C	X	X	X	X
Chipping Sparrow	F	C	F	C	F	F	F	X	X		
White-crowned Sparrow		C	C	C	C	C	C	X	X	X	X
Hummingbirds	C	C	C	F	F	C	C	X	X		
Pine Siskin	C	C				F		X	X		
Mountain Quail	C	F	F	F	R	C		X	X	X	
Barn Swallow		C	C	C	F	C	C	X	X		
Violet-green Swallow	C	C	C	C	C	C	C	X	X		

Tree Swallow	C	C	F		F	F	F	X	X		
Stellar's Jay	C	C	C	C	F	C	C	X	X	X	X
Scrub Jay	C	F	F	F	F	C	F	X	X	X	X
Black-billed Magpie		C	F	C	C	C		X	X	X	X
Common Raven	C	C	C	C	C	C	C	X	X	X	X
Common Crow	C	C	C	C	C	C	C	X	X	X	X
Black-capped Chickadee	C	C	C		F	C	C	X	X	X	X
Common Bushtit	C	C	F		F	F		X	X	X	X
Dipper						C		X	X	X	X
White-breasted Nuthatch	C	C	F			C		X	X	X	X
Brown Creeper	C	C	F	F	F	C		X	X	X	X
Red-breasted Nuthatch	C	C				C		X	X	X	X
Grasshopper Sparrow				C				X	X		
American Robin	C	C	C	C	C	C	C	X	X	X	X
Varied Thrush	C	C				C	C	X	X	X	X
Swainson's Thrush	C	C				C		X	X	X	
Western Bluebird	C	C	C	C	F	C	C	X	X		
Mountain Bluebird	C	C		C	F	C		X	X	X	X
Golden-crowned Kinglet	C	C				C		X	X	X	X
Ruby-crowned Kinglet	C	C				C		X	X	X	
Bohemian Waxwing	C	C				F	F	X	X	X	X
Cedar Waxwing	C	C				F	F	X	X	X	
Starling	C	C	C	C	C	C	C	X	X	X	X
Vaux's Swift	F				F	F	F	X	X		
Solitary Vireo	C	C	F			F	F	X	X		
Orange-crowned Warbler	C	C	F			F	F	X	X		
Sage Sparrow	F	C	F	C	F	F	F	X	X	X	X
Short-eared Owl	F	C	F	C	F	F	F	X	X	X	X
Amphibians Species											
Northern Long-Toed Salamander						U		X	X	X	X
Western Toad	F	F			F	F		X	X	X	X
Pacific Tree Frog	C					C	F	X	X	X	X
Rough-skinned Newt	C					C		X	X	X	X
Spotted Frog						F		X	X	X	X
Leopard Frog						F		X	X	X	X

Reptiles												
Painted Turtles						F			X	X	X	X
Northwestern Fence Lizard	C	C	C	C	F	C	C		X	X	X	X
Western Shink	F	F	F		F	F	F		X	X	X	X
Oregon Alligator Lizard		F	F			F	F		X	X	X	X
Rubber Boa						U			X	X	X	X
Sharp-tailed Snake		U	U			U			X	X	X	X
Stripped Whipsnake		U	U		F	U			X	X	X	X
Western Yellow-bellied Racer		U	U			U			X	X	X	X
Great Basin Gopher Snake	U	U	U	U		U			X	X	X	X
Pacific Gopher Snake		C	C	C		C	C		X	X	X	X
Valley Garter Snake		C	C	C		C	C		X	X	X	X
Wandering Garter Snake					U	U			X	X	X	X
Northern Pacific Rattlesnake	F	F	F	F	F	F	F		X	X	X	X
Western Ring-necked Snake	F	F	F	F	F	F	F		X	X	X	X
Great Basin Fence Lizard					F				X	X	X	X
Sagebrush Lizard	U	U	U	U	F	U	U		X	X	X	X
Side-blotched Lizard	U	U	U	U	F	U	U		X	X	X	X
Western Whiptail	U	U	U	U	U	U	U		X	X	X	X
Rocky Mt. Rubber Boa	U	U	U	U	U	U	U		X	X	X	X
Bullsnake			C	C	C	C	C		X	X	X	X
Night Snake	U	U	U	U	U	U	U		X	X	X	X
Mammals												
Mule Deer					C	C	C		X	X	X	X
Blacktail Deer	C	C	C			C	C		X	X	X	X
Coyote	C	C	C	C	C	C	C		X	X	X	X
Bobcat	F	F		F	F	F			X	X	X	X
Raccoon	C	C	C		F	C	C		X	X	X	X
Long-tailed Weasel	F	F			F	F	F		X	X	X	X
Badger		F		F	C				X	X	X	X
Striped Skunk	C	C	C	C	F	C	C		X	X	X	X
River Otter					F	F			X	X	X	X
Mink					F	C			X	X	X	X
Beaver						C			X	X	X	X
Muskrat			F			F			X	X	X	X
Merriam Shrew					U				X	X	X	X
Vagrant Shrew	U	U	U	U	U		U		X	X	X	X

Water Shrew					U			X	X	X	X
Pacific or Coast Mole	U	U			U	F	F	X	X	X	X
Little Brown Myotis	U	U	U		U	U	U	X	X	U	U
Fringed Myotis	U	U	U		U	U	U	X	X	U	U
California Myotis	U	U	U		U	U	U	X	X	U	U
Western Harvest Mouse					C			X	X	X	X
Canyon Mouse					C			X	X	X	X
Deer Mouse	F	C	C	C	C		C	X	X	X	X
Northern Grasshopper Mouse					C			X	X	X	X
Bushy-tailed Wood Rat		C	C		C	C	C	X	X	X	X
Sagebrush Mole					U			X	X	X	X
Montane Meadow House					U			X	X	X	X
Norway Rat					F	C	C	X	X	X	X
House Mouse			C	C	F	C	C	X	X	X	X
Western Jumping Mouse			F	F	F			X	X	X	X
Opossum		F				F	R	X	X	X	X
Dusky Shrew	U	U	U	U			U	X	X	X	X
Trowbridge Shrew	U	U	U				U	X	X	X	X
Pacific Mole	U	U					R	X	X	X	X
Yuma Myotis	U	U	U				U	X	X	U	U
Spotted Skunk	F	F	F	F	R	F	F	X	X	X	X
California Ground Squirrel	C	C	C	C	F	C	C	X	X	X	X
Yellow Pine Chipmunk	C	C	C				C	X	X	X	X
Townsend Chipmunk	C	C	C				C	X	X	X	X
Small-footed Myotis	U	U	U		U	U	U	X	X	U	U
Hairy-winged Myotis					U			X	X	X	X
Long-eared Myotis	U	U	U		U	U	U	X	X	U	U
Silvery-haired bat	U	U	U		U	U	U	X	X	U	U
Big Brown Bat	U	U	U		U	U	U	X	X	U	U
Western Pipistrelle	U	U	U		U	U	U	X	X	U	U
Pallid Bat	U	U	U		U	U	U	X	X	X	X
Lump-nosed Bat					U			X	X		
Blacktailed Hare					R			X	X	X	X
Whitetailed Hare					F		F	X	X	X	X
Mountain Cottontail	F	C	C	C	C	C	C	X	X	X	X
Pygmy Rabbit	F	F			F	F	F	X	X	X	X
Yellow-bellied Marmot					F			X	X	X	X
Belding Ground Squirrel					C		F	X	X	X	X

Townsend Ground Squirrel					C		F	X	X	X	X
Least Chipmunk	F	F			F			X	X	X	X
Northern Pocket Gopher	C	C	C	C	C	C	C	X	X	X	X
Great Basin Pocket Mouse					U			X	X	X	X
Ord Kangaroo Rat					F			X	X	X	X
Western Gray Squirrel	C	C	C			C	C	X	X	X	X
Chickaree	C	C				C		X	X	X	X
Northern Flying Squirrel	F	F				F		X	X	X	X
Longtail Vole	C	C		C		C	C	X	X	X	X
Oregon Vole	C	C		C		C	C	X	X	X	X
Norway Rat						C	C	X	X	X	X
Black Rat						C	C	X	X	X	X
Porcupine	C	C	C	C	C	C	C	X	X	X	X
Snowshoe Hare	C							X	X	X	X
Black Bear	C							X	X	X	X
Mountain Lion	F	F	F					X	X	X	X
Rocky Mountain Elk	C	C	C	C		C	C	X	X	X	X
Pika	C							X	X	X	X
Nuttall Cottontail	C	C		C		C		X	X	X	X

The forested regions of the western portions of the county provide winter habitat for the deer and elk that range there from higher elevations. Migrational movements range from a few hundred feet to several miles. The winter range area varies in size depending on winter weather conditions and snow depth. Although much of the range area is in public ownership, many of the lower valley areas are now largely settled by private owners. Maintenance of the remaining big game winter range is necessary if viable herds of deer and elk are to remain in these portions of the county.

Also ranging in these forested areas are black bear, cougar; migratory birds, northern bald eagles and other species. Many of these species have large ranging requirements and feed on deer mortalities. Proper management and maintenance of these species includes maintaining road less areas and preserving key stands of old timber.

Timber management on forest land has both beneficial and detrimental effect on wildlife species. Clear-cutting methods have increased habitat for big game species but have at the same time eliminated habitat for some bird and mammal species. Consequently, proper timber management is essential.

In recent years, the productive pine-oak habitat has been undergoing development into recreational subdivisions. Road access, off road vehicles and free-ranging dogs can have detrimental effects on animals utilizing these areas. Harvesting of old growth pine will diminish necessary habitat for animals such as the introduced Merriam's turkey, which has a definite preference for pine as a food source and roosting area.

Riparian habitats are very sensitive to adverse impacts, as these areas serve a great number of wildlife species in a variety of ways. Not only does this vegetation provide habitat, but is instrumental in maintaining water quality and preventing soil erosion. In some parts of the county, particularly the eastern and southern portions, riparian habitat is scarce and must be protected.

Livestock grazing has had a tremendous effect on vegetative cover along streams. Intensive grazing has caused a decline of large native grasses, such as blue brush wheatgrass and Idaho fescue. The Columbian sharp-tailed grouse, which was associated with native bunchgrass and adjoining bushy areas, has disappeared. Heavy grazing of livestock and deer in the summer has an adverse impact on wintering deer and other wildlife species. Fires, as well as misuse and over-use of riparian habitats by man also have tremendous detrimental effects.

Figure 16 shows areas of sensitive big game winter range and riparian habitat. These areas were determined through research by the Oregon Department of Fish and Wildlife.

4. Unique Habitats

The unique rock formations, rock slides and overall variable terrain features of the southern portion of the county and along the Deschutes, John Day and

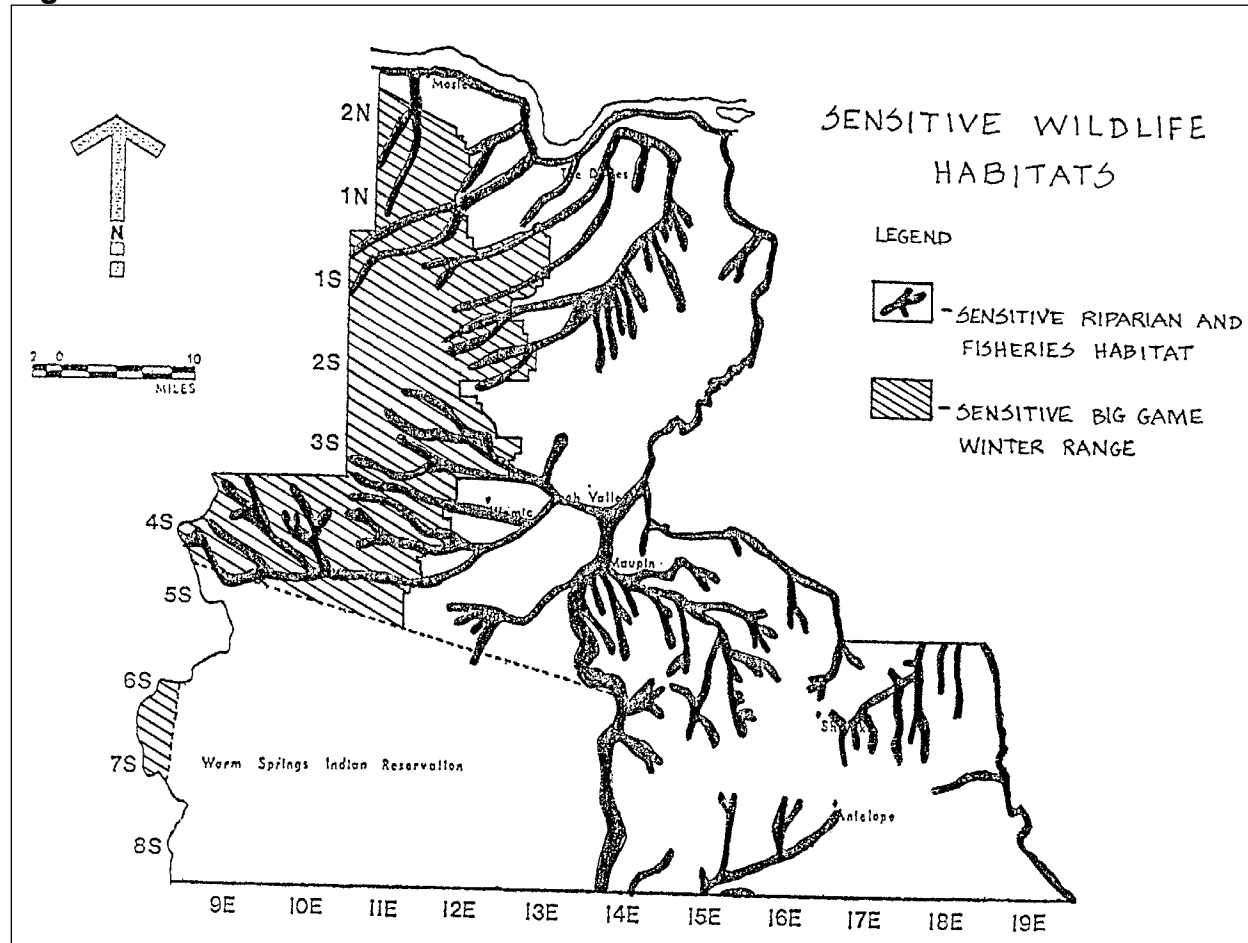
Columbia Rivers provide an important and unique wildlife habitat. Some wild-life species are directly associated with rock formations as a result of adaptation. An example is the chukar part-ridge. Rocky, steep terrain is an integral part of good chukar habitat, as these areas are utilized for shade, cover and escape routes. Other species closely associated with rock formations include bobcat, porcupine, wood rat, cliff swallow, rock and canyon wrens and the rattlesnake. Golden eagles and bald eagles nest in rock outcrops, cliffs and snags along the John Day and Deschutes Rivers, as do burrowing owls and the great blue heron. Osprey nest and feed along the Deschutes and Columbia.

Oregon white oak is a common deciduous tree species in central Wasco County, but it is considered to be a unique entity, as there is little in the remainder of eastern Oregon. Older age class oaks provide many nest cavities for a wide range of non-game wildlife species. Several species directly associated with Oregon white oak include the Lewis woodpecker, silver gray squirrel and Merriam turkey.

5. Land Use Conflicts and Resolutions

The type and severity of conflicts between wildlife and other land uses vary depending upon the habitats and land use involved. Conflicts to habitat frequently results in habitat loss or degradation and harassment which reduce animal numbers and correspondingly recreational opportunities. Land uses most compatible with Wasco County's fish and wildlife resources include open space, agriculture and forest. Land use designations which maintain large minimum lot size result in low residential densities and reduced conflicts between habitats and human activities. It is important to note that valuable habitat is found throughout the County, not just in those areas identified as sensitive.

Figure 16 – Sensitive Wildlife Habitats



Source: Department of Fish & Wildlife

The conflicts with wildlife in sensitive habitat such as big game winter ranges, riparian, and salmonid spawning areas are identified and protected by various means. Special consideration will be given to fish and wildlife concerns in these areas when conflicting uses occur. Zoning and conditional uses will be used to further maintain or enhance fish and wildlife habitat.

Much of the sensitive winter range (see Map 16) is on, or adjacent to, private lands. Conflicts occur when wintering big game migrate to the lowlands and cause damage to fencing and agricultural crops. In an attempt to reduce damage from big game, the Department of Fish and Wildlife has been obtaining lands through purchase and lease agreements. Many big game now winter in the White River Wildlife Management Area shown in Figure 17.

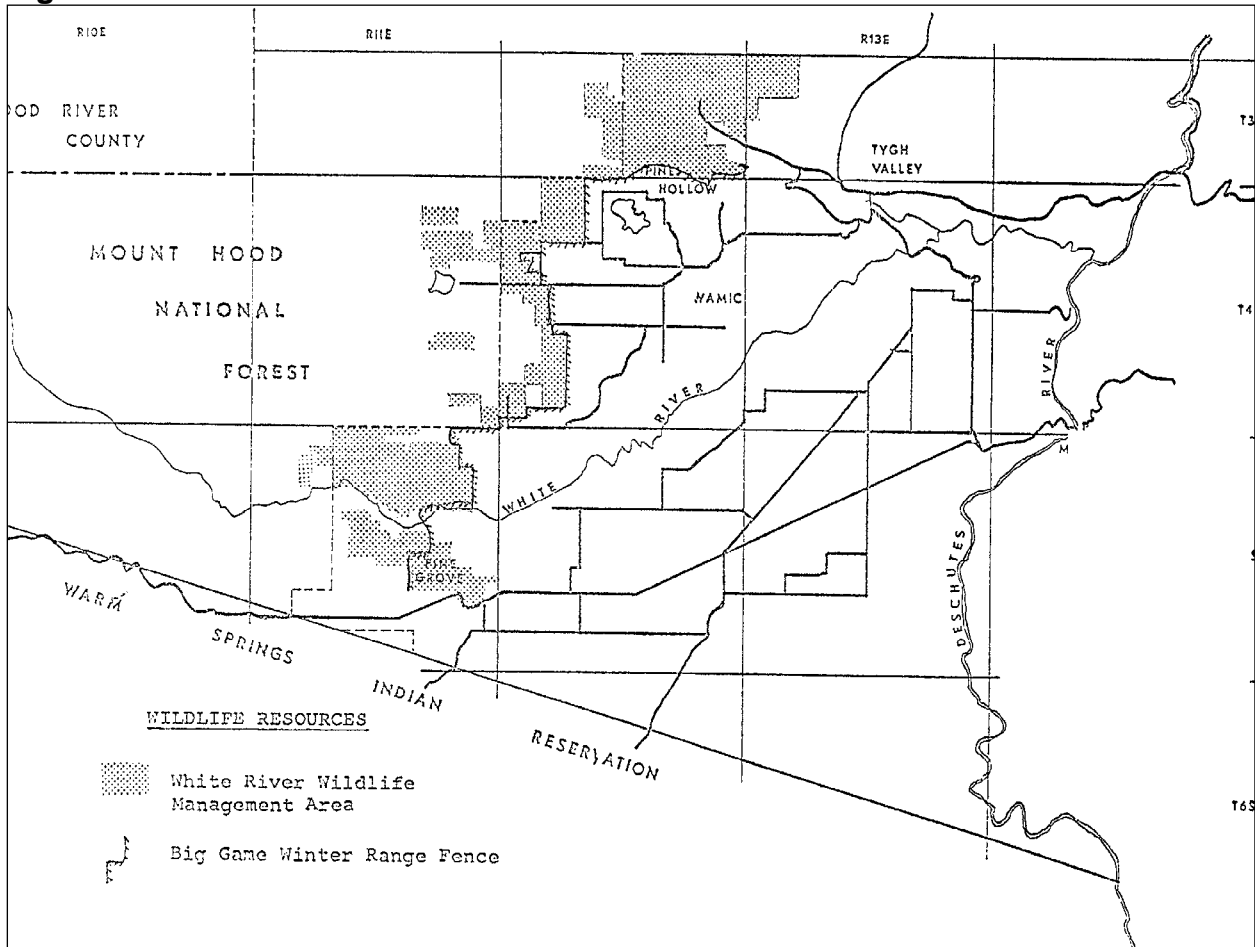
The White River Management Area was initiated in 1953 by what was then the Oregon State Game Commission. It is a 25,000 acre project which not only provides big game winter range, but also recreational and agricultural uses such as fishing, hunting, picnicking, livestock grazing, timber harvest, fur-trapping, horseback riding, and share-crop wheat production.

A fence along the management area boundary has been partially constructed to restrict big game movement onto private lands. The Department's goal is to maintain deer populations on agricultural lands at levels that are compatible with agricultural and residential uses.

There are several means by which landowners can coordinate with the Department of Fish and Wildlife to achieve this goal. Each is briefly discussed below. This information was obtained by discussion with Department of Fish and Wildlife personnel, John Beck and Jim Torland, on September 2, 1980. Detailed information can be obtained from the local Department of Fish and Wildlife.

- a. Damage control hunt: These hunts are tailored to meet the needs of landowners in specific areas. Farmers must agree to allow hunting on their properties. The duration of these hunts varies with the type of winter and population numbers in the area.
- b. Kill permits: Landowners may be issued permits to kill a specified number of deer, or elk, as agreed upon by the Department of Fish and Wildlife prior to issuance.
- c. Hazing permits: Allows the landowner to shoot to scare only. Fish and Wildlife Department personnel may use helicopters, cars, shotguns and even fire-crackers to scare wildlife from the area.

Figure 17 – Wildlife Resources



- d. Repellents: The Department of Fish & Wildlife may utilize or authorize the usage of odiferous repellents applied to trees, orchards and plants to repel big game.
- e. Fencing: The Department will provide small amounts of fencing free of charge and will participate in a cost-share program to provide fencing for large acreages. The Department will currently pay up to \$7.50 per rod (one rod equals 16.5 feet) of fencing, with the landowner providing the additional cost and labor. The Department will also research and provide cost estimates for fencing supplies.

6. Fisheries Habitat

The fisheries resources in Wasco County can be broadly broken into six significant habitat types: the Columbia River, the backwater ponds of the Columbia, the Fifteenmile Creek drainage, the Deschutes River, the Deschutes River tributaries and lakes and reservoirs. The diversity of aquatic habitat provided by these water bodies supports an even wider variety of fish species. These species and their habitats are shown in Table 15, and discussed below.

a. The Columbia River:

The Columbia River is probably the single greatest fisheries resource in the Pacific Northwest. In recent years, the valuable anadromous salmonids in the Columbia River have been faced with increasing problems. At present, in the area between the Bonneville and the John Day dams, tens of thousands of adult salmonids are unaccounted for each year, probably largely due to mortalities from dam operations.

Juvenile fish suffer excessive delays during their down-stream migration through the numerous slow-moving Columbia River Reservoirs. Unscreened turbine intakes at most Columbia River dams allow a large percentage of the juvenile migration to pass through the turbines often killing large numbers.

Adult salmon and steelhead trout migrating up the Columbia River continue to face delays in passing some dams. These delays can be critical to those fish that are exposed to excessive river temperatures for an extended period. The warming of the water in the slow-moving Columbia River Reservoirs is favorable to outbreaks of bacterial and fun-gal infections. These infections can result in the death of the fish before they are able to spawn.

To date, dams on the main stream Columbia and Snake Rivers and their tributaries, have reduced by one-half the natural habitat available to Columbia Basin salmon and steelhead. Fortunately, artificial propagation has compensated for some of this loss and now accounts for an estimated fifty percent of the salmon and steelhead produced in the Columbia Basin.

Table 15 – Fish Species and Habitats

	Columbia River	Deschutes River	White River	Fifteenmile Creek	Eightmile Creek	Fivemile Creek	Dry Creek	Tygh Creek	Badger Creek	Jordan Creek	Little Badger Creek	Threemile Creek	Rock Creek	Clear Creek	Frog Creek	Crane Creek	Harlow Creek	Gate Creek	Wapinitia Creek	Nena Creek	Eagle Creek	Oak Brook Creek	Buckollow Creek	Deep Creek	Stag Canyon	Cove Creek	Brocher Creek	Trout Creek	Ward Creek	Antelope Creek	Bakeoven Creek	Columbia Bacwkater Podnds	
A = Abundant F = Few C = Common R = Rare																																	
Game Species																																	
Chinook Salmon	A	A	F																				R								R	C*	
Steelhead	A	A	C	F	R														F	F	F	F	A	C	F	R	F	C	F	F	A	C*	
Coho Salmon	A	A	C	C	F	R																											C*
Chum Salmon	R																																
Sockeye Salmon	A	C																															F*
Rainbow Trout	C	A	A	A	A	C	F	A	A	A	F	C	C	A	C	C	C	C	F	F	F	F	A	A	F	F	F	C	F	F	A	F	
Cutthroat Trout	R			R	R	R									C																		
White Sturgeon	A																																
Green Sturgeon	F																																
Mountain Whitefish	A	A	C																														
American Shad	A																																
Channel Catfish	C																																C
Brown Bullhead	A																																A
Walleye	C																																C
Yellow Perch	C																																C
Largemouth Bass	A																																A
Smallmouth Bass	A																																A

The utilization of the spillways cause nitrogen levels in the water to reach 135 percent to 140 percent saturation, well above the critical thresholds for both adult and juvenile salmon and steelhead. Unscreened turbines account for significant mortalities ranging from eight to fifteen percent per dam.

Juvenile salmon and steelhead are faced with other threats in their downstream migration. Large predator populations, including the voracious Walleye Pike, which has recently found its way into the Columbia River, devour untold numbers.

The future of the anadromous fish species utilizing the Columbia River Basin will depend upon the efforts of numerous state (Idaho, Washington, and Oregon) fishery agencies, federal resource agencies, Army Corps of Engineers and the Bonneville Power Administration, and the coordination of these agencies with the private energy and fisheries sectors.

The outlook for summer steelhead, like that for spring and summer Chinook, is not good. The potential exists, however, for substantial recovery, if downstream migrant passage mortalities at main stream dams can be greatly reduced and additional mitigating measures provided.

b. Backwater Ponds of the Columbia River:

Production of warm water game fish in the Columbia River is affected by the fluctuating pool levels behind The Dalles and Bonneville Dams. Unfortunately, the backwater ponds adjacent to Interstate 84 are connected to the Columbia River with road culverts and, thus, fluctuate with the river. These fluctuations result in sporadic habitat change and reduction that may have detrimental effects on the resident fish populations.

c. Fifteenmile Creek Drainage:

Low summer stream flows, excessive water withdrawal, and extreme stream temperatures during the summer months of the year, are the most limiting fish production factors in the Fifteenmile Creek watershed. The excessive silt loads often carried by streams in this portion of the Fifteenmile system have drastically reduced the amount of quality of gravel available for resident and anadromous trout spawning. This silt originates from cultivated fields and stream banks during periods of heavy precipitation and run-off.

Much of the silt movement in this portion of the watershed could be checked with proper soil conservation practices. Many of the smaller intermittent feeder drainages could reduce silt movement if the vegetation in the bottom of the drainage was permitted to recover from overgrazing.

Deep, fertile bottomland within the flood plains of this watershed are often cultivated and planted with crops that are poorly suited for soil stabilization. These deep soil areas are often extremely vulnerable to flood erosion. Great quantities of valuable top soil can be lost during a short period of high water.

Preservation and/or re-establishment of riparian vegetation is essential to help alleviate the problems plaguing the Fifteenmile Creek watershed. Riparian vegetation not only provides good stream bank erosion control, but it also improves stream water quality. Future water quality and fish production within this system will be dependent upon good stream corridor management.

Water storage for irrigation, flood control and minimum stream flow would be beneficial within the Fifteenmile Creek watershed where not in conflict with anadromous fish migrations. Studies will have to be made to determine where these sites could be located.

d. Deschutes River:

The high quality water and stable flows of the Deschutes River provide optimum conditions for fish production. The river has a diverse fish population comprised of anadromous and resident game species, as well as non-game species.

Major salmon, steelhead and resident trout spawning grounds are located throughout the reach of the Deschutes River. Figure 18 is a periodicity chart for salmon, steelhead and trout in the river.

The aquatic habitat of the Deschutes River is in fairly good condition. It is imperative that the present flow of the river not be compromised. Any further reduction in stream flow can only have a detrimental effect on the stream's valuable fishery.

The riparian habitat along this portion of the river has been deteriorating for many years. In many areas, the dominant overstories of hackberry and alder have been unable to successfully reproduce as a result of excessive livestock overgrazing. Many dead snags along the river bear witness to the gradual demise of this segment of the riparian corridor.

Throughout this section of river there is evidence of stream bank erosion. In most instances, the erosion is a direct result of livestock trampling or wave action from passing power boats.

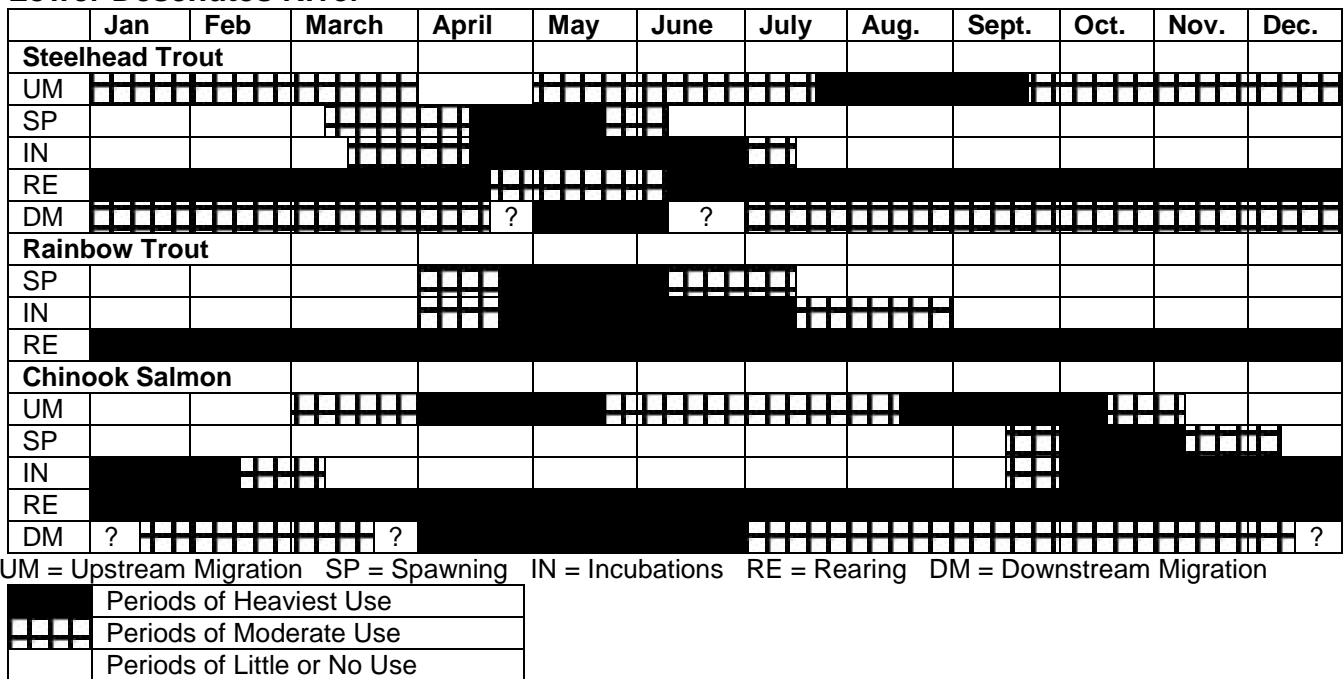
Fires, started by the railroad or negligent individuals, are a continual habitat threat along the Deschutes River. Valuable riparian habitat is destroyed each year by these remote blazes.

Reductions in flow of the Deschutes River would be detrimental to fish production. A report of a 1960's study, (Lower Deschutes River, Oregon: "Discharge and Fish Environment"), undertaken by the Oregon Game Commission, recommended a minimum Spring flow of 4,800 cubic feet per second, and a Fall flow of 4,500 cfs. The Federal Power Commission has directed the Portland General Electric Company to release a minimum of 3,000 cfs at Pelton Dam, which is below the recommended minimum flows.

e. Deschutes River Tributaries:

The tributary streams of the Deschutes include the following: Buck Hollow Creek, Bakeoven Creek, Trout Creek, Ward Creek, Antelope Creek, White River, Nena Creek, Wapinitia Creek, Oak Brook, Eagle Creek, and the streams that flow through Oak, Ferry and Fall Canyons. These streams support relatively small numbers of resident steelhead and trout.

Figure 18 – Periodicity Chart, Steelhead Trout, Rainbow Trout and Chinook Salmon, Lower Deschutes River



Fish production in the Buck Hollow, Bakeoven, and Trout Creek systems is limited by low summer flows and a general lack of good riparian vegetation. These streams may be-come intermittent during the summer months.

Migrations of fish from the Deschutes River into Nena Creek and White River are blocked by the impassable falls within two miles of the Deschutes River. White River and its tributaries above White River Falls support good numbers of resident trout. Good numbers of non-game fish are also found in the lower reaches of the streams, while trout are predominant in the upper reaches low summer stream flows, siltation and excessive summer water temperatures are factors most limiting fish production in the streams that flow through the lower stretches of Oak, Ferry and Fall Canyons. These streams are commonly intermittent during the summer months. Fish production during this "pinch period" is limited to scattered potholes and short sections of flowing water.

These streams regularly transport large silt loads during periods of heavy precipitation. Wheat fields above the Deschutes Canyon rim are the primary sources of this silt.

Riparian vegetation is in poor condition along sections of these streams as a result of unregulated livestock grazing. Periodic flash flood conditions in these short drainages have damaged considerable riparian vegetation; however, regeneration of this stream cover is often impossible as a result of livestock "camping" on these stream bottoms.

Headwater storage projects that would release good minimum flows throughout the summer would be beneficial when not in direct conflict with anadromous fish. Good riparian vegetation, encouraged by the stable flows, would provide important stream cover and have a moderating effect on high summer water temperatures.

f. Lakes and Reservoirs:

The high mountain, walk-in lakes, such as Big Twin, Catalpa, and Little Boulder Lake, are stocked with trout annually or every other year. Clear Lake, Frog Lake, Pine Hollow Reservoir, and Rock Creek Reservoir, and other impoundments are stocked annually with trout.

N. Environmental Considerations

1. Air Quality

Wasco County's air quality is considered good by the Department of Environmental Quality, State of Oregon. It complies with all federal and state air quality guidelines. Air pollution rarely goes over the primary or secondary federal and state standards.

The major sources of air pollution in Wasco County and their yearly emissions are listed in Table 16. Particulate levels are found to be generally higher here than in the Willamette Valley. Wind entrained soil dust is the cause of the higher particulate levels. The nature of the soils in the county, the agricultural practices of dry plowing and disking, and vehicular traffic on unimproved roads are all factors in this type of air pollution. Grain elevators are a source of more localized air quality problems. Table 16 lists the particulate level for: one such elevator in Wasco County.

Although specific data is lacking, observed climatic conditions indicate that conditions are often adverse for air quality management. Due to rapid heat loss during the night, atmospheric temperatures decline. The reduction of warm air stratification lowers the mixing level from several thousand feet to only a few hundred feet, resulting in early morning inversions. During an inversion particulates and contaminants could be trapped and concentrated within a few hundred feet off the ground.

The highest potential for temperature inversions and related pollution problems exists within The Dalles airshed, or "bowl". This "bowl" is centered at The Dalles (100 feet above sea level) and bounded by the surrounding topography (2,000 to 3,000 feet above sea level). This natural basin or "bowl" restricts lateral dispersion of air. Other areas in Wasco County have little potential for air pollution problems.

2. Water Quality

a. Surface Water Quality:

The Columbia, Deschutes, and John Day Rivers are the only streams that are monitored regularly for water quality. Generally, the state and federal standards for water quality are met.

Table 16 – Air Pollution Sources

Source	Particulate	Sulfurous Oxides
Tygh Valley Timber Co.	140.5	0.3
Martin Marietta Aluminum	806.5	528.5
Interior Elevator Co.	200.6	-0-
Light Duty Motor Vehicles	132.6	32.3
Heavy Duty Motor Vehicles	36.2	52.7
Railroads	17.4	39.6
Residential Space Heating	8.0	30.6
Commercial Space Heating	16.2	137.9

Slash Burning	396.1	-0-
Forest Fires	79.2	-0-
Orchard Prunings	29.2	-0-
Total	1952.5 or 12.7% of region total	821.9 or 23.1% of region* total
The Dalles Sampling Station		
	Days Exceeding Primary Air Standard	Days Exceeding Secondary Air Standard
1970	0	6
1971	0	2
1972	0	2
1973	2	2
1974	0	0
1975	0	1

Source: Department of Environmental Quality

*Region includes Crook, Deschutes, Hood River, Jefferson, Klamath, Lake Sherman and Wasco Counties.

The water of the Columbia River is relatively high in dissolved solids. High concentrations of fluoride, sulfate, and calcium ions are also apparent from water quality comparisons. Surveillance of radioactive contamination from upstream nuclear plants has shown that the water has not exceeded acceptable levels for drinking purposes. Following are typical water quality measurements:

Turbidity	1-4 Jackson Turbidity Units.
Color	1-30 Units
Total Alkalinity	30-60 mg/L.
Total Hardness	40-80 mg./L.
Algae Content	0-150/100 ml.
Bacteria Content	5-150/100 ml.
Total Solids	60-90 mg/L.

The water quality in the lower Deschutes River generally met the established standards for ph and for concentrations of dissolved oxygen and total coliforms except on occasions when minor technical violations of the ph and total coil-form levels occurred. These minor deviations from the standards, however, are not known to affect the uses of water for beneficial use.

There are four monitoring stations on the John Day River, although none are within Wasco County. There is no problem with coliform or other pollutants from septic systems due to the lack of development along this river. There are some non-point source water quality problems which are discussed below.

The State of Oregon, Department of Environmental Quality, has completed an assessment of non-point source problems throughout Oregon. It is a response to the Federal Clean Water Act of 1972, and specifically, to Section 208.

Table 17 outlines the non-point source pollution problems on various streams and rivers in Wasco County.

Table 17 – Non-Point Source Pollution

Stream	Streambank Erosion	Sedimentation	Excessive Debris	Water Withdrawal Causing Stream Quality Problem	Elevation Water Temperature	Nuisance Algae or Aquatic Plant Growth
S = Severe M = Moderate						
Mosier Creek	S/M			M	M	M
Mill Creek	S/M	M	M	M	M	
Mill Creek-South Fork	M	M	M	M		
Mill Creek-North Fork	M	M	M	M		
Threemile Creek	S	M		S/M	M	
Fivemile Creek	S/M	S/M		S/M	M	
Eightmile Creek	S/M	M	M	M	M	
Fifteenmile Creek	S/M	M		S/M	M	
Browns Creek	S/M			M		
Ramsay Creek	S/M	M	S	M		
Pine Creek	S	S			M	
Dry Creek	S	S				
Jorden Creek	M	M				
Tygh Creek	M	M	M	M	M	
Badger Creek	M		M	M	M	
Wapinitia Creek	M	M		M	M	
Nena Creek	S/M	S/M			M	
Buck Hollow Creek	M	M			M	
Bakeoven Creek	M			M	M	
Coyote Creek	S	S			M	
Quartz Creek	S	M			M	
Mill Creek	S					
Ward Creek	S	M		M	M	
Deep Creek	M	M			M	
Antelope Creek		M		M	M	
Trout Creek		S		M		
Muddy Creek				S		
Deschutes River	S*	S*				
John Day River	S/M	M		M	M	
White River	M	M		S/M		
Warm Springs River		S			M	

Source: Department of Environmental Quality, 1978

*The problem exists only on a very small stretch of this stream.

b. Sewer and Water Systems:

Communities with public sewerage systems and large industries which discharge waste water must obtain discharge permits from the Department of Environmental Quality. Twelve point source discharge permits have been issued in Wasco County. These permits allow the discharge of waste water into either public waterways or into waste treatment facilities, such as holding ponds. The permit holders are regularly monitored by the Department of Environmental Quality and are continuing to stay within the discharge limits allowed by their permits (Department of Environmental Quality, Bend, Oregon. Telephone conversation, Sept. 29, 1980)

According to the County Health Department, these are a few areas in Wasco County that have problems with septic or water systems. Pine Grove and Shaniko have very thin soils that cannot absorb large amounts of septic effluent. There is also some difficulty obtaining good wells in these areas. A study by the Health Department for the Environmental Protection Agency (EPA) has found that there may have been some pollution of one of the community water systems in Wamic by septic systems. The Environmental Protection Agency will analyze the extent of the problem and make a determination on how to resolve it. Misuse and over-use of septic systems is a problem in the Sevenmile Hill area, according to the Health Department. People who are used to city sewer and water systems may have a tendency to overload their drainfields with too much water at one time. The soils in this area allow for proper drainage and limiting the use of water would alleviate this problem. Other areas needing sanitary sewage disposal facilities in the near future include Tygh Valley and Pine Hollow.

All septic tank waste is handled by private pumpers under Department of Environmental Quality regulations for disposal. To date, no major problems exist.

c. Groundwater Quality:

According to the County Water master, groundwater quality in Wasco County is good. Wells are adequate and there does not appear to be any significant drawdown of water tables. (Tom Paul, Wasco County Watermaster, Sept. 30, 1980)

There is a critical groundwater reservoir beneath The Dalles Urban Area that is currently being man-aged by the Water Resources Department. Excessive use of water from this pool in the 1950's prompted the placement of water restrictions. These restrictions limit the use of this water to residential use only and limit the amounts that can be used.^{51bid}

3. Land Resources Quality

The quality of land resources can be adversely affected by the improper disposal of solid waste. Several dumping areas in the county that have caused problems in the past have since been corrected. There appears to be few environmental problems connected with solid waste disposal in the county at the present time.

Open burning is allowed twice a year, in the winter at the Northern Wasco County Sanitary Landfill, located three miles south of The Dalles. The burning is

closely supervised by the Department of Environmental Quality and the Wasco Rural Fire Department and causes only minimal amounts of air pollution. As there is very little development in the area surrounding the landfill, the environmental impacts are minimal.

The landfill has had inadequate water supplies to meet its needs in the past. Water is needed for the operators who reside at the site, for dust control and for irrigating newly seeded areas. These water needs will increase as the size of the operation increases. The placement of new wells is currently being examined.

The Mid-Columbia Solid Waste Plan: Generation, Disposal and Management, (Mid-Columbia Economic Development District, November, 1975), outlines various other problems with solid waste disposal in Wasco County. Illegal and unsightly piles of refuse in alleys and streets and illegal burning of trash have been noted, possibly due to the fact that only 70 percent of the residents in The Dalles Urban area subscribe to garbage collection service. (pp. 40-41).

The other 30 percent must haul their own garbage to the landfill. Often refuse from private homes may be found in publicly and commercially owned garbage bins. One possible solution to these problems is mandatory garbage collection (p. 42). Re-cycling has also become a viable alternative, particularly in The Dalles area, where newspaper, glass, card board and metal are currently being recycled. (p. 43).

Other problems that plague proper rural area solid waste management are fire control, obtaining adequate revenues for operation and construction of new facilities and land acquisition, refuse collection and transfer to disposal sites and public participation in solid waste control. These difficulties may become more apparent as populations in rural areas increase.

4. Noise Pollution

Due to Wasco County's rural nature, noise pollution is not a serious problem. According to the County Sheriff's Office and The Dalles City Police, very few complaints about noise are received. Most complaints are received in the evening hours and are due to barking dogs or loud music and parties. More complaints (2-3 weekly), are received in the summer months, and are probably due to activities brought about by the longer summer days and the fact that students are out of school.

Additional noise sources that may be nuisances are agricultural equipment, especially large trucks and spray planes, industry and highway traffic; specifically Interstate Highway 84, Union Pacific Railroad, and lumber mills. Because agriculture is a common livelihood in Wasco County, the noise that accompanies it is generally accepted. Relatively few residential areas are affected by the noise from either highway traffic or industries. Generally, these uses are located away from residential neighborhoods.

There is presently no noise ordinance in effect for Wasco County. The City of The Dalles has a noise ordinance that specifies certain hours when noise must be kept at a minimum.

O. Energy

1. Sources

The continued development of energy sources will be important to supply increased energy consumption. The following is a brief discussion of the developed and potential sources of energy in Wasco County.

a. Hydroelectric:

Hydroelectric power will continue to be a major source of energy for the area. Use of dams and storage reservoirs has made it possible to serve virtually all electric power requirements in the past. Most of the hydro power in the region has been developed; therefore, in the future other sources of energy will have to handle increased energy consumption.

Wasco County is served by three electric companies: Northern Wasco County P.U.D., Wasco Electric Co-op, and Pacific Power and Light. All of these companies obtain 100% of their power from the Bonneville Power Administration. Much of this power is produced locally at The Dalles Dam.

b. Pumped Storage:

Pumped storage is basically a refinement of conventional hydro power. It involves storing energy by pumping water into a storage reservoir during off-peak periods, and releasing it when peaking power is most needed. Five potential sites in Wasco County have been inventoried by the Army Corps of Engineers. This includes three sites along the Deschutes River, one near White River, and one in the Sevenmile Hill area. No further investigation has been made of these sites.

c. Thermal:

Thermal generation includes both nuclear and coal-fired plants. It is estimated that by the year 1995, thermal plants will operate as the main source of electric energy, supplemented by hydro power for peak demands. Nuclear plant development is important because its energy source is almost inexhaustible, yet relatively economical. The potential risks to the public from accidents remain controversial and may hamper development and increase costs to consumers. Coal-fired plants have gained some attention after development of a plant near Boardman, Oregon. Coal sources in Wasco County include some low grade coal in the John Day Basin on Dry Creek (Township 8 South, Range 19 East). However, these sources are not presently of suitable quality or quantity for use for energy production.

d. Geothermal:

The Columbia River basalt formation, which covers most of the county, has little potential for geothermal power. However, several areas on the Warm Springs Indian Reservation have some potential. No geothermal energy is presently being utilized in the county.

e. Oil and Gas:

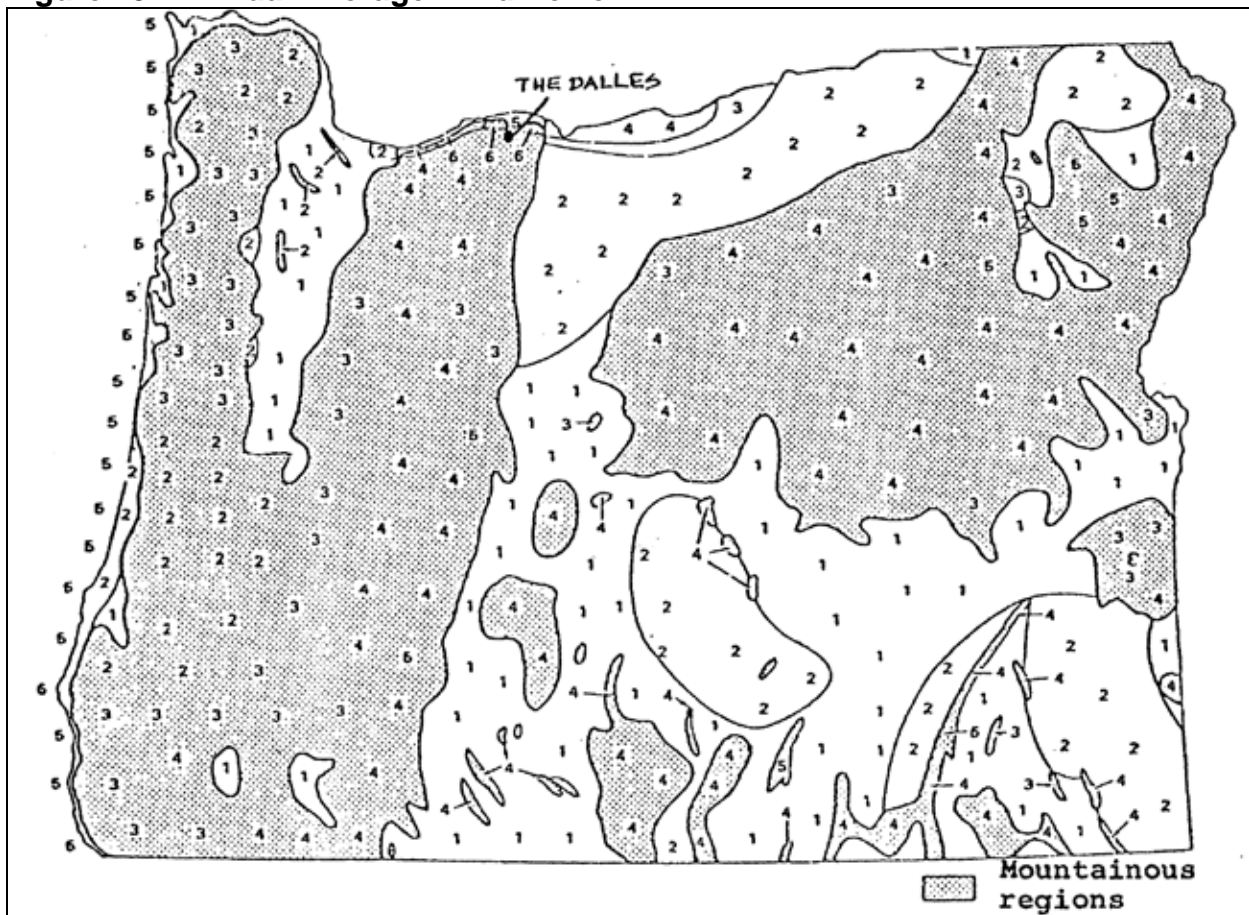
Exploration for oil took place in 1952, west of Dufur and The Dalles. The four exploration wells were drilled by small independent companies, and were dry. No other explorations for oil or gas have taken place.

Suppliers of natural gas in Wasco County include the Northwest Natural Gas Company and the Petrolane-Columbia Gas Service Incorporated. These companies obtain most of their supplies from Canadian sources (60 to 70 percent for Northwest Natural Gas Co.). Additional gas comes from Utah and six wells in Mist, Oregon. The construction of the gas line from Alaska will provide an additional source in the future.

f. Wind:

The utilization of wind for energy in Wasco County appears to be very feasible. Figure 19, taken from the Wind Task Force Final Report to the Oregon Alternate Energy Development Commission, (June, 1980, p. 5), shows that the Columbia Gorge and particularly the hills around The Dalles are some of the best potential sites for wind energy production in Oregon.

Figure 19 – Annual Average Wind Power



Source: Elliott, D.L. and W.R., Barchet. *Wind Energy Resource Atlas Volume I – Northwest Region*, PNL-3195 WERA-1. Richland: Battelle Pacific Northwest Laboratory, 1980.

Table 18 provides the scale for interpretation of the numbers given in figure 14 (p. 6).

Table 18 – Average Wind Power Density and Speed Class*

Wind Power Class	Percent Land Area	33 ft (10 m) aloft		164 ft (50 m) aloft	
		Wind Power Density Watts/m ²	Average Speed** Mph (m/s)	Wind Power Density Watt/m ²	Average Speed** Mph (m/s)
1	84.00	100	9.8 (4.4)	200	12.5 (5.5)
2	11.00	150	11.5 (5.1)	300	14.3 (6.4)
3	N/A	200	12.5 (5.6)	400	15.7 (7.0)
4	2.90	250	13.4 (6.0)	500	16.9 (7.5)
5	.17	300	14.3 (6.4)	600	17.8 (8.0)
6	.01	400	15.7 (7.0)	800	19.7 (8.8)
7	N/A	1000	21.1 (9.4)	2000	26.6 (11.9)

Source: Elliot, D.L. and W.R. Barchet. Wind Ener, Resource Atlas Volume 1 - Northwest Region, PNL-3195 WERA- .Richland: Battelle Pacific Northwest Laboratory, 1980

* Mean wind speed is based on Rayleigh speed distribution of equivalent mean wind power density.

** Average wind speed is for standard sea-level conditions. To maintain the same power density, speed increases of 5 percent per 5000 ft (3 percent per 1000 m) of elevation are required.

According to the report, a wind speed of twelve miles per hour is sufficient for energy generation. This is equivalent Wind Power Class 3. The greater the wind speed, the greater the amounts of electricity that can be generated.

The environmental effects of energy production by wind turbine generators (WTG) are considered to be very minimal (p. 16). These effects are summarized below.

- (1) Siting - WTG's must be placed far enough apart to effectively utilize the wind. This may re-quire a substantial land area. In areas with little development, as little as .41 acres of dedicated land per 300 foot diameter WTG may be required (P. 17). Agricultural activities could occur all around the site right up to the tower. If towers were placed in developed or developing areas, as much as 3.66 acres would be required around each tower (P. 17). Land would also be required for utility lines, access roads, and maintenance buildings.
- (2) Electromagnetic interference - WTG's may cause interference with radio and television trans-missions. Television receiving antenna would have to be within three miles of the WTG for interference to occur.
- (3) Ecology - There is little impact to the flora and fauna of the immediate area. Only the areas altered by the construction of the towers, roads and maintenance facilities would be affected (P. 19).

- (4) Noise - The effects of the low-frequency noise emitted by the WTG is being studied by NASA. The effects are considered to be minimal (P. 20).
- (5) Aesthetics - Often WTG's are placed along ridges and hilltops. In Wasco County, the placement of wind turbines would probably be along cliffs that would make them visible from the Columbia River Gorge. It is doubtful, however, that their presence would be any more visually unappealing than the high tension electrical lines and towers that are already present. They may even become a tourist attraction as the beneficial economic and environmental effects of wind energy become more widely acknowledged and accepted.
- (6) Safety - Hazards could result from a fallen tower or thrown blade. It has been estimated that a blade could be thrown from 500 to 1500 feet. The danger is minimal if the area remains unimproved and has restricted access (P. 21).

The advantages and disadvantages to energy production using wind are many. They are listed in Table 19.

Table 19 – Wind Energy Production Advantages & Disadvantages

#	Advantages	Disadvantages
1	No air or water pollution	Visually unappealing
2	Produces more energy/acre than any other energy source except nuclear, but with far fewer negative externalities	Wind is often inconsistent in speed and direction (and availability)
3	Has little effect on the surrounding land or the ecology of the area	Conflicts of land use are likely as specific siting requirement must be met, due to nature of the areas wind resources
4	Are safer than many other forms of energy production	Initial development cost is high
5	Produces local employment	
6	Requires no waste disposal	
7	Promotes conservation of non-renewable resources	
8	Instills community pride in self sufficiency and promotes energy awareness	

Source: Wind Task Force Final Report to the Oregon Alternate Energy Development Commission, (June, 1980)

g. Solar:

The use of solar energy also has many advantages and disadvantages. Advantages include: simple access to a plentiful and free energy source, few environmental effects and conservation of non-renewable resources.

Disadvantages include: the high initial installation cost; possibility of extended periods of cloudiness or shading of solar collection equipment by trees or other structures, and consequent need for back-up systems.

Use of solar power is a feasible energy alternative that has not had widespread application in Wasco County. This is often due to the high installation costs of solar equipment. These costs can be offset by the savings accrued through the use of this free and renewable energy source.

h. Waste Products:

(1) Solid Waste - Incineration of solid waste to produce energy is not only expensive, but can produce large amounts of air pollution. This method is generally only feasible in areas where large amounts of solid waste must be disposed of in a small land area. This form of energy production is not currently being utilized in Wasco County.

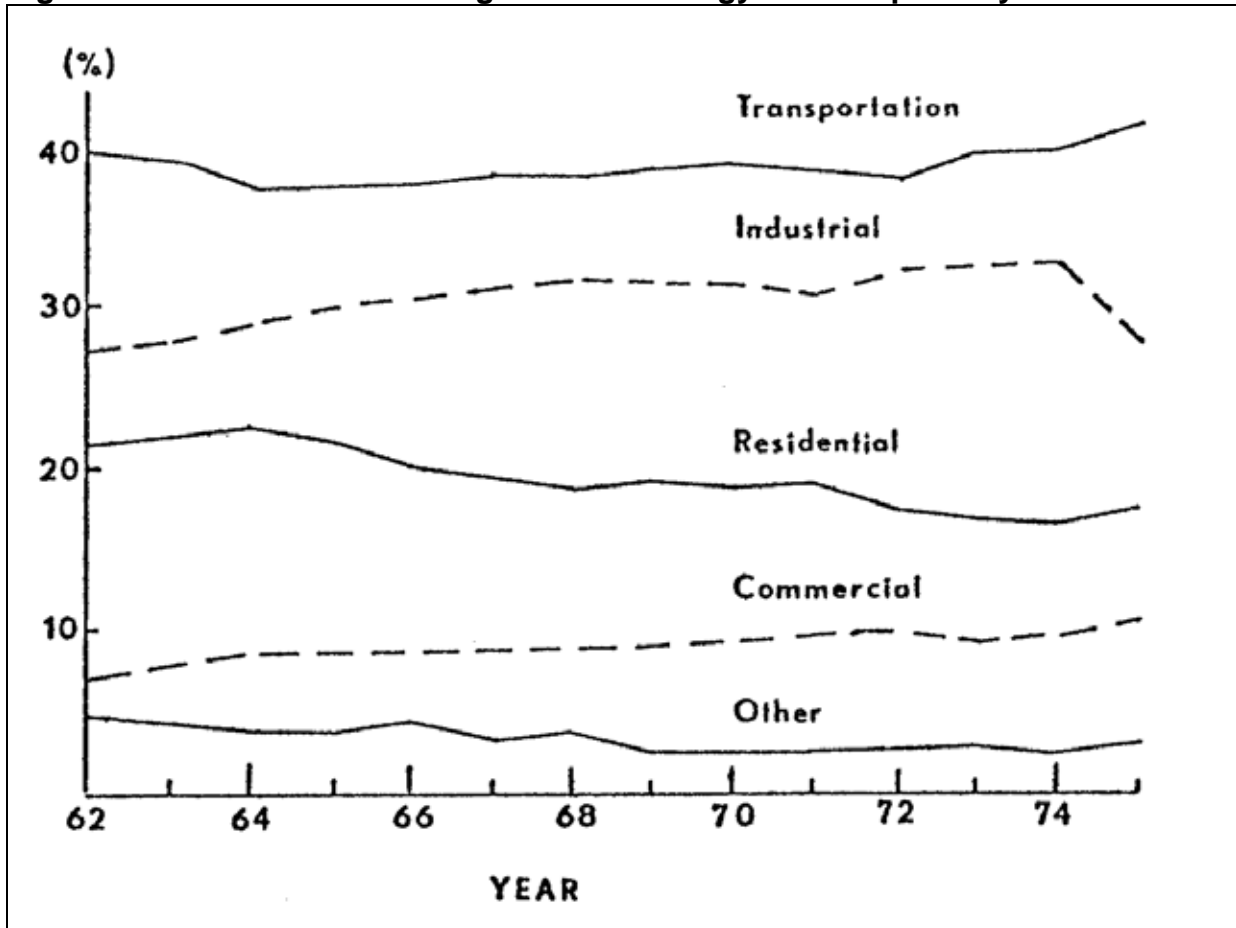
(2) Timber Production Wastes - Only one mill in the county that was contacted used timber production waste to produce energy. The pine mill in Tygh Valley uses chips, shavings and hog fuel to fire the boilers, which run the kiln to dry the lumber. Steam heat helps heat the plant also (Mountain Fir Lumber Co., Tygh Valley, Oregon. October 3, 1980). Use of waste materials represents a substantial savings in electrical costs for the plant.^{7ibid}

(3) Organic Wastes - Use of agricultural wastes to produce energy has been studied by farmers and ranchers in Wasco County. This type of energy production requires large amounts of cheap organic waste, a large initial investment for equipment, a substantial profit and stable market for producers and an assured supply of good standard quality fuel for consumers. None of these conditions can be realized at this time. Perhaps as fossil fuels continue to go up in price, production of energy from agricultural organic wastes will become a feasible alternative.

(4) Sewage - The Dalles Sewage Treatment Plant currently uses methane gas for a portion of its energy needs. The gas is produced during the treatment process and is used to run part of the equipment in the plant.

2. Consumption

It is important to understand trends in the consumption of energy so that adequate land use decisions can be made to affect these trends. Typical energy consumption in Oregon is shown in. Figure 20.

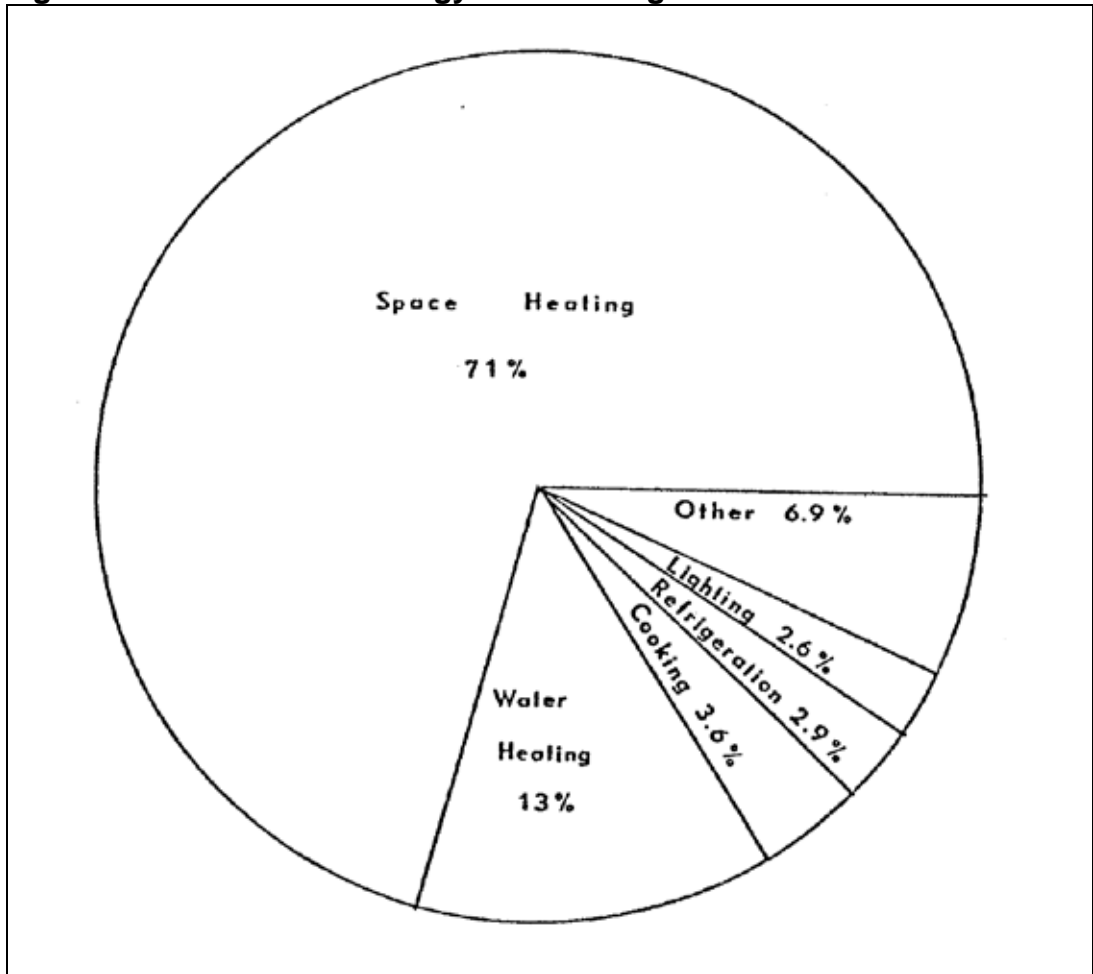
Figure 20 – Historical Percentage of Total Energy Consumption by Sector

Transportation = 40% (3/4 for autos) Industrial = 32% Residential = 17% Commercial = 9%
 Agricultural = 1% Other = 1%

The transportation sector is the largest user of energy. Petroleum products account for almost all of the energy consumed. Growth in agricultural energy consumption will depend on trends in irrigation. There has been a slow increase in agricultural energy consumption in the past (1.6% annual growth rate).

Space and water heating dominate energy use in the residential sector. (See Figure 21.) There is an increase in the amount of electricity and natural gas consumed in residences, with a decrease in petroleum use. Single family residences consume more energy per square foot of floor area than multi-family buildings.

Figure 21 – Residential Energy Uses – Oregon 1970

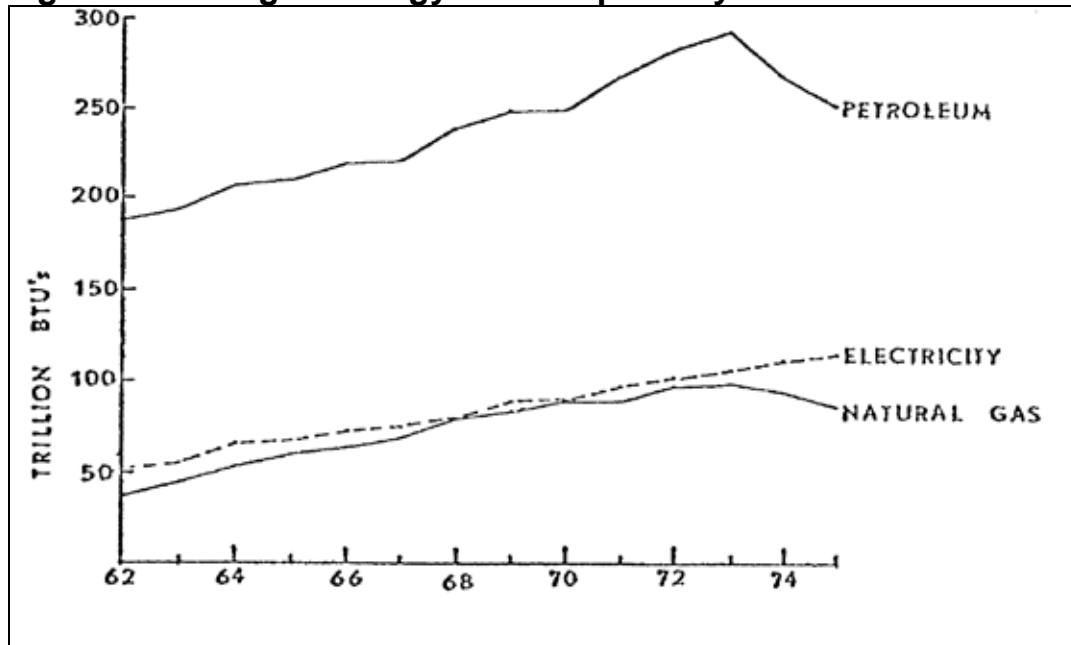


Source: Oregon Energy Future, Dept. of Energy 1978

The commercial sector's pattern of consumption closely resembles use in the residential sector with high energy use for space and water heating. Industrial energy use is very responsive to price fluctuations. A wide range of policy options can influence future industrial energy use.

All sectors consume approximately 57% petroleum, 23% electricity, and 20% natural gas. The trends in this use are shown on the graph in Figure 22.

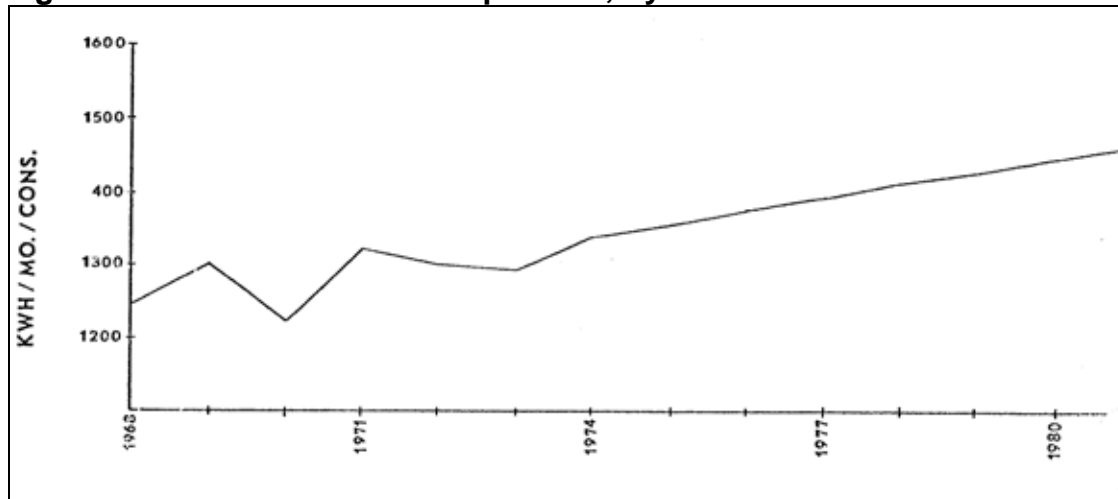
Figure 22 – Oregon Energy Consumption by Source



Source: Oregon's Energy Future

Electrical consumption in Oregon is 78% higher than the national average, which reflects the low cost of electricity and the electric intensity of industries. In rural Wasco County, electrical consumption includes approximately 1400 kilowatt hours per month per consumer (Wasco Electric Cooperative, Inc.). The forecast for increased electrical consumption is shown in Figure 23.

Figure 23 – Wasco Electric Cooperative, System Use Growth



As energy sources become more scarce and expensive, conservation and use of renewable energy resources, (sun, wind, water, waste), will become intense. Conservation is the key: wasteful use of energy is never profitable; no matter how plentiful the source.

Building codes aid the home builder in conserving energy. The addition of thermo pane windows and specified amounts of insulation are instrumental in a building's energy efficiency. Many power and gas companies will do free estimates of where a person's home needs weatherizing. All these factors can help conserve energy.

Recycling, use of bicycles, mopeds, pedestrian walkways and carpooling are all effective means of conserving energy. Local governments need to be responsive to programs which encourage these practices.

CHAPTER 3 POPULATION

The population of Wasco County has seen modest overall growth since 1900.

Table 1 - Population Growth in Wasco County: 1900 – 2000

Year	US Census Bureau 1 April Census Counts	Population Research Center 1 July Census Estimates
1900	13,199	
1910	16,336	
1920	13,648	
1930	12,646	
1940	13,069	
1950	15,552	
1960	20,205	
1970	20,133	
1980	21,732	
1990	21,683	
2000	23,791	
2005		23,935

ORS 195.025(1) requires counties to coordinate local plans and population forecasts. In 2006 Wasco County utilized the most recent population forecasts from the Portland State University Center for Population Research and Census, the State Department of Administrative Services Office of Economic Analysis, the July 2003 Dufur Comprehensive Plan, the January 2006 Maupin Comprehensive Plan, the 2004 City of Mosier Facility Master Plan and the 22 May 2006 ECONorthwest Population Forecast for The Dalles. The following table displays the coordinated population forecast for Wasco County and all of its incorporated cities from 2005 – 2026 based on this information.

Table 2 - 2005 – 2026 Wasco County Coordinated Population Forecast

Year	Antelope	Dufur	Maupin	Mosier	Shaniko	The Dalles	*Unincorporated Wasco County	Total
2005	60	597	450	430	34	15,184	6,665	23,420
2010	60	652	460	645	36	16,628	7,100	25,582
2015	60	713	471	778	38	18,329	7,555	27,944
2020	60	778	483	930	39	20,137	8,098	30,525
2025	60	850	496	1,037	40	22,124	8,739	33,346
2026	N/A	861	N/A	N/A	N/A	22,545	N/A	33,780

*The Unincorporated Wasco County figures do not include the population from The Dalles Urban Growth Area, the area outside the city limits but within the urban growth boundary. This represented a reduction of 3,465 people from 2000 to 2005. While this population is in the unincorporated portion of Wasco County, it is important for The Dalles to include this population in order to plan for an orderly process of urbanization and the expansion of city services. The remaining cities only include census figures from their incorporated city boundaries.

During the 2000 census the US Census Bureau established Census Designated Places. These are defined as:

“closely settled, named, unincorporated communities that generally contain a mixture of residential, commercial, and retail areas similar to those found in incorporated places of similar sizes.”

“CDP boundaries should follow visible and identifiable features, such as roads, rivers, canals, railroads, and above-ground high-tension power lines.”

The CDP’s consist of four of the 6 Goal 3 committed exception areas (Rural Service Centers) listed in Section XIII. Because the requirements for CPD boundaries limit them to following visible features, the boundaries are not coincident with the Rural Community boundaries. The specific CDP’s and their 2000 population figures are included in the table below.

Table 3 - 2000 US Census - Census Designated Place Population Figures

CDP	Population
Pine Grove	162
Pine Hollow	462
Tygh Valley	224
Wamic	36
Total	884

CHAPTER 4 POLITICAL STRUCTURE

Wasco County citizens are affected by a number of governmental levels. Federal, state, county and city laws and regulations all influence activities within the county.

County government is the main body that deals with rural county matters. It works directly with the people, as well as coordinating other governmental activities within the county.

The County Court is the main administrative body in Wasco County. It consists of the County Judge and two County Commissioners. The Court administers the budget and conducts the business of the county.

There are seven elected positions in county government. The Clerk, Assessor, District Attorney, Sheriff and Treasurer are under the administrative category. The judicial branch includes the District Court and Circuit Court.

The administrative county agency positions are appointed by the County Court. Among these agencies are the Health Department, Road Master, Planning Office, County Extension Agency, and Library. Judicial agency positions, such as the Juvenile Department, are appointed by the Circuit Court. These agencies operate within the constraints of federal and state laws. City laws affect agencies within the city limits.

Federal and state agencies often deal directly with County matters. They may intervene in subjects of state or national importance, or they may deliver services best available on a state or federal level. Such services include the post office, armed services, and any number of specialized agency programs.

Special districts can also be formed to deal with certain activities. These districts can involve the whole county, several counties, or portions of counties. In Wasco County, special districts have been formed for such things as education, economic development, recreation, and irrigation.

Each of the facilities and services available within the county will be discussed separately. It will be seen how the different levels of government affect citizens of Wasco County.

CHAPTER 5 COMMUNITY FACILITIES AND SERVICES

A. Police Protection

Wasco County is served by the Oregon State Police Department and the Wasco County Sheriff's Office. The Dalles City Police Department provides services within the city limits. Dufur has a city Marshall mainly for city police problems.

The Wasco County Sheriff's Office has fifteen deputies, one chief deputy and a sheriff. Deputies are stationed in The Dalles and respond to calls anywhere in the county. A majority of the Sheriff's Office work is around The Dalles area.

In 1976, the Wasco County Sheriff's Office took 2,890 total complaints. Out of these complaints, 253 total persons were charged in all offense categories. Approximately \$92,000 in property was lost, with about \$16,000 in property recovered.

A jail for Wasco County, Sherman County, Gilliam County, Wheeler County, city of The Dalles, and part-time for Hood River County and Morrow County is located in the basement of the County Courthouse. The Wasco County Sheriff's Office operates this facility. It has a capacity of forty-six adult persons. Separate facilities are available for juveniles with a capacity of four persons. The facilities meet all State standards.

The Oregon State Police patrol in Wasco, Sherman, Hood River, Wheeler and Gilliam Counties from The Dalles office. Calls within Wasco County may be responded to by adjacent district offices in certain circumstances, but the majority of calls are handled from The Dalles office. Twenty-one people are normally allocated to Wasco County from The Dalles district. Fifteen of these officers are on traffic control, with a majority patrolling either I-84, Highway 197 and part of Highway 97 within Wasco County. There are four fish and game officers. The other two officers provide a variety of police services within the county. The State Police handled 1,085 crimes within Wasco County in 1976.

The statistics given in Table 1 were compiled from information reported to the Oregon Uniform Crime Reporting Program for the first six months of 1978. This information is given for Hood River, Wasco, and Sherman Counties.

Table 1 – Crime Statistics

		Hood River County		Sherman County		Wasco County		District 9 Total	
		1978	1977	1978	1977	1978	1977	1978	1977
						9	2	9	2
	90 -Officer Assault								
Oregon Crime Index Offenses	011 - Murder	1	0	0	0	1	1	2	1
	02 - Force Rape	1	0	0	0	2	1	3	1
	03 - Robbery	2	4	1	0	5	9	8	13
	04 - Aggravated Assault	20	11	1	0	18	16	39	27
	05 - Burglary	72	71	1	6	104	105	177	182
	06 - Larceny	154	179	16	13	270	362	440	554
	07 - Motor Vehicle Theft	24	9	1	2	27	38	52	49
Part II Offenses	042 - Other Assault	3	6	2	1	9	6	14	13
	09- Arson	2	6	1	2	1	3	4	11

		10 - Forgery/Counterfeit	4	10	0	0	6	6	10	16
		11 - Fraud	19	34	2	2	23	27	44	63
		14 - Vandalism	127	124	4	1	53	49	184	174
		15 - Weapons	0	1	0	1	4	2	4	4
		17- Other Sex Offenses	4	5	1	0	14	2	19	7
	Drug Abuse	180 – Drug Total (Arrests)	35	35	6	1	33	54	74	90
		1801 – Narcotics (Arrests)	0	0	0	0	2	0	2	0
		1802 – Marijuana (Arrests)	33	34	6	1	23	45	62	80
		1803 – Synthetic (Arrests)	0	1	0	0	0	0	0	1
		1904 – Other Dangerous (Arrests)	2	0	0	0	8	9	10	9
		210 - DUII (Arrests)	131	130	13	15	157	178	301	323
		220 – Liquor Law (Arrests)	51	26	1	1	34	86	86	113
		240 – Disorderly Conduct (Arrests)	13	4	2	0	33	32	46	35
		26 – All Other	0	0	0	0	0	0	0	0

These statistics were compiled from information reported to the Oregon Uniform Crime Reporting Program for the first six months of 1978

B. Fire Protection

Several departments and districts offer fire protection services within Wasco County. These include the city fire departments for the cities of The Dalles, Mosier, Dufur and Maupin as well as the Wasco Rural Fire Protection District, Columbia Rural, Mosier Rural and, Juniper Flats Rural Fire Districts.

The Dalles City Fire Department and Wasco Rural Fire District serve the largest and most populous area in the county: the area in and around The Dalles. These departments have mutual aid agreements between themselves and the other districts, to provide additional support when necessary. The Wasco Rural Fire Protection District has 12 paid employees and 35 volunteers. The other districts have no full time, paid employees and are run by volunteers only.

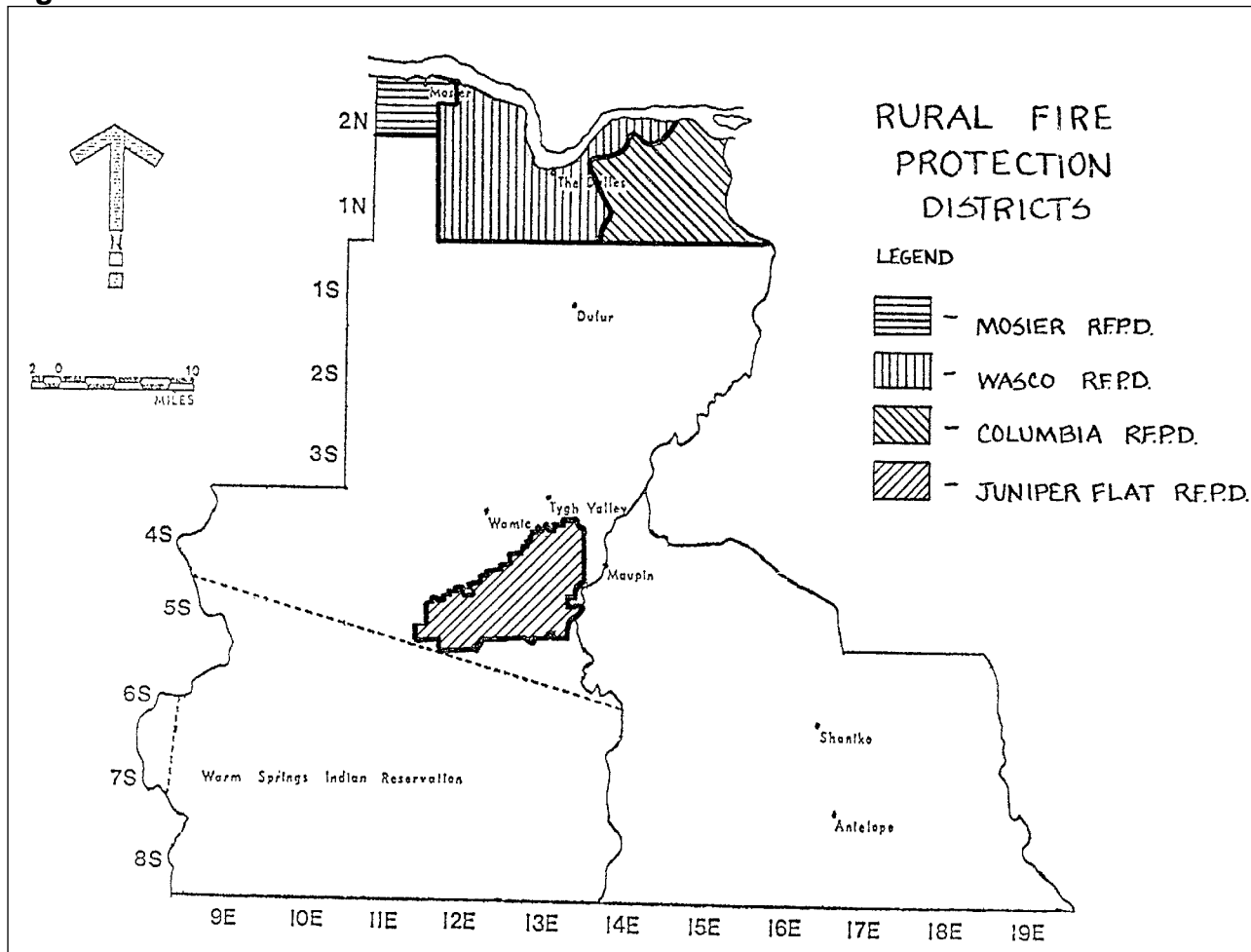
Fire equipment is adequate in the Wasco Rural District. They maintain two 1,000 gallon and one 750 gallon pumpers, two 4,000 gallon tankers, and four 200-300 gallon booster trucks, as well as complete first aid facilities and kitchen facilities for large fires. They can generally respond to any fire in their district from within 90 seconds to 10 minutes, depending on where it is located.

The Dalles City, Dufur City, Mosier City, and Maupin City Fire Departments protect their respective towns. These fire departments have the capacity to man structural fires within their own city limits. Larger fires may require assistance from other departments.

Wildland or non-structural fires are manned by the U.S. Forest Service, Bureau of Land Management, or the Oregon State Forestry Department. The Bureau of Land Management headquarters are in Prineville, and the initial attack is made by helicopter. The State Forestry Department dispatches firefighters out of their office in The Dalles. The U.S. Forest Service has a ranger station in Dufur which handles local forest fires. Each of these agencies responds mainly to fires on their lands, but

will help with other fires if needed. They also have back-up help on call within their agencies.

Figure 1 – Rural Fire Protection Districts



The rural fire districts have the primary responsibility for suppressing structural fires within their areas. If the fire is also within the protection districts of the Oregon State Forestry Department, or the U.S. Forest Service, they will take action on it, but only if it is on, or threatens, forest land. These agencies are not trained or equipped to fight structural fires.

The railroad companies fight fires caused by their activities. Rail lines run parallel to the Columbia River and Deschutes River.

C. Medical Services

All of the medical services in the county are located in The Dalles. This is an inconvenience for citizens who live in the distant areas of the county. Distance is especially critical in emergency situations.

The only in-patient medical facility in the county is The Mid-Columbia Medical Center. This is a private non-profit hospital. It has a 125-bed capacity, with an

average of 65 beds filled each day. Full capacity is considered to be seventy-five percent, with this hospital averaging fifty-two percent. A larger number of patients could easily be accommodated.

There are currently forty-four physicians in The Dalles area covering the majority of clinical services.

Several physician clinics and private physicians serve Wasco County. The Dalles Clinic, Mid-Columbia Clinic, and The Dalles Family Practice Group have a total of approximately 35 doctors. At least five other doctors offer special, (Orthopedics, Osteopathic), or private services. This makes a favorable ratio of approximately one doctor for every fifty citizens.

Special medical services are offered through the Columbia Basin Nursing Home, Valle Vista Nursing Home, and the Columbia Gorge Rehabilitation Center. The Columbia Basin Nursing Home is a county operated facility. It can accommodate 118 patients and usually operates at this capacity. Valle Vista Nursing Home is a private home handling a full capacity of 74 patients. The Columbia Gorge Rehabilitation Center has service for mentally retarded and emotionally disturbed persons. It is the only facility outside of The Dalles serving Wasco County, and is located in Hood River.

Columbia Veterinary Hospital and The Dalles Veterinary Hospital also provide service in Wasco County. Four Doctors of Veterinary Medicine (DVM) practice at these facilities.

Emergency medical service is available through four ambulances in the county. Two ambulances are manned in The Dalles by The Dalles Fire Department. They cover primarily the area north of the Willamette Base Meridian. An average of 750 calls per year are responded to by these ambulances. Wasco Rural Fire Protection District has one first response unit serving the Fire District.

The Dufur City Fire Department operates an ambulance in the Dufur vicinity. About 40 to 50 calls are received each year. An ambulance in Maupin covers southern Wasco County with an average of 40 to 50 calls per year. Both of these ambulances are manned by trained Emergency Medical Technicians.

The emergency services are inadequate. Four ambulances cannot possibly cover the 2,400 square miles of Wasco County. All emergency cases must be transported to The Mid-Columbia Medical Center. This may mean forty-five minutes or more to the hospital from the southern end of the county.

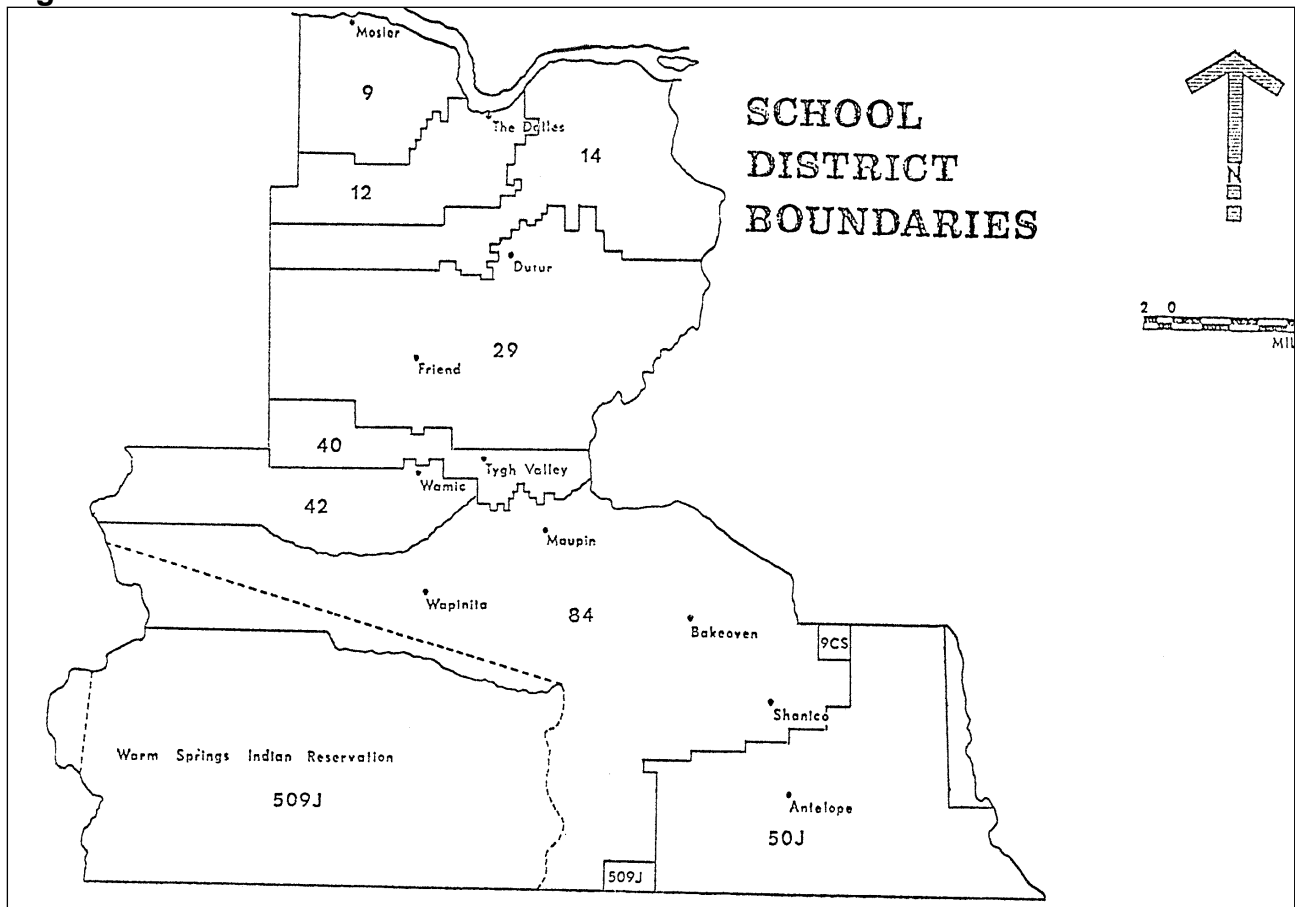
D. Schools

Wasco County is served by ten school districts. The area administered by each district is shown on Figure 2. The schools in each district, number of students and teachers and the present student to teacher ratios are shown in Table 2.

The ratio of approximately 20 to 25 students per teacher is an accepted level for elementary school capacity. Acceptable high school student-teacher ratios are lower, with 10 to 15 students per teacher an adequate ratio. Each of the schools in Wasco County are currently at or below these acceptable levels. This generally implies that county schools have room to meet future enrollment needs.

When the schools are close to capacity, alternatives such as year-round school or staggered school schedules may be employed. These alternatives increase capacities by twenty-five percent (25%) or more. After all possible techniques have been used to increase capacity and ratios of student-teachers become unacceptable, then new school facilities will have to be built. These decisions are made on a case-by-case basis and reflect more considerations than a simplistic ratio. These ratios are merely one consideration in quality education. More detailed analysis is desirable for specific decisions. All schools in Wasco County have been declared "standard" by the Oregon State Department of Education.

Figure 2 – School District Boundaries



#9 = Chenoweth #12 = The Dalles #14 = Petersburg #29 = Dufur #40 = Tygh Valley #42 = Wamic #84 = Maupin #50J = Antelope #9CS = Kent, Sherman County #509J = Madras, Jefferson County

Table 2 – School Districts

School Districts	Schools	Students	Teachers	Student/Teacher Ratio*	School Acreage
#9 Chenowith	-3 Elementary -1 High School	-651 -271	-43 -28	-15:1 -10:1	37.96
#12 The Dalles	-3 Elementary -Junior High -High School -Special Students	-1,147 -1,322	-54 -86	-21:1 -15:1	80.95
#14 Petersburg	-Elementary (H.S. Students sent to District #9 or #12)	-82	-8	-10:1	154.75
#29 Dufur	-Elementary -High School	-158 -77	-10 -10	-16:1 -8:1	1.95
#40 Tygh Valley	-Elementary (H.S. Students sent to District #84)	-82	-6	-14:6	5.36
#42 Wamic	-Elementary (H.S. Students sent to District #84)	-72	-4	-18:1	2.11
#50 Antelope	-Elementary (H.S. Students sent to Jefferson County)	-9	-1	-9:1	1.49
#84 Maupin	-Elementary -High School	-172	-11	-16:1	17.09
St. Mary's	-Elementary	-123	-7	-18:1	12.43
Adventist	-Elementary	-20	-2	-10:1	-----

*Includes total certified personnel = all teachers and supportive certified personnel excluding superintendents and assistant superintendents.

E. Postal Services

Wasco County is served by a number of post offices. Dufur, Tygh Valley, Maupin, Antelope, Mosier, and Shaniko all have local post offices. They receive mail from The Dalles post office. Post office boxes are available to residents within these towns. Citizens outside of the towns are served by rural routes from The Dalles, Dufur, Tygh Valley or Maupin.

F. Television and Radio

Television services in rural Wasco County are provided through a variety of co-op systems. These cooperatives receive television signals from the major antenna located near The Dalles. Television stations in Washington and Oregon can be received. Additional cooperatives can be formed at any time, depending on need.

KACI, KODL, and KCIV-FM radio stations serve Wasco County based in or near The Dalles. These stations broadcast mainly during the day. A variety of other radio stations from outside the county can be received through the television co-op systems.

G. Telephone

Several telephone systems serve Wasco County residents. Pacific Northwest Bell has the area surrounding The Dalles, south to Boyd, east to the Deschutes River, and west to Sevenmile Hill across to the Hood River county line. Approximately 12,000 phones are included in this territory based in The Dalles. A small portion of the area between Maupin and Antelope is also served by Pacific Northwest Bell, based in Madras. The Mosier area is served by the United Telephone Company of the Northwest, based in Hood River and Mosier. North State Telephone Company has a territory around Dufur, south toward Tygh Valley, between the Hood River county line and Deschutes River. It is based in Dufur. Deschutes Telephone Company (subsidiary of Telephone Utilities, Inc.), has four separate service areas, based in Tygh Valley, Wamic, Pine Grove and Maupin. The southeastern portion of the county is served by the Trans-Cascade Telephone Company, based in Antelope.

The entire county is served by one of the above telephone companies. These companies are obligated to extend service to any residents in their service area. If new lines are needed, a portion of the line extension costs must be paid by the new resident.

H. Newspapers

The Dalles Chronicle, The Dalles Reminder, and The Oregonian serve Wasco County. The Dalles Chronicle has the largest circulation, with 5,900 newspapers delivered each day, six days a week. Door-to-door deliveries are made in the rural areas on main roads as far south as Maupin.

Other circulation is through the mail or by news-stands. The Dalles Reminder is delivered twice a week. Weekly circulation is 15,650. Areas outside of The Dalles receive The Reminder by mail. The Oregonian has door-to-door delivery in The Dalles urban area only. Rural areas are served by mail or news-stands. The Oregonian is published seven days a week. None of the other small towns in the county have their own newspaper. All county citizens are served by one of the regular newspapers mentioned above.

I. Libraries

The Dalles-Wasco County Library is the main facility serving the county. Maupin has a public library. Dufur has a joint public/school library open to the public year round. Mosier has a small part-time public library. Books can be checked out by the public from some of the retail bookstores throughout the county. Books are also available by mail for citizens unable to get to the library. These extra services are provided through The Dalles-Wasco County Library. A total of 55,000 books are publicly owned within the county. This does not count individual school libraries not open to the general public. By the standard of 2½ volumes per person, Wasco County's library facilities are currently adequate.

Library services are also available through the Hood River Library to citizens of the Mosier area. Specialized books that are not carried by the different libraries are available through the State inter-library loan service.

J. Parks and Recreation and Scenic Areas

1. Current supply of recreational facilities

The parks and recreation sites in Wasco County are listed in Table 3, and their locations shown in Figure 3. Most of these sites are publicly owned (75%) and are in or near the Mt. Hood National Forest and the Deschutes, White, and Columbia Rivers.

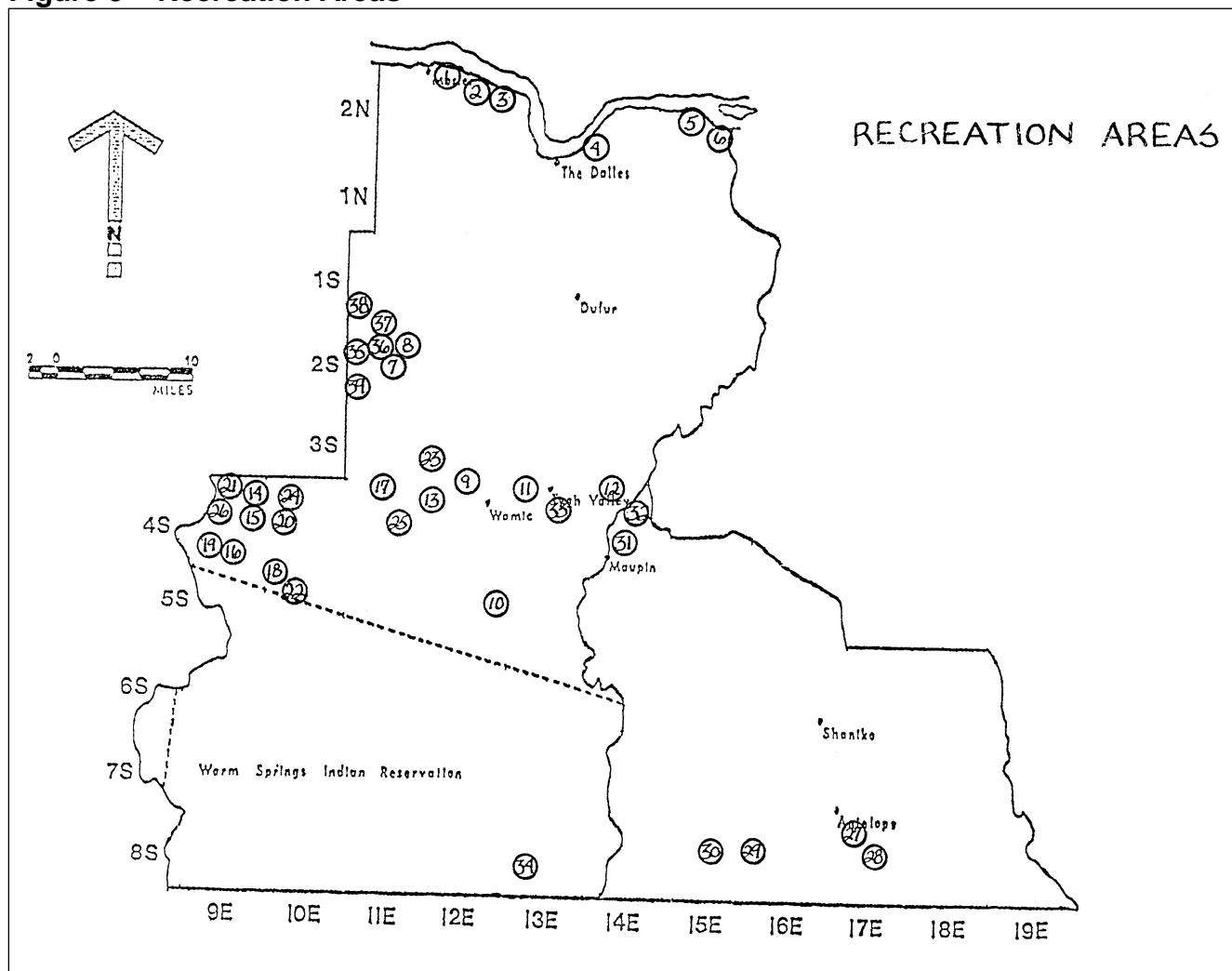
Table 3 – Park & Recreation Facilities

#	Park	Ownership	Water	Toilets (Pit/Flush)	Picnic Sites	Picnic Camp Sites	Trailer Sites	Total Camp Sites	Boat Ramp	Activities
B = Boating F = Fishing H = Hunting S = Swimming Hs = History R = River V = View T = Trails PG = Playground N = Nature Study Rh = Rock-hounding \$ = Fee Required										
1.	Memaloose State Park	State	X	F	X	X				V, R, Hs
2.	Mayer State Park	State	X	P	X				X	B, S
3.	Koberg Beach St. Wayside	State	X	F	X				X	B, S
4.	Seufert Park	Corps of Engineers		P	X					Hs
5.	Celilo Park	Corps of Engineers	X	P	X				X	B, F, Hs, S
6.	Deschutes River State Rec. Area	State		P	X	X	X			B, F, S
7.	Underhill Site	Private	X	P						Ns, T, Hs
8.	Camp Baldwin	Private	X	P		X			X	Ns, T, F, B
9.	Pine Hollow	Private	X	F & P	X	X	X	50		B, F, S, V, H
10.	Beebees	Private	X	P			X	20		
11.	Wasco Co. Fairgrounds	County	X	P	50	30	20	50		T, PG, F Rh
12.	White River Falls	State	X	F	X					F, V, T
13.	White River Game Management Area	State								N, H
14.	Barlow Creek	U.S.F.S.	X	F		6		6		F, N, H
15.	Barlow Crossing	U.S.F.S.		P		3		3		F, H
16.	Bear Paw	U.S.F.S.		P	2	4		4		H
17.	Bonney Crossing	U.S.F.S.		P	7	3		3		F, H
18.	Clear Creek	U.S.F.S.		P		5		5		F, H
19.	Clear Creek	U.S.F.S.	X	P		25	5	30	X	F, H, B
20.	Forest Creek	U.S.F.S.		P		5		5		F, H
21.	Grindstone	U.S.F.S.		P		3		3		F, H
22.	Keeps Mill	U.S.F.S.		P		3	1	4		
23.	Little Badger	U.S.F.S.		P	1	2		2		F, H
24.	Post Camp	U.S.F.S.		P	3	3		3		F, H
25.	Rock Creek Reservoir	U.S.F.S.	X	P	X	X		30	X	F, H, B
26.	Frog Lake	U.S.F.S.	X	P	13	17	1	18	X	B, F, S
27.	Browns	Private								Rh, \$
28.	Palmer's	Private								Rh, \$
29.	Formans	Private								Rh, \$
30.	Cow Canyon Rest Area	State	X	P	X					
31.	Handicap Fishing Area	B.L.M.		P		X				F

32.	Deschutes River	B.L.M.								Camping, no facilities
33.	Tygh Valley Park	Private		F	X					
34.	Kah-Nee-Ta Resort	Private	X	F	X	X	X			F, T, R, S
35.	Pebble Ford	U.S.F.S.	P	X	5					H
36.	Eightmile Crossing	U.S.F.S.	P	X	19					H
37.	Lower Crossing	U.S.F.S.	P	X	3					H
38.	Knebel Springs	U.S.F.S.	P	X	6					Horseback Riding, H
39.	Fifteenmile	U.S.F.S.	P	X	4					H, F, Horseback Riding, Motorcycles
40.	Ketchum	Private								Leased vacation homesites, \$
41.	Cascade Forest Campers Retreat	Private								Membership campground, \$

Source: Mid-Columbia Council of Governments, Oregon State Parks Division, U.S. National Forest

Figure 3 – Recreation Areas



The Deschutes River, historically and currently, is a key factor in the life and economy of Wasco County. The Deschutes River sports fishery, from Shearers Falls to South Junction, provides up to 75,000 angler days of recreation each year. Chinook salmon anglers annually spend up to 8,900 days angling near Shearers Falls.* The angler use information is summarized in Table 4 and in Figure 4 A and 4 B. The peak periods of angler harvest of salmon and steelhead are illustrated in Figure 5.

A statistical sampling program on the Deschutes River upstream from Maupin in 1978 indicated that nearly 2,900 crafts boated the river during the April 21-October 31, 1978 period. This count includes boats with anglers and/or non-anglers.

Public vehicle access to the east bank of the Deschutes River is limited to the reach from Buck Hollow Creek (county line), south to the Deschutes Club Gate (six miles south of Maupin), and the point access at the Bureau of Land Management Campground at South Junction. Public access to other areas of the river is primarily by boat or on foot.

Table 5 gives the public supply of recreation facilities in District 9 as given in the 1972 State Comprehensive Recreation Plan (SCORP).

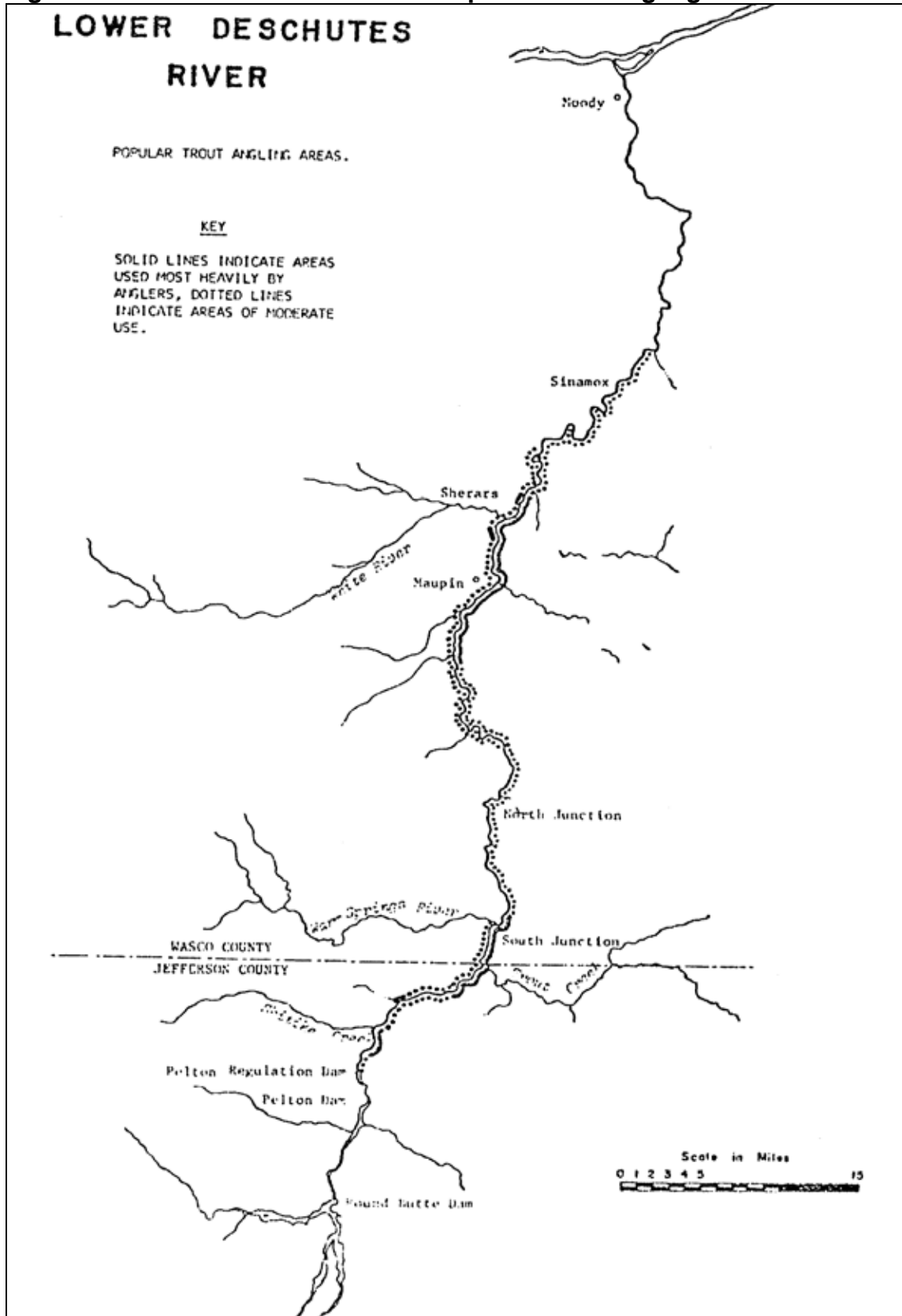
Table 4 – Deschutes River Angler Effort

Year	Anglers	Hours Fished	Trout	Steelhead
Maupin Area (Shearers Falls to Deschutes Club Gate)				
1973	31,264	87,178	35,661	1,126
1972	58,283	117,281	50,708	884
1971	73,301	137,553	52,515	1,568
1968	58,760	176,598	78,706	688
South Junction				
1978	1,952	10,783	1,750	N/A
1974	3,155	8,860	1,271	N/A
1973	2,503	9,951	1,164	77
1972	2,396	8,735	1,606	63
1969	5,423	19,880	12,470	1,021
Macks Canyon Road				
1977	7,749	44,107	N/A	2,193
1976	8,128	50,743	N/A	1,563
1975	8,068	53,880	N/A	1,610
1974	10,793	69,156	N/A	3,992
1973	11,141	60,987	N/A	2,987
1972	8,953	54,528	N/A	2,463
1971	7,507	36,026	N/A	2,253
1970	4,373	16,924	N/A	776
North Junction to Deschutes Club Gate				
Year	Anglers	Hours Fished	Trout	Total Boats
1978	6,642	34,471	6,791	2,895

Table 5 - 1972 State Comprehensive Outdoor Recreation Plan – Administrative District #9 - Wasco, Sherman, and Hood River Counties

Public Supply of Recreation Facilities							
Picnic Sites	Camp Sites	Launch Lanes	Trail Miles	Swim Pools	Open Play Acres	Field Sport Acres	Tennis Courts
1009	1016	32	442	3	88	44	3
Supply of Acres by Level of Government							
Federal	State	Local	Total				
499,970	25,372	543	525,885				
Supply of Number of Areas by Level of Government							
52	32	32	116				

Figure 4A – Lower Deschutes River Popular Trout Angling Areas



Oregon State Game Commissions Basin Investigation

Figure 4B – Lower Deschutes River Popular Angling Areas, Steelhead & Salmon

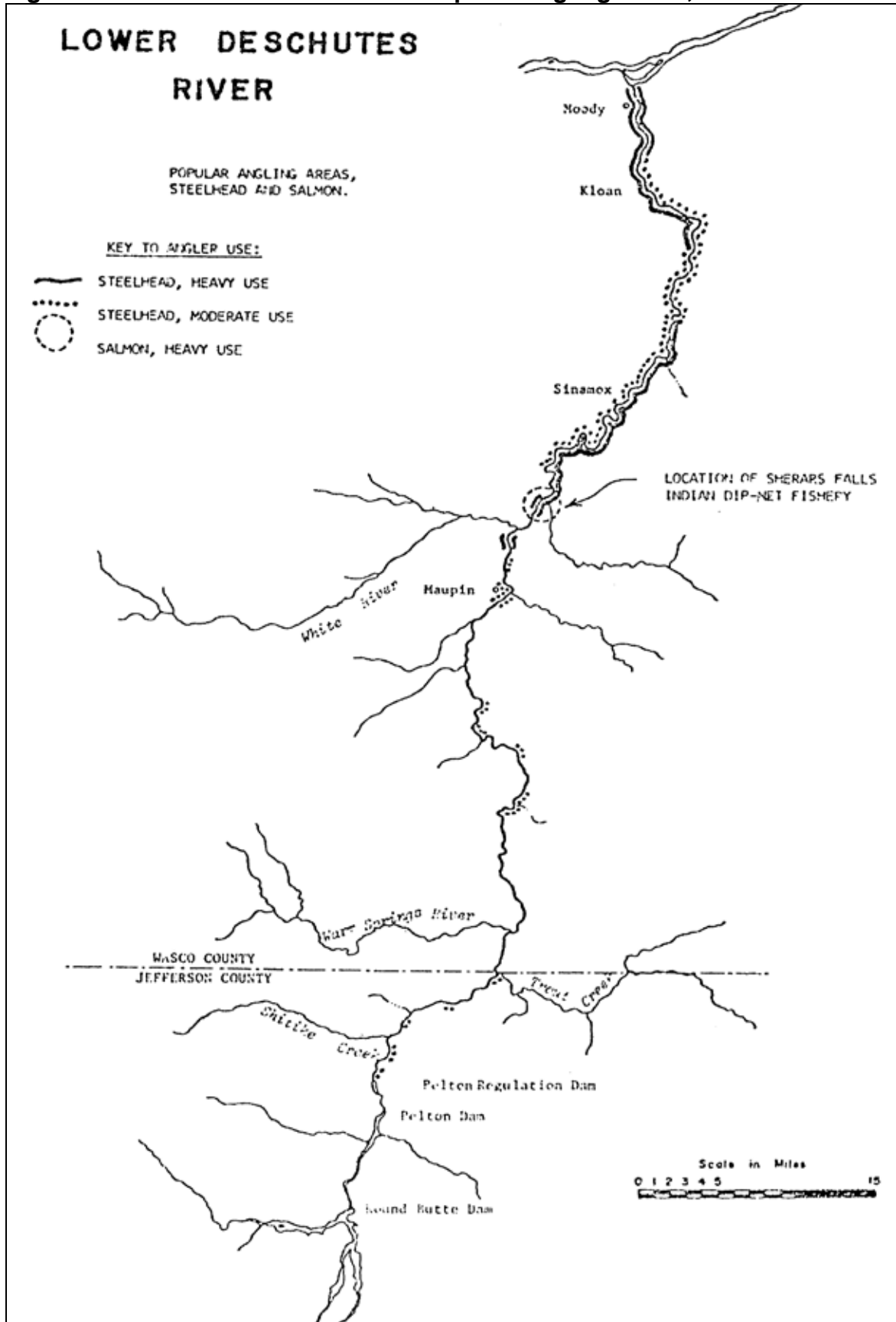


Figure 5 – Percentage Distribution by Month, Estimated Sport Catch of Steelhead and Salmon, Lower Deschutes River

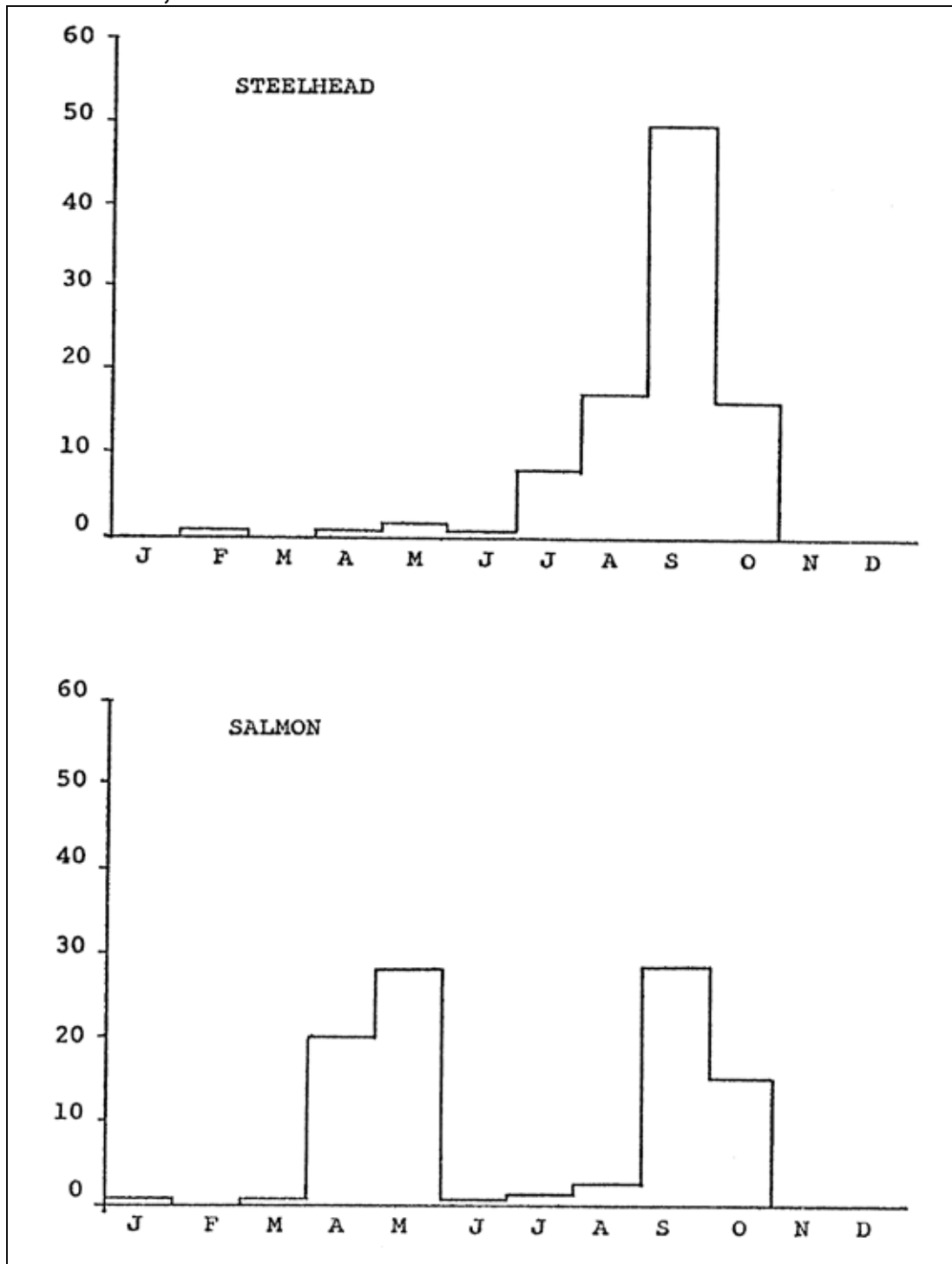


Table 6 shows the acres of developed and undeveloped recreation areas. This information is also taken from the 1972 State Comprehensive Outdoor Recreation Plan.

Table 6 – Acres of Developed & Undeveloped Recreation Areas & Supply of Urban & Rural Acres and Areas

Acres of Developed & Undeveloped Recreation Areas & Supply of Urban		
Developed	Undeveloped	Total
1,626 Acres	524,259 Acres	525,885 Acres
85 Areas	31 Areas	116 Areas
38% Federal 32% State 30% Local	95% Federal 5% State 0% Local	
Supply of Urban & Rural Acres and Areas		
Urban	Rural	Total
629 Acres	525,256 Acres	525,885 Acres
34 Areas	82 Areas	116 Areas

In addition to the standard park and recreational facilities, other special resources with unique characteristics have been inventoried in the 1978 SCORP. These include scenic rivers, lakes and reservoirs, research natural areas, wilderness areas, winter sport facilities, recreation trails and bicycle facilities, (p. 5.33). Each of these resources is briefly discussed below.

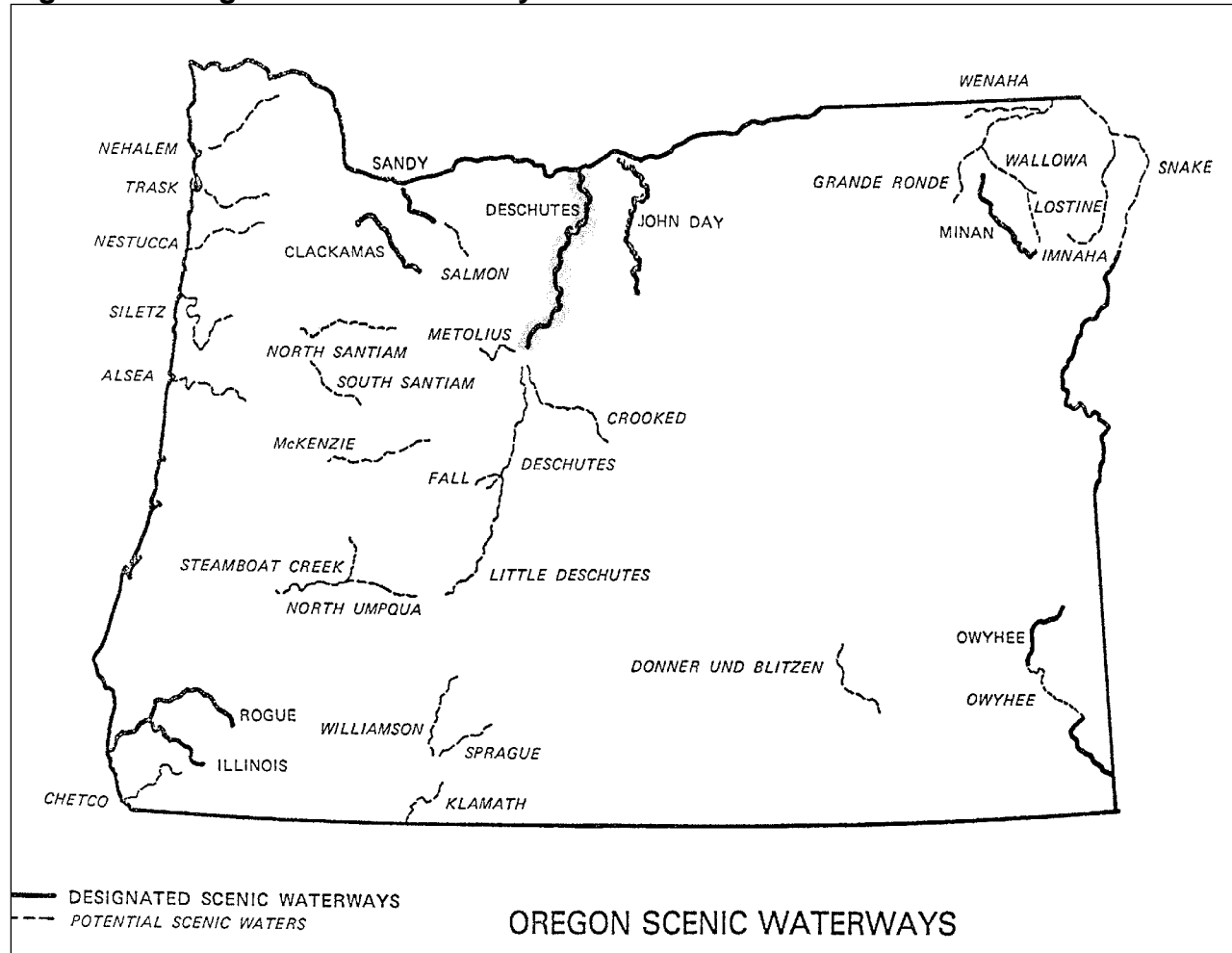
Figure 6 shows the designated and potential Oregon Scenic Waterways in the state. Both the Deschutes and John Day Rivers are designated scenic waterways. No other rivers in the county are considered potential scenic waterways.

District IX (Hood River, Wasco and Sherman Counties) have three lakes and reservoirs over 200 acres in size (not including those along the Columbia), for a total of 1,038 acres. This is only .23 percent of the total acreage in the state. These areas should be carefully managed and utilized to provide for the County's recreational needs while maintaining them for aesthetic, agricultural and habitat purposes.

Natural areas in the County have been discussed in Chapter II, J. There are no wilderness areas designated within the County. The nearest one is the Mount Hood Wilderness Area, located in Hood River County (SCORP, 1978, p. 5.40).

There are also no winter skiing facilities in Wasco County. Several of these areas are located near the summit of Mt. Hood, in Hood River County. These areas are close enough to provide adequate recreation of this nature for the citizens of the County.

Figure 6 – Oregon Scenic Waterways



According to the State Comprehensive Outdoor Recreation Plan (1978, p. 5.44), there are no Oregon re-creational trails that pass into or through Wasco County at the present time. The Columbia Gorge trail, which stops at approximately the Hood River-Wasco County border, may eventually have another 47 miles added to it, which would allow it to pass through the County and into Sherman County (p. 5.43). The Plan gives no indication of when this addition will occur.

The Pacific Crest Trail, one of three National Scenic Trails in the United States, passes through Wasco County. Approximately twenty miles of the Trail lie adjacent to the County's western boundary, in the Mt. Hood National Forest. Other trails, such as the Bar-low Creek trail, provide access to many of the scenic beauties in this portion of the County.

There are no bicycle trails in the County. These recreational trails are mainly located in the Willamette Valley portion of the state.

Scenic highways are "those adjacent to or passing through scenic areas in State or Federal parks, historic sites, or any area of natural beauty that has been designated a scenic area by the Scenic Area Board", (p. 5.42). Table 7 lists the

scenic high-ways in Wasco County as designated by the Board, which has recently been replaced by the Travel Advisory Council (Letter from Alan J. Cook, State Recreation Planner, (October 23, 1980)).

Table 7 – Wasco County Designated Scenic Areas

Route No	Hwy	From MP & Location	To MP & Location	Remarks
US I-80 N	2	67.72 – Hood River/Wasco County Line	69.62 – W City Limits of Mosier	660' Both Sides
		70.63 – E City Limits of Mosier	79.70 – 1.08 W of Tayler Frantz Rd 0-Xing	660' Both Sides
		87.85 - .06 E of E City Limits of The Dalles	96.70 - .25 W of Jct Celilo-Wasco Hwy	660' Both Sides
		96.70 - .25 W of Jct Celilo-Wasco Hwy	99.85 – Wasco/Sherman County Line	Within View
US 97	4	2.00 - .16 S of 0-Xing, Equipment Pass	11.00 - .14 S of Starveout Road	Within View
		22.42 - .06 N of Tygh Ridge Summit	43.83 - .13 N of W City Limits of Maupin	Within View
		47.00 - .14 N of City Limits of Maupin	50.00 – 2.58 S of S City Limits of Maupin	Within View
US 197/US 97	4	59.00 – 1.07 S of Criterion	74.26 – Wasco/Jefferson County Line	660' Both Sides
US 97	42	48.81 – Sherman/Wasco County Line	56.04 – N City Limits of Shaniko	Within View
		56.72 – W City Limits of Shaniko	68.66 – Jct The Dalles-California Hwy	Within View
ORE 216	44	0.00 – Jct Warm Springs Highway	26.17 – Jct The Dalles-California Hwy	Within View
US 26	53	62.15 – Clackamas/Wasco County Line	77.99 - .11 W of Willow Creek	660' Both Sides
ORE 216	290	6.00 - .45 W of Winter Water Creek	8.30 – Wasco/Sherman County Line	660' Both Sides
ORE 218	291	0.56 – S City Limits of Shaniko	7.31 – N City Limits of Antelope	660' Both Sides
		8.24 – E City Limits of Antelope	23.07 – Wasco/Wheeler County Line	660' Both Sides
US 30	292	2.00 - .91 E of City Limits of Mosier	13.00 - .73 W of Taylor – Frantz Road	660' Both Sides

2. Future Recreational Needs

Table 8 lists future recreation needs in Wasco County to the year 1990. Table 9 lists the out-door recreation demand for District IX to the year 2000. Table 10 lists locally expressed re-creational needs as of August, 1977 (SCORP, 1978, Appendix C).

The Statewide Comprehensive Outdoor Recreation Plan is only a rough estimate of recreation needs by regions. Final recreational land use designations are generally made by property owners and local citizens.

3. Outstanding Scenic and Recreational Areas

Outstanding scenic and recreational areas have exceptional qualities which draw visitors from outside the county, as well as provide local citizens with excellent recreational opportunities. These areas are listed in Table 11.

Table 8 – Wasco County Recreation Needs

Facility	Unit	Supply	Gross Need	Net Need		
				1975	1980	1990
Campsites	Site	590	854	264	348	521
Picnic Tables	Table	359	172	(187)	(176)	(149)
Swimming Pools	Pool	2	2	0	0	0
Boat Launch Lanes	Lane	8	5	(3)	(3)	(3)
Swim Beach	Feet	2,000	556	(1,444)	(1,435)	(1,385)
Walking & Hiking Trails	Mile	23	58	35	37	44
Biking Trails	Mile	1	4	3	4	4
Bridle Trails	Mile	21	5	(16)	(15)	(15)
Ball Fields	Field	12	8	(4)	(4)	(3)
Tennis Courts	Court	10	8	(2)	(2)	(1)
All Purpose Courts	Court	3	8	5	5	6
ORV Trails	Mile	0	1	1	1	1
Golf	Holes	45	18	(27)	(27)	(27)
Neighborhood Parks	Acres	7.0	101.0	94.0	95.0	102.5
Community Parks	Acres	60.0	202.0	142.0	144.0	159.0
District Parks	Acres	68.0	303.0	235.0	238.0	260.5
Regional Parks	Acres	1,125.0	505.0	(620.0)	(615.0)	(578.0)

Table 9 – District IX Outdoor Recreation Demand – Recreation Data Subcommittee – PNWRBC

Activity	1975	1980	1990	2000
Camping	1,115,300	1,225,900	1,454,500	1,624,200
Picnicking	428,300	458,200	527,800	576,300
Swimming				
-Pool	361,280	369,680	406,080	431,680
-Non-Pool	90,320	92,420	101,520	107,920
Sightseeing	1,598,700	1,718,600	2,033,600	2,240,000
Fishing	332,300	345,900	385,900	411,500
Boating	113,100	142,200	169,100	188,100
Water Skiing	71,500	78,100	90,600	102,000
Walking & Hiking	1,641,100	1,731,900	1,943,800	2,085,600
Hunting	154,800	171,700	198,900	215,500
Outdoor Games	302,100	318,000	352,500	371,800
Bicycling	278,000	290,600	319,600	338,200
Golfing	79,700	87,000	101,000	110,300
Horseback	69,800	74,600	87,800	94,000
Cultural Events	273,500	286,200	324,200	345,700
Snow	447,400	501,400	604,100	688,100
Other	1,841,000	2,039,900	2,422,500	2,647,700

*Activity occasions generated.

Table 10 – Locally Expressed Recreational Needs – August 1977

WASCO COUNTY:

- Campsites (Away from Interstate 84; inland on Deschutes River)
- Indoor Pools
- Boat Launch Lanes (Deschutes River)
- Walking Trails
- Multiple Use Trails
- Golf Courses
- Tennis Courts
- All-Purpose Courts
- ORV Trails and Areas
- Ball fields
- Access to Columbia River
- Neighborhood Parks
- Community Parks
- District Parks
- Bike Trails

Source:SCORP

Table 11 – Outstanding Scenic & Recreational Areas in Wasco County

Columbia River Gorge: Includes area defined by the Columbia River Gorge Commission and O.R.S. 390.460.

Deschutes River: Areas within the river canyon that can be seen from the Deschutes River or lands designated under the State Scenic Rivers Act. This is a potential Federal Wild and Scenic River.

John Day River: Land seen from the river within the river canyon, or lands designated under the State Scenic Rivers Act. This river is under study for inclusion as a Federal Wild and Scenic River.

Rock Creek Reservoir: Includes land adjacent to the reservoir.

Pine Hollow Lake: Includes land adjacent to the lake.

White River: Lands within the River Canyon, or lands within approximately 4 mile of the river.

K. Cultural Resources

Cultural resources include historic and archeological resources. These resources characterize the unique heritage of Wasco County.

1. Historic Areas

Historic Resources were inventoried and determined significant based on the ordinance criteria, Chapter 3, Section 3.770 Historic Preservation Overlay adopted December 7, 1994.

Table 12 lists designated landmarks in the County. The sites marked with asterisks (**) are listed in the “Statewide Inventory of Historic Sites and Buildings”. The other sites listed in Table 12 are considered designated County Historic Resources and may be taken into consideration for inclusion in the Statewide Inventory. The Wasco County historic Landmarks Commission may identify additional historic resources. Each of the Historic resources is identified for protection by the placement of the Historic Preservation Overlay, Environmental Protection District overlay zone of the Wasco County Land Use and Development Ordinance.

Table 12 – Historic Sites in Wasco County

1. Oregon Trail: This east-west route was the highway to the Northwest that ended in The Dalles.
2. Barlow Road and Cut-off Road: This was the alternate route to the Willamette Valley from the east. The former route was the Columbia River, which was a costly and dangerous trip. The road was built in 1845-6 by Samuel K. Barlow.
3. The Dalles Military Wagon Road: This was the main military road to interior Oregon from Fort Dalles.
4. ** Jonah H. Mosier Sawmill Site.
5. Lower Fivemile School.
6. Mt. Hood Flat School.
7. Lower Eightmile School.
8. Mill Creek Grange.
9. Wolf Run Community Hall.
10. Center Ridge School
11. Columbia Hall
12. **Bear Springs Camp Shelter (owned by the U.S. Forest Service)
13. **Wapinitia School/Gym (school is demolished)
14. White River Dam
15. Old White River Station Camp (owned by the U.S. Forest Service)
16. Pine Grove School
17. Jersey School
18. Lower Antelope School
19. Fivemile Rapids (National Register of Historic Places) listed 1974 (Site not identified on GIS to protect cultural resources)
20. Memaloose Island (eligible for placement on the National Register)
21. Abbott site near Wapinitia (eligible for placement on the National Register)

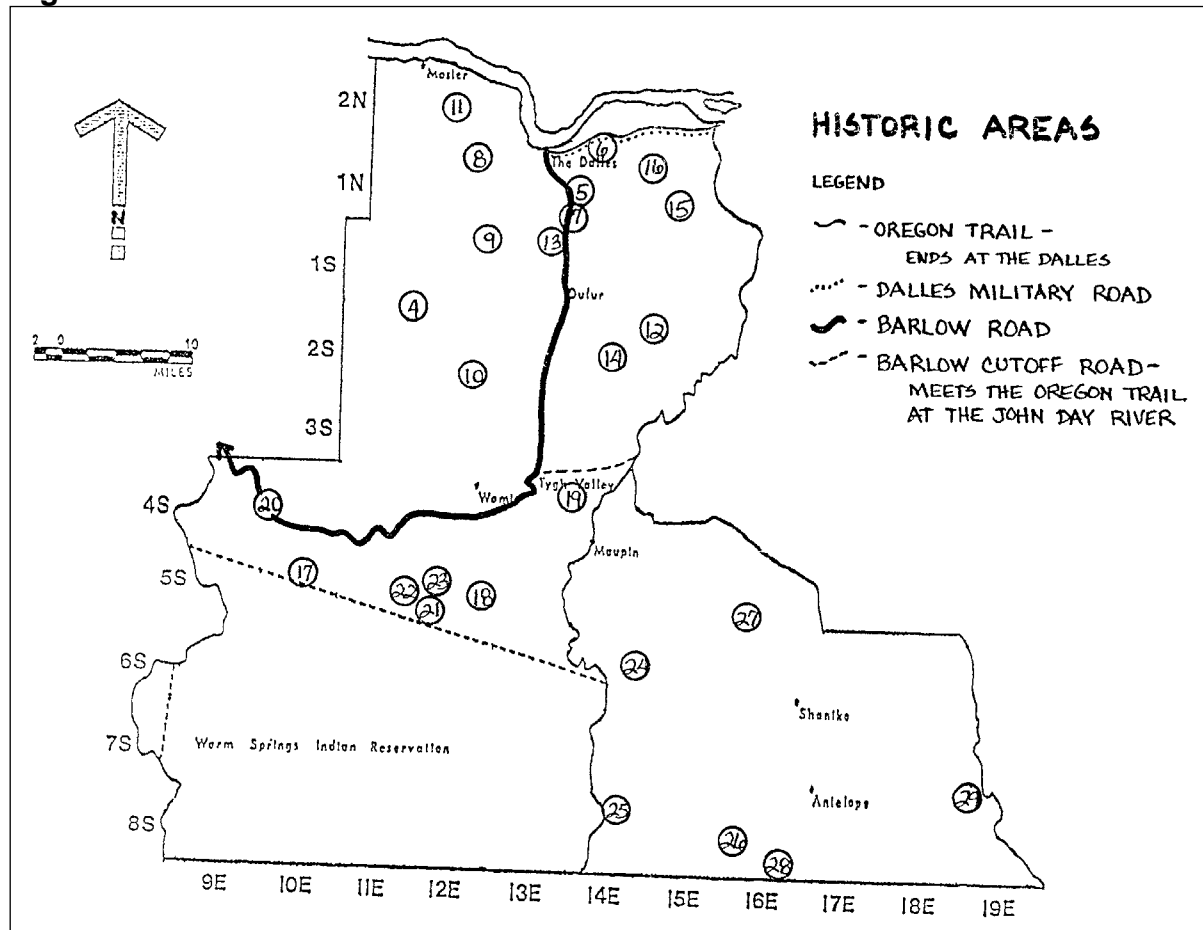
**listed on statewide register of historic areas

Seventeen (17) sites were added during the periodic review process (Ordinance 94-104 adopted December 21, 1994) and include (Survey forms are completed for the following as background documentation in the Wasco County Cultural Resource Inventory Element)

22. *Celilo Falls (#76)
23. Record Size Black Walnut (#67)

- 24. Old Fashioned Yellow Rose (#10)
 - 25. Ox Yoke Monument (#70)
 - 26. *Seufert Viaduct (#119)
 - 27. *BNRR Bridge (#80)
 - 28. Dalles Canyon City Road Bridge (#83)
 - 29. Upper White River Canyon Grade (#12)
 - 30. Hinton House (#7) (National Register of Historic Places)
 - 31. Nansene (#66)
 - 32. *Mark O. Mayer House (#30)
 - 33. Friend Store, Post Office, and Real Estate Office (#125 & #49)
 - 34. Thomas Slusher House (#51) - Removed from list via CPA-08-102
 - 35. Wapinitia Hotel (#15)
 - 36. OWRR&N Railroad Section House (#77)
 - 37. Round Barn (#53)
 - 38. Smock Prairie School (#14)
 - 39. Friend School (#126)
 - 40. Petersburg School (#128)
 - 41. Fairbanks School (#71)
 - 42. Clarno School (#65)
- *Located in the Columbia River Gorge National Scenic Area

Figure 7 - Historic Areas



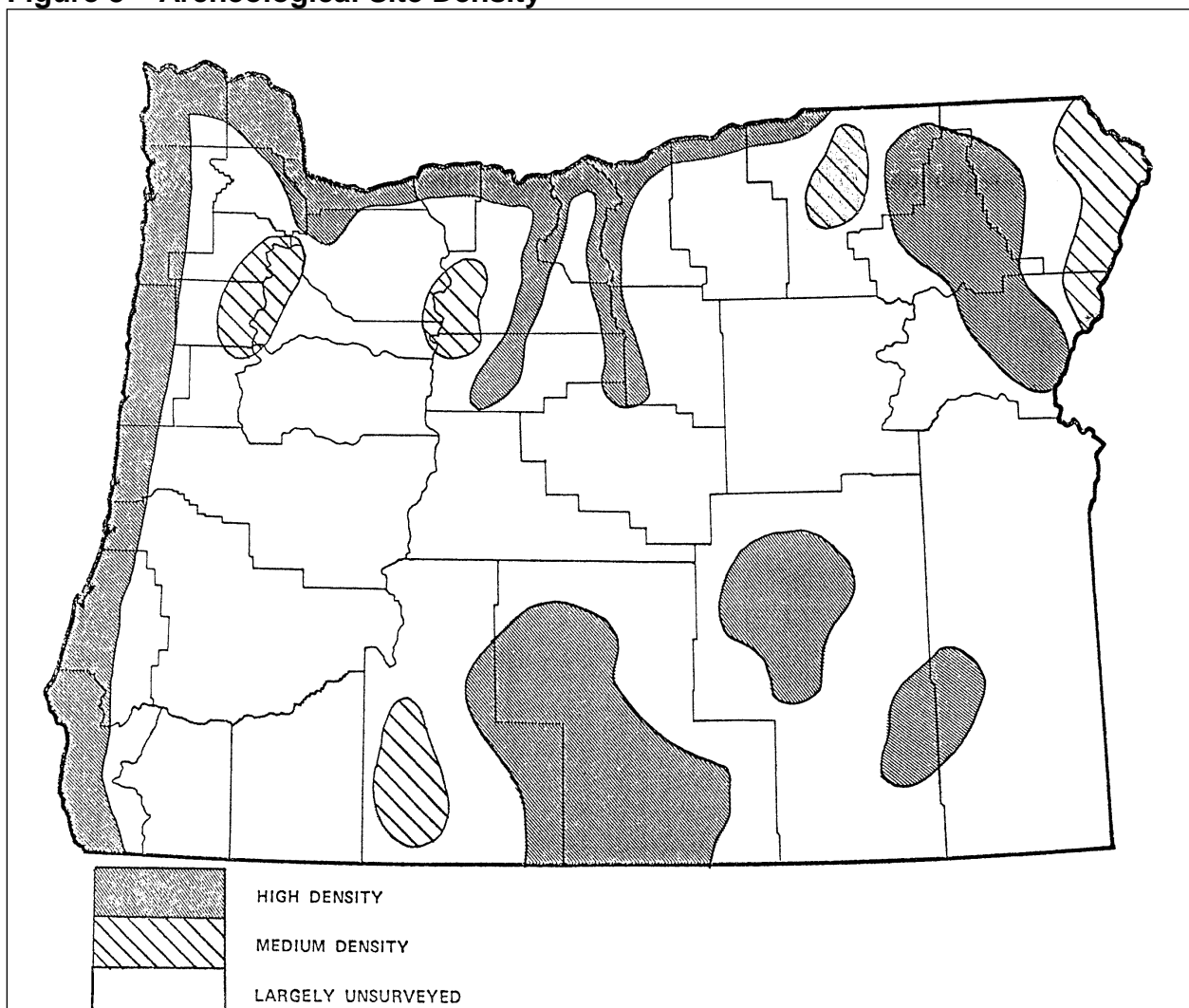
2. Archeological Areas

Archeological resources in Wasco County have not been extensively surveyed since the adoption of the comprehensive plan in 1983. The large majority of these sites are located along the Columbia, Deschutes and John Day Rivers.

The State Historic Preservation Office recommends sites to be included on the National Historic Register. There is one site in Wasco County that is on the Register, the Fivemile Rapids, listed in 1974. Memaloose Island and the Abbott Site near Wapinitia are eligible for placement on the Register (Lee Gilsin - State Historic Preservation Office, October 23, 1980).

Due to the possibility of vandalism of archeological sites, information regarding their location is exempt from the Freedom of Information Act. The Environmental Protection District Overlay zone has been placed over each of these areas. When any development is proposed, its effect on important archeological sites will be an item for consideration.

Figure 8 – Archeological Site Density



L. Social Services

A variety of social service programs are available through government agencies and other organizations. The agencies and their major service programs are listed below. Other organizations offering social services and all other information can be found in the Community Resources Book published by the Community Action Program (CAP).

Agency	Programs
Public Welfare Division	-Financial Assistance -Social services to those receiving assistance
Employment Division	-Unemployment Compensation Job Service
Community Action Program (CAP)	-Information and Referral -Comprehensive Manpower Training -Head Start -Housing -Homemakers Services -Senior Services -Citizens for Programs Through Law (CPL) -Summer Migrant Programs
Social Security	-Social Security Benefits
Administration	-Supplemental Security Income -Medicare Program
Extension Program	-Adult Education -Youth Programs
Children's Services Division	-Children and Family Services
Intermediate Education District	-Educational Services for all ages
Adult Parole and Probation	-Rehabilitation of adults on parole or probation
Vocational Re-habilitation	-Rehabilitation and placement for the disabled
Mid-Columbia Community Corrections	-Supervise misdemeanor offenders
Community Attention Home, Inc.	-Youth Services
Community Coordinated Childcare Council (4C)	-Children's Services
The Dalles Child Care Center	-Child care and development programs
The Dalles Senior Center	-Senior Services
Fort Dalles Urban Indians, Inc.	-Services to Indians
Mid-Columbia Children's Center	-Severely emotionally Disturbed Children
Mid-Columbia Economic Development District	-Coordinating and planning agency
Wasco County Juvenile Department	-Casework and counseling for youth under Court authority
Wasco-Sherman Public Health Department	-Preventive health care

<p>Active service clubs in Wasco County include:</p>	<ul style="list-style-type: none"> -Chamber of Commerce Jaycees -Kiwanis Club -WYAM Kiwanis Club Lion's Club -Toastmasters Club Toastmistress Club Rotary -Business and Professional Women -Soroptimist Club -American Association of University Women -Elks Club -4-H Club -Emblem Club -Girl Scouts of America -Boy Scouts of America -Others
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M. Utilities

Utilities include natural gas, electricity, public sewer and water systems and solid waste disposal facilities. Each is discussed below.

1. Natural Gas

The Dalles and Chenowith are the only areas serviced by natural gas in the county. The cost of extension of this service to new homes is based on the number of homes that will be served; a charge is made only if it costs more to service the area than the company will receive back in revenue. The standard monthly service charge is \$2.50.

According to the Northwest Natural Gas Company in The Dalles (Mr. Henry Tiano - Discussion, October, 1980), there are presently no problems with the supply of natural gas, nor will there be for at least the next two decades. Sixty to seventy percent of the current supplies come from Canada, while 30-40 percent comes from Utah and Oregon.

2. Electricity

The county is served by three electric companies: Northern Wasco County People's Utility District, Pacific Power and Light, and Wasco Electric Co-op, Inc. Generally, the Northern Wasco County P.U.D. serves The Dalles, Chenowith, Dufur, Tygh Valley and Wamic areas, and Pacific Power and Light provides service to Mosier. Wasco Electric services the remaining areas of the county. In areas outside communities and towns, the company that is closest to the customer will generally provide service.

All three companies obtain their power primarily from the Bonneville Power Administration. Most of the power is generated by the hydroelectric plants on the Columbia River.

According to the Oregon Department of Energy's report, Oregon's Energy Future (1978), "the energy-producing capability of the Northwest hydro system is almost fully developed", (p. 42). The areas' utilities are turning to thermal sources of power (p. 42).

This means that electric rates will probably increase. Table 13 gives the average electricity price projects for the state to the year 1996.

Table 13 – Average Electricity Price Projections (¢/kwh)

Year	Residential		Commercial	Industrial	Street & Highway Lighting
	Private Utilities	Public Utilities			
1971	1.33	1.02	1.31	0.44	2.88
1972	1.92	1.41	1.82	0.74	3.42
1973	2.91	2.02	2.75	1.09	5.13
1974	4.40	2.91	4.13	1.59	7.69
1975	6.21	4.00	5.79	2.21	10.87
1976	8.78	5.53	8.17	3.12	15.27

Source: Oregon's Energy Future, p. 67

- Public water and sewer systems are systems with four or more hook-ups. An inventory of these systems in the unincorporated portions of the county and their future supplies and capacities are illustrated in Tables 14 and 15. Additional information on potential groundwater sources and well locations is shown in Table 16, and is taken from the Comprehensive Water and Sewer Plan, Wasco County, Oregon, (J. Val Toronto and Associates, July, 1971) p. 71.

There is only one community sewer system in the unincorporated portion of the county. However, The Dalles City treatment plant serves the Chenoweth and other urban areas outside the City limits. The City will no longer offer sewer service to newly developing areas without annexing them.

Table 14 – Community Water Systems

#	Name	Pop Cr Area Served	No. of Hookups	Metered	Source	Storage Capacity (Gallons)	Design Capacity (Gallons)	Future Supply (20 Years)	Treatment	Use of System
1	Chenowith Irrigation Cooperative	2,600 (p)	745	680	3 Wells	1,000,000	32,000,000	Currently operating at 50% capacity	None	Domestic & Irrigation
2	Columbia Crest Water System	50 (p)	21	0	1 Well	None	100,000	No adequate; no more water rights; need more storage facilities	None	Domestic & Irrigation
3	Foley Lakes M.H.P. Water System	250 (p)	93	0	1 Well Spring	60,000	UA*	Adequate; DEQ has restricted further growth	Chlorinated	Domestic & Irrigation
4	Lower Chenowith Water District	480 (p)	140	140	2 Wells	250,000	275,000	Adequate	None	Domestic & Irrigation
5	Mt. Fir Lumber Co. Tygh Valley Division	40 (p)	50	31	Davidson Spring	350,000	160,000	Adequate; no growth planned	None	Industrial & Domestic
6	Pine Grove Water District	140 (p)	50	UA	1 Well	150,000	UA	Adequate with drilling of new deep well	None	Domestic & Irrigation
7	Pine Hollow Water Association	300 (p)	217	50	1 Well Field	None	500,000	Currently operating at about 50% capacity	UA	Domestic & Irrigation
8	Pinewood Mobile Manor	220 (p)	79	0	1 Well	None	UA	UA	UA	Domestic & Irrigation
9	Riverview Motel & Trailer Court	40 (p)	14	0	Taylor Spring	6,000	UA	Adequate; possibly need new well	Chlorinated	Domestic & Irrigation
10	Sportsmans Park	135 (p)	129	0	1 Well Spring	92,000	100,000	Adequate	None	Domestic & Irrigation
11	Tooley Terrace Water District	120 (p)	40	40	2 Wells	10,000	70,000	Inadequate; need new wells & reservoir	Chlorinated	Domestic & Irrigation
12	Tygh Valley Water District	200 (p)	65	0	Spring & 3 Wells	70,000	100,000	UA	None	Domestic & Irrigation
13	Wamic Water Association	250 (p)	63	0	1 Well	26,000	50,000	UA	UA	Domestic & Irrigation
14	Barlow Ranger Station	36 (p)	UA	0	Municipal (Dufur)	UA	UA	Shortages have been experienced	None	Domestic
15	Clackamas Lake Guard Station	6 (p)	UA	0	Stream	UA	UA	No shortages experienced; no growth planned	None	Domestic
16	Bear Springs Ranger Station	63 (p)	UA	0	Spring	40,000	UA	Adequate	Chlorinated	Domestic
17	Clackamas Lake Campground	21 (p)	UA	UA	Well	UA	UA	No shortages experienced	None	Domestic
18	Clear Lake	21 (p)	UA	UA	Well	UA	UA	No Shortages experienced	None	Domestic
19	Frog Lake	44 (p)	UA	UA	Well	UA	UA	Shortages have been experienced	None	Domestic
20	Shear Spring Water	7 (p)	7	UA	Surface	None	UA	Adequate; no growth	None	

	Association Inc.							anticipated		
21	Valley View Water Association, Inc.	8 (p)	10	UA	Well	10,000	UA	Adequate; no growth anticipated, could not be accommodated	None	Domestic
22	Rowena Dell Water District	6 (p)	6	UA	Well	30,000	UA	Unsure of 20 year supply	None	Domestic & Irrigation
23	Upper Mill Creek Water System	21 (p)	10	UA	Well	None	UA	Adequate	None	Domestic & Irrigation
24	Juniper Addition Water System	21 (p)	10	UA	Well	20,000	UA	Adequate; being incorporated into Tygh V. Water System	None	Domestic & Irrigation
25	Pine Hollow Water Corporation	220 (p)	400	UA	3 Wells	50,000	UA	Adequate to 1985; need new wells & reservoirs	None	Domestic & Irrigation
26	View Point Trailer Court	UA	60	UA	Well	15,000	UA	Adequate	None	Domestic & Irrigation
27	Inn at The Dalles Motel & Trailer Court	UA	60	0	2 Wells	15,000	430,000	Adequate	None	Domestic & Irrigation
28	Wolf Run	UA	UA	UA	Eightmile Creek	UA	UA	UA	UA	Domestic & Irrigation
29	Warm Springs River	UA	2	UA	Surface	1,500,000	UA	Expand if possible; unsure of 20 year supply	Chlorinated & Treated for turbidity	Resort
30	Juniper Flat District Improvement Co.	UA	Ditches	0	Clear Lake Reservoir	Clear Lake	21,007 ac./ft. adjudicated per year	Inadequate; could use more but don't have water rights	None	Irrigation Only
31	Lost & Boulder Ditch Co.	2400 (a)	ditches	0	Trib. of White R., Forest, Lost & Crano Creeks	None	UA	Plan to redo system from Little Boulder Lake to bring more water to give reserve supply; will use as storage (15 ac. Ft.)	None	Irrigation Only
32	Rock Creek District Improvement Company	UA	Ditches	0	3 Mile Cr., Rock Cr. Res., Gate Creek	1,200 ac./ft. Rock Cr. Res.	UA	Inadequate due to water rights, storage & supply	None	Irrigation Only
33	Round Prairie Ditch Company	490 (a)	Ditches	0	3 Mile Cr.	None	Use 50% of water in 3 Mile Cr.	Not adequate; supplemented by Badger Cr. & Pine Hollow Res.	None	Irrigation Only
34	Badger District Improvement Company	24 farms 4,100 ac.	Ditches	0	Badger Lake	Badger Lake 4,000 Ac. Storage	4,100 ac./ft.	No changes in agricultural practices; need won't change	None	Irrigation Only
35	Tygh Valley Highline Ditch Company	646 (a)	Ditches	0	Jordan Cr. Badger Cr.	Back-up water dam on Jordon Cr. To divert	UA	Adequate to extent of available water	None	Irrigation Only

						Badger Cr.				
36	Pine Hollow Co-op	20-22 Farms	Ditches	0	Surface Water runoff in winter-flood water	Supplement to Badger District	4,100 ac./ft.	No changes to agricultural practices	None	Irrigation Only

*Information Unattainable

Table 15 – Community Sewer Systems

Name	# Served	Type of Treatment	Current Flow	Capacity	Future Needs
Sportsmans Park	87 Lots	Community Drainfield	Unknown	190 Lots	Additional drainfield will be added as number of dwelling units increases
The Dalles	1,325 D.U.* (outside the City limits)	Secondary	2.12 million gallons per day (MGD)** average	4.5 MGD is average maximum capacity. Up to 7 MGD can be processed	Expansion to an average maximum capacity of 7 MGD is planned in 1985.

Source: County Health Dept. & City Public Works Dept.

*D.U. = Dwelling Units

**MGD = Million Gallons Per Day

Table 16 – Probable Ground Water Sources

Locality	Water Bearing Formation	Location of Well Sites	Probable Yield of Well (or Springs) (Gallons per Min.)	Probably Depth of Drilling Necessary Per Well (Feet)
Mosier	-Columbia River Basalt -“ “ -Alluvium	-Mosier Cr. Valley to South -At Town -Along River	-300 – 1,000 -300 – 1,000 -10 - 100	-500 – 800 -300 – 600 -50
Rowena	-Columbia River Basalt -Alluvium	-At or Near Town -Along River	-300 – 1,000 -50 - 300	-300 – 1,000 -50 - 100
The Dalles	-Columbia River Basalt	-At Town & Valleys to South	-500 – 1,000	300 – 1,000
Celilo	-Columbia River Basalt -Alluvium	-Entire Lowland -Along River	-500 – 1,000 -50 - 200	-300 – 1,000 -20 - 60

Source: Department of Interior

4. Solid Waste Disposal Facilities

The Northern Wasco County Sanitary Landfill is the only major sanitary landfill in the county and is located three miles south of The Dalles. This 20.83 acre landfill is privately owned and operated, and provides service to the entire county. The Dalles Disposal Company, also privately owned, provides garbage collection service to Mosier and The Dalles and all the area north of the Willamette Base Meridian (between Townships 1 North and 1 South). The City of Dufur collects its

own garbage, which it dumps at the landfill. The City of Maupin and communities of Pine Grove, Wamic and Tygh Valley have garbage collection service out of Maupin which gathers and disposes of their garbage at the landfill. The landfill recently began accepting garbage from Hood River County. Shaniko and Antelope each have modified landfills nearby that are under permit to the Department of Environmental Quality and are locally operated.

According to the Mid-Columbia Solid Waste Management Plan, (Mid-Columbia Economic Development District, November, 1975; p. 38), the Northern Wasco County Sanitary Landfill has a planned life span of fifteen years, which began in the fall of 1973. A 1978 engineering study done on the landfill by Bill Webber of Valley Land Sales in Corvallis shows the life span of the land-fill to be 25 years, at the current use rate (Art Braun- The Dalles Disposal Company (December 5, 1980)). An additional 17.5 acres of land adjacent to the landfill have recently been purchased for future use. This will increase the life span of the site to 30 years with the addition of Hood River County to the use rate.

Because this landfill is adequate to meet the needs of the northern and central portion of the county for the next 30 years, no new additional sites are being sought. According to the County Public Health Department, the modified landfills in Shaniko and Antelope will be adequate to meet the needs of these areas until the year 2000 (Dennis Illingworth, County Sanitarian. (December 3, 1980)).

CHAPTER 6 TRANSPORTATION

This chapter briefly summarizes the County's rural transportation system, including conditions, issues, proposed system improvements, financing, goals and policies. The County's adopted Transportation System Plan (TSP) prepared in 2009 provides more detailed information about the transportation system and also serves as a supporting transportation element of the Comprehensive Plan. The TSP addresses all modes of transportation pursuant to the requirements of the Oregon Transportation Planning Rule.

A. Road Systems

Roadways serve the largest share of trips and support many of the other modes of travel used in Wasco County. Automobiles/trucks, pedestrians, bicyclists, transit users, marine vessels, and freight transportation all rely on roadways to some degree for mobility and access to various land uses, including rail, marine, air, and pipeline/transmission facilities.

A number of jurisdictions own and manage the public roadway system within Wasco County, including the following.

- Wasco County owns and maintains approximately 697 miles of roadway, which includes 300 miles of paved roadway.
- The Oregon Department of Transportation (ODOT) owns upwards of 270 miles of state highways within the County, including some of the most heavily traveled roadways.
- The United States Forest Services (USFS) owns and maintains the roadways within the Mt. Hood National Forest, located in the western area of the County. These roadways have been used historically to access logging areas and provide emergency fire access; however they are now seeing more recreational use.
- The Confederated Tribes of Warm Springs own and maintain the roadways within the Warm Springs Indian Reservation area. The reservation is located in the southwest area of the county.
- The Incorporated Cities of The Dalles, Dufur, Maupin, Mosier, Shaniko, and Antelope own and maintain the roadways within their city limits that are not owned or maintained by ODOT or the County. These roadways provide local access and primarily serve local trips.

Roads in the County are generally classified as arterial, collectors and local roads. Currently, all arterial roads are state highways and under the jurisdiction of ODOT. Arterials roads are intended to provide mobility by serving high volumes of traffic, particularly through traffic, at higher speeds. They also serve truck movements and should emphasize through their design traffic movement over local access. Collector roads collect traffic from the local street system and distribute it to the arterial street system. These roadways provide a balance between traffic movement and land access and should provide extended continuous stretches of roadway to facilitate traffic circulation through the county. Local roads provide local land access

and carry locally generated traffic at relatively low speeds to the collector street system. They should provide connectivity through neighborhoods, but should be designed to discourage cut through vehicular traffic.

As part of the 2009 TSP process, roads were evaluated for performance using a volume to capacity ratio (v/c) measure. Projected future (2030) performance also was evaluated. The following two tables summarize current (2009) and projected 2030 performance for ODOT and major County roads. This analysis indicates that state highways and collector roads in the county current operate at well below their capacity in all cases and are expected to continue to do so through 2030. It also indicates that all major county roads have very good or excellent pavement conditions.

TABLE 1 - CURRENT AND PROJECTED FUTURE PERFORMANCE OF STATE FACILITIES

Roadway	Current (2009) Average Daily Traffic	Mobility Standard (V/C Ratio)	Current (2009) V/C Ratio	Future (2030) Average Daily Traffic	Future (2030) V/C Ratio
US 26	4,515	0.70	0.15	7,095	0.24
US 30	1,325	0.70	0.07	1,880	0.10
US 97 (South of US 197)	3,170	0.70	0.09	4,565	0.13
US 97 (East of US 197)	2,245	0.70	0.13	3,230	0.18
US 197 (at Boyd Market Road)	3,250	0.70	0.11	4,610	0.15
US 197 (at Fifteenmile Road)	1,735	0.70	0.06	2,465	0.08
OR 206 (East of I-84)	830	0.70	0.05	705	0.04
OR 216 (East of US 26)	235	0.70	0.01	350	0.02
OR 216 (West of US 197)	620	0.70	0.03	1,280	0.07
OR 216 (East of US 197)	255	0.70	0.01	525	0.03
OR 218 (South of US 97)	100	0.70	0.01	180	0.01
OR 293 (East of US 97)	185	0.70	0.01	295	0.02

TABLE 2 - CURRENT AND PROJECTED FUTURE PERFORMANCE OF COUNTY FACILITIES

Roadway	Current (2009) Average Daily Traffic	Mobility Standard (V/C Ratio)	Current (2009) V/C Ratio	Future (2030) Average Daily Traffic	Future (2030) V/C Ratio	Pavement Condition
Boyd Loop Road (East of US 197)	175	0.70	0.01	215	0.01	Very good
Browns Creek Road (South of Chenoweth Creek Road)	265	0.70	0.06	330	0.02	Very good
Cherry Heights Road (Northeast of Wells Road)	375	0.70	0.02	465	0.03	Very good
Dufur Valley Road (West of Rail Hollow Road)	265	0.70	0.01	325	0.02	Very good
Dufur Valley Road (West of South Valley Road)	210	0.70	0.01	260	0.02	Very good
Emerson Loop Road (East of Lower Eight Mile)	145	0.70	0.01	180	0.01	Very good
Fifteenmile Road (East of	290	0.70	0.02	355	0.02	Very good

Moody Road)						
Fivemile Road (West of OR 197)	415	0.70	0.02	515	0.03	Excellent
Friend Road (West of Dufur Gap Road)	100	0.70	0.01	125	0.01	Very good
Juniper Flat Road (West of OR 216)	30	0.70	0.01	35	0.01	Very good
Lower Tub Springs (South of OR 218)	40	0.70	0.01	50	0.01	Very good
Mill Creek Market Road (Northeast of Orchard Road)	1,630	0.70	0.09	2,020	0.12	Very good
Reservation Road (South of OR 216)	180	0.70	0.02	225	0.01	Excellent
State Road (at Sevenmile Hill Road)	480	0.70	0.01	600	0.03	Very good
Threemile Road (Southeast of Steele Road)	1,625	0.70	0.09	2,020	0.12	Very good
Upper Tub Springs (South of Hwy 218)	20	0.70	0.01	25	0.01	Very good

While most of the primary roads in the County have adequate existing and future capacity, a variety of projects are recommended in the future to improve intersection operations, address safety issues, and reconstruct roads as they age and require repairs or rebuilding. These projects are described in the TSP, which identifies approximately \$80 million worth of capital improvement projects through 2030. A significant portion of these funds would be dedicated to improving state or federal facilities (i.e., Interstate 84).

As of 2009, funding for the County's operation program for 700+ miles of paved and gravel roads comes almost entirely from sources outside the County in the form of transfer payments from the federal government and the State of Oregon. This revenue is used to pay salaries of County employees and for materials and services, road maintenance, and minor improvements. The federal payments once were related to the harvest of trees on federal forest land in the County; the payments were a means of compensating the county for wear and tear on public roads used to haul logs to mills and finished products to market. As logging declined, the federal government passed a five year Safety Net law in 2000 guaranteeing that counties would continue to receive annual funding at historic harvest levels. However, congressional support for continuing those temporary payments is waning and payments are expected to be phased out by 2013.

Transfer payments from the State of Oregon are the second largest source of revenue the County relies on to maintain its road network. The Oregon Department of Transportation redistributes revenue that it collects from fuel sales, weight mile taxes, driver and vehicle fees, and other sources to local governments across the state. The formula used to distribute funds differs for cities and counties.

For Wasco County and virtually all cities and counties in Oregon, gas tax revenue has not been keeping pace with costs. A combination of factors is weakening this

revenue source's purchasing power. The biggest problem is that the fuel tax rate is not indexed, so inflation is eroding its purchasing power. In addition, the combination of improved vehicle fleet mileage and the use of non taxed alternative fuel vehicles is affecting the amount of fuel sold disproportionately to vehicle miles traveled. Consequently, wear and tear on the road system is outstripping available revenues to accomplish needed maintenance and capital improvement projects. Recent forecasts by ODOT predict that without significant increases in the tax rate, fuel tax revenue will continue lagging inflation and decline in value to local road authorities.

As noted above, special federal forest payments are expected to be phased out by 2013, which would eliminate the Road Fund's primary revenue source. This would leave very limited available money for road maintenance and virtually no funds for capital improvements. The County will need to consider and implement a variety of potential approaches to address this shortfall, including the following:

- Make better use of existing resources
- Alter road network design and operating standards
- Secure more external funding
- Adopt additional local taxes and user fees

The County's TSP describes these actions and recommendations in more detail.

B. Other Modes of Transportation

A variety of non-auto modes of transportation are important for county residents to meet their mobility and recreation needs. They are described briefly here and in more detail in the County's TSP.

1. Pedestrian and Bicycle Travel: The pedestrian and bicycle modes serve a variety of needs including relatively short trips to major attractors, recreational trips, circulation within parklands, and access to transit (generally for trips under ¼ mile to bus stops). In rural areas of the County, walking and bicycling mainly serve as a form of recreation or exercise, rather than for commuting or shopping, due to the relatively long distances between originations and destinations. As a result, the majority of pedestrian and bicycle trips are short trips, including trips to the school, recreational areas, etc. While there are safety concerns associated with bicycle and pedestrian travel on high-speed, highly traveled roads, roadways with a low volume of traffic are preferred routes for pedestrian and bicycle use.

Existing pedestrian and bicycle facilities in Wasco County include a multi use trail along the Columbia River and several bike routes that are commonly traveled. These routes include the Mosier Loop, Dalles-to-Hood River connection, Cherry Heights, and Eightmile and Fifteenmile loops.

All State and County roadways in rural parts of Wasco County, except State Highways 26, 97 and 197, have an average daily traffic count of less than 3,000 vehicles, which is consistent with ODOT guidelines for shared bicycle use. However, most of the roadways are not signed to warn motorists of the potential

for encountering bicyclists on the roadways. In addition, County roadways with low traffic volumes tend to have high speed motorists and poor sight distance, making it potentially unsafe for bicyclists.

No specific proposed future bicycle and pedestrian improvement projects are identified in the TSP. However, given increasing recreational bicycle use in the County, a formal identification and recognition of cycling routes within the County was identified as a need and was formally recommended as part of the TSP process.

2. Transit Facilities and Service: Existing public transportation service in Wasco County is provided by the Transportation Network. The Transportation Network, a member of the Gorge TransLink, provides dial-a-ride service for The Dalles and selected portions of Wasco County. The Hood River County Transportation District offers public transportation services through Columbia Area Transit (CAT). CAT provides fixed-route service between Hood River, Mosier, and The Dalles on a daily basis and between Portland and The Dalles on a weekly basis.

The Mid-Columbia Economic Development District, under contract with the Association of Oregon Counties, prepared the Wasco County Coordinated Transportation Plan (CTP) update to address area needs from 2009 to 2012. The plan provides a framework to guide investments in public transportation. As such, improvements and future funding of public transportation in Wasco County should be implemented in accordance with the CTP.

3. Marine Transport: The Port of The Dalles is located on the Columbia River although it is primarily a marketing entity for industrial land in the region. In general, the Port owns industrial and commercial sites, some with riverfront barge access. Currently no known marine freight is loaded from sites within the Port of The Dalles, but the potential for such facilities exists. The Port also owns and operates a 120-slip marina facility with moorage for all types of boats with drafts up to 14 feet. A public boat launch ramp is also available at the marina. Adjacent to the Port of The Dalles is a private facility that currently provides storage and transport of wheat via the Columbia River.

No specific marine transportation facility improvement projects are identified in the County's TSP.

4. Air Transport: One public air transportation facility, The Columbia Gorge Regional/The Dalles Municipal Airport, serves Wasco County. The Airport is not located within the County, but is directly across the Columbia River from The Dalles, in the State of Washington. The Airport is jointly owned by the City of The Dalles and Klickitat County in Washington State. Despite the location, the Columbia Gorge Regional/The Dalles Municipal Airport is included in the statewide air transportation study, and serves many large local commercial companies, heavy industrial firms, and the United States Forest Service.

Two private air facilities are located in Wasco County. The Chenoweth Airpark is a private airport established in 1959 and located three miles west of The Dalles. Permission to use the airport is required in advance. The runway has an asphalt surface and is approximately 2,450 feet by 75 feet. Pine Hollow Airport is located 2 miles northwest of Wamic, Oregon. It is a private air strip and permission to use the air strip is required in advance. The airstrip is turf, with a 25-foot wide gravel center. The total dimension of the airstrip is 2,400 feet by 130 feet wide.

Future growth and development is a top priority of the Columbia Gorge Regional/The Dalles Municipal (CGRDM) Airport. However, there are currently no projects scheduled that are expected to increase the volume of air travel. No other long-term plans have been identified that suggest future air travel needs will increase at the CGRDM or private airports within the County over the next 20 years.

C. Freight, Pipeline and Transmission Facilities and Needs

Wasco County contains part of the Union Pacific (UP) Railroad's east-west main line. The UP main line provides the most direct connection from the Pacific Northwest to the Overland Route via Pocatello, Idaho, and Cheyenne, Wyoming. The Burlington Northern Santa Fe Railway (BNSF) is Oregon's second largest transcontinental railroad. A north-south BNSF line runs roughly along the county line between Wasco County and Sherman County before diverging into the south central part of Wasco County and points south.

BNSF and the Oregon Rail Plan identified needed improvements to five tunnels on the BNSF north-south line through central Oregon, located along an 88-mile stretch in Wasco and Jefferson Counties. Improvements were deemed necessary to provide clearances sufficient for "high-cube," 9-foot 6-inch containers stacked one on top of another in a double-stack configuration. When the ORP was published in November 2001, the State did not have funding in place to support these improvements.

Wasco County contains one major interstate transmission pipeline. The facility is a 36-inch diameter natural gas pipeline operated by Gas Transmission Northwest Corporation. This line runs through the southeast portion of the County enroute from Canada to California. The line transmits between 800 million and 1 billion cubic-feet of Canadian natural gas to California each day.

Wasco County recognizes the potential for future lines to bisect the County as future demand for natural gas increases. One proposal by Palomar Gas Transmission, a partnership between NW Natural and TransCanada, would provide additional capacity and reliability to the natural gas transmission system.

The proposed 36-inch-diameter underground pipeline will be approximately 217 miles long and connect to an existing gas pipeline located northeast of Shaniko. As proposed the route would run east-west through Wasco County adjacent to Maupin and Pine Grove. The project is anticipated to be completed in late 2011.

Additional pipeline transportation in and through Wasco County includes transport of water and sewer within incorporated cities, and transmission lines for electricity and telephone service throughout the County.

CHAPTER 7 HOUSING

A. Existing Housing

The location and condition of existing housing in Wasco County was inventoried by use of a windshield survey. General locations of housing units or clusters can be found on the Existing Land Use map on page 62 of this Plan.

All housing in the County was viewed and classified as either "standard", "marginal", or "substandard". The criteria used to determine these classifications are listed below.

1. Standard Unit: A standard unit is a dwelling unit that has a central heating system and a plumbing system complete with hot water and indoor toilet facilities that are reserved for the exclusive use of a single household. In addition, the structure should have no visual defects, or only slight defects, that could be repaired by the average homeowner during the course of regular home maintenance. Slight defects would include the following:
 - a. lack of paint
 - b. slight crumbling of mortar between bricks
 - c. small cracks
 - d. one or more broken windows
 - e. broken gutters or downspouts
 - f. missing roofing material over a small area
2. Marginal Units: A marginal unit is a dwelling unit that has a central heating system and a plumbing system complete with hot water and in-door toilet facilities that are reserved for the exclusive use of a single household. In addition, the structure should have no more than one or two major defects which would indicate a prolonged lack of regular home maintenance and which could not usually be repaired by the average homeowner. Major defects would include the following:
 - a. holes, open cracks and rotted, loose or missing material in the foundation, walls or roof over a substantial, but not overly large area
 - b. several broken windows and cracked or broken frames
 - c. broken or missing doors
 - d. broken or otherwise unsafe porches, stairs, etc.
3. Substandard Unit: A substandard unit is a dwelling unit that lacks a central heating system or has a plumbing system that is not reserved for the exclusive use of a single household, or is lacking hot water or indoor toilet facilities. A substandard unit is also one which has several major defects which would prevent the structure from providing safe and adequate shelter. Critical defects would include the following:

- a. holes, open cracks, and rotted, loose or missing material in the foundation, walls or roof over a large area
- b. substantial sagging of the floor, walls or roof
- c. extensive and unrepaired damage by storms, i.e., floods, damage by winds, and wind-driven rains, etc.
- d. damaged and unsafe chimney
- e. inadequate original construction tents, huts, with dirt floors or no foundations, barns, or converted garages.

Mobile homes were judged by their "weather tightness", which is defined as soundness, as well as wind and rain resistance. They were also categorized as standard, marginal, or substandard.

The main limitation to the windshield survey was that observation was limited only to viewing of the outside of the dwelling from a distance, and frequently to only one or two sides of the house. The condition of all parts of the units not visible, therefore, could not be considered. As a result, a dwelling unit which appeared sound on the outside could have been considered standard even though it had faulty wiring, plumbing, foundation, and so forth. If this interior factor could be considered, it would reduce even further the number of sound dwellings.

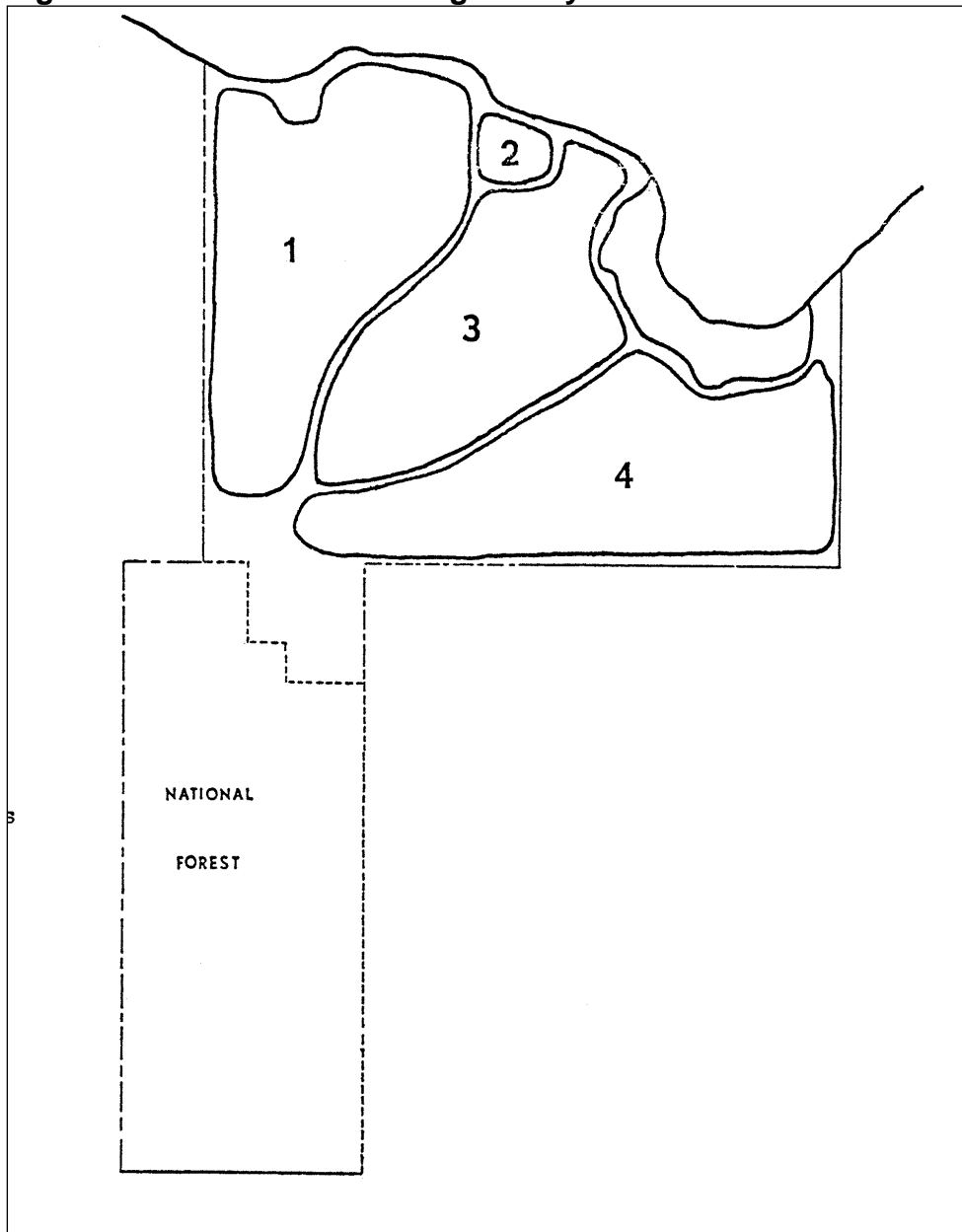
Data from the windshield survey was broken into the Planning Units described in the Introduction of this Comprehensive Plan: the Western, Eastern, Central and Southern Units. Table 1 shows the housing counts for each unit and for the county as a whole (excluding the six cities and Urban Growth Boundary Areas). This table shows that most of the housing (55%) is located in the Western Unit (see Figure 1). Eighty percent of the housing units are conventional single-family residences, and the other twenty percent are mobile homes. There appear to be few multi-family dwellings in these unincorporated portions of the County outside of the Urban Growth Boundary Areas.

Table 1 – Housing Statistics

	Single Family Dwellings			Sub Total	Mobile Homes			Sub Total	Total
	Standard	Marginal	Sub Standard		Standard	Marginal	Sub Standard		
Western	461	(94)		555	143	(14)		157	712 55%
Eastern	197	11	13	221	21	21	0	21	242 19%
Central	136	19	1	156	38	38	0	56	212 16%
Southern	96	11	0	107	15	15	0	22	129 10%
Totals Ave.	890 86%	41	(94) 14	1039 80%	217 85%	25	(14) 0	256 20%	1295 100%

These figures exclude Celilo Villaga, Warm Springs Indian Reservation and the incorporated cities (The Dalles, Dufur, Mosier, Maupin, Shaniko and Antelope), and their Urban Growth areas.

Figure 1 – Windshield Housing Survey



	1. Mosier Area	2. Rowena Area	3. Sevenmile Hill Area	4. Mill Creek Area	Total
Living Units	167	88	157	276	688
Single Family Homes	80%	68%	68%	84%	75% (83% standard, 12% marginal, 5% substandard)
Mobile Homes	20%	32%	32%	16%	25% (91% standard, 9% marginal, 0% substandard)
Standard	75%	75%	92%	89%	83%
Marginal	16%	18%	6%	10%	13%

Substandard	9%	7%	2%	1%	4%
Picker Cabins	12	N/A	N/A	139	151

The majority exist in the Celilo Village along the Columbia River. These dwellings are classified as marginal.

The majority of the housing, an average of 85%, is of standard quality, while the other 15% are either marginal or substandard. This holds true for both conventional homes as well as mobile homes. In the State of Oregon, 12% of all housing is either marginal or substandard.

Not included in the housing figures were the 151 units maintained for migrant laborers. All of these units were classed as marginal or substandard due to their lack of plumbing facilities. They were not added to the totals because they would indicate an unrealistic picture of the current housing conditions. They are all located in the Western Planning Unit (see Figure 1). They are concentrated along Mill Creek and south of The Dalles in the orchard lands. A smaller number of these units are found in the orchard lands south of Mosier.

In the Western Unit, which includes the area around The Dalles Urban Area, 78% of the housing is conventional; 22% is mobile homes. This can be compared to The Dalles Urban Area where only 5% of housing is in mobile homes.

Figure 2 shows that mobile home placement permits accounted for around 80% of all permits issued in both 1975 and 1976 for the unincorporated portions of Wasco County. Table 2 continues the count for the years 1977-80. Mobile homes accounted for 58%, 54% and 70% of all permits issued in those respective years. These figures show the enormous demand for mobile homes. It is important that the demand for this type of housing be recognized and accounted for.

Tables 3 and 4 give census data on housing for the years 1960, and 1970 and the preliminary data for 1980.

Table 2 – Building Permit Count

	1977		1978		1979		1980	
	#	%	#	%	#	%	#	%
Building Permits								
Conventional Homes	46	42	61	46	48	30	45	34
Mobile Homes	63	58	73	54	114	70	88	66
Totals	109	100	134	100	162	100	133	100

Source: Wasco County Planning Office

Figure 2 – Building Permits – Unincorporated Wasco County

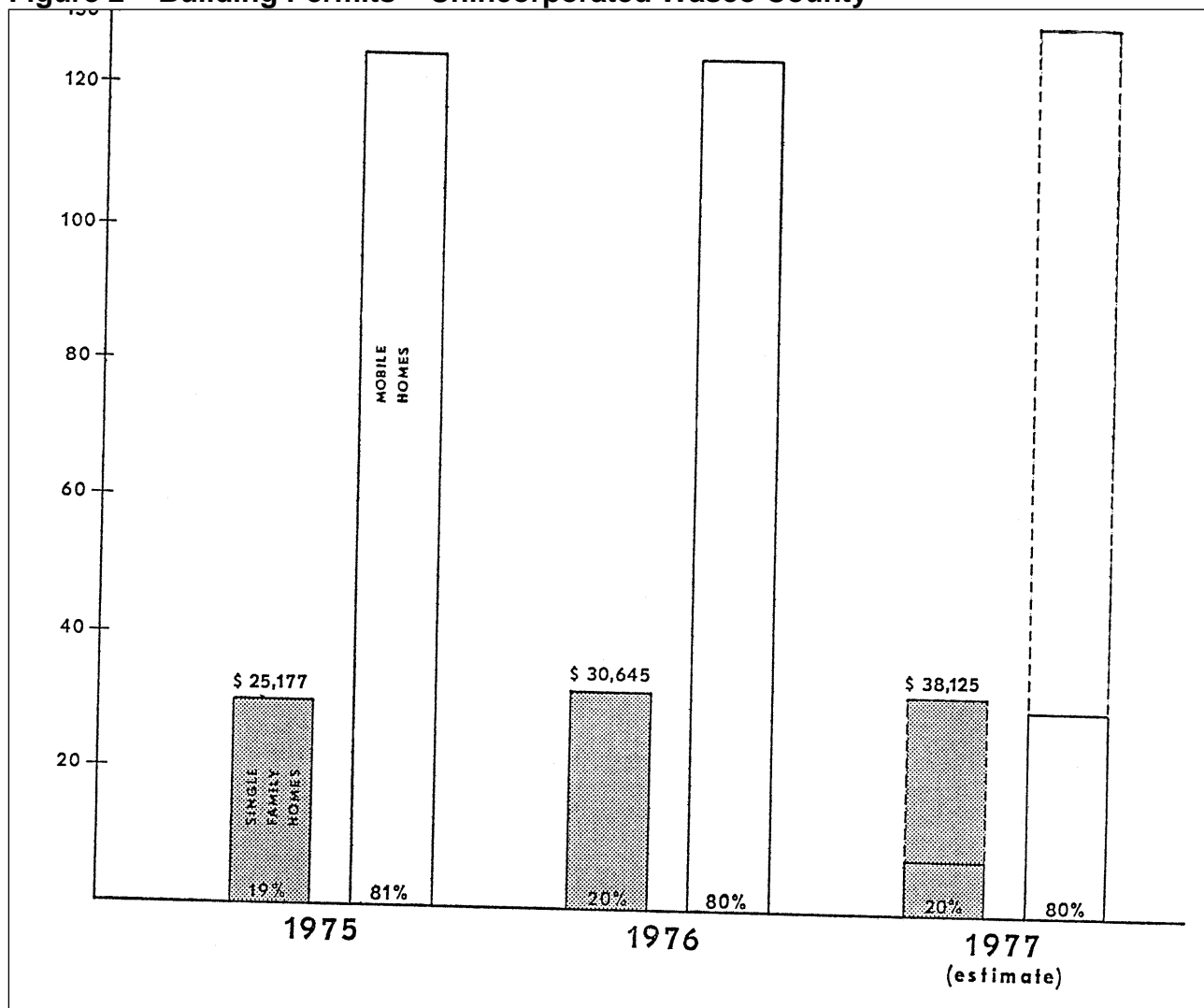


Table 3 – Housing – 1970 Census Data – Wasco County

Income	Renter Occupied Housing – All Size Households		
	With all plumbing with 1.25 persons/room or less. Pay less than 25% of income for rent.	Lack some or all plumbing with more than 1.25 persons per room. Pay more than 25% for rent.	Total
Less than \$2,000	48	269	317
\$2,000 – \$5,000	166	237	403
\$5,000 - \$10,000	758	83	841
\$10,000 - \$15,000	354	22	396
\$15,000 - \$20,000	114	13	127
\$20,000 and above	28	5	33
All Sizes	1,488 or 70%	629 or 30%	2,117 (100%)

Income	Renter Occupied Housing – All Size Households		
	Units with all plumbing, with 1.25 persons/room or less, built after 1939, or valued at \$10,000	Units lacking plumbing with 1.25 persons/room or more, built before 1939, or valued at	Total
Less than \$2,000	48	269	317
\$2,000 – \$5,000	166	237	403
\$5,000 - \$10,000	758	83	841
\$10,000 - \$15,000	354	22	396
\$15,000 - \$20,000	114	13	127
\$20,000 and above	28	5	33
All Sizes	1,488 or 70%	629 or 30%	2,117 (100%)

	or more inside/\$7,500 or more outside SMSA's	\$10,000 or less inside/\$7,500 or less outside SMSA's	
Less than \$2,000	344	68	412
\$2,000 – \$5,000	578	87	665
\$5,000 - \$10,000	1,343	188	1,531
\$10,000 - \$15,000	1,067	90	1,157
\$15,000 - \$20,000	345	19	364
\$20,000 and above	224	5	229
All Sizes	3,901 or 90%	457 or 10%	4,358 (100%)

Table 4 – Housing Census Data – 1960, 1970, and 1980

	1980	1970	1960
Wasco County			
Total Housing Units	9,732	7,289	7,732
Vacant (both seasonal & migratory)	1,718	162	1,070
Occupied Year Round	8,014	7,127	6,302
Cities			
Antelope	32	27	30
Dufur	236	179	191
Maupin	237	171	146
Mosier	130	94	104
Shaniko	22	20	32
The Dalles	4,571	3,804	3,644
Warm Springs Reservation	131	63	177
Chenowith Area	1,149	786	N/A
Misc.			
Total for Unincorporated Areas & Areas Outside U.G.B. & Reservation	3,224	2,145	3,048
Vacancy Rate (%)	17.7	2.2	14.5
% Housing Change from 1960	+32.	-1.	N/A
Household Size (based on occupied housing units)	2.62	2.82	3.21

B. Housing Needs

From an economic, social and energy conservation stand-point, it is desirable for new urban development to occur primarily in an urban or urbanizing area, as opposed to a rural area. This is in accordance with the Land Conservation and Development Commission Goals # 9 (Economics), # 11 (Public Facilities and Services), and # 13 (Energy Conservation). Also according to the Goals, flexibility of housing locations, types and densities must be provided for. The City of The Dalles and its urban growth area has and will continue to provide the needed area for much of the housing that is necessary for the future.

However, buildable lands outside the urban area may also be considered as potential residential areas. The criteria that were used to determine potential buildable lands outside the City limits and urban growth boundary areas are listed

below in Table 5. It should be noted that these factors do not take into account localized site constraints such as potable water supplies, subsurface sewage disposal or any other specific site constraints.

There is relatively little acreage in the County that can be considered buildable. Areas of 20% slope or greater would exclude most of the lands along the Deschutes, John Day and Columbia Rivers from this classification. Exact acreages of buildable lands and their locations can not be included due to the lack of slope data. This information should be included in the up-dating of this Plan.

Population analysis has shown that the majority of the population in Wasco County lives in The Dalles Urban Area. The 1980 preliminary census data shows that 5,720 housing units, or 59% of all housing units in the County are in The Dalles area. More people are moving to this area to get the goods and services they desire.

Table 6 (below) inventories the buildable lands within The Dalles Urban Area, as inventoried by the Wasco County Planning Office.

Table 5 - Buildable Land Limitations

#	Primary considerations which would prohibit building are as follows:
1	Soil Class I-VI: In accordance with Land Conservation and Development Commission guidelines, agricultural lands with soil class I, II, III, IV, V, and VI are to be preserved for agricultural use only.
2	Public Owned Lands: Publicly owned land cannot be built on by private individuals, so it was considered as non-buildable land.
3	Geologic Hazard Areas: Areas designated by the State Department of Geology and Mineral Industries as having potential hazards were considered non-buildable.
4	Slopes greater than 20%
5	Research Natural Areas: As determined by Wasco County.
6	The Dalles City Watershed, Dufur Watershed: These areas provide potable water for The Dalles and Dufur.
7	Forest lands with productivity ratings I - VI.
8	Wildlife Big Game Winter Range: As identified by the State Fish and Game Department.
9	Flood Plains: As determined by the Department of Housing and Urban Development.
10	Aggregate sites: These are preserved as supplies of these materials are scarce and not readily available. Need projections match known supply until the year 2000.

Table 6 – Buildable Lands – The Dalles Urban Area

	Urban Residential	Commercial (Mobile Home Parks)	Other Commercial
Total Orchard Land (Unavailable)	306 Acres	None	None
Total Buildable Land* with Development Restrictions** (marginal availability)	758 Acres	None	None
Total Buildable Land with no Development Restrictions	445 Acres	4 Acres or 35 Lots***	49 Acres
Total Land	1,509 Acres	4 Acres	49 Acres

*Buildable land – vacant land planned for urban residential, suburban residential or commercial development.

**Development Restrictions – includes restraints for new house construction or mobile home placement such as lack of sewer or water lines, excessive slope, lack of access or odd lot shapes or sizes.

***Based on present usage of approximately 8% of commercially zoned land for mobile home parks and 8.7 lots per acre.

Assuming a county population increase of 4,725 (Bonneville Power Administration estimate), between 1975 and 1995, approximately 1,665 dwelling units will be needed by 1995 for this population increase. This takes into account an average of 2.84 persons per household, the twenty-year average (1950-70) for Wasco County. Using these assumptions, if all residential development took place in The Dalles Urban Area, it appears that the buildable land will be at or near capacity by 1995.

The current need for housing in The Dalles Urban area must also be considered. According to the Housing Study for The Dalles Urban Area, there is a need for housing. A majority of people in the survey taken within that report expressed a belief that there is a need for housing in the community, however, the exact figures are not known. But, with an increasing population and a static housing market, there is definitely some need for additional housing. There is a deficiency of housing at all cost levels in The Dalles Urban area, according to the housing study. The State of Oregon Housing Division has listed Wasco County as having serious housing problems; a consideration of the total housing picture.

From the above analysis, there appears to be an adequate amount of urbanizable land, but a shortage of housing units in The Dalles Urban area. This shortage puts pressure on lands in the Western Unit to provide residential land for development to increase the housing stock. The rural areas can also provide a lifestyle away from the city on larger lots. Accommodation for other types of residential development is consistent with Land Conservation and Development Goal # 10 (Housing), which asks for flexibility in housing location, type, and density.

The above analysis does not take into account current market conditions or ownership patterns. In other words, there may be an adequate amount of buildable

land, but it may be owned by only a few people unwilling to sell. Until better market conditions occur (i.e., increased lot costs, tax incentives, or some means to encourage sale), there may be a very small amount of land truly available for purchase. Therefore, it is impossible to find out exactly how much land is actually available for new home construction in the urban area. However, we do know exactly how much land is vacant, which becomes a gross indicator of availability.

There appears to be very little demand for new housing in other parts of the county. Development is generally occurring in or near the small communities of Pine Grove, Tygh Valley, Wamic, as well as the unincorporated towns, and in the recreational developments of Rock Creek Reservoir, Pine Hollow and other subdivisions.

C. Financing Housing

If an adequate amount of land is available and buildable, and there is a shortage of housing stock, the real problem must lie somewhere in financing. This can be illustrated through the "rule of thumb" that spending over twenty-five percent (25%) of a family's income for housing is excessive. The following chart is derived based on this 25% figure.

Income	Cannot Afford Over This Amount for Housing	
Less than \$3,000	\$750./year	\$62./month
\$3,000-\$5,000	\$750-1250./year	\$63-104./month
\$5,000-\$10,000	\$1250-2500./year	\$105-208./month
\$10,000-\$15,000	\$2500-3750./year	\$209-312./month
\$15,000-\$20,000	\$3750-5000./year	\$313-417./month
\$20,000. and above	\$5,000. and up	\$418. and up/month

In 1970, about twenty-seven percent (27%) of the households in Wasco County paid over twenty-five percent (25%) for housing.

Population by income levels is also important to indicate what percentage of people are in each of the above categories. The tax returns in Table 7 show a general picture or trend of the number of people in each income level. Adjusted Gross Income (AGI) was taken from the 1974 tax returns. Each individual return represented approximately 2.5 persons in 1974.

Table 7 – Income Tax Returns Reporting – Adjusted Gross Income (AGI) – Wasco County

AGI	Number of Returns	% of Total County Returns	% of Total County AGI
Less than \$3,000	1906	23.7	3.4
\$3,000-\$5,000	883	11.0	4.2
\$5,000-\$10,000	1733	21.5	15.4
\$10,000-\$15,000	1613	20.0	24.1
\$15,000-\$20,000	1022	12.7	21.1

\$20,000 and above	759	9.4	24.9
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Effective Buying Income (EBI) also gives some insight into population by income levels. EBI includes net cash income, income in-kind and imputed income. It is a bulk measurement of market potential, or an estimation of actual buying power. Table 8 gives estimated buying income, information for Wasco County and Oregon.

Table 8 – Effective Buying Income (EBI)

Median Family EBI: -Wasco County = \$10,192 -Oregon = \$10,855	
Percentage of Households in EBI Groups in Wasco County	
Less than \$3,000	13%
\$3,000. - \$5,000	9.1%
\$5,000. - \$10,000	26.5%
\$10,000. - \$15,000	30.7%
\$15,000. and above	20.7%
Median Family Income = \$12,528	
Average Family Size = 2.84	

The average estimated cost of construction of a new single-family house in unincorporated Wasco County was \$25,177.00 in 1975. Using this average, only twenty-two percent (22%) of Wasco County residents could afford to build an average new house in 1975. (See the computations on Table 8). Only fourteen percent (14%) of The Dalles residents could afford a new house in the city. This means an annual in-come of \$14,000.00 was needed to afford a new house in rural Wasco County.

The cost of the building site averaged approximately \$1,000. per acre in 1975. Current costs per square foot for a dwelling are between \$22.00 and \$25.00. Additional costs for housing include fees for sewer, water, plan checks, permits, etc., and run approximately three percent (3%) of the total housing cost. Other considerations include taxes, insurance, and utilities. Table 9 below gives some indication of the cost of purchasing a home in 1975 in Wasco County.

Table 9 – Affordable Housing Computation (1975) - 91% Percent Interest Rate, 10% Percent Down Payment

\$25,177	Average Housing Cost
\$3,000	Three Acres of Land
\$750	Three Percent (3%) for Fees
\$28,927	Would require \$2,900 down, and monthly payments of at least \$290. (One percent of total housing cost is monthly payment.)

Mobile homes are one alternative to the high cost of single-family homes. The average cost of a new mobile home (\$12,000) is about half that of a new home. Using this figure, approximately forty percent (40%) of Wasco County residents could afford a new mobile home in 1975, (see the computations in Table 10.) An annual income of about \$7,700. would be required to sustain the monthly payments.

Table 10 – Mobile Home Affordability

10%	Interest
25%	Down Payment (\$3,000. Average)
\$12,000	Average Mobile Home Cost
\$50	Per Month Lot Rental
\$160	Monthly Payment

Housing assistance agencies have given some relief from the high housing costs. Following is a summary of the major housing assistance agencies and programs.

Federal Housing Administration (FHA):

A United States Government Agency designed to assist people mainly in acquiring loans for home purchases. The property to be purchased must meet FHA standards and objectives of livability and construction, and must be located in an acceptable neighborhood. At least twenty-five different assistance programs are offered by this agency.

Public Housing (Housing Act of 1937):

Financial assistance is available to develop, purchase, manage, or lease housing units for low-income families and individuals. Eligibility is limited to families who meet certain income requirements and guidelines. Three individual programs are administered through the local housing authority.

Farmers Home Administration (FmHA):

Nine different loan programs are administered through this agency. The emphasis of the program is on rural housing.

Veterans Administration (VA):

Loans are available to eligible war veterans whose security consists of real property located in the State of Oregon, for the acquisition of homes and farms.

Housing and Urban Development (HUD):

Several subsidy programs mainly for low-income families and individuals are available.

Of these programs, only HUD and FmHA actively finance projects in Wasco County. Prior to a 1973 moratorium on housing subsidies, only seventy-three (73) HUD subsidies, fifty (50) public housing assistance subsidies, and four (4) FmHA loans were given in the entire county. These programs have increased considerably since this time.

CHAPTER 8 ECONOMICS

Economics is the study of the supply and demand for housing, employment, schools, public facilities, and all components of the community which affect the quality of life. Economics helps to explain why an area has the population and employment it does today. Employment characteristics are a vital part of economics. Types of employment can be divided into basic and non-basic sectors.

The basic employment sector can be described as those types of employment which produce goods and services for customers outside the area. For example, Martin-Marietta Aluminum, Inc. has basic employment because it produces aluminum for markets outside the area. Demand for this basic sector production is determined by influences outside the community. Basic production is important because it brings money into the economy.

Non-basic employment is those types of employment which produce goods and services for the local market. Demand for non-basic employment is generated by basic production. A good example is the mining ghost town. When the mines were producing gold ore (basic production), activities such as saloons, hotels, stables, and black-smiths flourished (non-basic). When the mine went dry (no basic production), the money provided by exports stopped, and the non-basic businesses lost the source of their purchasing power. Due to loss of income sources for basic production (gold ore), and the resulting loss of non-basic production (supporting services), all economic activity ceased and the communities became ghost towns.

The base multiplier is a number which describes the relationship between basic and non-basic activity. It can be stated in terms of jobs or dollars of income. Basic production generates demand for non-basic production, and the base multiplier describes this demand. The Dalles Urban Area has an employment multiplier of 2.56 and an income multiplier of 2.13. This means that each basic job induces 1.56 non-basic jobs, or each dollar of basic income produces 1.13 non-basic dollars. Rural Wasco County would be expected to have a smaller multiplier than The Dalles. The county's economic activity is primarily basic production; the economy is too small to have a developed non-basic sector. To satisfy local demands, purchases are made outside of the area in The Dalles or Portland. Income from basic production leaks out of rural Wasco County faster than it does The Dalles. In other words, the people from the rural farming areas (basic income) spend their money for goods and services (non-basic) in The Dalles. This situation would occur more frequently than people from The Dalles purchasing in Portland. Therefore, the rural Wasco County base multiplier is smaller than The Dalles base multiplier.

Basic Sector

The basic sector of the Wasco County economy is composed primarily of agriculture, forestry, the processing of agricultural and forestry products, and other manufacturing industries. Employment and payrolls for Wasco County are shown in Table 1.

Table 1 – Covered Employment and Covered Payrolls

Covered Employment (in %)							
State Industrial Code Class.	1970	1971	1972	1973	1974	1975	1976
Ag., Forestry & Fisheries*	1	1	1	1	1	1	1
Mining	-	-	-	-	-	-	-
Contract Const.	5	6	5	5	4	4	3
Manufacturing							
-Food & Kindred Products	6	7	6	5	4	3	3
-Lumber & Wood Products	7	8	7	7	7	7	6
-All Other	14	12	12	11	9	9	9
Transportation, Communication & Utilities	5	5	4	4	3	3	3
Wholesale & Retail Trade	29	28	26	27	23	26	25
Finance, Insurance & Real Estate	3	3	3	3	3	3	3
Services	14	14	21	21	18	19	21
Government	17	16	15	16	27	27	25
Total	100%	100%	100%	100%	100%	100%	100%
Total (Persons Employed)	4,435	4,709	5,151	5,275	6,192	6,282	6,278
Covered Payrolls (in %)							
State Industrial Code Class.	1970	1971	1972	1973	1974	1975	1976
Ag., Forestry & Fisheries*	-	-	-	-	-	-	-
Mining	-	-	-	-	-	-	-
Contract Const.	8	9	7	8	5	6	5
Manufacturing							
-Food & Kindred Products	5	5	5	4	3	3	3
-Lumber & Wood Products	9	10	10	9	10	8	8
-All Other	18	17	16	15	13	13	14
Transportation, Communication & Utilities	6	5	5	5	4	4	4
Wholesale & Retail Trade	21	20	20	20	18	19	19
Finance, Insurance & Real Estate	3	3	3	3	2	2	2
Services	8	8	14	13	12	13	15
Government	23	23	22	22	32	30	30
Total	100%	100%	100%	100%	100%	100%	100%
Totals (In Thousands)	\$30,406	\$33,608	\$37,089	\$40,439	\$51,075	\$56,152	\$61,464

1*This does not include all agricultural or forestry payrolls.

Source: Wasco County Economic Information, Oregon Dept. of Economic Development(1979)

A. Agriculture

Agriculture is a very important part of the economy of the County. It is primarily composed of three sub-sectors: tree fruits, small grains, and livestock. Table 2 shows the estimates of total agricultural employment.

Table 2 – Wasco County –Full Time Agricultural Employment Estimates

Year	Employment	% of Wasco Covered Employment
1994	977	11.0%
1993	999	11.5%
1992	899	10.5%
1991	814	10.0%
1990	772	9.5%
1989	757	9.77%
1988	791	10.4%
1987	727	10.0%
1986	734	10.9%
1985	552	8.0%
1984	741	10.0%
1983	645	8.8%
1982	601	8.0%
1981	595	7.6%
1980	626	8.0%
1979	592	7.5%
1978	538	7.0%
1976	670	10.7%
1975	670	10.6%
1974	690	11.1%
1973	1,140	21.6%
1972	900	17.4%
1971	720	15.3%
1970	940	21.2%

All of the commercial fruit crops within the county are grown in the area near The Dalles and Mosier. Cherries are the most important crop, followed by apples, apricots, peaches, prunes, plums, and pears.

Soft winter wheat is the most important agriculture field crop grown in the county. Barley is a secondary crop which is typically grown in areas where the average rainfall is insufficient, or the soil depth is not adequate for wheat production.

Most of the agricultural land within the county is utilized for livestock range. Hay, cropland pasture, rangeland, and grass-shrub areas are utilized for livestock forage. Cattle and calves are the most important product. Hogs and sheep rank a distant second and third, respectively.

Tables 3-5 give a general overview of the farm sector in Wasco County. They are taken from the Census of Agriculture.

Table 3 – Agricultural Statistics

Subject	1992	1987	1982	1978	1974	1969	1964	1959
Total number of Farms	456	487	502	462	498	542	599	669
Acres in Farms	1,152,965	1,172,745	993,972	1,046,221	1,139,927	1,168,970	1,369,707	1,307,488
Average size of Farm	2,525	2,408	1,980	2,265	2,289	2,151	2,287	2,049
Value of Land & Bldgs. (in thousands)	\$442,891	\$342,360	\$350,207	\$199,121	\$138,725	\$ 76,166	\$59,021	\$ 51,502
Average Value per Farm	\$971,253	\$702,998	\$697,624	\$430,998	\$278,569	\$140,528	\$ 96,638	\$ 61,799
Average Value per Acre	\$355	\$297	\$346	\$196	\$122	\$65	\$43	\$39

Table 3 shows that even though the number of farms is decreasing, average farm size is growing, increasing 24% from 1959 to 1992. Agricultural land values per acre have increased almost 1000% since 1959.

Farm sizes within the county vary considerably. There are both large livestock ranches and smaller fruit orchards. This fact contributes to the variability of farm sizes within the county.

Table 4 – Farms by Size

Size	1992	1987	1982	1978	1974	1969	1964	1959
Less than 10 acres	46	48	36	32	37	23	23	17
10-49 acres	102	109	143	88	107	96	89	113
50-100 acres	43	52	39	45	42	57	68	65
100-499 acres	106	96	124	99	106	134	173	204
500-2,000 acres	75	87	72	100	103	127	146	164
2,000 or more acres	84	95	88	98	103	105	100	106
TOTAL	456	487	502	462	498	542	599	669

During the past thirty years, the number of farms within Wasco County has declined by 32%. The number of full-time owners, part-time owners and tenants has also declined as shown below.

Table 5 – Operator Characteristics

Tenure of Operator	1992	1987	1982	1978	1974	1969	1964	1959
Full Owner	281	312	329	303	324	345	388	429
Part Owner	123	123	124	101	110	133	138	156
Tenant	52	52	49	58	64	64	65	73
Managers							8	5
Average Age of Operator	52.6	52.1	50.2	50.8	53.5	52.2	51.6	50.4

A general overview shows that the number of farms is decreasing and they are becoming somewhat larger and much more valuable. This is probably due to consolidation of several smaller farms into larger ones.

1. Tree Fruits

The first commercial shipment of cherries from Wasco County occurred in the 1890's. Tree fruits have been increasing in importance, and cherries are now the most important tree fruit in the county. In 1970, Wasco County contributed 1.3 percent of the total production of sweet cherries within the nation, and 40 percent of the total production in the state. Wasco County supplies more sweet cherries to the market than any other single county in the nation.

The amount of land utilized in the production of tree fruits has increased almost 20% in the last 33 years, as shown in the following tables. In 1965, the Bureau of Reclamation designed and constructed an irrigation system, which provided irrigation water for over 5,600 acres in Wasco County. Due to this project, 800 to 1,000 additional acres were planted in tree fruits.

The total value of tree fruits in Wasco County has steadily increased since 1954, while the average harvested acreage has increased slightly. The increase in total value is primarily due to inflation, increased yield per acre, and the Bureau of Reclamation irrigation project.

Tables 6 and 7 also indicate that cherries were 93 percent of the total revenue and 92 percent of the tree fruit acreage in 1976; and 94 percent of the total revenue and 89 percent of the tree fruit acreage in 1992. Apples, apricots, peaches, prunes, plums and pears make up the rest of the revenue and acreage for the tree fruits.

Table 6 – Tree Fruit Acreage and Value Wasco County

Year	Harvested Acres	Number of Orchards	Average Size (acres)	Total Value	Average Value/Acre	Average Value/Orch
1992	7,166	125	57.3	\$25,175,000	\$3,513	\$201,400
1987	7,368	139	53.0	\$20,475,000	\$2,779	\$147,302
1982	6,490	140	46.4	\$14,006,000	\$2,158	\$100,043
1978	6,325	150	42.2	\$ 7,198,000	\$1,138	\$ 47,987
1974	6,325	149	42.4	\$ 6,240,000	\$ 987	\$ 41,879
1969	6,525	176	37.1	\$ 5,604,000	\$ 859	\$ 31,841
1964	5,910	186	31.8	\$ 2,347,000	\$ 397	\$ 12,618
1959	6,001	155	38.7	\$ 2,397,875	\$ 400	\$ 15,470

Table 7A– Tree Fruit Values

Year	Cherries	Apples	Apricots	Peaches	Prunes/ Plums	Pears	Total
1992	29,727,000	1,219,000	110,000	78,000	-	377,000	\$31,511,000
1987	21,046,000	1,186,000	128,000	-	-	85,000	\$22,445,000
1982	13,103,000	612,000	175,000	72,000	6,000	38,000	\$14,006,000
1976	6,701,000	300,000	100,000	72,000	14,000	11,000	\$ 7,198,000
1974	5,625,000	473,000	65,000	57,000	11,000	9,000	\$ 6,240,000
1969	5,440,000	77,000	26,000	55,000	4,000	2,000	\$ 5,604,000
1964	2,212,000	33,000	24,000	68,000	8,000	2,000	\$ 2,347,000
1959	2,246,215	25,000	17,550	99,600	7,450	2,070	\$ 2,397,885

Table 7B – Harvested Acreage

Year	Cherries	Apples	Apricots	Peaches	Prunes/ Plums	Pears	Total
1992	5,600	500	28	35	-	70	6,233
1987	5,400	440	30	-	-	40	5,910
1982	6,000	350	50	50	10	30	6,490
1976	5,800	130	100	250	35	10	6,325
1974	5,800	130	100	250	35	10	6,325
1969	6,000	90	100	280	35	20	6,525
1964	5,125	60	130	540	35	20	5,910
1959	5,270	100	150	415	55	11	6,001

Figures on return to capital investment and profit may be used to determine the health and stability of an industry. A study of American business found that the average rate of return on investment over the past 40 years was seven to nine percent. During the post-war period, the average rate of return to United States agriculture was two to four percent. Long term stability in terms of return to capital investment is important, not short term fluctuations.

In other words, an industry may have a net loss in one particular year and still be healthy. However, profit and return to capital investment must be positive in the long run. This is illustrated by the fact that the cherry industry is healthy, yet showed a negative return to capital investment in 1976.

Table 8 – Cost and Revenues for Tree Fruits

Year	Total Capital Investment/ Acre	Cost of Production/ Acre	Revenue/Acre	Return Rate on Capital Investment	Profit Acre
CHERRIES					
1976	\$ 2,387.00	\$ 1,331.40	\$ 1,155.00	Negative	Negative
1972	2,133.00	849.95	969.00	5.58%	119.05
1969	2,125.00	819.25	906.00	4.08%	86.75

APPLES					
1976	\$ 2,600.00	\$ 1,711.00	\$ 2,308.00	22.96%	597
1974	2,500.00	1,659.00	3,638.00	79.16%	1,979
1969	2,100.00	1,185.00	855.00	Negative	Negative
1964	2,000.00	878.00	550.00	Negative	Negative
APRICOTS					
1976	\$ 2,387.00	\$ 1,299.40	\$ 1,000.00	Negative	Negative
1972	2,133.00	817.95	650.00	Negative	Negative
1969	2,125.00	787.25	260.00	Negative	Negative
PEACHES					
1976	\$ 2,387.00	\$ 1,299.40	\$ 288.00	Negative	Negative
1974	2,133.00	817.95	230.00	Negative	Negative
1969	2,125.00	787.25	194.00	Negative	Negative
PRUNES & PLUMS					
1976	\$ 2,387.00	\$ 1,252.40	\$ 400.00	Negative	Negative
1972	2,133.00	770.95	314.00	Negative	Negative
1969	2,125.00	740.25	114.00	Negative	Negative
1964			228.00		
PEARS (WINTER)					
1976	\$ 2,600.00	\$ 1,432.38	\$ 1,000.00	Negative	Negative
1974	2,500.00	1,460.17	900.00	Negative	Negative
1969	2,100.00	1,074.10	100.00	Negative	Negative
1964	2,000.00	785.63	100.00	Negative	Negative

Seasonal agriculture workers are a significant portion of the required labor for orchard production. The labor hired to harvest fruit crops is primarily migrant and works four to five weeks. Table 9 provides an indication of the time and magnitude of the seasonal agricultural employment.

Table 9 – Total Agricultural Employment by Calendar Year, 1987-1995, 1995 Data Preliminary, Based on '95 Benchmark - Wasco County

Month	1987	1988	1989	1990	1991	1992	1993	1994	1995
January	350	340	340	580	420	580	360	530	510
February	370	380	370	580	640	510	650	700	590
March	420	390	400	560	610	620	650	730	510
April	450	420	570	480	540	480	570	580	590
May	450	450	410	490	560	540	500	620	600
June	980	470	2,750	6,020	4,300	6,300	4,280	5,210	4,560
July	2,550	1,980	6,960	5,650	4,990	2,370	6,330	760	550
August	480	470	590	550	2,550	1,510	1,170	550	650
September	400	400	540	570	570	620	590	570	590

October	400	390	540	500	510	1,550	760	480	510
November	370	360	450	440	510	1,140	540	530	480
December	350	340	420	430	460	710	410	420	510
AA	630	530	1,190	1,400	1,390	1,410	1,400	970	890

All data reflect workers aged 16 years and over. For further information on the agricultural employment series, contact the Employment Department's Agricultural Employment Analyst at (503) 378-4854.

It is estimated that 1½ full time laborers are required for each 100 acres of orchard land. In Wasco County in 1976, approximately 95 workers were employed on a full-time basis, excluding owners themselves. Table 5 shows there are 6,325 acres of harvested orchard land in Wasco County as of 1976. This means that at least 42 full-time workers are necessary, based on the estimation stated above.

Royal Anne (Napoleon) and Bing cultivars will continue to dominate the sweet cherry production in the Mid-Columbia area. Following the loss of 1,500 trees in the winters of 1972-74, the majority were replaced with Bings. Bings are suitable for long distance shipment, canning, or brining. Because of these qualities, growers may sell their produce to either the fresh market or to a processing plant.

At present, 35% of the cherries are sold as fresh, 50% are brined, and 15% are frozen. The primary markets for fresh cherries are the U.S. east coast, Midwest, California, and Florida. A foreign fresh cherry market has been opened in Hong Kong and Taipei in the last four years. This market now represents a small percentage of sales, but has doubled every year since trade began. Japan remains a potential market.

2. Small Grains

Small grain production is one of the most important agricultural activities in the county. Table 10 lists the value of sales for wheat, barley, and oats.

Table 10 – Total Value of Small Grains

Year	Wheat	Barley	Oats	Total
1994				
1992	\$12,339,000	\$ 449,000	\$ 22,000	\$12,810,000
1987	8,252,000	990,000	30,000	9,272,000
1982	17,807,000	850,000	70,000	18,727,000
1976	10,689,000	730,000	13,000	11,432,000
1974	16,822,000	849,000	14,000	17,685,000
1969	2,762,000	545,000	7,000	3,314,000
1964	2,346,000	497,000	6,000	2,849,000
1959	3,777,830	495,840	19,255	4,292,925

Source: OSU Extension Service Wasco County Estimates

Fewer small grain farms exist within the county than ever before. At the same time, acres in production is at an all-time high, resulting in larger farms (see Table 11). This trend will probably continue until increasing farm size is no longer profitable.

The trend, nationally, is also towards larger consolidated farm units. It is estimated that the percentage of farms with annual sales of \$100,000 or more will double from just four percent now, to eight percent by 1980-85. At the same time, the percent of cash receipts received by these farms will increase from 47 percent at present, to possibly 60 percent. However, this does not indicate a shift towards a larger percentage of corporation farms. In fact, the family farm will continue to account for about 90 percent of all farms. The family farm will be similar in nature to the corporate farm, in that it will be a modern, sophisticated and commercially oriented operation.

Table 11 - SMALL GRAIN FARMS

Year	No. of Farms	Acreage	Avg. Acres per Farm
1992	109	79,172	726
1987	137	70,327	513
1982	184	99,900	543
1976	190	89,100	469
1974	209	86,858	416
1969	245	79,574	325
1959	277	85,756	310

Source: Census of Agriculture, Oregon, State, and County Data

The profitability of a farming operation will be determined by several factors: management effectiveness, machinery age, availability of labor, soil

characteristics; just to mention a few. Each owner and operator should evaluate these factors to determine the optimum or efficient farm size.

In the past, fewer than one out of six farmers were engaged in farming on a part-time basis. Today, two out of three farm families derive more than half of their income from non-farm sources. Therefore, it appears that part-time farmers will gain in importance in the future. A significant number of seasonal employees are also hired each year for the small grain harvest.

Farm output will increase assuming public research continues to increase. The same types of technology that boosted yields in the last 25 years will continue to account for increases in the future.

The cost side of production forces the picture to be less bright. In 1950, U.S. farms had a gross income of about 32.3 billion, expenses of about 19.4 billion, and a net income of 12.9 billion or 40 percent of the gross. By 1970, gross income had increased 79 percent to 57.9 billion, but expenses had risen faster--112 percent to 41.1 billion, leaving a net income of 16.8 billion, or only 29 percent of the gross.

For farmers within Wasco County, the future looks somewhat similar to that of the preceding five years. However, the trends of recent years have left U.S. agriculture in a vulnerable position. The capital intensive agricultural production process requires a stable and fluid money market. If the prices of farm commodities, especially grains in this region, should continue at their low rates, farmers will be hard pressed to meet the elevated prices of fuel, fertilizers, and other agricultural chemicals.

The following are agricultural projections made by the U.S. Department of Agriculture Farm Index.

- a. Demand for farm products for domestic use as well as export is expected to grow by $1\frac{1}{2}$ to $1\frac{3}{4}$ percent annually over the next five to ten years.
- b. Farm output will mount one to three percent a year (depending on price and weather conditions), thanks to steady advances in technology and the substitution of capital for land and labor.
- c. Chronic surplus or shortages of farm products are not in the picture, although farm income and prices will fluctuate.

3. Livestock

Livestock has been an important agricultural activity within the county. Table 12 shows the value of livestock, poultry, and poultry products sold in Wasco County.

Table 12 – Total Estimated Income

Year	Value of All Livestock (Poultry & Products)	Value of Cattle (only)
1992	\$ 6,885,000	\$ 5,953,000
1987	5,819,000	4,748,000
1982	6,903,000	5,691,000
1976	4,818,000	3,725,000
1974	4,620,000	3,864,000
1969	4,091,000	3,385,000
1964	2,473,000	1,574,000
1959	3,430,000	2,151,000

Source: OSU Extension Service Wasco County Estimates

A large percentage of the beef operations in Wasco County are supplemental to grain operations. In fact, only 5% of the farming operations raise cattle exclusively. In most cases, grain farms have a significant percentage of non-cropland or rangeland. In an effort to utilize an operator's time more efficiently and fully, most farmers run beef cattle on the submarginal lands not suitable for dry-land farming. Because this type of operation is supplemental in nature, the production of beef cattle is limited by the least abundant resource; be it labor, or winter or summer range. When that resource becomes limiting, the additional cash cost required to make it available may not be justified.

The statistics relating to profit and return to capital investment are not available. Table 13 below lists the rate of return on capital investment for different sizes of herds in 1965. More recent statistics are not available.

Table 13 – Return on Capital Investment From Beef Cow Herd on Wheat Livestock Farms – Size Classification for Cropland

	Herd Size		
	Small	Medium	Large
(Up to 900 Acres)			
Profit:	\$ 740.00	\$ 2,297.00	
Rate of Return on Investment:	2.7	2.6	
(901-1550 Acres)			
Profit:	\$ 632.00	\$ 2,047.00	\$6,534.00
Rate of Return on Investment:	2.6	2.6	2.8
(1551 Acres & Over)			

Profit:	\$ 1,093.00	\$ 1,308.00	\$ 4,944.00
Rate of Return on Investment:	5.3	2.2	2.5

If the costs of land associated with wheat farming also carry the cost of the non-cropland, then a considerably different set of statistics emerge. That is, if an individual buys wheat ground there will be some rangeland purchased which cannot be separated from the costs of purchase of such land. Table 14 illustrates the changes in return on capital investment and profit when this assumption is made.

Table 14 – Size Classification for Cropland - Herd Size

	Herd Size		
	Small	Medium	Large
(Up to 900 Acres)			
Profit:	\$ 750.00	\$ 2,307.00	
Rate of Return on Investment:	6.8	7.4	
(901-1550 Acres)			
Profit:	\$ 632.00	\$ 2,047.00	
Rate of Return on Investment:	5.0	7.0	
(1551 Acres & Over)			
Profit:	\$21,539.00	\$ 1,272.00	
Rate of Return on Investment:	7.9	4.3	

The estimated acreage of private rangeland in Wasco County is currently 772,829 acres. The U.S. Forest Service and Bureau of Land Management administer a majority of the public rangeland. The Mt. Hood National Forest includes 150,506 acres of usable range within the commercial forest area. Most of these rangelands are east of the Cascade Mountains, with a majority of them in Wasco County. In 1974, fourteen permittees grazed 1,186 cattle on these lands in the summer. The Bureau of Land Management administers approximately 36,978 acres within the county. Most of these lands are adjacent to the Deschutes River.

High feed prices and/or shortage of feed in the future may change the beef situation considerably. Due to increased grain demand for human consumption, the beef producer may be forced to find alternative feed. The producer may also become more dependent upon range and pasture forage for production in the future.

B. Forestry

Forestry in Wasco County has continued to grow since the beginning of sawmills in 1861. The estimated value of the harvested timber in 1975 was \$6,006,245. The forest lands of Wasco County may be economically broken into three types: grass-shrub, principle forest, and upper-slope forest zones.

The grass-shrub forest is used primarily for grazing and is privately owned. This forest type is discussed in the agriculture-livestock section of this report.

The lower elevations of the principle forest zone are also used for range land. But, the value of this forest type is mainly for timber production of Ponderosa pine.

The upper slope forest zone is the primary source of true fir, mountain hemlock, lodge pole pine and western larch. Almost all of these forest lands in Wasco County are administered by the United States Forest Service.

The U.S. Forest Service and other public agencies administer about 95 percent of the commercial timber volume. These public lands are characterized by large inventories of old growth timber. On the other hand, private lands contain a considerable amount of timber in the younger classes (less than 40 years old). These stocking characteristics indicate that the public lands must absorb future timber supply demands. Intensified management of all timber lands may increase the yields in eastern Oregon in the long run.

According to the U.S. Forest Service, there is currently a permitted cut of 40-45 million board feet per year in the Mt. Hood National Forest. About 80% of this cut is purchased by Mt. Fir Lumber Company according to Jim C. Davidson, District Ranger, Barlow District of Mt. Hood National Forest, U.S. Forest Service (November 7, 1980)

Subdivision and partitioning of private commercial forest lands may potentially impact the forest base of the county. These recreational parcels remove the timber resource from commercial use. They cannot be economically logged and sometimes become precluded from harvesting for aesthetic reasons.

Forestry employment (currently 30% of manufacturing employment) may represent an increasingly important portion of the economy. Efficient use of forest residues, intensified management of public forest lands, and the retention of commercial forest land in production are all important in order to sustain the forest industry.

C. Manufacturing

There are thirty-two (32) manufacturing firms located in the county. Twenty-three (23) of the firms are located in The Dalles and Maupin urban growth boundaries. The nine located outside these two areas are: Cody Logging and Construction Co., Mountain Fir Lumber, Tygh Valley Sand and Gravel, Kent Johnson Logging, Muirhead Canning Company, The Dalles Concrete Products, Detwiler Logging Company, Richard Dodge Logging, Inc., and Windsor Meat Company.

Figures for the total payroll and employment for these county based manufacturing firms are listed in Table 15 for the 1975 calendar year. Totals for The Dalles and Maupin Mountain Fir Mills are included.

Table 15 – Manufacturing – Employment by Quarter, 1975

Quarter	Jan. - March	April - June	June-Aug.	Sept. – Dec.
Number Employed	811	1078	1061	924
Monthly Average	270.3	359.3	353.7	308
Total Quarterly Payroll	\$692,686.88	\$1,068,472.50	\$1,074,673.40	\$912,956.13
% of Total Annual Payroll	18.5	28.5	28.6	24.4

D. Tourism and Education

The major tourist attraction in the County is the Columbia River Gorge. Old Columbia River Road, Interstate 84, port dock facilities, parks and view points provide scenic and recreational facilities along the south side of the, Columbia River. The Deschutes River provides a variety of water related recreational activities such as fishing, boating, camping and sight seeing. These major tourist attractions contribute to the local economy of Wasco County.

E. Non-Basic

The major portion of rural Wasco County's economic activity is oriented towards basic production. Rural economies, such as rural Wasco County, typically have not achieved a size and diversification needed to support a large non-basic sector. Local non-basic demands are satisfied in available markets such as The Dalles and Portland.

Non-basic employment in the rural county primarily consists of farm services, grocery stores, gas stations, restaurants, and other personal services. This is a small part of the total non-basic sector, since services are concentrated in population centers such as The Dalles.

A small non-basic sector is not unusual for a rural area and does not indicate a weakness in the economy. As long as residents are willing to travel to larger markets there will not be a demand for a great variety of the non-basic sector in the rural

areas. As population grows in this part of the county, goods and service establishments will become more attractive for investment and the non-basic sector will grow.

F. Labor Force Characteristics

Unemployment in Wasco County has been a problem in the past. The unemployment rate has been consistently higher than the state average. This has been the case since completion of the government dam projects in the 1960's.

Table 16 illustrates changes in labor force, employment, and unemployment for Wasco and Sherman counties.

Table 16 - Changes in Labor Force, Employment and Unemployment - Wasco & Sherman Counties

	1976	1974	1970	1960
Labor Force	9,930	9,670	9,440	8,440
Employment	8,930	8,910	8,670	7,790
Unemployment	1,000	760	770	630
Unemployment Rate:				
Wasco/Sherman	10.1	7.9	8.2	7.4
Oregon	9.5	7.5	7.6	4.9

Another factor creating a higher than statewide unemployment rate is the seasonal employment in agriculture, food processing, construction, forestry, and lumber processing. These industries have their highest employment in summer, fall and early winter, as Table 17 (showing seasonal employment rates) indicates.

Table 17 – Seasonal Fluctuations in Unemployment as a Percentage of Civilian Labor Force for Wasco/Sherman Counties - 1975

Month	Percentage
January	11.9%
February	13.4%
March	11.5%
April	11.2%
May	10.2%
June	9.8%
July	7.3%
August	8.2%
September	7.3%
October	7.5%
November	9.7%
December	9.9%

Average	9.9%
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Occupations of employed persons and the occupations of job applicants gives the best information in existing skill levels. Wasco County figures for 1970 indicate approximately 75% of employment was skilled or semi-skilled. In 1976, just over 50% of the applicants at The Dalles local employment office identified their occupation as skilled. Of these job applicants, 35% identified their skills as clerical, sales, or service, while only 16% were professional, technical, machine trades or structural work oriented.

Table 18 illustrates occupational characteristics.

Table 18 - Occupations of Employed Persons, by Sex and Minority Status, 1970 & 1976

Occupation	Both Sexes						Female					
	Total (1)	White (2)	Black (3)	Other Races (4)	Spanish American	Minority Group* (6)	Total (7)	White (8)	Black (9)	Other Races (10)	Spanish American (11)	Minority Group (12)
All Occupations												
-#1976	7,816	7,690	44	82	49	175	2,784	2,755	17	12	10	39
-#1970	7,297	7,178	41	78	47	166	2,448	2,423	15	20	8	34
-%1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Prof., Technical & Related	12.9	13.0	9.8	0	0	NA	15.7	15.7	26.7	0	0	NA
-Engineers	1.2	1.2	0	0	0	NA	NA	NA	NA	0	0	NA
-Medical & Health Workers	1.5	1.6	0	0	0	NA	2.4	2.4	0	0	0	NA
-Teachers, Elementary & Sec. Schools	4.4	4.5	0	0	0	NA	6.7	6.7	0	0	0	NA
-Other Professional	5.7	5.8	9.8	0	0	NA	6.7	6.7	26.7	0	0	NA
Managers & Administrators, nonfarm	10.2	10.2	0	14.1	0	NA	5.9	6.0	0	0	0	NA
Sales	6.0	6.1	0	0	0	NA	8.1	8.2	0	0	0	NA
-Retail Stores	4.1	4.2	0	0	0	NA	6.7	6.8	0	0	0	NA
-Other Sales Workers	1.9	1.9	0	0	0	NA	1.4	1.4	0	0	0	NA
Clerical	11.7	11.9	0	0	19.1	NA	26.4	26.7	0	0	0	NA
-Secretaries, Stenographers, & Typists	2.3	2.3	0	0	0	NA	6.8	6.0	0	0	0	NA
-Other Clerical Workers	9.5	9.6	0	0	19.1	NA	19.6	19.8	0	0	0	NA
Craftsmen, Foremen & Related	17.1	17.3	7.3	6.4	19.1	NA	1.6	1.6	0	0	0	NA
-Construction Craftsman	5.4	5.5	0	0	0	NA	NA	NA	0	0	0	NA
-Mechanics & Repairmen	3.2	3.2	0	0	0	NA	NA	NA	0	0	0	NA
-Machinists & Other Metal Craftsmen	0.9	0.9	0	0	0	NA	NA	NA	0	0	0	NA
-Other Craftsman	7.8	7.8	7.3	6.4	19.1	NA	NA	NA	0	0	0	NA
Operatives Except Transport	9.6	9.6	19.5	7.7	0	NA	9.9	10.0	0	0	0	NA
-Durable Goods Manufacturing	3.5	3.4	19.5	7.7	0	NA	1.0	1.0	0	0	0	NA
-Nondurable Goods Manufacturing	1.2	1.2	0	0	0	NA	2.4	2.4	0	0	0	NA
-Nonmanufacturing	4.9	5.0	0	0	0	NA	6.5	6.6	0	0	0	NA
Transportation Equipment Operatives	4.6	4.6	0	7.7	12.8	NA	0.9	0.9	0	0	0	NA
Laborers, Nonfarm	5.5	5.2	26.8	20.5	19.1	NA	0.9	0.9	0	0	0	NA
Service, Exc., Private, Household	13.6	13.4	26.8	24.4	29.8	NA	25.4	25.1	46.7	50.0	0	NA
-Cleaning & Food Service	7.7	7.6	9.8	17.9	29.8	NA	13.3	13.5	0	0	0	NA
-Protective Service	0.0	0.8	0	0	0	NA	0.2	0.2	0	0	0	NA

-Personal Health & Other Services	5.2	5.1	17.1	6.4	0	NA	11.8	11.5	46.7	50.0	0	NA
Private Household Workers	1.0	0.9	0	6.4	0	NA	2.9	2.7	0	50.0	0	NA
Farm Workers	7.7	7.7	9.8	12.8	0	NA	2.2	2.1	26.7	0	0	NA

Source: Census Population, 1970 and Oregon Employment Division

Notes: NA = Not Available

*Sum of Spanish American and all races except white. Some duplication possible since Spanish American may include nonwhite races in addition to white.

Sum of individual items may not equal totals because of rounding.

G. Future Economic Outlook

The Overall Economic Development Programs for both the Confederated Tribes of the Warm Springs Reservation of Oregon (1976), and the Mid-Columbia Economic Development District (1980-81), give some indication of the current status of Wasco County's economy and what the future needs may be. However, they are quite general and do not give specific employment projections characteristics. The Bonneville Power Administration has made computations of these and other statistics in their publication, Population, Employment & Households Projected to 2000, (Sept. 1979). These statistics are given in Table 19 and will give some indication of the County's future economic status.

Table 19 shows that total employment will increase by 24.3% between 1980 and 2000. Agricultural employment will decrease by 16.1% during this time period, but non-agricultural employment will increase by almost 30%. Under the non-agricultural employment category, both the construction and lumber and wood products industries will experience employment reductions of 10 and 25 percent respectively. Both of these industries are dependent upon one another and this reduction reflects the current trend of ever-increasing housing prices and decreasing timber supplies.

All other forms of non-agricultural employment are expected to increase, especially the food and kindred products industry, which includes cherry processing. Wholesale and retail trade, as well as finance, insurance, and real estate are both projected to increase by 40 percent, and services by 55 percent; indicating that this area is becoming a regional service and trade center.

The following development projections are made based on the information previously presented:

1. Agricultural employment will decrease as a percentage of total employment due to the consolidation of farming units.
2. Seasonal and full-time employment in the lumber and wood processing will decline.
3. The lumber and wood products industry currently represents about 6 percent of the County's employment and 8 percent of the payrolls. (See Table 1). These percentages have been, and will continue, to slowly decrease to the year 2000, reflecting the State's trend. These decreases should not have too great an impact on Wasco County as a whole, although specific areas, such as Tygh Valley and Maupin could be seriously affected.

Table 19 – Oregon Employment Projections, 1975-2000 (Wasco)

	1975	1980	1985	1990	1995	2000
Total Employment (Household)	8,300	9,175	9,950	10,475	10,950	11,400
Total Employment (Establishment)	8,300	9,175	9,950	10,475	10,950	11,400
-Agriculture	825	775	725	700	675	650
-Non-Agricultural Self Employment	800	800	825	850	875	900
Total Non-Agricultural Employment	6,675	7,600	8,400	8,925	9,400	9,850
-Mining	--	--	--	--	--	--
-Construction	225	250	250	250	225	225
-Manufacturing	1,175	1,275	1,375	1,350	1,350	1,325
-Food & Kindred Products	(200)	(225)	(250)	(275)	(300)	(300)
-Lumber & Wood Products	(425)	(400)	(400)	(350)	(325)	(300)
-Paper & Allied Products	--	--	--	--	--	--
-Primary Metals	(500)	(575)	(600)	(600)	(600)	(600)
-Transportation Equipment	--	--	--	--	--	--
-Other Manufacturing	(50)	(75)	(125)	(125)	(125)	(125)
-Transportation & Public Utilities	375	400	425	425	450	450
-Wholesale & Retail Trade	1,600	1,875	2,100	2,275	2,450	2,625
-Finance, Insurance, and Real Estate	200	250	275	300	325	350
-Services	1,300	1,725	2,050	2,300	2,500	2,675
-Government	1,800	1,825	1,925	2,025	2,100	2,200

BPA – Requirements Section – July 15, 1975

4. The Dalles area will continue to grow in its status as a regional shopping center. These normally non-basic jobs are becoming forms of basic employment in this area.
5. The development of energy from wind and agricultural and timber wastes may foster development of new, smaller-scale industries, or supplement energy supplies on industries which are currently producing.
6. Tourism will continue to be an important part of the County's economy. There may be some fluctuation in tourist activity with variations in oil prices.

(Source: Wasco County Planning Office)

CHAPTER 9 LITERATURE CITED

Army Corps of Engineers, Portland District, Umatilla - The Dalles Environmental Impact Statement, April 1975.

Army Corps of Engineers Pumped Storage in the Pacific Northwest an Inventory, January 1976.

Bonneville Power Administration, The Electrical Energy Picture in the Pacific Northwest, May 1976.

Bureau of Land Management, Prineville, Oregon, Deschutes River Cultural Resources Survey.

Community Action Program, Community Resources - Wasco, Hood River, and Sherman Counties, 1976.

Environmental Law Institute, "Land Use and Conservation: Oregon Takes the Lead," January 1976.

Environmental Law Institute newsletter, Washington D.C., "Planning for Energy Conservation".

Hood River. County Planning Staff, Hood River - Westside Housing Report, 1976.

Lane Council of Governments, Housing - "programs available to homeowners and renters".

Long, Edward - "Cultural Resources in Oregon".

Oregon Department of Energy, January 1, 1977, Oregon's Energy Future - First Annual Report.

Oregon Department of Environmental Quality, Air Quality Control Division, December 31, 1975, Air Quality Profile and Evaluation for the Central Oregon Intrastate Air Quality Control Region (Region 190).

Oregon State Department of Geology and Mineral Industries, Ralph S. Mason, Oregon Mineral Deposits rap.

Mid-Columbia Economic Development District., A Detailed Plan for Low Rent Housing.

Mid-Columbia Economic Development District, Mid-Columbia Comprehensive Land Use Plan 1975-1990.

Montagne and Associates, Waterway Resource Consultants, Wasco County Aggregate Sites inventory.

Oregon State University, Department of Agricultural Economics, Corvallis, Oregon, Draft Resource Analysis - Wasco County; 1966.

Oregon State Highway Division, Oregon Parks map, Travel Information Section, 1976.

Oregon State Highway Division, Parks and Recreation Branch, State Comprehensive Outdoor Recreation Plan, (SCORP), 1972.

Oregon State Housing Division, Handbook for Housing Data Collection.

Oregon State Housing Division, Oregon Statewide Housing Element.

Oregon State Housing Division, Special Studies - "Oregon Housing," and "Development of Housing Information".

Oregon State University Office of Energy Research and Development, Wind Power Potential in Selected Areas of Oregon, Report #PUD 76-4, E. Wendell Hewson, Principle Investigator.

Oregon State Water Resources Board, 1965, Hood Basin.

Perspectives on Energy, Issues, Ideas, and Environmental Dilemma, Oxford University Press, 1975.

Planning for Housing and People in Oregon, U.S. Department of Agriculture, Soil Conservation Service, General Soils Map with Interpretation.

U.S. Geological Survey Water - Supply Paper 1594-E, Artificial Recharge Through a Well Tapping Basalt Aquifers at The Dalles, Oregon.

U.S. Geological Survey Professional Paper 383-A, Storage of Groundwater Behind Subsurface Dams in the Columbia River Basalt, Washington, Oregon, and Idaho.

U.S. Geological Survey, Mineral and Water Resources of Oregon, Bulletin 64, 1969.

U.S. Geological Survey Water Supply Paper 1999-N, Quality of the Groundwater in Basalt of the Columbia River Group, Oregon, Washington, and Idaho.

U.S. Census of Agriculture.

U.S. Geological Survey Water Data Report OR-75-1, Water Resources Data for Oregon - Water Year 1975.

Wasco County, Federal Works Agency, Work Projects Administration, Oregon Historical Records Survey, Inventory of the County Archives, of Oregon, No. 33.

Robert Welty Engineers, Inc., September 27, 1974, Two Year System Study, for Wasco Electric Cooperative, Inc,

Wheeler, Chris L., State Engineer, State of Oregon, Ground Water Levels 1963.

Wright, Pamela, Housing Study for The Dalles Urban Plan.

PERSONAL CORRESPONDENCE

Personnel from the following agencies and organizations were contacted for information:

Army Corps of Engineers
Bonneville Power Administration
Bureau of Economic Analysis,
Bureau of Land Management
Chamber of Commerce
Department of Environmental Quality Eastern Oregon Mental Health Department
Hood River County Extension Agency
Mid-Columbia Economic Development District Nature Conservancy
Nichols Museum, The Dalles
Oregon Department of Fish and Wildlife Oregon Department of Revenue
Oregon State Employment Service, Department of Human Resources
Oregon State Forestry Department
Oregon State Parks
Oregon State Police
Pacific Northwest Bell Telephone Company
Pacific Northwest Range and Experiment Station, U.S. Department of Ag.
People's Utility District Portland State University Soil Conservation Service
State Historic Preservation Office
State of Oregon Housing Division
The Dalles Fire Department The Dalles General Hospital The Dalles High School
The Dalles Post Office
The Dalles-Wasco County Library U.S. Forest Service
University of Oregon
Wasco County Extension Office Wasco County Health Department
Wasco County Education Service District

CHAPTER 10 SUMMARY AND ANALYSIS

INTRODUCTION

Citizen Involvement

The four former planning units (Western, Eastern, Central and Southern), will each be represented by a citizen involvement group and will have opportunities to give their input into future plan updating procedures.

A. HISTORY

Lewis and Clark first came to the area known as Wasco County in 1805 on their way west along the Oregon Trail. The County was established in 1854 by the territorial legislature.

The building of The Dalles Dam on the Columbia in the early 1950's provided thousands of new jobs and gave easier river access to barge transport of goods up and down river. Since the dam's completion in 1958, economic growth has been based on cherry and wheat production.

B. PHYSICAL CHARACTERISTICS

1. General Location

The County is bounded on the north by the Columbia River, on the east by the Deschutes and John Day Rivers, and on the west by the Cascades. Much of the southern half of the County lies within the Warm Springs Indian Reservation.

2. Topography

Steep rolling hills and sharp cliffs are characteristic land-forms in the County. Elevations range from 5,700 feet in the west to 150 feet on the Columbia River.

3. Climate

The climate is temperate to semi-arid. Low annual precipitation, low winter temperatures, high summer temperatures and high winds along the Columbia River Gorge are typical.

4. Water Resources

a. Surface Water

The County lies within three major drainage basins: the Hood, Deschutes River and John Day River basins. Stream flows are generally rapid during early winter rain-storms, before heavy snowfall and freezing conditions prevail. Many streams are perennial; drying up during the summer months.

b. Ground Water

Ground water supplies are generally adequate in all parts of the County. The Dalles Ground Water Reservoir has been declared a Critical Ground Water Area by the State Engineer, due to declining water levels. Stream diversion into the reservoir is helping to ease the pre-sure on it.

c. Water Rights and Usage

Estimated surface water rights in the Hood and Lower Deschutes River Basin in 1967 totaled over 2,000 cubic feet per second (cfs). This information was not available for the John Day River Basin. Ground water rights for the Hood Basin totaled 102.78 cfs in 1964. Again, this information was unattainable for the John Day and Deschutes River Basins.

d. Municipal Watersheds

Two municipal watersheds provide water for the cities of The Dalles and Dufur. They lie within the western forests of the County.

5. Geology

Generally, the County is underlain with expansive flows of Columbia River Basalt. Layers of ash, tuff and other volcanic material have been deposited in many areas as have Erosion materials from the Cascades, such as sand and silt. The flows of Columbia River Basalt are very obvious in the cliffs along the Columbia River Gorge.

6. Natural Hazards

A variety of geologic and flood hazard areas have been identified. On-site investigations should be made before development occurs in these hazard areas.

7. Mineral Resources

a. Metallic Mineral Resources

There are no economically important metallic mineral deposits in the County.

b. Non-Metallic Mineral Resources

Non-metallic mineral resources found in Wasco County include: semi-precious gem stones (agate, chalcedony, jasper, opal); fossils; agatized fruits, seeds and nuts; perlite; decorative volcanic tuff and ryolyte; and widely dispersed minor deposits of peat.

c. Aggregat Resources

Wasco County has approximately 73 aggregate pits with a total production capacity of 6.3 million tons.

8. Soils

Soils are generally formed from loess and volcanic basalt and ash, as well as sediment and other erosional materials. Soils Capability Classes II-VIII is found, with Classes III, VI and VII being the most widespread.

9. Vegetation

The plant associations from east to west are as follows: grass-land communities, chapparral-oak, ponderosa pine-white oak, douglas fir-ponderosa pine and high elevation forest.

10. Natural Areas

Areas of ecological and scientific value have been inventoried by the Oregon Natural Heritage Program, Nature Conservancy. Thirty-seven areas have been identified in Wasco County. The location descriptions are much generalized and include vast acreages.

Wasco County has also identified five natural areas in addition to those named by the Nature Conservancy. The natural areas will be protected and preserved by the placement of the Environmental Protection District over-lay zone.

11. Forest Resources

The U.S. Forest Service and other public agencies administer about 95 percent of the commercial timber volume. There are a total of 550,000 acres of forest land and a timber volume of 6,720 million cubic feet.

Timber has been classified into seven productivity ratings, based on the yield in cubic feet per acre. Classes II-VII exist in Wasco County; Class VII being considered non-commercial timber. Most of the timber is classes III-VI.

12. Land Use and Ownership

Most of the land is in either agricultural or forestry uses. Population is concentrated in the urban area of the City of The Dalles. The Warm Springs Indian Reservation covers a large portion of the southern part of the County.

Over eighty-four percent of the Counties are in private ownership. This includes Railroad Company, Indian reservation and private timber company lands. Public and semi-public lands, which total 15.6 percent of all lands, include Federal, State, County and City lands, as well as those owned by utilities, school districts and others.

13. Fish and Wildlife Resources

Wildlife Resources

An estimated 230 species of animals are found in the ten various habitat types which exist in Wasco County. Much of this habitat is considered sensitive to destruction by either natural and/or man-made forces. Conflicts of use arise between human activities and those of animals who must use these areas for food and cover. In an effort to correct these problems and avoid future conflicts, the sensitive wildlife habitat areas are being protected by the placement of large minimum lot size zoning classifications and the Environmental Protection District Over-layer zone. This will both reduce population densities in these areas and will allow proposed developments to be examined by the local governing bodies and any conflicts of use to be resolved.

Several means by which landowners can protect their lands from damage done by big game are offered by the Department of Fish and Wildlife. They include: damage control hunts, kill permits, hazing permits, use of repellents and fencing. The Department will work with landowners to devise a means by which damage from big game animals may be greatly reduced.

Fisheries Resources

Fisheries habitats include the Columbia River, back-water ponds of the Columbia River, Fifteenmile Creek Drainage, the Deschutes River, Deschutes River Tributaries and lakes and reservoirs. The Columbia River is considered to be the single greatest fisheries resource in the Pacific Northwest. The high quality water and stable flows provide optimum conditions for good fish populations.

14. Environmental Considerations

a. Air Quality

Air quality in Wasco County is considered to be good according to the Department of Environmental Quality (DEQ). The highest potential for air pollution problems exists within The Dalles airshed, which is centered at The Dalles and bounded by the surrounding high topography. This area is monitored by the D.E.Q. and measures may have to be taken if air pollution standards are being exceeded.

b. Water Quality

The Columbia, Deschutes and John Day Rivers are the only streams that are monitored regularly for water quality. Generally, all state and federal standards for water quality are met. Sewer and water systems appear to be satisfactory, as do ground water supplies and quality.

c. Land Resources Quality

Solid waste disposal presents no problems at the pre-sent time. Burning is allowed twice a year at the only sanitary landfill in the County and is closely monitored by the Department of Environmental Quality.

d. Noise Pollution

Due to Wasco County's rural nature, noise pollution is not a serious problem. Because the agriculture and timber industries are common livelihoods in the County, the noise which accompanies them is generally accepted. There is currently no noise ordinance in effect outside city limit boundaries.

15. Energy

a. Sources

The following is a list of developed and potential energy sources of energy in Wasco County:

Hydroelectric -	this will continue as a major source of energy for the area.
Pumped Storage -	five potential sites for this type of production are being investigated.
Thermal -	it is estimated that by the year 1995, thermal plants will operate as the main source of electrical energy, supplemented by hydro power for peak demands.
Geothermal -	there is little potential for this energy source in the County.
Oil and Gas -	Although there are no natural gas or oil supplies in the County, this will continue as a major energy source for the area.
Wind -	the utilization of wind as an energy source in Wasco County appears to be very feasible, particularly in the Columbia Gorge area.
Solar -	use of this feasible energy alternative has not had widespread application in the County.
Waste Products -	timber production wastes are currently being utilized to produce heat in at least one mill in the County. Use of organic agricultural wastes to produce alcohol has been studied and found

to be too unstable a resource at present to be useful on a large scale. The methane gas produced at The Dalles Sewage Treatment Plant is used to run part of the equipment at the plant.

b. Consumption

The transportation sector is the largest user of energy. Petroleum products account for almost all of the energy consumed. Space and water heating dominate energy use in the residential sector.

Energy conservation and recycling are encouraged as ways of preserving existing non-renewable energy supplies. These conservation methods include recycling glass, aluminum and paper, using bicycles and mopeds, pedestrian walk-ways and carpools. Local governments need to be responsive to programs which suggest these practices.

C. POPULATION

Population in Wasco County is projected to increase at a higher rate than in the past based on recent economic trends with much of the growth occurring in The Dalles Urban area and surrounding rural residential lands. In 2005, the population totaled 23,935 people. Forecasts for the year 2026 show the population will increase to 33,780, a 41 percent increase.

D. POLITICAL STRUCTURE

The County Governing Body, consisting of three Commissioners, is the main administrative body in the County. These are elected positions as are the positions of Clerk, Assessor, District Attorney, Sheriff and Treasurer.

E. COMMUNITY FACILITIES AND SERVICES

1. Police Protection

The County is served by the State Police, County Sheriff's Office, The Dalles City Police, the Dufur City Marshal and the Antelope City Marshal.

2. Fire Protection

The several fire departments and districts that service the County include the City fire departments for the cities of The Dalles, Mosier, Dufur and Maupin and the Wasco Rural Fire Protection District, Columbia Rural, Mosier Rural, and Juniper Flats Rural Fire Districts. Wildland or non-structural fires on public lands are manned by the U.S. Forest Service, Bureau of Land Management or Oregon State Forestry Department.

3. Medical Services

Most medical facilities in the county are located in The Dalles. They include the Mid-Columbia Medical Center, the Mid-Columbia Clinic, The Dalles Clinic, The Dalles Family Practice Group, the county-operated Columbia Basin

Nursing Home and the Valle Vista Nursing Home. The Columbia Gorge Rehabilitation Center located in Hood River also provides service to Wasco County.

Emergency medical services are provided by six ambulances. Two are operated by the Wasco Rural Fire Protection District, one by the Dufur City Fire Department, one in Maupin and two in Rajneeshpuram. Emergency services to other parts of the county are inadequate.

4. Schools

The County is served by ten school districts. Student-teacher ratios are presently adequate and no new facilities are proposed.

5. Postal Services

The cities of The Dalles, Dufur, Maupin, Mosier, Antelope, and Shaniko all have city post offices, as does the community of Tygh Valley.

6. Television and Radio

Television service is provided by cooperatives that receive signals from the major antenna located near The Dalles. Stations in many parts of Washington and Oregon can be received.

Three radio stations serve the County. KODL and KACI are located in The Dalles and KCIV-FM is located across the Columbia on the Klickitat Hills.

7. Telephone

Several telephone companies service the County. Pacific Northwest Bell covers The Dalles, Dufur, and Seven-mile Hill areas. Other areas are served by United Telephone Company of the Northwest, North State Telephone Company, Deschutes Telephone Company and the Trans-Cascade Telephone Company.

8. Newspapers

Five newspapers serve the county they are: The Dalles "Chronicle", The Dalles "Reminder", and the "Oregonian".

9. Libraries

The Dalles-Wasco County Library is the main facility in the County. Maupin, Mosier and Dufur each have small public libraries.

10. Parks and Recreation

a. Current Supply of Recreational Facilities

Most of the 42 parks and recreation sites in the County are in public ownership (75%) and are in or near the Mt. Hood National Forest and the Deschutes, White and Columbia Rivers. The Deschutes River is a

particularly popular steelhead fishing stream. This river and the John Day River have both been designated as Oregon Scenic Waterways.

There are no designated wilderness areas in the County. There are also no winter skiing facilities, Oregon recreational trails or bicycle trails. Several scenic areas have been designated by the State and these include portions of I-84 which pass through the Columbia Gorge, the old Gorge highway (U.S. 30) and several others.

b. Future Recreational Needs

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) shows a need for additional campsites and picnic facilities, especially along I-84, swimming beaches, walking and hiking trails, biking and bridle trails, ball fields, tennis and all-purpose courts, golf courses, and additional neighborhood, community, district and regional park lands. Demand for these resources will generate their development on either public or private lands.

c. Outstanding Scenic and Recreational Areas

Outstanding scenic and recreational areas have exceptional qualities which attract local and outside visitors. These areas include: Columbia River Gorge, Deschutes, John Day and White Rivers, Rock Creek Reservoir and Pine Hollow Lake.

11. Cultural Resources

1. Historic Areas

Historic sites in Wasco County include: the Oregon Trail, Barlow Road and Barlow Cut-off Road, The Dalles Military Wagon Road, Town of Ortley, many old school sites and others.

2. Archeological Areas

Many archeological sites exist in Wasco County, particularly along the Columbia, Deschutes and John Day Rivers. Fivemile Rapids and Fort Rock Campsite are on the National Historic Register. Memaloose Island and Abbott Site near Wapinitia are eligible for placement on the Register.

12. Social Services

There are nineteen active service agencies in the County. These include both private and public service agencies. There are also at least sixteen active service clubs, including Chamber of Commerce, Jaycees, Kiwanis, Boy and Girl Scouts, to name a few.

13. Utilities

a. Natural Gas

The Dalles and Chenowith are the only areas serviced by natural gas in the County. It is furnished by the Northwest Natural Gas Company in The Dalles.

b. Electricity

Three electric companies provide service to the County. They are the Northern Wasco County People's Utility District (P.U.D.), Pacific Power and Light (P.P.&L.), and Wasco Electric Co-op, Inc. Generally, the Northern Wasco County P.U.D. serves The Dalles, Chenowith, Dufur, Tygh Valley and Wamic; P.P. & L. services Mosier and Wasco Electric services the remainder of the County.

b. Public Water and Sewer Systems

There are 36 water systems in the County. Many provide water for both domestic use and irrigation and some are for agricultural and irrigation use only.

There are two community sewer systems in the County. One services the City of The Dalles and Urban area and has a maximum capacity of seven million gallons per day. The other system is in the Sportsmen's Park subdivision and is a community drainfields which services up to 180 lots.

d. Solid Waste Disposal Facilities

The Northern Wasco County Sanitary Landfill is a privately owned facility. Various garbage collection services dump at the landfill. It has an estimated life-span of between 15 to 25 years at current use rates. The additional 17.5 acres which have been purchased adjacent to the landfill and the addition of Hood River County to the use rate will increase the life-span to 30 years. Consequently, no additional landfill sites are currently being sought.

F. TRANSPORTATION

1. Road Systems

Roadways serve the largest share of trips and support many of the other modes of travel used in Wasco County. Automobiles/trucks, pedestrians, bicyclists, transit users, marine vessels, and freight transportation all rely on roadways to some degree for mobility and access to various land uses, including rail, marine, air, and pipeline/transmission facilities.

Detailed information on County roads, their current condition, their priority for improvements, their length and designation and other information is contained in the Wasco County Transportation Improvement Program.

2. Other Modes of Transportation

A variety of non-auto modes of transportation are important for county residents to meet their mobility and recreation needs. These include pedestrian, bicycle, dial-a-ride public transit, marine transport and air transport. Detailed information on other modes of transportation is contained in the Wasco County Transportation System Plan.

3. Freight, Pipeline and Transmission Facilities and Needs

Wasco County is an important location for existing and future freight, pipeline and transmission facilities. Detailed information on these is contained in the Wasco County Transportation System Plan.

G. HOUSING

1. Existing Housing

A windshield survey of existing housing classified housing as either standard, marginal or substandard. A total of 1,295 housing units were inventoried outside the city limits and urban growth boundaries of the six incorporated cities, the Celilo Village and the Warm Springs Indian Reservation. Of these units, 256 or 20 percent are mobile homes. About 85 percent of both conventional homes and mobile homes were classed as standard.

Building permit counts from 1975 to 1979 show that from 58 to 81 percent of permits is for mobile home placements. This indicates their importance as an economic and popular form of housing.

2. Housing Needs

Build able lands (land with excessive slopes of 20% or greater have not been excluded), were inventoried. Soils classes, ownerships, timber site productivity classifications, hazard areas, sensitive wildlife habitats, aggregate sites and natural areas were taken into consideration. There does not appear to be an abundance of adequate build-able lands in the County.

The Dalles Urban Comprehensive Plan shows that there is 1,455 acres of build able land within the established Urban Growth Boundary, 1,160 acres or 80% with at least one development restriction. Development restrictions may include a lack of sewer or water lines, excessive slope, lack of access or odd lot sizes. Using population and persons per household estimates, it appears that the build able lands in The Dalles Urban Area will be at or near capacity by the year 1995.

It is not known how much of the build able land in the Urban Area is actually available. Increasing pressure on vacant lands to be developed into home sites will force prices up. Alternative housing sites, especially those of a rural nature will satisfy the need for low cost housing and will allow for the alternate lifestyles called for in Goal # 10, Housing. These alternative housing sites

should be as near the urban area as possible, to conserve energy and limit encroachment on viable farm and forest lands, and should be located on lands that have been committed to small (ten acres or less) average lot sizes.

3. Financing Housing

In 1970, about 27% of all households in the County spent over the acceptable level of 25% of their income on housing. This indicates that housing costs are not meeting the needs of the County's citizens. It is important that both housing costs and building site costs be kept within an acceptable range. The increase in demand for small acreage (ten acres or less) rural home sites which allow mobile homes reflects the discrepancy between housing costs and incomes in the County.

H. ECONOMICS

The County's economic activity is primarily basic production: the production of goods and services for export. This type of production brings outside money into the area. The non-basic sector, which produces goods and services for local production is not as developed, especially outside The Dalles Urban area. This means that people in the rural areas of the County will generally purchase their goods and services in The Dalles or outside the County.

The basic sector of the County's economy is based on agriculture, forestry, processing of agricultural and forest products and aluminum production and a growing tourist industry in the county.

1. Agriculture

The Census of Agriculture shows that the total number of farms between 1959 and 1974 has decreased by 25 percent. The number of acres in farms has decreased by almost 13 percent, although there has been a slight increase in average farm size. This shows that smaller farms are becoming less economical to operate, probably due to the cost of mechanization. The census also shows that the number of small farms (less than 10 acres) and very large farms (2,000 or more acres) have increased, while everything in between (10 to 1,999 acres) has decreased.

Three types of agricultural commodities generally are produced in Wasco County. They are: tree fruits, small grains and livestock. Tree fruits, primarily cherries are mainly grown in and around The Dalles and Mosier. Their value has increased steadily, while the number of acres in production has remained fairly stable.

Small grains, primarily wheat, are grown in many of the non-forest portions of the County to the east and south of The Dalles. Acres in small grain production continue to stay at the same high levels of 20 years ago, although fewer farms exist.

Much of the livestock production, all but about 5%, depends on small grain operations. In most cases, grain farmers graze cattle on their marginal, non-crop lands or on public range lands. High feed prices and/or shortages of feed may force some farmers to reduce their supplemental livestock operations in the future.

2. Forestry

The U.S. Forest Service and other public agencies administer about 95 percent of the commercial timber volume in Wasco County. According to the Forest Service, the permitted annual cut in the Mt. Hood National Forest is currently 40-45 million board feet per year. About 80 percent of the allowable cut is purchased by Mt. Fir Lumber Company.

3. Manufacturing

Manufacturing firms outside the Urban Growth Boundaries of The Dalles and Maupin is primarily logging, food packaging, and aggregate mining. Martin-Marietta Aluminum, located within the urban growth boundary of The Dalles, is a major employer in the area.

4. Tourism and Education

5. Non-Basic

Rural economies, such as rural Wasco County, typically have not achieved a size and diversification needed to support a large non-basic sector. Local non-basic demands are satisfied in available markets such as Bend, The Dalles and Portland.

6. Labor Force Statistics

Unemployment has been a problem in Wasco County. It is found here at a rate consistently higher than the State average. This has been the case since the completion of the government dam projects in the 1960's. Seasonal employment in agriculture, food processing, construction, forestry, and lumber processing have also contributed to the high unemployment rate.

7. Future Economic Outlook

The Bonneville Power Administration has compiled employment projections that show that total employment in Wasco County will increase by 24.3 percent by the year 2000. Agricultural employment will decrease by 16.1 percent during this period while non-agricultural employment will increase by almost 30 percent. Wholesale and retail trade, as well as finance, insurance and real estate are all projected to increase by 40 percent and services by 55 percent, indicating that this area will become a regional service and trade center.

CHAPTER 11 REVISIONS PROCESS

A. Intent and Purpose

The Comprehensive Plan for Wasco County including all urbanizable areas is the primary document which guides and controls land use within Wasco County excluding incorporated areas. The plan is intended to reflect the community's current thoughts on land use planning and to be responsive to the needs and desires of citizens. In order to achieve this, the plan must respond to changing community attitudes and needs and to unforeseen circumstances which may affect the use of land in the future. It is, therefore, the intent of this section to permit the amendments of the Comprehensive Plan on a periodic basis and to describe the procedure for the amendment process.

B. A Comprehensive Plan Amendment May Take the Following Forms:

1. Amendment of one or more policies of the plan.(Legislative)
2. Amendment to the text, inventories, maps or figures of the plan. (Legislative or Quasi-Judicial)
3. Amendment of a portion of the Comprehensive Plan Land Use Designation map. (Legislative or Quasi-Judicial)
4. Amendment to the urban growth boundary. (Legislative or Quasi-Judicial)
5. A combination plan change/zone amendment. (Legislative or Quasi-Judicial)

C. Who May Apply For a Plan Revision:

Comprehensive Plan Revision may be initiated by:

1. Wasco County Governing Body. (Legislative)
2. Planning Commission by majority vote confirmed by the Wasco County Governing Body. (Legislative)
3. Property owner or his authorized representative. (Quasi-Judicial)

D. Legislative Revisions

Legislative revisions include land use changes that have widespread and significant impact beyond the immediate area such as quantitative changes producing large volumes of traffic; a qualitative change in the character of the land use itself, such as conversion of residential to industrial use; or a spatial change that affects large areas or much different ownership. The Planning Commission and County Governing Body shall evaluate the plan as often as necessary to meet changes in the social, economic, or environmental character of Wasco County.

E. Quasi-Judicial Revisions

Quasi-Judicial revisions are those which do not have significant effect beyond the immediate area of the change, i.e., narrow in scope and focusing on specific situations.

Each plan change or revision will first be heard by the Planning Commission on a first-come, first-serve basis. Such hearing shall be conducted in accordance with the Wasco County Planning Commission "Rules and Regulations".

F. Urban Growth Boundary Revisions

Individuals, agencies, or local governments requesting proposed revisions within or to, an urban growth "boundary outside a city limit shall apply to the Wasco County Planning Office. The Wasco County Planning Office will then submit a copy of this application to the city involved. The city involved shall submit to the Wasco County Planning Office a staff report including findings, recommendations, or decisions that the County Planning Commission and County Governing Body can use in making its decision. These reports should be submitted to the County Planning Office at least fourteen(14) days before the County Planning Commission holds its public hearing. The second alternative would be for the city to be represented at the public hearing, to express their views or rebut testimony.

G. Urban Growth Area Management

In the event that any city within Wasco County adopts an urban growth boundary which includes lands beyond their corporate limits, the city and the county shall agree upon a program for the joint management of such lands. The management program shall include provision for the interim management of these lands as well as a coordinated system for open communication between the two bodies. The agreement shall also include a joint system outlining procedures for plan amendments or changes to the Urban Growth Boundary.

H. General Criteria

The following are general criteria which must be considered before approval of an amendment to the Comprehensive Plan is given:

1. Compliance with the statewide land use goal as provided by Chapter 15 or further amended by the Land Conservation and Development Commission, where applicable.
2. Substantial proof that such change shall not be detrimental to the spirit and intent of such goals.
3. A mistake in the original comprehensive plan or change in the character of the neighborhood can be demonstrated.
4. Factors which relate to the public need for healthful, safe and aesthetic surroundings and conditions.

5. Proof of change in the inventories originally developed.
6. Revisions shall be based on special studies or other information which will serve as the factual basis to support the change. The public need and justification for the particular change must be established.

I. Transportation Planning Rule Compliance

1. Review of Applications for Effect on Transportation Facilities - A proposed plan amendment, whether initiated by the County or by a private interest, shall be reviewed to determine whether it significantly affects a transportation facility, in accordance with Oregon Administrative Rule (OAR) 660-012-0060 (the Transportation Planning Rule – “TPR”). “Significant” means the proposal would:
 - a. Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);
 - b. Change standards implementing a functional classification system; or
 - c. As measured at the end of the planning period identified in the adopted transportation system plan:
 - (1) Allow land uses or levels of development that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;
 - (2) Reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP; or
 - (3) Worsen the performance of an existing or planned transportation facility that is otherwise projected to perform below the minimum acceptable performance standard identified in the TSP or comprehensive plan.
2. Amendments That Affect Transportation Facilities - Amendments to the land use regulations that significantly affect a transportation facility shall ensure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the TSP. This shall be accomplished by one or a combination of the following:
 - a. Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.
 - b. Amending the TSP or comprehensive plan to provide transportation facilities,

improvements or services adequate to support the proposed land uses consistent with the requirements of Section -0060 of the TPR.

- c. Altering land use designations, densities, or design requirements to reduce demand for vehicle travel and meet travel needs through other modes of transportation.
 - d. Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.
3. Traffic Impact Analysis - A Traffic Impact Analysis shall be submitted with a plan amendment application pursuant to Section 4.140 Traffic Impact Analysis (TIA)) of the Land Use and Development Ordinance.

J. Procedure for the Amendment Process

1. A petition must be filed with the Planning Offices on forms prescribed by the Director of Planning.
2. Notice of a proposed revision within, or to, the urban growth boundary will be given to the appropriate city at least thirty (30) days before the County public hearing.
3. Notification of Hearing:
 - (1) Notices of public hearings shall summarize the issues in an understandable and meaningful manner.
 - (2) Notice of a legislative or judicial public hearing shall be given as prescribed in ORS 215.503. In any event, notice shall be given by publishing notice in newspapers of general circulation at least twenty (20) days, but not more than forty (40) days, prior to the date of the hearing.
 - (3) A quorum of the Planning Commission must be present before a public hearing can be held. If the majority of the County Planning Commission present cannot agree on a proposed change, the Commission will hold another public hearing in an attempt to resolve the difference or send the proposed change to the County Governing Body with no recommendation.
 - (4) After the public hearing, the Planning Commission shall recommend to the County Governing Body that the revision be granted or denied, and the facts and reasons supporting their decision. In all cases the Planning Commission shall enter findings based on the record before it to justify the decision. If the Planning Commission sends the proposed change with no recommendation, the findings shall reflect those items agreed upon and those items not agreed upon that resulted in no recommendation.

- (5) Upon receiving the Planning Commission's recommendation, the County Governing Body shall take such action as they deem appropriate. The County Governing Body may or may not hold a public hearing. In no event shall the County Governing Body approve the amendment until at least twenty (20) days have passed since the mailing of the recommendation to parties.

K. Appeals

The decision of the County Governing Body will be final unless appealed to a higher court.

L. Review

In any event, the Comprehensive Plan and implementing Ordinances shall be reviewed as often as necessary if the Planning Commission and County Governing Body finds that there are compelling reasons to justify such change, i.e., criteria listed in Section H. A public statement will be issued by the Planning Commission and/or County Governing Body on whether any revision is needed.

CHAPTER 12 DEFINITIONS

DEFINITIONS - EXISTING LAND USE MAP

Urban Growth Boundary Areas - includes those lands within the adopted Urban Growth Boundaries of the cities of Antelope, Dufur, The Dalles, Maupin, Mosier and Shaniko.

Residential - includes all residential developments, including multiple family dwellings and recreational subdivisions.

Commercial - includes all commercial uses, whether retail, wholesale, service oriented or professional.

Industrial - This classification includes both light and heavy industrial uses.

Public - includes all public and quasi-public uses, such as schools, fire and police stations, churches, parks, fairgrounds, and other recreation sites.

Agriculture - includes all lands used for agricultural purposes: orchard lands, wheat and other dry land farming lands, open range and grazing land (other than commercial forest) and all other agricultural lands, such as those cultivated and used for irrigated farm-lands, Christmas tree growing or other minor farm uses.

Forestry - this designation includes all commercial forest land, both publicly and privately owned. Productivity is greater than 20 cubic feet per acre per year.

Indian Reservation - includes all lands within the boundaries of the Confederated Tribes of Warm Springs Indian Reservation of Oregon.

PURPOSE DEFINITIONS OF MAP CLASSIFICATIONS ON THE COMPREHENSIVE PLAN MAP

Forest

Purpose: To provide for all commercial and multiple use forest activities compatible with sustained forest yield.

Municipal Watershed

Purpose: To protect the domestic water supplies of The Dalles and Dufur.

Exclusive Farm Use - Orchard, Wheat and Range, General Agriculture

Purpose: To sustain orchard lands as a viable portion of the local economy.

To maintain wheat and other small grain farms as an element of the local economy.

To preserve existing general agricultural uses, such as irrigated farm land and Christmas tree farming, as well as soils classes I-VI for present and future agricultural uses.

Forest-Farm

Purpose: To provide for the continuation of forest and farm uses on soils which are predominantly class 7 and forest site class 6 and 7; and to preserve open space for forest uses (other than strictly commercial timber production) and for scenic value in the Gorge.

Rural Residential

Purpose: To provide for residential, commercial, agricultural and other uses of a rural type and level which will not conflict with commercial agricultural operations on resource lands.

Industrial

Purpose: To provide for industrial uses outside Rural Service Centers which will not conflict with resource activities on resource lands and an exception to the Statewide Land Use Planning Goals is taken.

Commercial

Purpose: To provide for commercial uses outside Rural Service Centers which will not conflict with resource activities on resource lands and an exception to the Statewide Land Use Planning Goals is taken.

Rural Service Centers

Purpose: To allow controlled development and growth to continue in existing rural unincorporated communities.

Future Growth Area

Purpose: To recognize areas designated by the City of The Dalles Comprehensive Plan as future urbanizable lands and an exception to the Statewide Land Use Planning Goals is taken.

Urban Growth Areas

Purpose: To identify those lands within established Urban Growth Boundaries which will provide for high density urban development and provision of urban services.

Reservation Lands

Purpose: To identify those lands within the Confederated Tribes of Warm Springs Indian Reservation of Oregon. This area includes all land within the McQuinn Line.

CHAPTER 13 EXCEPTIONS TO GOAL #3

A. Introduction

In applying the statewide goals, both the need for preserving agricultural, forest and other resource oriented land uses and the need for providing housing and rural development must be recognized.

To accomplish the task of protecting agricultural and forestry lands while satisfying a portion of the County's housing demand, an "exception" to the statewide resource oriented goals (the Agricultural and Forestry goals), may be needed. The process for taking an exception is explained in the Land Conservation and Development Commission Goal #2, "Land Use Planning" of the Statewide Planning Goals and Guidelines, as follows:

When, during the application of the statewide goals to plans, it appears that it is not possible to apply the appropriate goal to specific properties or situations, then each proposed exception to a goal shall be set forth during the plan preparation phases and also specifically noted in the notices of public hearing. The notices of hearing shall summarize the issues in an understandable and meaningful manner.

If the exception to the goal is adopted, then the compelling reasons and facts for that conclusion shall be completely set forth in the plan and shall include:

1. Why these other uses should be provided for;
2. What alternative locations within the area could be used for the proposed uses;
3. What are the long term environmental, economic, social, and energy consequences to the locality, the region or the state from not applying the goal or permitting the alternative use;
4. A finding that the proposed uses will be compatible with other adjacent uses.

Specifically, the "Exceptions Process" is utilized to evaluate whether certain lands should be designated for future rural development or maintained as resource lands. As defined, this process requires that any lands designated for rural development be justified based on (1) "need"; (2) a consideration of other alternatives which would or would not require an exception;(3) a consideration of long-term consequences of designating an area for rural development; and, (4) the compatibility of the anticipated development with adjacent uses. When resource oriented goals cannot be met based on the need to provide for other uses, the "Exceptions Process" provides the flexibility to deal with those kinds of conflicts. Areas which are already "committed" to non-resource uses may be automatically accepted based on the definition of "committed lands" described in the following section.

Realizing that existing development within "resource oriented" areas, such as agricultural or forest lands, cannot logically be considered for resource uses, the Land Conservation and Development Commission devised a definition and mechanism for excluding such lands from resource consideration. This definition and mechanism, termed "committed lands", is described in a policy paper concerning questions about applying the statewide Agricultural goal. The following are excerpts from that paper:

When agricultural land is no longer available for farm use, the full findings, ordinarily required for an exception, are not necessary. The finding that the land has been (1) physically developed or built upon, or that the land has been (2) irrevocably committed to urban or rural uses, is the only information necessary to support a valid exception. However, how much of the land is considered as "physically developed or irrevocably committed" must be set forth with the facts supporting the designation of "developed" or "committed".

The (Land Conservation and Development) Commission has not defined "physically developed or irrevocably committed" preferring to leave that decision, on the nature and extent of these areas up to people more familiar with the particular situation. Whether or not land is in fact no longer available for farm use, will depend on the situation at the specific site and the factors dealing with areas adjacent to it ...The exact nature and extent of the areas "physically developed or irrevocably committed" must be clearly set forth ... The specific area(s) must be shown on a map and keyed to the appropriate findings of fact.

The following examples of "committed lands" were obtained from the same L.C.D.C. policy paper.

In some cases, a county might treat a ten-acre parcel of land suitable for farm use as "committed" even though a residence only occupies a one-acre portion of the, parcel in a corner of the property.

Whether the land is, in fact, "committed" will depend on the specific factors on and adjacent to the ten acres. For instance, the land may be surrounded by intensive development which may make cultivation or grazing impracticable.

On the other hand, the ten acres may only have a few acreage home sites nearby whose residents keep livestock and do small scale or intensive farming. In such a situation, the preservation of the ten acres, in an exclusive farm use zone would be proper as would, the inclusion of the acreage home sites in the Exclusive Farm Use as a pre-existing situation.

Another form of "commitment" could consist of significant, earlier public decisions, such as the approval and recording of a subdivision upon which construction has been started. Such construction might be the laying of a water or sewer line specifically designed and sized to permanently serve the subdivision.

On the other hand, the mere existence of a subdivision plat or a water or sewer district with service available to an area or parcel of agricultural land does not alone constitute a basis of "commitment". There are many examples of subdivisions or service districts within which land is being farmed. Some of these subdivisions are the old "fruit farms" type of five and ten acre lot divisions which never go beyond the "paper" stage. Others are more recent subdivisions which have not had any significant improvements. These agricultural lands obviously should be protected with an Exclusive Farm Use Zone.

B. Wasco County Committed Lands Process

To identify those lands committed to non-resource uses in Wasco County a two step process was used. The first step was to review an area's existing settlement pattern, the existing parcelization, and the amount of actual physical, development. A window survey was conducted to inventory the location of any physical development, to identify any significant factors which make this area unsuitable for resource purposes, and to determine the appropriate land use classification for a particular area. A breakdown of Soil Conservation Service agricultural capability class and forest site class was also inventoried to determine which areas are more suitable-for resource protection.

The second step involved a more detailed inventory of those areas previously identified for non-resource uses. For each specific area, the legal description, ownership, tax assessment, size of parcel and level of improvement were inventoried. The level of improvements was based on the January, 1982 Assessment Roll for Wasco County. Any parcel receiving a "true cash value" over five thousand dollars, or containing a mobile home or homestead was considered developed.

The Wasco County Assessor, Clair L. Balzer, explains:, "In most cases, the minimum value for improvements on a tax lot, which would indicate that there was a small home or cabin located there, or buildings used in connection with a mobile home would be a true cash value of \$5,000. Values less than this amount are in most cases single buildings of a special purpose, such as barns, feed sheds, or buildings from an original farmstead which are, now broken up into smaller acreages and the buildings remain on some of that acreage. If there is a question about any specific tax lot, information about the improvement can be obtained from the Assessor's office".

A parcel considered developed by this criteria did not automatically constitute commitment, but was a good indicator that a substantial amount of physical development exists on the parcel. Other factors such as size, tax assessment, location in relation to other parcels, level and amount of public facilities and services, character of the community and development trends were also considered.

C. Summary of Wasco County Exception Areas

All of Wasco County exceptions have been based on commitment. The compelling reasons and facts are presented throughout this section of the plan. Exceptions based on commitment do not need the detailed justifications that exceptions based on need do. Therefore, questions (1) through (4) above do not always apply to committed lands. Where they do apply, the following summary and analysis will provide the needed information and justifications.

Total County Land Area:	1,530,880.00 Acres
Total Acreage in Exception Areas:	7,291.81 Acres
Percent of the County's Total Land Area in Exceptions	0.47 Percent

Committed Exceptions

Number	Location	Acres
Rural Service Centers		
1.	Pine Grove	259.45
2.	Pine Hollow	834.00
3.	Rowena	551.00
4.	Tygh Valley	756.00
5.	Wamic	223.43
6.	Walters Corners	<u>6.00</u>
		2,629.88
Committed Subdivisions (See Detailed Pages)		
1.	Brown's Ranch Estates	116.2
2.	Cameron Tracts	280.9
3.	Dundas Tracts	160.0
4.	Flyby Night Subdivision	190.75
5.	Mill Creek Wayside Garden	9.78
6.	Mountain View Homes	7.28
7.	Reservoir Addition	9.00
8.	Rowena Dell P.U.D.	64.09
9.	Shady Brook Estates	86.64
10.	Sportsmans Paradise	994.74
11.	North Sportsmans Paradise	219.18
12.	South Sportsmans Park	13.20
13.	Sportsmans Park 2	16.8
14.	Sportsmans Park 3	28.4
15.	Sportsmans Park 4	15.2
16.	Terrace Trailer Homes	8.5
17.	Terrace Trailer Homes 2	10.92
18.	Terrace Trailer Homes 3	1.56
19.	Tooley Terraces	10.24
20.	Valley View Acres	32.98
21.	Wahtonka Tracts Subdivision	100.60
22.	Wayside Second Addition	2.00
23.	Williams First Addition	<u>17.6</u>
		2,396.56
Other Committed Lands		
1.	Rowena Dell Area	1,234.36
2.	Areas Adjacent to The Dalles U.G.B.	863.89
3.	Pine Grove Area	120.00
4.	Brown's Re-zone	1.15
5.	Mid-Columbia Grain Growers Re-zone	0.29
6.	Camp Morrow Re-zone	37.76
7.	Sacamano Re-zone	<u>7.92</u>
		2,265.37

Summary of Exception Areas

Exception Area	Legal Description	Acres	Number of Lots	Avg. Parcel Size	Zoning
Pine Grove (RSC)	T5S, R11E, & 12E	248.33	57	4.36	Varied
Pine Hollow (RSC)	T4S, R12E, S3 & 4	660.96	452	1.46	A-R
Rowena (RSC)	T2N, R12E	359	87	3.67	Varied
Tygh Valley (RSC)	T4S, R13E	294.19	279	1.05	Varied
Wamic (RSC)	T4S, R12E, S11, 14	96.63	69	1.4	Varied
Walters Corners (RSC)	T5S, R12E, S13, 14, 23, 24	6	4	1.5	C-2
Sportsman's Park	T4S, R11E, S14	64.78	184	.35	A-R
Pine Grove Area	T5S, R11E	123.5	18	6.86	RR
Mill Creek Reservoir Area	T1N, R12E, S22	25.14	40	.63	RMH-2
Mt. View Homes	T1S, R13E, S34	3.37	13	.26	R-2
Tooley Terrace Area	T2N, R13E, S7	30.20	58	.52	R-1/RMH-2
Valley View Acres	T1N, R13E, S12	20.81	19	1.52	RR
Brown's Re-Zone	T1N, R13E, S12	1.15	1	1.15	R-4
Mid-Col. Grain Re-Zone	T7S, R17E, S32	.29	1	.29	M-1
Rowena Dell Area	T2N, R12E	1,258.78	140	8.99	RR
The Dalles Area	T2N R13E	2,170.48	542	4.00	Varied
Mill Creek Area	T1N, R13E, S4, 8	16.32	27	.6	R-1
Mt. Hood Subd. (Richman)	T1N, R13E, S1, 12	171.46	7	N/A	RR
Dry Hollow Area	T1N, R13E, S10	14.13	17	.83	R-2
Cherry Park Area	T1N, R13E, S1	18.25	10	1.83	RR
Fifteen Mile Creek Area	T2N, R14E, S31	14.8	6	2.46	RR
The Dalles Country Club	T2N, R13E, S17, 20	21.28	6	3.55	C-1
The Dalles Concrete	T2N, R13E, S17	29.79	3	9.93	M-2/M-1
Bert Hodges' Property	T2N, R13E, S29	57.17	7	N/A	C-1/R-1
Bryant Property	T2N, R13E, S20,21	18.55	1	N/A	M-2
Total (Averages)		5,733.36	2,049	2.6	

Justification For Committed Subdivisions

Subdivision	Legal Description	Acres	# of Lots	Avg. Lot Size	% of Lot Committed	Zoning
Brown's Ranch Estates	2N, 13E, S31	116.2	19	6.12	11	RR-5
Cameron Tracts	2N, 12E, S9	280.9	33	8.51	24	RR-5
Dundas Tracts	2N, 12E, S16	160	16	10.00	45	RR-5
Flyby Night Subdivision	2N, 12E, S15	190.75	25	7.63	44	RR-5
Mill Creek Wayside Garden	1N, 12E, S22	9.78	8	1.33	75	RMH-2
Mountain View Homes	1S, 13E, S34	7.28	13	0.56	26	R-2
Reservoir Addition	1N, 12E, S22	9	18	0.50	65	RMH-2
Rowena Dell	2N, 12E, S3	64.09	29	2.21	25	RR-5
Shady Brook Estates	3S, 13E, S31	86.64	6	14.44	68	FF-10
Sportsmans Paradise N.	2S, 12E	994.74	118	N/A	21	FF-10
Sportsmans Paradise S.	2S, 12E, S14	219.18	26	8.43	19	FF-10
Sportsmans Park	4S, 11E, S14	13.20	33	N/A	71	AR
Sportsmans Park 2	4S, 11E, S14	16.80	42	N/A	71	AR
Sportsmans Park 3	4S, 11E, S14	28.40	71	N/A	44	AR
Sportsmans Park 4	4S, 11E, S14	15.20	38	N/A	39	AR
Terrace Trailer Homes	2N, 13E, S17	8.5	25	0.34	63	RMH-2
Terrace Trailer Homes 2	2N, 13E, S17	10.92	6	1.82	67	RMH-2
Terrace Trailer Homes 3	2N, 13E, S17	1.56	6	0.26	83	RMH-2
Tooley Terraces	2N, 13E, S17	10.24	16	0.64	40	R-1
Valley View Acres	1N, 13E, S12	32.98	17	1.94	35	RR-5
Wahtonka Tracts Subdiv.	1N, 12E, S1	100.60	20	5.03	65	RR-5
Wayside Second Addition	1N, 12E, S22	2.00	4	0.50	75	RMH-2
Williams First Addition	1N, 13E, S8	17.6	16	1.10	83	R-1

Pine Grove

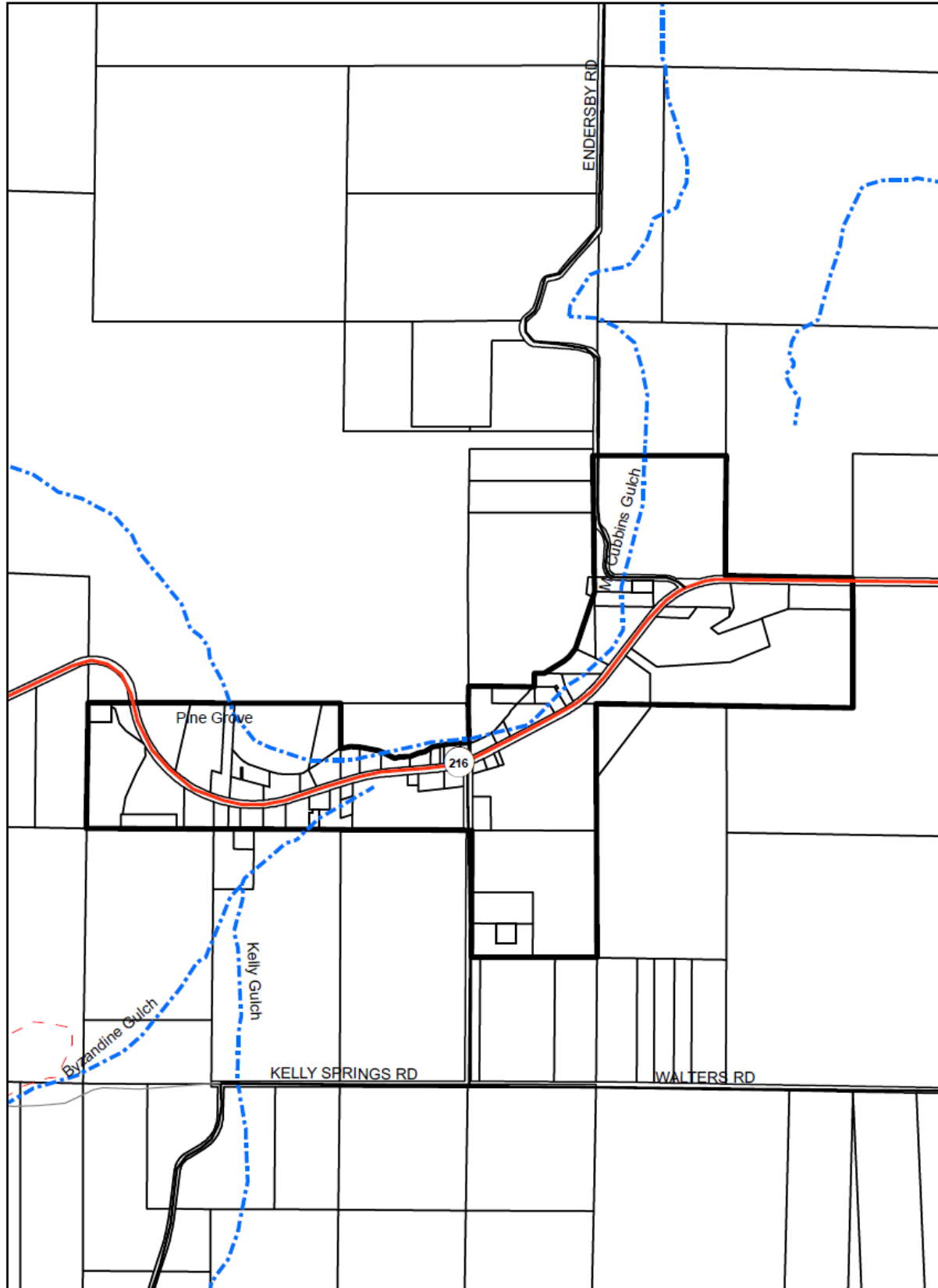
Pine Grove has approximately forty residents. It is located on an all-weather asphalt paved road sixteen miles west of Maupin on State Highway #216, a major highway between central Wasco County and Portland. Pine Grove forms a ribbon development along this highway for a distance of 1.15 miles. The population has remained fairly stable over recent years. An increase is expected over the next twenty year period in this central area due to increasing demands for housing and recreation. Pine Grove contains one combination store/service station, a restaurant, a tavern, and a rock quarry owned by the Oregon State Highway Division.

Pine Grove is served by a community water system. Sanitary waste water disposal is via individual septic tank units with subsurface drain fields. Fire protection is furnished by the Juniper Flat Rural Fire Protection District. Police protection is by the Wasco County Sheriff's Office. Bonneville Power Administration has power lines nearby.

Pine Grove is an established, platted community that is unincorporated. Many goods and services are provided to residents of the surrounding farm and forest lands which reduce the need to drive to other towns, such as Maupin, Tygh Valley, Dufur, or The Dalles.

Exception Area: <u>Pine Grove</u>
Location: Township: 5S Range: 11E & 12E Sections: 24, 25 & 26 (Range 11) and 19 & 20 (Range 12)
Zoning Classification: Varied
Plan Designation: Rural Service Center
Property Information: Total Acreage: 259.45 Number of Parcels: 63 Average Parcel Size: 4.12 Largest Parcel: 41.07 Smallest Parcel: .02 Occupied Parcels: 55 Vacant Parcels: 8 Development Density (Acres/Dwelling): 4.72
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 4.74 Class II: 112.12 Class VII: 112.47 Class II & IV: 30.12
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 224.59 120-85: 4.74 84-50: 30.12 20 or Less: 0
Adjacent Uses: North: Forest East: Agriculture, Range South: Agriculture, Forest West: Forest
Additional Information:

Pine Grove Rural Service Boundary



Pine Hollow

Pine Hollow consists of 834 developed acres with 500 lots. Average lot size is 20,000 square feet; all have been sold. There are seventy permanent residents.

Five wells provide water to 200 water users. The capacity of the wells is 1,000 units. Sanitary wastewater disposal is via individual septic tanks with drain fields. Soil conditions are generally suitable for this type of wastewater disposal. A public wastewater collection/treatment system is planned for development.

Other services include one restaurant, two gas pumps, an airstrip, a commercial park, and a commercial lease park with twenty-eight spaces (another 72 are possible). Structural and nonstructural fire protection is by a volunteer fire department.

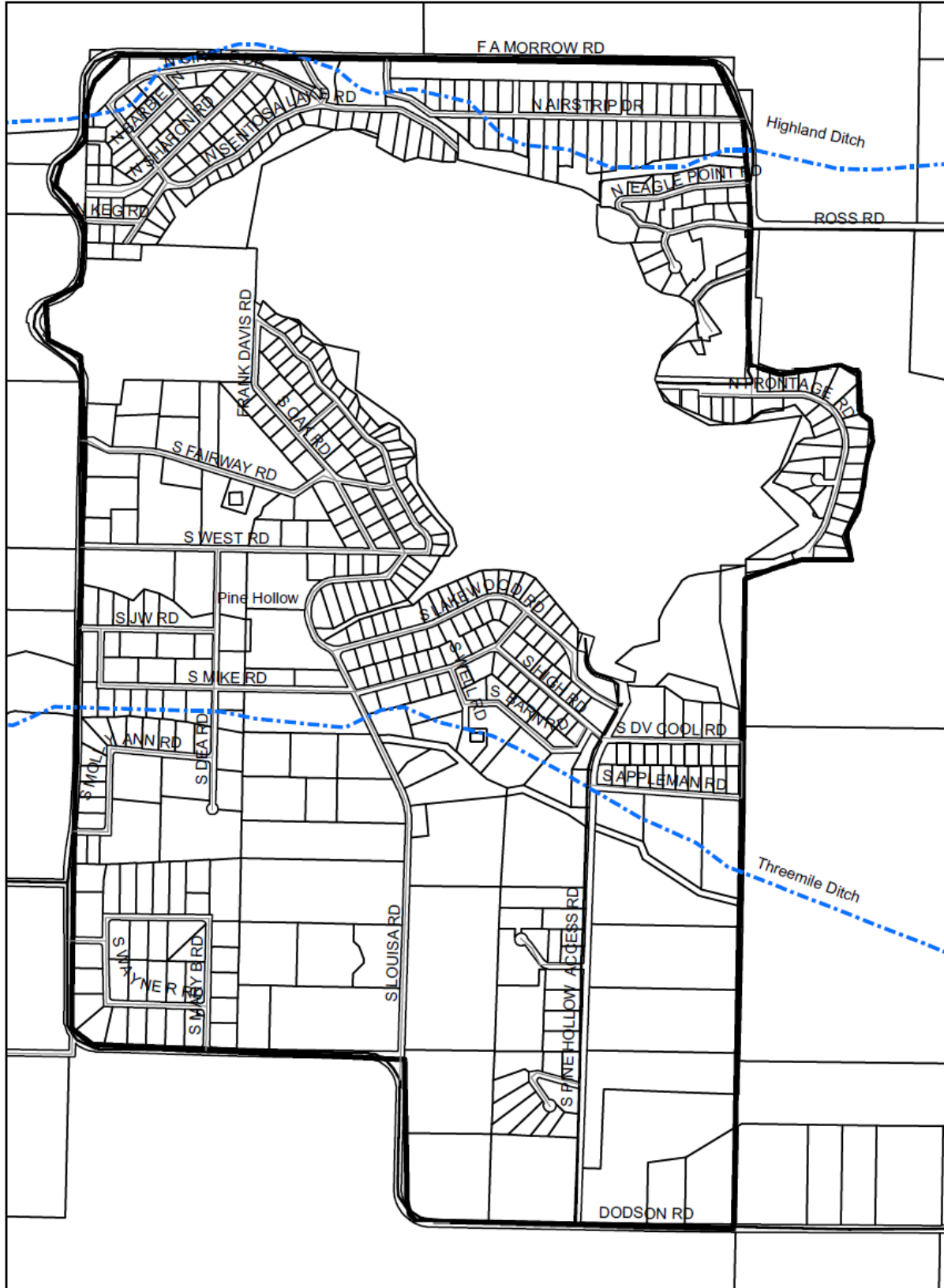
Adjacent land uses are primarily forest activities including game management by the Oregon State Fish and Wildlife Department. To the south and east there is scattered grazing and farming activities. Lot sizes of adjoining land ranges from forty (40) acres to three hundred ninety (390) acres. (See Pine Hollow Land Use map).

There is definitely a desire for this type of recreational development; as all the lots in Pine Hollow have been purchased and are committed to residential uses. The only other development of this type is at Rock Creek Reservoir, approximately five miles to the west.

Residents of Pine Hollow do not need to travel long distances to obtain both necessary goods and services as well as re-creational facilities. This type of development is very compatible with surrounding farm and forest uses, and in fact, provides services to help sustain them.

Exception Area: <u>Pine Hollow</u>
Location: Township: 4S Range: 12E Sections: 3, 4, 9 & 10
Zoning Classification: A-R (Agricultural Recreational)
Plan Designation: Recreational
Property Information: Total Acreage: 834 Number of Parcels: 500 Average Parcel Size: 1.76 Largest Parcel: 14.5 Smallest Parcel: .23 Occupied Parcels: 70 (Year Round) Vacant Parcels: 1 Development Density (Acres/Dwelling): *7.14
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 4.5 Class II: 0 Class VII: 449.5 Class II & IV: 380
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 0 120-85: 0 84-50: 834 20 or Less: 0
Adjacent Uses: North: Agricultural East: Agricultural South: Agricultural West: Agricultural, Forest
Additional Information: *This entire area is committed to full time residential and part-time recreational use. Although many lots are not used year round, they are used extensively in the summer months.

Pine Hollow Rural Service Boundary



Rowena

Rowena is located about five miles west of The Dalles along Interstate Highway 84 and the Old Columbia Gorge Highway 30. Approximately 160 people reside in this community. Of the 61 residences, 51 are conventional homes and 10 are mobile homes. This area has traditionally been zoned to allow mobile homes.

The Rowena rural service area covers approximately 551 acres. Average lot size in the developed areas is 4.61 acres. Approximately 140 acres are in highway and railroad rights-of-way. Some development has occurred north of Interstate 84 and the Union Pacific Railroad tracks, which is generally in the flood plain of the Columbia River. Most of the development, however, lies south of I-84.

Rowena is solely a residential community, having no commercial, industrial or public uses. Individual wells and septic systems service this area. Police protection is given by the Wasco County Sheriff's Office and the Oregon State Police. Fire protection is given by the Wasco Rural Fire Department in The Dalles.

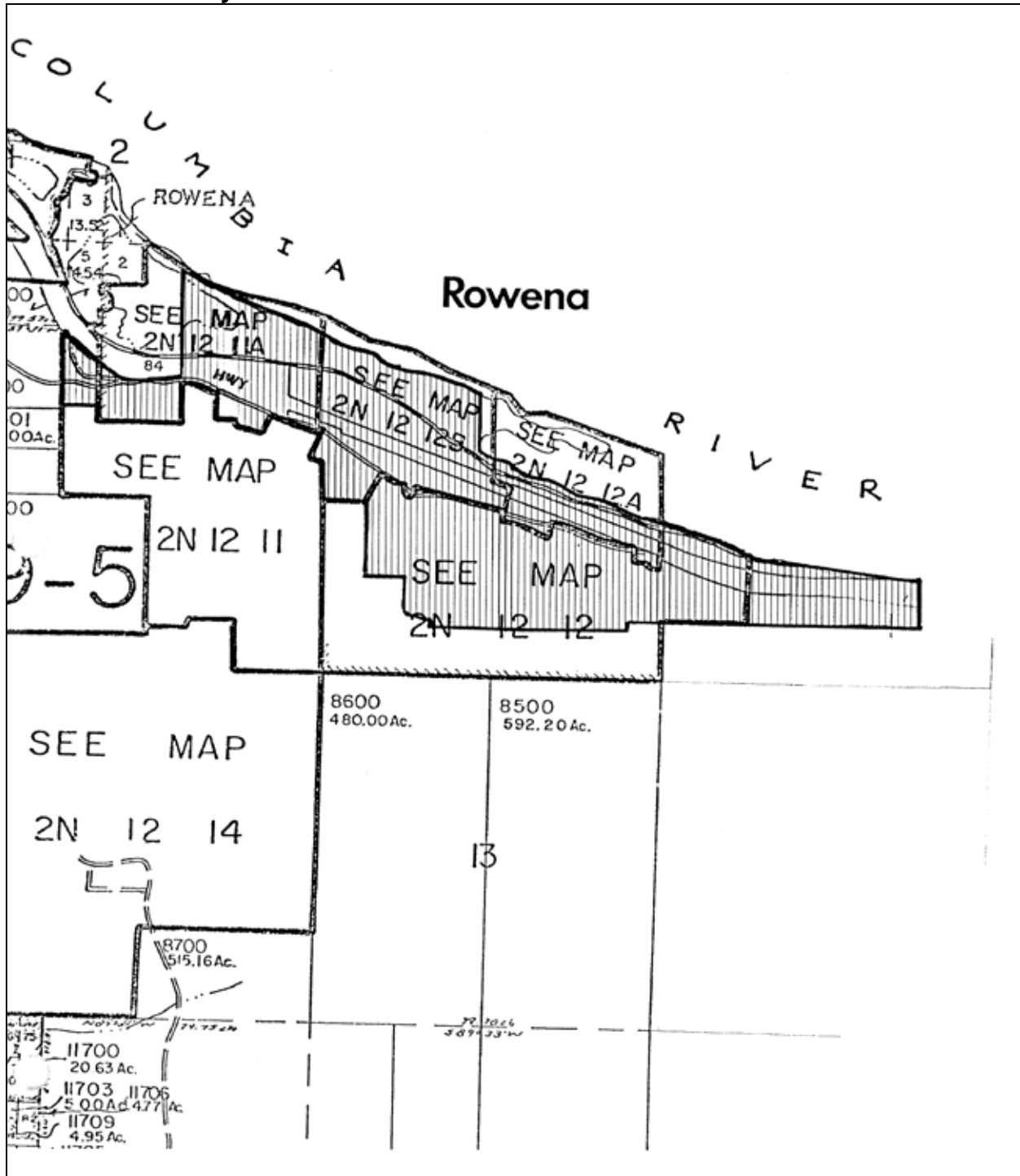
The rural service boundary designated for Rowena engulfs those lands which are generally committed to residential use. Soils are generally class VII and the predominant Forest site class is VII, or non-forest.

Although Rowena contains no commercial establishments of any nature, the short distance to The Dalles makes goods and services easily attainable without large investments in time and energy. There will be little long-term effect on the area if the present residential uses are allowed to continue.

Some of the Rowena area is in farm and open space uses. These areas are generally not included in the exception area. Only those lands committed to small lot sizes and residential uses were included. They present no conflict to the surrounding open space and non-intensive farming practices.

Exception Area: <u>Rowena</u>
Location: Township: 2N Range: 12E Sections: 1, 2, 11 & 12
Zoning Classification: Varied
Plan Designation: Rural Service Center
Property Information: Total Acreage: *551 Number of Parcels: 89 Average Parcel Size: 4.61 Largest Parcel: 35 Smallest Parcel: 0.01 Occupied Parcels: 61 Vacant Parcels: 28 Development Density (Acres/Dwelling): 6.73
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 79 Class II: 0 Class VII: 303.32 Class II & IV: 0
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 220.32 120-85: 75 84-50: 87 20 or Less: 0
Adjacent Uses: North: Columbia River East: Agricultural, Residential, Open Space South: Cliffs of the Columbia Gorge, some limited agricultural West: Agricultural, Recreational
Additional Information: *The total figure of 551 acres includes land in highway and railroad rights-of-way. Average parcel size and density calculations excluded the 140 acres in these uses: i.e., 411 acres is the total land area within the rural service center boundaries used for all other pertinent calculations on this page.

Rowena Boundary



Tygh Valley

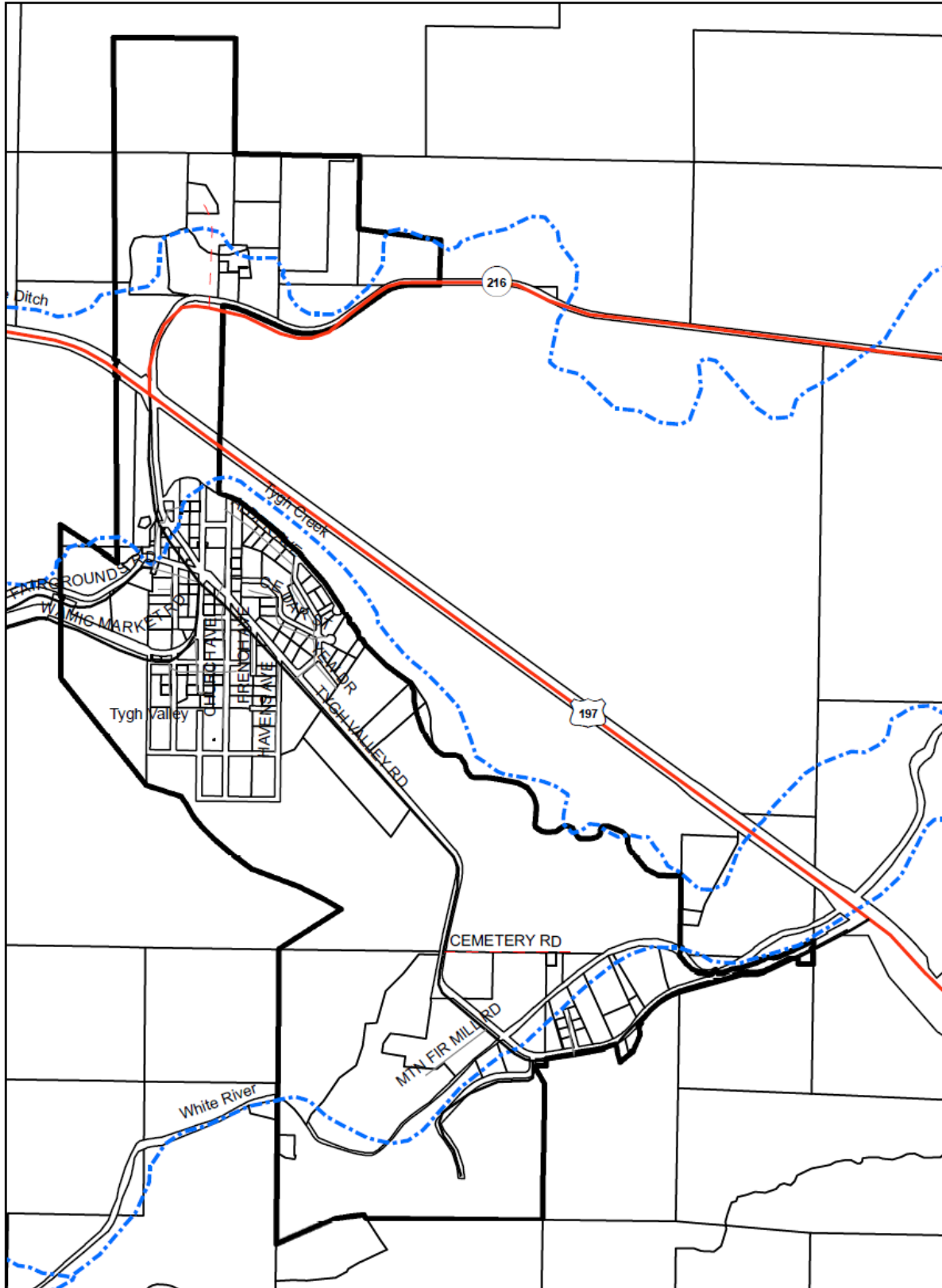
Tygh Valley is a community situated adjacent to and south of State Highway 216, located eighteen miles south of Dufur and ten miles north of Maupin. There are approximately 175 residents. Tygh Valley Timber Company, located about one mile south of town, maintains private company family housing for approximately an additional 85 persons. The population has remained fairly constant over the years and it is expected that this trend will continue with a modest increase in population expected over the next twenty year period. Tygh Creek meanders on the north between the community and the realigned state highway. Commercial establishments consist of the following: a general store, restaurant, combination tavern/cafe, two service stations, welding shop, motel, trailer parks and two churches.

The community is served by a water system supplied by one spring and two wells. The present supply will meet the community's needs for the next ten to twenty year period. Tygh Valley's fundamental waste water disposal system is by individual septic tanks with drain fields. Soil conditions generally are suitable for this type of waste water disposal. Police protection is by the Wasco County Sheriff's Office.

The area within the Rural Service Center designation is committed to urban uses. Similar urban uses may be found in the City of Maupin, approximately four miles to the south. This area provides many necessary urban services to residents in and around this area and also to tourists and passersby. Permitting these services to occur in this area will conserve energy for transportation uses and provide economic benefits in terms of goods and services provided Tygh Valley has existed as a community for many years. The urban uses in the town have been a benefit to the surrounding farming uses by providing needed social and economic services.

Exception Area: <u>Tygh Valley</u>
Location: Township: 3S & 4S Range: 13E Sections: 33 & 34(3S) and 3, 4, 9, 10, 11 & 15(4S)
Zoning Classification: Varied
Plan Designation: Rural Service Center
Property Information: Total Acreage: 756 Number of Parcels: 178 Average Parcel Size: 4.25 Largest Parcel: 91.22 Smallest Parcel: .11 Occupied Parcels: 95 Vacant Parcels: 83 Development Density (Acres/Dwelling): 7.96
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 223 Class II: 0 Class VII: 212 Class II & IV: 321
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 756 120-85: 0 84-50: 0 20 or Less: 0
Adjacent Uses: North: Agricultural, Vacant East: Agricultural South: Range, Vacant West: Agricultural
Additional Information:

Tygh Valley Rural Service Boundary



WASCO COUNTY PLANNING OFFICE

1721 W. 10th STREET THE DALLES, OREGON 97058

DANIEL C. DUROW, Director of Planning

PHONE: (503) 298-5169

TO: Wasco County Planning Commission

FROM: Wasco County Planning Office
Dan C. Durow, Director of Planning

RE: Proposed Plan Amendment and Zone Change to
Mountain Fir Lumber Company property in
Tygh Valley

Property Description:

<u>4</u>	<u>South</u>	<u>11</u>	<u>East</u>	<u>10</u>	<u>500</u>
[Township]		[Range]		[Section(s)]	[Tax Lot(s)]

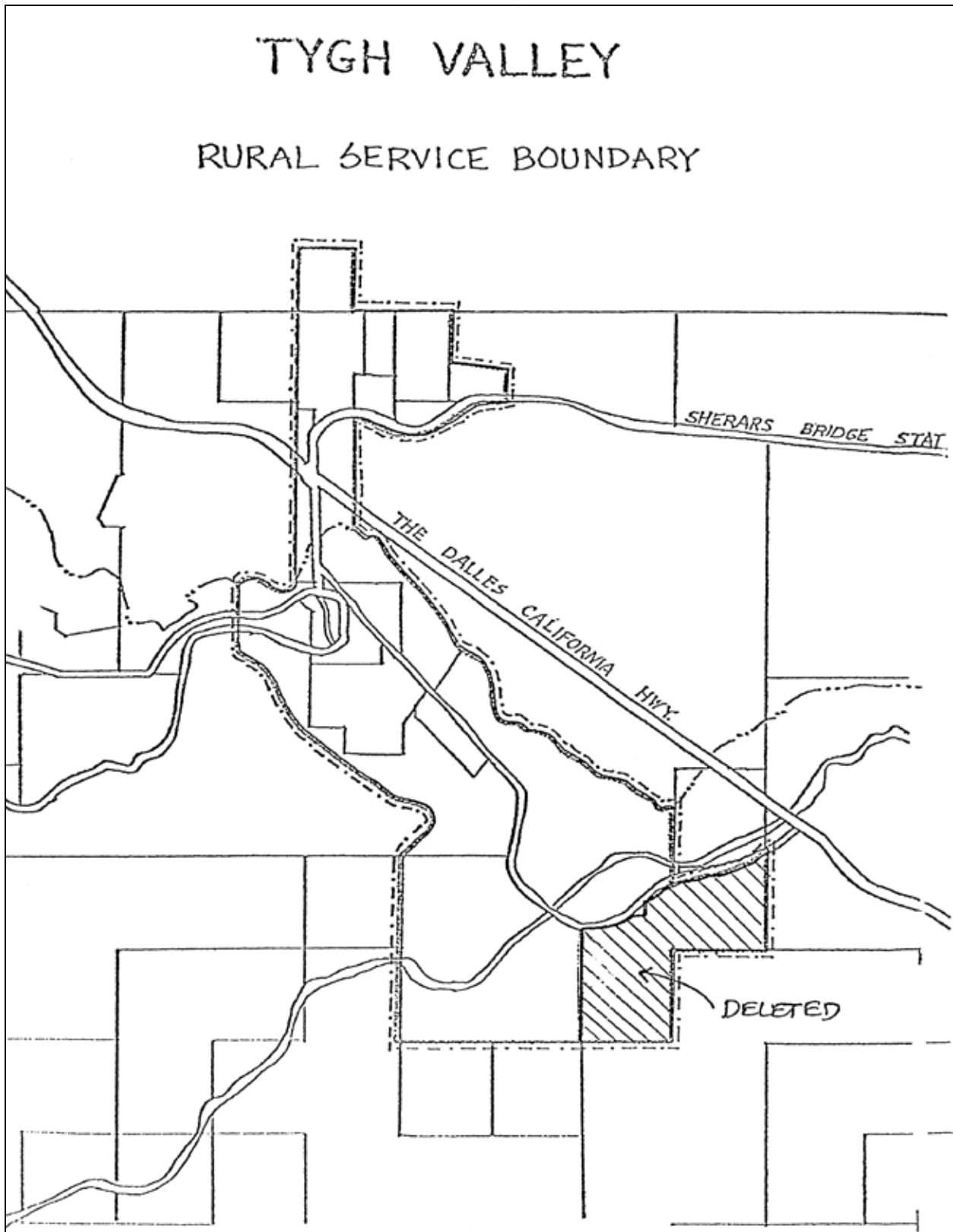
Existing Comprehensive Plan Designation: Rural Service Center

Existing Zoning: "A-1 (20)" Exclusive Farm Use

Proposed Comprehensive Plan Designation: Agriculture

Proposed Zoning: "A-1 (80)" Exclusive Farm Use

Basis for this Amendment: After re-evaluating this area
this parcel was found not to be committed to a non-farm use.



Original Rural Service Boundary with Designated "Deleted" Area

Wamic

Wamic has a population of approximately one hundred and fifty residents. It is located on an all-weather asphalt paved county road, five miles west of Tygh Valley and Federal Highway #197. Threemile Creek traverses through the northerly portion of the community with the majority of the residential development on the south side of the creek. Wamic contains one combination grocery/clothing/ hardware store; a combination garage/repair shop; a telephone office; a church and an elementary school. Over the past twenty years the community's population has remained fairly constant, and it is anticipated this same trend will continue during the next twenty years.

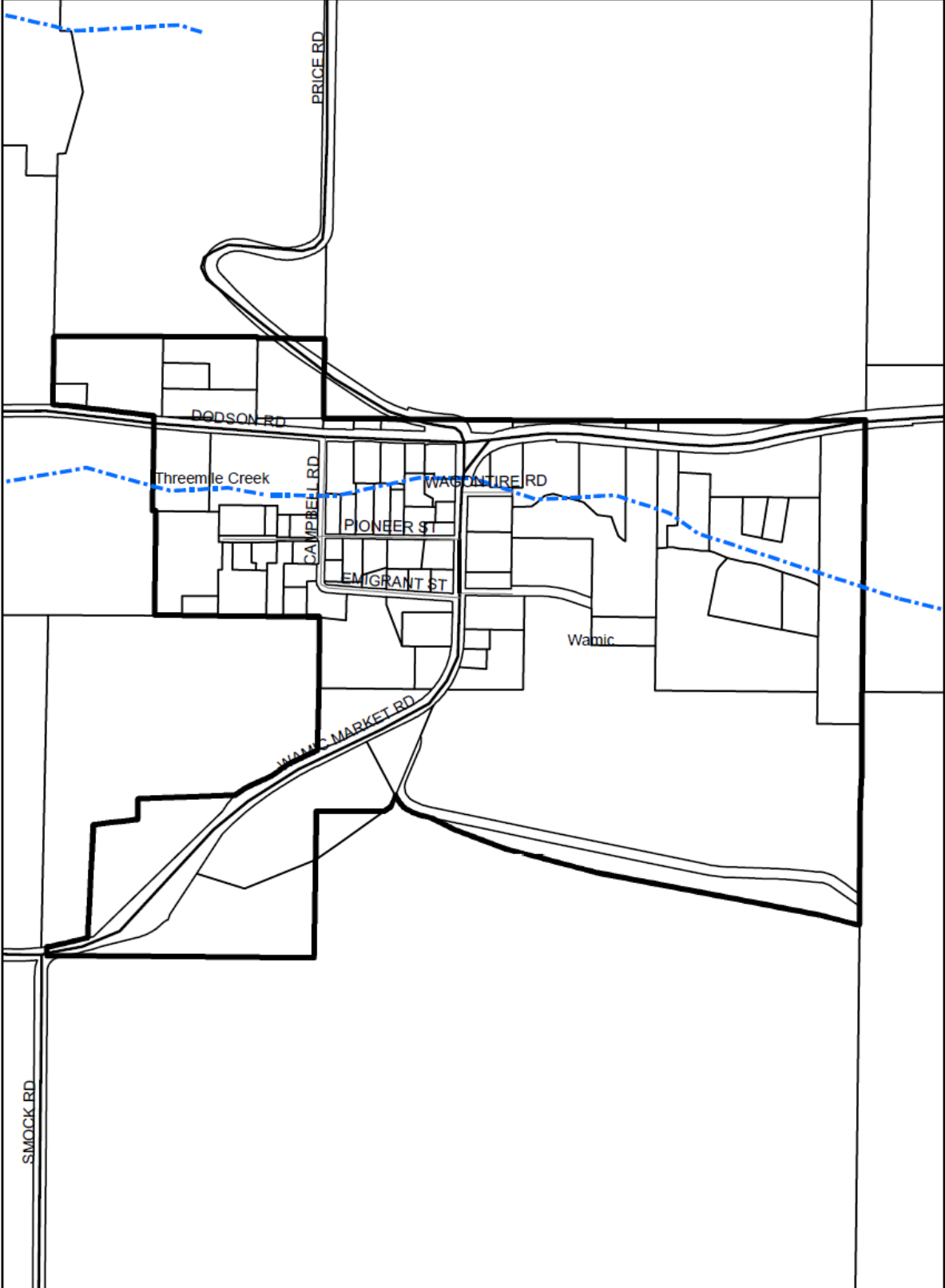
Wamic is served by a community water system that is considered adequate for the next ten year period. A separate underground piping irrigation system serves the residents' outdoor sprinkling and irrigation needs. Sanitary waste water disposal is by use of individual septic tanks with sub-surface drainfield installations. Police protection is provided by the Wasco County Sheriff's Office.

The lands within the Wamic Rural Service Center have been committed to urban and residential use for many years. To obtain similar services elsewhere, one would have to travel to Pine Grove which is approximately twelve miles to the south or to Tygh Valley, about four miles to the east.

Wamic provides social and economic services needed by residents in the surrounding farm and forest lands. It is situated at a convenient distance between the two larger towns of Tygh Valley and Pine Grove, which reduces the need to travel longer distances to obtain goods and services. This presents an advantageous economic and energy savings.

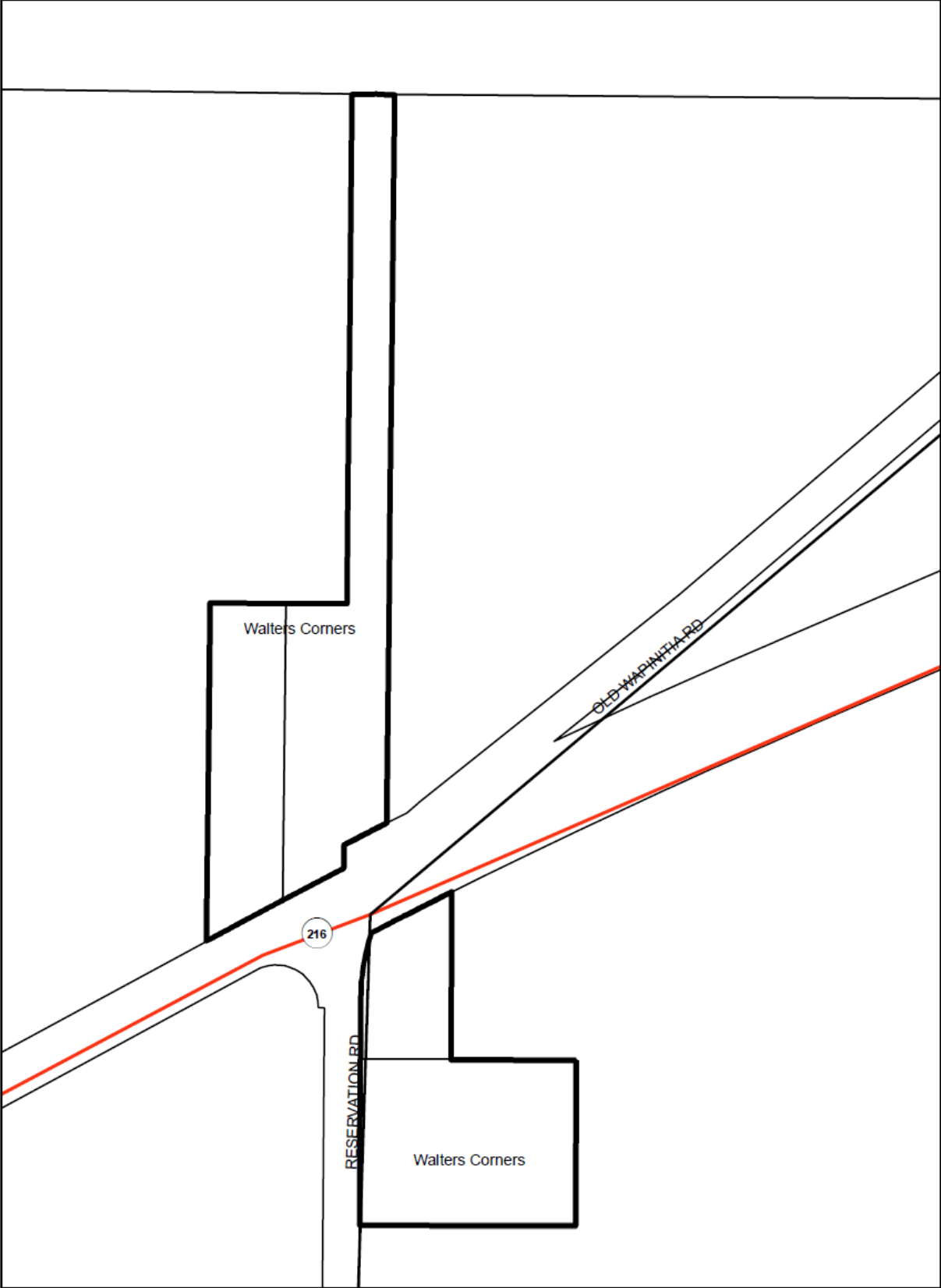
Exception Area: <u>Wamic</u>
Location: Township: 4S Range: 12E Sections: 10, 11, 14 & 15
Zoning Classification: Varied
Plan Designation: Rural Service Center
Property Information: Total Acreage: 223.43 Number of Parcels: 63 Average Parcel Size: 2.7 Largest Parcel: 11.10 Smallest Parcel: .04 Occupied Parcels: 40 Vacant Parcels: 12 Development Density (Acres/Dwelling): 4.26
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 59.14 Class II: 4.35 Class VII: 106.28 Class II & IV: 0
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 0 120-85: 1.18 84-50: 0 20 or Less: 0
Adjacent Uses: North: Forest, Agriculture, Range East: Agriculture, Range South: Forest, Agriculture, Range West: Agriculture, Range, Forest
Additional Information:

Wamic Rural Service Boundary



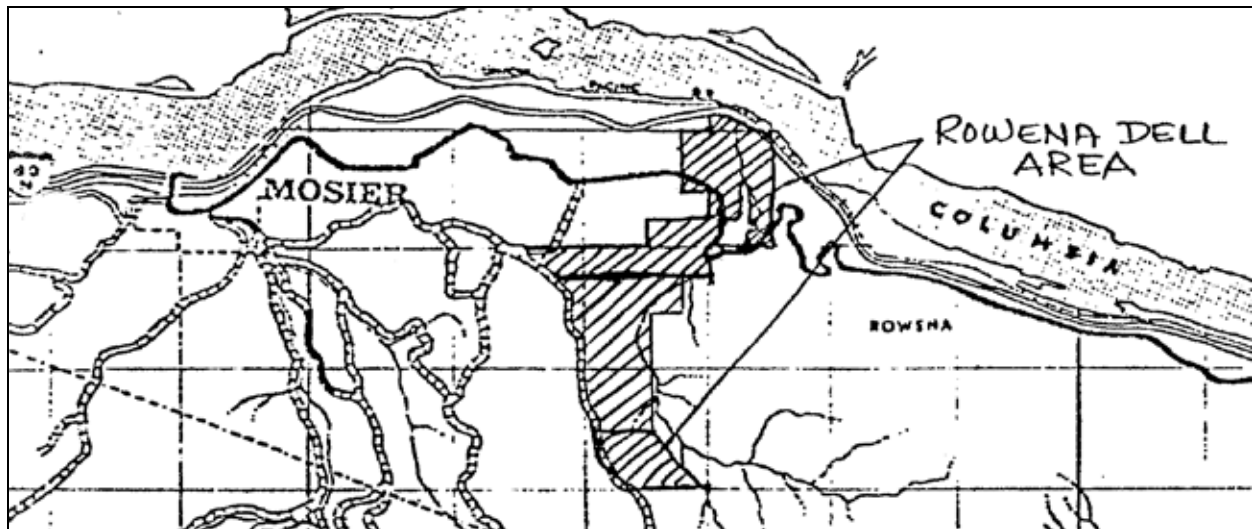
Exception Area: <u>Walters Corners</u>
Location: Township: 5S Range: 12E Sections: 14, 23, & 24
Zoning Classification: R-C (Rural Commercial) & A-1(160) Exclusive Farm Use
Plan Designation: Rural Service Center
Property Information: Total Acreage: 6 (approximately) Number of Parcels: 4 Average Parcel Size: 1.5 Largest Parcel: 2.27 Smallest Parcel: .79 Occupied Parcels: 3 Vacant Parcels: 1 Development Density (Acres/Dwelling): 2
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 0 Class II: 6 Class VII: 0 Class II & IV: 0
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 0 120-85: 0 84-50: 0 20 or Less: 0
Adjacent Uses: North: Agricultural East: Agricultural South: Agricultural West: Agricultural
Additional Information: The commercial use of Walters Corners has existed for many years and is a landmark in that area of the County. No long-term, negative environmental, economic, or energy consequences will occur if the use continues. No conflicts have ever occurred with adjacent uses nor are they expected to occur in the future.

Walters Corners Rural Service Boundary



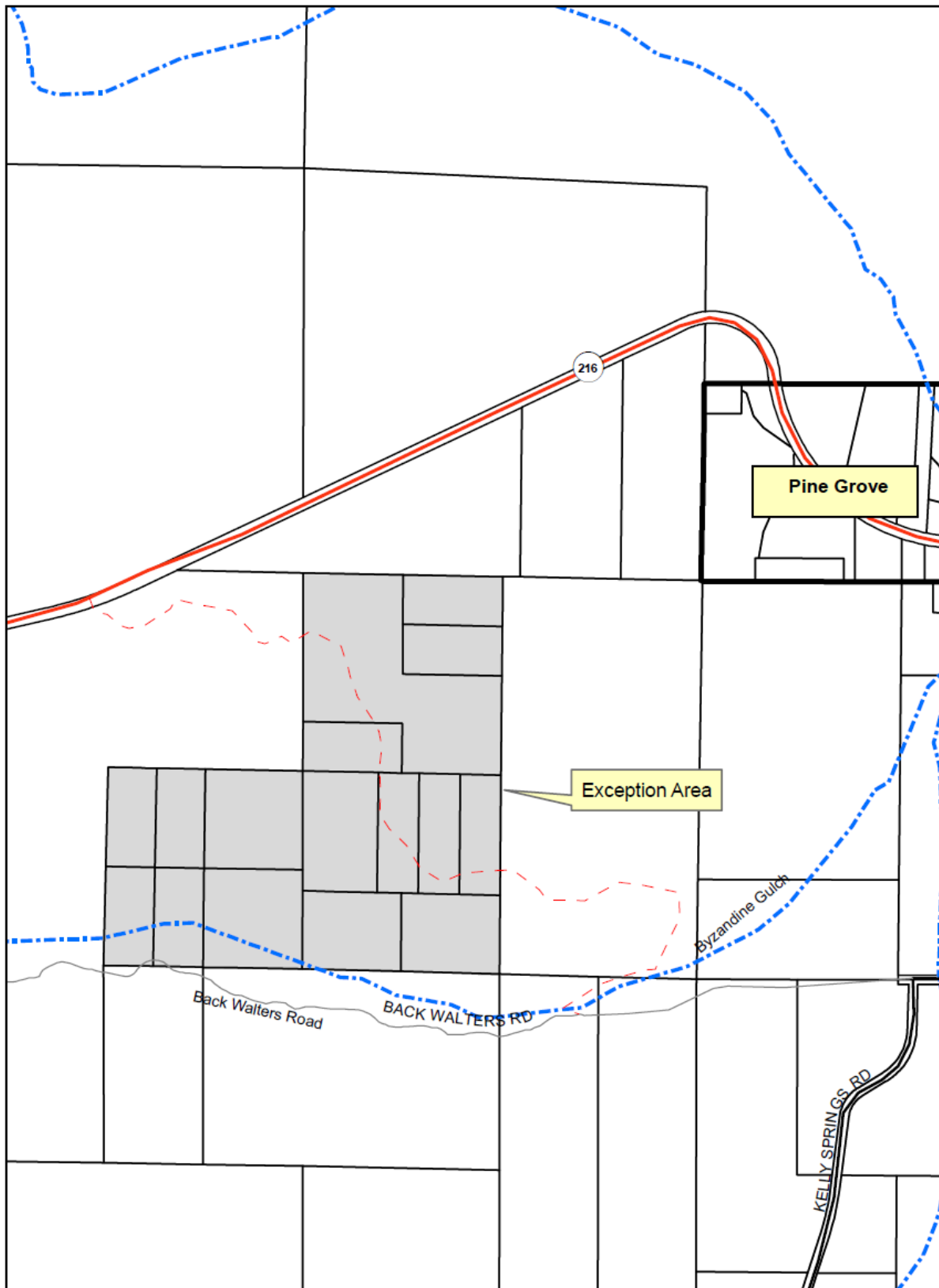
Exception Area: <u>Rowena Dell Area</u>
Location: Township: 2N Range: 12E Sections: 3, 4, 8, 9, 10 & 16
Zoning Classification: RR-5
Plan Designation: Rural Residential
Property Information: Total Acreage: 1,234.36 Number of Parcels: 65 Average Parcel Size: 18.99 Largest Parcel: 295.66 Smallest Parcel: 0.12 Occupied Parcels: N/A Vacant Parcels: N/A Development Density (Acres/Dwelling): N/A
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 79 Class II: 0 Class VII: 1,140.24 Class II & IV: 84.12
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Class 1: 0 Class 5: 210.08 Class 2: 0 Class 6: 676.12 Class 3: 0 Class 7 (Non-Forest): 348.16 Class 4: 0
Adjacent Uses: North: Columbia River and other rural residential lands East: Agriculture – Scrub Oak South: Agriculture – Scrub Oak West: Agriculture – Scrub Oak
Additional Information: Most frequently occurring lot size is 0.01 to 9.99 acres. Five acre minimum lot size will prohibit 56% of the lots from being partitioned further. 0.01 to 9.99 (37) 40.00 to 79.99 (4) 10.00 to 19.00 (16) 80+ (3) 20.00 to 39.99 (5)
See Attached Map

Rowena Dell Area



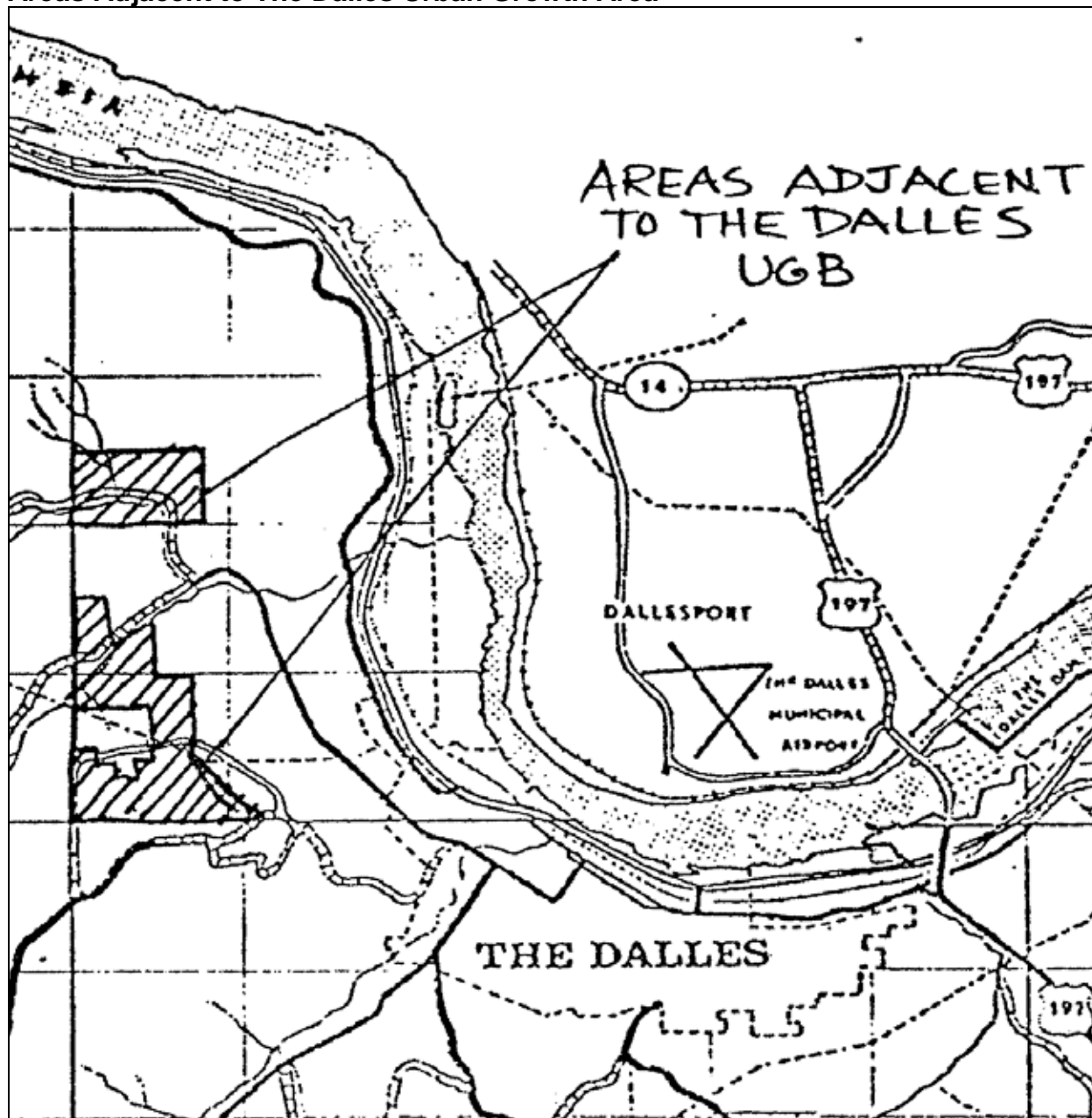
Exception Area: Pine Grove Area	
Location: Township: 5S Range: 11E Sections: 26	
Zoning Classification: RR-5	
Plan Designation: Rural Residential	
Property Information: Total Acreage: 120 Number of Parcels: 14 Average Parcel Size: 8.57 Largest Parcel: 22.5 Smallest Parcel: 2.50 Occupied Parcels: N/A Vacant Parcels: N/A Development Density (Acres/Dwelling): N/A	
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 120 Class II: 0 Class VII: 0 Class II & IV: 0	
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Class 1: 0 Class 5: 65 Class 2: 0 Class 6: 60 Class 3: 0 Class 7 (Non-Forest): 0 Class 4: 0	
Adjacent Uses: North: Agriculture - Range East: Pine Grove South: Warm Springs Indian Reservation – Scrub Oak West: Timber	
Additional Information: Most frequently occurring lot size is 0.01 to 9.99 acres. Five acre minimum lot size will prohibit 56% of the lots from being partitioned further. 0.01 to 9.99 (9) 10.00 to 19.00 (4) 20.00+ (1) See Attached Map	

Pine Grove Area



Exception Area: <u>Areas Adjacent to The Dalles Urban Growth Boundary</u>
Location: Township: 2N Range: 13E Sections: 19, 26, 31, 32
Zoning Classification: RR-5
Plan Designation: Rural Residential
Property Information: Total Acreage: 863.89 Number of Parcels: 46 Average Parcel Size: 18.78 Largest Parcel: 80.00 Smallest Parcel: .47 Occupied Parcels: N/A Vacant Parcels: N/A Development Density (Acres/Dwelling): N/A
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 0 Class II: 0 Class VII: 602.77 Class II & IV: 0
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Class 1: 0 Class 5: 102.40 Class 2: 0 Class 6: 208.53 Class 3: 0 Class 7 (Non-Forest): 552.96 Class 4: 0
Adjacent Uses: North: Vacant, Volcanic Cliffs, Some Grazing East: The Dalles Urban Growth Boundary South: Agricultural and Residential Uses West: Grazing, Wheat
Additional Information: Most frequently occurring lot size is 0.01 to 9.99 acres. Five acre minimum lot size will prohibit 57% of the lots from being partitioned further. 0.01 to 9.99 (26) 40.00 to 79.99 (7) 10.00 to 19.00 (4) 80+ (1) 20.00 to 39.99(8) <p style="text-align: center;">See Attached Map</p>

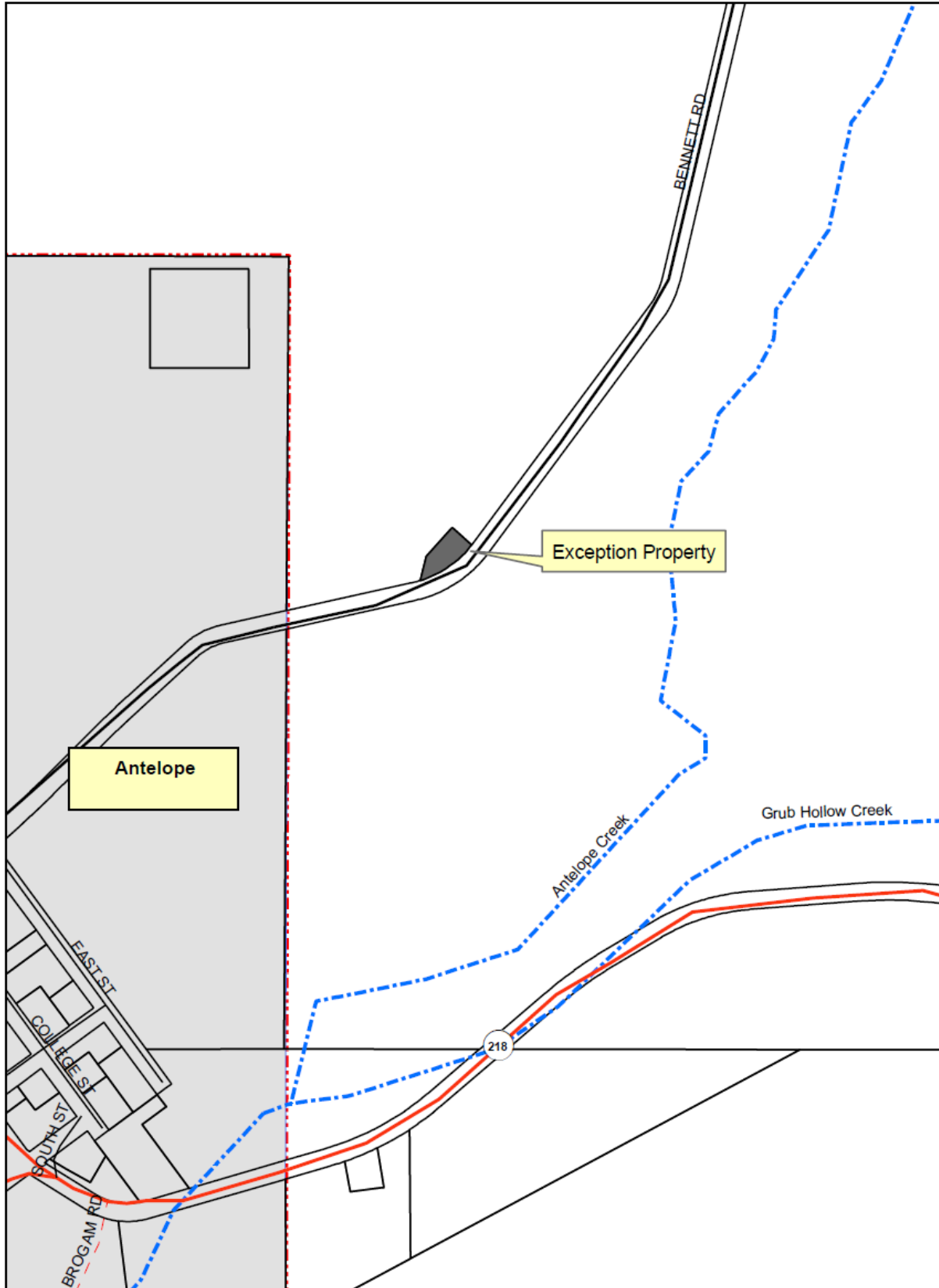
Areas Adjacent to The Dalles Urban Growth Area



Exception Area: <u>Brown's Re-Zone</u>
Location: Township: 1N Range: 13E Section: 5
Zoning Classification: "R-4" Residential
Plan Designation: Residential
Property Information: Total Acreage: 1.15 Number of Parcels: 1 Average Parcel Size: N/A Largest Parcel: N/A Smallest Parcel: N/A Occupied Parcels: N/A Vacant Parcels: N/A Development Density (Acres/Dwelling): 6 Rental Units
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 0 Class II: 0 Class VII: 0 Class II & IV: 1.15
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 1.15 120-85: 0 84-50: 0 20 or Less: 0
Adjacent Uses: North: Agricultural East: Orchards South: Orchards West: Roofing Business
Additional Information: The multifamily structures have been on this lot since 1964. The lot was re-zoned prior to their construction. No conflict with surrounding agricultural uses has ever occurred.

Exception Area: <u>Mid-Columbia Grain Growers – Re-Zone</u>
Location: Township: 7S Range: 17E Section: 0 (32) Taxlot: 2400
Zoning Classification: “M-1” Light Industrial
Plan Designation: Rural Service Center
Property Information: Total Acreage: .29 Number of Parcels: 1 Average Parcel Size: N/A Largest Parcel: N/A Smallest Parcel: N/A Occupied Parcels: 1 Vacant Parcels: N/A Development Density (Acres/Dwelling): Industrial Use
S.C.S Soil Class (Acres in Each Class): Class I: 0 Class VI: 0 Class II: 0.29 Class VII: 0 Class II & IV: 0
Forest Class, Cubic Feet Per Acre (Acres in Each Class) Non-Forest: 0.29 120-85: 0 84-50: 0 20 or Less: 0
Adjacent Uses: North: Agricultural land East: Agricultural land South: Agricultural land West: City of Antelope
Additional Information: This property was zoned “M-1” on July 6, 1976. The use has continue with no apparent conflicts with surrounding agricultural activities. See Attached Map

Mid-Columbia Grain Growers Exception



Badger Creek Ranch (Camp Morrow) Exception Area (CPA-06-101/EXC-06-101/ZNC-06-101)

The Badger Creek Ranch - Camp Morrow Exception is a reasons exception for 37.76 acres known as the Badger Creek Ranch portion of Camp Morrow. Camp Morrow property includes an established youth and family camp in Pine Hollow. This exception is requested along with a Limited Use Overlay applicable to the entire Camp Morrow property. The entire Camp Morrow property is 70.52 acres in size.

The Exception Area for a youth/family camp is approved by Wasco County Court Order, recorded with the Wasco County Court on November 14, 2006 (incorporated herein by reference). In accordance with OAR 660-04-018 (3) the exception statement is made part of the county's comprehensive plan. Ordinances and comprehensive plan designations are adopted to limit the uses and activities to only those uses and activities justified by the exception. If Wasco County were to change the types or intensities of uses within the Badger Creek Ranch Exception Area, a new reasons exception would be required. If the permissible uses and activities in the broader limited use overlay were changed or intensified, the exception granted to the Badger Creek Ranch portion of the camp would need to be reviewed. Continuation of the Badger Creek Ranch Exception is contingent upon the mutual relationship between the Ranch and the remainder of the Camp Morrow facilities.

Description of Exception Boundary and Development Area

The Camp Morrow Exception Area consists of 37.76 acres, known as the Badger Creek Ranch portion of the 70.52 acre Camp Morrow property. The 31.54 acre Lakeshore Retreat portion of the Camp Morrow property has been owned by Camp Morrow since 1958. A small 1.22 acre parcel on the same side of Morrow Road as Lakeshore Retreat has been purchased more recently and is also considered part of the Camp Morrow ownership and will be made part of the same single legal lot. Land on the east side of the road is known as Lakeshore Retreat and is currently developed and used as a youth/family camp. The full Camp Morrow property is affected by the Limited Use Overlay. Both the exception area and existing camp are located on the east end of Pine Hollow Reservoir in Wasco County Oregon.

The boundaries of the exception area and full Limited Use Overlay area is shown on Attachment B – Maps, and Attachment G – Proposed Camp Morrow Limited Use Overlay. The existing camp is currently developed and fully dedicated to youth and family camp uses. The presence of the existing camp is relied on to justify the exception and is therefore included in the Limited Use Overlay. Badger Creek Ranch exception area is to be formally developed and dedicated to a rustic camp program focused on the surrounding agricultural heritage. This portion of the camp will be somewhat separate in focus but will be used in conjunction with adjoining camp lands. Various recreational uses will be provided for all campers by facilities in the existing Lakeshore Retreat and the proposed Badger Creek Ranch portion of the camp. Formal inclusion of the Badger Creek Ranch portion of the camp property will allow for improvement of camp utilities and ensure long term viability of the existing camp as well as allowing for diversification of camp activities.

The youth/family camp will utilize some of the existing structures in the camp. Some structures will be replaced, and some structures may be expanded, removed or change in use to meet changing camp needs. Existing water and sewer systems located on the Camp Morrow property support the existing camp uses. These systems will be improved and expanded to support existing activities and any camp growth. These systems will support only camp uses and will not be relied on to serve any land outside the camp property. This Exception Statement describes the scope of the exception approved for youth/family camp and, together with the Wasco County Court Order, establishes the limitations or restrictions on uses in the Exception Area and the Development Area.

Scope of Exception

The approved reasons exception for the Badger Creek Ranch - Camp Morrow allows use of the exception Area for a youth/family camp. As proposed by Camp Morrow and approved by Wasco County, the exception supporting safe and clean operation of the existing camp, expansion of existing camp facilities, and formalization of equestrian camp activities within the exception area. The maximum number of campers accommodated in the exception area will be 50 campers. Use within the overall Limited Use Overlay (includes all of Camp Morrow Property) will be limited by the site's ability to support the uses. The maximum number of campers planned to be accommodated on the entire Camp Morrow site is 310. Existing permanent residences on site will be retained and the five existing RV sites (used primarily for long term seasonal volunteers) will be expanded to include a maximum of 12 RV sites. The primary camp season is the summer months. Some year round use may develop over time but the camp is not expected to function at full capacity except during the summer months. Off peak season uses may include, educational purposes, retreats or staff training, or fund raising activities.

Camp development includes five types of development. The first is expansion of the lakeshore retreat camper capacity from 138 beds to 164 beds. This allows the camp to be run as one large group or two small autonomous groups. Each side of the camp will accommodate 82 people, complete with one small meeting/game room, a nurses station, and a speakers cabin. The east side will have "dry" cabins with a central bath house while the other cluster of cabins will be replaced with cabins that include a restroom in each cabin and the central bath house will be removed.

The second type of development will be to expand the number of RV sites from 5 to 12. The third type of development will be the Retreat Village. The fourth type of development will be development undertaken to formalize the Badger Creek Ranch equestrian facilities and horse camp. The fifth type of development will be to expand, repair, or add buildings needed to support camp participants from any area of the camp. These developments may include work on or creation of the dining/kitchen building, the multi-purpose recreation center, full time residences, shops, and storage sheds. Water and Septic system capacity is a limiting factor on the site. The limited use overlay establishes review requirements for uses to ensure sufficient services are available to support development before development is approved.

Conceptual site plans documenting existing and planned developments for both the Lakeshore Retreat and Badger Creek Ranch components of the camp provide an inventory of existing structures and plans for expansion or replacement. Uses shown on the conceptual site plan and authorized by this exception support the youth/family camp only.

The Conceptual site plans are not intended to be binding documents regarding specific development of the Camp Morrow property. However, it does present the general parameters of the proposed youth/family camp in terms of the general location of principal camp components. Any new building or expansion of an existing building that will change the number of campers served by the camp will require a conditional use permit under the terms of the Camp Morrow Limited Use Overlay. Compatibility and capacity will be reviewed to make sure proposed new structures are developed only if determined to be consistent with the adopted exception and as water and sewer capacity are confirmed and developed. This approach allows the conceptual site plan to provide a general picture of the camp's long term plans and to illustrate how the maximum expansion might be accommodated on site. The camp operator or user must maintain operations that are similar to those shown on the conceptual plan. Exactly how the uses will be accommodated on site is not dictated by the conceptual plan.

The Exception authorizes the establishment and operation of a youth/family camp consistent with the approvals provided for in the Wasco County Court Order, including the staff report and attachments (A – G). Attachment E – Staff Report, includes Findings and Conclusions, describing the nature, size and general operation of the proposed camp. Attachment G defines the provisions of the Camp Morrow Limited Use Overlay. The purpose of the Camp Morrow limited Use Overlay is to assure that the development and operation of the camp is consistent with the purpose and intent of this Exception and limits uses and activities allowed in the underlying A-R zone to only those uses and activities justified by this Exception. By this reference, the Camp Morrow Limited Use Overlay is incorporated into this exception.

Reasons Justifying the Exception

This Exception and the accompanying referenced documents include the justification for the Exception and incorporate the Exception into the County's comprehensive plan. The following required elements are included by reference to and incorporation of the Wasco County Court Order, recorded with the Wasco County Clerk on November 14, 2006, and its attachments.

- ✓ The reasons justifying the exception including the facts and assumptions used as the basis for determining that a state policy in a goal should not apply to the Exception Area,
- ✓ the amount of land for the proposed use, and
- ✓ a rationale of why the use requires a location on resource land.

Inventory of Existing and Planned Improvements

Camp Morrow / Lakeshore Retreat Facilities						
Existing			Proposed			
Cabin/Structure Name	Map Key #	Sleeps	Cabin/Structure Name	Map Key #	Sleeps	Notes
Tyre & Sidon	1&2	18	Tyre & Sidon	1&2	20	Replace existing cabins with new structures, some in new locations, all dry cabins served by restroom #1
Joppa	3	10	Joppa	3	10	
Capernaum	5	10	Capernaum	5	10	
Bethany	6	10	Bethany	6	10	
Hebron	4	10	Hebron	4	10	
Cana	7	10	Cana	7	10	
			New Cabin	17	10	
Corinth & Athens	11&12	20	Corinth & Athens	11&12	20	Replace existing cabins w/ new structures, some in new locations, wet cabins (w/ shower & bath)
Antioch	13	10	Antioch	13	10	
Philippi	14	10	Philippi	14	10	
Ninevah	15	10	Ninevah	15	10	
Tarsus	16	10	Tarsus	16	10	
			New Cabin	18	10	
Ephesus	8	3	Ephesus	8	3	No change
Jerico	10	3	Jerico	10	3	Replace w/ wet cabin
Nurses	9	4	Nurses	9	4	No Change
			New Cabin	19	4	w/ second nurses station
			Remodeled Cabin	20	0	Meeting game room
			Remodeled Cabin	21	0	Meeting game room w/ bath
Total Beds		138			164	
Restroom Blocks	Map Key #		Restroom Blocks	Map Key #		Notes
Restroom	1		Restroom	1		Remodeled

Restroom	2					Replaced by wet cabins
Other Multi Purpose Buildings		Details	Other Multi Purpose Buildings		Details	Notes
Kitchen/Dining		Seat 138	Kitchen/Dining		Seat 260	Remodel expand
Craft/Lounge			Craft/Lounge			Remodel, add small office
Meeting/Game		Seat 150	Meeting/Game		Seat 150	No change
Store/Rec Deck			Store/Rec Deck			No change
Recreation Storage			Recreation Storage			No change
Prayer Chapel			Prayer Chapel			Remodel, add floor area
Amphitheater		Seat 50-75	Amphitheater		Seat 50-75	No change
Recreational Vehicle Sites		5 sites (full service)	Recreational Vehicle Sites		12 sites (full service)	No change to first 5 sites add 7
			Picnic Shelter w/ restroom			Add
			Laundry Facility w/ phone			Add
Site built full time residences		3	Site built full time residences		3	Retain houses, 1 or more may accommodate adult retreat use until retreat village is developed
Shop			Shop			Add bathroom
Storage Sheds			Storage Sheds			Replace single wide storage with pole buildings
			Guest cottage		Sleep 4	Add

			Summer staff dorm		Sleep 12	Add building w/ six rooms two beds each, 2 rooms per bath, all share staff lounge
			Additional residences		2	Add full time housing or replace converted housing if existing dwellings converted for adult retreat

Camp Morrow / Lakeshore Retreat– Retreat Village Facilities

Existing			Proposed			
Cabin/Structure Name		Sleeps	Cabin/Structure Name		Sleeps	Notes
None			Duplex Cabin		16	Add new wet cabins, all in new locations, geographically separated from remainder of camp
			Duplex Cabin		16	
			Fourplex Retreat		32	
			Fourplex Retreat		32	

Camp Morrow / Badger Creek Ranch Facilities

Existing			Proposed			
Cabin/Structure Name		Details	Cabin/Structure Name		Details	Notes
Riding arena		Seats 50-75				No change
Barn						
Horse Trailer Parking						
Tack Sheds		3				
Horse Stalls		15				
Tents and Platforms		Have slept 45 campers			50 maximum	Add capacity to serve and sleep 50

Kitchen/Chuck Wagon						campers max, Transition from temporary portable structures to permanent structures
Shower House						
Porta Pottys						

Sacamano Exception Area (CPA-07-102/ZNC-07-101/EXC-07-101)

(While this is a Goal 4 Exception there is no specific section for it so it is being placed in the Goal 3 Exception Section.)

The Sacamano Exception is a committed lands exception for less than eight acres. This exception includes a re-zone of less than eight acres from F-2 to FF-10 zoning. Portions of three parcels are involved. The first 16.16 acre parcel is owned by the Sacamanos having approximately 6.8 acres within the proposed exception area. The second is 10 acres, owned by Campbell, with approximately .78 acres within the exception area. The final parcel belongs to Cherniak /Conklin is 11.38 acres, .34 of which are part of the exception area. The Sacamanos own a contiguous parcel already entirely zoned F-F (10) that is not part of the requested exception. The entire Sacamano property (two legal contiguous lots) is 35.47 acres in size.

The Exception Area included in the Sacamano exception request is approved by Wasco County Court Order, recorded with the Wasco County Court on February 22, 2008 (incorporated herein by reference). In accordance with OAR 660-04-018 (3) the exception statement is made part of Wasco County's comprehensive plan. No special ordinances or comprehensive plan designations need to be adopted to limit the uses and activities to only those uses and activities justified by the exception. The exception is supported by reasons justifying a committed exception. The land within the exception area is committed to non resource use and shall be regulated by the county as non resource land. Applicable non resource zoning at the time the exception was proposed and granted was F-F (10). The F-F(10) zone is the zone applied to the exception area

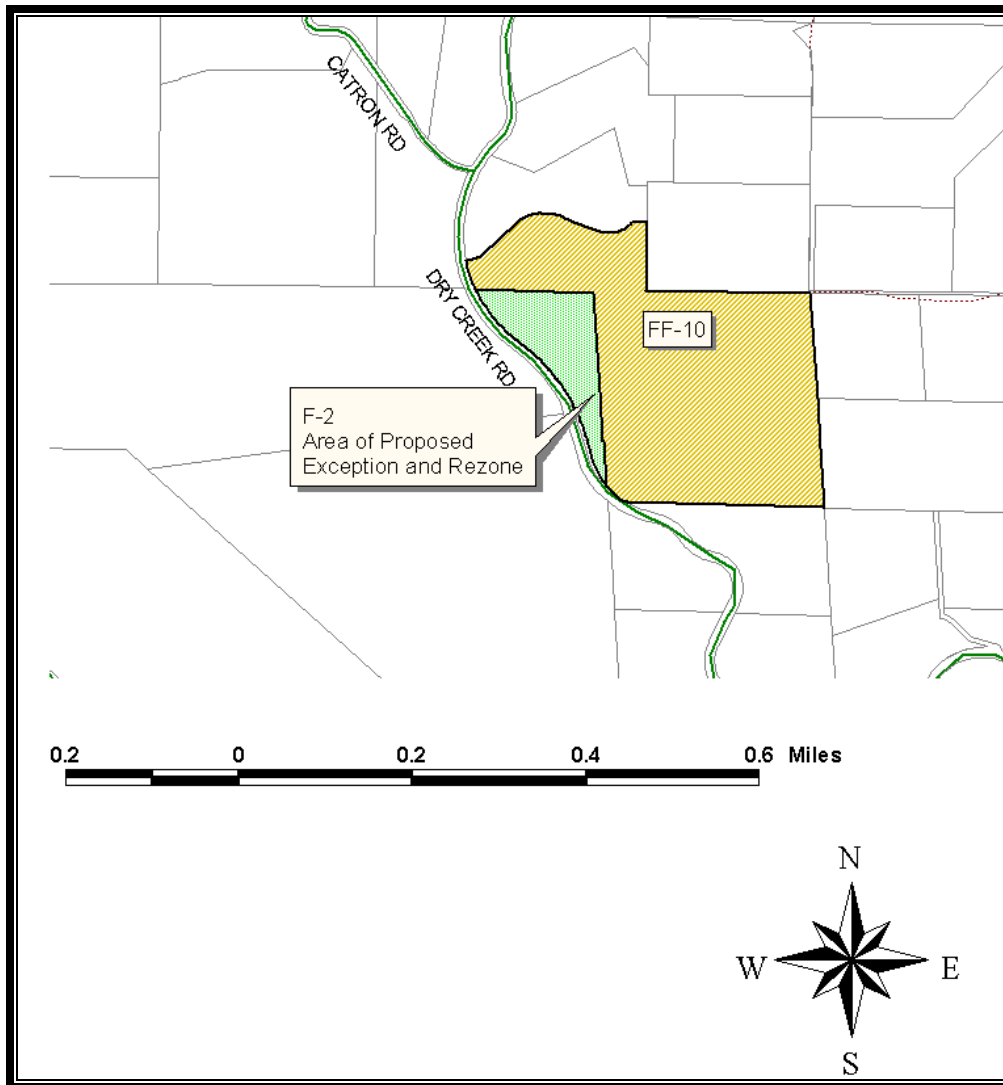
Description of Exception Boundary and Development Area

The proposed exception area is shown on the exception area map included with the application. The following table provides tax lots and sizes for total ownership by affected land owners and for portions of tax lots included within the proposed exception area.

OWNER	Tax Lot	Total Size	F-2 Rezone Area	Contiguous Land
Sacamano	2N12E17: 2700 & 1N12E20: 5000	16.16 acres 19.31 acres	Approx 6.8 acres (por. of TL 2700)	35.47 Acres
Campbell	2N12E20: 4700	10 acres	Approx 0.78 acres (por. of TL 4700)	10 Acres
Cherniak/ Conklin	2N12E20: 4600 & 2N 12E20: 4500	0.34 acres 11.04 acres	0.34 acres (all of TL 4600)	11.38 Acres

Permission has been granted from the owners of these parcels for inclusion in this exception and re-zone. The exception area and all parcels involved are located immediately north of Dry Creek Road, where the zoning is generally FF-10. South of this road, the zoning is generally F-2. The northern Sacamano property has a residential home and is located at 1880 Paradise Ridge Rd, Mosier, Wasco County, OR.

The boundaries of the exception area and re-zone area are shown below.



The involved parcels are currently in or appropriate for rural residential use. The exception area is committed to non resource use. It is committed by the following factors:

- isolation of the exception area by the road from useable F-2 lands,
- the lack of trees and lack of suitability to grow trees on the land within the exception area if it were managed separately from F-2 lands on the other side of the County Rd.,
- the limited size of the exception area which is under 8 acres in size,
- the shape of the exception area which is roughly triangular with much of the isolated F-2 zoned land in narrow pointed un-useable portions of the F-2 designated portions of the parcels, and
- the fact that the two sides of the triangular exception area are surrounded by FF-10 zoned non resource land including over half of each of the three legal lots having land within the exception area.

Since the land in the exception area is limited in size and is comprised of sections of parcels already zoned FF-10 and in residential use, no significant changes in current land use will result from this exception.

This Exception Statement describes the scope of the Sacamano requested exception and together with the Wasco County Court Order, establishes the F-F(10) zone as the non resource zone to be applied when the exception is granted.

Scope of Exception

The approved committed lands exception for the Sacamano parcel: The Sacamano exception allows rural residential use in the exception area in accordance with the new FF-10 zoning. As proposed and approved by Wasco County, the exception Supports application of the F-F(10) zone in place of the current F-2(80) zone for the area over which the exception is granted.

Applying the F-F(10) zone to the exception area is consistent with the predominant zoning in the vicinity and the predominant zoning of the parcels affected by the current resource zone.

No development currently exists in the exception area. Any future development will be permitted and approved by the County under the normal building permit process. Two of the three legal lots already have existing dwellings and the third lot would be permitted a dwelling and has been demonstrated to be able to accommodate a dwelling on the F-F(10) portion of the parcel without the granting of the exception. Granting the exception results in a more meaningful zoning boundary and allows for greater flexibility in building and home siting for one of the three affected legal parcels.

Justification of the Exception

This Exception and the accompanying referenced documents include the reasons a committed land exception is justified for the designated exception area and incorporate the Exception into the County's comprehensive plan. The following required elements are included by reference to and incorporation of the Wasco County Court Order, filed with the Wasco County Clerk on February 22, 2008.

- ✓ The reasons justifying the committed lands exception including the facts and assumptions used as the basis for determining that a state policy in a goal should not apply to the Exception Area,
- ✓ the amount of land for the proposed re-zone, and
- ✓ a rationale of why the re-zone makes sense on this particular plot of resource land.

CHAPTER 14 FINDINGS AND RECOMMENDATIONS

A. Justifications for Minimum Lot Sizes

Goal #3 states that "minimum lot sizes as are utilized for any farm use zones shall be appropriate for the continuation of the existing commercial agricultural enterprise within the area". The minimum lot sizes in the exclusive farm use zones are twenty (20) acres and eighty (80) acres. The justifications for these lot sizes are as follows.

1. A-1(20)

The A-1 (20) zoning has generally been applied to the orchard lands surrounding The Dalles and lying to the south of Mosier. The average lot size for all orchard lands in 1976 was 42.2 acres and was approximately forty (40) acres in 1980 (Jack Thienes Telephone Conversation) However, this does not represent the true picture of orchard sizes in the County; nor does it address the Goal 3 requirement stated above.

The question of what is a "commercial agricultural enterprise" has been wrestled with for several years in Oregon by many of the agricultural experts in government, universities and businesses. Everyone has a general idea or understanding of the answer, but no one has yet been able to precisely define it; and perhaps that is best. Defining a commercial orchard enterprise in Wasco County is also extremely difficult. Everyone knows an orchard when they see one, but each of the 150 orchards in Wasco County has their own unique set of circumstances which makes a single definition improbable and impractical. Each orchard operates differently but many have common characteristics.

One characteristic common to most, if not all, of the smaller orchards is that the orchard enterprise is not the sole source of income for the owner. The idea then that lot sizes must be large enough to ensure that one can make his livelihood solely from the orchard enterprise is simply not valid. ["1000 Friends" letter; July 31, 1981, Page 6, U 3].

The smaller orchards make up the majority of all orchard lands within Wasco County. There are currently 150 orchards comprising 6,000 acres. The ten largest orchards involve 2,690 acres, leaving 3,310 acres for the remaining 140 orchards.

No one would argue that the small orchard enterprises are not important to the overall fruit processing economy of Wasco County. The large orchards have been described as the backbone of the fruit industry. That being the case, and carrying the analogy further, the small orchards must then be the heart. If the opportunity for buying and operating a small orchard should be eliminated by excessively large minimum lot sizes, an acceleration of the consolidation of orchards, which is already occurring, would result. Many people who might want to begin operating a small orchard or those who want to expand an existing

orchard under these circumstances would be disappointed because they could not afford the price of the larger parcels nor the equipment necessary to maintain a large operation.

The following analysis of the sample area of orchard lands in Wasco County helps to illustrate the justification for the twenty (20) acre minimum lot size.

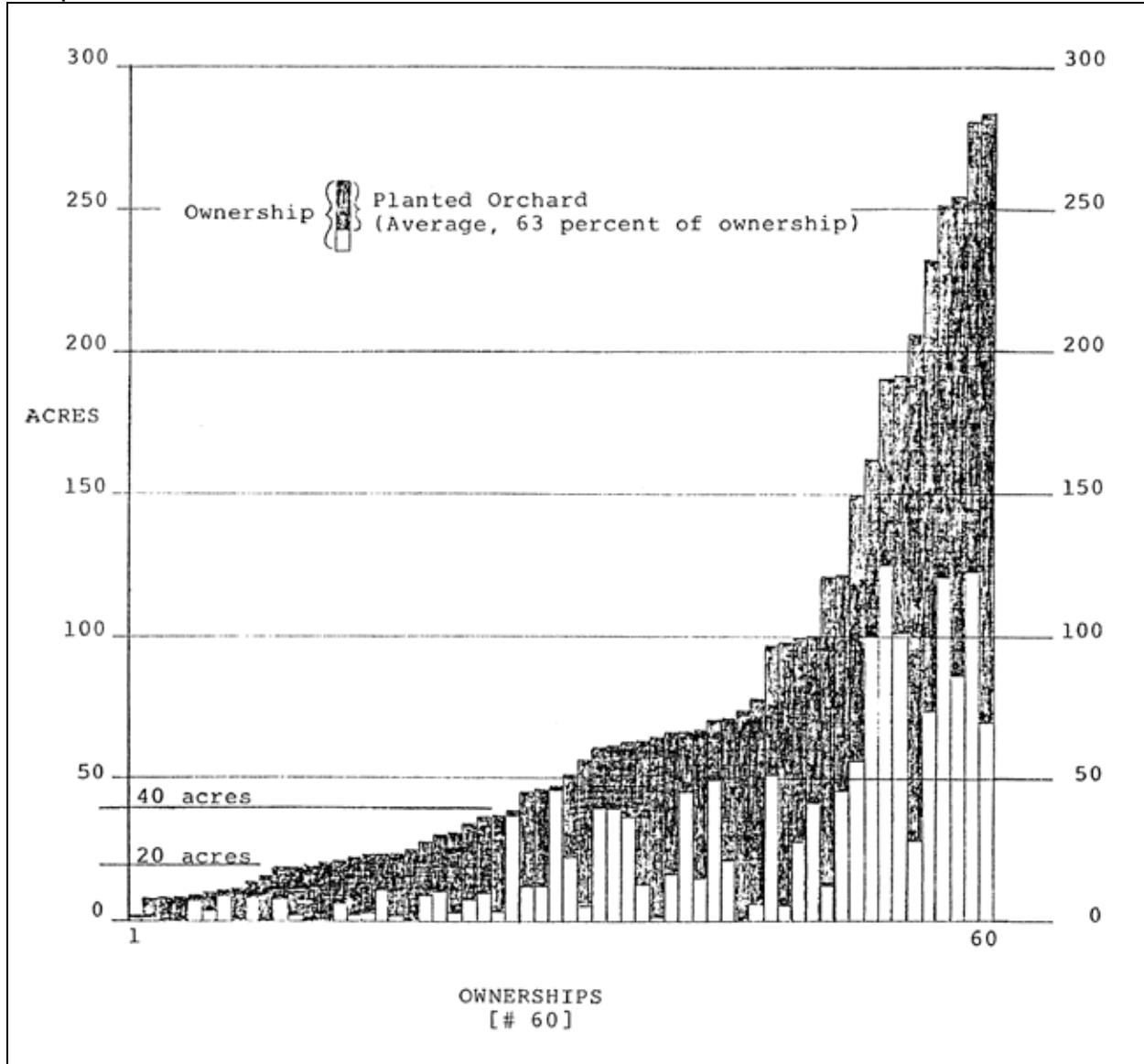
In order to get a better understanding of what constitutes a commercial orchard enterprise, a sample area of approximately eight (8) square miles was chosen in the heart of the orchard lands just south of the City of The Dalles. All of the sections 8, 9, and 10 (outside of the urban growth boundary), and all of sections 15, 16, 17, 21, 22 and those portions of sections 7, 11, 14, 18, 20, 23, 27 and 28 which had contiguous ownership parcels in Township 1 2 North, Range 13 East, were included. Ownerships for all lands within this sample area were established on an overlay of the Assessor maps. All lands planted in orchards were then drawn over the ownership patterns. The orchard lands information was traced from Agricultural Stabilization and Conservation air photos taken in 1979. All ownerships which had planted orchards were included in the analysis. Those ownerships larger than one acre within the sample area which had no planted orchards were removed and analyzed separately. All ownerships less than one acre were totally removed. (This was a small number and the parcels generally occurred close to main roads or other built areas).

The results of the ownership and planted orchards analysis show that on an average, 63 percent of each ownership was actually planted in orchards. Steep slopes, roads, home sites, creek bottoms and other topographic circumstances accounted for most of the unplanted area. It follows, then, that the argument of calculating a minimum lot size based strictly on ownership alone has little validity. ["1000 Friends" letter; July 31, 1981, page 6].

The graph shows that having a twenty (20) acre minimum lot size would protect 27 commercial orchard enterprises in the sample area of 60 owner-ships (almost half) from being further partitioned. A forty acre minimum would protect only 17 more. Clearly, minimum lot size alone cannot protect the backbone orchards unless the minimum lot size is above 300 acres. Protection of those orchards must be accomplished by some other means. Wasco County has provided protection of the large orchards by not allowing subdivisions in exclusive farm use zones. This provision provides the protection needed by the large orchards.

Additionally, protection of the continued operation of the small orchards would be achieved best with a twenty (20) acre minimum lot size. The graph of Non-Orchard Ownerships illustrates this fact. Twenty-six (26) of the 29 ownerships in the sample area that are without planted orchards could not be further partitioned. This would prevent any additional non-orchard developments which could interfere with existing orchard operations. Thus, the twenty (20) acre minimum lot size in the A-1 (20) zone is fully justified.

Figure 1 – Graph of Ownership and Planted Orchard – Sample Area Approximately 8 Square Miles



2. A-1(80)

The vast majority of Wasco County has been zoned exclusive farm use, eighty (80) acre minimum lot size. These areas are composed of wheat and range land.

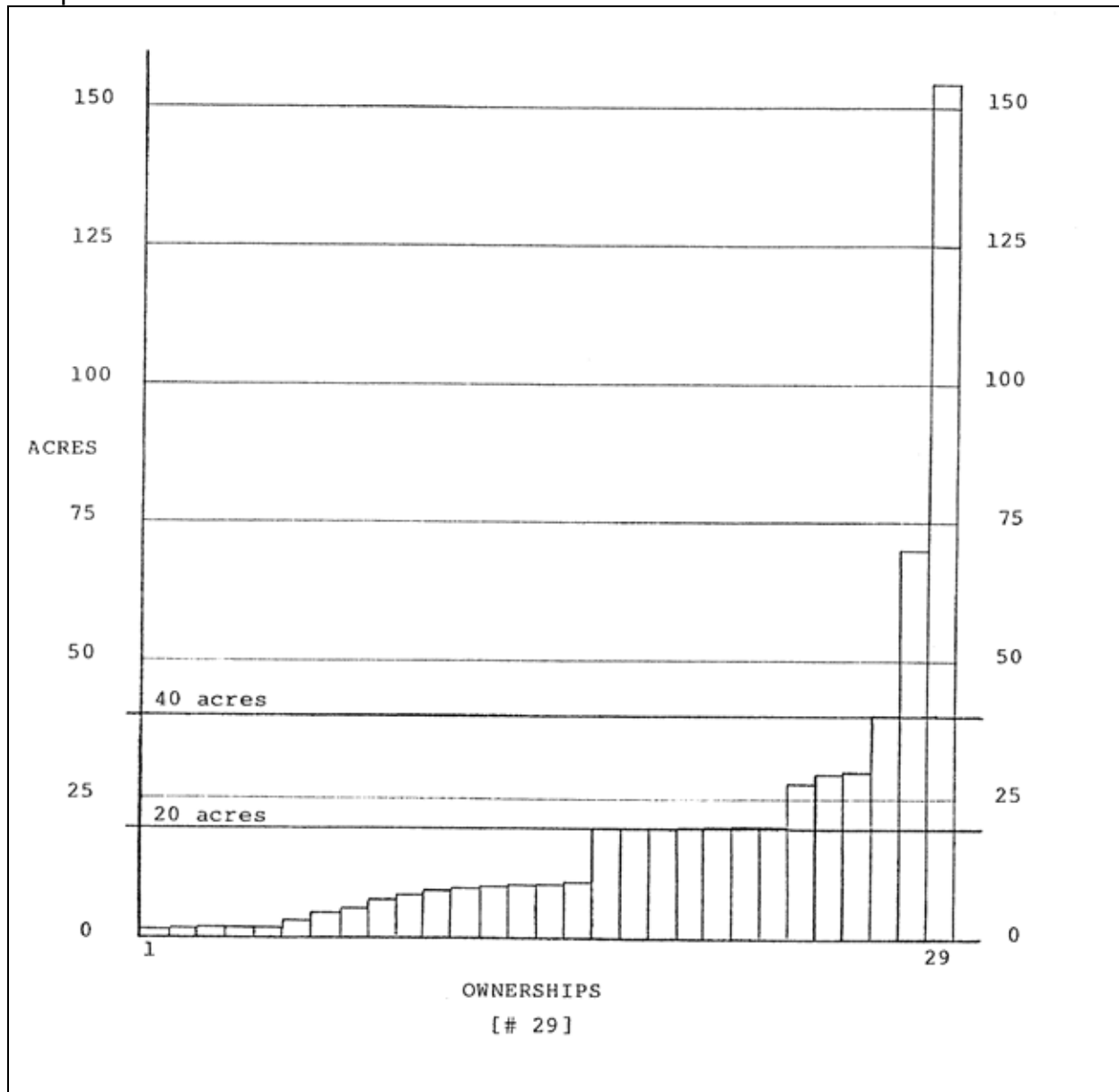
Although no detailed analysis like that done for orchard lands was done for wheat and range land, many of the same arguments and rationale hold true. Approximately 1,500 to 2,000 acres, or more is needed to "make a living" in these areas of the county. However, Goal 3 does not require that a minimum lot size be established to allow someone to make a living. It does require a lot size which will allow the commercial agricultural enterprise that already exists to continue. During the past thirty to forty years the number of farms has been decreasing and farm size increasing; minimum lot size will have no effect on this

trend. This fact can be clearly demonstrated in Wasco County. For eleven years, from 1969 to 1980, wheat and range lands were zoned twenty (20) acre minimum, yet the trend toward larger farms continued throughout that period.

Again, as was the case for orchard lands, to pre-vent the large ranches of 2,000 acres or more from being divided a minimum lot size of 1,000 acres or more would be needed. It is clear that protection of those farms must be accomplished by some other means. As with orchard lands, subdivisions will not be permitted in any exclusive farm use zone. This provision provides the protection needed by the large ranches.

Although the cost of range land is relatively low, the costs to establish a residence are extremely high. The costs of electricity and water alone will discourage residential development on eighty (80) acre parcels and will not be affordable for most people. The eighty (80) acre minimum lot size does preserve the area's commercial agricultural enterprises and is fully justified.

Figure 2 – Non-Orchard Ownerships – Within Orchard Land Sampled, Approximately 8 Square Miles



3. F-2(40) and F-2(80)

The "F-2 (40)" and "F-2 (80)" forest zones have very limited permitted uses and conditional uses that are generally compatible with primary timber management. Due to the high cost of these lands, the forty (40) and eighty (80) acre minimum lot sizes will be more than adequate to keep them in forest uses. Most of the lands zoned "F-2 (80)" is in either the Mt. Hood National Forest, White River Game Management Area or are private timber company holdings. These lands are adequately managed for forest, recreational and open space uses.

The area zoned "F-2 (40)" is considered sensitive big game habitat. Again, the Department of Fish and Wildlife has stated that they are supportive of this lot size for the area. Forty to 79.99 acre lots are the most frequently occurring lot size in the area. The forty (40) acre zone would protect (would prohibit further partitioning of), 78% of the lots. The forty (40) acre zoning is adequately justified.

4. F-1(80)

The "F-1 (80)" zone has been applied to The Dalles and Dufur watersheds. These areas are currently managed under "The Dalles Municipal Watershed-Comprehensive Management Plan", and the Dufur City Watershed Management Plan.

These watersheds lie almost completely in the Mt. Hood National Forest. The very limited permitted and conditional uses and the large eighty (80) acre minimum lot size as well as the public ownership will adequately protect these lands from conflicting uses.

5. F-F(10) and F-F(40)

The Forest Farm zone is intended to protect the existing, limited forest and farm uses and to preserve scenic value Columbia-Gorge Aerial open space and wildlife habitat. The land uses identified within the Plan which are compatible with wildlife habitat (pages 65-82) include open space, agriculture and forest. The "FF-10" and "FF-40" zones limit development of non-farm uses to ten percent of any parcel, thus preserving open space and wildlife habitat. Growing trees for timber production has not been determined to be a significant forest use in this zone. Because of this, no conflicts with timber production activities, such as spraying, will occur within this area. The forty (40) acre Forest-Farm zone has been applied to lands within the Columbia River Gorge Boundary to help protect the open space and scenic value of this valuable resource.

The only exception to the forty (40) acre zone in the Columbia Gorge occurs adjacent to The Dalles Urban Growth Boundary. This area contains approximately 266 acres and is surrounded on three sides by committed lands and the new Urban Growth Boundary. The area is within the previous Urban Growth Boundary and does not include any significant scenic quality. Two properties currently contain gravel and rock quarry operations. Both quarry operations are conditional uses which require that the operations are not visible from the major highways in the Gorge. Due to the existing uses, the lack of scenic quality and the development which surrounds this area on three sides, the "FF-10" zone which allows a smaller minimum lot size provides an adequate buffer and is the most appropriate zone classification for this area.

The Forest-Farm zones together total 20,044 acres. Of this total, 11,523 acres are in the "FF-40" area and 8,521 acres are in the "FF-10" area. Seventy percent (70%) of the soils in the FF-40" zone are class VII and VIII-- non-agricultural soils. Thirty-five percent (35%) of the soils in the "Ff-10" zone are class VII and

VIII. In both zones, the soils in class VII and VIII are the predominant soils. The class VI soils are generally scattered through out both zones and occur somewhat dispersed among the other soil types. This tends to make farming soils more difficult because the least productive of the agricultural soils are found adjacent to the non-agricultural soils. If these least productive of the agricultural soils are added to the percentages of non-farm soils within the "FF-40" and "FF-10" zones, the results are: Eighty-two percent (82%) soils classes VI, VII, and VIII in "FF-40"; and sixty-seven percent (67%) soils classes VI, VII, and VIII in the "FF-10" zones. The soils in this portion of

Wasco County relate to the soils in Hood River County more than to the remainder of Wasco County. Hood River County needs to consider soils classes I through IV as agriculture soils. (Letter from Soil Conservation Service on soil types in Seven Mile Hill Area).

As a further demonstration that this area does not contain "other lands" which are suitable for farm use, only fifty percent (50%) of the ownerships or less in the Forest-Farm zones can qualify for a farm tax deferral. To receive a farm tax deferral, a landowner must only gross five hundred dollars within three of five years in farm production. Lot size is also a good indicator of the lack of other lands suitable for farm use. In the "FF-40" zone, the average lot size is 49.8 acres. In the "FF-10" zone, it is 36.33 acres. Historically, people who have tried to farm the area seriously would have to sell small parcels just to maintain ownership of the remainder of the farm. This resulted, in part, in the preponderance of small lot sizes within this area. Small tract subdivisions which occurred many years ago are additional evidence of the lack of agricultural value of this area. This area's lot size characteristics are much different from the wheat and grazing lands in the remainder of the county.

The lands suitable for grazing are generally over-grazed and are only used for a few months in the spring. Water availability at these higher elevations is not economically feasible. Only one small area is currently under irrigation and it occurs at a low elevation near the Columbia River. Existing wells produce only small amounts of water; more suitable for domestic uses.

The Forest-Farm zone does protect existing farming operations by permitting dwell non-farm uses only as conditional uses. Lands within the Forest-Farm zones have been zoned for ten acre lot minimum lot sizes for many years. The designation of Forest-Farm has placed additional protection of forest and farm uses by having more non-farm uses as conditional uses or by not permitting them at all.

The "FF-10" zone has been applied to the Shady Brook and Sportsman's Paradise subdivisions. These areas are generally underdeveloped and contain average lot - sizes of ten acres or under. Ownership is diverse and no farming is currently being done within these areas. Within this zone any non-farm related

dwelling will need to receive a conditional use permit thus protecting adjacent farming operations which may be occurring in the area.

See additional documentation in Revisions Document Related to F-F(10)

B. Goal 5 Issues

Goal 5 states that open space shall be preserved and natural and scenic resources protected. The administrative rule on Goal 5, adopted by the Commission on May 1, 1981, has given the means by which these resources should be inventoried and preserved. The conflict resolution process used for each Goal 5 issue is illustrated below.

1. Land Needed or Desirable for Open Space

Generally, all of the agricultural and forestry lands in the County could be considered as open space, in accordance with Goal 5. Other lands, such as the rock cliffs found in the Columbia Gorge, the Deschutes and John Day Scenic Waterways, the White River and The Dalles and Dufur Watersheds could also be considered as open space lands. Each of these areas is being protected by various methods, to preserve their natural and scenic properties.

The type of "conflicting use" most often found to occur in the above mentioned open space lands is residential development, either conventional homes or mobile homes. Each open space resource and the method of protection are noted below.

a. Agricultural and Forest Lands:

According to sections 3.120(2)(a) and 3.210(1)(c) of the Wasco County Zoning Ordinance, residences are permitted outright in the agricultural and forest zones only in conjunction with a farm or forest use. Section 3.210(2)(r) permits a residence not connected with a farm or forest use as a conditional use, based on conditions set forth in section 3.120 (3), 3.210(3) and Oregon Revised Statutes 215.263. These conditions and the density requirement of each zone provide adequate protection of the farm, forest and open space resource. Other conditional uses must comply with the same conditions as mentioned above.

b. Columbia Gorge:

The Columbia Gorge, (as defined by Oregon Revised Statutes 390.460), is being protected from conflicting uses by the placement of the Environmental Protection District (EPD) Overlay zone, Section 3.700 of the Wasco County Zoning Ordinance. This overlay allows farm and forest uses, some utilities and re-creational use to occur, and dwellings in connection with farm or forest uses, provided they are constructed of materials which will minimize adverse impacts to the scenic values of the Gorge. All other uses permitted in the primary zone, either permitted out-right or as conditional uses, are considered

as conditional uses in the Environmental Protection District zone. The conflicting uses are allowed, but are specifically limited.

c. The Deschutes and John Day Scenic Waterways:

These waterways are protected by the State Scenic Rivers Act and the E.P.D. Division 5 (§3.755(5)).

d. The White River:

The White River Canyon (generally from rim to rim), has been designated as a natural area by the Nature Conservancy and Wasco County, and protected by the placement of the Environmental Protection District zone. Due to the Environmental Protection District zone, topography and nature of the canyon, (very few roads exist in this area), the threat of conflicting uses damaging this resource is negligible. The resource is adequately protected.

e. The Dalles and Dufur Watersheds:

These municipal watersheds are both zoned "F-1 (80)", which does not allow residential uses in any form, either as permitted use or conditional uses. Generally, only farm and forest uses and uses to maintain and enhance water quality and supply are permitted.

2. Mineral and Aggregate Resources

As stated in the Goals and Policies under Goal #5, rock and aggregate resources will be identified and protected by placement of the Environmental Protection District zone.

Extraction of these resources is a conditional use in the agricultural and forestry zones and a permitted use in the manufacturing zones.

Generally, residential uses are the uses which come into conflict with the extraction of aggregate and mineral resources. The provisions of the Environmental Protection District Division 5 overlay zone provide the protection necessary for all aggregate sites.

3. Energy Resources

Wind provides the most encouraging potential new source of energy in Wasco County. Privately owned and used wind generators are permitted in the farm and forest zones as customary accessory uses to any of the permitted uses [see Section 3.120(1)(f) and 3.210(1)(c).] If the owner of a wind generator sells excess electricity to a Utility, the Ordinance permits it as a utility facility necessary for public service [see Section 3.120 (1)(d) and 3.210(1)(d).]

Large-scale, commercial wind farms are considered as conditional uses in the A-1 Exclusive Farm Use zone and the F-F Forest-Farm zone. The limitations on conditional uses set forth in each section of the Ordinance and in Chapter 5

(Conditional Use Permits), must be addressed before the conditional use may be granted.

Exploration for geothermal resources is treated in a similar manner. It is considered as a conditional use in the agricultural zones, subject to the provisions in Chapter 5 of the Ordinance.

4. Fish and Wildlife Areas and Habitats

Big game herds are considered to be a valuable resource that was being threatened and in danger of being damaged. To remedy this situation, the placement of low density zoning requirements and stream setbacks were used to protect the resource. The development densities of one dwelling unit per forty (40) acres north of the Willamette Base Line and one per eighty (80) acres south of the Line were sanctioned by the Department of Fish and Wild-life as being adequate to maintain big game herds in the sensitive big game winter range area.

5. Ecologically and Scientifically Significant Natural Areas, Including Desert Areas

Natural areas have been identified and protected by the placement of the Environmental Protection District zone. None of the identified natural areas contain lands owned by private timber companies. No conflicts exist in the timber lands.

The Environmental Protection District zone allows for farm and forest practices to continue. The property owners that were contacted generally felt that there would be no conflicts with use of their land and protection of a natural area.

6. Outstanding Scenic Views and Sites

Outstanding scenic views and sites are generally those in the Columbia Gorge, the Deschutes and John Day Scenic Waterways and the White River Canyon. Protection of these areas has been discussed previously.

7. Water Areas, Wetlands, Watersheds and Groundwater Resources

Generally all water areas and wetlands are managed and protected by the State of Oregon. Occasionally, conflicts between recreational uses and agricultural uses exist, and are resolved at the State level. If the conflict is concerning water rights, the issue is resolved by the County Water master.

8. Wilderness Areas

There are no designated wilderness areas in the County.

9. Historic Areas, Sites, Structures and Objects

Thirty historic sites have been designated in the County. Only four of the sites are included in the "Statewide Inventory of Historic Sites and Buildings", for Wasco County, (Department of Transportation, 1976). These sites have been protected by the placement of the Environmental Protection District zone. Any

alteration or building of a structure that would have a detrimental effect on a historic site, as determined by the Planning Commission or County Court, based on input by the Historic Landmarks Advisory Committee, will not be permitted.

10. Cultural Areas

Cultural areas include archeological resources, as well as historic sites. Any proposed conflicting uses will be considered in light of the conditions set forth in the Environmental Protection District overlay zone.

11. Potential and Approved Oregon Recreation Trails

There are currently no Oregon recreation trails in Wasco County. The Columbia Gorge trail, which may pass into the county in the distant future, would fall under the conditions set forth in Section 3.755 of the Zoning Ordinance, which also affects the Columbia Gorge.

The Pacific Crest Trail, which passes through the County, is considered a part of the State Trail system. This trail, however, is located in the National Forest and is managed and maintained by the U.S. Forest Service. No conflicts exist in relation to any Oregon recreation trails.

12. Potential and Approved Federal Wild and Scenic Water-ways and State Scenic Waterways

At the present time there are no Federal wild and scenic rivers in the county and no knowledge of any potential for such a designation. State Scenic Waterways have been discussed previously (see Item 1 (c).)

CHAPTER 15 GOALS & POLICIES

GOAL # 1 - CITIZEN INVOLVEMENT

To develop and maintain a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

Policy 1

Improve the availability of planning information to all of the residents in the County

Implementation

- A. Hold at least one Citizen Advisory Group meeting per year. Other meetings shall be held as needed to inform the group of proposed changes in the Comprehensive Plan or other land use actions.
- B. The Chairmen of the planning areas shall be advised on all agency meetings or hearings on actions affecting land use.
- C. Make all pertinent land use information from all agencies available to the Citizen Advisory Group chairmen,

Policy 2

A Citizen Involvement Program shall encourage the participation of citizens representing a broad cross-section of the population.

Implementation

- A. A diversified geographic and vocational cross-section of citizens will be encouraged to participate in Citizen Advisory Groups.
- B. The Wasco County Planning Office shall provide clear and concise notice of the opportunities for citizen involvement.
- C. Encourage open attendance and participation by all people at Citizen Advisory Group meetings.

Policy 3

Encourage involvement of citizens and property owners in the land use planning process.

Implementation

- A. Notices of all Citizen Advisory Group meetings should be given at least ten (10) days prior to the meetings.

- B.** Notices of all Citizen Advisory Group meetings should be posted by the Wasco County Planning Office in the Wasco County Courthouse, at least two public places in each planning area, and shall be advertised in the newspaper of general circulation throughout the County.
- C.** When revising or adopting the Comprehensive Plan there shall be a public hearing held with each Citizen Advisory Group that is affected by the proposed action.

GOAL # 2 - LAND USE PLANNING

To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Policy 1

Citizen Involvement shall be an integral part of the planning process and shall be accomplished through the County's Citizen Involvement Program.

Implementation

- A.** The Citizen Involvement Program shall be maintained and updated periodically by the Wasco County Planning Office.
- B.** The Citizen Involvement Program shall abide by the policies as set forth in Goal # 1, "Citizen Involvement".

Policy 2

Comprehensive plans and implementing ordinances shall be consistent with the statewide goals and guidelines as well as the needs and desires of citizens in the County.

Implementation

- A.** The Comprehensive Plan shall include all elements identified by the Land Conservation and Development Commission which are applicable to the County.
- B.** Inventories and other forms of data used in the development of the Comprehensive Plan shall be the most factual and current data available.
- C.** The Comprehensive Plan shall be coordinated with all other plans and programs affected by, or having effect on, land use within the County.
- D.** All implementing ordinances applicable to the County shall be consistent with the Comprehensive Plan.

Policy 3

The Comprehensive Plan shall be reviewed periodically for necessary revisions to keep pace with changes in the physical, environmental, social and economic character of the County.

Implementation

- A.** The Citizen Advisory Groups, in conjunction with the County Planning staff, shall conduct annual Comprehensive Plan review and evaluation.

- B. Plan review and amendment shall take place every two years or whenever significant changes in the social, economic, physical, or environmental character of the County are evident.
- C. Plan review, evaluation, and amendment shall be carried out utilizing the revisions process as set forth in the Comprehensive Plan. (This process is identical to the planning process employed for the initial development of the Comprehensive Plan.)

Policy 4

Increase public awareness of the planning process and plan implementation.

Implementation

- A. Signs should be posted throughout the County to indicate permits are required.
- B. Federal, State, County and City agencies should cooperate to simplify, combine and expedite permit application.
- C. Allow for local public input into the process of locating electrical corridors.
- D. Hearing notice procedures shall be included in the Wasco County Zoning Ordinance.

GOAL # 3 - AGRICULTURAL LANDS

To preserve and maintain agricultural lands.

Policy 1

Maintain Exclusive Farm Use zoning.

Implementation

- A.** Maintain Exclusive Farm Use zone consistent with O.R.S. 215.203 to 215.273 to qualify for special farm use assessment as set forth in O.R.S. 308.370 to 308.406.
- B.** Minimum lot sizes in agricultural zones shall be appropriate for the preservation of ground water resources, continued agricultural use and aesthetic qualities.
 - 1.** On all lands designated as Exclusive Farm Use on the Comprehensive Plan may, if determined to be non-productive, using the Soil Conservation Service soils maps (soils classes VII or VIII) the minimum lot size may be reduced to twenty (20) acres, in accordance with Chapter 3.210(2)(o) of the Wasco County Zoning Ordinance and the applicable regulations of the Wasco County Subdivision and Land Development Ordinance.
 - 2.** Commercial activities in conjunction with farm use shall be allowed as conditional uses in the Exclusive Farm Use zone.
 - 3.** Non-farm uses permitted within farm use zones adopted pursuant to O.R.S. 215.213 should be minimized to allow for maximum agricultural productivity.
 - 4.** Non-farm dwellings within the Exclusive Farm Use zone may be permitted with a conditional use permit in accordance with the provisions of O.R.S. 215.213.
 - 5.** Subdivisions and Planned Unit Developments will not be permitted in the Exclusive Farm Use zone.

Policy 2

Where rural agricultural land is to be converted to urbanizable land, the conversion shall be completed in an orderly and efficient manner.

Implementation

- A.** Conversion of rural agricultural land to urbanizable land shall be in accordance with Goal # 14, Policy 1, A-E.

- B. Extension of services, such as water supplies, shall be appropriate for proposed urban use.
- C. Minimize an adverse impact which electrical systems may have on the productivity of agricultural lands by reviewing future plans of the Bonneville Power Administration for major power line corridors. Review and comment should be made by each of the affected planning areas.
- D. Pre-existing farm dwellings occupied on a rental or lease basis shall not justify the partitioning of good agricultural land or smaller acreage tracts in farm use zones.
- E. Encourage the development of conservation plans utilizing Best Management Practices (BMP's) as developed by Wasco County Soil and Water Conservation Districts as defined by its standards and specifications.
- F. The opportunity for review and comment shall be provided for citizen groups in the development of plans for the location of utilities such as power-line and highways which may adversely impact agricultural lands.

Policy 3

Land division criteria and minimum lot sizes used in areas designated as agricultural by this Plan shall be appropriate for the continuation of existing commercial agricultural enterprise in the area.

Implementation

- A. In order to promote the continuation of existing commercial agricultural enterprise in Wasco County, the zoning regulations shall provide for two classifications of Exclusive Farm Use. The "A-1 (80)" Exclusive Farm Use zone shall have a minimum property size of eighty (80) acres. The "A-1 (20)" Exclusive Farm Use zone shall have a minimum property size of twenty (20) acres. Land designated by the Comprehensive Plan as agricultural and containing acreages greater than or equal to the minimum property size of the appropriate zone classification shall be presumed to be commercial agricultural entities.
- B. Revise the zoning regulations [A-1 (80) and A-1 (20) zones and appropriate procedural sections] to provide for the governing body or its designee to review all divisions of agricultural lands creating parcels for non-farm uses.
 - 1. Divisions of agricultural lands for non-farm uses shall be consistent with all existing ordinances and the following criteria:

- (a) Any residential use which might occur on a proposed parcel will not seriously interfere with usual farm practices on adjacent agricultural lands.
- (b) The creation of any new parcels and subsequent development of any residential use upon them will not materially alter the stability of the area's land use pattern.
- (c) The proposed division or use of the proposed parcels will not eliminate or substantially reduce the commercial agricultural potential of the area nor be inconsistent with the Goals and Policies of this Plan.
- (d) Such divisions are consistent with the provisions of O.R.S. 215.213(2) and (3), O.R.S. 215.243 and O.R.S. 215.263 as applicable.

Or one or more of the following conditions apply

- (e) The parcel to be created will be sold to an adjoining farm operator, and such transaction does not result in the creation of an additional parcel or home site.
- (f) The proposed division will create a separate parcel for a second dwelling which exists on the property, and creation of the parcel is consistent with criteria (a) through (d) listed above.
- (g) The division clearly follows a physical feature which functionally divides and thus hinders normal farming activities, and creation of the parcel is consistent with criteria (a) through (d) listed above.

Policy 4

Where rural agricultural land is to be converted to urbanizable land, the conversion shall be completed in an orderly and efficient manner.

Implementation

- A.** Conversion of rural agricultural land to urbanizable land shall be in accordance with Goal #14, Policy 1, A-E.
- B.** Extension of services, such as water supplies, shall be appropriate for proposed urban use.
- C.** Minimize an adverse impact which electrical systems may have on the productivity of agricultural lands by reviewing future plans of the Bonneville Power Administration for major power-line corridors. Review and comment should be made by each of the affected planning areas.

- D. Pre-existing farm dwellings occupied on a rental or lease basis shall not justify the partitioning of good agricultural land or smaller acreage tracts in farm use zones.
- E. Normal agricultural practices (aerial pesticide applications, burning of pruning, dust and noise by machinery) shall not be restricted by non-agricultural interests within agricultural areas.
- F. The opportunity for review and comment shall be provided for citizen groups in the development of plans for the location of utilities such as power-lines and highways which may adversely impact agricultural lands.

Policy 5

Encourage multiple purpose storage reservoirs and land and water reclamation projects which enhance and benefit agricultural land.

Implementation

- A. Encourage individual farmers to develop soil conservation plans for each farming unit by coordinating land use planning with the United States Department of Agriculture and Wasco County Soil and Water Conservation Districts.
- B. Allow agriculture-related uses such as multiple purpose storage reservoirs and water reclamation projects in the "A-1" Exclusive Farm Use zone.

GOAL # 4 - FOREST LANDS

To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water and fish and wildlife resources and to provide for recreational opportunities and agriculture.

Policy 1

Land use regulations and tax incentives should be designed to safeguard forest management operations on both private and public lands.

Implementation

- A. Encourage resource management on those lands which meet the stocking and survival requirements of the Forest Practices Rules for Eastern Oregon.
- B. Only allow residential development, (i.e. in conjunction with forest use and not in conjunction with forest use), as conditional uses in the "F-2" Forest zone.
- C. Prohibit residential development, (i.e. in conjunction with forest use and not in conjunction with forest use), in the "F-1" Forest zones (i.e. City of the Dalles Watershed and City of Dufur Watershed).
- D. The minimum lot size of lands designated on the Comprehensive Plan map as "Forest" shall be eighty (80) acres.
- E. Approval of a conditional use permit for a dwelling not in conjunction with a forest use shall be preceded by the parcels disqualification from receiving a farm or forest tax deferral.

Policy 2

Lands within the "F-1" Forest designation shall be managed for maintenance of water quality and quantity, in addition to timber protection, fish and wildlife, soil conservation and air quality.

Implementation

- A. Land use actions within the "F-1" Forest zones shall be consistent with "The Dalles Municipal Watershed-Comprehensive Management Plan" and the City of Dufur Watershed Management Plan.
- B. A limited number of uses are allowed within the "F-1" Forest zone, of these uses residential development is not one. As a result of negative impacts, which are unable to be mitigated, on the water supply to the City of The Dalles and Dufur, residential development is prohibited.

Policy 3

All physical development should be located such that it minimizes the risk of wildfire and allows for assistance in the control of wildfire.

Implementation

- A.** All physical developments shall implement the applicable “Fire Safety Standards” of the zone in a timely manner.
- B.** A functioning on-site water supply shall be implemented prior to issuance of any zoning approval/building permit within the “F-1” and “F-2” Forest zones. The aforementioned water supply shall be connected to all applicable “Fire Safety Standards” of the zone.
- C.** Coordination with the appropriate fire protection agency shall occur prior to issuance of any zoning approval for any dwelling, temporary or permanent, in the “F-2” Forest zone.
- D.** Requests for dwellings not in conjunction with forest use, on property which is located outside of a rural fire protection district, shall not be accepted by the Approving Authority unless a contract for services has been reached with a rural fire protection district.

Policy 4

Coordination with the Oregon Department of Forestry and Oregon Department of Fish and Wildlife should occur whenever possible during the land use review process.

Implementation

- A.** Notice of all action on all conditional use permits shall be forwarded to these departments for their comments and analysis. Lack of concurrence from either department shall be considered by the Approving Authority in the decision making process.

Policy 5

Dwellings should be permitted on lands owned prior to extensive implementation of Goal 4 protection (Jan. 1985) where consistent with the Transition Lands Study Area study dated September 17, 1997.

Implementation

- A.** Adopt the Transition Lands Study document (September 17, 1997), and comprehensive plan map (ATTACHMENT A) by reference, as background information for planning purposes within Transition Lands Study Area.

- B.** Implement the “lot of record” provision in the TLSA, for parcels within a fire protection district (OAR 660-006-0027 adopted June 1, 1998).

- C.** Do not implement the OAR provision for the “template test” in the TLSA based on the available area wide information regarding overall land use patterns, land values, and lack of infrastructure in the forest zone, based on the Transition Lands Study Area study dated September 17, 1997.

GOAL # 5 - OPEN SPACES, SCENIC AND HISTORIC AREAS AND NATURAL RESOURCES

To conserve open space and protect natural and scenic resources.

Policy 1 – Mineral Resources

Protect and utilize appropriately the mineral and aggregate resources of Wasco County, and minimize conflict between surface mining and surrounding land uses.

Implementation

- A.** The development of new rock and aggregate resource sites shall be consistent with the State Planning Goal 5 and Oregon Administrative Rules Chapter 660, Division 16 process to balance conflicts between mining operations and new and existing surrounding conflicting uses.
- B.** Sites identified as significant aggregate resource sites shall not support interim or permanent uses which may jeopardize the future availability of the resource.
- C.** Mining and processing of gravel and mineral materials may only be allowed at sites included on the "Other Site" inventory or "Significant Sites" inventory.
 - 1.** Mining at sites on the "Other Sites" inventory may be allowed by a conditional use permit.
 - 2.** Mining at sites on the "Significant Sites" inventory may only be permitted in accordance with the Mineral Resources Overlay.
- D.** For each site determined to be significant, the County shall complete the remainder of the County Goal 5 process identifying conflicting uses, analyzing the ESEE consequences of the conflicting use(s), and designating a level of protection from conflicting uses. If the final decision concerning the site is to preserve fully or partially protect the resource from conflicting uses, the County shall zone the site with the Mineral Resources Overlay.

Policy 2 – Mineral Resources

The County shall maintain an inventory of mineral and aggregate resource sites. The comprehensive plan inventory shall consist of three parts:

-An inventory of "Significant Sites" identified through the Goal 5 process as important resources that will be protected from conflicting uses;

An inventory of "Potential Sites" for which sufficient information concerning the location, quality, and quantity of a resource site is not adequate to allow the County to make a determination of significance;

An inventory of "Other Sites" for which available information demonstrates that the site

is not a significant resource to be protected.

Implementation

- A.** The significance of non-aggregate mineral resources shall be judged on a case-by-case basis, taking into account information concerning the commercial or industrial use of the resource, as well as the relative quality and relative abundance of the resource within at least the County.
- B.** The scope of an existing or "grandfathered" aggregate operation shall be established by:
 - 1. authorization by a County land use approval; or
 - 2. the extent of the area disturbed by mining on the date that the mining operation became a non-conforming use.
- C.** Sites on the "Other Sites" inventory shall not be protected from conflicting uses.
- D.** For sites on the "Potential Sites" inventory, the County shall review available information about mineral and aggregate resources, and if the information is sufficient, determine the site to be significant when one of the following conditions exist:
 - 1. As part of the next scheduled Periodic Review;
 - 2. When a landowner or operator submits information concerning the potential significance of a resource site and requests a Comprehensive Plan amendment;
 - 3. When resolution of the status of a potential resource site is necessary to advance another planning objective.
- E.** In order to approve surface mining at a site zoned for exclusive farm or forestry use, the County shall find, as part of the ESEE analysis, that the proposed activity will not: 1) force a significant change in, or significantly increase the cost of, accepted farming or forestry practices on surrounding lands, and 2) will not significantly increase fire hazard or significantly increase fire suppression costs or significantly increase risks to fire suppression personnel.
- F.** The County may establish and impose conditions on operation of a surface mine when deemed necessary as a result of a site-specific Goal 5 analysis. Where such conditions conflict with criteria and standards in the Mineral and Aggregate Resources Overlay, the conditions developed through the Goal 5 analysis shall control.

- G. No surface mining or processing activity, as defined by the zoning ordinance, shall commence without land use approval from the County, and approval of a reclamation plan and issuance of an operating permit by DOGAMI.
- H. Aggregate sites shall be subordinate to the landscape setting as seen from travel corridors when such travel corridors have been determined to be significant by the ESEE analysis.

Policy 3 – Mineral Resources

New mineral and aggregate sites shall not be allowed within the quarter mile boundary of either the John Day or Deschutes Rivers.

Policy 4 – Mineral Resources

All aggregate operations within the Columbia River Gorge National Scenic Area shall be operated in compliance with the Management Plan for the National Scenic Area and its implementing ordinance.

Policy 5 – Wild & Scenic Rivers

The Deschutes and John Day River Scenic Waterways shall be maintained and protected as natural and open space areas with consideration for agriculture and recreation.

Implementation

- A. Coordinate all land use planning activities with the Bureau of Land Management, Oregon State Department of Transportation and the Warm Springs Indian Reservation. These three parties shall be notified of all proposed land actions within the Deschutes River and John Day River Scenic Waterways for their review and comment.
- B. Allow agricultural operations within the Deschutes and John Day Scenic Waterways.
- C. Allow only buildings customarily provided in conjunction with farm use within the visual corridors of the Deschutes and John Day Scenic Waterways.
- D. Encourage the preservation of landscape features of the John Day and Deschutes Rivers.

Policy 6 - Wild & Scenic Rivers

Cooperate with managing agencies to solve recreation use management on the John Day and Deschutes River Scenic Waterways.

Implementation

- A. Coordinate with and support the managing agencies recreation use management issues and facilities necessary for recreation and resource protection.

Policy 7 – Columbia River Gorge

Maintain the existing aesthetic quality of the Columbia River Gorge.

Implementation

- A. Scenic and Open Space areas in the Columbia River Gorge will be preserved by placement of the Environmental Protection District, Division 4, and overlay zone.
- B. The Oregon State Highway Division should employ plantings to provide buffers between residential areas and Interstate 84 when feasible.
- C. Forestry uses shall be in accordance with the Oregon Forest Practices Act.
- D. Clear-cutting within the legal boundaries of the Columbia River Gorge is discouraged.

Policy 8 - Water

Encourage the construction of ponds for livestock, fire protection and water reclamation.

Implementation

- A. Allow such uses in the "A-1" (Exclusive Farm Use) zone.
- B. The County Water master and Sanitarian shall continue to regulate appropriations, diversions and sewage waste disposals to ensure quality water resources.

Policy 9 - Fish and Wildlife

-Encourage land use and land management practices which contribute to the preservation and enhancement of fish and wildlife resources, with consideration for private agricultural practices.

-To conserve and protect existing fish and wildlife areas.

-To maintain wildlife diversity and habitat so that it will support optimum numbers of game and nongame wildlife for recreation and aesthetic opportunities.

Implementation

- A.** Identify and maintain all wildlife habitats by:
1. Implementation of an Environmental Protection District overlay zone for significant fish and wildlife habitats and for the big game winter range.
 2. Designation of the Big Game Winter Range and Area of Voluntary Siting Standards (low elevation winter range) on the map contained in this plans Resource Element.
- B.** The winter range identified on the Big Game Habitat Map included in the Resource Element of this plan shall be protected by an overlay zone. The Rural Service Centers identified in the Comprehensive Plan which lie within the overlay zone shall be exempt from the provisions of the overlay zone.
- C.** Consistent with the development standards of the land use ordinance, sensitive riparian areas of perennial and intermittent streams identified in the Resource Element, as well as to protect people and property from flood damage, the zoning ordinance shall prohibit development within 100 feet of the mean high water mark of perennial or intermittent stream or lake in a resource zone, and 50 feet of the mean high water mark of a perennial or intermittent stream or lake in residential zones.
- D.** Sensitive bird habitat sites (bald eagle, golden eagle, osprey, great grey owl, great blue heron) and mammal habitat sites (Western pond turtle nesting sites) identified in the Resource Element of the plan shall be protected by a Sensitive Bird and Mammal Overlay Zone during periodic review pursuant to the current County approved work program.
- E.** When site specific information is available to the County on the location, quality and quantity of threatened and endangered fish and wildlife species listed by State or Federal Wildlife agencies and the Oregon Department of Fish and Wildlife develops protection criteria for the species, the county shall proceed with a Goal 5 ESEE analysis in compliance with OAR 660 Div. 16.
- F.** The county shall review the Transition Land Study Area (TULSA) big game habitat areas and designated as "1-B" Goal 5 resources, during the next periodic review or as additional information on the location, quality and quantity of the habitat areas becomes available. (ORD. 3.180)
- G.** County-owned land shall be managed to protect and enhance fish and wildlife habitat except where a conflicting public use outweighs the loss of habitat.

- H. The county shall notify the Oregon Division of State Lands and the Oregon Department of Fish and Wildlife of any development application for land within a wetland identified on the National Wetlands Inventory maps. (ORD. 3.180).
- I. An application for a destination resort, or any portion thereof, in a recognized big game habitat overlay zone shall not be accepted pending completion of the County's Goal 8 destination resort mapping process. (ORD 3.180)
- J. The county shall provide ODFW an annual record of development approvals within the areas designated as Area of Voluntary Siting Standards' on the plan map to allow ODFW to monitor and evaluate if there is a significant detrimental effect on habitat.

Policy 10 - Historic, Cultural, And Archeological Resources

Preserve the historical, archaeological, and cultural resources of the County.

Implementation

- A. The Wasco County Historical Landmarks Commission shall maintain a current inventory of significant archaeological, and cultural resources in the county.
- B. Encourage preservation of resources identified as significantly historically, culturally, or archaeologically.
- C. Develop and implement a program to review and regulate activities which may impact historic, archaeological and cultural resources per statewide Goal 5 and OAR 660-16 (Amended by Historic Preservation Overlay Ord. adopted Dec. 7, 1994).
- D. Location of archaeological sites shall not be disclosed, (this information is exempt from the Freedom of Information Act), unless development is proposed which would threaten these resources. When any development is proposed which may affect an identified archaeological site, the site will be protected by the Wasco County Land Use and Development Ordinance, Chapter 3, Historic Preservation Overlay zone.
- E. Resources listed as Wasco County Historic Landmarks will be protected by the Wasco County Land Use and Development Ordinance Chapter 3 Historic Preservation Overlay zone.
- F. When adequate information becomes available, Wasco County shall evaluate its Goal 5 1-B historic resources for inclusion on the inventory or designation as a significant (1-C) resource and, where appropriate, provide protection under the County's Historic Preservation Overlay Chapter of the Wasco County Land Use and Development Ordinance.

- G.** Pursue private and public sources of funding for use by property owners in renovation and maintenance of historic properties.
- H.** Pursue options and incentives to allow productive, reasonable use, and adaptive reuse of historic properties.
- I.** The County shall designate a Landmarks Commission to advise the County Court about the county's historic landmarks according to the Historic Preservation Overlay ordinance. (Adopted by Ord., December 7, 1994).
- J.** Appoint a Historic Review Board whose role is to protect and preserve historic Landmarks, Districts and Corridors and who individually have demonstrated interest and expertise in the field of Historic Preservation. This board shall be empowered to:
 - 1.** Maintain and update the Wasco County Cultural Resource Inventory.
 - 2.** Recommend to the County Court the designation of historic landmarks or districts that meet the criteria for designation as contained in Section 3.772 of the Land Use and Development Ordinance.
 - 3.** Protect historic landmarks or districts through the review, in accordance with the review criteria established for alterations, demolition and new construction.
 - 4.** Provide a forum for public participation in matters and issues related to historic preservation in the community.
 - 5.** Review proposed activities by the County or other agencies, businesses, or developers that may detrimentally affect historic landmarks and advise the Planning and Economic Development Staff, Planning Commission, and County Court regarding these matters.
- K.** All resources listed on the National Register or determined eligible for the National Register of Historic Places shall be designated a Wasco County landmark subject to the Historic Preservation Overlay.

GOAL # 6 - AIR, WATER AND LAND RESOURCES QUALITY

To maintain and improve the quality of the air, water and land resources of the County.

Policy 1

Encourage land uses and land management practices which preserve both the quantity and quality of air, water and land resources.

Implementation

- A. Recognizing that the soil resource base is vital to maintaining productivity, encourage agricultural conservation and management practices which minimize the adverse effects of wind and water erosion.
- B. The adopted solid waste collection and disposal ordinance shall be enforced.
- C. Riparian vegetation on natural stream banks shall be preserved by the placement of an Environmental Protection District overlay zone or by regulation of setback requirements.

Policy 2

Maintain air quality in compliance with state and federal standards.

Implementation

- A. Encourage a more detailed study of air quality in Wasco County by the Department of Environmental Quality.
- B. New industries must comply with the air quality standards set forth by the Department of Environmental Quality.
- C. Support efforts to complete an air shed study in The Dalles and Dallesport area.

Policy 3

Maintain quantity and quality of water in compliance with state and federal standards.

Implementation

- A. Support best management practices for identified problems to maintain and improve land and water resourced qualities as adopted in "Sediment Reduction Project - 208 Non-Point Source Pollution Control Program", prepared by the State Soil and Water Conservation Commission, August, 1978.
- B. Incorporate all future water quality information into the Wasco County Comprehensive Plan.

- C. Continue regulation of subsurface sewage disposal systems and other point source water pollution emissions.
- D. Evaporation ponds containing toxic chemicals should be sealed or lined, and monitored by the Department of Environmental Quality.
- E. The adequacy of the Ground water supplies and their quality shall be a major consideration in all development.
- F. The Dalles Watershed shall be managed by the "Comprehensive Management Plan for The Dalles Municipal Watershed," 1972.
- G. The Dalles, Dufur and Antelope Watersheds shall be primarily managed for their domestic water supplies.
- H. Encourage the reduction of siltation in the Columbia River drainage by whatever means are found to be reasonable and effective.

Policy 4

Noise levels should be maintained in compliance with state and federal standards.

Implementation

- A. Noise levels for all new industries must be kept within standards set by state and federal agencies.
- B. Consideration for the effects of noise on the surrounding environment will be given when a new development of any kind is proposed.
- C. Noise sensitive areas should be identified and only compatible uses permitted in their vicinity.
- D. When building new highways or making major improvements on existing highways, consideration shall be given to reducing the noise impact on surrounding land uses.

GOAL # 7 - AREAS SUBJECT TO NATURAL DISASTERS AND HAZARDS

To protect life and property from natural disasters and hazards.

Policy 1

Control flood hazards through active management of water resources, soil conservation techniques and flood plain identification.

Implementation

- A.** The County shall continue to meet participation requirements for the national flood insurance program in identified flood hazard areas.
- B.** Lands within identified flood plains should be excluded from intensive development.
- C.** Flood plains have been identified by the Flood Insurance Rate Maps effective September 24, 1984 and will be protected by placement of the Environmental Protection District zone, Division 1.
- D.** Coordinate the flood plain ordinance provisions with the Soil Conservation Service.
- E.** Open space and agricultural uses are preferred in identified flood plain areas.
- F.** Projects for channelization, diversion and other flood control measures designed to reduce flood hazards should be supported.

Policy 2

Intensive developments should not be allowed in an identified Natural Hazard Area.

Implementation

- A.** Active natural hazard areas will be identified by the placement of an Environmental Protection District overlay zone.
- B.** Only those activities which are associated with non-intensive recreational or agricultural pursuits should be allowed upon lands inventoried as active natural hazard areas.
- C.** Pre-existing uses, not in accordance with Goal # 7, Policy 2 B., should be phased-out in active natural hazard areas.
- D.** Development restrictions on active geologic hazard areas shall be specified in the Zoning Ordinance Chapter 3.750.

- E.** Areas subject to active natural hazards should be evaluated as to the degree of hazard present, and appropriate limitations on use be imposed.
- F.** An on-site investigation and written report by a certified geologist shall be required before development will be allowed in an active geologic hazard area.
- G.** Applicants proposing development in an inactive geologic hazard area will be notified of that fact.

Policy 3

Wasco County shall maintain siting regulations for mobile homes to reduce safety and fire hazards.

Implementation

- A.** When securing a mobile home placement permit, siting regulations will be provided to the homeowners.
- B.** Due to potential wind hazards, tie-downs are required on all mobile homes located within thirty (30) miles of the Columbia River.

GOAL # 8 - RECREATIONAL NEEDS

To satisfy the recreational needs of the citizens of Wasco County and visitors.

Policy 1

Manage the Deschutes and John Day Scenic Waterways to minimize recreational over-use, accumulation of solid waste and conflicts with agricultural use, while maximizing their scenic and recreational values.

Implementation

- A.** Encourage governmental agencies to restrict open camp fires on the Deschutes and John Day Rivers.
- B.** Encourage the development of a cooperative management plan between private landowners and government agencies.
- C.** Prohibit recreational subdivisions within the Deschutes and John Day Scenic Waterways.
- D.** Encourage governmental agencies, (including the Marine Board, Bureau of Land Management, Department of Transportation and Wasco County), to limit the use of recreational power boats on the Deschutes and John Day Rivers.

Policy 2

Develop and maintain a variety of recreational sites and open spaces adjacent to population concentrations to adequately meet the County's recreational needs.

Implementation

- A.** The County may establish public park lands adjacent to future multiple-purpose reservoirs. This may include the dedication of park land to the County from a federal agency or private land developer at future reservoir sites.
- B.** Encourage a system of safe and convenient trails for non-motorized recreation and transportation. Adequate right-of-way should be acquired on public roads to provide bicycle, pedestrian and equestrian paths where feasible.
- C.** Large planned developments shall include the reservation of a suitable area of park land or open space.
- D.** Aesthetic values in existing and future re-creational sites should be preserved and enhanced.

Policy 3

Discourage illegal recreational access through private agricultural lands.

Implementation

- A. Encourage governmental agencies to develop a public information program concerning recreational access through private lands.
- B. Condemnation of private land for recreational use will be strongly opposed.
- C. Easements for recreational use at well-established access points should be acquired. Possible funding sources such as the National Park Service and Oregon State Parks should be investigated.

GOAL # 9 - ECONOMY OF THE STATE

To diversify and improve the economy of Wasco County.

Policy 1

Maintain agriculture and forestry as a basis of the County's rural economy.

Implementation

- A.** Subdividing and partitioning of productive agricultural and forest lands shall be discouraged.
- B.** Exclusive Farm Use zoning shall be maintained to allow special farm use assessment as an incentive for continued agricultural use.
- C.** Orchards, wheat, other small grain farms, and grazing lands shall be continued as a major portion of the economy.
- D.** Wasco County will encourage secondary wood processing plants in Maupin and Tygh Valley in order to provide more local basic employment.
- E.** Industries which process agricultural and forest products will be allowed, as a conditional use in the Exclusive Farm Use zone.

Policy 2

Commercial and industrial development compatible with the County's agricultural and forestry based economy will be encouraged.

Implementation

- A.** Wasco County will support commercial and industrial development within the Urban Growth Boundaries of incorporated cities, which will help to discourage conversion of productive orchard and other agricultural lands and provide more year-round employment opportunities.
- B.** Commercial activities in conjunction with farm use, including storage of agricultural goods, are allowed as conditional uses in agricultural areas of the County, to diversify the economy.
- C.** Because The Dalles Auction Yard provides a unique general service that is economically beneficial to the entire County; its present location shall be protected from incompatible land use intrusion.
- D.** Encourage increased commercial activity in the communities of Pine Grove and Tygh Valley rural service centers.

- E. Allow limited industrial growth in areas designated near Pine Grove and Tygh Valley.
- F. Protection and utilization of valuable rock and aggregate sources should be carried out as specified in Goal #5, Policies # 1, A-E; and # 2, A-F.

Policy 3

Wasco County will support the expansion and increased productivity of existing industries and firms as a means to strengthen local and regional economic development.

Policy 4

Wasco County will support the Mid-Columbia Economic Development District, the Wasco County Over-all Economic Development Plan (OEDP), and the Warm Springs Over-all Economic Development Plan (OEDP).

Policy 5

Tourism in Wasco County will be supported and encouraged.

Implementation

- A. Wildlife habitat and scenic waterways should be maintained for their scenic value to residents and tourists in Wasco County.
- B. Historic sites should be preserved and maintained to promote tourism in Wasco County.
- C. Additional parks, overnight camping areas, and other recreational areas should be provided when needed to encourage tourism in the County.

GOAL #10 - HOUSING

To provide for the housing needs of the citizens of Wasco County.

Policy 1

The development of adequate housing for all Wasco County citizens will be encouraged.

Implementation

- A.** Mobile homes shall be allowed as a permitted or conditional use on agricultural land for landowners and employees.
- B.** Mobile homes are a type of housing that may be allowed as a conditional use on certain forest lands.

Policy 2

A variety of housing types, locations and densities shall be encouraged.

Implementation

- A.** Residential developments should be related to physical site characteristics.
- B.** Residential developments shall be protected from encroachment of incompatible land uses.
- C.** Multiple family dwellings should be allowed only within the Urban Growth boundaries of the incorporated cities and within excepted areas, unless connected with farm labor.

GOAL #11 - PUBLIC FACILITIES AND SERVICES

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Policy 1

Provide an appropriate level of fire protection, both structural and wildfire, for rural areas.

Implementation

- A. The Bureau of Land Management, private landowners and railroad companies should be encouraged to develop a cooperative fire management program for the Deschutes River Area.
- B. Adequate fire protection should be a factor in locating and planning rural subdivisions or Planned Unit Developments.
- C. The County will assist Rural Fire Protection Districts in the acquisition of equipment and development of facilities.
- D. All community water systems shall provide minimum fire flow capacities and have a fire hydrant system.
- E. Adequate access shall be provided to any available water sources within development areas.
- F. Road design for rural subdivisions and planned unit developments should incorporate appropriate requirements with respect to mobility and access by fire suppression equipment.

Policy 2

Provide an appropriate level of police protection for rural areas.

Implementation

- A. Wasco County should continue to provide police protection, in conjunction with the Oregon State Police, commensurate with the needs of the rural community.

Policy 3

Minimize adverse impacts resulting from power line corridor and utility development.

Implementation

- A. The Bonneville Power Administration should compensate for damage resulting from power-line corridor development at levels based on the loss of agricultural and residential values and productivity.
- B. When economically and physically feasible, transmission lines should be laid underground.
- C. The Planning Commission and Citizen Advisory Groups should review all future Bonneville Power Administration power line corridor developments which may be routed through Wasco County, as well as all electrical substation and power plant development proposals.
- D. Public utility easements and transmission line corridors should be designed to provide for multiple land use.
- E. Maximum utilization of existing utility right-of-way should be encouraged to minimize the need for additional rights-of-way.
- F. Public utilities shall be responsible for appropriate maintenance including noxious weed control on all existing and future rights-of-way.

Policy 4

Encourage adequate and convenient school facilities for the citizens of Wasco County.

Implementation

- A. The County will continue to cooperate with school district(s) in the planning and placement of future educational facilities.
- B. The County will coordinate with the affected school district(s) when new subdivisions or Planned Unit Developments are proposed.

Policy 5

Future provision of public facilities and services shall be adequate to meet the needs of Wasco County citizens and be provided efficiently and economically.

Implementation

- A. The Dalles Sanitary Landfill shall be maintained as the solid waste disposal site in Wasco County until such time as additional sites become necessary.
- B. Improved public library and bookmobile service should be provided to all County residents.

- C. Increased and more efficient emergency medical service shall be encouraged, especially to those rural areas which must travel long distances for such service.
- D. The development of sanitary sewage disposal facilities for Wamic, Tygh Valley, Pine Grove, and Pine Hollow should be encouraged.
- E. Water systems developed on individual lots should provide a standpipe capable of handling the full capacity of the pumping system.
- F. The placement of nuclear facilities for the generation of nuclear energy shall be emphatically discouraged, especially in the more populous areas of the County where the obvious potential hazards would affect larger numbers of people.
- G. The availability of necessary utilities and public services shall be made known at the time of the development of subdivisions, Planned Unit Development and major partitions.
- H. The facilities and services provided shall be appropriate for, but limited to, the needs and requirements of the areas to be served.
- I. Facilities and services provided to areas designated Rural Residential and Rural Service Center shall be at levels appropriate to and necessary for rural uses only and shall not support urban uses.
- J. The County will coordinate its public facilities and services planning with the plans of affected special service districts and other governmental units.
- K. The County will develop a detailed drinking water service plan which will comply with O.R.S. 448.165 at the next update of the plan. A water system inventory will be the initial step and other factors such as groundwater resources, population growth, system aging, water quality and quantity will be considered in the detailed plan.

Policy 6

The larger lot sizes (5 acres in Wamic and 4- acres in Tygh Valley) will continue to apply until approved facility plans are acknowledged even though water systems currently exist in both communities.

Implementation

- A. Established minimum lot size in Wamic and Tygh Valley may be reduced to two (2) acre minimum property size standard when a community, municipal or public water and/or sewer public facility plan is “approved” by the county and

acknowledged by the state pursuant to the post acknowledgement plan amendment (PAPA) requirements (ORS 197.610 through 197.650) and the requirements for facility plans under OAR 660, Division 22.

- B.** Upon the “acknowledgement” of an existing or new community, municipal or public water and/or sewer system facility plan, the minimum property size standard may be amended from the current five (5) acre standard to two (2) acres in Wamic, and from the current four (4) acre standard to two (2) acres in Tygh Valley.

GOAL #12 - TRANSPORTATION

To provide and encourage a safe, convenient and economic transportation system.

Policy 1

Plan for and maintain an interconnected system of roads that will link communities for all users and that will provide for the existing and future needs for transportation of goods and people in the region.

Implementation

- A.** Promote and maintain an integrated and linked network of collector and local streets that minimizes travel distances.
- B.** When traffic levels warrant it, develop a County arterial system that facilitates efficient and safe transportation of goods and people in the region.
- C.** Maintain roadway performance standards for the efficient movement of people and goods.
- D.** Coordinate with ODOT in identifying improvement and maintenance needs for the existing rural arterial system (i.e., state highways).

Policy 2

Provide a transportation system that promotes the safety of current and future travel modes for all users.

Implementation

- A.** Continue to work with ODOT to identify and implement measures that will reduce the incidence and severity of motor vehicle crashes on roadway segments that exceeded the average statewide crash rate and/or other safety performance measures used by the county.
- B.** Provide a transportation system that allows for adequate emergency vehicle access to all land uses.
- C.** Promote railroad at grade crossing elimination, consolidation whenever possible.
- D.** Develop access management standards for all county road facilities and implement these standards through the development approval process and as part of public improvement projects.

Policy 3

Provide a multimodal transportation system that permits the safe and efficient transport of goods and people.

Implementation

- A.** Continue to support the development of public transit opportunities through coordination and collaboration with the Transportation Network, Gorge TransLink and the Hood River County Transportation District.
- B.** Promote an interconnected network of bicycle and pedestrian facilities throughout the County, including parallel routes to Interstate 84.
- C.** Consider bicycle and pedestrian facilities needed during construction of new roads and during upgrades of existing roads.
- D.** Support the development of recreational bicycling and hiking facilities.

Policy 4

Provide a transportation system that balances transportation services with the need to protect the environment.

Implementation

- A.** Develop and support a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumption and air quality impacts.
- B.** Encourage development patterns that decrease reliance on motor vehicles.
- C.** Design new and improved transportation facilities to minimize impacts on the natural environment.

Policy 5

Maintain the safety, physical integrity, and function of the County transportation network.

Implementation

- A.** Continue and enhance the partnering relationships with local jurisdictions, the Confederated Tribes of Warm Springs, and the Oregon Department of Transportation to provide a comprehensive, safe, and efficient transportation system throughout the County.
- B.** Maintain long-term County Road Fund stability.

- C.** Evaluate new innovative funding sources for transportation improvements, such as a road fund serial levy, road utility fee, and/or a county gas tax.
- D.** Explore the potential cost savings of revising operational or maintenance standards.
- E.** Advocate for flexibility in the use of federal timber receipts so that the county is not exposed to dramatic declines in this funding source.
- F.** Ensure that the existing transportation network is conserved through maintenance and preservation.

GOAL #13 - ENERGY CONSERVATION

To conserve energy.

Policy 1

The County will work with appropriate State and Federal agencies to identify and protect, and if feasible, develop potential energy resources, especially renewable energy resources.

Policy 2

Reduce the consumption of non-renewable sources of energy whenever possible.

Implementation

- A. Conversion of energy sources from non-renewable sources to renewable sources shall be encouraged.
- B. The allocation of land and uses permitted on the land should seek to minimize the depletion of non-renewable sources of energy.

Policy 3

Minimize energy consumption through the use of zoning and subdivision standards.

Implementation

- A. Zoning controls and subdivision design standards shall be developed and administered with consideration for the conservation of energy sources and the reduction of energy consumption.
- B. In the review of subdivision plans, consideration shall be made of the following in relation to energy consumption:
 - 1. Lot size, dimension and siting controls;
 - 2. Building height, bulk and surface area;
 - 3. Density of uses, particularly those which relate to housing densities;
 - 4. Availability of light, wind and air.
- C. Uses developed on the land shall be managed and controlled so as to maximize the conservation of energy.

Policy 4

Considerations should be given to systems and incentives for the collection, re-use and recycling of solid waste and other waste products.

Implementation

- A. Recycling centers for the collection of glass bottles, newspapers, tin cans, etc., should be encouraged.
- B. Public awareness and education concerning the use of recycling centers and methods shall be encouraged.
- C. Encourage the utilization of sewage treatment wastes for fertilizer, methane gas production or other feasible products.

Policy 5

The transportation system shall be diversified with emphasis on energy conservation.

Implementation

- A. Bicycle paths and pedestrian walkways should be placed whenever and wherever feasible.

Policy 6

Use of renewable energy shall be encouraged.

Implementation

- A. Wind generators will be permitted in the forestry, agricultural and rural zones.
- B. The County should develop a solar access ordinance.
- C. Facilities to manufacture alcohol from farm or timber waste products will be permitted as conditional uses in the forestry and agricultural zones.

GOAL #14 - URBANIZATION

To provide for an orderly and efficient transition from rural to urban use.

Policy 1

Conversion of rural agricultural land to urbanizable land shall be based upon consideration of each of the following factors:

- A. environmental, energy, social and economic consequences;
- B. demonstrated need consistent with other goals;
- C. availability of alternative suitable locations for the requested use;
- D. compatibility of the proposed use with related agricultural land; and
- E. the retention of Class I, II, III, IV, V, and VI soils in farm use.

Policy 2

Preserve community identity by encouraging concentration of residential development in and near existing communities.

Implementation

- A. Restrict the subdivision of lands in areas with difficult access, topography or drainage; in areas lacking adequate domestic water supplies; or in areas having severe soil limitations for individual subsurface sewage disposal.
- B. Population growth will be encouraged within the Urban Growth Boundaries of incorporated cities and unincorporated areas designated for residential uses within the comprehensive plan.
- C. Industrial, commercial and dense residential development should be restricted to areas within the urban growth boundaries of incorporated cities as well as rural service centers and planned unit developments.

Policy 3

Encourage subdivisions to be developed by a planned development approach, maximizing physical design, the retention of open space and reducing adverse impacts.

Policy 4

Availability of public services shall be made known at the time of the development of subdivisions, Planned Unit Developments, and major partitions.

Policy 5

Subdivision and partitioning activities shall be designed to reduce the County's financial participation in road construction within development areas.

APPENDIX

IN THE COUNTY COURT OF THE STATE OF OREGON
IN AND FOR THE COUNTY OF WASCO

IN THE MATTER OF ESTABLISHING A)
WASCO COUNTY HISTORICAL LANDMARKS)
ADVISORY COMMITTEE)

ORDER **FILED**

APR - 3 1980

Luc A. Poffitt COUNTY CLERK
By _____ Deputy

NOW ON THIS DAY, April 2nd, 1980,
the Court duly meeting for the transaction of public business
and a majority of the Court being present; and,

IT APPEARING TO THE COURT: That on June 5, 1978,
and again on March 3, 1980, the Wasco County Planning Com-
mission met to consider the establishment of a Wasco County
Historical Landmarks Advisory Committee; and,

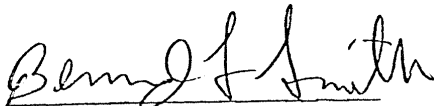
IT FURTHER APPEARING TO THE COURT: That (1) In
response to the Land Conservation and Development Commission,
Goals, the Wasco County Planning Commission recognized a need
for the establishment of a Wasco County Historical Committee,
the purpose of which will be to identify historical landmarks
in Wasco County and develop inventories for inclusion in the
Wasco County Comprehensive Plans; and (2) In order to involve
and receive input from knowledgeable citizens of the County,
the Commission determined that membership to the Committee will
consist of two (2) persons residing in The Dalles Urban Area
and five (5) persons residing within various geographic areas
of Wasco County, with a Chairman, Vice-Chairman, and Secretary
to be elected by the Committee members; and,

IT FURTHER APPEARING TO THE COURT: That officers of
the various area citizen advisory groups were contacted re-
questing that they submit names of knowledgeable persons in their
area to serve on this Committee.

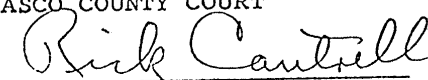
NOW, THEREFORE, IT IS HEREBY ORDERED: That a Wasco County Historical Landmarks Advisory Committee shall be established, with Planning Commission member Barbara Bailey as Commission Representative, in addition to the following appointees:

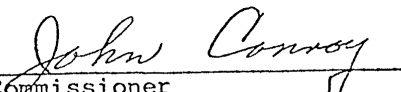
Gladys Seufert	The Dalles, Oregon
Jean Krier	The Dalles, Oregon
Al Limeroth	Dufur, Oregon
W.L. Bolton	Dufur, Oregon
Lenore Walters	Wamic, Oregon
Mrs. Nolan Anderson	Antelope, Oregon
Everett Metzentine	Wamic, Oregon

Approved as to Form:


Bernard L. Smith
District Attorney

WASCO COUNTY COURT


Judge


Commissioner


Commissioner

(Page 2 of 2)

CITIZEN INVOLVEMENT PROGRAM WASCO COUNTY, OREGON

History

Active citizen participation is essential to an effective planning program. Without citizen involvement and knowledge of the planning process, plans are merely words and symbols on paper. Citizens are the key to land use planning in the county.

The history of citizen involvement may be traced to the inception of the Wasco County Planning Commission in the early 1950's. The formation of area advisory committees in 1968 and 1969 represented a major extension of the continuing citizen involvement policies of the Wasco County Court.

On December 27, 1973, a formal citizen involvement program was adopted by the Court. Provisions of this program included the formation of seven advisory committees, a Director's advisory list, and a number of methods of information distribution. Citizen involvement procedures were also listed for the six cities in Wasco County. A Committee for Citizen Involvement was added on November 5, 1975.

In early 1977, changes in staff personnel prompted the reformation of the Comprehensive Plan from sixteen planning units into five planning units, known as the Western, Eastern, Central, Southern, and The Dalles Urban units. To accommodate this shift in planning units from sixteen to five, new citizen advisory committees were organized. The new committees consisted of the same citizens involved previously.

Plans for the Western, Eastern, Central and Southern units were adopted by the County Court in January of 1980 and taken to the Land Conservation and Development Commission for acknowledgment. Due to an excess of repetitive information and the difficulties presented in correlating, re-viewing and utilizing four separate county plans, it was decided, based on comments and suggestions from the Land Conservation and Development Commission staff and reviewing agencies, that they would be combined into one Comprehensive Plan. The Dalles Urban Plan remains as the Plan for the City of The Dalles and surrounding urban area. The county-wide approach to planning will continue to allow active citizen participation by maintaining the planning areas in connection with the citizen involvement program.

The purpose of this document is to adopt a new citizen involvement program to reflect recent changes. The intent is to get a renewed commitment by the people of Wasco County to the land use planning program.

The Program (Communication)

It is the desire of the Wasco County Court to provide for active citizen participation and to assure effective two-way communication with citizens of Wasco County in the development of comprehensive planning within Wasco County. It is, therefore, determined that the Wasco County Planning Office shall be responsible for implementation of the following activities and programs.

Citizen Advisory Groups (Citizen Influence)

The purpose of the Citizen Advisory Group is to give plan and policy recommendations to the County Planning Office staff and Planning Commission. Each group is organized to give advice on their respective area, and encouraged to be involved in all phases of the planning process. They are the "heart" of the citizen involvement program. These Citizen Advisory Group meetings will provide a forum for agency personnel, local officials, and all interested citizens to discuss and resolve conflicts on the comprehensive plans.

The four advisory committees will be organized as follows:

Western Area Citizen Advisory Committee, Eastern Area Citizen Advisory Committee, Central Area Citizen Advisory Committee, Southern Area Citizen Advisory Committee.

There will be no formal membership appointments beyond the Chairman, Vice-Chairman and Secretary. These formal appointments are needed for contact people that the Planning Department can depend on for setting meeting dates and contacting interested individuals in the area for advice on Planning Commission actions.

Again, the main purpose of the citizen Advisory Groups is to aid in plan and policy formation.

Technical Information (Methods to Involve Citizens)

Technical information will be presented and made available in an understandable form. Notices of Citizen Advisory Group meetings will be posted in the local post offices, libraries, and other public places within the affected areas. The local newspapers and radio stations will also be asked to broadcast meeting notices.

Feedback Mechanisms

Recommendations resulting from the Citizen Involvement program will be retained and made available to the public. The rationale used in making land use policy decisions will be available in the form of written records.

Financial Support

This citizen involvement program is in part supported financially by the State Land Conservation and Development Commission for Fiscal Year 1980-81.

The Citizen Advisory Group for the Rural Planning Areas will meet as staff requests to review comprehensive plan data and make policy recommendations. Individual Citizen Advisory Groups may schedule special meetings to review proposed Planning Commission actions and Board of Adjustment actions such as re-zones, variances, subdivisions, etc.

Agency Involvement

The purpose of the agency involvement program is to assure adequate participation in the comprehensive planning process. All agencies will be involved to the extent necessary to coordinate individual plans and programs. Agency personnel are invited to all Citizen Advisory Group meetings for in-pu into the planning process. Agencies will

also be asked for technical data for the plan document by the Wasco County Planning Office.

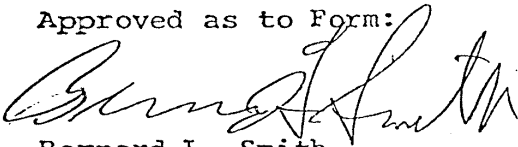
It should also be understood by all Federal and State agencies as well as other local special purpose districts that their planning for future development should be coordinated with the County Planning Department.

Committee for Citizen Involvement

The committee for Citizen Involvement will be composed of the Chairman and Vice-Chairman of the four Citizen Advisory Groups. They will evaluate the effectiveness of Citizen Involvement and suggest ways to gain added citizen participation, evaluate the adequacy of agency involvement, and make any suggestions for improvement in citizen or agency involvement.

Adopted this day of April 22, 1981, by the Wasco County Court.

Approved as to Form:

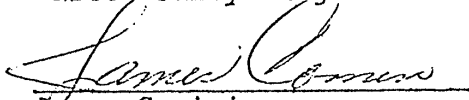


Bernard L. Smith
District Attorney

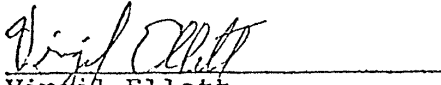
WASCO COUNTY COURT



Richard Cantrell
Wasco County Judge



James Comini
County Commissioner



Virgil Ellett
County Commissioner

CITIZEN ADVISORY GROUP OFFICERS

Western	Chairman:	Grant Wilson	478-3437
	Vice-Chairman:	Bill Reeves	478-3368
Eastern	Chairman:	George Fax	296-6941
	Vice-Chairman:	George Hood	467-2532
Central	Chairman:	Ray Webb	328-6229
	Vice-Chairman:	Gene Reynolds	483-2239
Southern	Chairman:	Don Gomes, Jr.	489-3319
	Vice-Chairman:	Margaret Hill	489-3263

REPORT on WATER RESOURCES

BROWNS CREEK-CHENOWITH CREEK GROUNDWATER

Federal Description:

There are two water-yielding rock formations under-lying the Browns Creek-Chenowith Creek area. Their compositions and depths beneath the surface differ greatly. The Yakima Basalt is composed of basalt, a dense massive rock; the depth beneath the surface varies, but is usually between 600 and 900 feet. The Dalles Formation, which overlies the Yakima Basalt, is an interfingering of beds of alluvial deposits consisting of consolidated (cemented together) sandstone, sandy shale, conglomerate, fine-grained tuff, tuffaceous sandstone, and andesitic pyroclastic rock; the depth from the surface ranges from 0-10 feet.

The rocks of the Yakima Basalt are impermeable except where jointed. Water may occur in either or both of two zones (referred to as the upper and lower zones). The two zones are separated by 300-375 feet. Consequently, the occurrence and capacity of the Yakima Basalt is unpredictable from location to location. When completed, wells may yield little or no water, to amounts in excess of one hundred gallons per minute.

The interfingering of various beds of The Dalles Formation has resulted in lenses of water occurring randomly throughout the formation. The tuff, clay, and sandstone, which make up most of The Dalles Formation, are highly impermeable. The sandstone is permeable, and acts as conduits through which ground water moves under hydrostatic head to points or areas of discharge. The lenses of water throughout The Dalles Formation are referred to as perched ground water. The occurrence of perched water is highly variable and can occur anywhere within The Dalles Formation. Generally, the perched groundwater in The Dalles Formation yield amounts that are adequate for household and stock-watering demands, but cannot be relied upon for uses requiring continual withdrawal of large quantities of water (greater than 20 gallons per minute).

Recharge:

The recharge rate of the Yakima Basalt is speculative. Carbon-14 tests have been used to determine recharge rates in areas of the United States. However, the method has not been used in The Dalles region, probably because the iron in the basalt interferes with the process of dating the water.

The area for recharge of the Yakima Basalt is also questionable. There has been speculation that the recharge is via water of the Columbia River infiltrating the basalt. This has been proven for areas adjacent to the Columbia River, but is questionable for areas further from the Columbia River because of lack of data and low transmissibility of water through the basalt. It is certain that the discharge in many areas is occurring faster than the recharge, resulting in a lowering of the water tables (referred to as ground water mining).

The recharge period of The Dalles Formation is predictable. Recharge is via seasonal precipitation in the form of rain or snow percolating through the soil to the permeable sandstones. The recharge area is the immediate drainage basin area of Browns Creek-Chenoweth Creek. The slope of the land towards the creek tends to concentrate groundwater in The Dalles Formation closer to the creek. Additionally, a normal fault north of the creek has been displaced in such a way as to expose permeable layers of the Dalles Formation, thus facilitating increased re-charge. Fluctuations of groundwater are normal and in most cases due to seasonal differences of precipitation amounts.

Well Records (uses of water)

There are approximately 100 wells on Browns Creek-Chenoweth Creek. The average well depth is 281 feet. Nearly all wells tap a sandstone bed of The Dalles Formation; most are used for domestic use. The average bailing test yielded 27 gallons per minute which surpasses the 5-6 gallons per minute required by lending institutions; the average draw-down for The Dalles Formation was approximately 20 feet, which is proportional to the pumping rate and therefore, highly predictable.

A few wells are used for irrigation and industrial use. Such activities that require sustained high yields usually must tap the Yakima Basalt which is from 700 to 900 feet beneath the land surface.

The present cost of drilling a well The Dalles region ranges from \$12. - \$15. Per foot plus cost of materials. Drilling a well into The Dalles Formation will cost from \$900. to \$10,000. An owner can be reasonably sure that he will have an adequate supply for domestic use. However, if the intended use is irrigation, the first 700 feet may yield sufficient amounts of water, but will not necessarily yield sufficient amounts of water in the future. Many times the well must be drilled as deep as 1,000 feet for adequate water.

Interference Between Wells:

There are no laws that require minimum spacing between wells. Occasionally, however, drawdown of wells will sometimes interfere with each other. This occurrence is most frequent with wells tap-ping the Yakima Basalt. Close spacing of wells in The Dalles Formation (200 feet) will usually not result in interference between wells because of the low pumping rates for domestic use, relatively rapid recharge rate, and varying occurrence of perched groundwater. It has been suggested that a general lowering of the water table below the roof zones of trees and shrubbery impedes water from being given off as evapotranspiration, thus conserving water for withdrawal through wells.

NOTE: Wells can interfere with each other if proper casing and/or sealing is not used. Without proper sealing, perched groundwater can be drained into water bodies below, thus interfering with wells tap-ping the perched water table.

Summary

1. The Dalles Formation has variable occurrences of perched groundwater; the Yakima Basalt also has variable occurrences of groundwater.
2. The Dalles Formation has a rapid recharge rate; the recharge area is identifiable. The recharge rate of the Yakima Basalt is speculative; the recharge area is undetermined.
3. The yield-capacities of The Dalles Formation is adequate for domestic use but questionable for irrigation; the yield-capacity of the Yakima Basalt is variable and ranges from 0 to (in excess of) 100 gallons per minute.
4. The drawdown of wells paced close together (200 feet) will not interfere with each other if tapping The Dalles Formation; wells tapping the Yakima Basalt and spaced closely together will interfere with each other.
5. Wells tapping The Dalles Formation are less expensive to drill than wells tapping the Yakima Basalt.