

GRAND MOUND SUBAREA PLAN
FOR THE GRAND MOUND URBAN GROWTH AREA



THURSTON COUNTY DEVELOPMENT SERVICES

GRAND MOUND SUBAREA PLAN
FOR THE GRAND MOUND URBAN GROWTH AREA

July 1, 1996



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Thurston County Development Services

Lynn Dosheery	Project Manager
Don Krupp	Director
Fred Knostman	Policy and Projects Manager

Thurston Regional Planning Council

Ron Towle	Graphics Coordinator
David Read	Geographic Information Systems
Susan Payne	Geographic Information Systems

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Adopting Resolution

Resolution No. 11219, effective July 1, 1996

Amendments

Resolution No. 11588, December 15, 1997 (document reprinted)

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
Planning History	1
Public Involvement	2
Subarea Plan Organization and Content	3
II. DESCRIPTION OF PLANNING AREA	5
Location	5
Existing Environment	5
Existing Land Use	6
Population and Housing Characteristics	7
Existing Public Services and Facilities	8
III. FINAL URBAN GROWTH AREA BOUNDARY	11
Boundary Description	11
Designation Criteria	11
IV. LAND USE PLAN	15
Community Vision and Planning Objectives	15
Land Supply Analysis	16
Land Use Designations	18
V. TRANSPORTATION PLAN	23
Introduction	23
Requirements of the State Growth Management Act	23
Roadway Classifications	26
Design Standards	27
Level of Service	27
Future Roadway Improvements	28
Future Safety and Preservation Needs	31
Transit Service	31
Bicycle Facilities	32
VI. STATE AND LOCAL PLANNING COMPLIANCE	33
Growth Management Act Compliance	33
County-Wide Planning Policy Compliance	36
APPENDIX	
Traffic Volume Forecasts	A-1

LIST OF TABLES

	Page
1	Existing Land Use 6
2	Population and Housing Units 7
3	Projected Population and Housing Growth 16
4	Projected Employment Growth 17
5	Absorption of Vacant Buildable Land 18

LIST OF MAPS

		Following Page
1	Grand Mound and Rochester Subareas	2
2	Critical Aquifer Recharge Areas	6
3	Critical Areas	6
4	Existing Land Use	6
5	Final Urban Growth Area Boundary	12
6	Future Land Use	18
7	Transportation Plan	28

LIST OF FIGURES

	Page
1	Transportation Access/Mobility Graph 27
2	Typical Roadway Sections following page 28

I. INTRODUCTION

The unincorporated community of Grand Mound is situated about 15 miles south of Olympia in southwest Thurston County. Like many other small western Washington communities located within the Interstate 5 corridor, Grand Mound is well-positioned for future development opportunities. Because of this location, Grand Mound stands to benefit from recent and future economic growth within the broader Pacific Northwest region, the dynamic I-5 corridor, and Thurston County.

The Grand Mound subarea that this plan addresses is the Grand Mound Urban Growth Area (UGA). The Grand Mound UGA was first established by the county in 1995 under the State Growth Management Act. The UGA adopted in 1995 comprised approximately 950 acres generally centered around the intersection of State Route 12 and Old Highway 99, just west of the Interstate 5 interchange. This is the original study area boundary used in developing this Subarea Plan (see Map 1). The present development pattern within the area consists of scattered low density residential uses, mixed with commercial and light industrial uses located primarily along the main arterials.

Planning History

Planning for the Grand Mound area began in the 1970's with the development of the 1978 Rochester Subarea Plan, which covered the entire southwest corner of the county. The plan identified a 15 square mile area around Rochester and Grand Mound as a "growth center" to promote growth and economic development in south Thurston County.

In 1980, the county adopted new zoning for the area to implement the Rochester Subarea Plan. The zoning applied to the 15 square mile "growth center" was a mixed use district, entitled Medium Density Residential 1-6 Dwelling Units per Acre. This zone allowed residential, commercial and industrial land uses to be located throughout the community, which further encouraged the mixed use pattern that is evident today.

In the mid-1980's, a locally formed citizen's committee from Grand Mound initiated contact with Thurston County and expressed interest in developing a sanitary sewer system and water supply system that would allow denser development in the Grand Mound area. This area, which is currently served by on-site septic systems, private wells and private small water systems, is situated over permeable soils that do not provide adequate protection to the aquifer below. This aquifer provides the sole source of domestic water for Grand Mound residents and businesses.

In response to this community request, in 1988 the county adopted a Grand Mound Sewer Service Area (covering 440 acres) and placed policies in the Thurston County Comprehensive Plan that encourage urban levels of growth within the Rochester-Grand Mound area where urban services can be provided. The Comprehensive Plan also incorporated the goals and policies of the earlier Rochester Subarea Plan; however, it recommended that the boundaries of the area be reevaluated to provide a more realistically achievable growth area. The 1988 Comprehensive Plan applied an Industrial land use designation to the overall Rochester-Grand Mound area (with a note indicating that industrial and other land uses are permitted in a mix).

Since 1988, the county has been working with the local citizen's committee to develop sewer and water plans for the Grand Mound area. A preliminary feasibility analysis concluded that if the 1988 sewer service area was expanded by several hundred acres, the sewer and water systems would be economically viable.

The 1995 Thurston County Comprehensive Plan established the Grand Mound Urban Growth Area (UGA), covering 950 acres in the vicinity of the I-5 interchange. This UGA meets the criteria of an urban growth area as defined by the State Growth Management Act. It is specifically intended to support the sewer and water planning in Grand Mound. It encompasses most of the 1988 sewer service area and extends beyond it to capture adjacent lands capable of being developed with urban uses. It is also intended to support the community's overall goals of:

- enhancing economic development opportunities through sewer and water provision,
- providing family wage job opportunities in the local community,
- providing retail and service businesses for surrounding residents and the traveling public, and
- providing an adequate supply of housing and variety of housing types to support the projected population growth.

Since adoption of the Grand Mound UGA in 1995, the land use plan, UGA boundary, zoning, and sewer and water plans have been further evaluated and refined. This Grand Mound Subarea Plan presents the updated land use plan and UGA boundary.

Corresponding zoning changes that implement this Subarea Plan are included in the Thurston County Zoning Ordinance and Official Zoning Map. Updates to the sewer and water plans are presented in separate documents, entitled 1996 Grand Mound Wastewater Comprehensive Plan and 1996 Grand Mound Water System Plan/Project Report.

Public Involvement

The process of reevaluating the land use plan, UGA boundary, and zoning for the Grand Mound UGA involved extensive public participation. Beginning in the summer of 1995, the county hosted a series of community workshops for local residents and property owners to share their concerns and desires regarding the future of Grand Mound and to reach consensus on a preliminary land use/zoning plan upon which to hold the formal public hearing process. County staff also met with the local citizen's utility committee, representatives of the chamber of commerce, and many individual property owners.

The preliminary land use/zoning plan that emerged from the community workshops significantly differed from the mixed use plan established in the 1978 Rochester Subarea Plan, in that it identified specific areas for future commercial, industrial, and residential development within Grand Mound. The preliminary plan also proposed adding the developed portion of the Maple Lane School site into the UGA and removing two small areas from the UGA in order to retain the current rural land uses

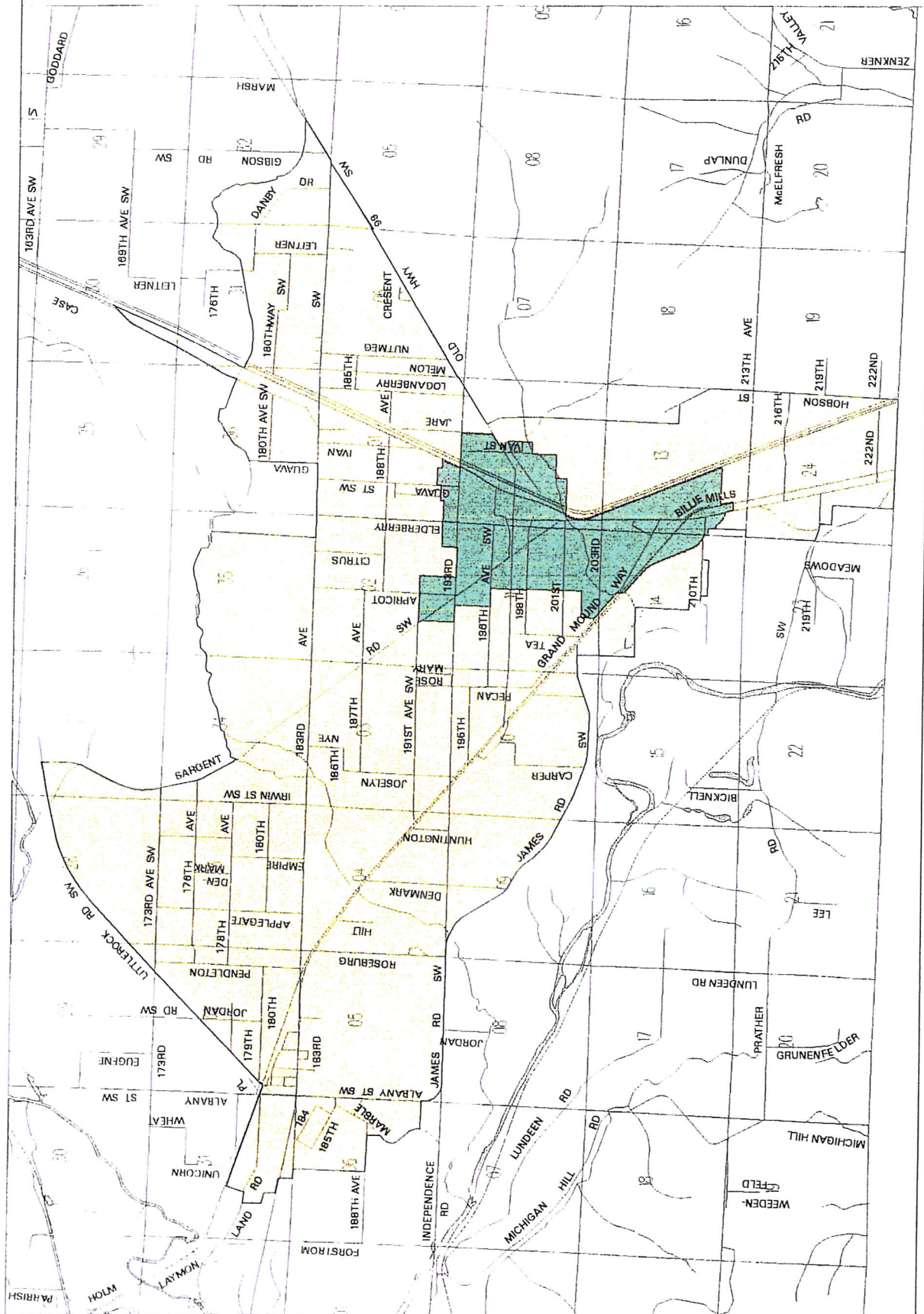
GRAND MOUND AND ROCHESTER SUBAREAS THURSTON COUNTY

Grand Mound Subarea
Rochester Subarea

Thurston County Development Services



MAP 1



in those areas.

Subarea Plan Organization and Content

The Thurston County Comprehensive Plan is the general policy plan that guides the overall development of the county. The Comprehensive Plan allows the preparation of subarea plans for those areas where more detailed land use policies and designations are needed to address unique features or needs.

This Grand Mound Subarea Plan represents a more detailed plan for lands within the Grand Mound UGA. It is consistent with and functionally a part of the Thurston County Comprehensive Plan. It expands upon the Comprehensive Plan by providing a more detailed land use plan and set of objectives tailored to the specific needs of the Grand Mound community. This Subarea Plan replaces the 1978 Rochester Subarea Plan for lands within the Grand Mound UGA.

For the following topics, this Subarea Plan relies on the text and policies in the Comprehensive Plan for guidance within the Grand Mound UGA: housing, transportation, capital facilities, private utilities, economic development, natural environment, historic resources, and plan amendments. The land use chapter of the Comprehensive Plan also includes additional goals and policies that apply throughout the county, including Grand Mound. For these topics, the reader is referred to the Comprehensive Plan for further information.

Together, this Subarea Plan and the Thurston County Comprehensive Plan constitute the growth management plan for the Grand Mound UGA, in compliance with the State Growth Management Act and County-wide Planning Policies.

Chapter II of this plan provides a brief description of the planning area, including a summary of the existing environmental conditions, existing land use, and the transportation and other public facilities currently serving the subarea.

Chapter III describes the final changes to the Grand Mound Urban Growth Area boundary and how the revised boundary meets the designation criteria of the State Growth Management Act and County-Wide Planning Policies.

Chapter IV presents the community's vision and planning objectives that will guide future development of the Grand Mound UGA. This chapter also includes a land supply analysis and the land use plan.

And finally, Chapter V describes how this Subarea Plan, in conjunction with the Thurston County Comprehensive Plan, complies with the goals and policies of the State Growth Management Act and County-Wide Planning Policies.

II. DESCRIPTION OF PLANNING AREA

Location

The Grand Mound UGA is generally bounded by Ivan Street and I-5 to the east, 193rd Avenue to the north, Old Highway 9 to the south, and about midway between Tea Street and Old Highway 99 to the west. The Grand Mound UGA is surrounded by the Rochester subarea, which covers 9,500 acres and stretches west to the unincorporated community of Rochester, east to Gibson Road and Old Highway 99, and north to Scatter Creek. A separate land use plan, called the Rochester Subarea Plan, and zoning plan have been developed for the Rochester area. Refer to the Rochester Subarea Plan for more information on the area surrounding Grand Mound. Map 1 shows the original study area boundaries for the Rochester and Grand Mound Subarea Plans.

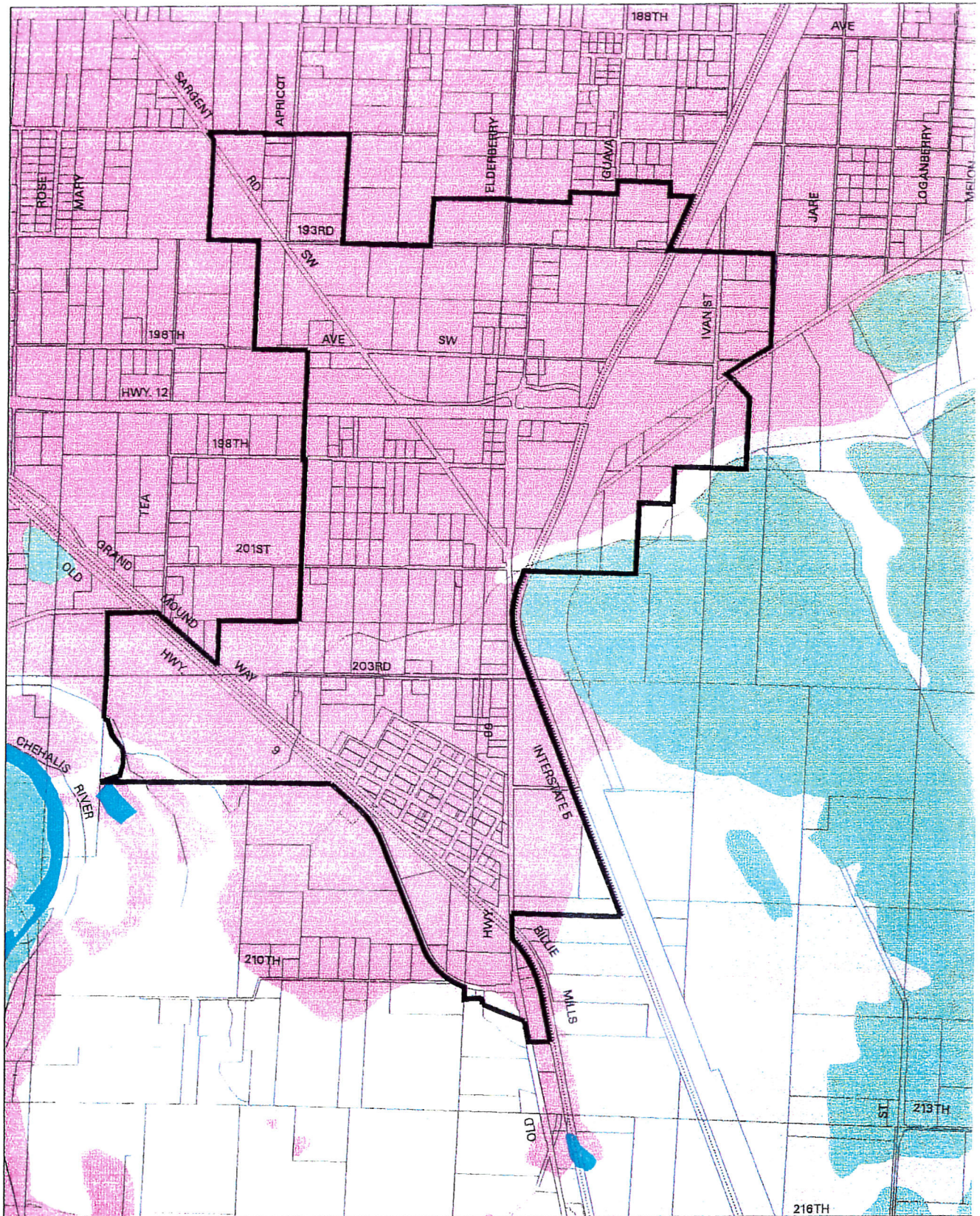
Existing Environment

Ground water. Grand Mound is located over a shallow, highly productive aquifer which underlies the Scatter Creek and Chehalis River Valleys. This aquifer is unconfined and is, therefore, highly susceptible to land use impacts. Most of the land area in the Grand Mound UGA is classified as "extremely critical aquifer recharge area" (see Map 2).

This aquifer provides the sole source of drinking water to local residents and businesses. One potential source of contamination that is of concern in Grand Mound is the high concentration of on-site sewage disposal systems. Well water nitrate levels have been found to be elevated beyond background levels in this area. The concern is not only with nitrate levels, but with the other types of wastes that are disposed of in on-site systems as well, such as chemicals used in households and businesses. Development within this extremely critical aquifer area is guided by the Thurston County Critical Areas Ordinance.

Surface water. Prairie Creek, a tributary of the Chehalis River, is a small seasonal stream that winds through the Grand Mound UGA from the northeast to the southwest and drains much of the area. The county has classified Prairie Creek as a Type 3 stream, since it supports a small run of chum salmon and possibly coho salmon (see Map 3). Development occurring adjacent to Prairie Creek is guided by the Thurston County Critical Areas Ordinance.

Wetlands and floodplains. Wetlands have been identified in a few small areas in the northeastern and southern edges of the UGA; however, they do not appear to pose a significant development constraint. Based on maps produced by the Federal Emergency Management Agency (FEMA), there are no significant 100-year floodplains within the proposed UGA (see Map 3). Development adjacent to wetlands and within floodplains is guided by the Thurston County Critical Areas Ordinance.



CRITICAL AQUIFER RECHARGE AREAS GRAND MOUND URBAN GROWTH AREA

LEGEND

Extreme
High
Moderate

Low
Open Water

 Urban Growth Area Boundary

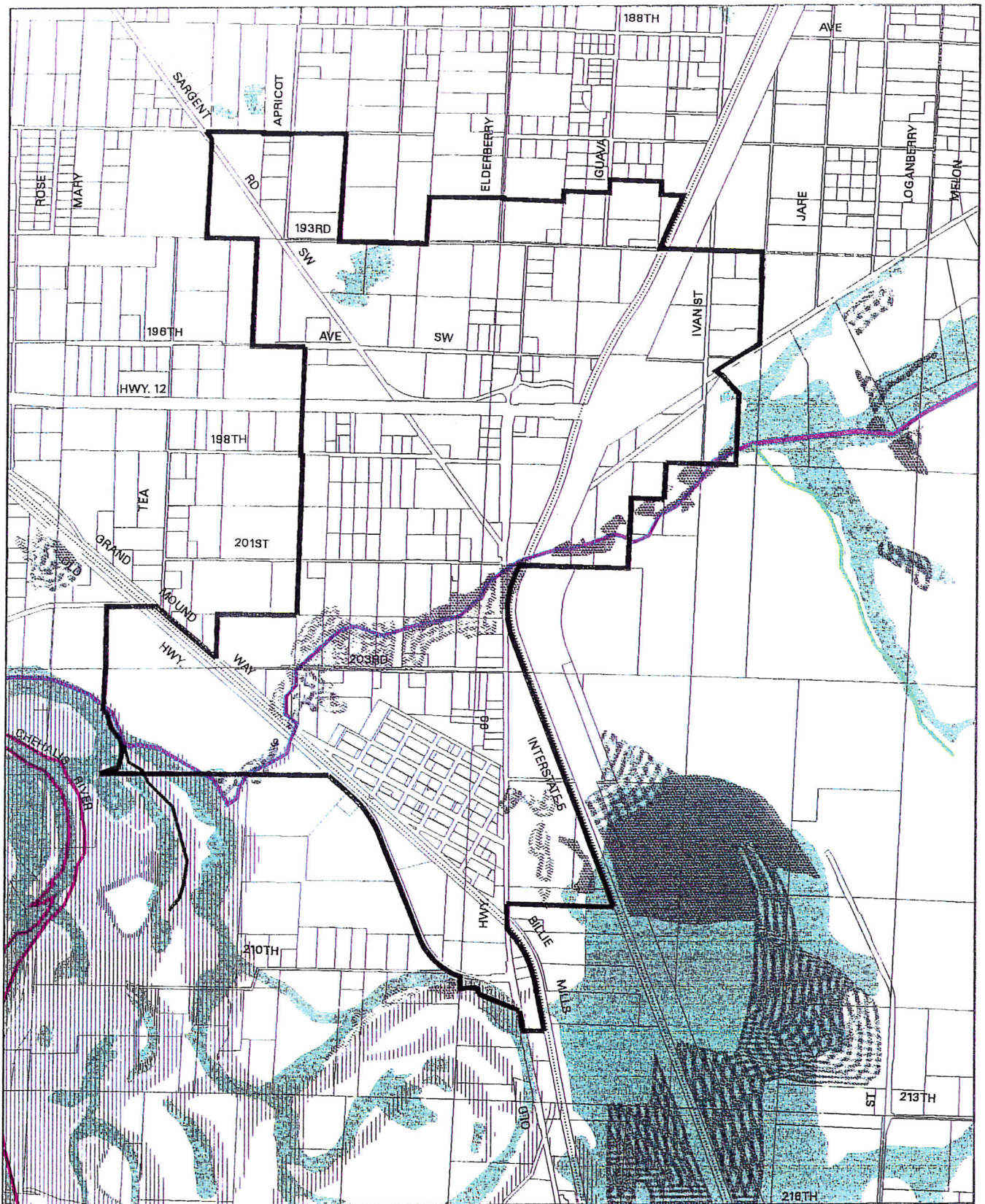
NOTE: Sewer and Water Service Area Boundary follows Urban Growth Area Boundary

0 500 1000
Map Scale in Feet

July 1996

Thurston County Development Services

MAP 4



CRITICAL AREAS GRAND MOUND URBAN GROWTH AREA

STREAM TYPES

- 1+
- 2+
- 3+
- 4
- 5
- Unclassified

• Fish bearing streams.

Source: Washington Department
of Natural Resources.

NWI WETLANDS

-

Source:
(1) National Wetland
Inventory Data Maps.
(2) Soil Survey of
Thurston County, WA (1990)

IMPORTANT HABITATS

-
-
-

Source: Washington Department
of Fish and Wildlife

FLOODPLAINS

-
-

Source: Federal Emergency
Management Agency
Flood Protection
Areas (1983).

GEOLOGIC HAZARDS

-

Source: USDA-SCS
Soil Survey of
Thurston County, 1990.

-

NOTE: Sewer and Water Service Area Boundary
follows Urban Growth Area Boundary



July 1996

Thurston County Development Services

MAP 3

Plants and animals. The UGA was originally covered with prairie vegetation; however, much of the native vegetation has since been removed. No rare or endangered plants or animals have been identified in the area; however, a significant stand of oak woodlands forms an almost continuous corridor along Prairie Creek through the community (see Map 3). Development in and around the oak woodland habitat is guided by the Thurston County Critical Areas Ordinance.

Geologic hazards. Geologically hazardous areas include those areas particularly subject to erosion, siltation, landslide, or other seismic hazard. Due to the relatively flat topography of the Grand Mound UGA, there are no identified landslide hazard areas. However, potential areas include active and inactive gravel mining sites. Development within geologic hazard areas is guided by the Thurston County Critical Areas Ordinance.

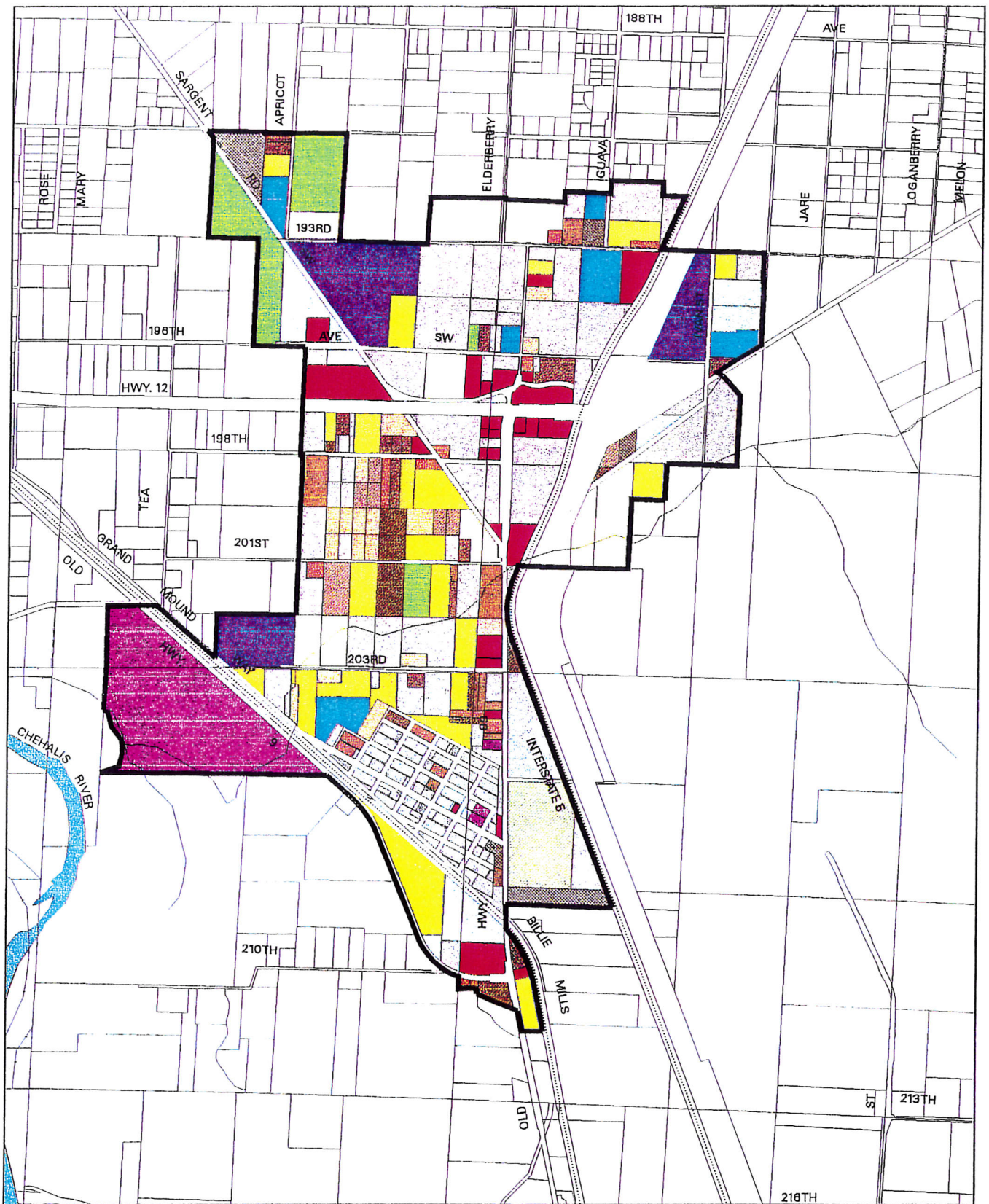
Existing Land Use

Based on a land use survey conducted in January 1995, there is a broad mixture of commercial, light industrial and residential land uses within the Grand Mound UGA. A substantial amount of the UGA is currently vacant, developable land. Map 4 illustrates the existing land use pattern within the final urban growth area. Table 1 below provides an acreage breakdown of these existing land uses.

**Table 1
Existing Land Use
Grand Mound UGA**

Land Use Type	Acres
Undeveloped	241
Agriculture	41
Residential 1 du/5 ac	99
Residential 1 du/2 ac	82
Residential 1 du/ac	41
Residential 2 du/ac	27
Residential 4/du/ac	31
Public Facility	74
General Commercial	48
Light Industrial (Non-manufacturing)	35
Light Industrial (Manufacturing)	26
Mineral Extraction (Active/Inactive)	57
Right-of-Way (roads, railroads)	173
TOTAL	975

Source: Thurston Regional Planning Council, January 1995.



EXISTING LAND USE GRAND MOUND URBAN GROWTH AREA

LAND USE TYPE

- Undeveloped
- Agriculture
- Residential (1 du/5 ac)
- Residential (1 du/2 ac)
- Residential (1 du/1 ac)
- Residential (2 du/1 ac)
- Residential (4 du/1 ac)

- Public Facility
- General Commercial
- Light Industrial (Non-manufacturing)
- Light Industrial (Manufacturing)
- Mineral Extraction (Active/Inactive)

OVERLAYS

- Mobile Homes only
- Residential with Home-Based Industry

- Urban Growth Area Boundary
- NOTE: Sewer and Water Service Area Boundary follows Urban Growth Area Boundary

NOTE: Land use current as of January 1995.

0 500 1000
Map Scale in feet

July 1996

Thurston County Development Services

MAP 4

Commercial uses within the Grand Mound UGA include highway oriented businesses (e.g., gas stations, restaurants, motel) and community commercial uses (e.g., mobile home sales, auto sales, lumber/hardware store, video store, beauty salon, insurance office, floral shop).

Industrial uses include manufacturing businesses (e.g., steel fabrication, fiberglass boat fabrication, concrete block manufacturing) and non-manufacturing uses (e.g., truck and diesel repair, RV repair, manufactured home storage, mini-storage). There are also several active and inactive gravel mines in the area.

Residential uses range in housing type and density, although the lack of sewer has limited densities to less than the maximum six units per acre allowed by the previous zoning. Housing types include mobile home parks and duplexes (at a density of four units per acre), and single family homes, including site-built, manufactured and older mobile homes (with a density range of one unit per five acres to two units per acre). Several homes also have home-based industries associated with them (see Map 4).

Population and Housing Characteristics

In 1995, there were approximately 575 people living in the Grand Mound UGA, with a total of 237 dwelling units. Average household size varies between 2.36 and 2.64 persons per household, depending on the housing type (compared to the county average of 2.55). Table 2 shows the breakdown of housing units by type.

**Table 2
Population and Housing Units
Grand Mound UGA**

1995 Total Units		1995 Household Size		1995 Population		
SF ¹	Other ²	SF	Other	SF	Other	Total
54	183	2.64	2.36	143	432	575

Source: Thurston Regional Planning Council, 1995.

¹"SF" refers to site-built single family homes.

²"Other" refers to all other housing, including manufactured homes, mobile homes and duplexes.

The 1990 Census provides additional insight into the population and housing characteristics of the Grand Mound area. The U.S. Census Bureau gathered data for an area identified as the "Grand Mound Census Designated Place," which covers the Grand Mound UGA (north of Grand Mound Way) and the surrounding area extending west to Pecan Street, north to 183rd Avenue, and east to Melon Street. While the census information covers a somewhat broader geographic area than the Grand Mound UGA, it can give a general picture of conditions within the UGA.

According to the 1990 Census, approximately 65 percent of the housing units in the Grand Mound area are owner-occupied, 26 percent are renter-occupied and 9 percent are vacant. Compared to the county as a whole, there is a higher ratio of owner-occupied units in Grand Mound (60 percent for the entire county versus 65 percent) and, conversely, a lower ratio of renter-occupied units in Grand Mound. The vacancy rate in Grand Mound is slightly higher than the overall county (9 percent versus 6 percent).

Over 60 percent of the households in the Grand Mound area are married couples. Another 17 percent are single spouse households. Non-family households account for the remaining households in the area.

Household income levels are generally lower in the Grand Mound area when compared to the entire county. Approximately 36 percent of the population is identified as being "below to just above" the poverty level in 1990. (In 1990, the U.S. Census reflected a poverty level of \$12,674 annual income for a family of four.) Of all households in the Grand Mound Census Designated Place, 22 percent earned less than \$12,500 in 1990. This is an important factor in the consideration of affordable housing within the area.

In 1990, the types of household income earnings (i.e., wage and salary, pension, public assistance, etc.) reported in Grand Mound was comparable to the county as a whole. Wage and salary income was the highest category, with investment and rental income earnings the second highest source of income. There were about an equal number of households in Grand Mound reporting the remaining income sources, including social security, retirement and self-employed.

The vast majority (90 percent) of Grand Mound residents commute to job sites outside of Grand Mound (*Chase Economics, 1995*). This high commuter percentage is expected to continue into the foreseeable future, particularly given the robust economic growth forecast for Thurston County.

Existing Public Services and Facilities

Grand Mound is not incorporated, so most public services are provided by either Thurston County government or special districts. Thurston County provides general government, sheriff, public works, social services, property assessment, public health, cooperative extension, county fair, jail, justice system, and election services. Currently, private companies provide the following services: refuse disposal, recycling, electricity, and telecommunications facilities.

Fire and emergency medical services. Fire protection and emergency medical services within the Grand Mound UGA are provided by Grand Mound Fire District 14. The district is staffed by volunteers and managed by a three member elected Fire Commission Board. These services are primarily financed through property tax levies. All volunteers are trained in basic life support services. Advanced life support services are provided by the Medic One program throughout the

county. The closest advanced life support services aid unit is stationed in Tenino. Mutual aid agreements with all adjacent districts are in effect in the case of major events.

Fire District 14 serves 26 square miles, with one main fire station on Old Highway 99 and a substation on Michigan Hill Road. The district has a 4-6 minute average response time for calls within its service area. Because there are no existing fire hydrants in the district, water is usually transported to a fire by tanker truck.

Police. Police protection is provided to the Grand Mound UGA by the Thurston County Sheriff's Department. A department substation is located in the Key Bank building on Old Highway 99. Five deputies on a 24-hour watch are assigned to the district. One or two deputies are on duty at any given time. The Sheriff's Department plans to increase the number of deputies within the next several years. The Washington State Patrol has troopers which patrol I-5 and SR 12. These troopers are available to back up the sheriff's officers in the Grand Mound UGA if they are needed.

Schools. The Grand Mound UGA is served by Rochester School District 401. The district provides public education for grades K-12. The district operates four main schools, all of which are located outside of the UGA. Even if no further growth were to occur, significant improvements will need to be made to the district's facilities. Currently, approximately 90% of the district's operating budget is covered by state funds. The remaining funds derive from a local property tax levy and a flat fee charged for single family building permits.

Parks and recreation. There are no recreational facilities located within the Grand Mound UGA. At the nearby high school on Carper Road, there are baseball/football fields, running track and basketball courts. There are a few nearby outdoor recreation areas, including a private baseball park (Hoss Field) on 196th Avenue, the Grand Mound Driving Range along Old Highway 9, and a motor-cross track on Jare Street. There are also several regional outdoor recreation areas, including the Scatter Creek Game Preserve, the Capitol Forest, and the boat launch on the Black River. Thurston County's Parks and Recreation Department does not operate any recreational facilities in the greater Rochester-Grand Mound area.

Water. There is no public water supply system that serves the Grand Mound area. Private wells or small community systems currently provide all of the potable water. All wells draw water from the same underlying aquifer. In order to enable urban level development within the UGA, a public water system is necessary.

In 1996, the county developed an updated water system plan for the UGA to support the future land use plan. This water system plan, entitled Grand Mound Water System Plan/Project Report, was adopted by the county concurrently with the Grand Mound Subarea Plan.

Sewer. The Grand Mound UGA is currently served by individual on-site septic tanks and drainfields. There are no community sewage collection, transmission, or treatment facilities. Septic system maintenance is entirely the responsibility of the property owner.

The current exclusive use of on-site septic systems in Grand Mound has a potential for contaminating the underlying aquifer. The fact that water passes quickly through the soil in this area increases the potential for ground water contamination. On-site septic systems rely on purification of their effluent by soil microorganisms. If the effluent percolates through the soil too rapidly for these microorganisms to function effectively, ground water contamination may result.

For urban level development to occur in this area, a means of sewage disposal other than on-site septic systems is needed. Therefore, in 1996 the county developed an updated sewage system plan for the UGA based on the future land use plan. This sewage plan, entitled 1996 Grand Mound Wastewater Comprehensive Plan, was adopted by the county concurrently with the Grand Mound Subarea Plan.

Stormwater management. The Grand Mound area is gently sloping with very porous soils. Because of the porous nature of the soil and relatively flat terrain, most precipitation quickly percolates into the soils. The highest amount of runoff is generated in the I-5 interchange area, where impervious surfaces are concentrated. No public stormwater management facilities currently exist within the UGA. Currently, stormwater management needs are addressed on a site-by-site basis as development occurs, in accordance with the Drainage Design and Erosion Control Manual for Thurston County.

In 1995, the county conducted an analysis of stormwater management needs to accommodate projected growth in Grand Mound. This analysis recommends continued use of the county's Drainage Manual in reviewing development proposals to address future stormwater needs. For more information, refer to the Grand Mound Comprehensive Stormwater Management Plan.

III. FINAL URBAN GROWTH AREA BOUNDARY

Boundary Description

The Grand Mound Urban Growth Area (UGA) boundary adopted in the 1995 Thurston County Comprehensive Plan encompassed 958 acres. The UGA boundary was established based on the designation criteria in the State Growth Management Act and the 1992 County-Wide Planning Policies. It also reflected the sewer and water service boundaries adopted earlier and the conclusions of a feasibility analysis, which found that the sewer and water service area needed to be expanded in order to make utility development more economically viable.

This Subarea Plan makes the following refinements to the 1995 UGA boundary (see Map 5):

- Expands the boundary to include the developed portion of the Maple Lane School site in light of the state's plans to connect the facility to the county's planned sewer system,
- Reduces the boundary to exclude properties fronting on Billie Mills Street in order to allow for rural residential and agricultural uses to continue,
- Reduces the boundary to exclude a property along Old Highway 99, south of the Old Highway 9 intersection, due to the extensive wetlands onsite that pose limitations to urban development, and
- Reduces the boundary to exclude property at the eastern edge of the UGA along Ivan Way (east of I-5), due to property owner desires to maintain the rural uses on their properties.

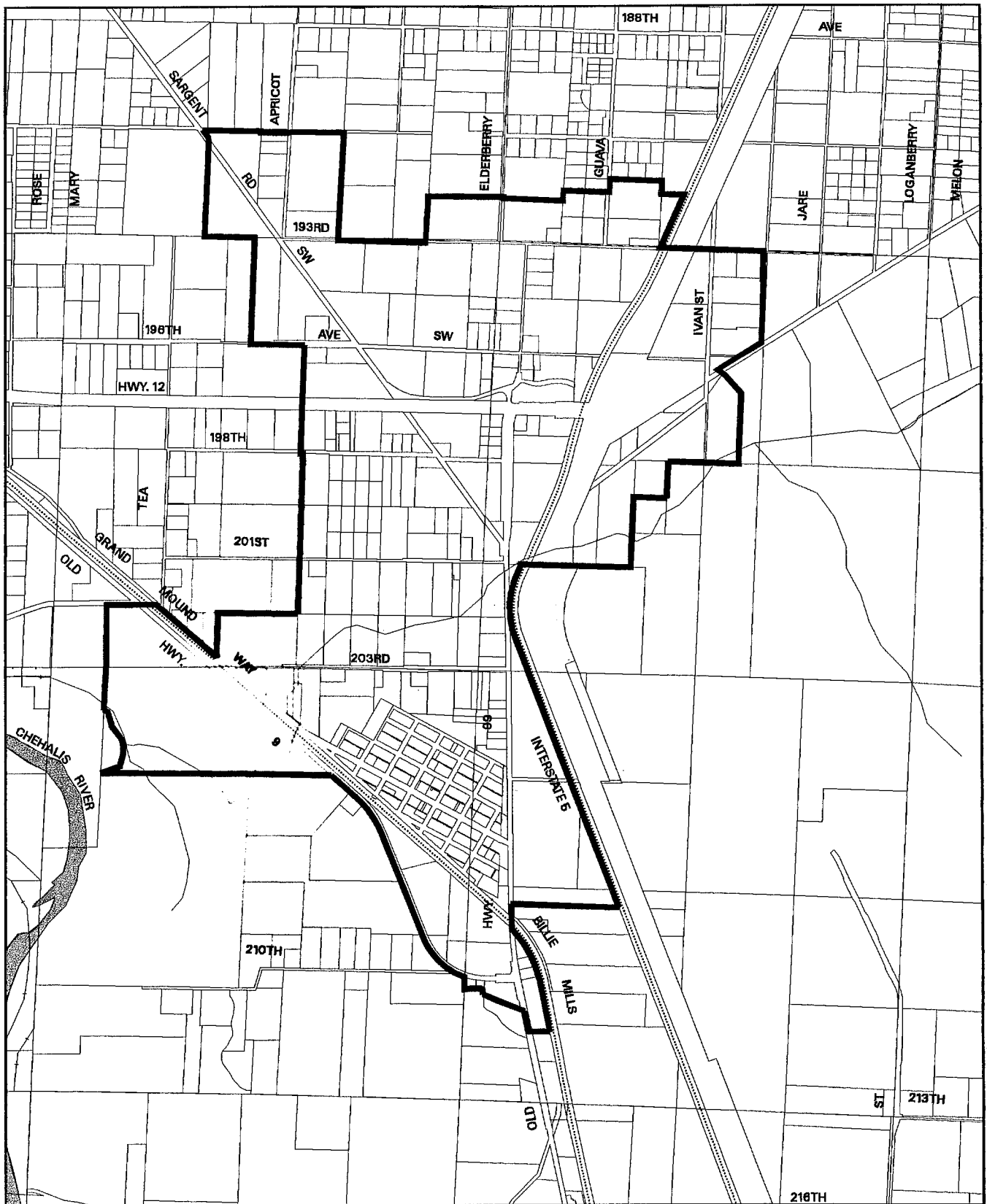
With these boundary refinements, there is a net increase in the Grand Mound UGA of 17 acres, for a total of 975 acres.

Designation Criteria

The final Grand Mound UGA described above meets the designation criteria of the Growth Management Act and County-Wide Planning Policies as follows:

Existing development is urban in character. Based on a land use survey conducted in January 1995, there is currently a variety of urban land uses in the Grand Mound UGA (see Map 4). This includes commercial, industrial and residential uses. Commercial uses include highway oriented and community commercial businesses. Industrial uses range from fabrication and manufacturing businesses to storage and truck repair businesses.

Residential uses range in housing type and density, although the lack of sewer has limited densities to less than the maximum six units per acre that the zoning previously allowed. Existing densities range from one unit per five acres up to four units per acre.



FINAL URBAN GROWTH AREA BOUNDARY GRAND MOUND URBAN GROWTH AREA

 Urban Growth Area Boundary

NOTE: Sewer and Water Service Area Boundary
follows Urban Growth Area Boundary



July 1996

Thurston County Development Services



MAP 5

Area does not include large areas currently characterized by rural uses. The commercial, industrial and residential land uses described above are interspersed with vacant and underdeveloped lots, some of which were posted for sale as commercial and industrial land when the land use survey was conducted in 1995. There are also a few small farms within the area. Once urban services are provided, these lands will be better able to support urban development and are expected to be converted to such uses.

Area does not include long-term resource lands or extensive critical areas. The UGA has been located to exclude designated long-term natural resource lands, areas of extensive wetlands, fish and wildlife habitat, geologic hazards, and floodplains. However, an extremely vulnerable aquifer underlies the area. Within the Grand Mound area, the primary concern regarding this aquifer is the high concentration of on-site sewage disposal systems. This UGA designation enables the construction of a sewer system in the area to better protect the vulnerable ground water.

Area follows logical boundaries. The UGA boundary is located to complement good utility design and operation practices (i.e., looped water system distribution, service to both sides of a road in most cases, etc.) and follows ownership boundaries, steep slopes and other features of the landscape that serve as logical boundaries between urban and rural land uses.

Area boundary considers citizen preferences. The UGA includes most lands within the sewer service area adopted in 1988, which was developed in close coordination with citizens in the community. It also includes some lands adjacent to the 1988 sewer service area to reflect the need for a sufficient size area that is economically viable for urban service provision and to follow more logical boundaries.

Area is of sufficient size to accommodate projected growth. Based on the land supply analysis in Chapter IV of this plan, there is sufficient vacant, developable land within the final Grand Mound UGA to accommodate the projected commercial, industrial and residential growth. Establishing an urban growth area and providing sewer and water facilities will encourage commercial and industrial infilling and more compact, higher density residential development, thereby promoting more efficient use of the available land base.

Area is planned for sewer and water facilities over next twenty years. In 1996, the county updated its sewer and water system plans for Grand Mound based on the future land use plan (described in the following chapter) and final UGA boundary. These updated utility plans affirmed that the final UGA can be fully served with sewer and water facilities to meet the needs of the projected growth.

Expansion area is an existing state juvenile facility with need to upgrade sewage treatment capacity. Maple Lane School is a state juvenile facility that houses male juvenile offenders. Its current capacity is 250 residents. The site covers 200 acres, with the facility buildings concentrated in the northern portion of the site. The developed portion of the site is contiguous to the Grand Mound UGA adopted in 1995. This northern portion of the site is the area added into the final UGA.

The school is currently served by two wells and an on-site sewage disposal system that includes a sewer lagoon, under a permit from the State Department of Ecology. In 1994, the school developed

a facilities plan that recommended an upgrade to the existing sewer facilities. As a first priority, the plan recommends that the school connect to the county's planned sewer system for Grand Mound. A second priority is to develop a separate treatment plant. According to the county's updated sewer plan, there is adequate capacity in the planned sewer system to accommodate Maple Lane School.

Areas removed from UGA will leave sufficient land to accommodate projected growth. As noted in the land supply analysis in the following chapter, there is adequate land area remaining in the Grand Mound UGA to accommodate growth that is projected to occur over the next twenty years.

IV. LAND USE PLAN

Community Vision and Planning Objectives

During the public workshop process in the summer of 1995, residents and property owners reached consensus on the following community vision and objectives to guide the future development of the Grand Mound UGA:

1. Grand Mound will continue to evolve into a commercial trade center, providing a variety of retail and service uses for residents in the general region and the traveling public. Commercial uses should be located where there is high visibility from major roadways and where good access can be provided for both local and regional traffic.
2. Commercial centers should be developed rather than narrow strip development in order to protect the quality of the community and to improve traffic safety and flow.
3. Light manufacturing and storage/warehouse uses will continue to develop within Grand Mound. Industrial uses should be located where they can take maximum advantage of rail and freeway access in order to minimize impacts on traffic flow in the community.
4. Commercial and industrial development will benefit the community by enhancing job opportunities and the local tax base which, in turn, will increase support for schools, parks, and other community facilities.
5. Residential areas of the community will continue to infill with a variety of housing types and should maintain a low density character. People working in local jobs should be able to afford to live within the community. Residential areas should be protected from the impacts of commercial and industrial uses and should have good pedestrian access to transit stops, bike routes and shopping areas.
6. Residential densities should be set at a level that will feasibly support sewer and water facilities, will preserve the open space character of the area, and will be compatible with adjacent low intensity uses outside of the UGA.
7. To the extent possible, existing land uses should not have to take on a non-conforming use status with new zoning. An exception would be for sparsely scattered residences that may be located within predominantly commercial and industrial areas.
8. Interim land uses should be allowed prior to sewer and water, as long as such uses are designed so that they allow for urban infill when utilities become available.
9. A safe, smooth flowing road system needs to be maintained within the community as future development occurs. Public transit services should continue to be monitored to ensure that adequate service is provided.

10. Properties that are predominantly covered with wetlands or floodplains should be located outside the UGA.

These community objectives for Grand Mound supplement the land use goals, objectives and policies in the Thurston County Comprehensive Plan. The land use plan described later in this chapter, as well as the accompanying zoning, serve to implement this community vision and set of planning objectives.

Land Supply Analysis

The purpose of a land supply analysis is to determine how much residential, commercial and industrial land that Grand Mound will need within its urban growth area to accommodate at least twenty years of projected urban growth, in accordance with the State Growth Management Act. The analysis is based on the population and employment forecasts for the community.

In 1995, the Thurston Regional Planning Council (TRPC) updated the population forecasts for the county, based upon a hybrid economic and demographic model. Table 3 shows the population and housing growth projections for the Grand Mound UGA through the year 2020.

Table 3
Projected Population and Housing Growth
Grand Mound UGA

	1995	2000	2005	2010	2015	2020	Increase (1995 - 2020)
Population	575	576	613	688	773	833	258
Housing Units	237	245	267	298	333	356	119
SF¹	54	54	63	79	105	123	69
Other²	183	191	204	219	228	233	50

Source: Thurston Regional Planning Council, 1995.

¹"SF" refers to site-built single family homes.

²"Other" refers to all other housing, including manufactured homes, mobile homes and duplexes.

Table 3 indicates that there will be moderate growth through the year 2020, with an estimated 1.3 percent annual growth rate through 2010, which increases to 2.1 percent through 2020.

Commercial and industrial growth projections for the Grand Mound UGA were developed by Chase Economics in 1995. This study divided the local economy into two major sectors: basic (or export) and non-basic (or service). The basic sector is composed of those industries which produce goods or services that are mainly for "export" to markets outside the local area. An example of a basic industry in the Grand Mound area is Maple Lane School, which exports services to the rest of the state. The non-basic sector mainly serves the needs of local residents and the basic sector industries.

Typical examples of non-basic businesses are grocery stores and auto repair service stations.

The modeling approach used by Chase Economics assumes a critical link between these basic and non-basic sectors of the economy. Essentially, the non-basic sector changes in response to changes within the local basic sector. As the basic industry sector grows, so does the non-basic sector grow in a generally proportionate amount. Therefore, the key to Grand Mound's economic growth is its ability to attract basic industries that produce goods and services for outside markets.

The Chase study found that Grand Mound's location along the I-5 corridor and planned sewer and water improvements enhances its attractiveness for economic development, particularly industrial growth. Based on a medium growth scenario, the study projects employment growth in Grand Mound as shown in Table 4 below.

Table 4
Projected Employment Growth
Grand Mound UGA

Sector	1995	2000	2005	2010	2015	2020	Increase (1995 - 2020)
Mining	14	14	14	14	14	14	0
Construction	4	5	9	12	16	18	14
Manufacturing	49	52	80	82	85	112	63
Transport, Commun. & Utilities	0	0	2	4	76	86	86
Retail Trade	168	177	185	191	214	236	68
Wholesale Trade	12	13	115	205	225	230	218
Services	16	19	31	35	42	53	37
Finance, Insurance & Real Estate	13	14	15	22	25	29	16
TOTAL	276	294	451	565	697	778	502

Source: Chase Economics, 1995.

The study then determined the acreage needed to accommodate the projected population and employment growth. This was compared with the vacant and underdeveloped land within each of the land use designations. Underdeveloped land includes parcels that are occupied by a use that does not cover the entire site and can be further developed (e.g., a single house on a 2 acre parcel in an area designated for 3-6 units per acre), and parcels that are designated for more intensive use than that which currently occupies the property (e.g., a single-family home on land designated for commercial uses).

The Chase Study results were then updated to reflect the final land use designations. Based on the land use plan described later in this chapter, 40 percent of the available commercial land, 68 percent

of the available industrial land, and 69 percent of the available residential land will be developed by the year 2020 (see Table 5).

Table 5
Absorption of Vacant Buildable Land
Grand Mound UGA

Major Land Use Type	1995	2000	2005	2010	2015	2020
Commercial	27%	28%	33%	35%	37%	40%
Industrial	35%	35%	51%	58%	65%	68%
Residential	56%	57%	59%	67%	67%	69%

Since there are limited wetlands, floodplains, and steep slopes within the Grand Mound UGA, nearly all of the existing vacant and underdeveloped land is buildable. However, a certain amount of this buildable land can be expected to be held out of the marketplace for investment, future expansion or personal use. According to the State Department of Community, Trade and Economic Development, a reasonable assumption is that 30 percent of the buildable land will be unavailable over the forecast period. Even with this reduction in available land, however, there is sufficient land supply within the proposed Grand Mound UGA to accommodate the projected population and economic growth through the year 2020.

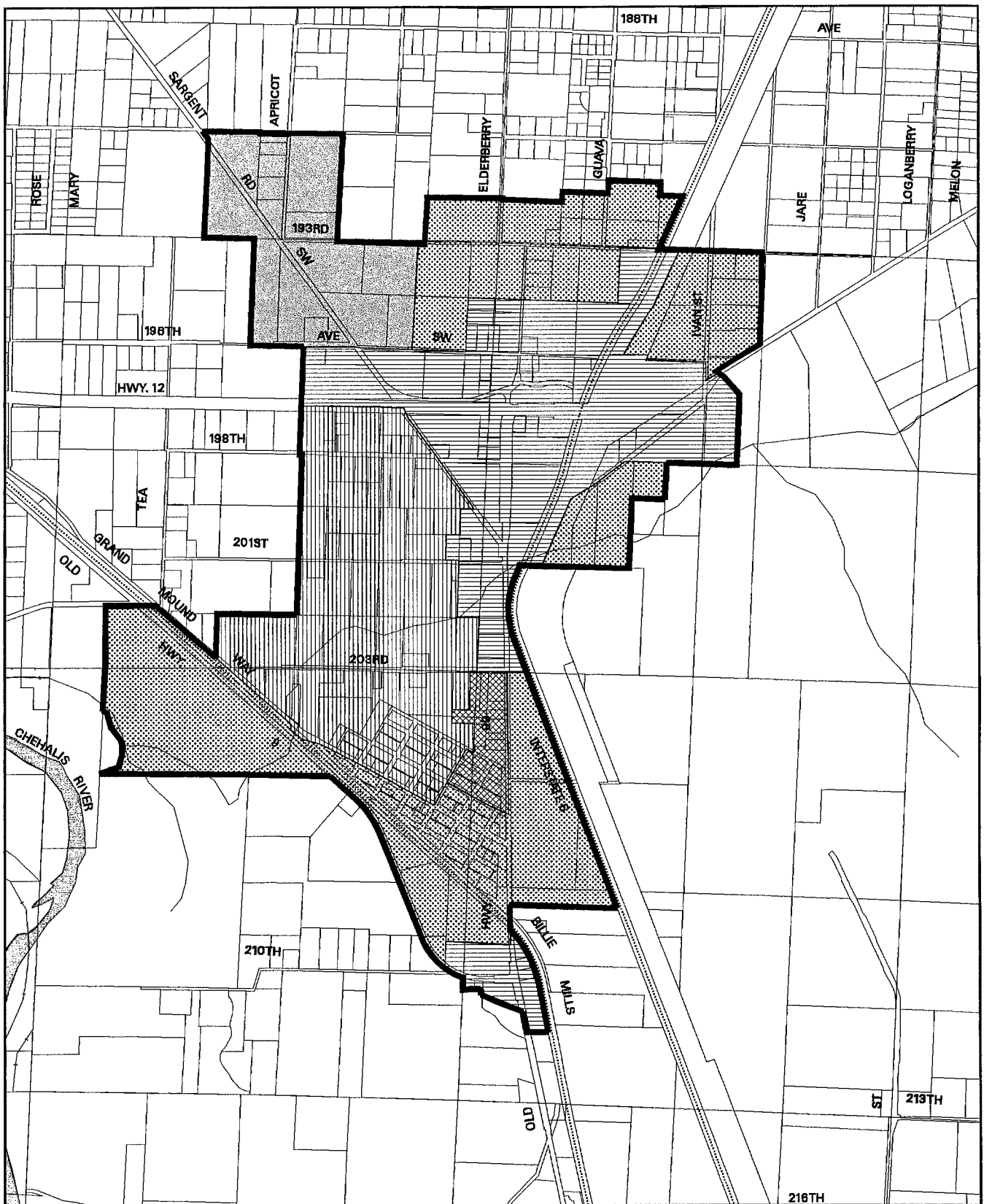
Land Use Designations

The Growth Management Act requires the county to "designate the proposed general distribution and general location and extent of the uses of land" throughout the unincorporated areas of the county. This section of the plan describes each of the land use designations depicted in the Future Land Use Map (see Map 6) for the Grand Mound UGA. It also provides further guidance for the zoning and other measures needed to effectively implement the plan.

Residential 3-6 Units per Acre


The Residential 3-6 Units per Acre designation covers 224 acres in the land use plan. This accounts for 23 percent of the total UGA. This designation covers the western portion of the UGA where low density residential uses predominate. This land use designation is also set back from the main arterials in the community where the majority of commercial and industrial uses are located. Development within this designation should be at a minimum residential density of 3 units per acre, in order to make efficient use of lands within the urban growth area and to ensure that development can feasibly support the necessary sewer and water facilities.

A wide range of housing types should be allowed, including single family homes, duplexes, mobile



FUTURE LAND USE GRAND MOUND URBAN GROWTH AREA

FUTURE LAND USE DESIGNATIONS

-  Residential 3-6 Units per Acre
-  Residential 4-16 Units per Acre
-  Arterial Commercial
-  Planned Industrial
-  Light Industrial

 Urban Growth Area Boundary

NOTE: Sewer and Water Service Area Boundary follows Urban Growth Area Boundary

0 500 1000
Map Scale in Feet

July 1996

Thurston County Development Services

MAP 6

home parks, and accessory dwelling units. Development occurring prior to sewer and water should be configured such that when sewer and water facilities become available, the site can be infilled to achieve the minimum density requirement.

This designation should be a receiving area for the county-wide transfer of development rights program, which helps support the conservation of long-term farmlands in the rural part of the county. One area of prime farmlands targeted for protection in this program is along the Chehalis River, just outside the Grand Mound UGA. Development at the highest increment of the density range (6 units per acre) should require participation in the transfer of development rights program.

Residential 4-16 Units per Acre

A total of 20 acres are designated as Residential 4-16 Units per Acre, representing 2 percent of the overall UGA. This is an area along Old Highway 99 that currently has a mixture of residential densities and substantial vacant land. This designation will allow for single family and multifamily residences and can provide more affordable housing opportunities than the 3-6 units per acre designation. Development within this designation should be at a minimum residential density of 4 units per acre, in order to ensure more compact development within the urban growth area and to ensure that development can feasibly support the necessary sewer and water facilities.

In addition to single family and multifamily residences, mobile home parks and accessory dwelling units should be allowed. Development occurring prior to sewer and water should be configured such that when sewer and water facilities become available, the site can be infilled to achieve the minimum density requirement.

Neighborhood commercial uses should also be allowed within this designation as long as such uses can be designed to mitigate impacts on surrounding residential properties. Neighborhood commercial uses are intended to serve the everyday personal needs of the local neighborhood and are subject to approval of a special use permit.

This designation should be a receiving area for the county-wide transfer of development rights program, which helps support the conservation of long-term farmlands in the rural part of the county. One area of prime farmlands targeted for protection in this program is along the Chehalis River, just outside the Grand Mound UGA. Residential development at the highest increment of the density range (16 units per acre) should require participation in the transfer of development rights program.

Arterial Commercial

A total of 259 acres are designated Arterial Commercial in the land use plan. This represents 26 percent of the total UGA. This designation is centered around the intersection of SR 12 and Old Highway 99, and extends outward to encompass other lands with high visibility and good access along the main arterials in the community. It extends south along Old Highway 99 to 203rd Avenue to encompass the existing commercial uses along this stretch of the road, thereby limiting the extent of narrow strip development along the roadway. It extends to the east side of I-5 to include several properties on the south side of Old Highway 99. It also includes an area at the intersection of Old Highways 99 and 9, where commercial businesses have already begun to locate.

This designation will allow a broad range of highway oriented commercial uses for the traveling public and community commercial uses serving the local community. It will also allow infilling on properties along the main arterials where existing commercial development is interspersed with vacant or underdeveloped parcels.

This designation also allows high density residential uses (up to 16 units per acre) as well as residences in conjunction with an allowed commercial use. Residential development within this designation should be at a minimum density of 6 units per acre, in order to ensure more compact development within the urban growth area and to provide a broader range of affordable housing opportunities.

Planned Industrial

A total of 362 acres within the UGA are designated Planned Industrial. This represents the largest land use category within the community, with 37 percent of the total UGA. This designation is located so that it can take maximum advantage of the two railroad lines through the community, particularly where railroad sidings currently are located. This designation is also located where good road access to SR 12 and I-5 can be provided and where there are large vacant parcels or groupings of vacant parcels that could accommodate industrial uses. In many parts of this designation, scattered industrial uses already exist.

This designation also includes the developed portion of the Maple Lane School site, as correctional facilities are considered a compatible use within the designation, subject to approval of a special use permit.

The purpose of the Planned Industrial designation is to provide for industrial development in a way that protects the nearby residential areas surrounding the UGA, that protects the character and integrity of adjacent commercial areas within the UGA, and that encourages comprehensive planning of an entire industrial site. The designation allows a broad range of assembly, processing and storage uses, but does not allow gravel mining or some of the manufacturing uses permitted in the Light Industrial designation.

The designation also allows those commercial uses that primarily serve the industrial uses. A single temporary home is also allowed in this designation as an interim use until an industrial use is constructed.

Light Industrial

The Light Industrial designation covers 110 acres in the land use plan, which accounts for 11 percent of the UGA. This designation is located in the northwestern corner of the community where several light industrial uses already exist, such as gravel mining and concrete block manufacturing. This designation allows industrial uses involved in the processing, fabrication and storage of products. The designation also allows those commercial uses that primarily serve the industrial uses. A single temporary home is also allowed within this designation as an interim use until an industrial use is constructed.

Development within this designation should be designed to protect adjacent areas from adverse industrial impacts. The area should also be protected from uses which may interfere with efficient industrial operations.

V. TRANSPORTATION PLAN

Introduction

The Grand Mound subarea was established as the Grand Mound Urban Growth Area (UGA) by the county in 1995 under the State Growth Management Act. Along with becoming designated as an urban area, the approximately 950 acres within the UGA boundary was rezoned to provide adequate commercial, industrial, and residential areas to accommodate the projected future growth. As urban development occurs, the traffic volumes on the adjacent roadways will increase. Adequate transportation facilities are required to meet the concurrency requirements of the Growth Management Act (GMA). The GMA requires that transportation facilities either be in place or funded prior to approval of land use applications. Therefore, it was necessary to conduct an additional traffic study in 1997 to build upon the previous traffic analysis for the Rochester/Grand Mound area.

The 1997 Transportation Study focused on the Grand Mound UGA. The analysis of future transportation needs was based on a medium growth scenario for 2020, as projected in the 1995 Chase Economics study. (See pages 18-20 of this Subarea Plan for more information on the medium growth scenario.) The Transportation Study assessed the capacity of the existing transportation system to accommodate projected traffic volumes and concluded that improvements will be needed in Grand Mound over the next 20 years. Several public workshops and meetings with individual property owners were held in the community to review the study results and to reach consensus on a new transportation plan for Grand Mound. This Chapter describes the transportation issues identified in the study, the GMA requirements that must be met, and the existing and future transportation facilities needed to serve projected population and employment growth in Grand Mound.

Requirements of the State Growth Management Act

Land use assumptions used to estimate travel. The GMA requires that the land use assumptions used in estimating travel be included in the plan. The land use assumptions used in this chapter are consistent with those used in the Regional Transportation Plan, Thurston County Comprehensive Plan, and the Land Use Chapter of this Subarea Plan.

An inventory of existing ground transportation facilities and services. The GMA requires an inventory of air, water, and ground transportation facilities and services to define existing capital facilities and travel levels.

Roadways. The Grand Mound UGA is greatly impacted by pass-through traffic from outside the area along the two state highways: I-5 and SR 12. Interstate 5 runs north-south and provides easy access to nearby urban areas, such as the Olympia area to the north and the communities of Centralia and Chehalis to the south. State Route 12 is a major east-west roadway through the UGA. It links Grand Mound with Rochester and Oakville to the west.

The major county arterials within the UGA are Old Highway 99, Elderberry (SR 12 to 196th Ave.), 196th Avenue (Sargent Rd to Elderberry), and Sargent Road. There are several county collector and local roads within the UGA.

Pedestrian and bike paths. There are currently no sidewalks or bike paths within the Grand Mound UGA. Intercity Transit (based in Olympia) provides bus service from Grand Mound to Olympia eight times per day during the week. Grand Mound is also served by Twin Transit, which provides bus service to Centralia and Chehalis.

Railroads. There are two common carrier rail lines that traverse the Grand Mound UGA and provide excellent rail opportunities for future industrial uses. One is the Burlington Northern Railroad, which links Grand Mound with Centralia and Aberdeen/Hoquiam. There is an existing railroad siding on this line, located just west of old Highway 99 in Grand Mound.

The second rail line is located along the west side of I-5 and is commonly known as the Chehalis Western Railroad. The City of Tacoma has recently purchased this railroad from the Weyerhaeuser Company and has contracted with the Tacoma Eastern Railway Company to operate it as a common carrier freight and passenger line. This railroad links Grand Mound with Chehalis to the south and Tacoma to the north. There is an existing siding along this rail line within Grand Mound, just north of the I-5 interchange.

Level of service standards for the Grand Mound UGA. The GMA requires level of service standards for all arterials and transit routes to serve as a gauge to judge performance of the system. The level of service standards set for the Grand Mound UGA is "D". This standard is consistent with other urban growth areas within Thurston County. Transit level of service is addressed in Goal 1, Objective C of the Transportation Chapter of the Thurston County Comprehensive Plan. The County Comprehensive plan also proposes that a multi-modal level of service standard be developed that emphasizes moving people and goods, not just vehicles. Goal 4, Objective B of the Transportation Chapter in the Comprehensive Plan further describes this multi-modal approach.

Compliance with level of service standard. The GMA requires specific actions and requirements for bringing into compliance any facilities or services that are below the established level of service standard.

Grand Mound Transportation Study. This 1997 study outlines initial and future transportation improvements needed to support projected growth within the Grand Mound UGA.

Thurston County Capital Facilities Plan. This plan identifies the six-year bridge, road capacity, bike lane, preservation and safety improvement needs of the County roadway network. The plan also identifies funding strategies for each individual project.

Concurrency. The GMA requires that adequate public facilities and services be provided concurrent with new development. The GMA defines "concurrent with development" for transportation as

meaning "improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years" of the development.

Adequacy of transportation facilities is based upon locally adopted levels of service. It should also be based on realistic expectations consistent with the growth anticipated in this subarea plan.

In 1995, Thurston County adopted a concurrency management ordinance that requires all new developments to comply with the GMA concurrency requirement for transportation facilities. Under this ordinance, any development proposal that would cause transportation facilities to fall below level of service "D" in Grand Mound will be denied.

Traffic volume forecasts. The GMA requires forecasts of traffic volumes for at least 10 years based on the adopted land use plan to provide information on the location, timing, and capacity needs of future growth.

Existing traffic volumes. Exhibit 1 of the appendix shows existing peak hour traffic volumes in the Grand Mound area. This information is based on traffic counts assembled as part of the 1997 Transportation Study.

Twenty year traffic volumes. Future traffic volumes generated in the 1997 Transportation Study were based upon a traffic forecasting model. 2020 traffic volume forecasts are presented in Exhibit 2 of the appendix.

Transportation facility improvements. The GMA requires the identification of system expansion needs and transportation system management needs to meet current and future demands.

Initial improvements. Initial improvements are intended to address existing transportation deficiencies within the Grand Mound UGA. Further discussion of initial improvements can be found on page 32 of this Transportation Plan.

Future improvements. Future transportation improvements are based on these 2020 traffic volume forecasts. A discussion of future improvements can be found on pages 32 and 33 of this Transportation Plan.

Transportation financing plan. The GMA requires a multi-year financing plan based on the transportation needs identified in this plan.

A detailed transportation financing plan for the six-year roadway improvements is updated annually in the Capital Facilities Chapter of the Thurston County Comprehensive Plan.

Intergovernmental coordination. The GMA requires intergovernmental coordination efforts, including an assessment of the impacts of the transportation plan and land use assumptions on the

transportation systems of adjacent jurisdictions. Please refer to the Transportation Chapter of the Thurston County Comprehensive Plan for further discussion of this topic.

Demand-management strategies. Strategies to reduce the reliance on single occupancy vehicles can be found under Goal 1, Objective A, Policy 2 of the Transportation Chapter of the Thurston County Comprehensive Plan.

Note: For general county goals and policies related to transportation, please refer to the Transportation Chapter of the Thurston County Comprehensive Plan.

Roadway Classifications

Roadways have three basic roles in serving the overall transportation needs in Grand Mound and Thurston County. These are:

- To provide for the safe movements of people and goods. (Safety)
- To provide for the efficient movement of people and goods. (Mobility)
- To provide access to land. (Access)

These three concepts of Safety, Mobility and Access are key to designing and locating the various classes of roadways. Using the above concepts, a functional hierarchy of roadway classes can be developed that provide varying degrees of safety, access and mobility. Below is a description of varying types of road classifications. Figure 1 shows the relationship between access and mobility.

Arterials are intended to provide a high degree of mobility and serve the longer trips. Since movement, not access, is their principal function, access management is essential in order to preserve capacity. Frequently, the arterial system carries important internal and intercity bus routes, goods and services. Finally, in urbanized areas, this system provides continuity for all rural arterials that intercept the urban boundary.

Several characteristics of an arterial which help provide for the safe and efficient movement of people and goods are: left and right turn bays at public and private intersections/driveways, double left turn bays at major intersections, signalized intersections, and sidewalks.

Implementation of the above criteria and installations of the warranted improvements (i.e. left turn pocket) will help ensure that traffic capacity and safety is maintained. This, in turn, will ensure regional accessibility of private development. Preservation of mobility on an arterial is mutually advantageous to the public and private sectors.

Collectors provide both land access and mobility within residential, commercial, and industrial areas. Cross-sectional design of collectors may involve considerable variation, depending on the type, scale and density of anticipated or actual adjacent development. The purpose of a collector road is to distribute trips from the arterial system into residential, commercial, and industrial areas.

Conversely, the collector road also functions to collect trips from residential, commercial, and industrial areas and channels them to the arterial system.

Local roads provide access to land. Local roads can be found in residential, commercial and industrial areas. Movement on local roads involves traveling to or from a collector road. Local roads offer the lowest level of mobility among the previously mentioned road classifications.

Source: ITE, 1988, Transportation and Land Development, Institute of Transportation Engineers, Washington D.C.

FIGURE 1

Map 7 shows the roadway classifications for the Grand Mound UGA and Figure 2 depicts the cross-sections for the various roadway classifications. Roads not classified on Map 7 are considered local roads that shall be designed in accordance with the local roadway section in Figure 2.

Design Standards

Grand Mound is an urban area. Urban roads are constructed to a higher operating standard to serve higher densities and more intense development. Roadways in the Grand Mound Urban Growth Area are subject to the Thurston County *Minimum Design Standards for Urban and Rural Street Construction*. However, the roadway cross-sections in Figure 2 of this chapter shall be used in Grand Mound to meet local needs and conditions.

Level of Service

The concept of level of service uses qualitative measures that characterizes operational conditions within a traffic stream and their perception by motorists and passengers. The description of individual levels of service for roadway segments summarize traffic stream conditions in terms of factors such as speed, travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The description of individual levels of service for intersections is the average stopped delay per vehicle. This measure is similar to the description of road segments in that it gauges driver discomfort and frustration, but it also recognizes fuel consumption and lost travel time.

Levels of service are given letter designations, from A to F, with A representing the best operating conditions (free flow, little delay) and level of service F the worst (congestion, long delays). Generally, levels of service A and B are high, levels of service C and D are moderate, and levels of service E and F are low. See the Transportation Chapter of the County Comprehensive Plan for further information on these designations.

The adopted level of service for urban areas within Thurston County, including Grand Mound, is level of service "D". In Grand Mound, level of service "D" will be used as a threshold to determine when road improvements are needed. Level of service "D" conforms with the Regional Transportation Plan.

Future Roadway Improvements

Significant Issues. Current and future roadway improvements planned for the Grand Mound UGA address the following significant issues identified in the 1997 Transportation Study:

SR 12/ Elderberry intersection and approaches. As of 1997, this intersection operates below level of service D. Therefore, the intersection and its approaches will need to be upgraded to allow further development to proceed within this area. The initial improvements identified on page 30 are planned to correct this level of service problem.

Prairie Creek Bridge on Old Hwy 99. The Prairie Creek Bridge is narrow and will constrict the projected traffic flow as the southern portion of the UGA develops. Therefore, this bridge will need to be replaced to accommodate future traffic volumes.

Left Turn Provisions for Old Hwy 99 East of I-5. The numerous intersections along Old Hwy 99 east of Interstate 5 are subject to significant left turn movements. The potential accidents resulting from left turning movements will increase as future traffic volumes increase. Currently, the County Road and Transportation Services Department is in the process of constructing left turn pockets at critical intersections, but the ultimate solution will be to build a continuous two-way left turn lane.

Roadway design. Roads within Grand Mound are currently not built or designed to serve urban-level development. As urban development occurs, roads within the UGA will need to be upgraded to urban design standards.

Roadway Improvement Strategy. In the Grand Mound UGA, timely construction of roadway improvements is a particular challenge because future land use will significantly increase traffic over existing generally rural conditions. As mentioned at the beginning of this section, there are several significant transportation needs in this community. Some need to be addressed immediately (i.e. SR 12/Elderberry intersection) and others are improvements that will need to be completed as Grand Mound develops (i.e. improvements to the Prairie Creek Bridge). Coordination between public and private entities and the availability of funds to complete road improvements is essential to meet current and future transportation demands.

The proposed initial improvements will not only correct existing deficiencies, but will also provide additional capacity serving new development. The additional capacity share of initial improvements will be funded from sources including new development contributions through SEPA mitigation and/or other fees as well as from County funds and, when available, state or federal grants.

Road improvement objectives. To meet the current and future demands of the Grand Mound transportation network, the following objectives are intended to guide the County's review of development proposals:

- At a minimum meet federal, state, and local regulations including stormwater runoff improvements related to improvements to public facilities.
- Ensure that concurrency requirements under the State Growth Management Act are met.
- Provide predictability during the development review process, including minimizing the scope of site-specific traffic studies.
- Obtain equitable roadway improvement funding from new development in Grand Mound, with other sources addressing traffic impacts from "through" traffic using area arterial roads.

Implementation strategy. The following strategies are intended to implement the above objectives:

- The County will use road funds to correct safety, concurrency (SR12/Elderberry intersection) and road structure problems. The County will provide the initial transportation infrastructure to raise the level of service of the SR12/Elderberry intersection, to allow urban development to proceed and to increase the safety and efficiency of the arterial road system. The initial improvements are listed on the following page.
- Development proponents will dedicate right-of-way, build frontage improvements, and fair share mitigation toward impacted off-site improvements required to avoid future concurrency problems.
- The County will coordinate with the Washington State Department of Transportation (DOT) in planning for improvements to SR 12, including the intersection of SR 12/Old Hwy 99/Elderberry, the SR 12/I-5 interchange and possible future connections to Sargent Road from SR 12.
- The balance of the costs for roadway and intersection improvements within Grand Mound will need to come from federal and state grants and loans and other local sources.

Planned roadway improvements. Planned roadway improvements in the Grand Mound UGA will provide for sufficient vehicle capacity, adequate roadway structure, minimization of hazards, and efficient use of County funds. Improvements to the Grand Mound UGA are based on the Grand Mound Transportation Study and the 20 year traffic forecasts. The Transportation Study identified

roadway improvements for the interim and long-term.

Initial improvements. The following initial improvements are planned to be constructed by the county in conjunction with the installation of the sewer and water facilities, anticipated to be completed in 1998.

Road widening:

- 196th Avenue upgrade (Elderberry west to new connector road, with the upgrade extended to Sargent Road within six years)
- Old Hwy 99 upgrade (198th Avenue to SR 12)
- Elderberry upgrade (SR 12 to 196th Avenue)

The above projects represent road widening and left turn pockets at the intersections of SR12/Elderberry and Elderberry/196th. They also include a continuous left turn lane be on Old Hwy 99 from 198th Avenue to SR 12.

New road construction:

- New collector road connecting 197th Avenue and 196th Avenue (between Elderberry and Sargent Road)

Other:

- Install cul-de-sac on 197th Avenue at Elderberry

Future Improvements. The following future improvements are projected to be needed by 2020:

Intersection upgrades:

- 193rd Avenue/Sargent Road (install signal and channelize intersection)
- I-5 interchange (signalize ramps)
- Elderberry/196th Avenue (install signal and channelize intersection)
- 196th Avenue/Sargent Road (install signal and channelize intersection)
- SR 12/Elderberry intersection improvement (channelization and signal upgrade)
- Elderberry/197th Avenue (197th Avenue east of Elderberry is to be limited to right-in and right-out movements)
- 198th Avenue/Sargent Road (intersection realignment)
- Old Hwy 9/Old Hwy 99 (install signal and channelize intersection)
- Ivan Street/Old Hwy 99 (channelize intersection)

Road widening:

- Old Hwy 9 (west UGA boundary to Old Hwy 99)
- Grand Mound Way (west UGA boundary to Old Hwy 99)

- 203rd Avenue (major collector segment west of Old Hwy 99)
- 201st Avenue (west UGA boundary to Old Hwy 99)
- 198th Avenue (west UGA boundary to Old Hwy 99)
- Old Hwy 99 (east boundary of State right-of-way at I-5/SR 12 interchange to east UGA boundary)
- Old Hwy 99 (widen to arterial road classification, from 198th Avenue to SR 12)
- Old Hwy 99 (south UGA boundary to 198th Avenue)
- SR 12 (west UGA boundary to east boundary of State right-of-way at the I-5/SR 12 interchange)
- Elderberry (widen to arterial road classification, from SR 12 to 196th Avenue)
- Elderberry (196th Avenue to north UGA boundary)
- 196th Avenue (widen to arterial road classification, from Sargent Road to Elderberry)
- 196th Avenue (Elderberry east to the new connector road)
- 197th Avenue (Elderberry east to the new connector road)
- 197th Avenue (Sargent Road to cul-de-sac)
- Sargent Road (197th Avenue to north UGA boundary)
- 193rd Avenue (Sargent Road to east UGA boundary)
- Apricot Street (193rd Avenue to north UGA boundary)
- Guava Street (193rd Avenue to north UGA boundary)
- Ivan Street (segment south of Old Hwy 99 and segment north of Old Hwy 99 to north UGA boundary)

New road construction:

- New collector road connection between 197th Avenue and 196th Avenue east of Elderberry

Bridge:

- Prairie Creek bridge on Old Hwy 99 (widen)

Future Safety and Preservation Needs

The County has Pavement Management and Safety Management programs. These programs create priority arrays which identify road preservation and safety improvements needed throughout the county on an ongoing basis. Preservation and safety projects are then incorporated annually into the Capital Facilities Chapter of the Thurston County Comprehensive Plan.

Transit Service

Intercity Transit serves the Grand Mound/Rochester area with Route 98. For additional information concerning transit service in Thurston County, please refer to the Thurston County Comprehensive

Plan.

Bicycle Facilities

The proposed Class II bicycle routes through the Grand Mound UGA are as follows:

- Old Hwy 99 (south UGA boundary line to SR 12)
- Old Hwy 99 (Elderberry east outside of UGA)
- Elderberry Road (SR 12 to 196th Avenue)
- 196th Avenue (Sargent Road to Elderberry)
- Sargent Road (196th Avenue north outside UGA)

A Class II bike route is a shoulder lane adjacent to the motor vehicle roadway for principal use by bicyclists. These bike lanes are designated by signs and/or pavement markings (see Figure 2 for major and minor arterial classifications).

VI. STATE AND LOCAL PLANNING COMPLIANCE

Growth Management Act Compliance

The State Growth Management Act includes thirteen goals that guide the development of local comprehensive plans and regulations. Since the growth management plan for Grand Mound consists of both the Thurston County Comprehensive Plan and this Subarea Plan, many of the plans and policies that implement the Growth Management Act goals are embodied in the Comprehensive Plan. An analysis of how the Comprehensive Plan meets the goals of the Growth Management Act was prepared prior to its adoption in 1995. The following is a listing of the state goals and an analysis of how the Grand Mound Subarea Plan meets these goals.

Goal 1. Urban growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.

Goal 2. Reduce sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low density development.

This Subarea Plan, and associated Grand Mound sewer and water facility plans, are specifically intended to change the course of development within the Grand Mound area by providing the infrastructure needed to support infilling and more compact urban development, thereby reducing growth pressures in surrounding rural areas. Minimum density requirements in residential areas and the requirement that phased development be designed to ultimately meet the minimum density provisions are examples of how this plan provides for more efficient use of the land.

Goal 3. Transportation. Encourage efficient multi-modal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

The transportation plan in this Subarea Plan and the Transportation Chapter of the Thurston County Comprehensive Plan include the transportation plan and policies for Grand Mound. Additionally, the land use plan in this Subarea Plan takes maximum advantage of the excellent rail access within the community, as well as transit and other alternative modes of transportation.

Goal 4. Housing. Encourage the availability of affordable housing to all economic segments of the population of this state; promote a variety of residential densities and housing types; and encourage preservation of existing housing stock.

The Housing Chapter of the Thurston County Comprehensive Plan and this Subarea Plan include policies and land use designations designed to encourage the provision of affordable housing. For example, this Subarea Plan allows a variety of housing types in the residential designations, including site-built and manufactured homes, apartments, mobile home parks, and accessory dwelling units. The arterial commercial designation also allows apartments, condominiums and

other multifamily housing.

Goal 5. Economic development. Encourage economic development throughout the state that is consistent with adopted comprehensive plans; promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons; and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.

This Subarea Plan ensures the provision of adequate land for the projected growth in commerce and industry in the Grand Mound area. A wide variety of businesses are allowed within the commercial and industrial designations, providing a diversity of employment opportunities. Construction of the planned sewer and water facilities in Grand Mound is expected to greatly improve the area's ability to attract further development. The Economic Development Chapter of the Thurston County Comprehensive Plan includes specific policies that further promote economic development opportunities.

Goal 6. Property rights. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.

This Subarea Plan was developed through a community workshop effort, allowing residents and property owners to share their interests and concerns about the future of the community and to reach agreement on a preliminary land use plan. The designation of areas for future land uses was based upon many factors including the impact of designations on private property. The Thurston County Comprehensive Plan provides further policies that ensure sensitivity to property rights concerns.

Goal 7. Permits. Application for both state and local government permits should be processed in a timely and fair manner to ensure predictability.

The Land Use Chapter of the Thurston County Comprehensive Plan includes a policy to ensure timely and fair processing of development permits.

Goal 8. Natural resource industries. Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forest lands and productive agricultural lands, and discourage incompatible uses.

The Natural Resource Lands Chapter of the Thurston County Comprehensive Plan provides policies and criteria for identifying and conserving long-term resource lands. These lands are located outside of urban growth areas in order to minimize land use conflicts. By promoting higher density, compact development within urban growth areas, as in this Subarea Plan, there will be less development pressure within and adjacent to long-term resource lands.

Goal 9. Open space and recreation. Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks.

The Capital Facilities Chapter of the Thurston County Comprehensive Plan provides policies on the provision of park and recreation facilities throughout the county. The Natural Environment Chapter of the Comprehensive Plan provides policies on the conservation of fish and wildlife habitat.

Goal 10. Environment. Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

One of the important goals of this Subarea Plan is to increase protection of the extremely sensitive aquifer that underlies the Grand Mound area through the provision of sewer and water. The Natural Environment Chapter of the Thurston County Comprehensive Plan provides further policy guidance regarding air and water quality and water availability.

Goal 11. Citizen participation and coordination. Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.

The community vision, planning objectives and land use plan in this Subarea Plan were prepared in public workshops held in the Grand Mound community. Notices for these workshops were mailed to all property owners within and immediately adjacent to the Grand Mound urban growth area, and were posted throughout the community. Meetings with the local citizen's committee on utility planning and individual property owners were also held to gather further community input. Public hearings by the Thurston County Planning Commission and Board of County Commissioners were then held at the nearby high school, with notices for these hearings sent to property owners in Grand Mound.

Goal 12. Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

The land use plan in this Subarea Plan was prepared in close coordination with the sewer and water plans and the transportation plan. The Transportation Chapter of the Thurston County Comprehensive Plan contains policies that ensure that improvements needed to serve new development are in place at the time of development or that funding is in place to construct the needed improvements within six years of the development.

Goal 13. Historic preservation. Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.

The Historic Resources Chapter of the Thurston County Comprehensive Plan includes policies that encourage the preservation of historically significant buildings and sites throughout the county.

County-Wide Planning Policy Compliance

The Growth Management Act requires that comprehensive plans, including subarea plans, be consistent with adopted county-wide planning policies. The County-Wide Planning Policies for Thurston County were adopted by the Board of County Commissioners in 1992, after being ratified by all of the cities and towns within the county. The following is a brief description of how this Subarea Plan is consistent with each of the ten policy areas addressed in the County-Wide Planning Policies for Thurston County.

I. Urban Growth Areas

Chapter III of this Subarea Plan describes how the final Grand Mound UGA meets the criteria in the County-Wide Planning Policies. The land supply analysis in Chapter IV of this plan affirms that there is sufficient area and densities within the final UGA to permit the urban growth that is projected to occur in the succeeding twenty-year period.

II. Promotion of Contiguous and Orderly Development and Provision of Urban Services

This Subarea Plan encourages compact, efficient urban development through provision of sewer and water facilities, minimum density requirements in residential areas, and a requirement that development occurring prior to sewer and water must be configured so that residential areas may eventually infill and become urban. Residential clustering is also allowed as an option to conventional subdivisions.

III. Joint County and City Planning Within Urban Growth Areas

This section of the County-Wide Planning Policies specifically applies to those urban growth areas that are adjacent to a city or town. Since Grand Mound is an unincorporated urban growth area distinct from any city or town in the county, this section does not apply.

IV. Siting County-Wide and State-Wide Public Capital Facilities

The Capital Facilities Chapter of the Thurston County Comprehensive Plan includes a process for identifying and siting public capital facilities of a county-wide and state-wide nature which have a potential for impact beyond the local area. This siting process applies throughout the unincorporated county, including Grand Mound.

V. Analysis of Fiscal Impact

Capital facilities projects necessary to support the land uses designated in this Subarea Plan are listed in the Capital Facilities Chapter of the Thurston County Comprehensive Plan. The Capital Facilities Chapter also includes funding strategies to balance revenues and needs for public facilities required to serve existing and future development.

VI. Economic Development and Employment

The major goals of this Subarea Plan are to enhance economic development opportunities in Grand Mound through sewer and water provision, encourage family wage job opportunities so that residents living in and around Grand Mound can work within the community, increase retail and service business opportunities to better serve the surrounding community and the traveling public, and to promote a variety of residential densities and housing types to meet the needs of future population growth. Based on the land supply analysis in Chapter IV of this plan, there is an adequate provision of commercial and industrial land in the land use plan to accommodate the projected economic growth for at least twenty years.

VII. Affordable Housing

This Subarea Plan and the policies in the Housing Chapter of the Thurston County Comprehensive Plan are expressly designed to encourage housing affordability. For example, this Subarea Plan allows a broad range of housing types and densities throughout the residential designations, including accessory dwelling units.

VIII. Transportation

The transportation plan in this Subarea Plan is consistent with the Regional Transportation Plan. The Transportation Chapter of the Thurston County Comprehensive Plan includes policies that ensure coordination of local plans with the Regional Transportation Plan. The Transportation Chapter also establishes the level of service standards and a multi-modal transportation plan. The Capital Facilities Chapter of the Comprehensive Plan provides the funding strategy for needed transportation improvements to support the growth within the Grand Mound UGA.

IX. Environmental Quality

The Natural Environment Chapter of the Thurston County Comprehensive Plan ensures coordination of local land use planning with comprehensive plans for stormwater, sewer and water. This Chapter also includes policies to ensure protection of critical areas, air and water quality and water availability. This Subarea Plan was prepared in close coordination with stormwater, sewer and water plans prepared for the Grand Mound UGA in 1995 and 1996.

X. Process Policies

- 1. Population Projections and Urban Growth Areas*
- 2. Review of County-Wide Planning Policies*

This Subarea Plan has been developed to accommodate the regional population allocation generated by the Thurston Regional Planning Council, consistent with the County-Wide Planning Policies. The Subarea Plan is designed to be a flexible document. As conditions and circumstances change, or as regional plans and policies are amended, it can be reevaluated and amended accordingly.