
City of Lakewood Comprehensive Plan

Final Environmental Impact Statement

June 2000

This programmatic Environmental Impact Statement analyzes relevant impacts on the environment of the proposed action, adoption of the comprehensive plan by the City of Lakewood. In addition to the preferred alternative, the analysis addresses two other alternatives including a no action alternative and mixed use alternative in compliance with the State Environmental Policy Act (SEPA).

**City of Lakewood
Comprehensive Plan
Final Environmental Impact Statement**

June 2000

FACT SHEET

Project Title

City of Lakewood Comprehensive Plan Final Environmental Impact Statement.

The City of Lakewood Community Development Department has prepared this Environmental Impact Statement (EIS) to analyze the potential environmental impacts associated with adopting and implementing the City's comprehensive plan. The City prepared the comprehensive plan to satisfy requirements of Washington State's Growth Management Act (GMA). The EIS is intended to satisfy regulatory requirements of the State Environmental Policy Act (SEPA).

Project Description and Alternatives

The Proposed Action analyzed in this EIS is the City Council's adoption of a new City of Lakewood comprehensive plan. The EIS analyzes the effects of three alternative means of accomplishing the Proposed Action: (1) adopting the comprehensive plan, referred to as the Preferred Alternative in this EIS; (2) adopting a variation of the plan, known as the Mixed-Use Alternative; and (3) continued use of the City's interim comprehensive plan, known as the No Action Alternative.

Preferred Alternative: The Preferred Alternative proposes specific land uses in lieu of the mixed-use designations found in the other alternatives. This difference is particularly marked along the Bridgeport corridor and in the northeast section of the city. Other significant differences include the addition of an overlay district around Lakewood Station, changes to the boundaries of western Lakewood's low density residential areas to include additional lakefront parcels, and designation of an Urban Center and Manufacturing/Industrial Center consistent with regional policy objectives. It is also intended to curtail sprawl through more organized land use patterns and redevelopment while accommodating residential and employment growth with the least amount of adverse environmental impact. The principal strategy of the plan for guiding future growth is: (1) protecting established neighborhoods; (2) development intensification within the city's central spine, which stretches north along Bridgeport Way from the planned commuter rail station past the Mall and the Colonial Center through to the Custer neighborhood; (3) focused residential density in several neighborhoods, notably Springbrook, Tillicum, and Custer; and (4) increasing the employment base in eastern portions of the city. The plan seeks to preserve the existing character of large lot residential neighborhoods in west Lakewood and along the lake shores, and to protect riparian habitat along the major creeks. This alternative provides development capacity for an estimated 17,500 new residents and 12,275 new jobs by the year 2017.

No Action Alternative: If the City Council takes no action to adopt a new comprehensive plan, the existing City of Lakewood interim comprehensive plan will remain in effect. Thus, the interim comprehensive plan serves as the No Action Alternative for this SEPA analysis. This plan was adopted on February 20, 1996. The interim comprehensive plan contains the following GMA-required elements: Land Use, Housing, Transportation, Utilities, and Capital Facilities. The plan also contains elements on Essential Public Facilities, Environment, and Critical Areas. The plan does

not include growth targets and generally assumes continuation of current trends. New development capacity is estimated at 31,853 new residents and 9,982 new jobs.

Mixed-Use Alternative: This alternative was developed through a public process beginning in late 1997 and culminating in public workshops in mid 1998. This alternative assumes ambitious growth targets for over 30,000 new residents by the year 2017, and moderate employment growth of 11,237 jobs. Most of this growth would be located in a collection of mixed-use land use designations in the eastern half of the city. The highest concentration would be targeted toward an urban center clustered around a commuter rail station. This alternative would stabilize Lakewood's low density single-family neighborhoods dominating the city's western half.

Alternatives Considered But Not Analyzed for SEPA Impacts: A range of four distinct development scenarios was developed for public consideration early in the planning process. These four development scenarios were refined to the two action alternatives analyzed in this EIS: the Preferred Alternative and the Mixed-Use Alternative. The original development scenarios are not analyzed separately in this EIS.

Project Location	The Proposed Action affects the land contained within the existing Lakewood city limits and proposed annexation areas. Lakewood lies between the cities of University Place and Tacoma on the north, McChord Air Force Base (AFB) and the Fort Lewis Military Reservation on the east and south, and the town of Steilacoom on the west.
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Date of Implementation	2000-2017
Lead Agency	The City of Lakewood Community Development Department
Responsible Official	Dave Bugher
Required Permits	N/A
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Date of DEIS Issue	January 20, 2000
Date Comments Due	February 19, 2000
Time and Place of Public Hearings	March 4, 1999 Lakewood City Hall, 10510 Gravelly Lake Drive, S.W., Lakewood, WA
Final EIS Issue Date	June 16, 2000
Prior Environmental Review	The Draft SEPA EIS was released for public review in January 2000.
Subsequent Environmental Review	No further environmental review is expected for the Comprehensive Plan. Individual development projects within the City will be subject to review for threshold determinations and potentially additional SEPA review.
Location of Background Information	City of Lakewood Community Development Department 10510 Gravelly Lake Drive, S.W. Lakewood, WA 98499-5013
Availability of Copies	Copies may be obtained for a fee of \$20.00 from the City of Lakewood Community Development Department 10510 Gravelly Lake Drive, S.W. Lakewood, WA 98499-5013

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Acronyms and Abbreviations

AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
APZ I	Accident Potential Zone I
APZ II	Accident Potential Zone II
avg	average
BMP	Best Management Practice
CBD	Central Business District
cfs	cubic feet per second
CIP	Capital Improvement Plan
CTR	Commute Trip Reduction
DU	dwelling unit
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FAZ	Forecast Analysis Zone
GIS	geographic information system
GMA	Growth Management Act
GMCC	Growth Management Coordinating Committee
gpm	gallons per minute
HCM	Highway Capacity Manual
HOV	high occupancy vehicle
HUD	Housing and Urban Development
I-5	Interstate 5
I-695	Initiative 695
IVHS	Intelligent Vehicle Highway Systems
LOS	level of service
mev	million entering vehicles
MG	million gallons
MGD	million gallons per day
mph	miles per hour
MVET	Motor Vehicle Excise Tax
NAAQS	National Ambient Air Quality Standards
NWI	National Wetlands Inventory
OFM	Office of Financial Management
PAB	Planning Advisory Board
PCTP	Pierce County Transportation Plan
PSE	Puget Sound Energy
PSRC	Puget Sound Regional Council
RCW	Revised Code of Washington
ROC	Record of Communication
ROW	right-of-way
s.f.	square foot
SEPA	State Environmental Policy Act

Acronyms and Abbreviations (continued)

SMP	Shoreline Master Program
SOV	single occupant vehicle
SR	State Route
SR-99	State Route 99 (South Tacoma Way)
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TSM	Transportation Systems Management
UGA	Urban Growth Area
LINOS	Urban Natural Open Space
UST	underground storage tank
V/C	Volume/Capacity Ratio
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

1.0 INTRODUCTION

1.1 Policy Background and Process

1.1.1 Description of the Proposed Action and Alternatives

As a recently incorporated city in the state of Washington, Lakewood is in the process of adopting its first 20-year comprehensive plan. The Proposed Action requiring analysis under the State Environmental Policy Act (SEPA) is the adoption of a new comprehensive plan by the Lakewood City Council. This Environmental Impact Statement (EIS) analyzes the impacts of two plan alternatives, as well as a No Action Alternative. The two action alternatives are the proposed comprehensive plan as endorsed by the City Council in its recent review as the Preferred Alternative, and a second alternative called the Mixed-Use Alternative. If the City Council takes no action adopting a new comprehensive plan, the City's interim comprehensive plan as initially adopted would remain in effect until a new plan is adopted. Thus, the No Action Alternative as addressed in the EIS is the continued use of the interim comprehensive plan. These alternatives are summarized in Chapter 2 of this EIS and analyzed in Chapter 3.

1.1.2 Lakewood's Comprehensive Planning Process

The Lakewood comprehensive plan (City of Lakewood 2000) is intended to be a reflection of the community's values and an expression of its vision for the future. Community-wide visioning sessions were held early in the plan's development to allow citizens an opportunity to identify positive and negative characteristics about Lakewood. This vision has remained as a foundation for comprehensive plan development throughout the process.

Development of the plan was a complex effort involving the contributions and reflections of members of the community, City staff, elected and appointed officials, and outside experts. The resulting plan is a cohesive structure to guide the many land use and other public policy decisions facing this dynamic community as it grows and changes over the next two decades. Because all City regulations are legally required to be consistent with the adopted comprehensive plan, it enables City government in its entirety to share a common starting point for developing regulations, reviewing legislation and proposed projects, and making crucial spending decisions.

1.1.3 GMA/SEPA Requirements

The comprehensive plan alternatives were developed to guide Lakewood's growth for the next 20 years in compliance with the State of Washington's Growth Management Act (GMA, Chapter 36.70 of the Revised Code of Washington [RCW]). The overall intent of the GMA is to focus future growth in established urban areas and preserve rural areas, resource lands, and open space. To accomplish this, GMA requires cities and counties to provide for projected growth of population and employment within designated urban areas

as established by each county. Under the GMA, cities and counties are required to prepare 20-year comprehensive plans that demonstrate their ability to accommodate additional households and employment according to projections provided by the State Office of Financial Management (OFM) to each county. Counties are responsible for allocating growth to cities within their jurisdiction. GMA requires that Lakewood adopt a comprehensive plan containing elements that address Land Use, Transportation, Housing, Capital Facilities, and Utilities. Lakewood has voluntarily prepared additional elements addressing Urban Design, Public Services, and Economic Development.

This EIS is required by the State Environmental Policy Act (SEPA) (RCW 43.21C.030 (2)(c)). The adoption of the Lakewood comprehensive plan by the Lakewood City Council constitutes the action requiring SEPA compliance.

1.1.4 EIS Preparation Process

Preparation of this EIS took place concurrently with development of the comprehensive plan, as is consistent with the purpose of SEPA/GMA integration¹. This concurrent development is intended to ensure that environmental analyses under SEPA would be an integral part of the planning and decision-making process under GMA. As a result, numerous goals, policies, and other provisions in the plan, initially developed as SEPA mitigation measures in the Draft EIS, are now included in the comprehensive plan as an integral part of that plan. This includes revisions to the Future Land Use Plan adopted in response to impacts noted in the DEIS. Additional mitigations have been added to this FEIS after review of the revised Land Use Plan.

One of the purposes of SEPA is to include public input into environmental review. This objective was accomplished through a public scoping period that took place in September and October 1999. The scoping allowed agencies, affected tribes, and members of the public to comment on the scope of analysis. Following the scoping period, this draft EIS was released for review and comment by agencies, affected tribes, and members of the public. Comments are published along with the response to each in this final EIS.

¹ Washington Administrative Code (WAC) 197-11-210 through 197-11-235.

1.2 Location and Background

1.2.1 Project Setting

The City of Lakewood is located in southwestern Pierce County (see Figure 1.2-1). Commencement Bay is approximately 8 miles to the northeast of the city, and Mount Rainier National Park is approximately 35 miles to the southeast. The cities of Tacoma and University Place form the northern boundary of Lakewood, with the Fort Lewis Military Reservation and McChord Air Force Base (AFB) defining the southern and eastern boundaries. Unincorporated Pierce County lies to the east, and the Town of Steilacoom lies to the west. For the most part, the jurisdictional boundaries and the urban growth, area (UGA) boundaries are contiguous, although the UGA does extend to and encompass the developed portions of the military bases. More specifically, the city limits are bounded as follows:

- On the north, by Chambers Creek, Leach Creek, and the corporate limits of the cities of University Place and Tacoma.
- On the east, by Interstate 5 (I-5), south to 95th Street S, east to Sales Road S to its southerly terminus, finally bounded by Steele Street, south of 104th Street S.
- On the south, by the north and west boundaries of McChord AFB and the north boundary of the Fort Lewis Military Reservation, west to a line established by 107th Avenue SW.
- On the west, bounded by 107th Avenue SW, between Fort Lewis and a line approximately 1/8 of a mile south of 100th Street SW, east to Far West Drive SW and then north along this line to the top of the Chambers Creek Canyon, and then north to Chambers Creek.

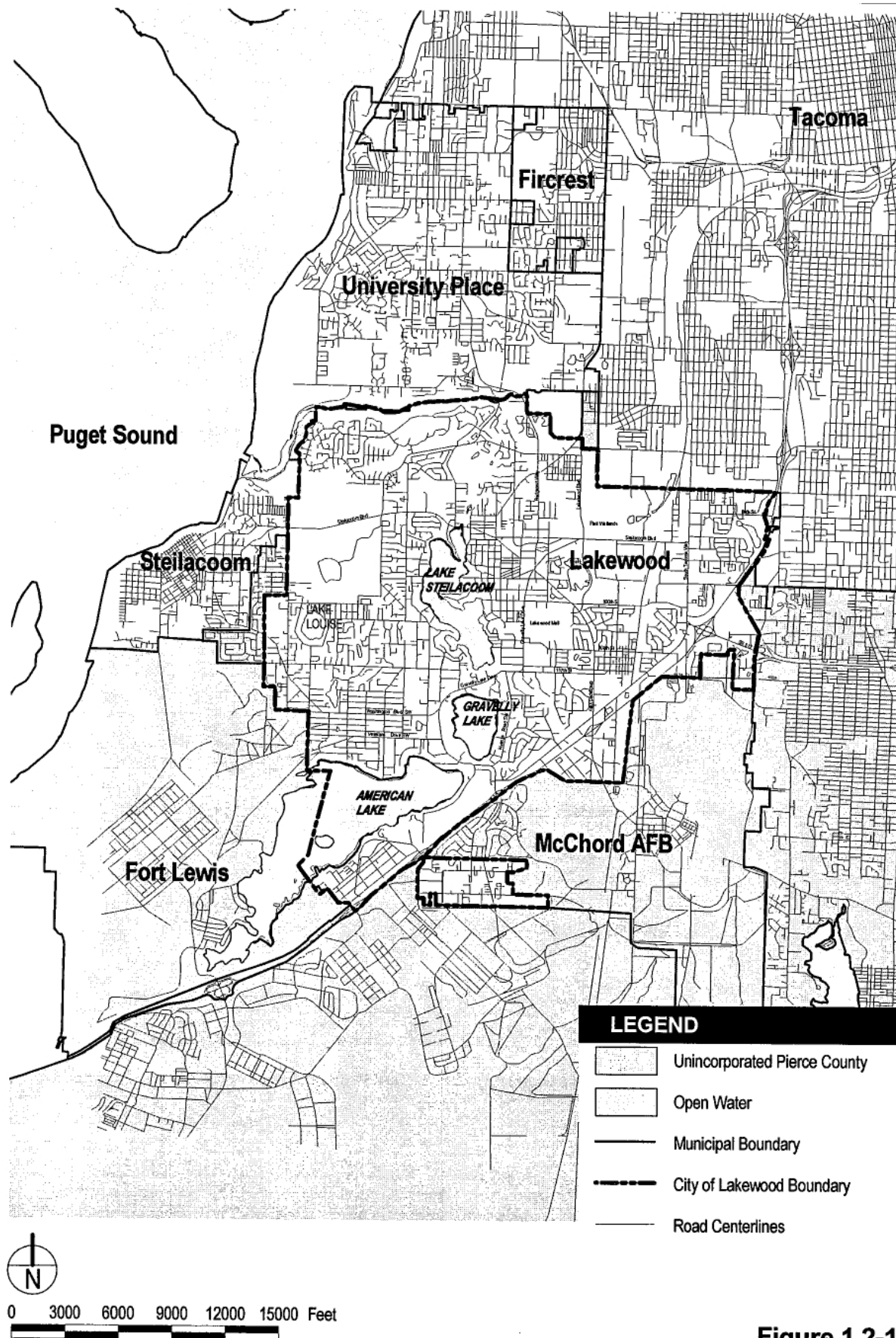
The City of Lakewood encompasses approximately 24 square miles (12,106 acres)². Of this total area, 1,098 acres are covered by lakes, and 1,725 acres are contained within public rights-of-way (ROW), leaving 9,979 total acres of net usable area. Elevations within the city begin at sea level and rise to approximately 300 feet above mean sea level.

1.2.2 Demographic Overview

In 1995, Pierce County estimated that the population of the City of Lakewood was 62,500 people (City of Lakewood 1996), or 9.2% of Pierce County's population. By way of comparison, other cities in Pierce County are Tacoma (27.5%), Puyallup (4.4%), University Place (4.3%), Edgewood (1.6%), Bonney Lake (1.4%), and Sumner (1.2%). The State OFM found the population in 1996 to be 65,182, in a separate estimation. The City of Lakewood is 1.1% of the state and 2% of the four-county³ Central Puget Sound Region population.

² City of Lakewood Geographic Information System (GIS).

³ King, Kitsap, Pierce, and Snohomish counties.



Source: Pierce County GIS / Lakewood Parcel Survey Database / EDAW Inc., 1999.

Figure 1.2-1
Lakewood and Vicinity

Pierce County is 12% of the state's population and 21.7% of the region's. Census tract boundaries for the city, as used by the U.S. Census Bureau for the 1990 census, are shown in Figure 1.2-2.

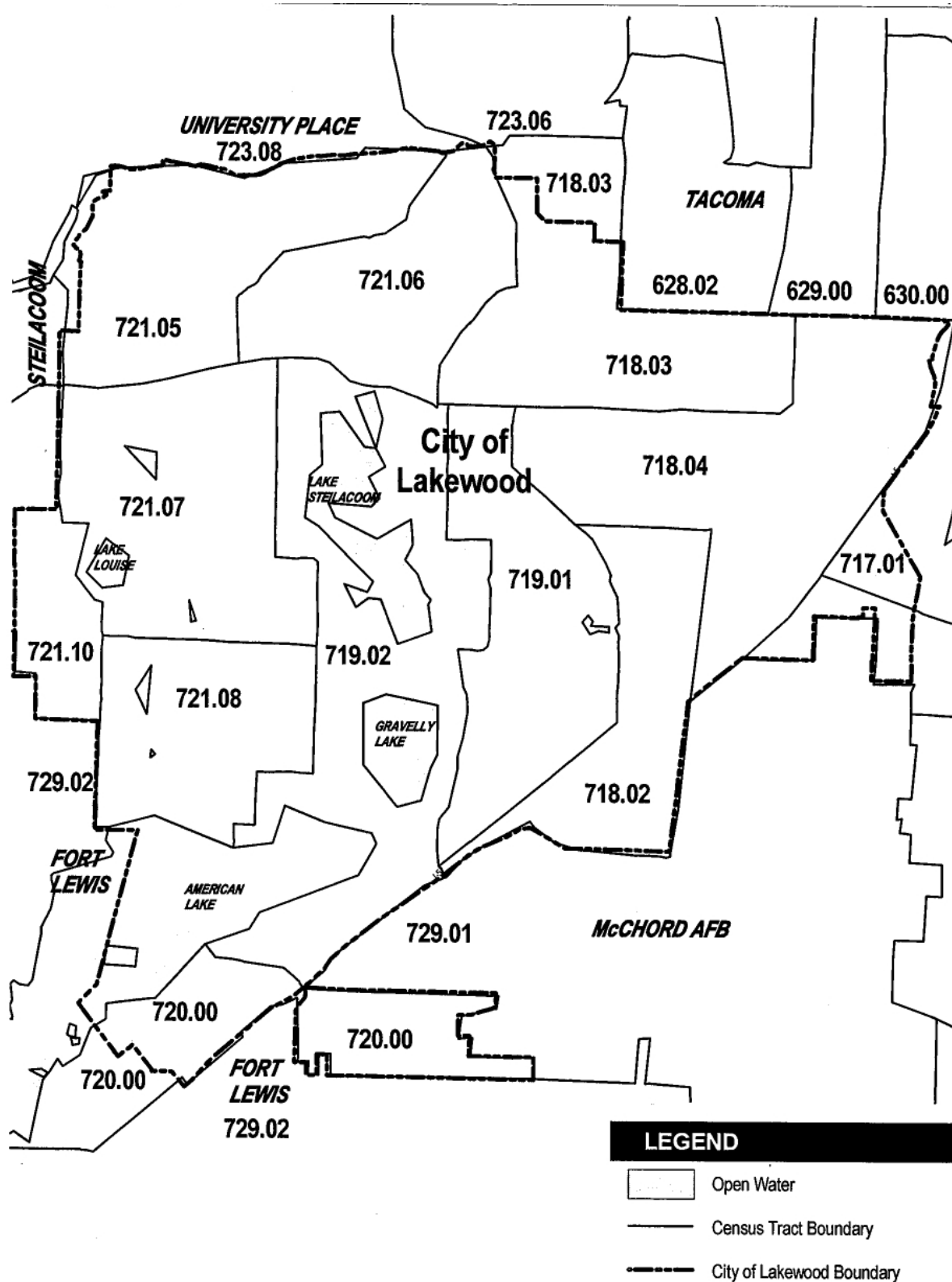
With some notable exceptions, Lakewood's demographic profile is very similar to that of Pierce County and the State of Washington as a whole. Lakewood has, and to some extent is known for, its concentration of wealthy households. However, these are outnumbered by more modest income households. This serves to lower the average household income to levels less than the county and state average, with larger proportions of people in poverty status. Lakewood's socioeconomics vary significantly among the different parts of the city. Wealth tends to concentrate along the lakeshores and in the northwestern parts of the city, with lower income households scattered throughout neighborhoods east of the lakes.

1.2.3 Community History

The City of Lakewood was incorporated on February 28, 1996. The long history of Lakewood dates back to Native American habitation for at least 9,000 years. White settlers arrived in the mid-1800s with the stationing of federal troops at Fort Steilacoom beginning in 1849. Early settlers were farmers, but the town became increasingly residential in the beginning of the 20th century with access provided by an electric trolley system. The name "Lakewood" was the winning entry in a contest held by a local land company in 1909, replacing the name "the Lakes District" as the residential and resort area had formerly been known. The U.S. Army founded Fort Lewis in 1917 and McChord AFB two decades later, adding an enduring military presence to the area. The Lakewood Colonial Center, the first planned shopping center west of the Mississippi, was built in 1937. This served the community's commercial needs until the late 1980s when the Lakewood Mall was built.

Land uses in the City of Lakewood are varied—from lakefront estates, to strip commercial, to industrial, to semi-rural. The western part of the city is almost entirely residential in character, due in part to the attractiveness of its many lakes as well as limited access. By contrast, land uses in the eastern part of the city are dominated by commercial development, although pockets of housing are scattered throughout this part of the city as well. This development pattern has in part been dictated by the many transportation arterials, which run through the eastern part of the city, especially Pacific Highway Southwest, Bridgeport Way, Steilacoom Boulevard, the Burlington Northern Railroad, and more recently I-5. Permissive pre-incorporation land use controls resulted in sprawl and an overabundance of widely distributed commercial activity. The city is generally developed and there are no meaningful amounts of resource lands (such as forestry, agricultural, or mining land uses) remaining in Lakewood.

Lakewood is surrounded on the east and south by two military installations — McChord Air Force Base and the Army's Fort Lewis.



0 2000 4000 6000 8000 10000 Feet

Source: Pierce County GIS / Lakewood Parcel Survey Database / EDAW Inc., 1999.

Figure 1.2-2
1990 Census Tract Boundary Map

Lakewood considers itself the host community for both. Most major entrances into these two large bases are through Lakewood, and many of the military personnel who serve at these bases live and/or shop in Lakewood, along with their families. The presence of these bases has a noticeable impact on Lakewood's demographics and, consequently, land use patterns.

1.3 Relationship of EIS to Other Documents

1.3.1 Comprehensive Plan

This EIS is a companion document to the comprehensive plan (EDAW 2000). The purpose of the EIS is: (1) to analyze environmental impacts associated with the alternatives, (2) to contribute to the final plan by incorporating the findings of this analysis in the form of revisions to the plan's goals and policies, and (3) as well as identify additional mitigation measures for adoption by the city. By design, the comprehensive plan is a focused document, comprised principally of the Future Land Use Plan, the land use designations, and the goals and policies, with a minimum of supporting discussion and documentation. Much of the work that contributed to the development of the plan is documented by this EIS, including most of the underlying details.

1.3.2 Background Report

The background report (EDAW 1997) was developed in preparation for both the comprehensive plan and this EIS. It lays the ground work for both of these documents by identifying existing conditions and trends in detail. Accordingly, the background report serves as a detailed technical appendix to the affected environment section of this EIS, particularly for data related to demographics, land use, housing, transportation, and utilities.

1.3.3 6-Year Capital Improvement Plan

Under the GMA, Lakewood is required to have a 6-year Capital Improvement Plan (CIP), detailing how it has budgeted funds for all major capital spending in support of the comprehensive plan. This is one mechanism for ensuring concurrency between growth and available infrastructure. The comprehensive plan identifies areas of growth, and the EIS identifies shortcomings of existing infrastructure, as well as current or future inability to provide services in support of that anticipated growth. The CIP identifies how the City intends to meet that shortfall.

1.4 Organization of this EIS

Following this Introduction (Chapter 1), this EIS contains the following chapters:

- Chapter 2, which describes the three alternatives analyzed in detail in this EIS (the Preferred Alternative, the No Action Alternative, and the Mixed-Use Alternative).

- Chapter 3, which describes the affected environment, potential impacts, proposed mitigation measures, and any significant environmental impacts associated with implementation of the various alternatives.
- Chapter 4, which includes the references cited in this document.
- Appendix material, including the development capacity analysis and transportation data.

1.5 Public Comment on the Draft EIS

The Draft EIS was issued by the City of Lakewood on January 20, 2000, followed by a 30-day comment period that closed on February 19, 2000. Numerous comment letters were received. As many letters contained similar comments, individual letters were not responded to; instead, these comments were summarized and responded to by issue. All letters, summarized comments, and official responses are included in Appendix C.

2.0 DESCRIPTION OF THE ALTERNATIVES AND SUMMARY OF IMPACTS

Each of the three comprehensive plan alternatives analyzed identifies a unique set of land use designations arranged geographically on the accompanying maps. Each Land Use Map controls the geographic distribution of growth and change within the city, identifying the size and location of residential areas, industrial and employment centers, commercial lands, and other uses through the land use designations. The land use designations control the relative densities and intensities of development as well as the permitted generalized land uses within these areas. Analyzed in conjunction with the existing baseline conditions, these alternatives represent Lakewood's approach to accommodating future growth as required by GMA.

2.1 Preferred Alternative

2.1.1 Summary: Preferred Alternative

The Preferred Alternative is the City Council's adoption and implementation of a comprehensive plan (EDAW 2000) that would focus growth in an urban center encompassing the Bridgeport Avenue corridor, Lakewood's central spine. An enlarged central business district (CBD) at the north end of this urban center would include the Lakewood Mall and the Colonial Center. These would synergistically form the community's commercial, civic, and cultural nucleus. Substantial redevelopment of this area including new streets, development of a new City Hall, and significant changes to the Mall itself and its immediate surroundings are part of the plan.

At the southeastern end of this spine, a new district would be catalyzed around a proposed commuter rail station. Development would consist of the commuter rail station itself, medical-related activity around St. Clare Hospital, and new office and commercial development along Pacific Highway Southwest. In between, blocks of new multi-unit housing would be built east of St. Clare Hospital, along with new trails and open space. New office/light industrial development is intended to cross 1-5 into Springbrook along the 47th Street corridor. High quality pedestrian improvements would be achieved in accordance within a defined Lakewood Station district.

A substantial portion of the American Lake Gardens neighborhood, currently an older residential neighborhood with a substantial amount of substandard housing, would be redesignated as Industrial. Although isolated, it has excellent freeway access and large level parcels of land suitable for industrial use. One intention of this Industrial designation is to create suitable land values to allow the extension of sewers to Tillicum and American Lake Gardens. Extension of sewers to Tillicum would permit the intensification of residential land uses in that neighborhood.

The Springbrook neighborhood would also have extensive redesignation of existing residential land to industrial. The intent is to position this land for

redevelopment in light industrial or business park uses, partially driven by proximity to the Sound Transit commuter rail station.

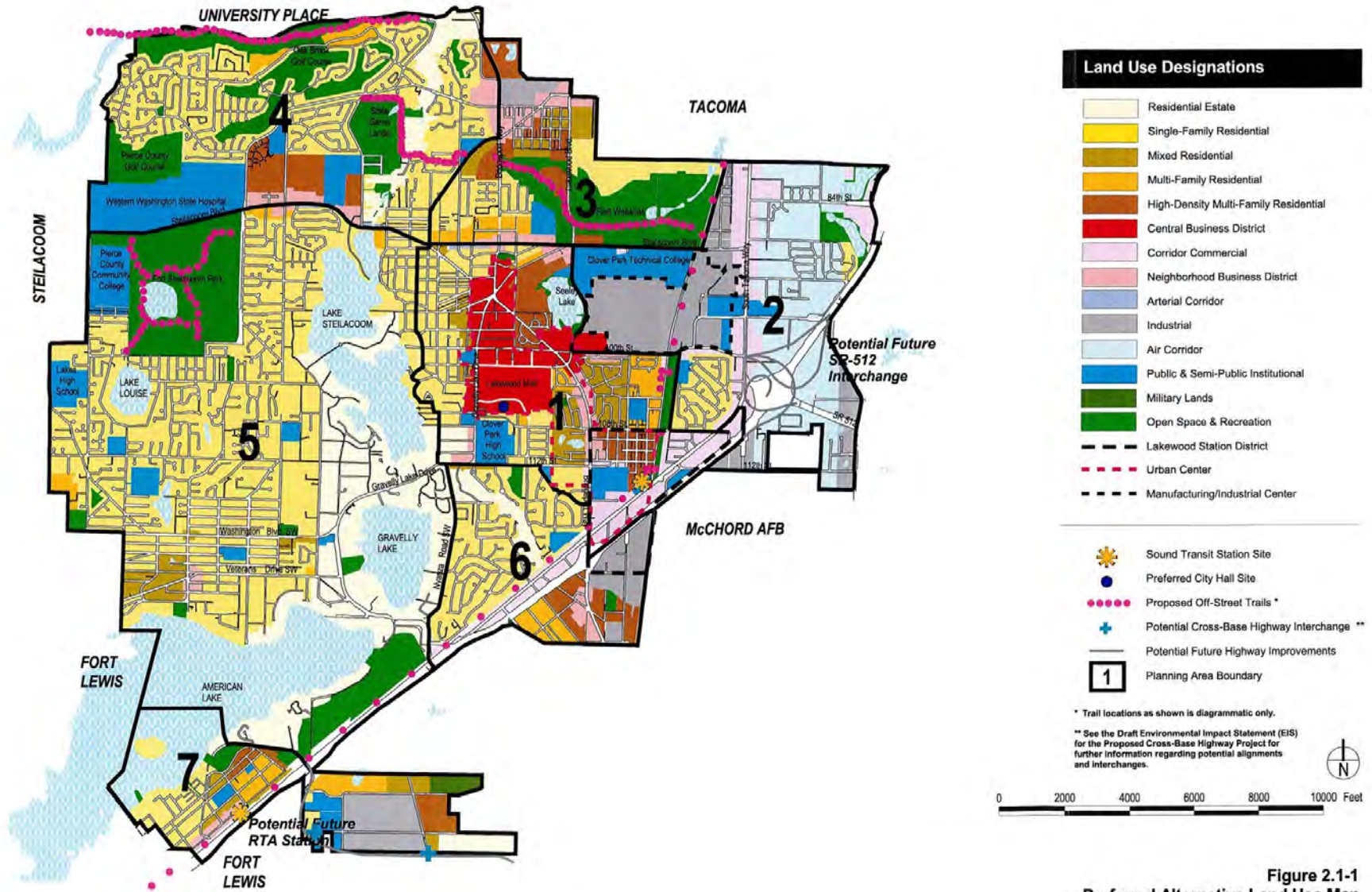
This alternative would also add to the supply of parks and open space to attract and mitigate for increased density. Land use designations restricting development to larger lots would protect habitat along stream corridors and lakeshores.

The Preferred Alternative envisions a more distinct land use pattern than either of the other two alternatives and, while still allowing for substantial growth, would accommodate less residential growth than the other alternatives. The Preferred Alternative is mapped on Figure 2.1-1.

2.1.2 Special Features: Preferred Alternative

A plan of this size and complexity, expected to guide growth over a 20-year period, obviously has considerable detail. Some of the special features of this alternative are identified below.

- A regional urban center that includes the entire CBD, adjacent higher density housing, and the Lakewood Mall and Colonial Center.
- Intensification of a more urban mix of uses around the Mall and Colonial Center, including a new City Hall, urban design improvements, and potentially the creation of new city ROWs.
- A Lakewood Station district with a new high quality pedestrian environment, moderate to high density housing, expanded medical campus and office employment, and expanded trails and open space.
- Increased residential density in Tillicum facilitated by new sewer service, public lake access, and services.
- A new industrial area encompassing most of American Lake Gardens, based on the excellent regional transportation access, land suitability, and need for redevelopment.
- A new industrial area encompassing a large portion of Springbrook, capitalizing on the excellent regional transportation access and lack of existing development.
- Numerous clusters of high density residential development supported by improved open space, services, and other amenities.



- Moderate residential growth, with a projected capacity for 17,500 new residents in 2017.
- Improved bicycle and pedestrian facilities on arterials and local streets.
- A new land use designation along substantial portions of lake and streamfront property to stabilize established single-family neighborhoods by limiting subdivision opportunities, and to protect riparian habitat and water quality of the lakes and streams.
- An improved streetscape and urban design environment, with the focus of commercial development along Pacific Highway Southwest, especially in the Lakewood Station district.
- Improved streetscapes and city gateways within the CBD, along Bridgeport Way, and at other entries to the city.
- Reconstruction of the I-5/State Route (SR)-512 interchange to increase freeway access and connect 100th Street directly to the freeway.
- Support for construction of the Cross-Base Highway.
- Undergrounding of electrical utilities along key arterials leading to the city center.

2.2 No Action Alternative

2.2.1 Summary: No Action Alternative

Until a new comprehensive plan is adopted, the existing plan will remain in effect. This plan is the interim comprehensive plan (City of Lakewood 1996) as adopted upon incorporation. The interim comprehensive plan is largely based on the pre-existing policies and zoning regulations developed by Pierce County. This plan serves as the No Action Alternative by virtue of the fact that it has already been adopted by the City Council (although it lacks certain aspects of GMA comprehensive plans such as growth targets or a Future Land Use Map). The interim comprehensive plan, along with some specific temporary land use restrictions, has been guiding land use planning in the city since incorporation in compliance with GMA requirements. For the purposes of this SEPA analysis, the No Action Alternative is defined as the interim comprehensive plan without these temporary restrictions, notably the large lot overlay districts identified for the areas west of the Lakes. The No Action Alternative Land Use Map, as shown in Figure 2.2-1, is based on the zoning map adopted by the interim comprehensive plan.

The No Action Alternative would perpetuate existing land use patterns throughout Lakewood. Rather than concentrate growth, residential population would be distributed throughout the city, typically at low or moderate densities. Relatively small clusters of high density residential would be included in locations currently dominated by apartment style development. Commercial development would be co-mingled with other uses in strips of land zoned Mixed-Use District along Pacific Highway Southwest and other

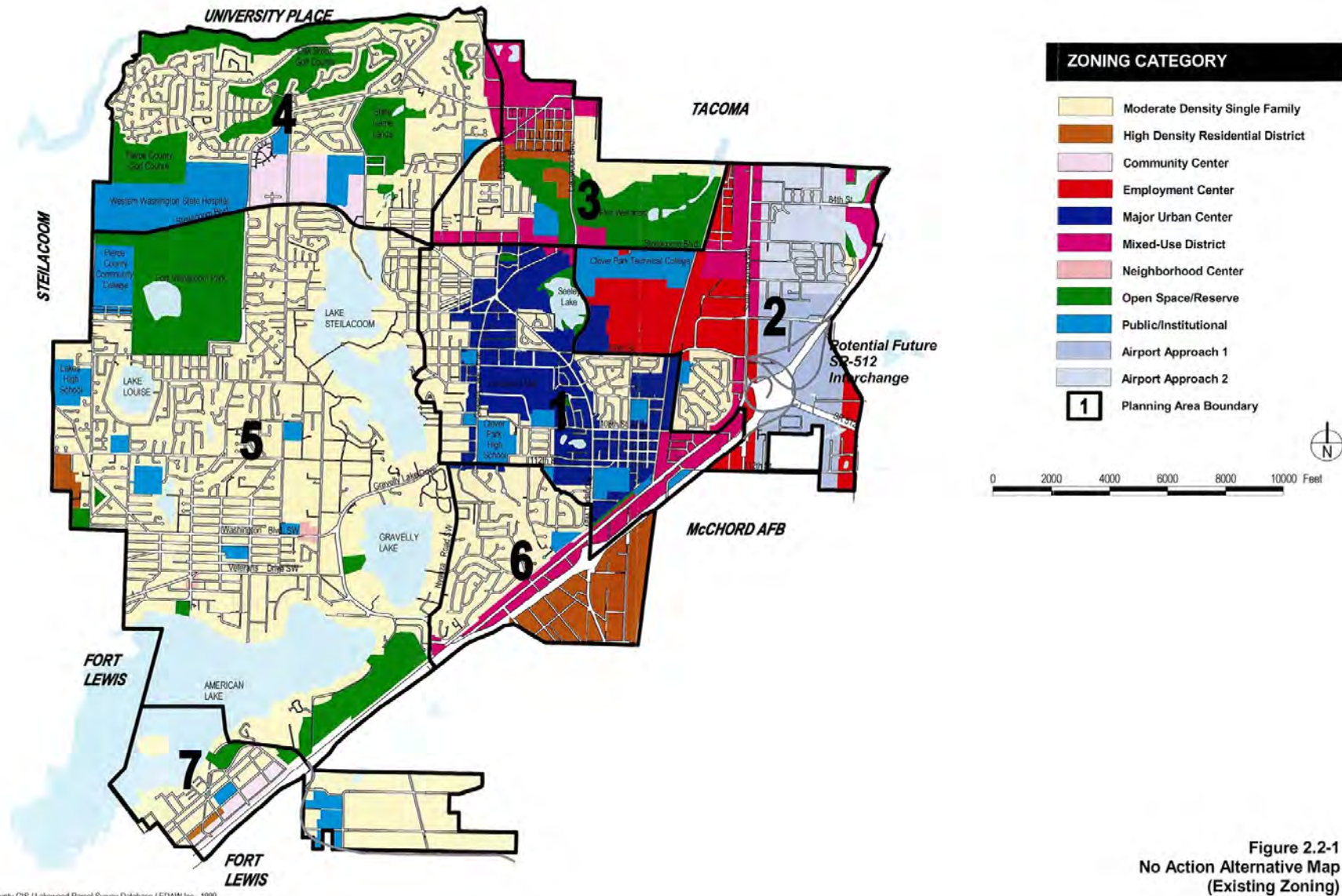
major corridors. Since these mixed-use designations offer few restrictions to most uses and permit market forces free reign, a broad range of land uses is possible under this alternative.

The organizational concept underlying this alternative is based on the existing land use pattern, which distributes growth of different land uses throughout the city. The western half of the city would primarily remain moderate density residential but would gain a significant number of households due to infill construction and subdivision of existing large lots. The sprawling mix of commercial, industrial, and residential uses would continue to dominate eastern Lakewood. The capacity for population growth under this alternative would greatly exceed anticipated population growth.

2.2.2 Special Features: No Action Alternative

Some of the distinctive features of the interim comprehensive plan are identified below.

- Continued sprawl, resulting in distributed growth throughout the city.
- The highest projected capacity for population growth of the three alternatives (increase of nearly 32,000 people).
- Significant residential growth in west Lakewood, with a substantial change of residential character in some areas.
- Limited employment growth, with little or no development of attractive office or business park type activities.
- High density growth in the Springbrook neighborhood.
- No additional park or open space development.
- Mixed-use rather than exclusive land use designations would predominate.
- Support for construction of the Cross-Base Highway.



2.3 Mixed-Use Alternative

2.3.1 Summary: Mixed-Use Alternative

The strategy and direction for the city's growth established by the Mixed-Use Alternative would shift population growth from the western half of the city to the central commercial area and the eastern half of the city.

The blend of land use designations identified by this alternative is less specific than that found in the Preferred Alternative. There are more designations that allow for a mix of residential, commercial, and other uses to be developed side by side. This alternative thus allows for a less pre-determined, more market-based evolution of land use patterns.

While the Mixed-Use Alternative identifies organizational principles and a Future Land Use Map, corresponding goals and policies have not been developed, as is the case for the Preferred Alternative and No Action Alternative. SEPA analysis is based on general land use patterns and densities identified by land use designation.

As the name indicates, this alternative retains much of the mixed-use land use patterns currently found in Lakewood. Nevertheless, residential densities are expected to increase significantly under this alternative. Job growth would also increase in mixed-use areas. The nucleus of this growth would occur around Lakewood Station, which would be converted into an urban core of low-rise apartment blocks and offices. Substantial residential and commercial growth would also be directed to areas surrounding Lakewood Mall, the Colonial Center, Custer, Ponders Corner, the Pacific Highway Southwest corridor, and other areas in northeast Lakewood. The character of much of this growth would be dictated by market factors due to the extensive reliance on mixed-use land use designations. The resulting land use patterns are therefore somewhat unpredictable. Although the patterns of change are similar to the Preferred Alternative, there are spatial differences in the location as well as the identity of land use designations. This alternative includes redevelopment of the Lakeview neighborhood for higher density residential use and retains residential (rather than industrial) uses in American Lake Gardens and most of Springbrook. The Mixed-Use Alternative is mapped on Figure 2.3-1.

2.3.2 Special Features: Mixed-Use Alternative

Special features of the Mixed-Use Alternative are as follows:

- An urban center clustered around Lakewood Station with new high density employment and housing.
- Capacity for population growth at a level between those of the No Action Alternative and the Preferred Alternative, with capacity for an additional 30,204 residents.

- Increased residential density in the Lakeview neighborhood.
- Numerous large, mixed-use designations, each with differing relative concentrations of housing and commercial uses.
- Land use protections (overlay zones) along the western shores of lakes to limit residential growth in established single-family neighborhoods.
- Increased residential density in Tillicum and American Lake Gardens facilitated by new sewer service to both neighborhoods.
- Improved streetscape design and focused commercial development, as well as potential for considerable residential development along Pacific Highway Southwest.
- Improved streetscapes and gateways within the urban center area and along Bridgeport Way.
- Reconstruction of the I-5/SR-512 interchange to increase freeway access and connect 100th Street directly to the freeway.
- Improved bicycle and pedestrian facilities on arterials and local streets.
- Support for construction of the Cross-Base Highway.
- Undergrounding of electrical utilities along key arterials leading to the city center.
- Urban design enhancements and improvements to the quality of development within the urban center and along entryways to the city.

2.4 Summary Description of the Alternatives

A summary description identifying the principal features of each alternative is provided in Table 2.4-1. This table highlights similarities and differences among the alternatives.

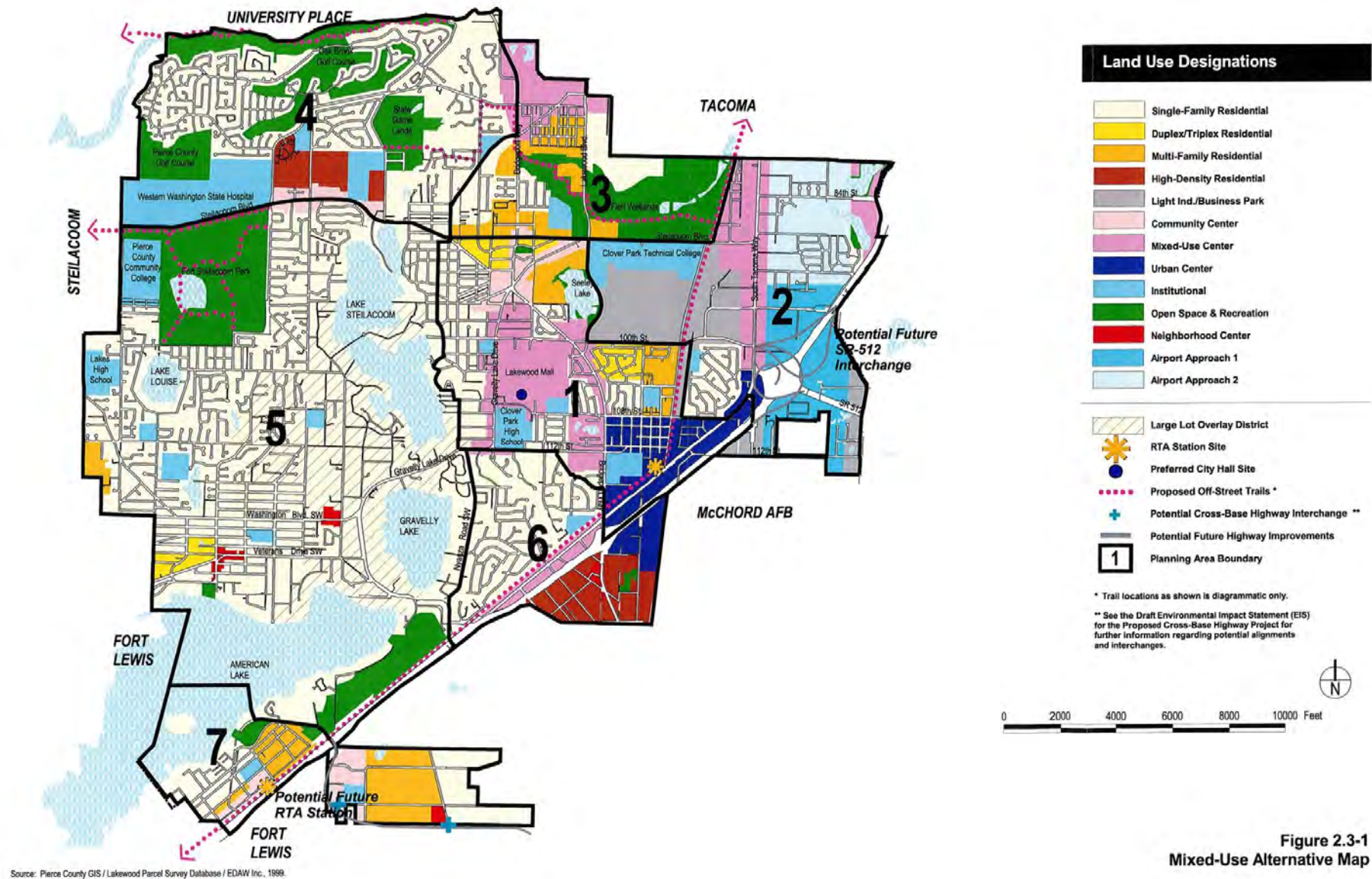


Table 2.4-1: Summary Description of the Alternatives.

Defining Features	Preferred Alternative	Mixed-Use Alternative	No Action Alternative
Projected Population	17,500 New Residents	30,204 Residents	31,853 Residents
Growth Capacity			
Projected Employment	12,275 New Jobs	11,237 Jobs	9,982 Jobs
Growth Capacity			
General Concept	Growth directed to urban center and several other urban neighborhoods in east Lakewood. More public services exist. Development in west Lakewood minimized. Moderate residential growth. Aggressive employment growth. Creation of additional parks and open space mitigates increased population density.	Growth directed to east Lakewood, particularly to the Pacific Highway SW corridor and commuter rail station vicinity. Aggressive residential growth. Development in west Lakewood minimized. Very aggressive employment growth. Clusters and corridors of mixed commercial and residential uses. Some new park and open space development.	Aggressive residential growth. Clusters of mixed commercial and residential uses. Land use decisions rely on market forces rather than policy guidance.
Key Features	Development of transportation-oriented Lakewood Station district. Redeveloped CBD along Bridgeport Way becomes a more urban downtown. Conversion to industrial uses in American Lake Gardens and Springbrook. Public investment focused on highest growth areas. Riparian protections identified through land use. Urban design measures incorporated as mitigation for increased density.	High intensity mixed-use regional center at Lakewood Station. Increased residential density in Tillicum and American Lake Gardens facilitated by new sewers. Intensive mixed-use development along Pacific Highway SW.	Extensive mixed-use rather than exclusive use land use designations. Significant residential growth through subdivision of large lots in west Lakewood. Continued sprawl; growth distributed throughout Lakewood. Lakewood Station-related development would be accommodated through existing mixed-use zoning provisions.

2.5 Alternatives Considered but Eliminated Prior to Full SEPA Analysis

A range of distinct development scenarios was developed for public consideration early in the planning process. Each of the scenarios was presented for public input as part of the alternatives development process. These eventually led to development of the Mixed-Use Alternative and ultimately to the Preferred Alternative. The preliminary alternatives are not subject to SEPA analysis because the alternatives being analyzed encompass a sufficiently broad range to satisfy SEPA requirements.

A summary of these preliminary conceptual alternatives is provided here to illustrate the depth of exploration that went into development of the SEPA alternatives. Each preliminary alternative proposed differing amounts of change, but all supported utility improvements; protection of most existing single-family neighborhoods; and intensification of land use in Tillicum, Springbrook, and American Lake Gardens. The four preliminary alternatives are summarized below.

2.5.1 Neighborhood Improvement

This preliminary alternative proposed the most modest level of growth and the maximum protection of the character of existing single-family neighborhoods. Significant recommendations included reinforcement of neighborhood centers, distribution of capital improvements throughout Lakewood, and better linkages and streetscape improvements, particularly for pedestrians.

2.5.2 Traditional Lakewood

This preliminary alternative most resembles the Mixed-Use Alternative. This alternative emphasized the Colonial Center as the city center, focusing housing, commercial development, and a new City Hall there. Development was also recommended for the Lakewood Mall and commuter rail station. Capital improvements would have been centered in the urban center area.

2.5.3 Highway 99 Corridor Revitalization

This preliminary alternative promoted redevelopment of the Highway 99 corridor by increasing the range of permitted uses, directing substantial development including housing to this corridor, and creating a distinctive design and streetscape.

2.5.4 Regional Employment Center

The organizing principle of this alternative was the creation of 13,000 new jobs, targeting northeast Lakewood for commercial development in particular. Land use changes would target regional land development markets and promote mixed-use development, especially that permitting residential uses around the Lakewood Mall. The focus was on economic growth over residential growth. This alternative proved unfeasible due to development limitations as the result of safety restrictions related to McChord AFB.

2.6 Summary of Impacts

Table 2.6-1 briefly summarizes the environmental impacts identified for each alternative, along with mitigation measures and significant unavoidable adverse impacts. Detailed analyses of impacts and related mitigation measures are provided in Chapter 3.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Resource Lands and Critical Areas				
<ul style="list-style-type: none">General impacts — Potential for • localized increase in surface water runoff and storm discharge, decrease in surface water quality, infiltration and contamination of groundwater, and some reduction in fish and wildlife habitat due to ongoing development.Increased protection of riparian zones.Increased Springbrook development could impact two wells there.Potential effects to existing habitat from industrial development in American Lake Gardens.Water quality improvements due to sewerage Planning Area 7.	<ul style="list-style-type: none">Similar general impacts as Preferred Alternative, but more pronounced due to increased level of development and less specific land use pattern.Decreased forest cover and wildlife habitat in western Lakewood.Potential non-point pollution to adjacent streams and shorelines.	<ul style="list-style-type: none">Similar general impacts as Preferred Alternative, but more pronounced due to increased level of development.Increased Springbrook development could impact two wells there.Higher chance of runoff impacts to stream channels.Clustered development and pavement would indirectly affect water quality.	<ul style="list-style-type: none">Update the Site Development Regulations and the Zoning and Land Use Code to comply with comprehensive plan.Further define & develop Critical Area Regulations and Sensitive Areas Ordinance to protect environmentally sensitive resources. Supplement city's GIS system w/ critical area maps.Add new water quality policies to the comprehensive plan.Implement regional water quality plans in support of salmon recovery efforts.Add environmental professionals to City staff.	<ul style="list-style-type: none">Loss of some wildlife habitat and vegetation.Increase of impervious surface area
Land Use				
<ul style="list-style-type: none">Projected growth capacity of 17,500 new residents, mostly housed in high density neighborhoods and single-family infill housing.Accommodation of 12,275 new jobs.Curtailed sprawl through organized land use patterns and redevelopment, and development of a high-density urban center.Portions of American Lake Gardens converted to industrial park, eliminating existing mixed-use and single-family residences.Goals and policies reflect new land uses.Portions of Springbrook converted to industrial park eliminating existing residential uses.	<ul style="list-style-type: none">Projected growth capacity of 31,853 new residents and 12,844 new households.Employment growth estimated at 9,982 new jobs.Widely distributed growth throughout the city. Residential infill in large undeveloped lots around lakes and streams in American Lake Gardens and west Lakewood.Continued commercial strip development on Pacific Hwy SW.Goals and policies controlled by existing zoning.Continued sprawl development through use of poorly defined mixed-use zoning.	<ul style="list-style-type: none">Projected growth capacity of 30,204 new residents.Employment growth estimated at 11,123 new jobs.Large lot overlay would restrict new development to preserve low density residential character.Urban Center designation to focus urban development between 1-5 and Pacific Highway SW.Mixed-Use Center designation to collocate complementary uses such as housing, services, and jobs.Continuation of extensive use of mixed-use designations.	<ul style="list-style-type: none">Street grid completed in the Lakewood Station District as well as better connections across RR tracks, Pacific Highway SW, and 1-5.If portions of American Lake Gardens are developed as an industrial park, careful planning for residential relocation and buffers for remaining residents.Sub-area plans prepared for individual neighborhoods experiencing substantial growth or change (e.g., CBD, Lakewood Station, Tillicum, American Lake Gardens, Custer, and Springbrook).	<ul style="list-style-type: none">None of the alternatives would produce adverse environmental impacts that cannot be mitigated.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Plans and Policies				
<ul style="list-style-type: none">No impacts identified.	<ul style="list-style-type: none">Interim comprehensive plan identifies no growth targets.Extensive use of general mixed-use zoning does not comply with county-wide policy on focused growth management.	<ul style="list-style-type: none">Lacks specific policy language so not possible to completely analyze.Seeks to reduce sprawl by focusing growth.	<ul style="list-style-type: none">Pierce County Ordinance #97-59 will need to be amended to reflect the revised comprehensive planning growth target of 17,000 additional residents.Development regulations to identify building standards to buffer airplane noise.	<ul style="list-style-type: none">In relation to other plans, policies, and ordinances, no unavoidable adverse impacts would result from any of the alternatives..
Parks, Recreation, and Open Space				
<ul style="list-style-type: none">Implementing land use goals would improve Lakewood's open space and recreation inventory (e.g., Burlington Northern RR track partially converted to park; new open space in Springbrook; Flett/Chambers creek shoreline designated open space; urban design treatments; creation of an off street trail; and new park in NE Lakewood).	<ul style="list-style-type: none">Inadequate land designated for recreation and open space.Public access to remaining natural areas extremely limited.	<ul style="list-style-type: none">Increased amount of open space and recreation facilities, but less than the Preferred Alternative.Creation of an off-street trail.Open space deficiencies in parts of the city.	<ul style="list-style-type: none">New bond initiative or other funding sources to fund park acquisition, maintenance, and improvement. Recreation improvements should target areas of population growth.Increased public access to existing shorelines. Developer incentives for semi-public open space creation.	<ul style="list-style-type: none">Increased growth would exacerbate existing open space and recreation deficiencies, especially in light of recent open space bond initiative failures.
Housing				
<ul style="list-style-type: none">Capacity provided for 7,107 new dwelling units (the fewest of the alternatives).Restricted housing development (especially mixed-use).Removal of some of housing in American Lake Gardens (potential displacement of 572 existing residences) and Springbrook (potential displacement of 298 existing residences).Lack of monitoring plan, as required by GMA.Supply of affordable housing likely to decrease significantly by 2017.	<ul style="list-style-type: none">Capacity provided for 12,844 new dwelling units.Greatest ability to respond to overall regional population pressure, while maintaining a supply of affordable housing.	<ul style="list-style-type: none">Capacity provided for 12,179 new dwelling units.Sewer upgrades in Tillicum and American Lake Gardens.	<ul style="list-style-type: none">Housing policies should be expanded to further support development and redevelopment of affordable housing for low and moderate income households.Implement monitoring program to accurately track housing needs.Housing policies and programs regarding relocation assistance should be strengthened in light of American Lake Gardens and Springbrook.Continue to identify and meet "fair share" housing goals.	<ul style="list-style-type: none">For Preferred Alternative —Loss of 870 dwelling units in American Lake Gardens and Springbrook.No Action Alternative—Gradual but significant transformation of character of neighborhoods surrounding the lakes.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Transportation				
<ul style="list-style-type: none">Growth would contribute to increased traffic and congestion.Without the proposed I-5/SR-512 interchange project, 9 intersections to operate at LOS E or F at p.m. peak hour in 2017; 12 intersections to operate at LOS D (V/C ratio of 0.73)With the proposed I-5/SR-512 interchange project, 6 intersections to operate at LOS E or F at p.m. peak hour in 2017; 14 intersections to operate at LOS D (V/C ratio of 0.72).	<ul style="list-style-type: none">Growth would contribute to increased traffic and congestion.12 intersections to operate at LOS E or F at p.m. peak hour in 2017; 10 intersections to operate at LOS D (VIC ratio of 0.74).Access to west Lakewood deteriorate, due to dramatic growth and physical constraints to road widening.	<ul style="list-style-type: none">Without the proposed I-5/SR-512 interchange project, 8 intersections to operate at LOS E or F at p.m. peak hour in 2017; 13 intersections to operate at LOS D (V/C ratio of 0.72)With the proposed I-5/SR-512 interchange project, 9 intersections to operate at LOS E or F at p.m. peak hour in 2017; 11 intersections to operate at LOS D (V/C ratio of 0.73).	<ul style="list-style-type: none">Multiple roadway improvement projects are recommended or scheduled.Recommended grade separation over the BNSF RR tracks on 100w St. SW. HOV Direct Access ramp project at the I-5/SR-512 interchange.Work with Pierce Transit and local employers to plan and implement a local mini-bus circulatory system between park & ride, commuter rail station, major office centers, the Mall, and other high density developments.Multiple sidewalk and bicycle lane improvements.Implement Transportation Demand Management and Transportation Systems Management strategies.	<ul style="list-style-type: none">There will be increased traffic on city arterials in 2017 as a result of anticipated growth and development. Traffic congestion on city arterials will increase by 23% to 26% by 2017 depending on which of the three alternatives is implemented.
Aesthetics/Views				
<ul style="list-style-type: none">Visual quality and quality of designed environment expected to improve over life of the comprehensive plan due to urban design measures.Visual character of portions of American Lake Gardens and Springbrook would change from residential to industrial.	<ul style="list-style-type: none">Loss of forested character of remaining coniferous forest areas.	<ul style="list-style-type: none">Large Lot Overlay district would protect community character in west Lakewood.	<ul style="list-style-type: none">Identify sensitive views, view corridors, and visual resources, and develop a program to protect these resources (especially views of Mt. Rainier and several of the lakes).	<ul style="list-style-type: none">Transformation of neighborhood character in portions of American Lake Gardens and Springbrook to industrial.Loss of specific public and private views as city develops
Public Services, Utilities and Capital Facilities				
<ul style="list-style-type: none">Police — Crime Prevention through Env. Design would increase crime resistance; managed growth will enable the Police Dept. to use its resources more efficiently; need for an additional 50 officers to provide officer to citizen ratio of 1.6:1,000; secondary impacts of increased traffic might reduce response times.	<ul style="list-style-type: none">Police - Need for an additional 151 officers to provide officer to citizen ratio of 1.6:1,000; secondary impacts of increased traffic might reduce response times.Fire — Need for additional fire fighting resources. Secondary impacts of increased traffic might reduce response times.	<ul style="list-style-type: none">Police - Need for an additional 72 officers to provide officer to citizen ratio of 1.6:1,000; secondary impacts of increased traffic might reduce response times. •Fire — Need for additional fire fighting resources, especially in American Lake Gardens. Secondary impacts of increased traffic might reduce response times.	<ul style="list-style-type: none">Increase police force as population grows to maintain officer to citizen ratio and continue crime prevention programs.Construct new fire stations to serve underserved high growth areas.	<ul style="list-style-type: none">Increased demands with population growth on all public services and utilities. Funding issues for mitigation are expected to be especially problematic with schools and parks. Areas with greatest growth and least existing services (e.g., Springbrook) most problematic.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Preferred Alternative	Impacts		Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
	No Action Alternative	Mixed Use Alternative		
<ul style="list-style-type: none"> • Fire — Conversion of portions of American Lake Gardens and Springbrook would change nature of Station #2-3, which may require additional equipment and training; secondary impacts of increased traffic might reduce response times. • Schools — Proportional increase in student enrollment (1,567 elementary, 850 middle, and 717 high school students). Tyee Park, Carter Lake, Lakeview, Tillicum, and Dower schools most affected. • Stormwater — Facility improvements required in Springbrook, Lakewood Station, NE Lakewood, and American Lake Gardens due to increased impervious surface (e.g., \$4 million of retention facilities in American Lake Gardens). • Sanitary Sewers- Individual basins may require improvements as development occurs. Installation of sewer system in Tillicum and American Lake Gardens (\$12 to \$14 million). • Water, Electricity, Telecommunications, Solid Waste, Natural Gas — Utility providers can accommodate planned growth. 	<ul style="list-style-type: none"> • Schools - Proportional increase in student enrollment, especially in W portion of city. Most affected schools would be Lake City, Lake Louise, Idelwild, Custer, Dower, and Mann. • Stormwater — Stormwater management concerns, especially in Springbrook and NE Lakewood, as well as related facility improvements. Greater impacts than the Preferred Alternative (however, no such impacts to American Lake Gardens). • Sanitary Sewers- Individual basins may require improvements as development occurs. • Water, Electricity, Telecommunications, Solid Waste, Natural Gas — Utility providers can accommodate planned growth. 	<ul style="list-style-type: none"> • Schools - Proportional increase in student enrollment, especially in central part of city. Most affected schools would be Tyee Park, Carter Lake, Tillicum, and Lakeview. • Stormwater— Land use changes would result in impacts to the Springbrook and American Lake Gardens areas, as well as the NE portion of the city. Additional retention facilities required. • Sanitary Sewers- Individual basins may require improvements as development occurs. • Water, Electricity, Telecommunications, Solid Waste, Natural Gas — Utility providers can accommodate planned growth. 	<ul style="list-style-type: none"> • Coordinate planning efforts with the Clover Park School District, and work with individual schools affected by changes in surrounding land uses. • Conduct lake management studies to determine pollutant sources. Ongoing water quality monitoring program for all public drainage systems that discharge to streams or lakes. Develop community education program for water quality. • Implement a State-approved Comprehensive Stormwater/Water Quality Management Program. • Provide sewer service to American Lake Gardens and Tillicum. • Identify and develop additional stormwater retention facilities in Springbrook, Lakewood Station, NE Lakewood, and American Lake Gardens as development Occurs. 	

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Air Quality				
<ul style="list-style-type: none">• Air quality could be affected by increasingly dense space heating.• Potential to emit would be proportional to 17,000-person increase in population.• New industrial facilities in American Lake Gardens and Springbrook could generate air pollution.• Traffic-related air quality impacts would be very similar among the three alternatives (for peak p.m. hour delays on arterials). Air quality could be degraded at affected locations.	<ul style="list-style-type: none">• Air quality could be affected by increasingly dense space heating and increased traffic.• Potential to emit would be proportional to 32,000-person increase in population.• New industrial facilities in American Lake Gardens could generate air pollution.• Traffic-related air quality impacts would be very similar among the three alternatives (for peak p.m. hour delays on arterials). Air quality could be degraded at affected locations.	<ul style="list-style-type: none">• Increased light industrial activity in the eastern employment center could change air quality depending on the nature of the industry.• Traffic-related air quality impacts would be very similar among the three alternatives (for peak p.m. hour delays on arterials). Air quality could be degraded at affected locations.	<ul style="list-style-type: none">• Transportation system improvements that decrease idling vehicles and congestion would protect air quality.• Restrictions on wood-burning stoves and incentives for energy efficiency would reduce emissions.	<ul style="list-style-type: none">• While localized air quality impacts could occur related to growth, no significant unavoidable effects to regional air quality are anticipated.

3.0

ELEMENTS OF THE ENVIRONMENT

This section is comprised of descriptions and analyses of each applicable element of the environment. These include: resource lands and critical areas; land use; plans and policies; parks, recreation, and open space and critical areas; housing; transportation; aesthetics; utilities; and air quality. Specific sections of this chapter address each of these elements. Each section contains a discussion of the affected environment, environmental impacts, proposed mitigating measures, and significant unavoidable adverse impacts (if any).

3.1 Resource Lands and Critical Areas

3.1.1 Affected Environment

Under the GMA, Lakewood is required to review its critical area regulations when adopting its comprehensive plan. The primary purpose of this subsection is to evaluate consistency between existing goals and objectives governing critical areas and each of the three alternatives under consideration. An additional function is to compare the impact of each alternative on resource lands.⁴

Critical areas in the City of Lakewood include wetlands, aquifer recharge areas, fish and wildlife habitat, flood-prone areas, geologically hazardous areas, shorelines, creeks, streams, and lakes. Each of these is described in the comprehensive plan background report (EDAW 1997) and in the Environment and Critical Areas sections of the interim comprehensive plan (City of Lakewood 1996). Wetlands, flood-prone areas, lakes, shorelines, and streams are shown graphically on Figure 3.1-1.

Resource Lands

There are no remaining economically functioning resource lands in the City of Lakewood. Although Pierce County's tax assessor database⁵ contains land use classifications for mineral extraction and agriculture, the actual parcels are either unused or being used for another purpose.

There are no commercial stands of timber in Lakewood. The largest contiguous parcel of forest lands in the city stretches along the northern border of Lakewood on the steep slopes adjacent to Chambers Creek. Remnants of forest cover are clustered at South Tacoma State Game Refuge, Seeley Lake Park, and Fort Steilacoom Park. Significant concentrations of forest cover are found scattered throughout the large lot residential areas west of Gravelly and Steilacoom lakes and east of Lake Louise, but these forest lands are potentially vulnerable to future residential development. Timber cover is mapped on Figure 3.1-2.

⁴ As defined by the Environment and Critical Areas Element of the interim comprehensive plan, "*Resource Lands* means those lands suitable for agriculture, forest or mineral extraction and protected by resource land regulations."

⁵ Parcel-level data used for SEPA analysis.

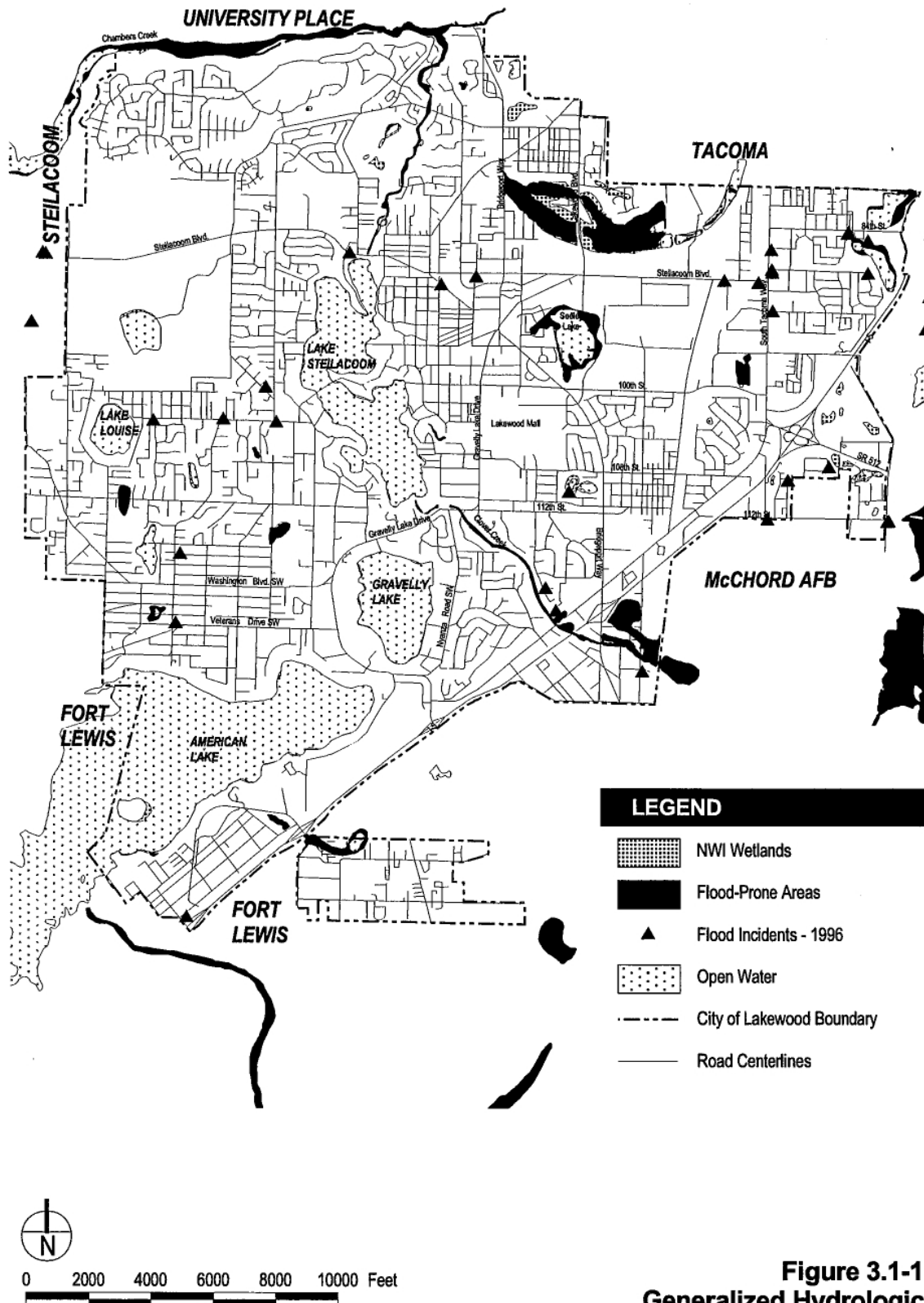


Figure 3.1-1
Generalized Hydrologic
Features Map

Wetlands

Lakewood has an estimated 155.3 acres of wetlands in addition to 955 acres of lakes (City of Lakewood 1996). The largest non-lacustrine wetland is the 106-acre Flett Creek floodplain in northeast Lakewood. The second largest wetland is the 37-acre Crawford Marsh comprising much of Seeley Lake Park. Both contain peatbogs and waterfowl and animal habitat. Other wetlands are scattered throughout Lakewood on both public and private property along stream corridors and in isolated depressions.

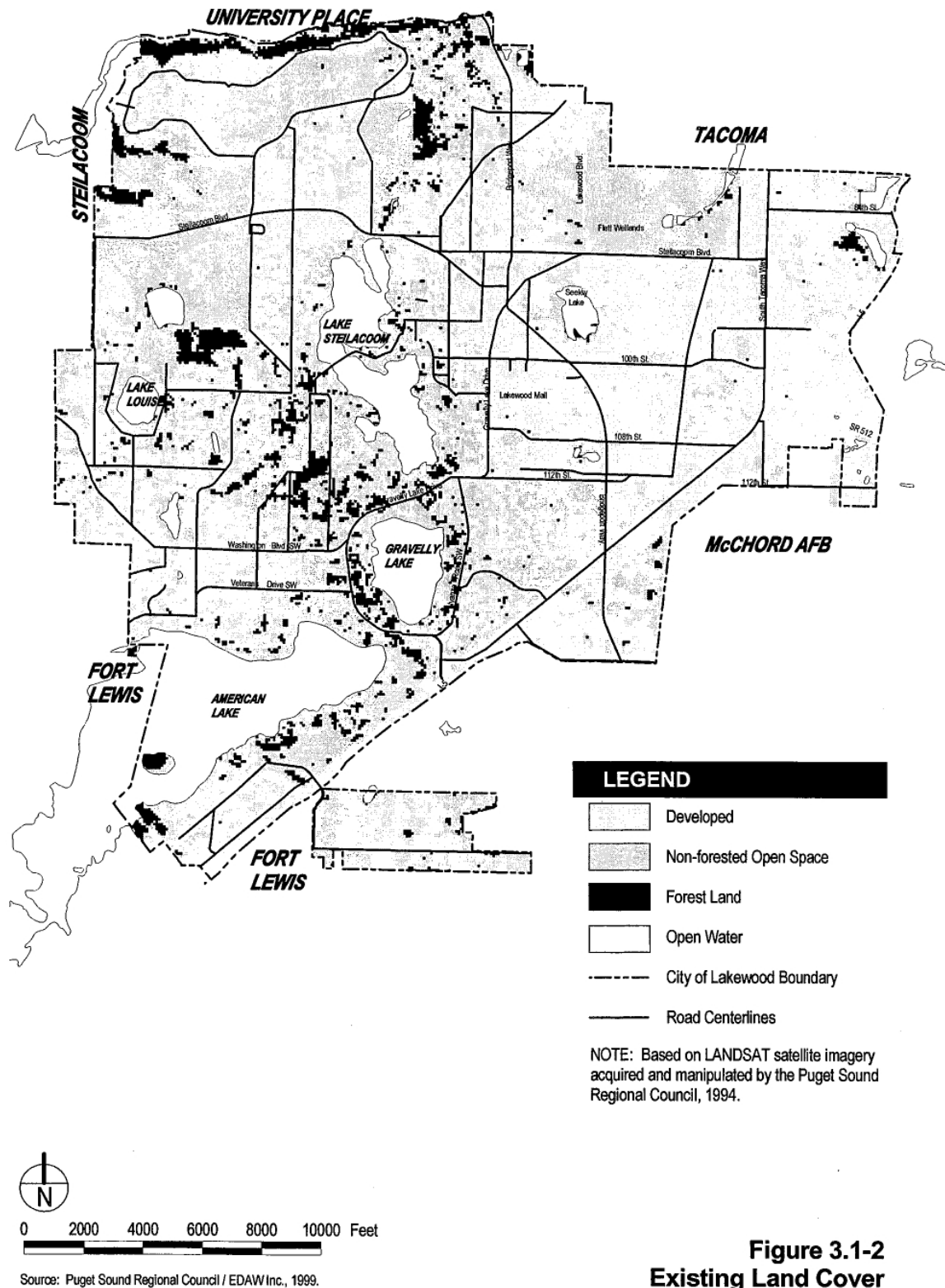
Aquifer Recharge Areas

Most of Lakewood is built above a series of four aquifer systems that supply the Lakewood Water District with well water, providing Lakewood with water for domestic and industrial use. Protection of these aquifers is the subject of a detailed Wellhead Protection Plan prepared for the District in 1997. The Wellhead Protection Plan delineated 23 sets of Wellhead Protection Areas. These protection areas cover 14 individual production wells, six well fields (containing a total of 12 wells), and three wells for possible protection (Economic and Engineering Services, Inc. and Robinson & Noble, Inc. 1997).

The Wellhead Protection Plan identifies Aquifer A as the shallowest aquifer with the most direct hydrologic relation to the surface. In addition, it is composed of highly permeable glacial deposits resulting in hydrologic conductivity values averaging approximately 1,650 feet per day (Economic and Engineering Services, Inc. and Robinson & Noble, Inc. 1997). Because of these factors, Aquifer A is the shallowest and most vulnerable of Lakewood's aquifer systems. This aquifer is generally located along the I-5 corridor in eastern Lakewood with water contribution flowing west from McChord AFB and Spanaway. American Lake is believed to have a direct hydrologic connection to the aquifer. This shallow aquifer also includes a smaller area in western Lakewood that includes Waughop Lake and Lake Louise, both of which are believed to contribute directly to three wells south of Fort Steilacoom Park.

Fish and Wildlife Habitat

Lakewood lies within the natural vegetation zone known as the western hemlock forest zone (Franklin and Dyrness 1988). In undisturbed areas, typical vegetation is characterized by forests of western hemlock (*Tsuga heterophylla*), Douglas-fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata*). Disturbed areas, which include areas that have been logged or developed as well as stream corridors, typically support a mix of deciduous trees including red alder and bigleaf maple. A regional variant of the western hemlock zone, characterized by treeless prairie openings and extensive stands of Garry oaks (*Quercus garryana*) intermixed with the more typical regional forests, is commonly found in the south Puget Sound area on soils formed from glacial drift and outwash. These soils are often poor in nutrients and excessively well drained. This regional variant is typical of much of the native vegetation of Lakewood. In the present era, most of Lakewood is composed of suburban and urban development, with remnant areas of native vegetation found in a patchy mosaic throughout the city. Significant remaining intact



**Figure 3.1-2
Existing Land Cover**

stands of native vegetation include the Flett wetlands, the Chambers Creek canyon, and Seeley Lake Park.

Wildlife habitat has been greatly reduced as a consequence of development, with little suitable habitat for large mammals remaining. Information provided by the Washington Department of Fish and Wildlife (WDFW) regarding lands meeting the criteria as priority wildlife habitats indicates a number of those habitats are present in the city, including wetlands, riparian zones, and urban natural open spaces (UNOS). The remaining habitat can support a variety of smaller mammals, reptiles, amphibians, and birds. Standing water in the form of lakes accounts for 955 acres, or 8% of Lakewood's surface area. These lakes support a variety of water and shorebirds, as well as aquatic fauna.

The Clover Creek watershed is the principal watershed in the city. Clover Creek empties into Lake Steilacoom. The lake then flows into Chambers Creek, which empties into Puget Sound immediately west of the city limits. Chambers Creek forms the boundary between the cities of Lakewood and University Place. Major tributaries of Chambers Creek include Leach Creek and Flett Creek. Chambers Creek has been dammed to form Steilacoom Lake. Two streams flow into Steilacoom Lake, Clover Creek and Ponce de Leon Creek. Chambers Creek, Leach Creek, Flett Creek, and Clover Creek are all identified by the WDFW as having anadromous fish runs⁶. In addition, there is a critical spawning habitat identified near the mouth of Chambers Creek. Two anadromous fish species listed under the Endangered Species Act (ESA) are present in the area, including chinook salmon (*Oncorhynchus tshawytscha*) and Puget Sound/Strait of Georgia coast coho salmon (*O. kisutch*) (WDFW 1997).

Because of the presence of endangered salmonids in the watershed, land use activity must conform to ESA regulations for Lakewood to receive protection under Section 4(d) of the ESA. These are identified in the National Marine Fisheries Service 4(d) rules, which identify the elements that must be present in an approved stormwater management plan. The Chambers/Clover Creek watershed forms Water Resource Inventory Area (WRIA) 12, as defined by the Washington Department of Ecology. The Chambers/Clover Creek Watershed Action Plan is the watershed-wide document under development to manage non-point source pollution within WRIA 12. This Action Plan contains a number of recommendations with regards to habitat, water quality, and related issues of importance to salmon recovery efforts, and has been approved by Lakewood as well as most other jurisdictions within WRIA 12.

Although Lakewood is generally a disturbed landscape, some federal or state plant and animal species of concern are known to occur. See the Lakewood background report (EDAW 1997) for a comprehensive discussion of these species of concern, as well as related priority habitats.

Flood-Prone Areas

Flooding is the most common natural disaster in Lakewood due the area's hydrologic conditions, topography, and development patterns. The most recent significant floods occurred in 1996 and 1997, which inundated significant

⁶ WDFW letter dated August 13, 1997.

sections of Chambers, Steilacoom, and Clover creeks as well as numerous isolated topographical depressions around Lakewood. Significant portions of northeast Lakewood, especially in the Clover and Flett Creek drainage area, are susceptible to flooding. Other areas prone to flooding include wetlands and adjacent low-lying upland areas. These areas are shown on Figure 3.1-1.

Flooding threatens lives and damages property. Its frequency and severity tend to increase as a result of development, specifically as permeable forest cover is replaced by impervious surfaces such as rooftops or concrete or even by semi-permeable ground covers such as lawns. The most effective way to limit increasing urbanization-related flood risk is to limit changes to natural hydrologic functions. Accordingly, natural drainage channels need to be preserved whenever possible, and permeable surfaces should be protected. Changes to these system functions should be compensated by engineered systems such as retention/detention basins, swales, and other approaches designed to simulate natural flood control mechanisms by allowing stormwater to slowly seep into the ground or gradually drain downstream.

Geologically Hazardous Areas

Geologically hazardous areas typically include areas subject to structural failure, usually as a result of mass wasting or seismic incident. Most of Lakewood is located on relatively flat lands sloping 8% or less. The steepest significant land area in Lakewood, and consequently the area most vulnerable to landslide, is the southern rim of the Chambers Creek canyon, which is the northwestern boundary of the city. Other sloping areas include hillsides with moderate slopes scattered in primarily residential areas and some former gravel quarries with slopes over 30% grade.

Creeks, Streams, and Lakes and their Shorelines

Much of Lakewood lies within the Chambers Creek drainage basin. Chambers Creek flows into Puget Sound between Steilacoom and University Place and forms Lakewood's northern boundary. Chambers Creek is joined by Leach and Flett Creeks near Lakewood's boundary with University Place and Tacoma. Flett Creek originates in southern Tacoma and drains the largest palustrine wetland system in the city, Flett wetlands.

As previously mentioned, there are numerous lakes in Lakewood, covering a total of 955 acres. Most of these lakes, including American, Gravelly, Waughop, and Seeley lakes and Lake Louise, are of glacial origin. Steilacoom Lake was formed as the result of damming Clover Creek to create a millpond. Chambers Creek flows from the south and drains Lake Steilacoom, which is impounded by the dam at Steilacoom Boulevard. The largest stream feeding Lake Steilacoom is Clover Creek, which flows from the southeast through Ponders Corner and Springbrook. A smaller stream, Ponce de Leon Creek, drains the Lakewood Mall site flowing past the current City Hall, emptying into Lake Steilacoom.

Many of Lakewood's lakes are fed by groundwater flow. The water table underlying the city is very shallow and moves rather freely through the permeable glacially deposited sandy and gravelly soils. Where the depressions

in local topography go deep enough, they intercept the water table and form lakes. Lake levels fluctuate seasonally with local water tables.

3.1.2 Environmental Impacts

Some inevitable impacts to critical areas will result from each of the alternatives as a result of increasing urbanization. These may include: an increase in erosion and sedimentation, an increase in surface water runoff and storm discharge, a decrease in surface water quality, infiltration and contamination of groundwater, and reduction in fish and wildlife habitat. Specific impacts on resource lands and critical areas are discussed below for each of the alternatives under consideration. Because there are no remaining economically functioning resource lands in Lakewood, no discussion of impacts to resource lands has been included in this section.

Preferred Alternative

Wetlands

No wetlands identified on National Wetlands Inventory (NWI) maps appear to be directly affected by land use changes comprising this alternative. In addition, wetland protection goals and policies in the Land Use chapter address mechanisms to protect wetland resources.

Aquifer Recharge Areas

The Preferred Alternative would designate the un-sewered parcels on the southeast shore of American Lake as Residential Estate. This designation would significantly restrict future development in this potentially sensitive area and would help protect Aquifer A. This alternative would also increase residential and industrial development in the Springbrook neighborhood, which could impact two wells located at the western edge of that neighborhood.

Fish and Wildlife Habitat

This alternative would increase residential densities to allow for an additional 7,056 new households, which is 5,787 households less than the No Action Alternative. Additionally, this alternative has identified adequate land uses to accommodate 12,275 new employees. In general, this intensification of development would occur in areas that are largely developed, avoiding major loss of intact valuable habitat.

Most of the remaining urban natural open spaces are identified for preservation in the Preferred Alternative. Lands designated as Open Space encompass 1,490 acres, an increase of 70% from the 876 acres identified under the No Action Alternative. This includes new parkland and stormwater retention areas planned for northeast Lakewood and Springbrook neighborhoods. It also designates some of the last remaining intact oak savanna landscape, contained in a parcel near the intersection of Steilacoom Boulevard and Lakewood Boulevard, as Open Space.

The Preferred Alternative includes a large lot land use designation that restricts development in specified areas to a density of up to 2 units per acre. This designation encompasses most residential properties on either side of Chambers and Clover Creeks, as well as much of the shoreline on three of the major lakes: American Lake, Gravelly Lake, and Lake Steilacoom. This designation greatly decreases potential for land development in these areas compared to the No Action Alternative.

Selection of the Preferred Alternative will make it easier for Lakewood to comply with the terms of the Chambers/Clover Creek Watershed Action Plan. Creation of a Residential Estate land use designation is unique to this alternative, affording protection to water quality by restricting development density adjacent the creek. It will also create a more compact development pattern, resulting in the creation of less impervious surface, again protecting water quality. The Preferred Alternative is therefore most beneficial of the three alternatives for salmonid species.

Substantial amounts of residential development are likely to occur, which would be distributed at varying densities throughout the city. Most of this development would occur in areas long designated for such uses at such intensities, with some impact on vegetation and habitat. In retaining these land uses, Lakewood is complying with the GMA goal of promoting growth within the UGA, reducing impacts to habitat outside of the UGA by accommodating growth with existing developed areas. This growth would result from redevelopment or infill within developed areas, not the development of rural or resource lands. Consequently, no significant adverse impacts to plants and animals from the overall residential growth are expected.

Commercial lands are overbuilt in Lakewood, as measured by the square footage of retail square footage per capita, and the amount of vacant commercial buildings (EDAW 1997). One goal of the Preferred Alternative is to limit sprawl of new commercial development in the city, and not expand the amount of future commercial development outside of the existing commercial land use footprint. No habitat would be affected due to commercial development under this alternative. Industrial lands have been expanded considerably with the designation of portions of the American Lake Gardens neighborhood and the Springbrook neighborhood for industrial development. This would potentially affect some habitat, as many of the affected parcels are currently developed with low density housing or are undeveloped. Future industrial development of American Lake Gardens would require installation of new sewer systems, which would improve habitat conditions in the long term.

Flood-Prone Areas

The areas targeted for the highest density development do not coincide with flood-prone areas, with the exception of a portion of the Springbrook neighborhood slated for industrial development. Although most of American Lake Gardens is not shown on Pierce County Environmental Constraint maps as flood-prone, industrial development could exacerbate flooding problems in flood-prone areas if impervious surfaces increase as a result of industrial

development in the central portion of the neighborhood. In either case, storm drainage controls mandated by Section 17.46.190 of the City's site development regulations should address this.

Geologically Hazardous Areas

The comprehensive plan would not impact the few geologically hazardous areas present in the city. No development would be permitted in or near the Chambers Creek canyon, where the greatest hazard is. In addition, the plan's Geological Risk Management policies include several measures to mitigate landslide, erosion, and seismic risk. Certain parcels bordering stream channels may be exposed to some risk from potential stream under-cutting. Under the Preferred Alternative, new residential development in these areas would be reduced through the Residential Estate designation.

Creeks, Streams, and Lakes and their Shorelines

This alternative would cluster urban growth in several target areas, limiting opportunities for non-point pollution. In addition, residential density would be limited along portions of the lake and stream shores by the Residential Estate designation. The redesignation of industrial lands in American Lake Gardens would result in positive impacts to water quality as it would replace many of the existing dwellings based entirely on septic systems with new sewered industrial facilities. In addition, several goals and policies in the Environmental Quality section of the Land Use chapter address shoreline and water quality protection.

No Action Alternative

Wetlands

Much of the area adjacent to and including the extensive Flett wetlands complex is identified for single-family residential uses under the No Action Alternative. Development of both multi-family and single-family on upland pockets within and adjacent to the Flett wetlands complex was permitted under zoning that would remain unchanged by this alternative. The valuable priority habitat in the Flett wetland complex will likely become more fragmented and reduced under this alternative because of its permissive land use controls. This alternative would not result in any other specific impacts to Wetlands other than non-point impacts from generally distributed growth, which would likely reduce natural areas including wetland buffers.

Aquifer Recharge Areas

Since this alternative would generally distribute growth in many parts Lakewood, Aquifer A, the shallowest and most vulnerable of Lakewood's aquifer systems, is not likely to be significantly affected by significant increases in impervious surface or additional pollutant sources in most areas. Of greatest concern is the eastern shore of American Lake, which would receive significant redevelopment under this alternative. Specifically, the large parcels between the lake and the Tillicum Country Club are likely to be subdivided, but this area has no sewer service. Additional home construction

here would add septic systems within one-year's water travel time from one of the Lakewood Water District's wells.

Fish and Wildlife Habitat

This alternative would increase residential densities to allow for an additional 12,844 new households, which is 5,787 households more than the Preferred Alternative. Additionally, the No Action Alternative is estimated to contain adequate land uses to accommodate 9,982 new employees. With regards to industrial and commercial growth, this intensification of development would occur in areas that are largely developed, avoiding major loss of intact valuable habitat. With regards to residential development, 61% of the city is dedicated to moderate density single-density family housing at a maximum density of 6 dwelling units (DUs) per acre. This density has the potential for adverse impacts to fish and wildlife habitat.

Almost 4,500 new single-family residences could be developed on Planning Area 5 alone under this designation. This level of development would have an adverse impact on the forest cover in Planning Area 5, which contains the most extensive remaining unprotected forests in Lakewood (EDAW 1997). This would cause an adverse impact on fauna reliant on habitat provided by the forests of western Lakewood, or the major streams and wetlands of Lakewood. Therefore, the No Action Alternative would have a significant environmental impact on plants and animals.

Because the level of development would be greatest for this alternative, it would result in the greatest amount of impervious surface being created, with subsequent negative effects on water quality. There are no lacustrine or riparian protection measures included in the proposed land uses under the No Action Alternative, such as larger lots adjacent to streams and lakes. This alternative would hamper Lakewood's efforts to comply with the policies identified in the Chambers/Clover Creek Watershed Action Plan with respect to improving water quality and salmon recovery.

Flood-Prone Areas

Although this alternative would expand urban growth, the interim comprehensive plan includes a number of objectives and policies in the Environment and Critical Areas Element aimed at preventing flood-related damage.

Geologically Hazardous Areas

The No Action Alternative would not appreciably increase landslide risk because no steep slopes are designated for developable uses; however, some additional single-family development would be permitted in neighborhoods in the western part of the city where moderate slopes are indicated⁷.

Creeks, Streams, and Lakes and their Shorelines

⁷ 15%-30% slope according to Pierce County (1994b).

This alternative would expand and distribute urban growth throughout the city, including areas adjacent to streams and shorelines, increasing opportunities for non-point pollution. The interim comprehensive plan does contain a number of objectives and policies in the Environment and Critical Areas Element that address water quality, including surface water and other natural drainage systems.

Mixed-Use Alternative

Wetlands

This alternative would not likely have a direct impact on NWI wetlands.

Aquifer Recharge Areas

This alternative is unlikely to significantly increase impervious surfaces or additional pollutant sources in most areas of the city, especially in areas recharging Aquifer A. Like the No Action Alternative, the eastern shore of American Lake would receive significant redevelopment, adding septic systems within one-year's water travel time from one of the Lakewood Water District's wells. This alternative would also increase development in the Springbrook neighborhood, which could impact two wells located at the western edge of that neighborhood.

Fish and Wildlife Habitat

The Mixed-Use Alternative would increase residential densities to allow for an additional 12,179 new households, which is 664 new households less than the No Action Alternative, but 5,123 new households greater than the Preferred Alternative. Additionally, the Mixed-Use Alternative has identified adequate land uses to accommodate 11,237 new employees. Like the Preferred Alternative, the Mixed-Use Alternative designates substantially more land as open space than the No Action Alternative. In general, intensification of development would occur in areas that are largely developed, avoiding major loss of intact valuable habitat. This alternative would protect some of the existing habitat east of Woodbrook Road in American Lake Gardens. There are some large lot protection measures in place in western Lakewood but no riparian protection measures, allowing much greater level of development adjacent to creeks and lakes than possible under the Preferred Alternative. The Mixed-Use Alternative may cause significant adverse environmental impacts to the important riparian habitats along Chambers and Clover Creeks, thus negatively affecting salmon recovery efforts.

Flood-Prone Areas

Impacts from this alternative would be similar to the Preferred Alternative except along stream channels, which could be developed at a higher density.

Geologically Hazardous Areas

The impacts of this alternative would be comparable to those under the No Action Alternative.

Creeks, Streams, and Lakes and their Shorelines

The Mixed-Use Alternative would cluster urban growth into several target areas but would likely result in significant pavement, which would indirectly affect water quality. This alternative would limit density along lakeshores to a moderate degree.

3.1.3 Mitigation Measures

The City's current Site Development Regulations⁸ and Zoning and Land Use Code⁹ mitigate some environmental impacts from development, although it is assumed both regulations would be updated in response to the new comprehensive plan.

The City needs to develop more complete Critical Area Regulations to protect the full spectrum of environmentally sensitive resources. The City's current Critical Areas Ordinance, Chapter 18.37 of the Lakewood Municipal Code, is limited to landscaping and buffering.¹⁰ Chapter 14.142, Critical Areas and Natural Resource Lands General Requirements, establishes general requirements but not clear criteria (,—) for defining critical areas, allowing for ambiguity. Clear, unambiguous criteria should be developed, and critical areas maps developed into the City's geographic information system (GIS) database. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new goal for Environmental Critical Areas, as well as three new policies for this goal (see Section 3.11.1 of the Comprehensive Plan).

The City should also update its Shoreline Master Program (SMP) in compliance with the State's Shoreline Management Act (90.58 RCW Shoreline Management Act of 1971) and Pierce County Shoreline Management Regulations (Ord. 97-84) to address regulated shorelines, including all major lake and stream shores. Lakewood's current SMP is Pierce County's Title 20, Shoreline Management Regulations (i.e., it has adopted Pierce County's SMP as its own). Due to differences in planning scale, not all water bodies in Lakewood meeting the criteria of 20 acres or 20 cubic feet per second (cfs) are discussed in the County document, which should be supplemented. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy under the Shorelines discussion in Section 3.11.3 (Shorelines).

Wetlands

The City's two largest wetland areas, Flett wetlands and Seeley Lake, are both protected from direct impacts through their Open Space designations. Natural buffer areas are required to protect documented wetlands and certain drainage courses from pollution and erosion. The City's Site Development Regulations make reference to "the wetlands section of the City's Critical Area and Natural Resource Land regulations" (Section 14.142 City Code), but these regulations are not comprehensive.

⁸ Title 17 Subdivisions 17.46 Site Development Regulations.

⁹ Title 18 Zoning and Land Use Code 18.

¹⁰ Adopted by ordinance #157 on February 17, 1998.

Aquifer Recharge Areas

New regulations need to be promulgated to protect aquifers consistent with the Wellhead Protection Plan. Sewers should also be extended to parcels bordering American Lake, and water quality should be monitored for contaminants. An ongoing water quality monitoring program will be implemented for all public drainage systems that discharge into lakes and streams.

Fish and Wildlife Habitat

The City must expand its current Sensitive Areas Ordinance and develop its own Critical Areas maps for fish and wildlife resources, beyond what has been adopted from Pierce County.

The City must develop its Shoreline Master Program further, beyond what has been adopted from the County, as discussed above. Further, the impacts of development to anadromous fish should be addressed in response to the recent listing of Puget Sound salmon species under the ESA. Lakewood should continue to support and participate in WRIA-12 watershed planning efforts, and otherwise ensure it is in compliance with NMFS' ESA 4(d) rules.

The City should develop an adequately staffed natural resources program to address issues pertaining to natural resource protection. Professional natural resources staff will be needed to implement such a program, given the city's size (both in area and population).

Flood-Prone Areas

The regulations include measures to ensure that the capacity of watercourses is maintained. In addition, the Flood Damage Prevention Ordinances¹¹ contains specific requirements applying to construction and renovation projects intended to avoid flooding and minimize flood-related damage. The comprehensive plan also includes several general policy-level approaches to flood management. The Preferred Alternative would reduce residential density on parcels bordering stream channels, which would decrease the risk of flood damage. It also identifies stormwater detention areas for acquisition in northeast Lakewood. No additional mitigation measures are required.

Geologically Hazardous Areas

Development on steep slopes will be controlled by the City's Site Development Regulations and Critical Area Regulations. No additional mitigation measures are required.

Creeks, Streams, and Lakes and their Shorelines

The principal mechanisms for protecting these resources and mitigating development impacts will be the City's Shoreline Master Program and the Critical Area Regulations. Lakewood must promulgate both and enforce their provisions through the City's Development Regulations. In addition, the comprehensive plan contains goals and policies specifically addressing these

¹¹ 18.36 of the Lakewood Zoning and Land Use Code.

resources. Lake management studies for Lake Steilacoom, Gravelly Lake, and Lake Louise are needed to determine sources of pollutants and nutrients entering these water bodies and determine what can and cannot be done to control pollutant sources. The Pierce County Conservation District Stream Team Program will provide water quality education to the community.

The City's Site Development Regulations¹² and the Zoning and Land Use Code¹³ would mitigate some environmental impacts from development taking place under any of the alternatives. These regulations require storm drainage control systems intended to replicate the hydrologic performance of the site prior to development. Depending on the project, these regulations may require additional measures (such as oil-water separators) and conceptual drainage plans and offer protections to each category of critical area.

Additional Mitigation Measures

The following proposed policies, adapted from local wellhead protection programs (Brown and Caldwell et al. 1985; Tacoma-Pierce County Health Department 1997), were identified in the DEIS as being policies that should be added to the comprehensive plan's Water Quality section (3.11.7). The Comprehensive Plan has been revised to incorporate related policy language into that section; no further mitigation measures are needed.

New policy: Work with local water districts and Pierce County to establish development review procedures to notify the entities of all development applications within Wellhead Protection Areas that require hydrologic assessment or SEPA response.

New policy: Work cooperatively with the Lakewood Water District to maximize protection of aquifers. Establish ongoing efforts to:

- Educate citizens and employers about Lakewood's dependency on groundwater.
- Establish and maintain public awareness signs delineating the boundaries and key access points to the Lakewood Water District's Wellhead Protection Areas.
- Maintain groundwater monitoring programs.
- Implement a well decommissioning program for all unused wells.
- Coordinate planning and review of drainage, detention, and treatment programs within Wellhead Protection Areas.

New policy: Modify development regulations to limit impervious surfaces in aquifer recharge areas.

New policy: Cooperate with local water districts, adjoining jurisdictions, and military bases to:

¹² Title 17 Subdivisions 17.46 Site Development Regulations

¹³ Title 18 Zoning and Land Use Code 18

- Develop and implement a common system to reflect land use risks across all Wellhead Protection Areas.
- Establish and maintain an integrated regional wellhead protection data mapping, analysis, and updating system.
- Enhance stormwater drainage, detention, and treatment programs.

3.1.4 Unavoidable Adverse Impacts

Some wildlife and native vegetation would be lost as a result of population growth and development associated with all alternatives. The extent of habitat loss would be minimized under the Preferred Alternative in comparison with the other two alternatives due to designated growth patterns.

3.2 Land Use

3.2.1 Affected Environment

The City of Lakewood contains a total of 12,106 acres, including lakes. With an average population density of 5.2 people per acre (3,264 residents per square mile), Lakewood's land use distribution is slightly (9%) higher than the regional average of 2,961 residents per mile and roughly comparable to the density of Bellevue and Spokane (PSRC, October 1998). Public street ROWs comprise the second largest land use category, consuming 1,712 acres of the city's land area. Much of these streets serve low density, single-family neighborhoods, which comprise the single largest land use category. Other character-defining land uses include open space, parks, and lakes for which the city was named.

Land use patterns in Lakewood vary in different parts of the city. The western half of Lakewood is predominantly residential, with residential development ranging from modest single-family homes to spacious lake-front estates. This portion of the city contains the lakes, a college, a State hospital campus, and a large County park. The eastern half of Lakewood also has a sizable percentage of residences but has a more diverse mixture of land uses in addition to housing. Uses include retail and other commercial development along arterials and at the Lakewood Mall and Colonial Center, 1-5, Pacific Highway Southwest, an industrial park, and an assortment of other uses serving the city and adjacent military bases. The geographic distribution of Lakewood's land uses are depicted graphically on the existing Land Use Map (Figure 3.2-1).

For analysis purposes, the city has been divided into seven different planning areas (see Figure 3.2-2). By identifying these planning areas, the process of data gathering and summarizing is simplified and easier to communicate. The boundaries of the planning areas were based on existing zoning, current land use, census information, and jurisdictional boundaries. A detailed discussion of the boundary limits and character of each of the seven planning areas is provided in Chapter 3.0 of the background report. Data from the City's land use inventory has been summarized into 13 land use categories shown on Table 3.2-1 for each planning area.

Table 3.2-1: Baseline Land Use Summaries By Planning Area.

Land Use Categories	Area 1 (acres)	Area 2 (acres)	Area 3 (acres)	Area 4 (acres)	Area 5 (acres)	Area 6 (acres)	Area 7 (acres)	Summary by Land Use	% of Total Area
Access	4	21	3	0	6	14	0	48	.4
Agriculture	0	0	26	0	0	0	16	42	.3
Residential Single-Family	408	193	190	720	2021	340	229	4101	33.8
Mobile Home Park	12	99	1	0	0	10	33	154	1.3
Multi-Family Residential	143	104	102	107	106	104	97	764	6.3
Commercial	297	323	39	37	19	44	20	777	6.4
Manufacturing/Industrial	17	253	65	0	0	14	0	348	2.9
Public/Gov't Svcs	53	39	188	19	60	11	9	378	3.1
Education	68	110	1	57	160	10	39	445	3.7
Open Space/Recreation	44	35	105	650	560	0	32	1427	11.8
Street ROW	309	248	83	222	545	188	119	1712	14.1
Vacant	67	146	63	51	176	74	57	635	5.2
Water	0	0	0	0	928	0	170	1098	9.1
No Data	39	33	7	59	27	11	2	179	1.5
Acre Totals	1460	1603	872	1922	4607	820	822	12106	100
Percentage Totals	12	13.2	7.2	15.9	38	6.8	6.8	99.9	

Source: City of Lakewood, 1998.

3.2.2 Environmental Impacts

Environmental impacts related to land use are discussed below for each of the alternatives.

Preferred Alternative

Growth Targets and Assumptions

GMA requires that all jurisdictions preparing comprehensive plans demonstrate that these plans are capable of meeting specific population growth allocations targets.

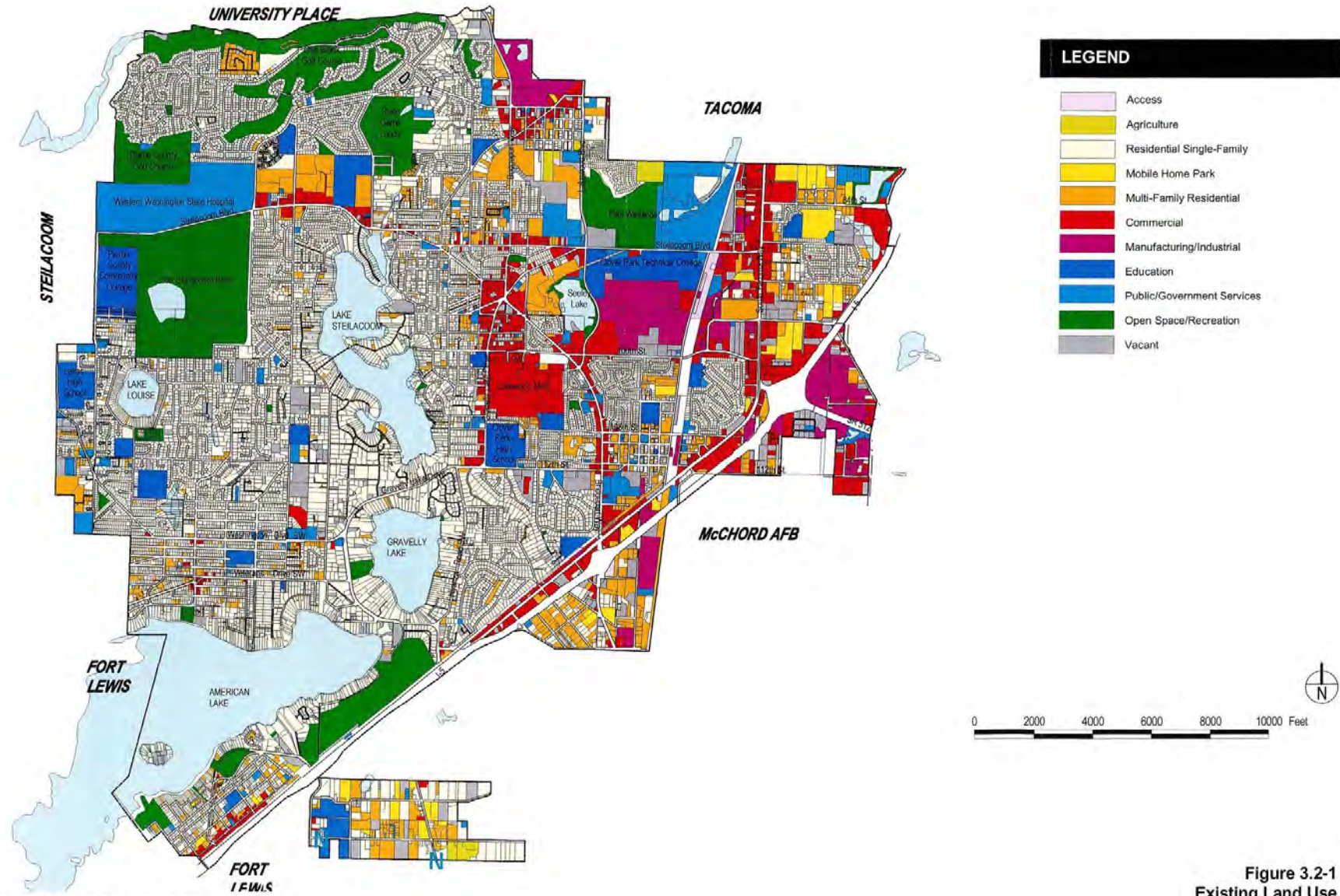
Lakewood's 20-year population growth target has evolved through the development of the comprehensive plan. The original number of 11,072 additional residents¹⁴ was derived from the population target assigned to Pierce County by the State's Office of Financial Management (OFM), and subsequently allocated to individual cities in the county by the Puget Sound Regional Council (PSRC) based on a county-wide distribution model. PSRC assigned a growth target allocation of 11,072 to the Lakewood area in 1995, prior to incorporation. After incorporation, the City successfully petitioned for a new target of 30,000 additional residents based on what the City initially felt was a realistic average annual growth rate, derived from growth rates experienced in the early 1990s.

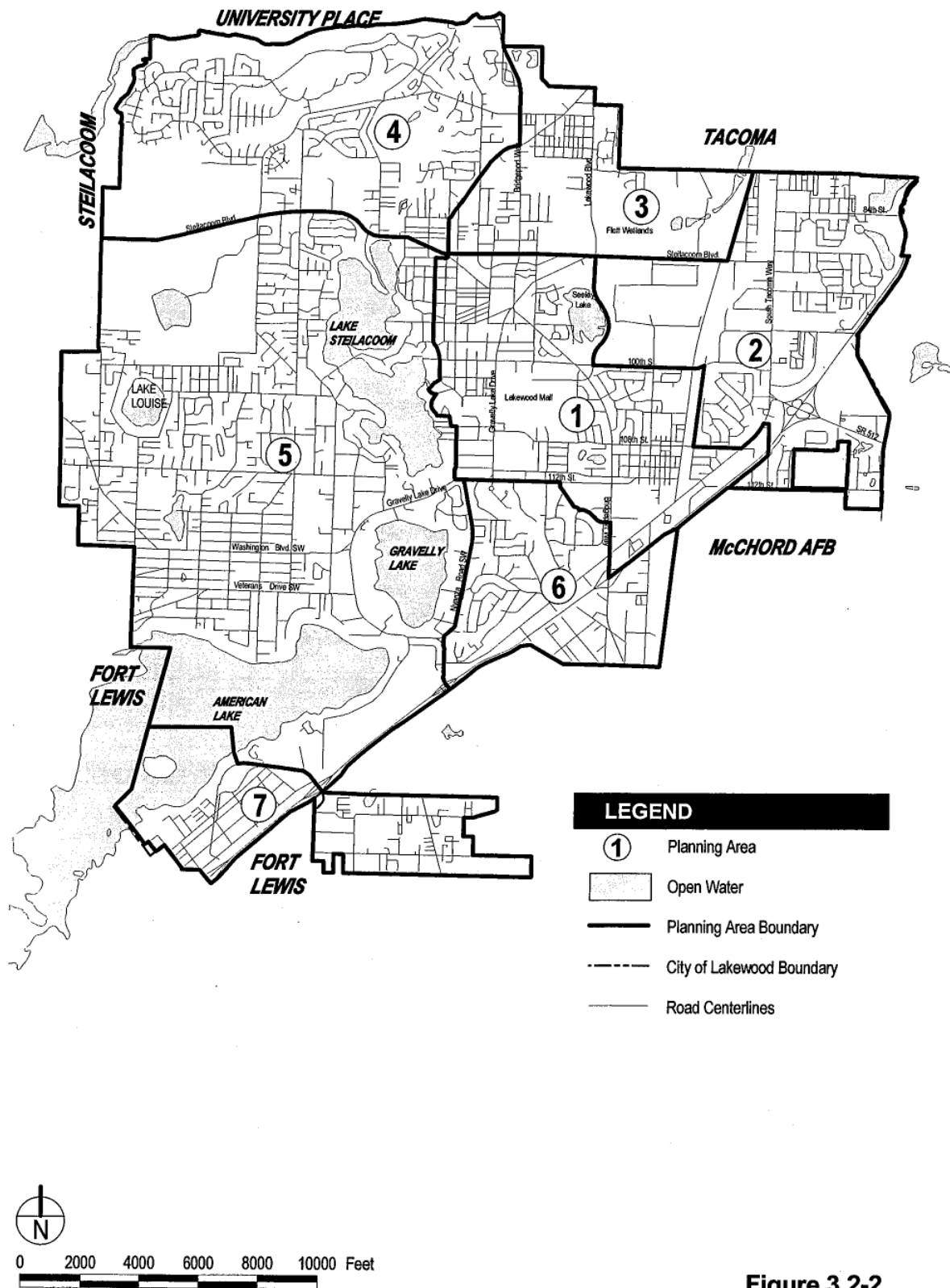
The addition of over 30,000 new residents by the year 2017 therefore became the starting point for Lakewood's comprehensive plan development. However, to achieve this level of growth, the City would have to add population at an average rate of 1.71% per year throughout the life of the plan, a very high growth rate relative to historical growth data for Pierce County jurisdictions. Not all planners were in agreement with the new growth target. Pierce County transportation planners built a target 20-year population increase for Lakewood of 13,147 into the regional traffic distribution model. Land use

¹⁴ 2017 growth target.

capacity would have to be sufficient to accommodate the large number of new residents through significantly increased density in several parts of the city. Increasing awareness of limiting factors as the plan developed—including existing transportation limitations, cost of additional utility connections, limited existing land values, and a desire to maintain stable neighborhoods—contributed to downward adjustments in the original growth target. As a result, the Pierce County Growth Management Coordinating Council (GMCC) accepted a new 20-year growth target for Lakewood of 17,000 in the fall of 1999. This new growth target has yet to be formally adopted by the Pierce County Council. Both the GMCC and the Pierce County Regional Council (PCRC) have recommended approval. The Preferred Alternative is projected to have a growth capacity at build-out of approximately 17,500 new residents, resulting in a total projected residential population of approximately 82,670 for Lakewood, based on the 1996 population estimate of 65,182 provided by OFM.

This alternative also seeks to guide an increase in employment opportunities. Land use goals and policies specifically address the need to concentrate employment-generating commercial, office, and industrial activity in appropriate areas to provide the city with a healthy allotment of jobs, services, and a diversified tax base. Taken altogether, the different employment-generating land uses have the capacity to add approximately 12,275 new jobs by the year 2017.





Source: Pierce County GIS / Lakewood Parcel Survey Database / EDAW Inc., 1999.

**Figure 3.2-2
Lakewood Planning Areas**

Population and Employment Growth

This alternative provides for the relatively moderate population growth of 17,500 residents. Much of this population would be housed in high density neighborhoods, as well as lower density infill housing in west Lakewood's single-family neighborhoods. This alternative has a development capacity of approximately 6,400 more residents than the number of residents as allocated to Lakewood by the PSRC in 1995.

This alternative would accommodate about 10,847 new private sector jobs over the next 20 years. The majority of these jobs would likely be retail/wholesale/service sector positions, with the balance comprised of industrial and office jobs.

Public sector and institutional employment growth would be very similar as other alternatives, creating approximately 1,428 new positions. Not surprisingly, most of these jobs would be located in existing employment areas within the central and northeastern portions of the city. Future growth projected for each alternative is graphically illustrated on Figure 3.2-3. This chart compares additional residents and jobs generated by the three alternatives. Future residential growth projected by planning area is graphically illustrated on Figure 3.2-4. This chart also compares the relative population growth generated by all the three alternatives. Future employment growth projected by planning area is graphically illustrated on Figure 3.2-5. This chart also compares the relative job growth generated by all the three alternatives.

Changes to Land Use

The Preferred Alternative is intended to curtail sprawl through more organized land use patterns and redevelopment while accommodating residential and employment growth with the least amount of adverse environmental impact. The principal strategy of the plan for guiding future growth is: (1) protecting established neighborhoods; (2) intensification of the city's central spine through planned redevelopment, which stretches north along Bridgeport Way from the planned commuter rail station past the Mall and the Colonial Center through to Custer; and (3) increasing the employment base in eastern portions of the city. The plan seeks to preserve the existing character of large lot residential neighborhoods in west Lakewood and along the lake shores, and to protect riparian habitat along the major creeks.

Future land use would be controlled by zoning regulations adopted to implement the new comprehensive plan. Many of the land use designation boundaries would be similar to those found in previous alternatives, even though many of the designations themselves would be different. The new land use designations are summarized in Table 3.2-2.

Several of the land use designations are shared in common with the Mixed-Use Alternative, while others are unique to this alternative. These are compared in Table 3.2-3. The Preferred Alternative proposes specific land uses in lieu of the mixed-use designations found in the other two alternatives.

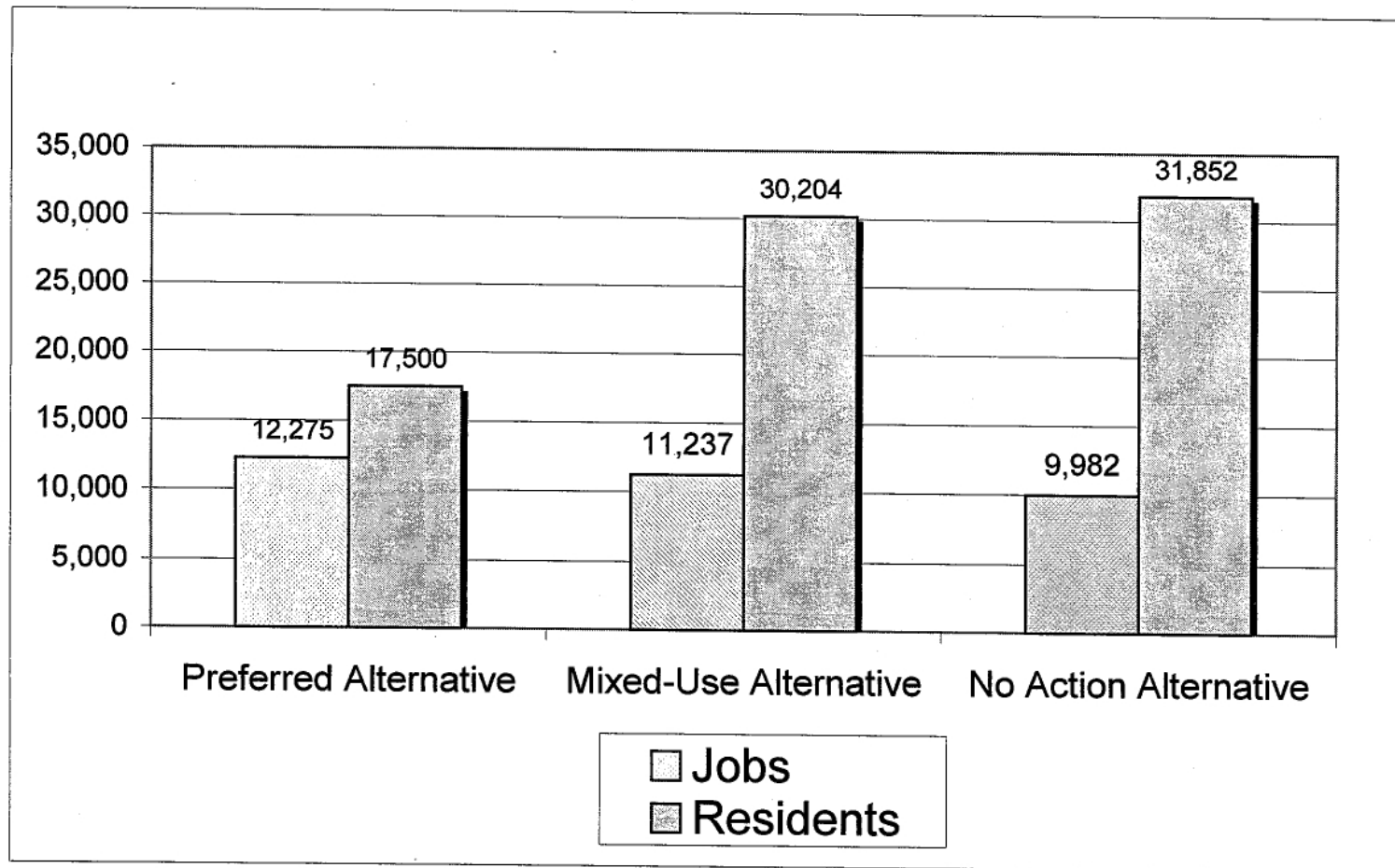
Figure 3.2-3: Comparison of Population and Employment Change

Figure 3.2-4 Residential Growth by Planning Area

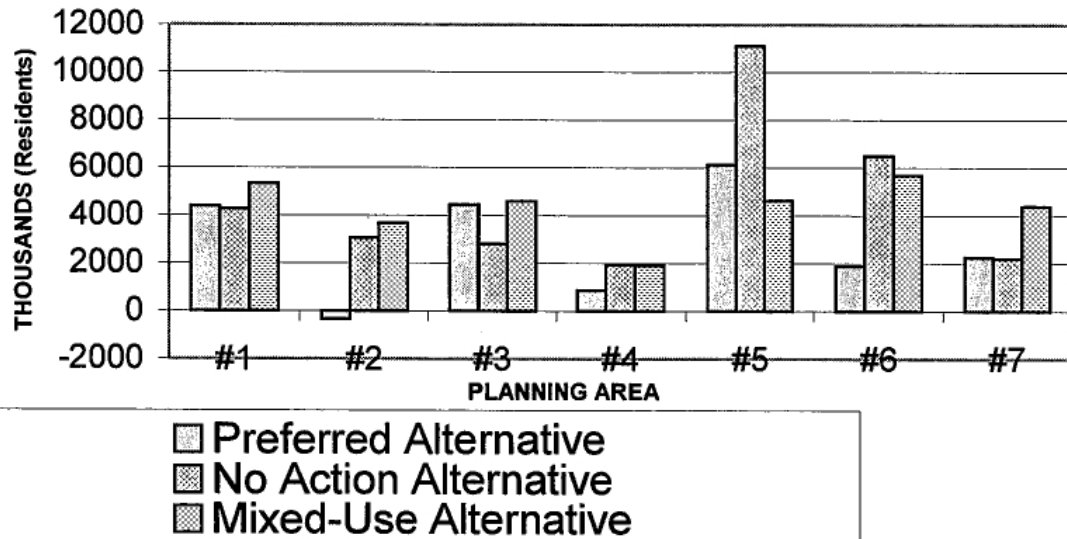


Figure 3.2-5 Employment Growth by Planning Area

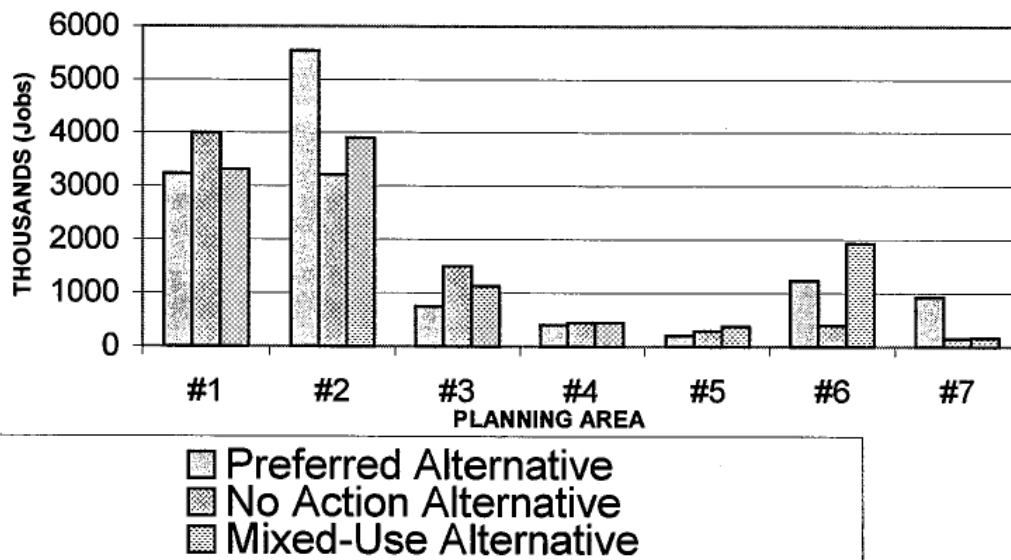


Table 3.2-2: Land Use Designation Summary for the Preferred Alternative.

Land Use Designation	Density (DU/acre)	General Description
Residential Estate	DU/acre: 1-2 avg jobs/acre: N/A	This designation is intended to protect the existing character of Lakewood's suburban neighborhoods that surround and lie immediately west of the lakes. Large lot protections are in place to preserve existing land use and vegetation patterns and to minimize traffic and other impacts.
Single-Family Residential	DU/acre: 4-6 avg jobs/acre: N/A	This designation is a low density residential environment allowing one house per parcel, including mobile homes. This is the dominant land use category in the city affecting about 33% of the land.
Mixed Residential	DU/acre: 8-14 avg jobs/acre: N/A	This designation is a low density residential environment allowing for an intensification of existing single-family residential uses in the form of duplexes, triplexes, and other moderate scaled multi-unit housing up to six units per structure. It also would include single attached houses on smaller (5,000 s.f.) lots allowing assorted density to ensure choice and flexibility.
Arterial Corridor	DU/acre: 4-6	This designation accommodates the unique circumstances of properties located along several major arterials in predominantly residential areas. Properties subject to this designation may be used for low-intensity, non-nuisance businesses as well as residences (home occupations).
Multi-Family Residential	DU/acre: 12-22 avg jobs/acre: N/A	This designation is a medium-density residential environment allowing for duplex, triplex, and four-plex units, as well as retirement/group homes and transitional housing.
High Density Multi-Family	DU/acre: 22-40 avg jobs/acre: N/A	This is a high-density residential environment allowing for concentrations of pedestrian-orientated condominiums and apartment buildings located near Lakewood Station and along major arterial streets, State highways, and major transit routes connecting to the CBD. This is a consolidation and intensification of existing multi-family residential housing. The purpose of this area is to provide significant housing opportunities on transit routes convenient to employment and services.
Central Business District	DU/acre: 30-54 avg jobs/acre: 45	The CBD would encompass both the Lakewood Mall and the Colonial Center, which would have slightly different zoning designations recognizing their distinct design and market attributes.
Corridor Commercial	DU/acre: N/A avg jobs/acre: 25	Corridor Commercial would accommodate existing commercial development fronting arterials such as Pacific Highway Southwest, Bridgeport Way, and Steilacoom Blvd. Commercial activity on these corridors caters to customers both within and beyond the surrounding neighborhoods due to placement on roadways used by residents of more than one community. The designation allows for an intensification of commercial uses and an increase in the number of jobs beyond existing auto-oriented and other land intensive commercial uses.
Neighborhood Business District	DU/acre: 12-22 (Level 1) 22-40 (Level 2) avg jobs/acre: 15	This designation is intended to provide convenient services to outlying neighborhoods. These districts would be limited commercial nodes supporting a concentrated mix of small scale retail and service commercial and office development serving the daily needs of residents in the immediate neighborhood at a compatible scale with surrounding neighborhoods. Moderate to high density residential is permitted on upper floors on a conditional basis.
Industrial	DU/acre: N/A avg jobs/acre: <15	This designation allows for manufacturing, repair, and other lower intensity, higher impact land uses. Although industrial generates only a low to moderate amount of jobs per acre, this designation would protect "family wage" jobs.
Public and Semi-Public Institutional	DU/acre: N/A avg jobs/acre: based on actual use data	This designation allows for major institutions including hospitals and colleges and other significant concentrations of government and institution-owned land.
Open Space and Recreation	DU/acre: N/A avg jobs/acre: 0	This designation includes designated natural areas; neighborhood, community, and regional parks; as well as linear trails and public golf courses. Private land included in this designation would include large outdoor recreation enterprises such as marinas, golf clubs, and riding stables. The purpose of this land use designation is to protect open space, critical habitats, and provide recreational uses on public property.*
Military Lands	DU/acre: N/A avg jobs/acre: N/A	This designation applies to land in Lakewood owned by the Department of Defense.
Air Corridor 1	DU/acre: N/A avg jobs/acre: <12	This designation applies specific provisions to land within the approach to the McChord AFB runway to reduce noise and increase public safety. Commercial and industrial zones within this designation minimize land use and occupancy intensity, structural height, smoke, dust, steam, electronic interference, birds, some vegetation, and glare. In addition, special development standards require additional noise insulation.
Air Corridor 2	DU/acre: 2 avg jobs/acre: 512	This designation applies specific provisions to land within the approach to the McChord AFB runway to reduce noise and increase public safety. Commercial and industrial zones within this designation minimize land use and occupancy intensity, structural height, smoke, dust, steam, electronic interference, birds, some vegetation, and glare. In addition, special development standards require additional noise insulation.
Lakewood Station District	30-54 (Depends on underlying designation)	The overlay provision would include design and development standards to enhance the pedestrian environment and encourage substantial redevelopment to create a diverse new urban neighborhood.

*This land use category is not intended for schools, fire stations, utility property, etc. which are permissible under other land use designations; however, such uses do appear on the map to prevent inaccurate employment and housing counts.

Table 3.2-3: Comparison of Land Use Designations for Preferred, No Action, and Mixed-Use Alternatives.

Preferred Alternative		No Action Alternative		Mixed-Use Alternative	
Land Use Designation	Density	Land Use Designation	Density	Land Use Designation	Density
Comparable Designations					
<i>Residential Estate</i>	DU/acre: 1-2			<i>Large Lot Overlay District</i>	DU/acre: 2
<i>Single-Family Residential</i>	DU/acre: 4-6	<i>Moderate Density Single-Family</i>	DU/acre: 2-6	<i>Single-Family Residential</i>	DU/acre: 5
<i>Mixed Residential</i>	DU/acre: 8-14			<i>Duplex/Triplex Residential</i>	DU/acre: 6-12
<i>Arterial Corridor</i>	DU/acre: 6				
<i>Multi-Family Residential</i>	DU/acre: 12-22			<i>Multi-Family Residential</i>	DU/acre: 5-24
<i>High Density Multi-Family</i>	DU/acre: 22-40	<i>High Density Residential District</i>	DU/acre: 25	<i>High Density Residential</i>	DU/acre: >24
<i>Central Business District</i>	DU/acre: 30-54 avg jobs/acre: 45	<i>Major Urban Center</i>	DU/acre: 18 jobs/acre: 40	<i>Urban Center</i>	DU/acre: 25 avg jobs/acre: 45
<i>Corridor Commercial</i>	DU/acre: N/A avg jobs/acre: 25	<i>Mixed-Use District</i>	DU/acre: 18 jobs/acre: 25	<i>Mixed-Use Center</i>	DU/acre: 25 jobs/acre: 25
<i>Neighborhood Business District</i>	DU/acre: 12-40 avg jobs/acre: 15	<i>Community Center</i>	DU/acre: 14 jobs/acre: 15	<i>Community Center</i>	DU/acre: 25 avg jobs/acre: 15
<i>Industrial</i>	DU/acre: N/A avg jobs/acre: <15	<i>Employment Center</i>	jobs/acre: 8	<i>Light Industry/Business Park</i>	jobs/acre: 10
<i>Public and Semi-Public Institutional</i>	avg jobs/acre: actual data or projections	<i>Public/Institutional</i>	avg jobs/acre: actual data or projections	<i>Institutional</i>	avg jobs/acre: actual data or projections
<i>Open Space and Recreation</i>	0	<i>Open Space Reserve</i>		<i>Open Space and Recreation</i>	0
<i>Military Lands</i>	DU/acre: N/A avg jobs/acre: N/A	<i>Neighborhood Center</i>	jobs/acre: 15	<i>Neighborhood Center</i>	jobs/acre: 10
<i>Air Corridor 1</i>	DU/acre: 0 avg jobs/acre: <12	<i>Airport Approach Overlay 1</i>		<i>Airport Approach Overlay 1</i>	
<i>Air Corridor 2</i>	DU/acre: 2 avg jobs/acre: <12	<i>Airport Approach Overlay 2</i>		<i>Airport Approach Overlay2</i>	
<i>Lakewood Station Overlay District</i>	DU/acre: avg jobs/acre:				

This difference is particularly marked along the Bridgeport corridor and in the northeast corner of the city. Other significant differences include the addition of a special designation around Lakewood Station, and changes to the boundaries of western Lakewood's low density residential areas to include additional lakefront parcels.

Other distinguishing land use features of this alternative are described for each of the planning areas and land use categories as follows

Planning Areas

Planning Area 1: This planning area would be targeted for significant growth. Highest intensity development would be targeted in and around the Lakewood Mall. Both the Mall and the Colonial Center would be included in a CBD designation that would permit office and residential infill development to complement and bolster existing retail. The plan envisions major redevelopment aimed at creating a city center providing a balance of jobs, housing, and services in an urban setting. New streets would enhance connections to other neighborhoods.

The area around Lakewood Station would also be redeveloped into a higher density urban neighborhood comprised of blocks of multi-family residential developments with open space and pedestrian improvements. Several blocks would be identified for expansion of medical-related employment near St. Clare Hospital and other industrial land in the northeast corner of the district. This area would allow for a dense concentration of mixed-use urban development with a significant high density multi-unit residential presence in the center. Much of the district is within easy walking distance of the commuter rail station. The overlay provision would include design and

development standards to enhance the pedestrian environment and encourage substantial redevelopment.

Open space opportunities consistent with the existing auto-oriented commercial activity on Pacific Highway Southwest and Bridgeport Way would be recognized through designation as Corridor Commercial. To balance significant infill growth, several existing single-family neighborhoods such as Oak Park, Clover Park Plat, Lakeview, and Wildaire would be preserved and stabilized.

Planning Area 2: Industrial lands dominate much of this planning area. The other dominant designation is land constrained by the aircraft approach zone to McChord AFB where high intensity uses such as schools and apartment complexes would be phased out over time in favor of low-occupancy uses like storage, open space, and single-family housing. A narrow strip on either side of Pacific Highway Southwest would be designated Corridor Commercial. Overall, land uses within this planning area would be very similar to the other alternatives.

Planning Area 3: This alternative proposes a slightly less dense mix of housing intensity in the Custer area. A large amount of land would serve as a Neighborhood Business District, and the existing brick plant would be protected through industrial designation. Other significant designations include Mixed Residential and High Density Multi-Family. Overall, this planning area can expect the second highest net residential density after Planning Area 6.

Planning Area 4: Land use in this planning area would be the same as in the other two alternatives; thus, no substantive land use changes related to employment or residential growth are expected. This planning area is expected to remain the least densely populated in Lakewood.

Planning Area 5: In this alternative, west Lakewood's large lot zones would be designated Residential Estate areas rather than as an overlay applied to existing zones. The Preferred Alternative would extend the Residential Estate classification to the eastern shores of Gravelly and American Lakes as well as the northeastern shore of American Lake. The other distinguishing characteristic of this alternative would be a slight increase in land designations as residential at higher than single-family densities.

Planning Area 6: The residential growth potential of this planning area would decrease slightly in comparison to the Mixed-Use Alternative. This change would result from the inclusion of low density Residential Estate designation along both sides of Chambers Creek, the designation of Ponders Corner to Corridor Commercial, and a slightly lower intensity mix of residential uses in Springbrook. Nevertheless, Springbrook can expect the highest average net residential density of any planning area under this alternative. Likewise with 73 acres designated for industrial uses in Springbrook, this planning area can expect 1,218 new employment opportunities. This land use designation is expected to displace 296 multi-family housing units and two houses.

Planning Area 7: In Tillicum, the Preferred Alternative proposes a slightly lower density mix of housing but otherwise closely resembles the Mixed-Use

Alternative. The Preferred Alternative also includes neighborhood-specific urban design treatments to offset the impacts of greater density and make the neighborhood more attractive and functional.

American Lake Gardens is currently isolated from the rest of the city. It is surrounded on three sides by McChord AFB and Fort Lewis, and on the fourth side by I-5. Serious environmental problems exist due to the density of older rental housing placed entirely on septic systems, yet extension of sewer lines at present land values would be prohibitively expensive. American Lake Gardens has very good regional transportation access, which will increase if and when the Cross-Base Highway is built. The area's relative isolation from the rest of the city, low land values, good access to I-5, substandard housing conditions, and the prohibitive cost of providing sewer infrastructure make this area ripe for a major change in land use. Accordingly, the Preferred Alternative proposes to designate a substantial portion of American Lake Gardens as "industrial" for development as a new planned industrial campus. Industrial uses would require new sanitary sewer extension and other infrastructure, which are anticipated to be the responsibility of interested developers. As a result, the character of this neighborhood would shift from a mix of residential and other land uses to an industrial core surrounded by a mix of higher density residential uses. Overall, this planning area can expect approximately 800 new industrial jobs.

Over time, The Preferred Alternative would eliminate a substantial portion of the existing housing in American Lake Gardens as a result of Industrial designation. There are currently 572 existing dwelling units in this area, of which only 23 are single family. The remaining housing units consist of 57 mobile homes, 8 duplex units, and 484 apartments (ROC, D. Bugher, 5/18/00). Although much of this housing is considered affordable, this classification is a direct or indirect result of its poor physical condition and lack of sewer services. While changing this neighborhood to another use would end reliance on failing septic systems, resulting in positive impacts to public health and the natural environment, the loss of affordable housing would have a negative impact on its occupants.

In the city as a whole, American Lake Gardens constitutes approximately 5% of all housing units, including 8% of all apartments and 33% of the mobile homes. Apartments in the area have an average density of 11.6 DUs/acre with individual parcel densities as high as 24 DUs/acre. The mobile home parks have an average density of 8.5 DUs/acre and consist of mobile homes that predate Housing and Urban Development (HUD) standards for manufactured homes. In total, 34% of the land in American Lake Gardens supports 90% of the housing units at an average density of 10 DUs/acre utilizing on-site septic disposal.

Land Uses

The following land uses comprise the Preferred Alternative. The relative distribution by area and percentage is summarized in Table 3.2-4.

Residential Land Uses: Residential uses under the Preferred Alternative are similar to the Mixed-Use Alternative in type, distribution, and quantity. One

important difference between this and other alternatives related to housing is that the Corridor Commercial designation does not include residential uses, unlike the Mixed-Use Center or District zoning proposed for much of the same areas in the other alternatives. Another difference is the relatively larger proportion of Residential Estate at the lower end of the density spectrum and High Density Multi-Family at the other. In addition to comprising more area, both designations are also more geographically widespread. This alternative also includes an overlay zone permitting increased density for senior housing that will include the entire CBD, portions residentially zoned land west of Bridgeport Way, and much of the Lakeview neighborhood.

Table 3.2-4: Lakewood Preferred Alternative Land Use Distribution.

Designation	Intended Use	DU/ Acre	Jobs/ Acre	Acreage
Residential Estate	Large lot residential	1-2	N/A	961
Single-Family Residential	Single-family homes	4-6	N/A	3,165
Mixed Residential	Low density with multi-unit housing	8-14	N/A	292
Multi-Family Residential	Medium density residential	12-22	N/A	266
High Density Multi-Family	Apartment complexes	22-40	N/A	410
Corridor Commercial	Commercial development	N/A	25	347
Central Business District	Lakewood Mall and Colonial Center	30-54	45	244
Neighborhood Business District	Commercial Services	12-40	15	223
Arterial Corridor	Home Occupations	6	6	8
Industrial	Manufacturing, repair, etc.	N/A	15	618
Public & Semi-Public Institutional	Hospitals, colleges, etc.	N/A	Varies	753
Air Corridor 1	Approach to McChord AFB	N/A	12	282
Air Corridor 2	Approach to McChord AFB	2	12	200
Open Space & Recreation	Natural areas, parks	N/A	Varies	1,490
Military Lands	Department of Defense land	N/A	N/A	23
TOTAL				12,166

Source: Provided by EDAW, Inc.

Arterial Corridor: Residential properties located along several major arterials will be permitted for use as the site of low-intensity, non-nuisance businesses if located within this special land use designation.

Commercial and Industrial: This alternative attempts to reduce the surplus of commercial land and concentrate it into viable clusters within the CBD, along principal Commercial Corridors, and in compact Neighborhood Business Districts. Each of these designations would have a particular market focus that would be reflected in development standards and other provisions to be addressed by the zoning code.

Industrial land would be preserved in the Lakewood Industrial Park and north of McChord AFB. In addition, a 118-acre portion of American Lake Gardens and 73 acres in Springbrook would be designated Industrial. Industrial uses are further encouraged and protected through appropriate economic development and land use policies.

Industrial uses have not traditionally been considered compatible with residential uses due to concerns by adjacent residents over noise, air quality, truck traffic, and other potential impacts. The inclusion of larger areas of new industrial uses in predominantly residential neighborhoods such as American Lake Gardens and to a lesser degree in Springbrook could create ongoing land use conflicts between adjacent incompatible land uses proposed by this alternative.

Government Services/Institutional: Land used for colleges, hospitals, large government offices, and other public services would be re-designated to Public and Semi-Public Institutional, but actual uses or the amount of land devoted to such uses are unlikely to change under any of the alternatives.

Neighborhood and Central Business District: This alternative includes specific designations for each type of land use, although several would permit accessory and conditional uses in addition to the principal use. The most flexible designation in terms of acceptable land use is Central Business District, which supports commercial, office, and residential. This designation relies on strict development standards and other provisions to ensure that the mix of uses achieves a desirable balance of land uses and does not result in additional sprawl.

Open Space/Recreation: The most significant difference between the type and quantity of land proposed for open space and recreation uses in this alternative versus the other alternatives is due to the designation of portions of the railroad corridor as Open Space and Recreation land for trail development. Other open space designation is attributable to minor adjustments to locational criteria. Open Space and Recreation is addressed in further detail in Section 3.5.

Unique Designations: The Preferred Alternative addresses unique circumstances with unique designations for land affected by neighboring military operations. The Air Corridor designation applies to areas affected by potential risks and noise associated with military aircraft operations at McChord AFB. The Air Corridor designation restricts the intensity, type, and design of land uses within the designation to minimize these impacts to civilian activity on the ground as well as to flight operations overhead. The Military Lands designation applies to the portions of the federal and state military installations within the city. Currently, this designation only applies to a small portion of the American Lake Gardens neighborhood owned by the Air Force.

Goals and Policies

The comprehensive plan contains goals and mandates adopted from GMA (RCW 36.70A); Multi-County Planning Policies; County-Wide Planning Policies; and objectives, principles, standards, and policies specific to Lakewood. The Preferred Alternative assumes these would be implemented.

No Action Alternative

Population and Employment Growth

Potential impacts to land use are directly related to household and job growth. Under the interim comprehensive plan, no specific growth targets are assigned; thus, population growth would be limited under this alternative by the residential development capacity permitted under existing land use regulations. Based on the theoretical existing capacity of undeveloped and underdeveloped land within Lakewood, there is sufficient capacity to create 12,844 new housing units. Assuming that the average household population of 2.48 remains unchanged, Lakewood's residential population could increase by a

maximum of 31,853 by the year 2017, representing a population increase of close to 32% (see Appendix A). This maximum growth potential is generally consistent with the projected 30,000 initially allocated to Lakewood by the Pierce County Comprehensive Planning process but exceeds the PSRC's original allocation of 11,072 new residents. Population change is graphically illustrated in Figure 3.2-3.

The most recent employment estimate for Lakewood was 19,977 jobs in 1990 (City of Lakewood 1986). An analysis of potential employment growth was conducted based on the capacity of available land based on regional average employment densities and as regulated by existing land use controls to support employment growth. Based on this analysis, Lakewood could add up to 9,982 new jobs representing an increase of nearly 49% over the 1990 estimate. Population and employment change is graphically illustrated in Figure 3.2-3.

Changes to Land Use

Land use under the interim comprehensive plan is controlled by zoning regulations that were imposed by Pierce County prior to Lakewood's incorporation.¹⁵ Lakewood has eight different zoning designations, as summarized in Table 3.2-5.

Table 3.2-5: Existing Zoning Designations under the No Action Alternative.

Designation	Intended Use	DU/ Acre	Jobs/ Acre	Acreage
Community Center	Apartments & neighborhood commercial	14	15	281
Employment Center	Commercial and industrial	0	8	894
High Density Residential	Apartment complexes	18	0	436
Major Urban Center	High density commercial & residential	18	40	757
Mixed-Use District	Assorted uses	18	25	1,041
Moderate Density Single-Family	Single unit homes	4	0	6,673
Neighborhood Center	Commercial	0	15	15
Open Space Reserve	Parks	0	0	876

A capacity model was developed to model the maximum future growth allocation for each alternative. The development capacity analysis estimated how residential and employment growth would be distributed by land use category for each of the seven planning areas. Only parcels considered to be re-developable¹⁶ were considered for potential growth sites. For example, growth estimates for land zoned or designated for single uses such as Moderate Density Single-Family or Employment Center were based on estimated probable maximum density.¹⁷ For mixed-use zones, growth allocation was split between residential and employment land uses. Table 3.2-6 summarizes the relative growth of housing compared to employment in each planning area.

It is assumed that vacant and economically underutilized parcels will supply a majority of future growth opportunities. Potential development sites are scattered across Lakewood, facilitating a widely distributed growth pattern. A

¹⁵ Lakewood subsequently added a number of temporary overlay zones to protect large residential lot development patterns, but these are not considered part of the No Action Alternative within this SEPA analysis.

¹⁶ Parcels deemed to be vacant or underutilized based on relative valuation of improvement and real estate values through geographic information system (GIS) analysis. See Appendix A for more detailed explanation.

¹⁷ For example, the existing Land Use Code (18.35.020.B.2.) permits up to 25 DU/acre in non-single-family zones; the capacity analysis used the more realistic density of 18 DU/acre.

significant portion of residential growth under the No Action Alternative would be facilitated through subdivision of large single-family zoned lots bordering Lakewood's lakes and streams. Other recipients of this type of growth would be the west Lakewood and American Lake Gardens neighborhoods. Higher density infill would occur along the eastern edge of Springbrook. Employment could significantly expand, filling numerous underdeveloped sites around the Colonial Center, the Lakewood Mall, and the industrial/commercial strip between South Tacoma Way and the Lakewood Industrial Park.

Table 3.2-6: Growth Allocation by Planning Area.

Planning Area	Employment Growth	Residential Growth
1	3,997	4,263
2	3,213	3,049
3	1,498	2,802
4	444	1,932
5	287	11,106
6	392	6,503
7	151	2,197
TOTAL	9,982	31,853

The No Action Alternative would allow widely distributed growth throughout the city. Residential growth would result from development of single-family housing infilling the large underdeveloped and vacant lots around the lakes and streams in American Lake Gardens and west Lakewood. Higher density development would be limited to Springbrook and several large vacant parcels scattered around the city. Employment growth could result from continuation of existing strip commercial development along the Pacific Highway Southwest corridor, and in the central part of Planning Area 1. Smaller areas with employment capacity include Custer, Tillicum, and northeastern Lakewood. Other distinguishing land use features of this alternative are described for each of the planning areas and land use categories as follows.

Planning Areas

Planning Area 1: Most of this planning area would be comprised of Major Urban Center zoning, which emphasizes high density employment but also permits considerable concentrations of housing. Existing commercially dominated land use patterns would likely continue, with redevelopment dictated by economic trends. As a result, this planning area is expected to supply the largest percentage of future job growth of all the planning areas under this alternative. Housing built as infill within the Major Urban Center zone and in the Moderate Density Single-Family zone around the fringes of the planning area would also increase.

Planning Area 2: This planning area includes most of the Employment Center, including the Lakewood Industrial Park and existing industrial activity north of McChord AFB. Vacant and underutilized land zoned Employment Center and Mixed-Use District accounts for the other half of this planning area's employment capacity. Due to size, the two zones together, plus some Major Urban Center acreage, would supply the second largest number of jobs of any planning area after Planning Area 1, totaling 3,213 jobs, close to half of the

city's total under this alternative. A moderate number of new housing units could be accommodated in this planning area due to the significant number of underutilized mixed-use acres.

Planning Area 3: North central Lakewood would include large tracts of land zoned Moderate Density Single-Family, Mixed-Use District, High Density Residential, and Open Space Reserve. Most of the growth capacity is attributable to vacant and underutilized High Density Residential and Mixed-Use District parcels.

Planning Area 4: Most of this planning area would remain in its current single-family residential and open space uses. Additional undeveloped and underdeveloped single-family residentially zoned land along the Chambers Creek corridor could accommodate future residential growth in this planning area. A small cluster of underutilized Community Center at Hipkins and Steilacoom would supply a small employment increase in northwest Lakewood. This planning area is expected to supply a net average of 2.9 DU/acre, which is denser than under either of the other alternatives; nevertheless, Planning Area 4 would still be the least dense of the seven planning areas under the No Action Alternative.

Planning Area 5: West Lakewood comprises the largest planning area in the city consisting of about 38% of the city's total acreage (City of Lakewood 1998). It is generally developed in a pattern of single-family homes on residential streets. Although well-developed, there are still significant numbers of vacant parcels available for residential development under current zoning. There are even more underutilized parcels, many large enough to be subdivided into two or more lots, yielding additional housing sites. The large supply of land vulnerable to subdivision and new housing construction in this desirable section of the city could supply nearly 4,500 new housing units. By contrast, with minimal land zoned for employment or mixed uses, this planning area has the lowest job creation capacity of all planning areas in the city. As a result of this alternative, this planning area could develop a significant imbalance of housing to jobs and services.

Planning Area 6: The northern portion of this planning area would remain as a single-family neighborhood. A large number of underutilized lots along the Clover Creek corridor and around Ponders Corner could supply significant new single-family housing opportunities in this corner of the planning area, but the majority of residential growth would result from high density, multi-family construction within the Springbrook neighborhood on currently underutilized and vacant land. In total, this planning area could expect over 6,500 new residents, the second largest residential growth volumes of any planning area. As this is the smallest planning area, comprised of only 820 acres, the change in residential density would be considerable in this part of the city, resulting in a net average density of 7.7 DU/acre, denser than any of the other planning areas. A few vacant parcels of mixed-use land along the Pacific Highway Southwest corridor in Ponders Corner would accommodate a small amount of additional employment growth.

Planning Area 7: This planning area, comprised of Tillicum and American Lake Gardens, is zoned almost entirely Moderate Density Single-Family, with a few blocks of Community Center and several parcels zoned High Density Residential in the southeastern corner of American Lake Gardens. Although this part of the city has the lowest overall potential growth capacity of any planning area in Lakewood due to its relatively small size (6.8% of the city's land area), it has a high percentage of vacant and underdeveloped parcels resulting in significant potential localized redevelopment. As a result, an average net density of 6.8 DU/acre can be expected.

Land Uses

The following land uses comprise the No Action Alternative.

Residential: The predominant land use under the No Action Alternative would be Moderate Density Single-Family, covering 6,673 acres, approximately 55% of the city. High Density Residential would be limited to two large clusters located in Springbrook and Custer, as well as two smaller ones bordering Fort Lewis. A significant percentage of housing would be accommodated in mixed-use zones.

Commercial and Industrial: The only exclusively commercial and industrial non-residential land use designations are the Employment Center and Neighborhood Center. Employment Centers primarily serve industrial and warehousing uses in northeast Lakewood around the Industrial Park and in the area around the I-5/SR-512 interchange. Neighborhood Centers serve small retail/service clusters as a convenience to nearby residents. Most jobs and commercial activity would be located in mixed-use zones.

Government Services/Institutional: The No Action Alternative is based on existing zoning, which does not include specific designations for government services or institutional uses like schools, colleges, and hospitals. Instead, these uses are permitted within appropriate designations; thus, there are no substantive differences between this and other alternatives.

Mixed Land Uses: Mixed-use zones comprise major portions of the city under this alternative, particularly the Mixed-Use Districts in east Lakewood and the Major Urban Center along Bridgeport Way and other major arterials, as well as the Mall. Community Centers surrounded by residential zones provide a mix of uses with a more local focus.

Open Space Reserve: This zone includes large parks, golf courses, and the State Game Lands.

Goals and Policies

The interim comprehensive plan contains goals and mandates adopted from GMA (RCW 36.70A); Multi-County Planning Policies; County-Wide Planning Policies; and objectives, principles, standards, and policies specific to Lakewood. The No Action Alternative assumes these would remain unchanged. Consistency between County-Wide Planning Policies and local regulations is required by GMA. Land use under this alternative would be

controlled for the most part by the existing Zoning and Land Use Code¹⁸; however, this analysis assumes that any amendments to the Land Use Code subsequent to Lakewood's incorporation would not be included in this alternative. As a result, no protections associated with the temporary Residential Density, Residential-Urban, and Residential-Urban/Commercial overlay zones¹⁹ are considered part of this alternative. This alternative complies with GMA as an interim measure only. Additional policies, regulations, and adjustments to land use control mechanisms would be needed to ensure compliance on a long-term basis.

Mixed-Use Alternative

Population and Employment Growth

Under this alternative, population growth capacity would expand significantly. Potential redevelopment of Lakewood's 2,139.5 vacant or underutilized acres could provide housing for an additional 30,204 residents, which would represent an increase of over 40% above current estimates of the city's population by the year 2017 if the average household population of 2.48 remains unchanged²⁰ (see Appendix A). This alternative would accept considerably more residents than were initially allocated to Lakewood by the PSRC, but still less than the No Action Alternative would permit. Population change is compared graphically in Figure 3.2-3.

Increases to employment capacity would be even more dramatic under this alternative, which would potentially add 11,123 new jobs by 2017²¹. This would represent an increase of 55% over the present job supply and 14% more jobs than supported by the No Action Alternative. Employment change is graphically illustrated in Figure 3.2-1

Changes to Land Use

Overall, the three most distinguishing land use features of the Mixed-Use Alternative are: (1) the preservation of western Lakewood's low density residential landscape, (2) the creation of a high density Urban Center, and (3) large mixed-use areas. Changes to land use are summarized in Table 3.2-7.

Land use under this alternative would be classified by the land use designations comprising this alternative to be implemented by zoning regulations. The Mixed-Use Alternative would protect existing low density residential character by restricting new development through the continuation of large lot overlay protections within the zoning code. Permitted use (single-family residential) would remain unchanged, but limits on density would be established through development standards.

¹⁸ Title 18 Zoning and Land Use Code.

¹⁹ These zoning designations were adopted by the City of Lakewood as interim overlay zones following incorporation.

²⁰ Future household size is likely to be less than 2.48; thus estimated population increases are conservative.

²¹ Employment growth analysis assumed the following employment/housing split for mixed use zones:

Community Center: 40/60

Mixed-Use Center: 60/40

Urban Center: 70/30

Table 3.2-7: Land Use Designation Summary for the Mixed-Use Alternative.

Land Use Designation	Intended Use	DU/Acre	Jobs/Acre	Acreage
Large Lot Overlay District	Low density single family	2	0	864.87
Single-Family Residential	Moderate density single family	5	0	3453.02
Duplex/Triplex Residential	Low density multi family	6-12	0	112.2
Multi-Family Residential	Moderate density multi family	5-24	0	465.86
High Density Residential	Apartment complexes	>24	0	237.55
Urban Center	Urban-scale high density commercial & residential	25	45	249.54
Mixed-Use Center	Assorted uses	25	25	710.76
Community Center	Apartments & neighborhood commercial	25	15	193.89
Light Industry/Business Park	Industrial and office jobs	0	10	379.11
Institutional	Hospitals, colleges, and public schools	0	actual data or projections*	673.32
Open Space and Recreation	Open space and recreation	0	0	1395.76
Neighborhood Center	Neighborhood commercial	0	10	31.47

* Employment data provided by hospitals, school district, and public agencies were used in lieu of density-based employment estimates (see Appendix A).

The most dramatic land use change under this alternative would be the designation of the Urban Center. The Urban Center boundaries would extend only as far north as 108th Street and as far west as Bridgeport Way but would cross 1-5 to the south and encompass a 1^{1/2} mile portion of the strip between 1-5 and Pacific Highway Southwest. Under the Mixed-Use Alternative, this would be the target for long range urban development, intended to be the site for the highest density of both employment and residential growth. An underdeveloped mix of older rental housing, vacant land, auto-oriented businesses, and a hospital would become the site for a distinct, compact, recognizable downtown. The Urban Center would be anchored by the commuter rail station, as well as high density housing and employment. Retail, restaurants, theaters, corporate and government offices, human services, medical and related services, research and development, and other employers would generate up to 3,931 new jobs. Housing provided mostly through mixed-use and apartment/ condominium complexes would house an additional 3,498 new residents. Other distinguishing land use features of this alternative are described for each of the planning areas and land use categories as follows.

Planning Areas

Planning Area 1: The majority of the land designated as the Urban Center and close to half the employment and housing growth within the Urban Center would be located within this planning area. Since the land is currently underdeveloped, the proposed development intensity would dramatically alter the character of this corner of the city. Most other portions of this planning area would experience moderate employment and population growth, with the exception of the northwest corner of the planning area, which is likely to double its population. This is most likely attributable to the high percentage of land designated Community Center and High Density Residential.

Planning Area 2: This planning area has significant redevelopable acreage for employment but relatively modest residential capacity. Employment increases are projected to be equitably split between industrial and mixed-use areas, while housing CD-growth is mostly limited to mixed-use areas.

Planning Area 3: Significant growth is slated for this planning area. Employment is projected to double as a result of the significant capacity of the Mixed-Use Center and housing will increase at an even higher rate in the Mixed-Use Center and Multi-Family Residential parcels.

Planning Area 4: No substantive land use changes related to employment or residential growth are expected as a result of this alternative. This planning area will likely remain the least dense with only 2.8 DU/acre.

Planning Area 5: As discussed above, the Mixed-Use Alternative would dramatically reduce this planning area's growth capacity by establishing large lot zones on 300 acres within the planning area. These large lot zones would account for one of the most significant differences between this and the No Action Alternative because they would eliminate much of the residential development capacity in Planning Area 5. Under the No Action Alternative, Planning Area 5 would have the potential for 4,478 homes. By contrast, the large lot zoning designation limits potential new units to only 1,862, a reduction of 38%. As a result, this planning area should expect only minor housing and job growth during the life of the plan.

Planning Area 6: Land uses in Planning Area 6 are primarily designated High Density Residential, Single-Family Residential, and Urban Center. Since much of the land is vacant or under-utilized, the growth potential is substantial, with an estimated capacity for 5,685 new residents, the greatest total increase of any planning area. This planning area would host a substantial percentage of the Urban Center's total growth including 1,658 jobs and 1,595 new residents.

Planning Area 7: This planning area, comprised of Tillicum and American Lake Gardens, would be targeted for substantial residential development under this alternative. Geographically isolated from the rest of Lakewood yet conveniently close to 1-5 and Fort Lewis, both neighborhoods have substantial portions of vacant and underutilized property suitable for redevelopment if water and sewer service is improved.

This alternative would nearly double this planning area's population, increasing Tillicum's population by 722 new residents and increasing the population of American Lake Gardens by 1,049, resulting in net average density of 8.5 DU/acre. Thus, both neighborhoods would have considerably higher average densities than any other planning area for any of the three alternatives.

Employment growth by contrast would actually decrease under this alternative. Community centers in both neighborhoods would create modest job opportunities, but employment would be considerably less than the No Action Alternative (108 vs. 934, respectively).

Land Uses

The following land uses comprise the Mixed-Use Alternative.

Residential Land Uses: Five separate land use categories apply specifically to residential use. Residential densities vary from only two housing units per acre in the Large Lot Overlay designation to as many as 30 per acre in the High

Density Residential. Three additional mixed-use designations allow housing in combination with other uses.

There would be a minor net decrease overall in single-use residential land under the Mixed-Use Alternative. Nevertheless, overall residential capacity in the eastern part of the city, as well as Tillicum and American Lake Gardens, would be substantially increased due to upzoning of single-family land to high density and multi-family designations, as well as moderate to high density mixed-use areas. Coupled with the large lot zoning protections west of the lakes, Lakewood would expect residential growth to shift toward apartment and condominium development in eastern and southern portions of the city.

Overall housing capacity of this alternative would be 30,204 residents. Although a substantial portion of new residential growth would result from infill and redevelopment occurring in single-family areas of the city, most new growth would be facilitated by higher density development such as apartments and condominiums. This would occur in Lakewood's northern and eastern neighborhoods where such growth is encouraged by this alternative's Land Use Map.

Commercial and Industrial Land Uses: Most commercial land in Lakewood would be consolidated into one of three mixed-use designations: Community Center, Mixed-Use Center, or Urban Center. These three designations would permit low, moderate, and high employment density coupled with varying residential intensity. In addition, several small Neighborhood Centers would provide convenient commercial services near the residential neighborhoods they serve, but these would not be expected to play an economically significant role as employment generators.

This alternative would increase industrial land under the designation Light Industry/Business Parks. This designation would comprise much of eastern Lakewood's existing Employment Center and is intended to retain and attract a variety of industrial and business activity with low average employment density. Residential uses are considered incompatible and would be prohibited in these areas.

Government Services/Institutional: Land used for schools, hospitals, government offices, utilities, and other public services would be re-designated to Institutional, but actual uses or the amount of land devoted to such uses are unlikely to change.

Mixed Land Uses: A large amount of land would continue to be classified in one of several mixed-use designations, although the individual designations would be modified. These designations are intended to be locations of complementary uses including housing, services, and jobs clustered together at moderate to high density.

Open Space Recreation: This alternative includes significantly more land designated for parks and open space uses; however, this is due in part to more precise land use accounting than to actual land use allocation. See Section 3.5 for more information.

Goals and Policies

Since the Mixed-Use Alternative is more of a generalized land use concept than a fully developed comprehensive plan, no distinct goals and policies were developed.

3.2.3 Mitigation Measures

The following mitigation measures are primarily intended to address potential impacts associated with the Preferred Alternative but would also apply to the other two alternatives.

- Neighborhood or sub-area plans should be prepared under each of the alternatives for the neighborhoods with the greatest capacity for growth, especially those slated for the highest density, more complex land uses, or greatest change. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 3.2.2 (Living Environment).
- To achieve the desired vision for the Preferred Alternative's Lakewood Station District, a number of urban design solutions are ultimately needed, including completion of the existing street grid, creation of more open space opportunities, and better pedestrian and vehicular connections across the railroad tracks, Pacific Highway Southwest, and 1-5. To address this mitigation measure, the City has revised the Comprehensive Plan to include new policies in Section 3.3.5 (Lakewood Station District).
- Ongoing planning for the CBD must emphasize the need to create a true mixed-use urban center that provides Lakewood a sense of identity as a city. Economic development efforts are needed to attract high quality development and tenants as well as residential uses to the downtown area. To address this mitigation measure, the City has revised the Comprehensive Plan to reword a goal in Section 3.3.2 (Central Business District, Land Use), as well as added a new policy in Section 5.2 (Goals and Policies, Economic Development).
- Creative funding mechanisms for urban design and open space improvements, such as grants, bond measures, creation of Local Improvement Districts, regional and state partnerships, and others, are needed to maintain and improve the quality-of-life as the city densifies. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new goal and its associated policies in Section 4.6 (Goals and Policies, Urban Design).
- Potential impacts associated with the Preferred Alternative to current residents of American Lake Gardens and Springbrook must be mitigated by careful planning of these neighborhoods' partial conversion to industrial use and by the provision of relocation assistance to residents (see Section 3.5.3 for mitigation measures specific to housing impacts) as well as buffering requirements to enhance compatibility and diminish possible use conflicts. To address this mitigation measure, the City has revised the Comprehensive Plan to expand the title of and add policies to

Section 3.4.3 (American Lake Gardens and Springbrook), as well as add new policies to Section 3.10 (Isolated Areas).

- City zoning and development regulations must be amended to reflect the goals of the Future Land Use Map and the attendant land use designations. Adequate development standards must be identified to ensure that proper site and architectural design measures are implemented through private as well as public development. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 4.6 (Goals and Policies, Urban Design).
- City economic development efforts will be needed to reinforce comprehensive planning goals and policies, and the envisioned future land use distribution.

3.2.4 Unavoidable Adverse Impacts

Land use designations under all alternatives will accommodate substantial amounts of population growth. Given population growth pressures being experienced in the Puget Sound region currently and for the projected future, it is expected that Lakewood will experience substantial population growth, with unavoidable impacts to the environment. Development capacity is less under the Preferred Alternative than under the other alternatives and will likely produce fewer overall impacts (although this is not entirely certain, given that growth will depend to a large extent on unpredictable market forces). Furthermore, the Preferred Alternative proposes a more compact and well-defined development pattern than other alternatives that will minimize these impacts while still accepting a fair regional share of growth.

The conversion of portions of American Lake Gardens and Springbrook from residential to industrial uses as intended by the Preferred Alternative will cause the loss of up to 868 housing units. A large percentage of these are relatively low cost housing, although many are substandard.

3.3 Plans and Policies

This section addresses conformance with County-Wide Planning Policies and GMA. In addition, this section evaluates possible conflicts with the plans and policies of adjacent jurisdictions and military bases.

3.3.1 Existing Policy Framework

Growth Management Act

The State of Washington adopted the Growth Management Act (RCW Chapter 36.70A) to address increasing problems stemming from uncoordinated growth in rapidly growing areas across the state. The GMA is based on the following 13 goals²²:

²² RCW § 36.70A020.

- *Urban growth.* Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
- *Reduce sprawl.* Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
- *Efficient multi-modal transportation.* Encourage efficient multi-modal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.
- *Increased availability of affordable 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.
- *Appropriate 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.
- *Protection of property rights.* Private property shall not be taken for public use without just compensation. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
- *Fair and timely permit processing.* Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.
- *Maintenance and enhancement of 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.
- *Support for 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.
- *Environmental protection.* Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
- *Participation by citizens in the planning process.* Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.
- *Provision of adequate 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.

- *Preservation of historic resources.* Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.

The principal method to achieve these goals is through comprehensive planning by cities and counties. The GMA specifies that comprehensive plans for cities contain the following five mandatory elements: Land Use, Housing, Capital Facilities, Utilities, and Transportation. In addition, the GMA encourages the inclusion of other elements that are consistent with the Act's goals as well as specific subarea plans.

Two of the key requirements of the GMA are consistency and concurrency. Consistency requires that a comprehensive plan be consistent with the Act's goals; that plan elements are internally consistent; that each element is consistent with the future Land Use Map; that transportation and land use decisions are consistent; that the transportation element is consistent with the 6-year Transportation Improvement Program (TIP); consistency between each City's comprehensive plan and the County comprehensive plan; consistency between the plans of neighboring jurisdictions; consistency between development regulations and the comprehensive plan; consistency between capital budget decisions and the comprehensive plan; and consistency between the State's capital budgeting actions and local comprehensive plans.

Concurrency requires that public facilities be adequate and ready in time to serve development. For transportation, meeting the concurrency requirement means denying approval to developers if level of service would fall below standards established by the comprehensive plan.

Multi-County Planning Policies

State laws including the GMA, as well as federal laws require the central Puget Sound region to have a regional growth management and economic development transportation strategy and a regional transportation plan. The PSRC complied with these mandates with VISION 2020 (PSRC 1994), an eight-part strategy for managing the region's growth, last updated in 1995. These parts, consisting of urban growth areas, contiguous and orderly development, regional capital facilities, rural areas, open space, resource protection and critical areas, economics, and transportation, meet GMA's multi-county planning requirements for all central Puget Sound planning areas. As the long range growth management strategy for the region, VISION 2020 establishes a policy framework articulating the vision of diverse, economically, and environmentally healthy communities framed by open space connected by a quality multi-modal transportation system.

County-Wide Planning Policies

Pierce County adopted County-Wide Planning Policies in 1992 (Pierce County 1992a, most recently amended December 17, 1996) in response to GMA goals

that the comprehensive plans of adjacent jurisdictions be consistent with one another. Issues addressed include: affordable housing; agricultural lands; economic development; education; fiscal impact; historic, archeological, and cultural preservation; natural resources, open space, and protection of environmentally sensitive lands; siting of regional public capital facilities; transportation; and urban growth areas. The Pierce County County-Wide Planning Policies generally reiterate GMA goals intended to guide the development of comprehensive plans prepared by each jurisdiction in the county. The policies with implications for land use in the City of Lakewood are summarized in Section 3.4 of the background report. For the purpose of SEPA analysis, the most critical of these are the policies addressing affordable housing and urban development. Housing is discussed in Section 3.5 of this EIS.

1992 Joint land Use Study

The Air Force and Army collaborated with adjacent jurisdictions to develop a joint land use study, McChord AFB and Fort Lewis Joint Land Use Study published in February of 1992 (Joint Land Use Study Team 1992). Since Lakewood is more directly affected by flight operations at McChord AFB than by Army exercises at Fort Lewis, the portions of the study most relevant to Lakewood address flight obstructions, aircraft safety, and aircraft-generated noise. Safety and noise data provided the locational criteria for Compatible Use Districts (CUDs). Each CUD corresponds to a specific accident potential zone (APZ) or to areas affected by excessive noise levels. Depending on severity of safety risk or noise, detailed compatibility use guidelines determined permissible land uses. Not surprisingly, the guidelines substantially limit the allowable uses and total development capacity in the northeast sector of the city. Pierce County incorporated the land use limitations in the Joint Land Use Study and the County's land use regulations. Upon incorporation, the City of Lakewood followed the County's lead by adopting these land use controls into its interim zoning.

1998 AICUZ Study

The Air Force prepared a new Air Installation and Compatible Use Zone (AICUZ) study in 1998 (McChord AFB 1998). This study updated the findings of the 1993 McChord Air Force Base Air Installation Compatible Use Zone (AICUZ) Study (McChord AFB 1993) by addressing changes in the base's flying mission. The most significant changes included the replacement of aging C-141 with new C-17 aircraft and the increase in the air traffic pattern altitude by 300 feet. The study included numerous recommendations on how to address noise and safety risks associated with military activity.

The Air Corridor areas are located at the final approach to the McChord AFB's runway and are subject to noise and safety impacts of military flight operations. The AICUZ study determined that potential risk to life and property from hazards associated with aircraft operations within the Air Corridor necessitate control of the intensity, type, and design of lands uses within the designation. To address these concerns, the Air Force included a table of land use compatibility guidelines listing appropriate and inappropriate

land uses based on the U.S. Department of Transportation's Standard Land Use Coding manual (SLUCM). This table addresses both the accident potential zones (Clear Zone, APZ I, and APZ II) and the four noise classifications (65-69 Day-Night Level [DNL], 70-74 DNL, 75-79 DNL, and over 80 DNL).

While the Air Corridor designations generally recognize the restrictions recommended by the AICUZ study, these designations also recognize that the City cannot render property economically useless without risk of a takings judgment. In the Air Corridor designation, non-residential uses are permitted subject to performance and intensity standards. These City land use designations would prohibit high-intensity retail and services activities and multi-story office space or additional dwelling units. All existing high intensity retail uses, duplexes, apartments, and mobile home parks would become nonconforming uses.

Chambers-Clover Creek Watershed Action Plan

As required by the Washington Administrative Code 400-12, Pierce County has prepared a Watershed Action Plan for the Chambers and Clover Creek watersheds which include the land within the boundaries of the City of Lakewood. This plan has not been endorsed by the Pierce County Council but is expected to be by mid 2000. The purpose of the plan is to address non-point water pollution sources through a number of specific action items. Following the plan's endorsement, a Basin Advisory Committee will be formed to steward the plan's implementation. This committee will include representation from state and local agencies, tribes, major employers, and private organizations (ROC, Erkkinen, 5/19/00).

Lakewood Water District Wellhead Protection Plan

In compliance with the Washington State Department of Health Guidelines, the Lakewood Water District published a Wellhead Protection Plan in 1997 (Economic Engineering Services, Inc. and Robinson & Noble 1997). The plan delineates Wellhead Protection Areas, inventories potential contaminant sources, assesses susceptibility to contamination, and includes a number of planning recommendations intended to protect groundwater resources. Since Lakewood is completely dependant on groundwater for domestic, industrial, and irrigation water uses, consistency with the Lakewood Water District Wellhead Protection Plan is critical.

Plans of Adjacent Jurisdictions

GMA requires that comprehensive plans be consistent between jurisdictions. In addition to Fort Lewis and McChord AFB (see discussion under McChord AFB AICUZ Study), Lakewood shares jurisdictional boundaries with the Tacoma, Steilacoom, University Place, and unincorporated areas of Pierce County.

Compatibility issues related to adjoining land use on opposite sides of the corporate limits are also discussed below.

3.3.2 Relationship to Plans, Policies, and Ordinances

Preferred Alternative

Growth Management Act

The GMA requires that the comprehensive plans of local jurisdictions contain five elements (Land Use, Housing, Capital Facilities, Utilities, and Transportation). The Lakewood comprehensive plan is organized by chapter rather than element. The document does not necessarily follow the order recommended by GMA; however, all GMA requirements have been addressed by the Preferred Alternative. Each chapter generally contains goals and policies, accompanied by explanatory text. Some information required by GMA is contained in the background report as well as this EIS. The following paragraphs explain where GMA-required information is located within the draft Lakewood comprehensive plan and its supporting documents.

Land Use Element (36.70A.070(1)): GMA land use requirements are addressed in several locations. The bulk of issues related to land use are addressed in Chapters 2 and 3 of the comprehensive plan. Chapter 2 discusses land use designations and locations, while Chapter 3 consists primarily of related goals and policies. The land use chapter contains an Environmental Quality section that addresses GMA-required groundwater quality protection and drainage, flooding, and stormwater runoff issues. In addition, some physical characteristics such as building intensities are addressed at greater detail in the Urban Design chapter. Future population is estimated according to a development capacity model included in this EIS chapter, with greater detail presented in Appendix A.

Housing Element (36.70A.070(2)): Required housing issues are addressed in the Land Use chapter and several other locations. Technical analysis of needs and capacity is contained in the background report and the EIS. The comprehensive plan land use designations and map identify areas of the city targeted for different housing types. The Land Use chapter addresses goals and policies related to a variety of housing issues.

Capital Facilities Element (36.70A.070(3)): The GMA Capital Facilities requirements are addressed in Chapter 9 of the comprehensive plan as well as in the background report and in the 1999-2004 Capital Improvement Plan (CIP). Chapter 9 contains a typology of the different categories of service providers and goals and policies pertaining to each. Specific capital improvement projects are listed as required in the Lakewood 1999-2004 CIP.

Utilities Element (36.70A.070(4)): The most detailed discussion of utility capacity, needs, and locational issues is contained in the Utilities section of the background report. The Public Services, Utilities, and Capital Facilities section of this EIS also contains relevant information, especially pertaining to impacts and proposed mitigation associated with the comprehensive plan.

Transportation Element (36.70A.070(6)): The Transportation section of the comprehensive plan establishes the overall transportation framework for Lakewood's transportation planning through long-range goals and policies. This plan also designates arterial street classifications, bicycle and pedestrian trails, and establishes level of service standards. Analysis of traffic, safety, and

level of service impacts; road improvements proposed by the State and County; and funding options are contained in detail in the Transportation section of this EIS. Specific transportation projects led by the City are listed in the CIP.

Optional Elements (36.70A.080(1)): Lakewood opted to include chapters addressing urban design, economic development, and public services, along with the five required elements discussed above. In addition, other issues such as parks and recreation and environmental quality are included in the Land Use chapter.

Multi-County Planning Policies

The Preferred Alternative shares many of the VISION 2020 goals, especially expanding housing choice and increasing job opportunities for community residents. The proposed Lakewood Station District, a new area of intensive commercial and residential development intended to be catalyzed by the Sound Transit commuter rail station in southeast Lakewood, exemplifies the type of urban growth envisioned by VISION 2020. Numerous other features from improved pedestrian and bicycle networks to compact urban design types to balanced employment and housing exemplify this consistency.

County-Wide Planning Policies

The Preferred Alternative is consistent with the County-Wide Planning Policies²³. The Lakewood comprehensive plan consists of goals and policies that reflect the emphasis of each of the major County-Wide Planning Policy issue areas, and the Future Land Use Map is based on the land use principles of GMA (and the County-Wide Planning Policies).

The Future Land Use Map in particular exemplifies compliance with the County-Wide Planning Policies. The map illustrates how Lakewood's land base is to be allocated through the completion of the comprehensive plan's 20-year life span. This Future Land Use Map has been developed in accordance with the County-Wide Planning Policies for Pierce County, and has been integrated with all other planning elements to ensure consistency throughout the comprehensive plan. The development of the Future Land Use Map has specifically considered the general distribution and location of land uses, the appropriate intensity and density of land uses given current development trends, the protection of the quality and quantity of public water supplies, the provision of public services, the control of stormwater runoff, and the costs and benefits of growth. The Land Use chapter includes corresponding goals and policies associated with the map.

The City of Lakewood executed an interlocal agreement with Pierce County in 1996 authorizing amendments to the County-Wide Planning Policies²⁴ that established standards for urban and manufacturing/industrial centers. The Lakewood Urban Center (as shown in Figure 2.2 of the draft comprehensive plan) meets or exceeds some of the minimum guidelines for urban center

²³ Resolution #1996-39.

²⁴ Ordinance #96-127 Section 6.1.

designation as defined by VISION 2020 as shown in Table 3.3-1 but does not meet others. At 552 acres, the Lakewood Urban Center is just over half the 1.5 square mile maximum area for an urban center set by VISION 2020. Proportionately, the Lakewood Urban Center is expected to employ slightly more than half the 15,000 minimum employees of an Urban Center. The Lakewood Urban Center's density of 15.1 jobs and 6.6 households per acre falls short of the regional criteria of 25 jobs and 10 per acre. With the addition of commuter rail service and a park-and-ride lot at Lakewood Station, the Urban Center will meet the regional transit criteria. The Lakewood Manufacturing/Industrial Center (as shown in Figure 2.2 of the draft comprehensive plan) also meets the criteria of appropriate County-Wide Planning Policies.

Table 3.3-1: Urban Center Comparison.

Guidelines	VISION 2020/Pierce County	Lakewood
Employees per Acre	25 (minimum)	151
Households per Acre	10 (minimum)	6.6
Total Employees	15,000 (minimum)	8,352
Total Area	1.5 square miles (Maximum)	0.86 square miles

One planning policy unique to Pierce County²⁵ is the requirement of net density of four units per acre. Full build-out of the Preferred Alternative is expected to yield a capacity of 32,250 potential dwelling units on 6,580 net buildable acres. Net buildable acres is arrived at in this case by eliminating all land that is unbuildable due to designation from consideration. This includes public rights-of-way, open water, open space, air corridor, and public and semi-public institutional. Lakewood's density would be 4.9 DUs/acre, which exceeds the County-mandated minimum ratio. This compares favorably to the current density of approximately 2.5 units per acre based on a 1995 population of 62,500 and a net buildable acreage of 10,082 acres (excluding lakes and public ROWs), based on zoning. Neither number takes critical areas into account; however, removing critical areas from net buildable area would increase calculated density slightly.

Under the GMA, each affected jurisdiction is expected to meet certain assigned growth targets assigned by the Office of Financial Management (OFM). Accordingly, in 1997 OFM assigned growth targets to each GMA county for use in each jurisdiction's comprehensive planning efforts. The growth estimates were developed using the cohort survival method and presented as ranges, consisting of low, medium, and high projections. Because the estimates were aggregated at the county-wide level, Pierce County worked with the PSRC to distribute the estimated growth by Forecast Analysis Zone (FAZ). This allowed the county to assemble growth estimates for each jurisdiction. As previously discussed, PSRC estimated Lakewood's 20-year growth using an econometric model to be 76,254, representing an addition of 11,072 residents above the 1996 population as estimated by OFM of 65,182. Pierce County subsequently assigned Lakewood a 2017 target of 93,200 residents at Lakewood's request.²⁶ Subsequent comprehensive planning efforts

²⁵ Ordinance #96-127 Section 6.1.

²⁶ Per Pierce County Ordinance #97-59 adopted May 13, 1997.

developed alternative land use concepts, which were refined into land use alternatives for environmental review, including analysis of development capacity. The capacity analysis determined the current Preferred Alternative (i.e., Recommended Future Land Use Map) to have a build-out capacity of 17,500 new residents. In general, this lower number results from a reduction in residential density in west Lakewood combined with a more critical assessment of market-driven development patterns.

While falling short of earlier expectations as presented to Pierce County, Lakewood is still anticipating a substantial share of the region's growth above original PSRC targets. Since Lakewood will not achieve the current 2017 target of 93,200 residents as required under County-Wide Planning Policies, the growth targets will have to be adjusted to ensure consistency between the growth projected by the plan and the County-Wide Planning Policies and PSRC allocations. In addition to the more general growth management focus discussed above, the County-Wide Planning Policies also addressed the following specific subject areas:

Housing: County-Wide Planning Policies on housing identify a number of alternative strategies for housing all segments of the population projected during the planning period. The Preferred Alternative addresses housing in the Land Use chapter, which includes numerous policies aimed at accommodating the City's housing needs. The plan designates a variety of geographically distributed residential areas with different densities and housing types. Additional analysis of housing issues is included in Section 3.5 of this EIS.

Economic Development: The Preferred Alternative complies with the County-Wide economic development policies in several ways. Chief among these is by designating ample commercial and industrial land areas to provide a significant employment base. Attention was paid to the geographical relationship between residential and employment generating land uses, to transportation connections, and to ensuring viability of new industrial areas.

Urban Growth Areas: The GMA requires the designation of urban growth areas (UGAs) within the county. Locational criteria state that an urban growth area needs to be of sufficient size to accommodate projected urban growth over a 20-year period. The county and municipalities must work together to manage this growth within the designated UGA to produce a fiscally sound growth pattern for all government bodies.

As a mechanism for managing this growth, the "principles of understanding between Pierce County and the municipalities in Pierce County," as outlined in the County-Wide Planning Policies, identify a number of categories of "centers," within which specific policies are adopted directing the type and nature of growth. These include metropolitan centers, urban centers, town centers, and manufacturing centers. These centers are priority locations for accommodating growth, each of a different type and size. Lakewood has two centers: an urban center (focused on the Lakewood Mall) and a manufacturing center, focused on the Lakewood Industrial Park.

Policy numbers 12 through 35 in the Principles of Understanding identify a series of criteria and treatments for urban centers. Among others, they are to be

characterized by clearly defined geographic boundaries, high capacity transit and sufficient land intensity to support it, pedestrian-oriented land uses and amenities, and sufficient public open spaces and recreational opportunities. Specific design treatments are encouraged, including streetscape amenities, defined setbacks and building massing, and a rich mixture of land uses, including higher residential densities. Urban centers must plan for and meet the following criteria:

- a minimum of 25 employees per gross acre of non-residential lands;
- a minimum of 10 households per gross acre;
- a minimum of 15,000 employees; and
- shall not exceed a maximum of 1 1/2 square miles in size.

Policy numbers 35 through 42 in the Principles of Understanding identify a series of criteria and treatment for manufacturing centers. Among other characteristics, planning for manufacturing centers is to encourage clearly defined geographic boundaries, direct access to regional transportation systems, and provision to prohibit housing. Development of offices and retail uses is to be discouraged beyond that needed to serve employees, while land assemblage to provide efficient-sized parcels for manufacturing is to be encouraged. Design and provision of efficient modern transportation system is a high priority.

Chambers-Clover Creek Watershed Action Plan

The Preferred Alternative generally complies with the Chambers-Clover Creek Watershed Action Plan. The same Lakewood City staff participated in the development of both the Watershed Action Plan and the Preferred Alternative. Goals and policies addressing water quality and stormwater are consistent with watershed plan action items.

Lakewood Water District Wellhead Protection Plan

The Wellhead Protection Plan concentrates on three priorities: (1) enhancing and improving local aquifer and wellhead protection through cooperative inter-jurisdictional processes; (2) making effective use of available committees or groups to provide focus and coordination; and (3) selecting action recommendations based on priority of outcome, effectiveness in achieving that outcome, and low cost. These objectives are reiterated in the plan's 36 individual recommendations, which are generally directed at the Lakewood Water District and Pierce County, the principal agencies responsible for well head protection.

The Preferred Alternative generally complies with the Wellhead Protection Plan. References to the Wellhead Protection Plan's recommendations (such as efforts to coordinate emergency response and land use planning efforts with the water district) are included as secondary wellhead protection measures in the environmental protection goals and policies and elsewhere.

McChord AFB AICUZ Study

The McChord AFB AICUZ Study (McChord AFB 1998) established two zones to address noise and safety risks associated with military aircraft use: Accident Potential Zone I (APZ I) and Accident Potential Zone II (APZ II). The AICUZ Study recommended severe land use restrictions in either Accident Potential Zone. Uses that: attract concentrations of people; would stockpile explosive or combustible materials; release substances, light, or electronic emissions that interfere with flight operations; or attract birds would be prohibited. No residential uses would be allowed in Accident Potential Zone I, and housing would be limited to one DU/acre in Accident Potential Zone II. Commercial and industrial uses would be restricted in a similar fashion.

The Preferred Alternative would designate significant portions of the northeastern corner of the City as Air Corridor 1 and Air Corridor 2. This land use designation corresponds to Airport Overlay Zones adopted by Pierce County in response to the AICUZ Study and the APZ I and APZ II zones. The Air Corridor is mapped in Figure 3.3-1.

The Preferred Alternative includes a number of goals and policies aimed at ensuring consistency with the AICUZ Study's recommended aircraft-related land use restrictions north of the runway. Land use restrictions would be implemented through new zoning, which would restrict commercial and industrial uses to those that generate an average maximum of 12 jobs per acre. New housing would be prohibited in Air Corridor 1 designation, corresponding to APZ I, and limited to very low densities (2 DU/acre) in Air Corridor 2. The development capacity analysis identified the potential for development of 86 new dwelling units in Air Corridor 2.

Adjacent Jurisdictions

Town of Steilacoom: The Town of Steilacoom lies to the west of Lakewood. Designated land uses appear consistent on both sides of the boundary with Steilacoom. Both jurisdictions have designated the majority of the area Single-Family Residential. A small area on the Steilacoom side of the line is designated Industrial, but most of this is isolated geographically at the foot of steep slopes rising up from Chambers Creek.

City of University Place: University Place lies northwest of Lakewood on the opposite side of Chambers Creek. Like Lakewood, University Place has designated the Chambers Creek canyon for open space and recreation uses. Land at the top of the bluff is zoned for Single-Family Residential on the University Place side and a mixture of Single- and Multi-Family Residential on the Lakewood rim of the canyon.

City of Tacoma: The City of Tacoma is located north of Lakewood, with both jurisdictions sharing a significant boundary. Tacoma has designated a number of land uses along its southern boundary, which generally mimic those on the Lakewood side of the jurisdictional boundary. Most of the land on the Tacoma side is zoned R2 (One Family Dwelling District), which is analogous to the Single-Family Residential designation on the Lakewood side. A few small

areas of Lakewood's other designations are also compatible with adjoining uses in Tacoma.

Pierce County: A small area of unincorporated Pierce County is located between Lakewood and Steilacoom. It is likely that this area will be annexed in the future by one of these jurisdictions.

No Action Alternative

Growth Management Act

The interim comprehensive plan was developed in response to GMA requirements; as an interim planning document, however, it was not required to fully comply with GMA; thus, no growth targets are included.

Nevertheless, the interim comprehensive plan contains the five required elements (Land Use, Housing, Capital Facilities, Utilities, and Transportation.) The plan also contains elements addressing optional issue areas.

County-Wide Planning Policies

As a portion of the Pierce County comprehensive plan (Pierce County 1993), the interim comprehensive plan is consistent with the County-Wide Planning Policies in terms of content and general structure. It is difficult to ascertain how the plan can comply with the focused growth management strategy of the County-Wide Planning Policies because the structure of the plan is limited to very general mixed-use zoning. Average net density under this alternative would exceed the County's minimum.

McChord AFB Joint Land Use and AICUZ Studies

The interim comprehensive plan would continue to govern land uses within the approach to McChord AFB according to the Airport Approach Overlay Zones generally developed in response to the Joint Land Use Study (Joint Land Use Study Team 1992); thus, this alternative would be consistent with this document as well as the 1998 AICUZ study (McChord AFB 1998), which is very similar.

Chambers-Clover Creek Watershed Action Plan

Although development of the Interim Comprehensive Plan pre-dates the Chambers-Clover Creek Watershed Action Plan, the two appear to be consistent. This is due the former's emphasis on environmental protection measures including watershed and surface drainage considerations.

Lakewood Water District Wellhead Protection Plan

The No Action Alternative complies with the Wellhead Protection Plan. This alternative includes a discussion of aquifer protection issues as well as a number of goals and policies specifically addressing surface and groundwater quality under ENV Objective 5.

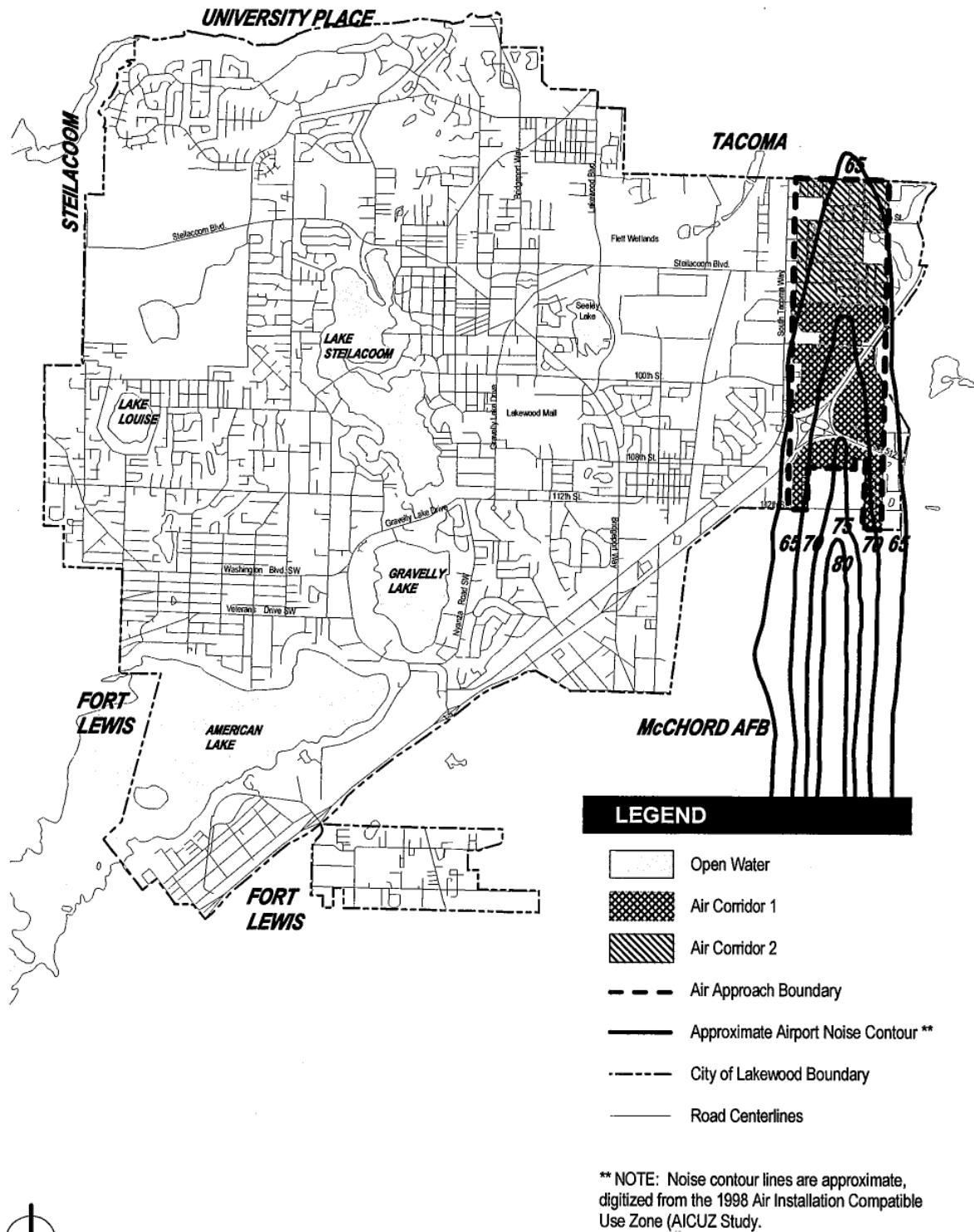


Figure 3.3-1
Airport Approach Area Map

Adjacent Jurisdictions

The interim comprehensive plan would generally preserve the status quo in terms of land use and policy direction, generating no obvious inconsistencies with adjacent jurisdictions.

Mixed-Use Alternative

The Mixed-Use Alternative consists of a land use and distribution concept with the goals and policies associated with the other two alternatives previously discussed. Consistent with the vision of the GMA, VISION 2020, and County-Wide Planning Policies, the Mixed-Use Alternative seeks to reduce sprawl by focusing growth in a high-density urban center and in moderate density mixed-use centers. Land uses would facilitate a variety of residential densities and improve the jobs/housing balance.

McChord AFB AICUZ Study

The Mixed-Use Alternative would also regulate land uses within the approach to McChord AFB according to the Airport Approach Overlay Zones developed in response to the AICUZ Study; thus, this alternative would be consistent with the Joint land Use Study as well.

Chambers-Clover Creek Watershed Action Plan

Since the Mixed-Use Alternative contains no goals and policies, no evaluation can be made of consistency with the Chambers-Clover Creek Watershed Action Plan.

Lakewood Water District Wellhead Protection Plan

Since the Mixed-Use Alternative contains no goals and policies, no evaluation can be made of consistency with the Wellhead Protection Plan.

Adjacent Jurisdictions

The Mixed-Use Alternative would retain the existing residential uses bordering Steilacoom and University Place. The existing mix of uses would likely remain along the boundary with Tacoma; thus, no land use inconsistencies with adjacent jurisdictions would result.

3.3.3 Mitigation Measures

Pierce County Ordinance #97-59, adopted May 13, 1997, established Lakewood's targeted population growth for 2017 as 93,200 residents, at Lakewood's request. That ordinance should be amended by the Growth Management Coordinating Committee (GMCC) to recognize a more realistic population increase number of 17,000 and set the 2017 population target at a lower number. In 1996, PSRC estimated Lakewood's 20-year growth to be 76,254, using an estimated population growth of 11,072 residents²⁷. Lakewood will request that the GMCC amend the ordinance to reflect new capacity

²⁷ EDAW memo to Lakewood staff, date: May 20, 1999

increase target of 17,000 new residents, for a revised 2017 target of 82,670, based on the OFM's 1996 population estimate of 65,182.

The County's ordinance will need to be amended to reflect the revised comprehensive planning growth target of 17,000 additional residents.

3.3.4 Unavoidable Adverse Impacts

In relation to other plans, policies, and ordinances, no unavoidable adverse impacts would result from any of the alternatives.

3.4 Parks, Recreation, and Open Space

This section discusses the affected environment, environmental impacts, mitigation measures, and unavoidable adverse impacts on parks, recreation, and open space associated with implementation of the alternatives considered in this EIS.

3.4.1 Affected Environment

Nearly 12% of Lakewood's land area is classified as Open Space/Recreation Area (EDAW 1997). This includes City-owned parks and open space, Pierce County parkland, lands belonging to the State of Washington, school playgrounds and college campuses, greenbelts, and privately owned recreation facilities. Specifically designated park and recreation resources in Lakewood currently total only 698 acres, or roughly 5% of the City's land area. Parks and recreation facilities in Lakewood are shown graphically on Figure 3.4-1 and summarized in Table 3.4-1.

Table 3.4-1: Park and Recreation Facilities in Lakewood.

Park Site	Total Acres	Number of Sites
City-Owned Parks and Facilities	31.6	8
Neighborhood Parks	8.5	3
Community Parks	17.4	2
Special Use Areas	4.9	2
Undeveloped Park Land	.8	2
Pierce County Owned Parks and Facilities	583	4
Regional Parks	270	1
Special Use Areas	110	1
Natural Open Space/Greenways	202	2
State of Washington	82	1
Natural Open Space/Greenways	82	1
Other	1.3	1
Neighborhood Parks	1.3	1
TOTAL	697.9	14

Source: JC Draggoo & Associates 1997.

City-Owned Parks and Facilities

With the exception of American Lake North Park and Harry Todd Park, most parks and recreation facilities owned by the City of Lakewood are

considerably underdeveloped, and all have some degree of deficiencies resulting from deferred maintenance. In addition, park facilities are not well distributed geographically, leaving many neighborhoods completely un-served by park resources (JC Draggoo & Associates 1997).

Pierce County Owned Parks and Facilities

Pierce County continues to be the largest park facility operator in Lakewood, owning and operating four major parks in the city. The largest of these is Fort Steilacoom County Park, a large regional park with sports fields, trails, a playground, and historic barns. Other County facilities in northwest Lakewood include nearby Fort Steilacoom Golf Course and Chambers Creek Canyon Park, a natural riparian corridor with trails. Lakewood's other county park is Seeley Lake, a centrally located, partially developed wetland open space.

State of Washington

The WDFW maintains the South Puget Sound Wildlife Reserve, an 82-acre game farm with trails and natural areas for wildlife in northern Lakewood.

Public School Facilities

Local public schools maintain the majority of sports facilities such as sports fields, gymnasiums, and playgrounds; however, public access is only possible during non-school hours. Middle and high schools typically have a football stadium with a track, a gym, several baseball/softball fields, and at least three tennis courts. Lakes High School also has a swimming pool. Elementary schools are usually equipped with a soccer field, multi-use backstop, and a covered basketball court; in addition, several have gyms. Recreation facilities owned by the school district are listed in Table 3.4-2.

Private Facilities

A large amount of recreation land is in private ownership in Lakewood. This includes facilities with some public access including two golf courses and Lakewood Gardens, as well as privately maintained parks serving residential subdivisions. Private indoor recreation facilities include the YMCA, the Lakewood Racquet Club, a senior center, community center, and Boys and Girls Club. Pierce College and St. Francis Cabrini School also have recreation facilities for their students. Privately owned recreation facilities are listed in Table 3.4-2.

More detailed information on the existing environment is contained in the City of Lakewood Parks and Recreation Master Plan prepared by JC Draggoo & Associates, November 14, 1997.

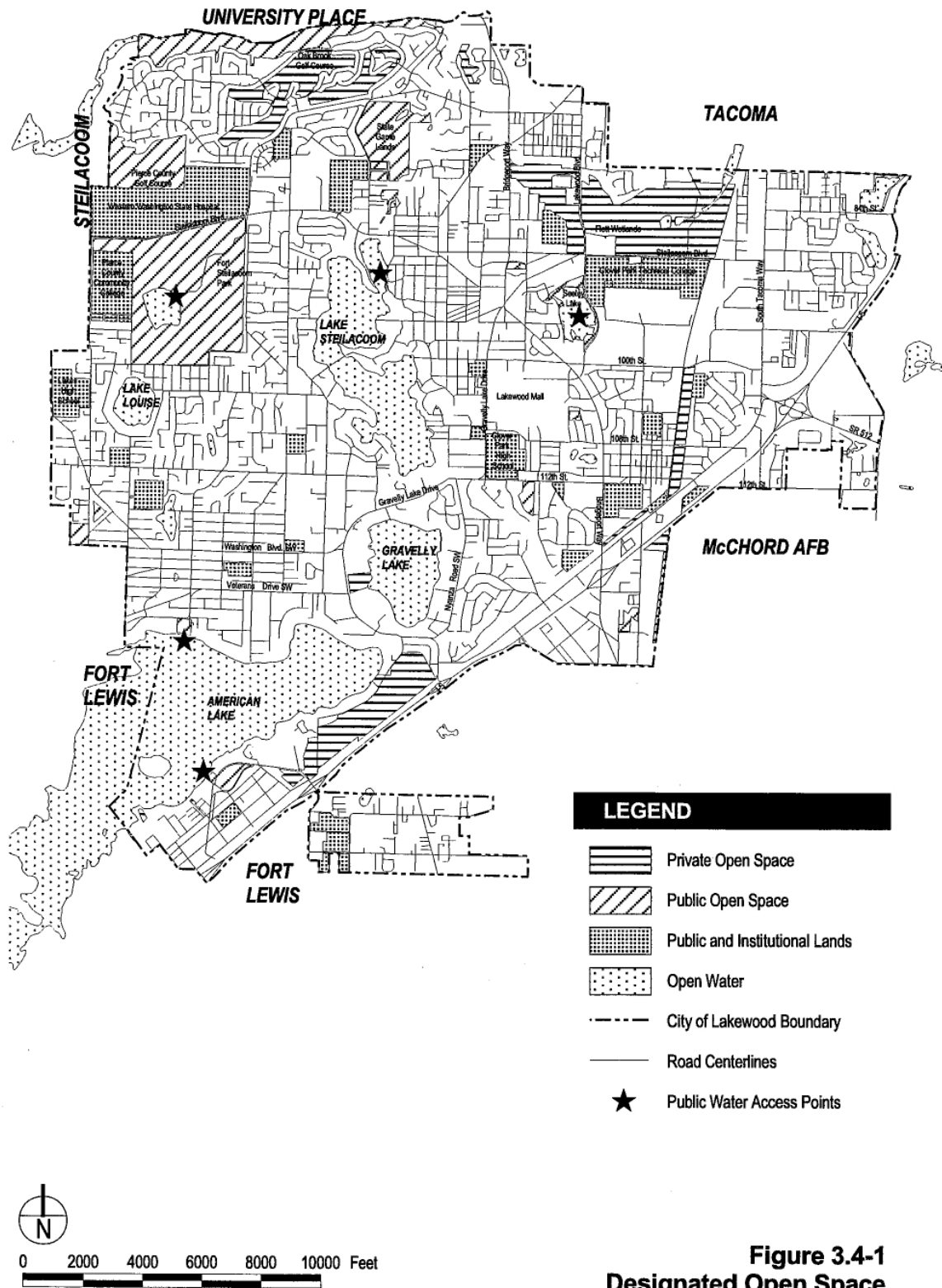


Figure 3.4-1
Designated Open Space
and Recreation Area Map

3.4.2 Environmental Impacts

Environmental impacts related to parks and recreation are discussed below for each of the alternatives under consideration.

Preferred Alternative

The Preferred Alternative includes goals and policies primarily pertaining to the Open Space and Recreation land use designation. These goals and policies also address trails as well as arts, culture, and history. The Preferred Alternative would rely on the 1997 Lakewood Parks and Recreation Master Plan²⁸ as a strategic document that sets priorities for park and recreation resources. The Preferred Alternative would also improve Lakewood's open space and recreation inventory to implement land use goals as illustrated by the following examples:

- Portions of the Burlington Northern Railroad track right-of-way would be designated Open Space to facilitate development of a linear park.
- New open spaces would be designated in the Springbrook neighborhood to provide amenities and natural drainage opportunities for higher density residential and industrial development.
- Undevelopable lands bordering Flett and Chambers creeks would be designated Open Space to protect habitat values.
- A number of private facilities providing significant public and semi-public recreation opportunities would be designated as Open Space.
- Urban design measures would be used, such as improved street trees, sidewalks, and other improvements, to enhance the livability of higher density areas and enhance connections with parks, schools, and other pedestrian destinations.
- A new park would be created in northeast Lakewood, serving open space, recreation, and hydrologic functions.

Given the scarcity of public open space and recreation land, increasing public shoreline access would be one very cost-effective and land efficient way to increase recreational opportunities for Lakewood citizens. This could be accomplished through a number of mechanisms ranging from enhancing existing public street ends to acquiring new waterfront park sites.

²⁸ The City of Lakewood commissioned Draggo Associates, a parks planning consultant, to develop a citywide Parks and Recreation Master Plan, which was accepted by City Council in 1997. No SEPA review was performed, and the document has no adopted or official status.

Table 3.4-2: Public & Quasi-Public Park and Recreation Facilities By Planning Area.

Facilities	Description	Agency	Acreage
Planning Area 1			
Lakewood Active Park	neighborhood playground	City of Lakewood	2.2
Lakewood Kiwanis Park	neighborhood playground	City of Lakewood	2.8
Seeley Lake Park	lake and trails	Pierce County	47
Primley's Replat Park	undeveloped	City of Lakewood	.3
Clover Park H.S.	sports facilities	School District	34.3
Park Lodge Elementary	sports facilities	School District	5.8
Lakeview Elementary	sports facilities	School District	9.4
Lakewood Community Center	community center	Pierce County ¹	N/A
Boys and Girls Club	youth center	Private nonprofit	N/A
St. Francis Cabrini	softball & soccer fields	Private school	--
Planning Area 2			
Oakwood Elementary	sports facilities	School District	9.8
Southgate Elementary	sports facilities	School District	7.8
Lakewood YMCA	indoor recreation facility	Private nonprofit	N/A
Planning Area 3			
Lochburn Middle School	sports facilities	School District	21.4
Clover Park Technical College Trust	wetland	Private nonprofit	--
Lakewood Racquet Club	health club	Private club	N/A
Planning Area 4			
Chambers Creek Park	natural area & trails	Pierce County	155
Ft. Steilacoom Golf Course	public golf course	Pierce County	110
South Puget Sound Wildlife Area	game farm	State of Washington	82
Hudtloff Middle School	sports facilities	School District	25.3
Oakbrook Elementary	sports facilities	School District	10
Custer Elementary	sports facilities	School District	11.6
Dower Elementary	sports facilities	School District	10
Oakbrook Country Club	private golf course	Private	--
Oakbrook 7 th Addition	open play area	Oakbrook 7 th Addition Park and Rec. District	1.3
Planning Area 5			
Ft. Steilacoom Park	regional park	Pierce County	270
Forest Park	neighborhood park	City of Lakewood	3.5
American Lake North Park	swimming beach and boat ramp	City of Lakewood	4.1
Lakeland Park	undeveloped water access	City of Lakewood	.5
Lakes High School	sports facilities	School District	.8
Mann Middle School	sports facilities	School District	39.2
Lake Louise Elementary	sports facilities	School District	22
Lake City Elementary	sports facilities	School District	9
Idlewild Elementary	sports facilities	School District	9.5
Lakewood Gardens	formal gardens	Private nonprofit	10
Tacoma Golf & Country Club	private country club	Private	--
Pierce College	swimming pool, fitness	Private college	--
Glenwood Acres Park	pool, tennis, playground	Private	1.1
Planning Area 6			
Tyee Park Elementary	sports facilities	School District	11.7
Planning Area 7			
Harry Todd Park	multi-use waterfront park	City of Lakewood	17.4
Tillicum Community Center	community center	Pierce County ²	--
Woodbrook Middle School	sports facilities	School District	38
Tillicum Elementary	sports facilities	School District	5

¹ Leased to Clover Park Technical College² To be operated and maintained by Tillicum Community Center Board after July 1, 2000

No Action Alternative

Parks and recreational facilities are classified by GMA as Public Facilities (RCW 36.70A.030). As such, these facilities can be addressed in the capital facilities element of a comprehensive plan, in a parks and recreation element of the comprehensive plan, or in a separate plan. As a newly incorporated city, Lakewood was not required to have a Capital Facilities Plan, and the Capital Facilities Element of the interim comprehensive plan does not address parks and recreation per se. This alternative assumes that park and recreation resources would remain as they are described in Section 3.4.1.

The quantity of land currently designated for recreation and open space is inadequate to support projected future population levels. Existing recreation and open space lands form a pattern of isolated patches, with no network of connecting greenways to link parks and provide wildlife habitat. While Lakewood has an abundance of natural assets, public access to these areas is and would likely remain extremely limited under this alternative.

Mixed-Use Alternative

The Mixed-Use Alternative would also increase the amount of open space and increase recreation facilities, including a proposed off-street trail. Given the relatively large population increases proposed under this alternative, existing open space deficiencies would likely increase in several areas of the city. The Mixed-Use Alternative would likely incorporate the 1997 Lakewood Parks and Recreation Master Plan.

3.4.3 Mitigation Measures

In recognition of the parks deficiencies identified above, the City sought additional public resources through a parks bond initiative on the September 1999 ballot. This ballot sought over \$14 million to implement the City's Parks and Recreation Master Plan. The City's September 1999 measure failed for lack of validation. It was placed on the November ballot in the hope of validation but again failed due to majority vote. Until funding can be secured to support parks acquisition, existing deficiencies will remain. Future parks ballots will need to make this issue compelling to voters.

Given the scarcity of public open space and recreation land, increasing public shoreline access would be one very cost-effective and land-efficient way to increase recreational opportunities for Lakewood citizens. This could be accomplished through a number of mechanisms ranging from enhancing existing public street ends for public use to acquiring new waterfront park sites.

3.4.4 Unavoidable Adverse Impacts

All three alternatives will result in growth, which will exacerbate existing open space and recreation deficiencies. These vary depending on neighborhood location and recreation need.

3.5 Housing

3.5.1 Affected Environment

Data and analysis about the affected environment are provided in the City of Lakewood background report to the comprehensive plan.

3.5.2 Environmental Impacts

Under SEPA (Chapter 197-11 WAC), housing impacts are generally confined to issues of addition or removal of units and indication of whether these units serve low, moderate, or higher income households. Questions relating to the role of community and the effects of displacement on residents are considered socioeconomic and outside the scope of environmental review under SEPA.

Environmental impacts for the Housing Element of the comprehensive plan are discussed below for the Preferred Alternative, the No Action Alternative, and the Mixed-Use Alternative. Impacts to housing capacity and location under these three alternatives are described in the Land Use chapter of this EIS. That section analyzes the City's ability to meet a targeted range of new households over the 20-year planning period.

As shown in the Land Use Element, the Preferred Alternative provides capacity for a net 7,107 new dwelling units. The No Action Alternative provides capacity for 12,844 new dwelling units, and the Mixed-Use Alternative provides capacity for 12,179 new units.

Under all three alternatives, future population growth in the City of Lakewood is likely to increase demand for housing to serve a broad range of household incomes and needs. The ability of the market to provide housing to meet these needs adequately depends on a number of factors, one of which is more prevalent in Lakewood than other Puget Sound cities. Lakewood has a fairly high rental vacancy rate, over 8% in 1999. While this represents a decline from vacancy levels in previous years, it still leaves some room for accommodating new households. Utilization depends in part on modernization and rehabilitation of these units; many may be vacant because of poor condition and/or insufficient size and configuration by current standards. In general, much of the multi-family housing stock is older. In particular, there is an excess supply of one-bedroom apartments that are not desirable in today's market.

Other factors in meeting population growth include the supply of developable land; availability of land zoned for higher densities; existence of incentives, such as density bonuses, for the provision of affordable units; preservation of the existing stock of affordable units; and the ability of development regulations to facilitate development in a timely and cost effective manner (e.g., streamlined review, impact fee waivers).

Under the No Action and Mixed-Use Alternatives, there is not likely to be difficulty meeting Pierce County's affordability goals that deal with a proportion of new housing being affordable to below-median income households. These goals have been accepted by the City of Lakewood. It may

be difficult to significantly reduce the current affordable housing deficit under the alternatives being considered by the City.

The City has limited powers and resources to produce or rehabilitate subsidized housing. Lakewood has already provided a significant amount of the regional supply of affordable housing. Significant change to the housing affordability picture will have to come from a regional financing effort. Pierce County will be reviewing affordability goals and fair share formulation shortly after the availability of data from the 2000 census. While the County does not have numeric targets at this time, the City could review its housing production and affordability in relation to state housing policies. (See Pierce County's Guidelines from GMCC to PCRC dated 9/9/93. See also the Countywide Planning Policies on pp 6-22 to 6-24 of the City of Lakewood Background Report to the Comprehensive Plan [EDAW 1997]).

Preferred Alternative

Changes in Housing

The Preferred Alternative provides the fewest new housing units, with 7,107 new units projected. This alternative focuses on preservation of existing single-family neighborhoods and the concentration of higher density housing in a limited number of neighborhoods. Protection of the large lot neighborhoods near the lakes is more expansive in this alternative than in the Mixed-Use Alternative. Property bordering lakes and stream corridors is also reduced to low density residential use.

Opportunities for development of housing are more restricted in the Preferred Alternative than in the Mixed-Use Alternative since single use designations replace mixed-use areas in the Bridgeport and Northeast portions of the city.

Perhaps the most significant feature of the Preferred Alternative from a residential perspective is the change in use of portions of the American Lake Gardens area and the Springbrook area from residential to a largely industrial designation. In total, 868 housing units, including mostly affordable units, could be lost as this area converts to industrial use. Some of these units are currently in need of modernization and repair, and are substandard in quality or served by failing septic systems. Many of these units can be expected to become vacant.

Seventy-five percent of the housing units built in the 1980s are renter-occupied. As of 1990, about one quarter of single-family units were renter-occupied (U.S. Bureau of the Census 1990).

Based on the land use patterns established in the Future Land Use Map, about 3,829 new single-family homes would be built, mostly in the Single-Family Residential designation. Approximately 4,466 new units of multi-family housing would be built, the majority (3,218) constructed in High Density Multi-Family land use designation. In addition, 544 new units of varied housing types would be built within the mixed-residential designation for the city as a whole. A portion of these housing gains will be offset by housing losses during redevelopment. In addition, on overlay zone permitting increased

density for senior housing is expected to add a relatively modest number of additional housing units for seniors.

Pierce County's fair share allocation of affordable housing (September 1993) sets targets for numbers of affordable units that cities and unincorporated areas should provide, although there are currently no adopted goals for Lakewood. These are based on current levels of moderate income households paying more than 30% of their income for housing and earning less than 95% of county median income (\$28,891 in 1999). The targets are adjusted according to a formula relating to jobs. The county is planning to rework these formulae based on the 2000 census data.

It is advisable for the City of Lakewood to monitor housing production and costs on an ongoing basis to ensure compliance with affordable housing goals as these are set by the County. County-wide policies currently require monitoring on a 5-year basis. While Lakewood housing prices and rents are currently affordable, house sales prices are rising. There are a number of means available to the City so that Lakewood can assist in continuing to meet goals in the future, such as development of policies encouraging accessory units. In addition, Lakewood may cooperate with other cities and public-private partnerships to respond to housing needs on a regional or subregional level.

According to an estimate based on the 1990 census, there were 4,835 households paying more than 30% of their income on housing who earn below 95% of county median income. This represents a little over 22% of the city's 22,754 households in 1990. To provide housing affordable to the same percent of new households, 1,604 housing units will need to be affordable to people earning under 95% of the county median income in 2017.

Goals and Policies

The goals and policies of the Housing Element support many of the objectives of the GMA, which include preserving existing neighborhoods and providing a range of housing opportunities.

In addition, current and forecast housing demand and the need for affordable housing are identified in the draft comprehensive plan. This information provides the basis for the draft comprehensive plan's policies, which meet Lakewood's particular needs and market conditions while fulfilling a number of GMA and County-Wide Planning Policies.

The Preferred Alternative would have an impact on residents of portions of American Lake Gardens and Springbrook who would be displaced by new development of industrial uses in these areas. The policies do not fully mitigate the loss of large numbers of units in American Lake Gardens and Springbrook nor do they provide specific opportunities for replacement housing. They do include methods to encourage production and modernization of housing. They do identify the possible use of CDBG funds for relocation for displaced residents. However, these funds would not be adequate for the purpose. If the policies included the statement that plans for redevelopment of

American Lake Gardens and Springbrook would change if adequate relocation resources were not found, they might provide sufficient mitigations.

The Lakewood comprehensive plan must be accompanied by a monitoring program and implementation strategies to comply with GMA (WAC 365-195-310-2). These are discussed in some policies, but are not sufficiently spelled out or quantified in the plan. Certain land use policies provide for annual reporting on affordable housing, but this is not an adequate monitoring program. These are not currently in the plan. When developed, the plan will provide all required sections of a housing element and can be evaluated in relation to adopted housing impacts. The proposed monitoring program and implementation strategies would mitigate some of the likely impacts on housing resulting from the Preferred Alternative.

No Action Alternative

Changes in Housing

No changes to the land uses described in the interim comprehensive plan would occur for the No Action Alternative. Future changes could occur as residential development proposals are submitted to the City of Lakewood. Their environmental impact would be evaluated on a case-by-case basis. Under this alternative, as many as 12,844 new households could be accommodated in the City of Lakewood.

Additional single-family residences would be accommodated through infill on existing zoned lots and new subdivisions. Some increase in housing units results from accessory dwelling units. Additional multi-family housing would be built in areas currently zoned for this use. Given the large number of new households that could be accommodated under the zoning associated with the interim comprehensive plan, the No Action Alternative would have minimal negative impact on the ability of the City to respond to population pressure.

Goals and Policies

Under the No Action Alternative, policies in the Lakewood interim comprehensive plan would continue to guide residential development in the City of Lakewood. The residential development concepts of the interim comprehensive plan provide a broad array of objectives and techniques to encourage the production and preservation of housing and neighborhoods for all segments of the population, including low income and special needs groups. They also provide for innovative design solutions, changes in regulatory environment, and development and implementation of financial tools to achieve the GMA housing goals²⁹.

The interim comprehensive plan includes sufficient policies and strategies to fulfil GMA and County-Wide Planning Policies in Pierce County.³⁰

²⁹ See pages 147-158 of interim comprehensive plan.

³⁰ For a discussion of GMA and County-Wide Planning Policies regarding housing, see the background report, p. 6-22.

Some policies relating to the location of different residential densities are covered in the Land Use Element of the comprehensive plan.

Implementation Strategies and Monitoring

The interim comprehensive plan includes strategies under each objective that are specific enough to define a public approach to housing. The interim comprehensive plan does not include a monitoring element as required under GMA.

Mixed-Use Alternative

Changes in Housing

This alternative has aggressive growth targets: approximately 12,179 new units by the year 2017. Moderate-density multi-family housing would develop near retail centers in a number of areas in the eastern half of the city. Additional residential development is concentrated in new designations that allow duplexes and some townhouses. The distribution of housing types varies by neighborhood. Accessory units are allowed within the single-family designation. The location of housing near services may lead to a better relationship between housing and other land uses.

The provision of sewers to Tillicum and American Lake Gardens opens the possibilities of higher quality residential development in these areas. Both areas are proposed for a mixture of single-family and multi-family housing. The size of the area designated as Community Center in Tillicum is reduced in comparison to the No Action Alternative, thus strengthening residential use in the neighborhood.

Goals and Policies

Since the Mixed-Use Alternative is more of a generalized land use concept than a fully developed comprehensive plan, no distinct goals and policies were developed.

3.5.3 Mitigation Measures

General

Provide a monitoring program to track housing availability and affordability, as called for in State and County-wide policies. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 3.2.1 (Housing Goals and Policies).

Provide a strategy plan, possibly as a separate document referred to in the plan, with quantified targets and timelines to build on housing policies.

Preferred Alternative

Housing policies should be expanded to include policies for replacement of existing housing for low and moderate income households. Additional policies to encourage housing production could be added if residential capacity does not meet the housing needs of future Lakewood residents as required under the

GMA and found in Pierce County's population targets. Examples of suggested new policy language include:

Additional Policies under GOAL LU-5:

- Improve the existing multi-family housing stock by encouraging, through public-private partnerships, revitalization and replacement of existing apartment complexes in appropriate locations throughout the city.
- Encourage improving management practices of apartment projects by providing technical assistance and other support to apartment management organizations.

Additional Policies under GOAL LU-7:

- Establish public programs and/or public-private partnerships to encourage and assist redevelopment of outdated or substandard multi-family dwellings aimed at providing opportunities for affordable housing.
- Provide incentives for developers to increase the supply of affordable housing through mechanisms such as density bonuses or fee waivers.
- Develop strategies, including financial assistance, to support the relocation of households displaced by City actions, including rezoning.

No Action Alternative

This alternative would accommodate the largest number of households. Other variables being equal, the large supply can help keep prices and rents lower than in options with tighter controls on supply.

The policies in the interim comprehensive plan³¹ that indicate the intention to orient regulations toward development feasibility, develop financial tools, encourage redevelopment-rehabilitation, and promote the availability of special needs housing would mitigate possible loss of units or reduction in affordability.

A monitoring program could provide additional mitigation. Mixed-Use Alternative

The Mixed-Use Alternative would require mitigation measures similar to the No Action Alternative.

3.5.4 Unavoidable Adverse Impacts

Preferred Alternative

Under the Preferred Alternative, the loss of up to 572 existing dwelling units in American Lake Gardens and 298 dwelling units in Springbrook is likely to be an unavoidable adverse impact. Even if some attempt is made to accommodate other multi-family or lower cost units elsewhere in the city, the lower overall capacity of this alternative and the limited opportunities for

³¹ Lakewood interim comprehensive plan Housing Element, 1996 pp 136-158.

multi-family housing are likely to adversely impact a substantial portion of low and moderate income households now living in American Lake Gardens and Springbrook.

No Action Alternative

Under the policies of the interim comprehensive plan, gradual change in the residential districts around the lakes is highly likely as large lots are subdivided. From the point of view of City policies proposed in the comprehensive plan, this would be a negative impact. However, under the standards in SEPA, the likely result would be a greater number of housing units. Thus, it would not be an adverse impact under SEPA.

The policies in the interim comprehensive plan appear to support GMA goals and policies in most respects. However, without a monitoring plan, it would be difficult to track the production and affordability of housing relative to GMA goals and SEPA standards.

Mixed-Use Alternative

This alternative also provides a large capacity for new residential units, similar to the No Action Alternative. The slightly lower supply due to lower capacity might contribute to rising rents and house prices but is unlikely to be a significant negative impact.

3.6 Transportation

3.6.1 Affected Environment

For this transportation analysis, elements of the affected environment include the existing roadway characteristics, traffic volumes, traffic operations (including level-of-service), accident history, transit service, pedestrian and bicycle facilities, transportation demand management, and transportation deficiencies.

Existing Roadway Characteristics

The City of Lakewood's arterial street classifications are shown in Figure 3.6-1. These roadway classifications identify roads according to their uses and serve as the basis for planning roadway improvements. The following definitions serve as a general guide for classifying streets:

- **Principal arterials** - are roadways that provide access to principal centers of activity. These roadways serve as corridors between principal suburban centers, larger communities, and between major trip generators inside and outside the plan area. Service to abutting land is subordinate to travel service to major traffic movements. The principal transportation corridors within the City of Lakewood are principal arterials. These roadways typically have daily volumes of 15,000 vehicles or more.
- **Minor arterials** - are intra-community roadways connecting community centers with principal arterials. They provide service to medium-size trip generators, such as commercial developments, high schools and some



Figure 3.6-1
Arterial Street Classifications

junior high/grade schools, warehousing areas, active parks and ballfields, and other land uses with similar trip generation potential. These roadways place more emphasis on land access than do principal arterials and offer lower traffic mobility. In general, minor arterials serve trips of moderate length, and have volumes of 5,000 to 20,000 vehicles per day.

- **Collector arterials** - connect residential neighborhoods with smaller community centers and facilities as well as provide access to the minor and principal arterial system. These roadways provide both land access and traffic circulation within these neighborhoods and facilities. Collector arterials typically have volumes of 2,000 to 8,000 vehicles per day.
- **Local access roads** - include all non-arterial public city roads and private roads used for providing direct access to individual residential or commercial properties. Service to through traffic movement usually is deliberately discouraged.

Planning for the comprehensive plan transportation needs primarily focuses on the arterial street system within the City of Lakewood since local access streets typically do not have capacity deficiencies. As shown in Figure 3.6-1, principal arterials in the City of Lakewood include South Tacoma Way, Pacific Highway Southwest, Steilacoom Boulevard, Bridgeport Way, a portion of Gravelly Lake Drive, Custer Road, 100th Street SW, Lakewood Drive, Washington Boulevard, Military Road, and a small segment of 112th Street SW.

Existing intersection traffic control devices are shown on Figure 3.6-2. All major arterial street intersections are signalized. Figure 3.6-2 also depicts existing high-accident intersection locations.

Existing Traffic Volumes

Year 1995 daily and p.m. peak hour traffic volumes were obtained from the City of Lakewood and Pierce County Public Works Department for all principal and minor arterials within the City of Lakewood. The existing daily traffic volumes are shown in Figure 3.6-3. As shown, high daily traffic volumes are generally experienced along principal arterials, which carry volumes ranging from approximately 13,000 to 43,000 trips per day. Traffic volumes are the highest in the vicinity of interchanges with I-5, with the highest daily volume occurring at South Tacoma Way north of the I-5/SR-512 interchange (about 43,800 vehicles per day). Volumes are generally lower in the southern and western areas of the city, where many residential neighborhoods currently exist.

Some p.m. peak hour turning movement volumes were also obtained from Pierce County or were derived from counts performed by Parametrix, Inc. (a contractor to the City of Lakewood). The p.m. peak hour turning movement volumes were available for the following signalized intersections:

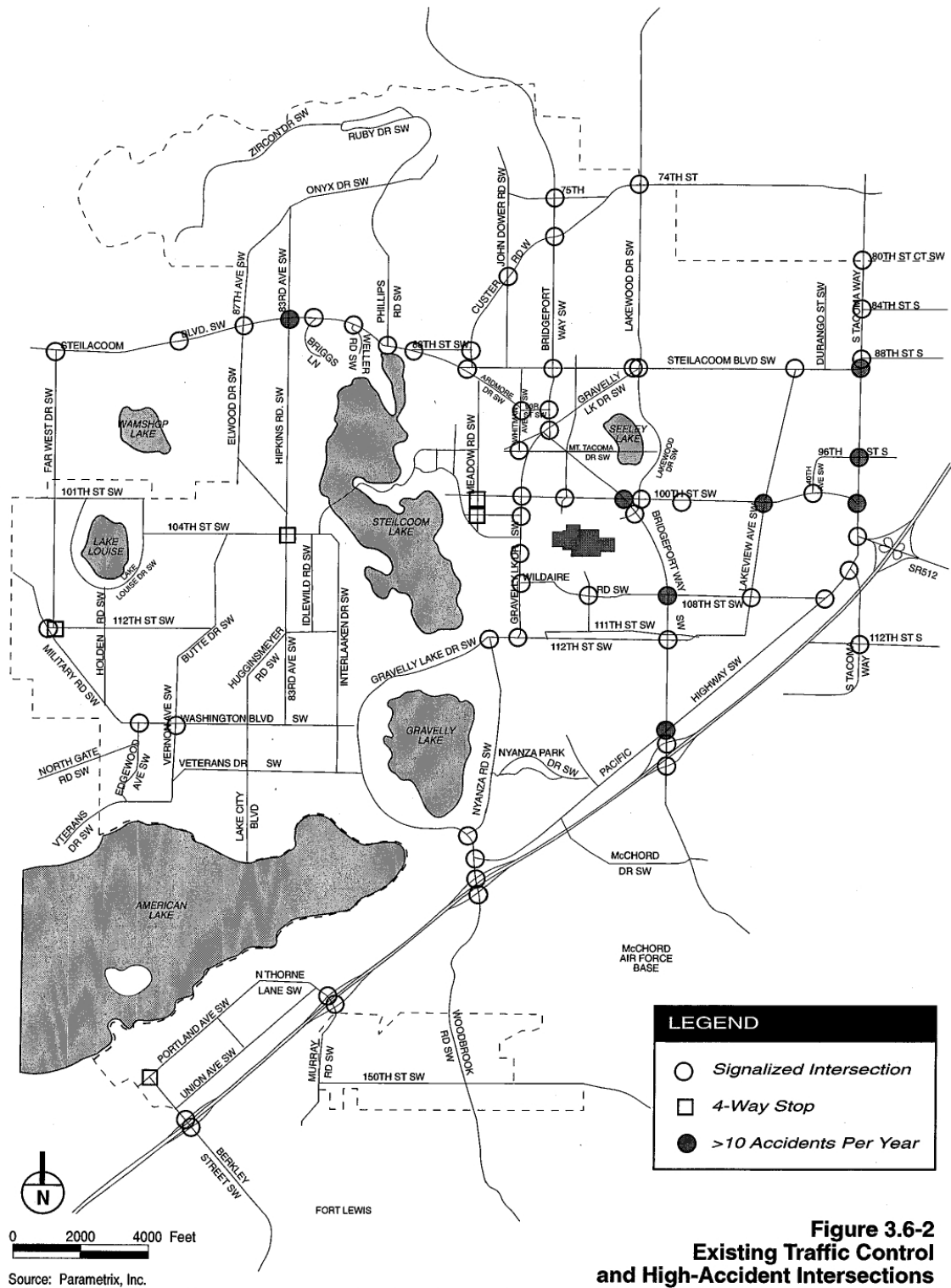


Figure 3.6-2
Existing Traffic Control
and High-Accident Intersections



- Steilacoom Boulevard SW/83rd Avenue SW
- Steilacoom Boulevard SW/87th Avenue SW
- Steilacoom Boulevard SW/88th Avenue SW
- Bridgeport Way SW/Custer Road
- Bridgeport Way SW/108th Street SW
- Bridgeport Way SW/112th Street SW
- Gravelly Lake Drive SW/100th Street SW
- Lakeview Drive SW/100th Street SW
- Lakeview Drive SW/108th Street SW

Existing Traffic Operations

Level of service (LOS) is an estimate of the quality and performance of transportation facility operations in a community. The methodology outlined in the 1997 Highway Capacity Manual (HCM) (Transportation Research Board 1994) is commonly used for determining LOS. According to the HCM, the degree of traffic congestion and delay is rated using the letter “A” for the least amount of congestion to the letter “F” for the highest amount of congestion (i.e., LOS A through LOS F). GMA requires the City of Lakewood to establish LOS standards. The choice of a particular LOS threshold can vary by planning subarea, roadway classification, or specific corridor or street. LOS D is usually considered the minimum acceptable standard in urban areas. With this level of service, some delays are expected for certain traffic movements.

The following LOS categories provide general descriptions of the different levels of service defined in the HCM:

- **LOS A** - represents a free-flow condition. Travel speeds are at or near the speed limit and little to no delay exists. Freedom to select desired speeds and to make turns and maneuver within the traffic stream is extremely high.
- **LOS B** - represents a zone of stable flow. Drivers still have reasonable freedom to select their travel speeds. Minor average delays of 5 to 15 seconds per vehicle are experienced at signalized intersections.
- **LOS C** - still falls within the zone of stable flow, but travel speeds and vehicle maneuverability are more closely controlled by the higher volumes. The selection of speed is not affected by the presence of others, and maneuvering within the traffic stream requires vigilance on the part of the driver. Longer average delays of 15 to 25 seconds per vehicle are experienced at signalized intersections.
- **LOS D** - approaches unstable flow. Travel speed and freedom to maneuver are somewhat restricted, with average delays of 25 to 40

seconds per vehicle at signalized intersections. Small increases in traffic flow can cause operational difficulties at this level.

- **LOS E** - represents operating conditions at or near the capacity of the roadway. Low speeds (approaching 50% of normal) and average intersection delays of 40 to 60 seconds per vehicle are common. Freedom to maneuver within the traffic stream is extremely difficult. Any incident can be expected to produce a breakdown in traffic flow with extensive queuing.
- **LOS F** - describes forced flow operation at very low speeds. Operations are characterized by stop-and-go traffic. Vehicles may progress at reasonable speeds for several hundred feet or more, and then be required to stop in a cyclic fashion. Long average delays of more than 60 seconds per vehicle occur at signalized intersections.

A more technical method of measuring LOS is described in the HCM, which involves the calculation of the volume-to-capacity ratio (V/C) of a roadway or intersection. The V/C ratio ranges shown in Table 3.6-1 have been developed for determining planning level mid-block LOS on urban and rural roadways.

Table 3.6-1: Level of Service Criteria for Urban and Rural Roadways.

LOS	Volume to Capacity (V/C) Ratio	
A	less than or equal to	0.3
B	less than or equal to	0.5
C	less than or equal to	0.75
D	less than or equal to	0.90
E	less than or equal to	1.0
F	greater than	1.0

V/C ratios and LOS were calculated for mid-block arterial roadway sections throughout the City of Lakewood, based on current p.m. peak hour traffic volumes. The results are shown in Table 3.6-2.

Table 3.6-2: City of Lakewood Existing Corridor Levels of Service.

Street Name/Section	Highest One-Way Peak Hour Volume			V/C		LOS	
	a.m.	p.m.	One-Way Capacity ¹	a.m.	p.m.	a.m.	p.m.
Ardmore Drive SW							
southeast of Steilacoom Blvd. SW	486	641	720	0.68	0.89	C	D
northwest of Whitman Avenue SW	451	579	720	0.63	0.80	C	D
Bridgeport Way W							
north of Gravelly Lake Drive SW	865	1182	2050	0.42	0.58	B	C
north of Custer Road W	1068	1021	2050	0.52	0.50	C	B
north of 75th Street W	1105	1336	2050	0.54	0.65	C	C
north of 111th Street SW	997	1100	2050	0.49	0.54	B	C
south of Lakewood Drive SW	865	1166	2050	0.42	0.57	B	C
south of Pacific Highway SW	1008	1191	2050	0.49	0.58	B	C
north of Pacific Highway SW	1065	1336	2050	0.52	0.65	C	C
at Clover Creek bridge south of I-5	947	1298	2050	0.46	0.63	B	C
Custer Road SW/W							
north of 88th Street SW	969	1118	1825	0.53	0.61	C	C
northeast of Bridgeport Way SW	1103	1039	1825	0.60	0.57	C	C
southwest of Bridgeport Way SW	1050	1038	1825	0.58	0.57	C	C
Gravelly Lake Dr. SW							
south of Mount Tacoma Drive SW	798	1130	2050	0.39	0.55	B	C
west of 112th Street SW	886	1195	2050	0.43	0.58	B	C
south of Pacific Highway SW	1325	1583	2050	0.65	0.77	C	D
north of Pacific Highway SW	1240	2147	2050	0.60	1.05	C	F
west of end Nyanza Rd. SW (south)	882	869	975	0.90	0.89	D	D

Table 3.6-2: City of Lakewood Existing Corridor Levels of Service.

Street Name/Section	Highest One-Way Peak Hour Volume			V/C		LOS	
	a.m.	p.m.	One-Way Capacity ¹	a.m.	p.m.	a.m.	p.m.
Hipkins Road SW							
south of Steilacoom Blvd. SW	367	411	720	0.51	0.57	C	C
north of 104th Street SW			720				
Interlaaken Drive SW							
east of Bridge #3192A	184	374	720	0.26	0.52	A	C
Lakewood Drive SW							
north of Steilacoom Blvd. SW	664	937	1825	0.36	0.51	B	C
south of Steilacoom Blvd. SW	528	683	2050	0.26	0.33	A	B
north of 74th Street W	799	1082	1825	0.44	0.59	B	C
south of 74th Street W	602	723	1825	0.33	0.40	B	B
north of 100th Street SW	517	577	2050	0.25	0.28	A	A
Military Road SW							
south of 112th Street SW	372	613	975	0.38	0.63	B	C
Mount Tacoma Drive SW							
west of Gravelly Lake Drive	422	498	975	0.43	0.51	B	C
Murray Road SW							
north of 146th Street SW	498	727	720	0.69	1.01	C	F
North Thorne Lane SW							
southeast of Union Avenue SW	275	523		0.38	0.73	B	C
Nyanza Road SW							
north of Gravelly Lake Drive SW	434	673	975	0.45	0.69	B	C
Pacific Highway SW							
east of Gravelly Lake Drive SW	231	392	720	0.32	0.54	B	C
Phillips Road SW							
north of Steilacoom Blvd. SW	462	448	720	0.64	0.62	C	C
South Tacoma Way							
south of Steilacoom Blvd. SW	965	1209	2050	0.47	0.59	B	C
north of Steilacoom Blvd. SW	1050	1356	2050	0.51	0.66	C	C
north of 96th Street S	976	1182	2050	0.48	0.58	B	C
south of 100th Street SW	1672	1977	2900	0.58	0.68	C	C
south of SR-512	834	1147	2050	0.41	0.56	B	C
Steilacoom Blvd. SW							
west of 83rd Ave. SW/Hipkins Rd. SW	995	1330	2050	0.49	0.65	B	C
west of 87th Avenue SW	1063	985	1825	0.58	0.54	C	C
east of Phillips Road	1629	1759	2050	0.79	0.86	D	D
west of Phillips Road SW	1235	1636	1825	0.68	0.90	C	D
southeast of 88th Street SW	776	1068	1825	0.43	0.59	B	C
Union Avenue SW							
northeast of Berkeley Street SW	420	362	720	0.58	0.50	C	B
southwest of North Thorne Lane SW	195	421	720	0.27	0.58	A	C

Table 3.6-2: City of Lakewood Existing Corridor Levels of Service.

Street Name/Section	Highest One-Way Peak Hour Volume			V/C		LOS	
	a.m.	p.m.	One-Way Capacity ¹	a.m.	p.m.	a.m.	p.m.
Veterans Drive SW							
west of Gravelly Lake Drive SW	307	399	720	0.43	0.55	B	C
Washington Blvd. SW							
east of Vernon Avenue SW	551	706	975	0.57	0.72	C	C
west of Edgewood Drive SW	698	665	975	0.72	0.68	C	C
west of Vernon Avenue SW	349	660	975	0.36	0.68	B	C
west of Gravelly Lake Drive SW	1007	985	975	1.03	1.01	F	F
74th Street W							
west of Lakewood Drive SW	1065	1397	2050	0.52	0.68	C	C
87th Avenue SW							
south of Steilacoom Blvd. SW	118	170	720	0.16	0.24	A	A
north of Steilacoom Blvd SW	439	552	975	0.45	0.57	B	C
88th Street SW							
east of Steilacoom Blvd. SW	1014	836	1825	0.56	0.46	C	B
100th Street SW							
east of Lakeview Drive SW	829	1084	2050	0.40	0.53	B	C
104th Street SW							
west of Hipkins Road SW	246	388	720	0.34	0.54	B	C
108th Street SW							
west of Pacific Highway SW	453	551	720	0.63	0.77	C	D
112th Street SW/S							
west of Bridgeport Way SW	454	314	720	0.63	0.44	C	B

¹ The Highway Capacity Manual was used as a guideline for estimating one-way capacities for these roadways, based on facility type, number of lanes, traffic control, and channelization.

LOS D was selected as the initial threshold to identify system deficiencies. This is the LOS standard used in most urban areas in the Puget Sound region and serves as a reasonable initial threshold to begin identifying deficiencies in the network. Figure 3.6-4 highlights the LOS D or worse arterial segments within the City of Lakewood under existing conditions (1995).

The following existing roadway sections exceed the LOS D threshold during the a.m. and/or p.m. peak hour:

- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F, p.m. peak)
- Murray Road SW north of 146th Street SW (LOS F, p.m. peak)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F, a.m. and p.m. peak)

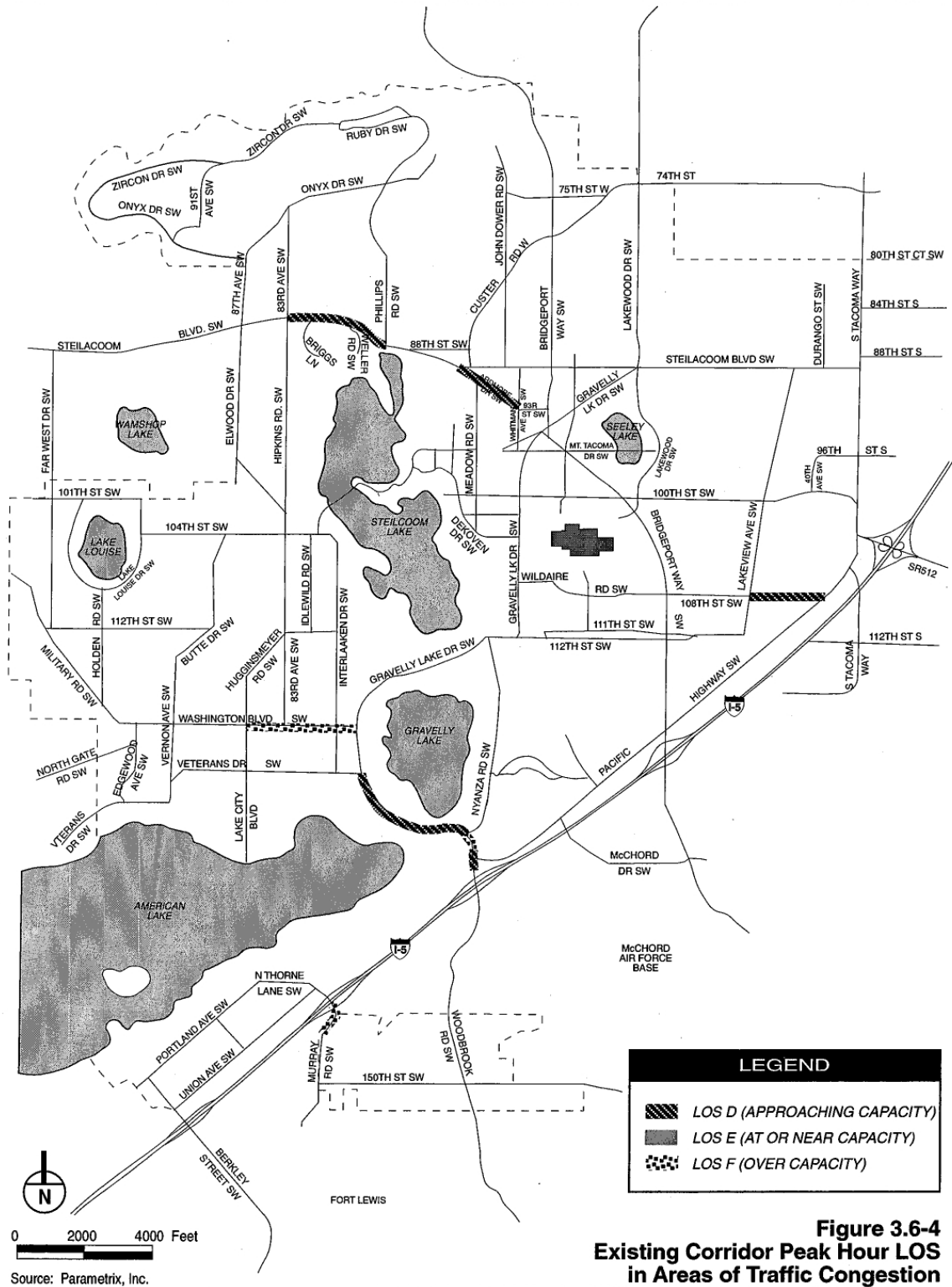


Figure 3.6-4
Existing Corridor Peak Hour LOS
in Areas of Traffic Congestion

In addition, seven arterial segments along Ardmore Drive SW, Gravelly Lake Drive C) SW, Steilacoom Blvd. SW, and 108th Street SW operate at the LOS D threshold during the p.m. peak hour. One arterial segment on Steilacoom Blvd. SW and one segment of Gravelly Lake Drive SW operate at LOS D during the a.m. peak.

The HCM methodology for signalized intersection analysis was also used at several major traffic signal-controlled intersections. At these intersections, level of service is related to the average delay experienced by all vehicles as they approach the intersection. Table 3.6-3 summarizes the relationship between level of service and average delay for signalized intersections.

Table 3.6-3: Level of Service Criteria for Signalized Intersections.

Level of Service	Average Delay (seconds per vehicle)
A	≤ 5.0
B	> 5.0 - ≤ 15.0
C	> 15.0 - ≤ 25.0
D	> 25.0 - ≤ 40.0
E	> 40.0 - ≤ 60.0
F	> 60.0

Based on discussions with City of Lakewood Public Works staff, the following signalized intersections were selected for analysis:

- Steilacoom Boulevard SW/83rd Avenue SW
- Steilacoom Boulevard SW/87th Avenue SW
- Steilacoom Boulevard SW/88th Avenue SW
- Bridgeport Way SW/Custer Road
- Bridgeport Way SW/108th Street SW
- Bridgeport Way SW/112th Street SW
- Gravelly Lake Drive SW/100th Street SW
- Lakeview Drive SW/100th Street SW
- Lakeview Drive SW/108th Street SW

The results of the signalized intersection LOS analysis are summarized in Table 3.6-4. As shown, all analyzed intersections are currently operating at acceptable levels of service (LOS C or better).

Table 3.6-4: City of Lakewood Existing Levels of Service for Signalized Intersections.

Signalized Intersection	Level of Service	Delay
Steilacoom Boulevard SW/83rd Avenue SW	C	19.4
Steilacoom Boulevard SW/87th Avenue SW	B	13.8
Steilacoom Boulevard SW/88th Avenue SW	B	8.6
Bridgeport Way SW/Custer Road	C	23.6
Bridgeport Way SW/108th Street SW	B	14.8
Bridgeport Way SW/112th Street SW	B	10.4
Gravelly Lake Drive SW/100th Street SW	B	10.5
Lakeview Drive SW/100th Street SW	B	11.6
Lakeview Drive SW/108th Street SW	C	17.2

Accident History

Accident records for the City of Lakewood were reviewed for the years 1992 through June 1996. Accident rates and accident severity (property damage only, personal injury, fatality) were reviewed for all signalized intersections and roadway segments in the City of Lakewood. The detailed results of this analysis are included in Appendix B.

The following intersections have averaged close to 10 or more accidents per year for the past 5 recorded years:

- 100th Street SW/Lakeview Avenue SW
- Bridgeport Way SW/Pacific Highway SW
- Bridgeport Way SW/108th Street SW
- Bridgeport Way SW/100th Street SW
- South Tacoma Way/100th Street SW
- South Tacoma Way/96th Street SW
- South Tacoma Way/Steilacoom Blvd. SW
- Steilacoom Blvd. SW/83th Avenue SW

A closer review of the accidents at these intersections shows that no fatalities have occurred at these locations in the 5-year period represented. Furthermore, these intersections averaged accident rates below 1.0 per million entering vehicles (mev), with the exception of the South Tacoma Way/Steilacoom Blvd. SW intersection. Therefore, for the most part, the intersections experiencing frequent accidents tended to also carry the highest traffic volumes. The intersection of 100th Street SW/59th Avenue SW should be noted for its high accident rate of 1.1 accidents per mev, despite its relatively average history of accident occurrences.

Transit Service

Pierce Transit provides transit service to the City of Lakewood. There are currently nine local routes serving the City of Lakewood, offering connections to McChord AFB, Parkland Transit Center, Fort Lewis, Steilacoom, Tacoma Mall, and downtown Tacoma. Eight of these routes connect at the Lakewood Transit Center, adjacent to the north side of Lakewood Mall.

In addition to the local transit routes, regional express routes to Seattle and Olympia also serve the SR-512 Park and Ride, located at the junction of SR-512 and South Tacoma Way. Table 3.6-5 lists Pierce Transit's bus routes currently serving the City of Lakewood. Service for many of these routes may decrease due to voter approval of Initiative 695 (1-695). In January 2000, all revenues from the motor vehicle excise tax (MVET), a major source of funding for Pierce Transit, will be eliminated due to 1-695.

Pierce Transit also provides door-to-door service for the mentally ill and physically impaired via the Shuttle. This service is available through the Pierce Transit Dispatch Office. Rideshare and ridematch programs are also available for commuters who want to start or join a carpool or vanpool.

Table 3.6-5: Pierce Transit Bus Service Routes.

Route No.	Route Description	Service Area	Schedule
48	Sheridan-M Street	Lakewood Mall to Downtown Tacoma	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
200	Bridgeport	Tacoma Community College to Lakewood Mall	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
202	S. 72nd Street	Lakewood Mall to Sumner	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
204	Lakewood-Parkland	Parkland to Lakewood Mall	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
206	Fort Lewis	Lakewood Mall to Fort Lewis	Weekdays - every 30 minutes Saturdays - every 30 minutes Sundays - every 1 hour
210	Lakewood	Downtown Tacoma to Lakewood Mall	Weekdays - every 15 minutes Saturdays - every 30 minutes Sundays - every 1 hour
212	Steilacoom	Lakewood Mall to Steilacoom	Weekdays - every 30 minutes Weekends - every 1 hour
214	Washington	Lakewood Mall to Pierce College	Weekdays(AM)-every 30 min. Weekdays(PM)-every 1 hour Sat./Sun. - every 1 hour
300	S. Tacoma Way	Tacoma Mall to McChord Commissary	Weekdays - every 30 minutes Saturdays - every 30 minutes Sundays - every 1 hour
591X, 592X, 594X	Seattle Express	Downtown Seattle (all), Tacoma Dome (591X, 594X), Downtown Tacoma (594X), SR-512 Park & Ride (all)	Wkdys (5-8am)-every 15 min. Wkdys (8am-6pm)-every 30 min. Saturdays - every 30 minutes Sundays - every 1 hour
601X, 603X, 605X, 620X	Olympia Express	Olympia (all), SR-512 P&R (all), Tacoma Community College (601X), Tacoma (602X, 605X, 620X)	Wkdys -every 15 min. to 1 hour Sat./Sun. - no service

Source: Pierce Transit, 1997.

Pedestrian and Bicycle Facilities

Table 3.6-6 lists the locations of non-motorized transportation facilities in the City of Lakewood. Most other areas in the City of Lakewood lack sidewalks or paved shoulders. A review of City of Lakewood traffic accidents was conducted to determine the number of accidents involving pedestrians and/or bicyclists that occurred between 1990 and September 1996. The results of the review are shown in Table 3.6-7.

Other Project-Related Issues

Other future issues that could have a significant impact on roadway capacity in different areas of the city include:

- Construction of the proposed Cross-Base Highway and potential land use changes in American Lake Gardens.
- Redevelopment of the South Tacoma Way (SR-99) corridor.
- Reconstruction of the 1-5/SR-512 interchange and connection to 100th Street SW.
- Location of the Sound Transit commuter rail station and associated redevelopment in the station area.

Table 3.6-6: Existing Non-Motorized Transportation Facilities.

Location	Facility
Fort Steilacoom Park Trails	Multi-Use Trails
84th St. S - S. Tacoma Way to Tacoma City Limit	Sidewalks
87th Ave. SW - Steilacoom Blvd. to Onyx Dr. SW	Paved Shoulders
96th St. S - 40th Ave. SW to 26th Ave.	Sidewalks
108th St. SW - Davisson Rd. SW to Lakeview Ave. SW	Sidewalks
112th St. SW - Military Rd. SW to Butte Dr. SW	Paved Shoulders
Berkeley St. SW (156th St. - Portland Ave. SW to SR 5 Northbound Access)	Sidewalks
Bridgeport Way - Arrowhead Rd. to Lakewood Dr. SW	Sidewalks
Bristol Ave. SW - Lakewood Mall to 100th St. SW	Sidewalks
Hipkins Rd. SW - Angle Lane SW to Steilacoom Blvd.	Paved Shoulders Exist: (Narrow - 92nd St. to Angle)
Lake St./Maple St./Orchard St./Washington St. SW (Tillicum Sidewalks)	Sidewalks
Gravelly Lake Dr. SW - North End Nyanza Rd. SW to Bridgeport Way	Sidewalks
Whitman Ave. - Motor Ave. to Ardmore Ave.	Sidewalks

Table 3.6-7: Year 1990 to 1996 Traffic Accidents Involving Pedestrians or Bicyclists.

Type	Year						
	1990	1991	1992	1993	1994	1995	1996 ¹
Pedestrian	19	19	23	24	20	14	14
Bicycle	10	19	16	11	15	15	12

¹ January through September only.

- Location of the proposed City Hall/Civic Center complex and potential redevelopment around the complex.
- Increase in freight and passenger rail service that may require grade separation of existing at-grade crossings.. 100th Street SW and Bridgeport Way have been mentioned as possible locations.

As shown in Table 3.6-7, more traffic accidents involved pedestrians than bicycles. Almost all of the accidents were personal injury accidents. Only two of the listed accidents, both of which involved bicyclists, resulted in property damage only. Ten fatalities were experienced in the accidents. Of these, nine accidents involved pedestrians and one accident involved a bicyclist. Fatalities occurred at the following locations:

- Farwest Drive SW south of Steilacoom Blvd. SW (involved bicyclist)
- Farwest Drive SW north of 102nd Street SW
- Military Road SW southeast of Wildwood Avenue SW
- Pacific Highway SW southwest of the BNSF railroad bridge
- Pacific Highway SW northeast of Clover Creek bridge
- Pacific Highway SW northeast of 47th Avenue SW
- Pacific Highway SW southwest of 112th Street SW
- Pacific Highway SW northeast of New York Avenue SW
- South Tacoma Way south of 86th Street South
- 108th Street SW at Kendrick Street SW

Transportation Demand and Systems Management

Travel Demand Management (TDM) and Transportation Systems Management (TSM) strategies attempt to optimize the capacity of the existing transportation system through signalization and other traffic engineering mechanisms. TSM strategies focus on managing transportation facilities and the supply of transportation options. The goal of TSM is to maintain and enhance optimal system efficiency for moving people and goods. TDM strategies use the same concepts to affect travel behavior and the demand to use transportation facilities. The goal of TDM is to reduce, eliminate, or shorten trips, or shift trips to non-peak periods.

Washington State currently has its own TDM law in effect, the Commute Trip Reduction Act (CTR). This law requires companies with 100 or more full-time employees that begin work between 6:00 and 9:00 a.m. to establish and implement a TDM program. The law includes trip reduction goals for all qualifying businesses of 20% by 1997, 25% by 1999, and 35% by 2005. Washington State's CTR program is currently funded by the Clean Air Fund, which could be affected by the passage of I-695.

The Washington State Department of Transportation (WSDOT) recently published a summary of CTR effects on travel in the eight counties affected by the act, between 1993 and 1995. The report shows that the total number of single-occupant vehicle (SOV) trips decreased by 5.6% during this period. SOV trips in Pierce County areas that include CTR companies decreased by 5.4%. A total of 57 companies in the urbanized Tacoma/Fife area showed reductions of 5.9%, and 28 companies in rural Pierce County showed reductions of 4.6% in SOV trips.

CTR applies to several major employers in and around the City of Lakewood, as listed in Table 3.6-8.

Table 3.6-8: CTR Affected Employers in the City of Lakewood.

Company	Location
Fort Lewis Veterans Administration Medical Center	American Lake (West of I-5)
U.S. Army/Fort Lewis	East of I-5, South of 150th St. SW/Perimeter Rd.
McChord AFB	East of I-5, North of 150th St. SW/Perimeter Rd.
Pierce College	Steilacoom
Western State Hospital	Fort Steilacoom
Clover Park Technical College	Lakeview (West of I-5)

Source: Pierce County

3.6.2 Environmental Impacts

Travel Demand Forecasting and Model Development

A citywide transportation planning model was developed using the EMME/2 computer software package. An important function of a model is its ability to analyze future development scenarios in terms of traffic impacts. This model calculates trip generation based on land use characteristics, allowing the impact of different land use types and development intensities to be evaluated.

To project future transportation demand, three alternative land use and development scenarios were assumed (the Preferred Alternative, the No Action Alternative, and the Mixed-Use Alternative). For the Preferred and Mixed-Use Alternatives, the I-5/SR-512 interchange improvements, including a direct connection to 100th Street SW, was evaluated by incorporating a “with” and “without improvement” case into the analysis.

For the No Action Alternative, the future land use assumptions contained in the Pierce County EMME/2 travel demand forecasting model were adjusted to reflect more recent information developed for this EIS. These future land use assumptions for the No Action Alternative are based on current zoning. For the Preferred and Mixed-Use Alternatives, land use assumptions within Lakewood were modified to reflect changes in the type and intensity of future land use and development. (Refer to Section 3.2.2 for information on land use totals by planning area.)

EMME/2 model output includes peak hour roadway traffic volumes given specific land use or transportation network scenarios. The model developed for the City of Lakewood provides peak hour arterial link volumes on all streets.

The land use data used for developing the traffic model were divided into Transportation Analysis Zones (TAZs) within the seven designated planning areas identified and described in Section 3.2 (Land Use). These TAZs are shown in Figure 3.6-5. Population growth forecasts based on land use within these planning areas were linked to the TAZs and used as inputs to drive the travel demand forecasting models.

The seven designated planning areas for the City of Lakewood (illustrated in Figure 3.2-2) include:

Table 3.6-9 lists the projected resident and job populations for the No Action, Preferred and Mixed Use Alternatives by planning area. These were the assumptions used to conduct the traffic impact analyses.

Table 3.6-9: Summary of Revised Lakewood Capacity Analysis of Residential and Employment Growth

Planning Areas	Residents			Jobs ²⁹		
	Preferred	No Action	Mixed Use	Preferred	No Action	Mixed Use
#1	4,392	4,263	5,330	3,233	3,997	3,307
#2	-343	3,049	3,673	5,538	3,213	3,905
#3	4,450	2,802	4,587	742	1,498	1,126
#4	866	1,932	1,920	405	444	487
#5	6,137	11,106	4,618	206	287	375
#6	1,885	6,503	5,685	1,230	392	1,935
#7	2,265	2,197	4,391	921	151	167
Total	17,500³⁰	31,852	30,204	12,275	9,982	11,237

³² Includes public sector employment located in public and institutional employment areas estimated based on actual employment and employment projections.

³³ Assumes reduction of 2,153 residents due to housing units lost to industrial designation.

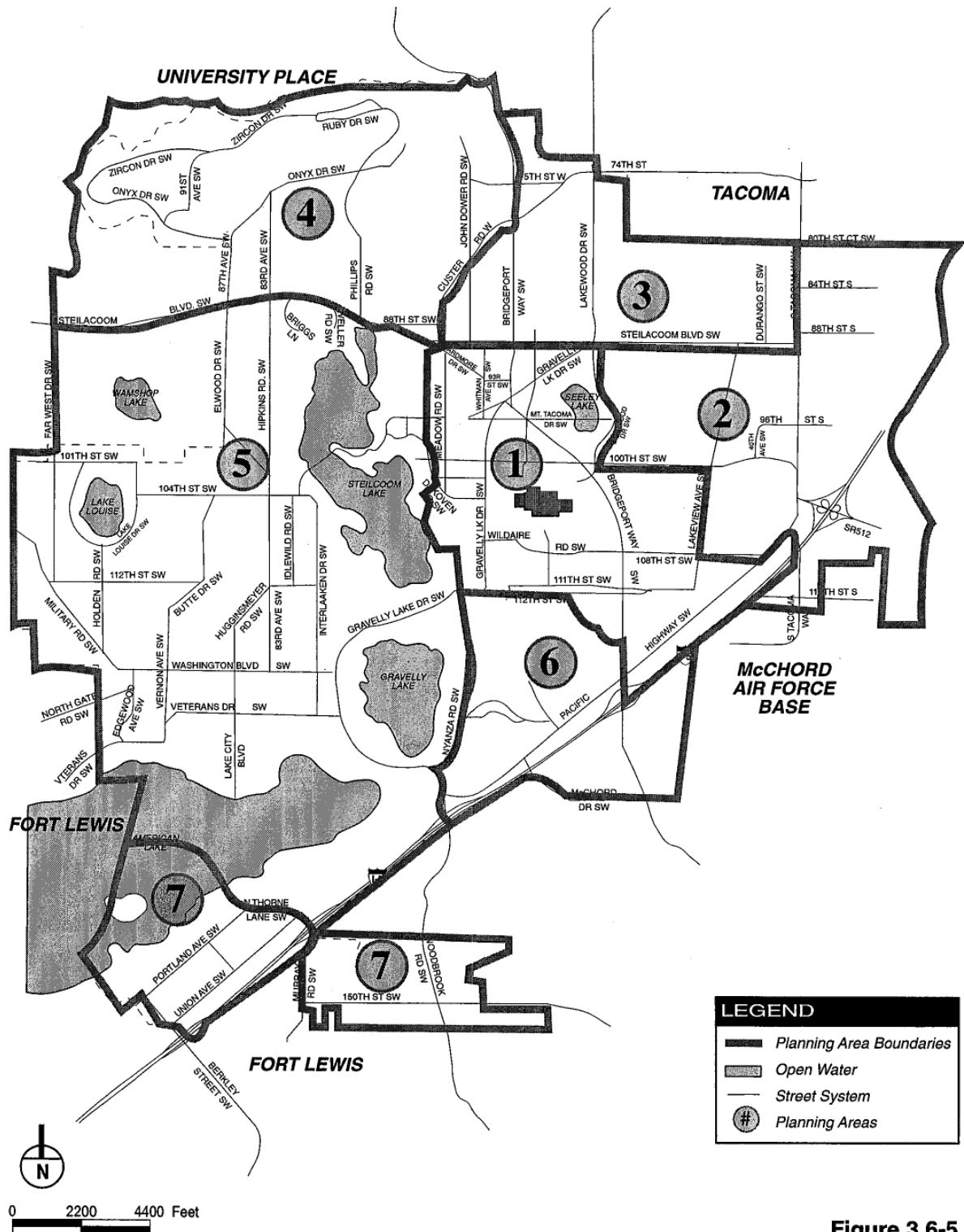


Figure 3.6-5
Planning Area Boundaries

Land uses contained in the planning areas were grouped into two main categories:

- Residential dwelling units, including single- and multi-family dwelling units; and
- Retail and non-retail employees — this category includes employees for retail uses and non-retail uses such as office, light industrial, school, hospital, and service employees.

Planned Transportation Improvements

City of Lakewood Six-Year Comprehensive Transportation Program (2000-2005)

The City of Lakewood Six-Year Comprehensive Transportation Program includes projects that would be constructed between the years 2000 and 2006, depending on when funding is provided. Anticipated annual transportation revenues and expenditures are displayed in the Capital Facilities Program and Finance Plan shown in Tables 3.6-10 and 3.6-11.

Table 3.6-10: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Revenues
(All amounts are times \$1,000)

Sources of Funds	Totals						
Existing Revenues							
<i>Non-City Sources</i>							
Woodbrook Settlement Funds	625						
UATA	2,101						
ISTEA	850						
TEA-21	2,403						
TIB	1,690						
CDBG	3,460						
Pierce College	20						
HES	468						
Sound Transit	18,000						
Private Development	468						
Clover Park School District	50						
Community Service Organizations	90						
<i>Total of Non-City Existing</i>	<i>\$30,225</i>						
	2000	2001	2002	2003	2004	2005	Total
City Sources							
Beginning Fund Balance	3065						\$3,065
Transfer from Fund 110	350	350	350	350	350	350	\$2,100
Motor vehicle fuel tax (Arterial Streets Fund)	419	419	419	419	419	419	\$2,094
Vehicle license fee	460	460	460	460	460	460	\$2,760
Real estate excise tax (Arterial Street Fund)	900	900	900	900	900	900	\$5,400
Utility tax	1200	1200	1200	1200	1200	1200	\$7,200
Electrical Contract	80	80	80	80	80	80	\$480
Right of Way Permits	24	24	24	24	24	24	\$144
Community service organizations	15	15	15	15	15	15	\$90
<i>Total of City Existing</i>	<i>\$6,513</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$23,752</i>
Less Operations and Maintenance	924	956	989	1023	1059	1097	\$6,048
Less Operating Fund Balance	750						\$750
<i>Total Existing Services</i>	<i>\$4,839</i>	<i>\$2,492</i>	<i>\$2,459</i>	<i>\$2,425</i>	<i>\$2,389</i>	<i>\$2,351</i>	<i>\$16,954</i>

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
SECTION 1							
NEW CONSTRUCTION							
ARTERIAL STREET PROJECTS							
1.1 108th St SW Lakeview to So. Tacoma Way - Reconstruct	0.00	1,100.00	200.00	0.00	0.00	0.00	\$1,300.00
1.2 Nyanza Road and I-5 Right Turn Lane	0.00	60.00	720.00	0.00	0.00	0.00	\$780.00
1.3 Cross Base Highway	1.00	0.00	0.00	0.00	0.00	0.00	\$1.00
1.4 Union Ave Berkeley to Thorne Ln. - Reconstruct	0.00	0.00	100.00	100.00	2,300.00	0.00	\$2,500.00
1.5 146th St	0.00	0.00	425.00	0.00	0.00	0.00	\$425.00
1.6 Interlaaken Drive PE Only	0.00	20.00	0.00	0.00	0.00	0.00	\$20.00
1.7 Interlaaken Drive / 104th St / Beach Ln Cul-de-sac	0.00	20.00	0.00	0.00	0.00	0.00	\$20.00
1.8 Hipkins Traffic Calming	60.00	340.00	0.00	0.00	0.00	0.00	\$400.00
1.9 Reconstruction of Intersection of Gravelly Lake Drive/Steilacoom Blvd./Lakewood Drive	380.00	1,520.00	0.00	0.00	0.00	0.00	\$1,900.00
1.10 Lakewood Drive Right Turn Lane at So. 74th	45.00	255.00	0.00	0.00	0.00	0.00	\$300.00
1.11 Gravelly Lake Drive and 112th Intersection Improvement	40.00	10.00	0.00	0.00	0.00	0.00	\$50.00
1.12 112th Street between BPW & Lakeview - Reconstruct	0.00	116.00	910.00	0.00	0.00	0.00	\$1,026.00
1.13 47th Ave SW I-5 to 123rd /St SW	26.00	0.00	0.00	0.00	0.00	0.00	\$26.00
1.14 Elwood & Dresden Intersection PE Only	5.00	0.00	0.00	0.00	0.00	0.00	\$5.00
1.15 Bridgeport Way Lakewood Drive to 59th Avenue	1,000.00	0.00	0.00	0.00	0.00	0.00	\$1,000.00
1.16 Main Street and Wildaire	1,000.00	0.00	0.00	0.00	0.00	0.00	1,000.00
Section 1 Sub-Totals	2,557.00	3,441.00	2,355.00	100.00	2,300.00	0.00	10,753.00
SECTION 2							
NEW CONSTRUCTION							
SIDEWALK PROJECTS							
2.1 59th Ave SW (one side) Seeley Lk Apts to 100th Street	38.00	212.00	0.00	0.00	0.00	0.00	\$250.00
2.2 Pacific Street (south side) Kline to Lakeview Avenue	8.00	58.00	0.00	0.00	0.00	0.00	\$66.00
2.3 121st Street, No. side Vernon - Alameda, So. side Lake City Blvd on 83rd; east side Lake City Blvd. - Washington to 121st	20.00	170.00	0.00	0.00	0.00	0.00	\$190.00
2.4 John Dower Road (east side) Custer to 75th Street West	0.00	0.00	45.00	335.00	0.00	0.00	\$380.00
2.5 Idlewild Road SW (east side) 104th to 112th	45.00	370.00	0.00	0.00	0.00	0.00	\$415.00
2.6 104th St SW (south side) Hipkins to Idlewild	7.00	78.00	0.00	0.00	0.00	0.00	\$85.00
2.8 Onyx - Gamet to Coral (east side)	20.00	120.00	0.00	0.00	0.00	0.00	\$140.00
2.9 So. Tacoma Way (east side) 92nd to Steilacoom Blvd.	23.00	177.00	0.00	0.00	0.00	0.00	\$200.00
2.10 So. Tacoma Way (east side) 92nd to Pierce Transit Base Expansion	23.00	177.00	0.00	0.00	0.00	0.00	\$200.00

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
2.10 Steilacoom Blvd. (south side) Chambers Creek Bridge to Lake Steilacoom Point Road	20.00	95.00	0.00	0.00	0.00	0.00	\$115.00
2.11 East side of I-5 between American Lake Gardens and Gravelly Lake Drive	0.00	0.00	200.00	0.00	0.00	0.00	\$200.00
2.12 Hillhurst Drive & Montrose Ave.	12.00	92.00	0.00	0.00	0.00	0.00	\$104.00
2.13 Bridgeport Way - San Francisco to I-5	0.00	60.00	490.00	0.00	0.00	0.00	\$550.00
2.14 101st St SW & Lake Louise Drive SW Farwest Drive to 104th St PE Only	0.00	0.00	0.00	60.00	0.00	0.00	\$60.00
2.15 104th St SW (PE Only) Lake Louise Drive to Butte Drive	0.00	0.00	0.00	0.00	30.00	0.00	\$30.00
2.16 SW Corner 93rd St SW & Whitman Avenue	0.00	0.00	22.00	138.00	0.00	0.00	\$160.00
2.17 So. Tacoma Way (west side) Steilacoom Blvd. to 92nd	20.00	145.00	0.00	0.00	0.00	0.00	\$165.00
2.18 So. Tacoma Way (west side) 92nd to Pierce Transit	15.00	110.00	0.00	0.00	0.00	0.00	\$125.00
2.19 Pacific Highway Bridgeport Way to BNSF	115.00	885.00	0.00	0.00	0.00	0.00	\$1,000.00
2.20 Custer Road (east side) Meadow to Steilacoom	0.00	0.00	30.00	230.00	0.00	0.00	\$260.00
2.21 Custer Road (south side) John Dower to Meadow	40.00	220.00	0.00	0.00	0.00	0.00	\$260.00
2.22 Bridgeport Way (PE only) No. City Limits to Custer Road	0.00	0.00	160.00	0.00	0.00	0.00	\$160.00
2.23 80th Ave. W./Onyx Dr. (PE only); 85th Ave. W. to Coral Ln.	0.00	30.00	0.00	0.00	0.00	0.00	\$30.00
2.24 Pacific Highway BNSF Trestle to 108th St.	140.00	1,060.00	0.00	0.00	0.00	0.00	\$1,200.00
2.25 Bridgeport Way - 59th Avenue to Steilacoom Blvd.	0.00	900.00	0.00	0.00	0.00	0.00	\$900.00
2.26 Sidewalks in vicinity of schools	0.00	800.00	800.00	800.00	800.00	800.00	\$4,000.00
2.27 88th Street (north side) Edgewater to Custer	0.00	0.00	0.00	0.00	30.00	350.00	\$380.00
2.28 Pacific Street (south side) Cronin to 47th	0.00	120.00	0.00	0.00	0.00	0.00	\$120.00
2.29 Steilacoom Blvd. Custer Road to 88th	0.00	0.00	0.00	0.00	80.00	620.00	\$700.00
2.30 San Francisco Ave. (one side) Lincoln to Bridgeport	0.00	0.00	0.00	0.00	130.00	0.00	\$130.00
2.31 100th Street (south side) Bridgeport to Lakeview	0.00	0.00	0.00	0.00	125.00	975.00	\$1,100.00
2.32 Lakewood Drive (one side) Steilacoom Blvd. to Flett Creek	0.00	0.00	0.00	45.00	355.00	0.00	\$400.00
2.33 Oakwood Elementary Sidewalks	61.20	0.00	0.00	0.00	0.00	0.00	\$61.20
2.34 Custer Road (south side) Bridgeport to John Dower	312.00	0.00	0.00	0.00	0.00	0.00	\$312.00
2.35 All Weather Surface Bus Stops	24.00	0.00	0.00	0.00	0.00	0.00	\$24.00
2.36 Flashing Lights at School Crossings	40.00	0.00	0.00	0.00	0.00	0.00	\$40.00
2.37 Holden Road Military Road to Mann Jr High	120.00	0.00	0.00	0.00	0.00	0.00	\$120.00

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
2.38 Tillicum Sidewalks	25.00	0.00	0.00	0.00	0.00	0.00	\$25.00
Section 2 Sub-Totals	1,128.20	5,879.00	1,747.00	1,608.00	1,550.00	2,745.00	14,657.20
SECTION 3							
TRAFFIC SIGNALS							
3.1 Steilacoom Blvd. and Durango	15.00	165.00	0.00	0.00	0.00	0.00	\$180.00
3.2 Gravelly Lake Drive and School St	0.00	0.00	0.00	18.00	132.00	0.00	\$150.00
3.3 Union Avenue & Berkeley	30.00	195.00	0.00	0.00	0.00	0.00	\$225.00
3.4 Motor Avenue & Whitman	0.00	0.00	0.00	180.00	0.00	0.00	\$180.00
3.5 Traffic Signal Timing (Steilacoom Blvd.) Gravelly Lake Drive	0.00	0.00	20.00	0.00	0.00	0.00	\$20.00
3.6 Red Signal Detection Equipment	0.00	160.00	0.00	0.00	0.00	0.00	\$160.00
3.7 Bridgeport Way and San Francisco Avenue.	225.00	0.00	0.00	0.00	0.00	0.00	\$225.00
Section 3 Sub-Totals	270.00	520.00	20.00	198.00	132.00	0.00	1,140.00
SECTION 4							
TRANSPORTATION PLANNING							
4.1 Pavement Management System	35.00	5.00	35.00	5.00	35.00	5.00	\$120.00
4.2 Geographic Information System	20.00	20.00	20.00	20.00	20.00	20.00	\$120.00
Section 4 Sub-Totals	55.00	25.00	55.00	25.00	55.00	25.00	240.00
SECTION 5							
BIKEWAYS							
5.1 Misc. Bikeway Markings	1.00	1.00	1.00	1.00	1.00	1.00	\$6.00
5.2 Lakewood Drive So 74th St to Bridgeport Way (PE Only)	0.00	0.00	0.00	0.00	100.00	0.00	\$100.00
5.3 80th Street West Connection (PE Only)	0.00	0.00	0.00	0.00	0.00	57.00	\$57.00
5.4 Misc. Bike Lane Construction	20.00	20.00	20.00	20.00	20.00	20.00	\$120.00
Section 5 Sub-Totals	21.00	21.00	21.00	21.00	121.00	78.00	283.00
SECTION 6							
STREET LIGHTING							
6.1 Residential Street Lighting	60.00	60.00	60.00	60.00	60.00	60.00	\$360.00
6.2 Arterial Street Lighting	5.00	60.00	60.00	60.00	60.00	60.00	\$305.00
Section 6 Sub-Totals	65.00	120.00	120.00	120.00	120.00	120.00	665.00
SECTION 7	5.00	0.00	5.00	0.00	5.00	0.00	\$15.00
BRIDGE INSPECTION							
SECTION 8							
BEAUTIFICATION PROJECTS							
8.1 Bridgeport Way and Pacific Highway	0.00	75.00	0.00	0.00	0.00	0.00	\$75.00
8.2 Steilacoom Blvd. and Farwest Drive	0.00	40.00	0.00	0.00	0.00	0.00	\$40.00
8.3 Arterial Street Tree Planting	100.00	100.00	100.00	100.00	100.00	100.00	\$600.00
8.4 Misc. Right-of-Way Beautification	15.00	35.00	35.00	35.00	35.00	35.00	\$190.00
8.5 112th Street and Gravelly Lake Drive R/W	15.00	0.00	0.00	0.00	0.00	0.00	\$15.00
8.6 Ardmore/Steilacoom	15.00	0.00	0.00	0.00	0.00	0.00	\$15.00
Section 8 Sub-Totals	145.00	250.00	135.00	135.00	135.00	135.00	935.00
SECTION 9							
ROADWAY RESTORATION PROJECTS							
9.1 Pacific Highway Bridgeport to BNSF Trestle	0.00	440.00	0.00	0.00	0.00	0.00	\$440.00
9.2 Pacific Highway BNSF Trestle to SR512	0.00	520.00	0.00	0.00	0.00	0.00	\$520.00

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
9.3 Gravelly Lake Drive Nyanza (south) to BNSF Trestle.	0.00	140.00	0.00	0.00	0.00	0.00	\$140.00
9.4 Bridgeport Way Fleet Creek to North City Limits	0.00	0.00	250.00	0.00	0.00	0.00	\$250.00
9.5 Gravelly Lake Drive Nyanza (north) to Bridgeport Way	0.00	0.00	0.00	0.00	0.00	780.00	\$780.00
9.6 Misc. Resurfacing	0.00	0.00	0.00	250.00	250.00	250.00	\$750.00
9.7 112th Street from Union Avenue to Steel Street.	30.00	0.00	0.00	0.00	0.00	0.00	\$30.00
Section 9 Sub-Totals	30.00	1,100.00	250.00	250.00	250.00	1,030.00	2,910.00
SECTION 10							
TRAFFIC CIRCLES							
10.1 Misc. Traffic Circles	8.00	8.00	8.00	8.00	8.00	8.00	\$48.00
SECTION 11	20.00	20.00	20.00	20.00	20.00	20.00	\$120.00
EMERGENT NATURE PROJECTS							
SECTION 12	911.00	13,627.00	1,000.00	0.00	0.00	0.00	\$15,538.00
LAKEWOOD STATION							
TOTAL COSTS	\$5,215.20	\$25,011.00	\$5,736.00	\$2,485.00	\$4,696.00	\$4,161.00	\$47,304.20

PE = Preliminary Engineering
Source: City of Lakewood, June 2000.

The Capital Facilities Program for transportation projects shown in Table 3.6-11, was developed to be consistent with and in support of goals identified in the Comprehensive Plan. Table 3.6-12 lists the transportation projects programmed over the 2000-2005 period and identifies the corresponding Comprehensive Plan goals that are supported by each project.

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
SECTION 1 CONSTRUCTION STREET PROJECTS	NEW ARTERIAL	
1.1 108th St SW Lakeview to So. Tacoma Way - Reconstruct	\$1,300	Goals T-7, T-10
1.2 Nyanza Road and I-5 Right Turn Lane	\$780	Goals T-10, T-21
1.3 Cross Base Highway	\$1	Goals T-2, T-3, T-10
1.4 Union Ave Berkeley to Thorne Ln. - Reconstruct	\$2,500	Goals T-7, T-10
1.5 146th St	\$425	Goals T-3, T-14
1.6 Interlaaken Drive PE Only	\$20	Goals T-3, T-7, T-9, T-14
1.7 Interlaaken Drive / 104th St / Beach Ln Cul-de-sac	\$20	Goals T-5, T-12
1.8 Hipkins Traffic Calming	\$400	Goals T-5, T-12
1.9 Reconstruction of Intersection of Gravelly Lake Drive/Steilacoom Blvd./Lakewood Drive	\$1,900	Goals T-5, T-7, T-10, T-14
1.10 Lakewood Drive Right Turn Lane at So. 74th	\$300	Goals T-4, T-5, T-7, T-9, T-10, T-14
1.11 Gravelly Lake Drive and 112th Intersection Improvement	\$50	Goals T-5, T-7, T-10

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
1.12 112th Street between BPW & Lakeview - Reconstruct	\$1,026	Goal T-7
1.13 47th Ave SW I-5 to 123rd /St SW	\$26	Goals T-7, T-10
1.14 Elwood & Dresden Intersection PE Only	\$5	Goals T-7, T-10
1.15 Bridgeport Way Lakewood Drive to 59th Avenue	\$1,000	Goals T-7, T-10
1.16 Main Street and Wildaire	\$1,000	Goals T-7, T-10
SECTION 2 NEW CONSTRUCTION SIDEWALK PROJECTS		
2.1 59th Ave SW (one side) Seeley Lk Apts to 100th Street	\$250	Goals T-7, T-14
2.2 Pacific Street (south side) Kline to Lakeview Avenue	\$66	Goals T-7, T-14
2.3 121st Street, No. side Vernon - Alameda, So. side Lake City Blvd on 83rd; east side Lake City Blvd. - Washington to 121st	\$190	Goals T-7, T-14
2.4 John Dower Road (east side) Custer to 75th Street West	\$380	Goals T-7, T-14
2.5 Idlewild Road SW (east side) 104th to 112th	\$415	Goals T-7, T-14
2.6 104th St SW (south side) Hipkins to Idlewild	\$85	Goals T-7, T-14
2.8 Onyx - Gamet to Coral (east side)	\$140	Goals T-7, T-14
2.9 So. Tacoma Way (east side) 92nd to Steilacoom Blvd.	\$200	Goals T-7, T-14
2.10 So. Tacoma Way (east side) 92nd to Pierce Transit Base Expansion	\$200	Goals T-7, T-14
2.10 Steilacoom Blvd. (south side) Chambers Creek Bridge to Lake Steilacoom Point Road	\$115	Goals T-7, T-14
2.11 East side of I-5 between American Lake Gardens and Gravelly Lake Drive	\$200	Goal T-14
2.12 Hillhurst Drive & Montrose Ave.	\$104	Goals T-7, T-14
2.13 Bridgeport Way - San Francisco to I-5	\$550	Goals T-7, T-14
2.14 101st St SW & Lake Louise Drive SW Farwest Drive to 104th St PE Only	\$60	Goals T-7, T-14
2.15 104th St SW (PE Only) Lake Louise Drive to Butte Drive	\$30	Goals T-7, T-14
2.16 SW Corner 93rd St SW & Whitman Avenue	\$160	Goals T-7, T-14
2.17 So. Tacoma Way (west side) Steilacoom Blvd. to 92nd	\$165	Goals T-7, T-14
2.18 So. Tacoma Way (west side) 92nd to Pierce Transit	\$125	Goals T-7, T-13, T-14
2.19 Pacific Highway Bridgeport Way to BNSF	\$1,000	Goals T-7, T-14
2.20 Custer Road (east side) Meadow to Steilacoom	\$260	Goals T-7, T-8, T-9, T-14
2.21 Custer Road (south side) John Dower to Meadow	\$260	Goals T-7, T-8, T-9, T-14
2.22 Bridgeport Way (PE only) No. City Limits to Custer Road	\$160	Goals T-7, T-8, T-9, T-14
2.23 80th Ave. W./Onyx Dr. (PE only); 85th Ave. W. to Coral Ln.	\$30	Goals T-3, T-7, T-13, T-14
2.24 Pacific Highway BNSF Trestle to 108th St.	\$1,200	Goal T-14
2.25 Bridgeport Way - 59th Avenue to Steilacoom Blvd.	\$900	Goals T-7, T-14
2.26 Sidewalks in vicinity of schools	\$4,000	Goals T-7, T-14

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
2.27 88th Street (north side) Edgewater to Custer	\$380	Goals T-7, T-14
2.28 Pacific Street (south side) Cronin to 47th	\$120	Goals T-7, T-14
2.29 Steilacoom Blvd. Custer Road to 88th	\$700	Goals T-7, T-14
2.30 San Francisco Ave. (one side) Lincoln to Bridgeport	\$130	Goals T-7, T-14
2.31 100th Street (south side) Bridgeport to Lakeview	\$1,100	Goals T-7, T-14
2.32 Lakewood Drive (one side) Steilacoom Blvd. to Flett Creek	\$400	Goals T-7, T-14
2.33 Oakwood Elementary Sidewalks	\$61	Goals T-7, T-14
2.34 Custer Road (south side) Bridgeport to John Dower	\$312	Goals T-7, T-14
2.35 All-Weather Surface Bus Stops	\$24	Goals T-7, T-13, T-14
2.36 Flashing Lights at School Crossings	\$40	Goals T-13, T-14
2.37 Holden Road Military Road to Mann Jr High	\$120	Goals T-7, T-14
2.38 Tillicum Sidewalks	\$25	Goals T-7, T-14
SECTION 3		
TRAFFIC SIGNALS		
3.1 Steilacoom Blvd. and Durango	\$180	Goals T-5, T-10
3.2 Gravelly Lake Drive and School St	\$150	Goals T-5, T-10
3.3 Union Avenue & Berkeley	\$225	Goals T-5, T-10
3.4 Motor Avenue & Whitman	\$180	Goals T-5, T-10
3.5 Traffic Signal Timing (Steilacoom Blvd.) Gravelly Lake Drive	\$20	Goals T-5, T-10
3.6 Red Signal Detection Equipment	\$160	Goal T-10
3.7 Bridgeport Way and San Francisco Avenue.	\$225	Goals T-5, T-10
SECTION 4		
TRANSPORTATION PLANNING		
4.1 Pavement Management System	\$120	Goal T-7
4.2 Geographic Information System	\$120	Goals T-2, T-13
SECTION 5		
BIKEWAYS		
5.1 Misc. Bikeway Markings	\$6	Goals T-11, T-12, T-14
5.2 Lakewood Drive So 74th St to Bridgeport Way (PE Only)	\$100	Goals T-11, T-12, T-14
5.3 80th Street West Connection (PE Only)	\$57	Goals T-11, T-12, T-14
5.4 Misc. Bike Lane Construction	\$120	Goals T-11, T-12, T-14
SECTION 6		
STREET LIGHTING		
6.1 Residential Street Lighting	\$360	Goal T-9
6.2 Arterial Street Lighting	\$305	Goal T-9
SECTION 7		
BRIDGE INSPECTION		
SECTION 8		
BEAUTIFICATION PROJECTS		
8.1 Bridgeport Way and Pacific Highway	\$75	Goal T-8
8.2 Steilacoom Blvd. and Farwest Drive	\$40	Goal T-8
8.3 Arterial Street Tree Planting	\$600	Goal T-8
8.4 Misc. Right-of-Way Beautification	\$190	Goal T-8

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
8.5 112th Street and Gravelly Lake Drive R/W	\$15	Goal T-8
8.6 Ardmore/Steilacoom	\$15	Goal T-8
SECTION 9 ROADWAY RESTORATION PROJECTS		
9.1 Pacific Highway Bridgeport to BNSF Trestle	\$440	Goal T-7
9.2 Pacific Highway BNSF Trestle to SR512	\$520	Goal T-7
9.3 Gravelly Lake Drive Nyanza (south) to BNSF Trestle.	\$140	Goal T-7
9.4 Bridgeport Way Flett Creek to North City Limits	\$250	Goal T-7
9.5 Gravelly Lake Drive Nyanza (north) to Bridgeport Way	\$780	Goal T-7
9.6 Misc. Resurfacing	\$750	Goal T-7
9.7 112th Street from Union Avenue to Steel Street.	\$30	Goal T-7
SECTION 10 TRAFFIC CIRCLES		
10.1 Misc. Traffic Circles	\$48	Goals T-5, T-8
SECTION 11 EMERGENT NATURE PROJECTS	\$120	
SECTION 12 LAKEWOOD STATION	\$15,538	Goals T-2, T-10, T-11, T-12, T-13, T-14, T-17
TOTAL COSTS	\$46,755	

WSDOT's State Highway System Plan

The State Highway System Plan (WSDOT 1998) provides service objectives and action strategies for maintaining, operating, preserving, and improving our state highways. Table 3.6-13 lists the 20-year Transportation Improvement Program (TIP) proposed for the City of Lakewood.

One WSDOT project that would relieve congestion around the existing I-5/SR-512 interchange and along Pacific Highway SW and 100th Street SW is the I-5/SR-512 interchange improvement project. The project is not currently included in the WSDOT's 20-year State Highway Systems Plan but has been planned at the conceptual design level. Through a series of flyover ramps, the project would provide direct access connections between I-5 and 100th Street SW from the north and south. It would also provide a direct flyover ramp connecting southbound I-5 to eastbound SR-512. Because of its expected level of congestion relief along 100th Street SW and Pacific Highway/Tacoma Way, the project alternatives were analyzed under "with" and "without" scenarios for the I-5/SR-512 interchange improvements. Approval of I-695 may decrease the likelihood of obtaining funds for this project.

Table 3.6-13: WSDOT 20-year Transportation Improvement Program (TIP) - 1997 to 2016.

Project/Mileposts	Description	Cost Estimate (Million \$)
I-5		
122.00 to 123.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$18.42M to \$24.57M
123.00 to 123.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$14.37M to \$19.17M
124.00 to 125.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$18.42M to \$24.57M
125.00 to 126.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$16.02M to \$21.36M
126.00 to 127.48	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$13.72M to \$18.29M
123.00 to 124.50	TSM	\$1.80M to \$2.40M
126.00 to 127.00	TSM	\$1.80M to \$2.40M
123.00 to 127.48	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$13.72M to \$18.29M
I-5 Subtotal		\$745,600
SR-512		
0.00 to 2.27	Widen to 8 lanes creating HOV lanes, IVHS, and Enhanced Transit.	\$25.80M to \$34.40M

IVHS: Intelligent Vehicle Highway System.

HOV: High Occupancy Vehicle

Pierce Transit Planned Service and Capital Improvements

Pierce Transit service and capital programs are implemented through their Service Plan, Capital Plan, Regional Coordination Initiatives, Marketing and Promotion Plan, and Financial Plan. Key elements of Pierce Transit's plans that relate to the City of Lakewood's transportation plan are summarized as follows:

- Increase in fixed-route service by 26% (ridership by 25%) by the year 2004. Service improvements will be primarily focused on increased frequencies and expanded hours for the core urban area, new routes to growing communities with good transit ridership potential, and feeder services connecting to new Sound Transit regional transportation stations. The City of Lakewood will benefit from improvements in each of these areas.
- Expansion of the number of vanpools by 15% per year, with 386 vans in service by 2004 (167 vans were in service in 1997). In Lakewood, actual vanpool growth is dependent upon private sector employment and employer support.
- Increase of Shuttle ridership through coordination with social service providers. Pierce Transit will strive to improve productivity and reduce operating costs for the Shuttle paratransit program.
- Encouraging ridership with a new computer ridematching system, expansion of the Flexpass program, and development of local CTR enhancement grants.

- Provisions for bringing signal-priority systems to the local transit network, which will improve transit travel times, make transit services more reliable, and improve operating efficiency. In the City of Lakewood, Bridgeport Way and South Tacoma Way have been identified as transit signal-priority corridors.
- More convenient regional travel via transit service with the introduction of a single fare medium (the Smart Card) in late 2000 or early 2001, which will allow for regionally consistent fare policies, including seamless inter-jurisdictional transfers. In the interim period, Pierce Transit will collaborate with Sound Transit, Metro, Community Transit, and Everett Transit to implement an interim regional pass in late 1999 when Sound Transit expects to begin operation of Regional Express bus service.
- Design and implementation of a regional (King, Pierce, and Snohomish counties) automated customer trip planning system. Pierce Transit's customer information staff will use computerized tools to assist customers in planning transit trips within or between any of the three transit service areas. The project will also explore opportunities for customers to directly access transit and other ridesharing information via personal computers and kiosks placed in public areas.
- Coordination with Sound Transit on the design of bus routes, stop locations, and schedules. A commuter rail station is currently planned in Lakewood on Pacific Highway SW between Sharondale Street SW and Bridgeport Way SW. Pierce Transit will provide feeder bus service to this facility.

Some of these programs/improvements may be revised or delayed due to voter approval of 1-695.

Level of Service Standards and Concurrency

GMA requires the adoption of LOS standards for arterial streets to gauge the performance of the transportation system. The LOS standards for streets in the City of Lakewood will be based on peak hour arterial link level of service.

Level of service standards required by the GMA are closely related to the issue of concurrency. The GMA requires that transportation improvements be made concurrent with new development. Once a street exceeds its level of service standard, a street project must be funded within 6 years to improve level of service back to within the LOS standard. If funds to improve the street are not approved within the 6-year timeframe, new development that would add traffic to the street could not be permitted.

Level of service standards need to be carefully chosen for each city and for different arterials within a city. It is desirable that levels of service should be the same on both sides of a city/county boundary; however, different goals on either side of a boundary can be legitimate reasons for two jurisdictions to establish different standards.

Establishing appropriate level of service standards for the City of Lakewood was discussed with the Planning Advisory Board (PAB) and Public Works department staff at several meetings. From these discussions, the following level of service standards are proposed in the Comprehensive Plan (Chapter 6, page 17):

- Maintain LOS F with a V/C ratio threshold of 1.10 in the Steilacoom Blvd. corridor between 88th St. SW and 83rd Ave. SW.
- Maintain LOS F with a V/C ratio threshold of 1.30 on Gravelly Lake Drive between 1-5 and Washington Blvd. SW.
- Maintain LOS F with a V/C ratio threshold of 1.25 on Washington Blvd. SW, west of Gravelly Lake Drive.
- Maintain LOS F with a V/C ratio threshold of 1.05 on Ardmore Drive SW between Steilacoom Blvd. SW and Whitman Avenue SW.
- Maintain LOS F with a V/C ratio threshold of 1.05 on Murray Road SW north of 146th Street SW.
- Maintain LOS E with a V/C ratio threshold of 1.00 on 108th Street SW between Pacific Highway SW and Bridgeport Way W.
- Maintain LOS E with a V/C ratio threshold of 1.00 on South Tacoma Way between 84th Street South and Steilacoom Blvd. SW.
- Maintain LOS E with a V/C ratio threshold of 1.00 on Bridgeport Way SW between Pacific Highway SW and 108th Street SW.
- Maintain LOS D with a V/C ratio threshold of 0.90 on all other arterial streets in the city, including state highways of statewide significance.

Future Traffic Volumes and Levels of Service

Preferred Alternative

The Preferred Alternative was considered with and without the proposed I-5/SR-512 interchange improvements and direct connection to 100th Street SW. This is a WSDOT project that is currently not listed on the WSDOT's 20-year fiscally-constrained State Highway Systems Plan. Funding for the project has not yet been identified. If the project were constructed, it would have a significant effect on traffic distribution and flow through the I-5/Tacoma Way and 100th Street SW corridors.

Table 3.6-14 compares future corridor p.m. peak hour levels of service in the year 2017 under the No Action and Preferred Action Alternatives with and without the I-5/SR-512 interchange improvements. The Preferred Alternative represents future conditions with some zoning changes to allow for increased development densities.

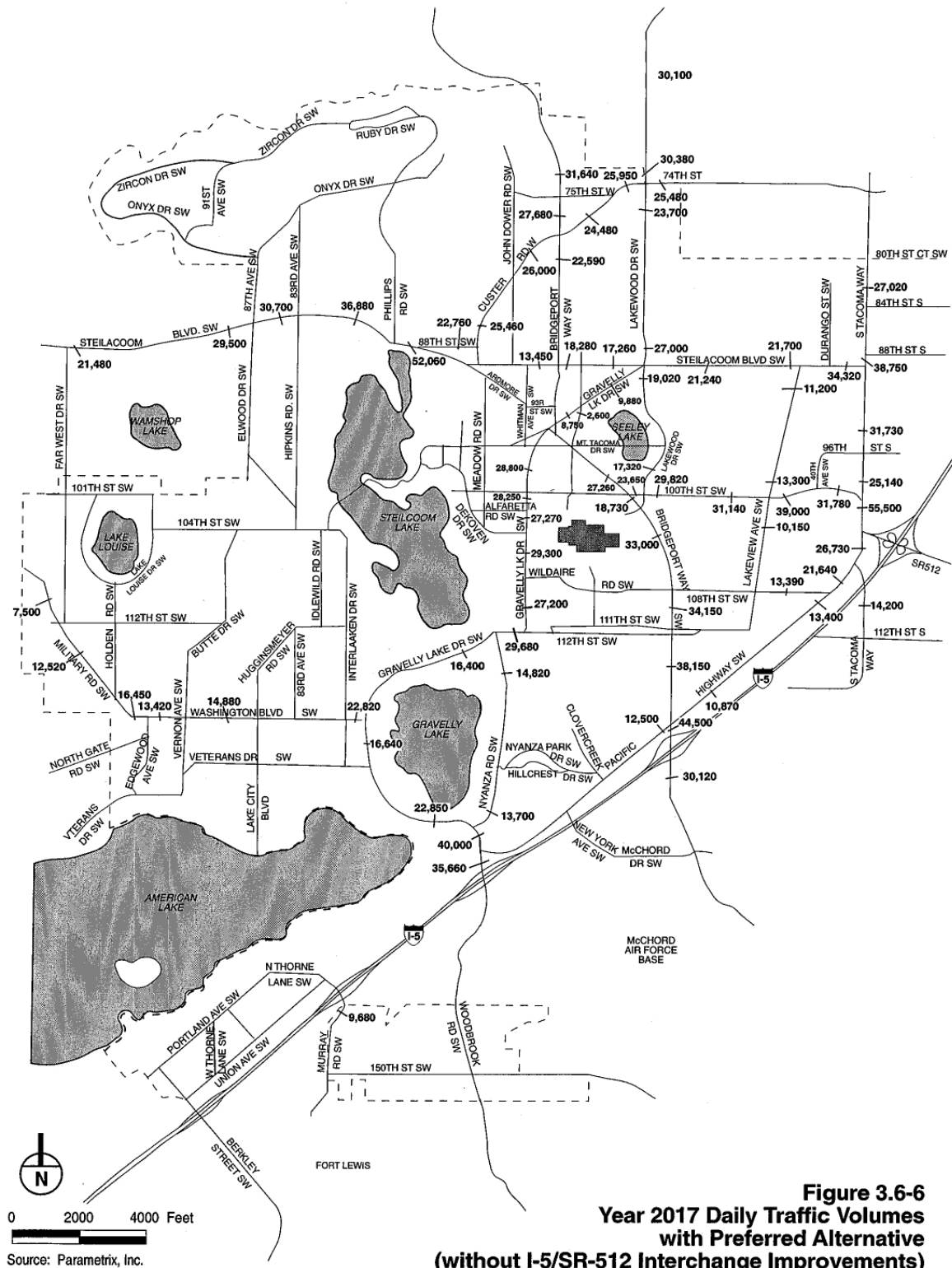
Figure 3.6-6 shows year 2017 daily traffic volumes for the Preferred Alternative without the I-5/SR-512 interchange improvements.

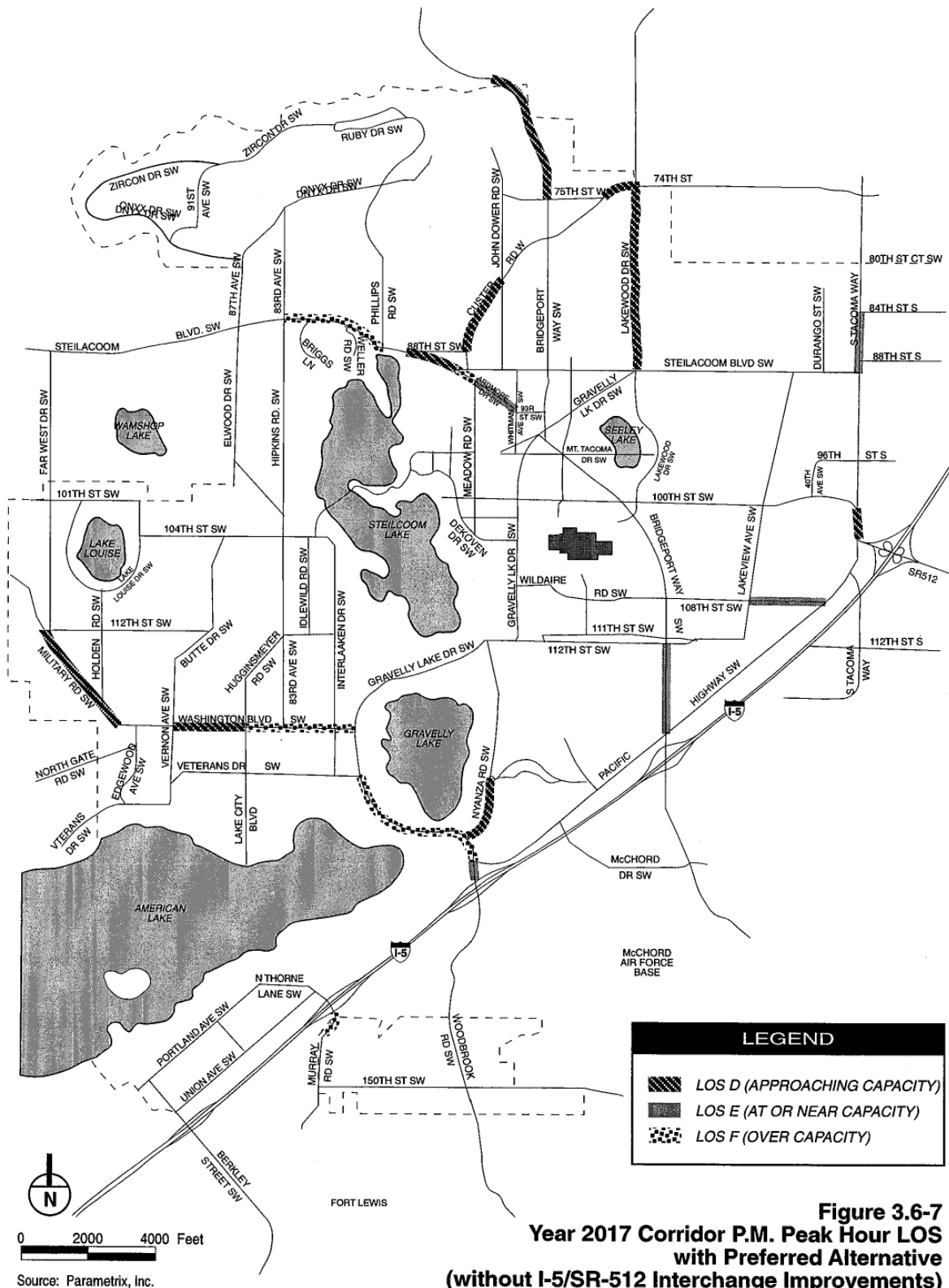
Figure 3.6-7 highlights the LOS D or worse arterial segments within the City of Lakewood under the Preferred Alternative without the I-5/SR 512 interchange improvements. The following roadway sections are projected to exceed LOS D during the p.m. peak hour in the year 2017:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)
- Ardmore Drive SW northwest of Whitman Avenue SW (LOS E)
- Bridgeport Way W north of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW south of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)

Table 3.6-14: City of Lakewood Year 2017 Corridor p.m. Peak Hour LOS for No Action and Preferred Alternatives.

Street Name/Section	No Action (2017)			Preferred Alternative (2017) with I-5/SR-512 Improvements			Preferred Alternative (2017) without I-5/SR-512 Improvements		
	Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Highest One-Way Peak Hour Volume	V/C Ratio	LOS
Ardmore Drive SW									
southeast of Steilacoom Blvd. SW	683	0.95	E	723	1.00	F	735	1.02	F
northwest of Whitman Ave. SW	650	0.90	E	651	0.90	E	655	0.91	E
Bridgeport Way W									
north of 75th Street W	1736	0.85	D	1720	0.84	D	1717	0.84	D
north of Gravelly Lake Drive SW	1323	0.65	C	1369	0.67	C	1369	0.67	C
south of Lakewood Drive SW	1490	0.73	C	1470	0.72	C	1493	0.73	C
north of Pacific Highway SW	1925	0.94	E	1813	0.88	D	1922	0.94	E
at Clover Creek bridge south of I-5	1393	0.68	C	1564	0.76	D	1292	0.63	C
Custer Road SW/W									
north of 88th Street SW	1388	0.76	D	1357	0.74	C	1379	0.76	D
northeast of Bridgeport Way SW	1376	0.75	D	1270	0.70	C	1292	0.71	C
Gravelly Lake Dr. SW									
northeast of Bridgeport Way SW	811	0.44	B	817	0.45	B	833	0.46	B
south of Pacific Highway SW	1901	0.93	E	1820	0.89	D	1862	0.91	E
north of Pacific Highway SW	2657	1.30	F	2547	1.24	F	2606	1.27	F
west of end Nyanza Rd. SW (south)	1080	1.11	F	1082	1.11	F	1101	1.13	F
Lakeview Avenue SW									
south of 100th Street SW	452	0.25	A	548	0.30	B	439	0.24	A
north of 100th Street SW	703	0.39	B	666	0.36	B	731	0.40	B
south of Steilacoom Blvd. SW	560	0.31	B	500	0.27	A	577	0.32	B
Lakewood Drive SW									
north of Steilacoom Blvd. SW	1669	0.91	E	1370	0.75	D	1396	0.76	D
north of 74th Street W	1764	0.97	E	1493	0.82	D	1505	0.82	D
north of 100th Street SW	742	0.36	B	748	0.36	B	773	0.38	B
Military Road SW									
south of 112th Street SW	734	0.75	D	752	0.77	D	746	0.77	D
Murray Road SW									
north of 146th Street SW	578	0.80	D	732	1.02	F	727	1.01	F
Nyanza Road SW									
north of Gravelly Lake Drive SW	817	0.84	D	778	0.80	D	800	0.82	D
South Tacoma Way									
north of 84th Street S.	1309	0.64	C	1336	0.65	C	1327	0.65	C
north of Steilacoom Blvd. SW	2024	0.99	E	1861	0.91	E	1921	0.94	E
north of 100th Street SW	1268	0.62	C	1460	0.71	C	1262	0.62	C
south of 100th Street SW	2486	0.86	D	1941	0.67	C	2505	0.86	D
south of SR 512	1351	0.66	C	1165	0.57	C	1314	0.64	C
Steilacoom Blvd. SW									
east of Farwest Drive SW	1029	0.56	C	1050	0.58	C	1044	0.57	C
west of Phillips Road SW	1909	1.05	F	1937	1.06	F	1948	1.07	F
southeast of 88th Street SW	1448	0.79	D	1441	0.79	D	1446	0.79	D
east of Lakewood Drive SW	924	0.45	B	953	0.46	B	938	0.46	B
west of South Tacoma Way	1320	0.64	C	1386	0.68	C	1395	0.68	C
Washington Blvd. SW									
east of Vernon Avenue SW	740	0.76	D	757	0.78	D	755	0.77	D
west of Gravelly Lake Drive SW	1158	1.19	F	1188	1.22	F	1183	1.21	F
74th Street W									
west of Lakewood Drive SW	1617	0.79	D	1626	0.79	D	1667	0.81	D
100th Street SW									
west of South Tacoma Way	1225	0.67	C	1393	0.76	D	1281	0.70	C
east of Lakeview Drive SW	1488	0.73	C	1641	0.80	D	1531	0.75	C
east of Lakewood Drive SW	1252	0.61	C	1298	0.63	C	1287	0.63	C
108th Street SW									
west of Pacific Highway SW	663	0.92	E	667	0.93	E	681	0.95	E





- Murray Road SW north of 146th Street SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)
- Steilacoom Blvd. SW west of Phillips Road SW (LOS F)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F)
- 108th Street SW west of Pacific Highway SW (LOS E)

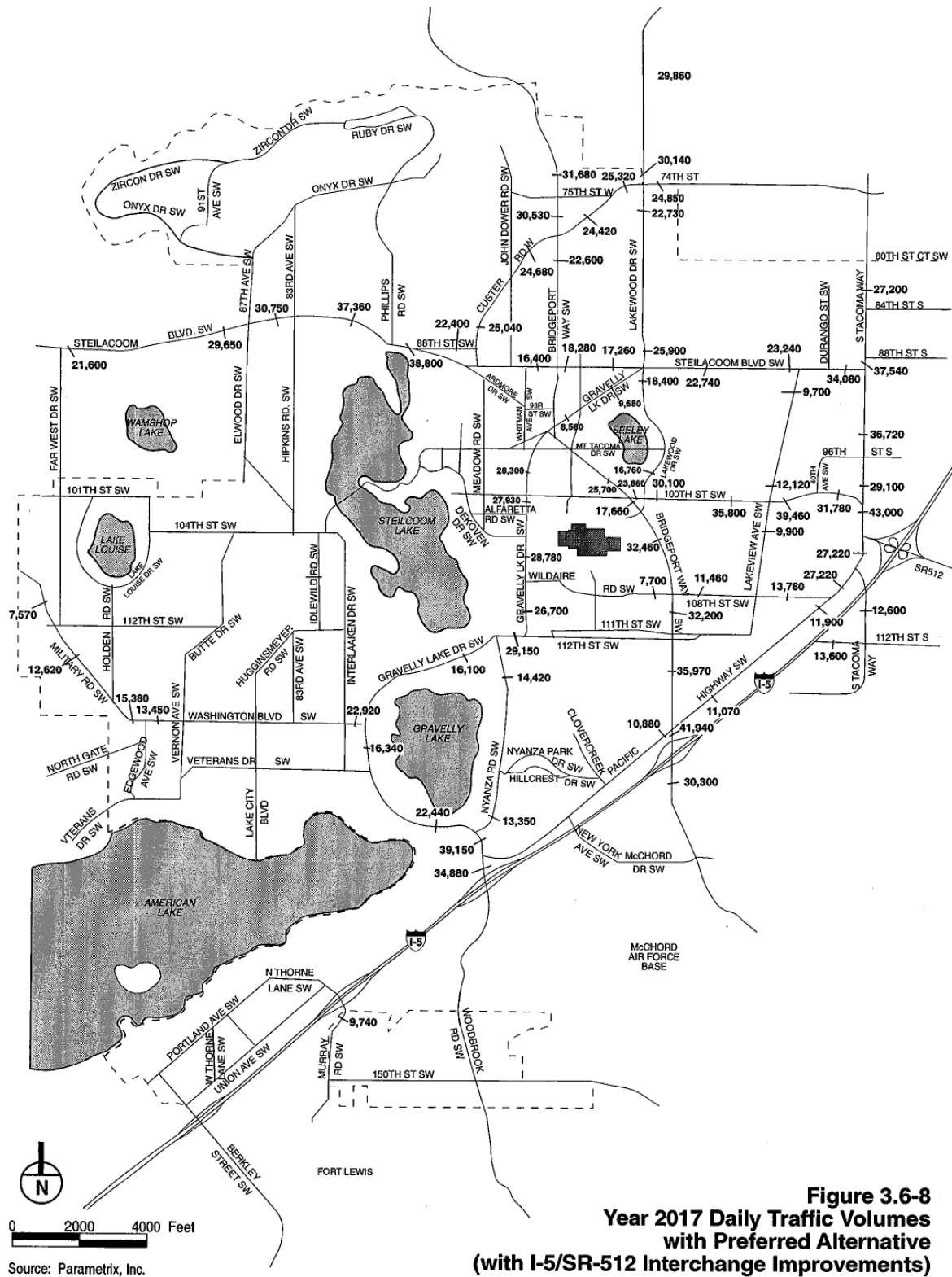
In addition, multiple arterial segments would operate at LOS D in year 2017 with the Preferred Alternative (without the I-5/SR-512 interchange improvements). These include:

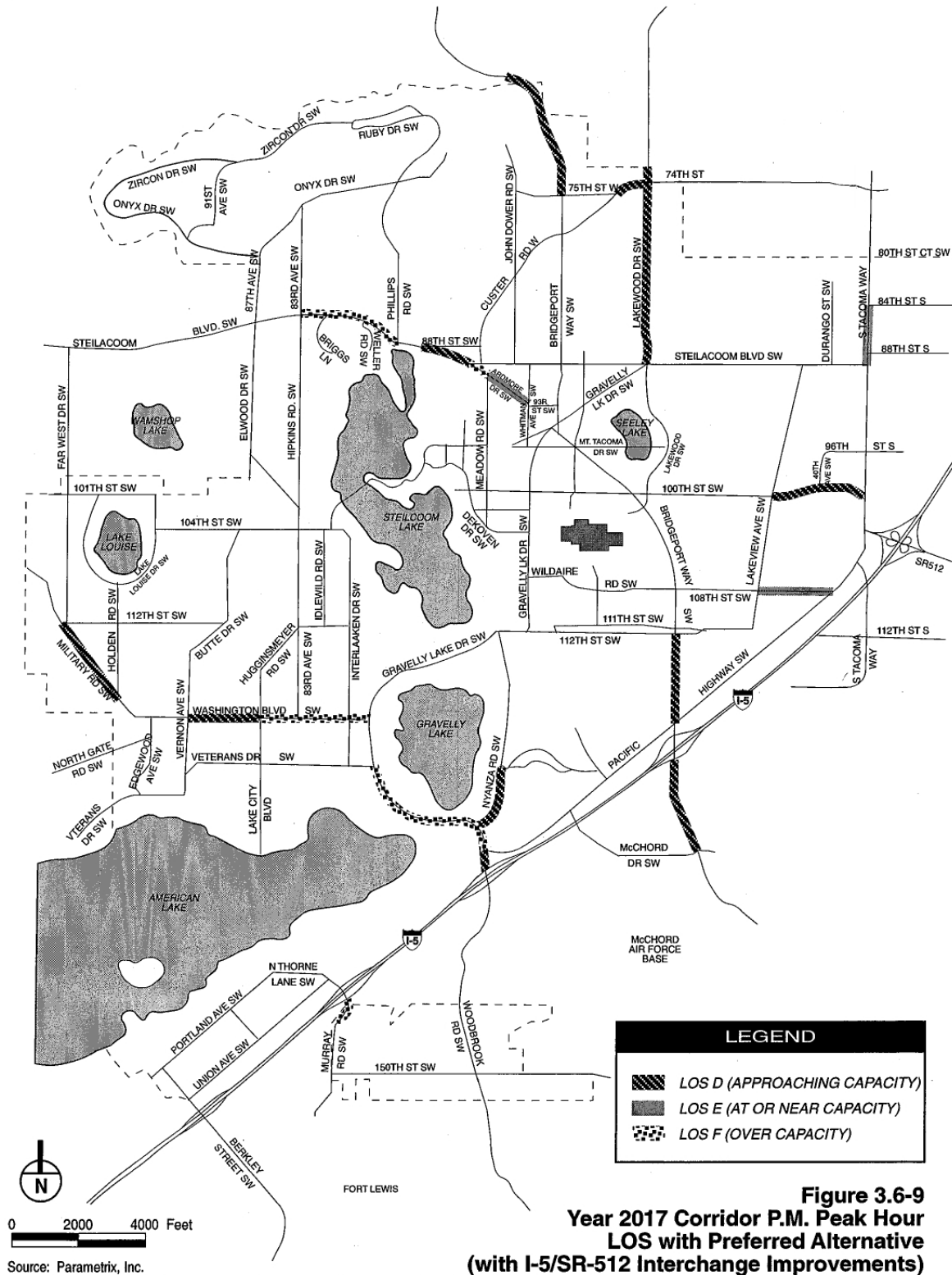
- Bridgeport Way West north of 75th Street W
- Custer Road SW north of 88th Street SW
- Lakewood Drive SW north of Steilacoom Blvd. SW
- Lakewood Drive SW north of 74th Street W
- Military Road SW south of 112th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- South Tacoma Way south of 100th Street SW
- Steilacoom Blvd. SW southeast of 88th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W west of Lakewood Drive SW

Figure 3.6-8 shows year 2017 daily traffic volumes for the Preferred Alternative with the I-5/SR-512 interchange improvements.

Figure 3.6-9 highlights the LOS D or worse arterial segments within the City of Lakewood under the Preferred Alternative with the I-5/SR 512 interchange improvements in the year 2017. The following roadway sections are projected to exceed LOS D during the p.m. peak hour:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)
- Ardmore Drive SW northwest of Whitman Ave. SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)
- Murray Road SW north of 146th Street SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)
- Steilacoom Blvd. SW west of Phillips Road SW (LOS F)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F)
- 108th Street SW west of Pacific Highway SW (LOS E)





In addition, multiple arterial segments would operate at LOS D in year 2017 with the Preferred Alternative (with the I-5/SR-512 interchange improvements). These include:

- Bridgeport Way West north of 75th Street W
- Bridgeport Way West north of Pacific Highway SW
- Bridgeport Way West at Clover Creek bridge south of I-5
- Gravelly Lake Drive SW south of Pacific Highway SW
- Lakewood Drive SW north of Steilacoom Blvd. SW
- Lakewood Drive SW north of 74th Street W
- Military Road SW south of 112th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- Steilacoom Blvd. SW southeast of Se Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W west of Lakewood Drive SW
- 100th Street SW west of South Tacoma Way
- 100th Street SW east of Lakeview Drive SW

Table 3.6-15 summarizes the increased levels of arterial congestion that would result from the Preferred Alternative with and without the I-5/SR-512 interchange improvements compared to 1995 existing conditions and the No Action Alternative.

Table 3.6-15: Existing Versus Year 2017 No Action and Preferred Alternatives (with and without I-5/SR-512 interchange improvements) Corridor p.m. Peak Hour LOS and Average V/C.

Alternative	Number of Arterial Segments Operating at:			Average V/C Ratio
	LOS D	LOS E	LOS F	
Existing Conditions (1995)	6	0	3	0.58
No Action Alternative	10	8	4	0.74
Preferred Alternative (without I-5 interchange connection)	10	5	6	0.733
Preferred Alternative (with I-5 interchange connection)	13	3	6	0.725

As shown in Table 3.6-15, the Preferred Alternative would utilize approximately 2% less of overall street system capacity than the No Action Alternative in the year 2017 with the proposed I-5/SR 512 interchange improvements, and about 1% less capacity than the No Action Alternative without the proposed interchange improvements. Traffic operations for Lakewood streets overall would be only marginally improved with the construction of the I-5/SR-512 interchange improvements.

No Action Alternative

The No Action Alternative represents a future development density that assumes no changes in the City of Lakewood's existing zoning. Future arterial traffic volumes are shown in Figure 3.6-10.

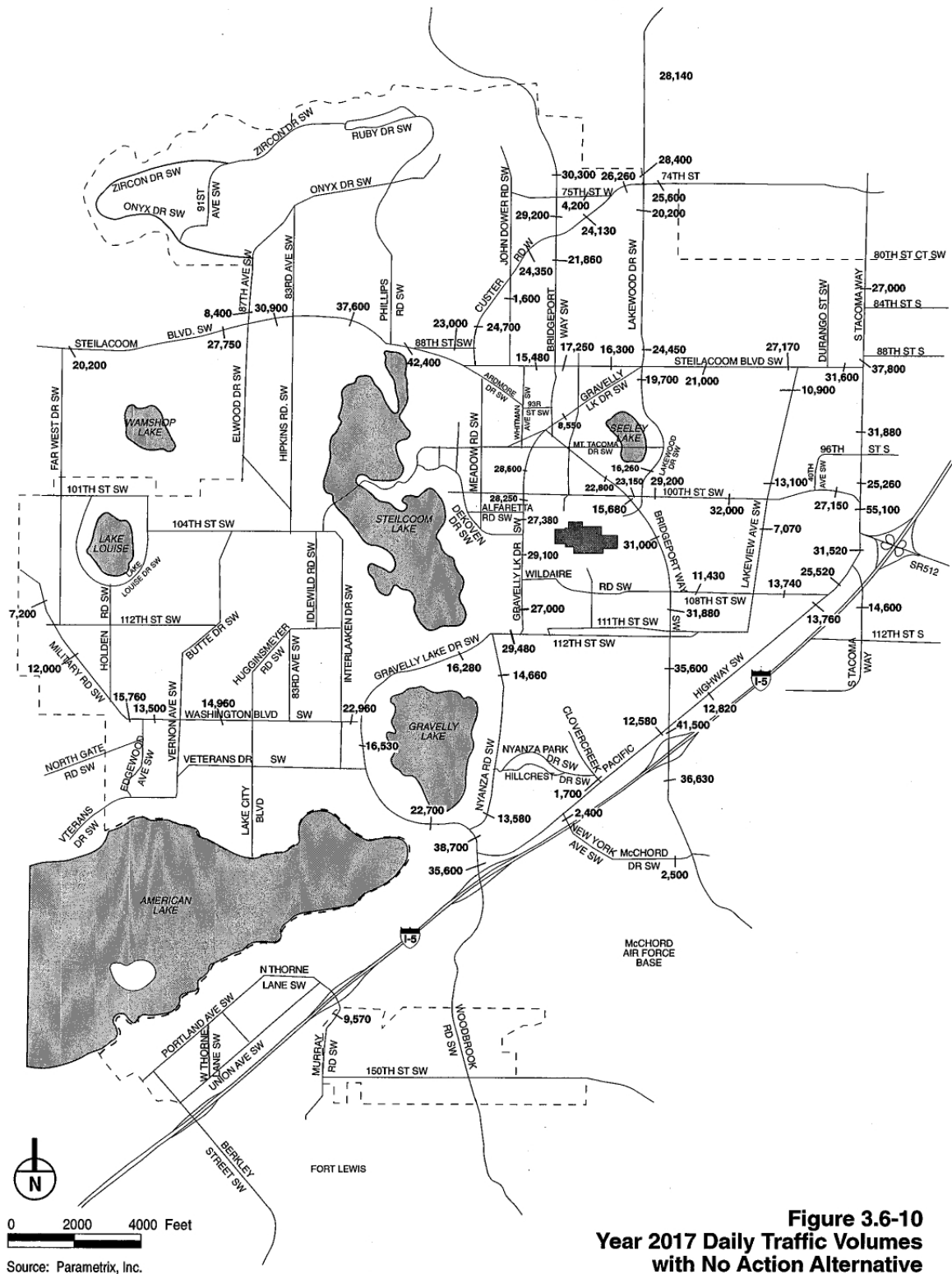


Table 3.6-16 compares existing LOS with year 2017 LOS for Lakewood arterials with the No Action Alternative.

Figure 3.6-11 highlights the LOS D or worse arterial segments within the City of Lakewood under the No Action Alternative. The following roadway sections are projected to exceed LOS D during the p.m. peak hour:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW
- Ardmore Drive SW northwest of Whitman Ave. SW
- Bridgeport Way W north of Pacific Highway SW
- Gravelly Lake Drive SW south of Pacific Highway SW
- Gravelly Lake Drive SW north of Pacific Highway SW
- Gravelly Lake Drive SW west of end Nyanza Rd. (south)
- Lakewood Drive SW north of Steilacoom Blvd. SW
- Lakewood Drive SW north of 74th Street W
- South Tacoma Way north of Steilacoom Blvd. SW
- Steilacoom Blvd. SW west of Phillips Road SW
- Washington Blvd. SW west of Gravelly Lake Drive SW
- 108th Street SW west of Pacific Highway SW

In addition, several arterial segments would operate at LOS D in year 2017, including:

- Bridgeport Way West north of 75th Street West
- Custer Road SW/W north of 88th Street SW
- Custer Road SW/W northeast of Bridgeport Way SW
- Military Road SW south of 112th Street SW
- Murray Road SW north of 146th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- South Tacoma Way south of 100th Street SW
- Steilacoom Blvd. SW southeast of 88th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W. west of Lakewood Drive SW

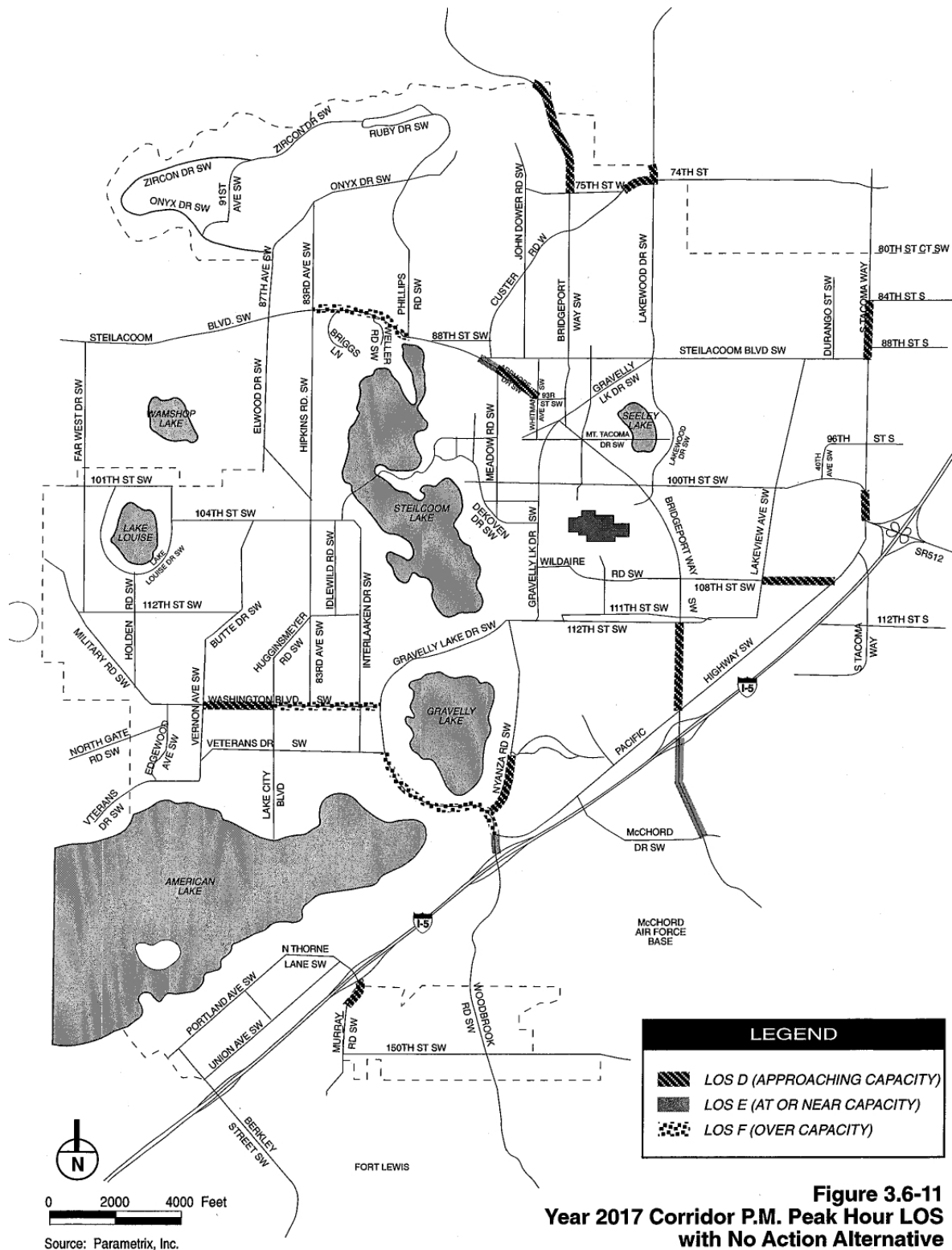


Table 3.6-16: City of Lakewood Corridor p.m. Peak Hour LOS for Existing Conditions and Year 2017 No Action Alternative.

Street Name/Section	Direction	One-way Capacity	Existing (1995)			Change in Volume 1995 to 2017	No Action (2017)		
			Highest One-Way Peak Hour Volume	V/C Ratio	LOS		Highest One-Way Peak Hour Volume	V/C Ratio	LOS
Ardmore Drive SW									
southeast of Steilacoom Blvd. SW	NW	720	641	0.89	D	42	683	0.95	E
northwest of Whitman Ave. SW	NW	720	579	0.80	D	71	650	0.90	E
Bridgeport Way W									
north of 75th Street W	NB	2050	1336	0.65	C	400	1736	0.85	D
north of Gravelly Lake Drive SW	NB	2050	1182	0.58	C	141	1323	0.65	C
south of Lakewood Drive SW	NB	2050	1166	0.57	C	324	1490	0.73	C
north of Pacific Highway SW	NB	2050	1336	0.65	C	589	1925	0.94	E
at Clover Creek bridge south of I-5	NB	2050	1298	0.63	C	95	1393	0.68	C
Custer Road SW/W									
north of 88th Street SW	SB	1825	1118	0.61	C	270	1388	0.76	D
northeast of Bridgeport Way SW	SW	1825	1039	0.57	C	337	1376	0.75	D
Gravelly Lake Dr. SW									
northeast of Bridgeport Way SW	SW	1825	638	0.20	A	173	811	0.44	B
south of Pacific Highway SW	NB	2050	1583	0.77	D	318	1901	0.93	E
north of Pacific Highway SW	SB	2050	2147	1.05	F	510	2657	1.30	F
west of end Nyanza Rd. SW (south)	WB	975	869	0.89	D	211	1080	1.11	F
Lakeview Avenue SW									
south of 100th Street SW	SB	1825	291	0.16	A	161	452	0.25	A
north of 100th Street SW	SB	1825	467	0.26	A	236	703	0.39	B
south of Steilacoom Blvd. SW	NB	1825	345	0.19	A	215	560	0.31	B
Lakewood Drive SW									
north of Steilacoom Blvd. SW	NB	1825	937	0.51	C	732	1669	0.91	E
north of 74th Street W	NB	1825	1082	0.59	C	682	1764	0.97	E
north of 100th Street SW	SB	2050	577	0.28	A	165	742	0.36	B
Military Road SW									
south of 112th Street SW	NB	975	613	0.63	C	121	734	0.75	D
Murray Road SW									
north of 146th Street SW	NB	720	727	1.01	F	-149	578	0.80	D
Nyanza Road SW									
north of Gravelly Lake Drive SW	NB	975	673	0.69	C	144	817	0.84	D
South Tacoma Way									
north of 84th Street S.	NB	2050	991	0.48	B	318	1309	0.64	C
north of Steilacoom Blvd. SW	SB	2050	1356	0.66	C	668	2024	0.99	E
north of 100th Street SW	SB	2050	1034	0.50	B	234	1268	0.62	C
south of 100th Street SW	NB	2900	1977	0.68	C	509	2486	0.86	D
south of SR 512	SB	2050	1147	0.56	C	204	1351	0.66	C
Steilacoom Blvd. SW									
east of Farwest Drive SW	WB	1825	805	0.44	B	224	1029	0.56	C
west of Phillips Road SW	WB	1825	1636	0.90	D	273	1909	1.05	F
southeast of 88th Street SW	EB	1825	1068	0.59	B	380	1448	0.79	D
east of Lakewood Drive SW	WB	2050	788	0.38	B	136	924	0.45	B
west of South Tacoma Way	WB	2050	863	0.42	B	457	1320	0.64	C
Washington Blvd. SW									
east of Vernon Avenue SW	WB	975	706	0.72	C	34	740	0.76	D
west of Gravelly Lake Drive SW	WB	975	985	1.01	F	173	1158	1.19	F
74th Street W									
west of Lakewood Drive SW	WB	2050	1397	0.68	C	220	1617	0.79	D
100th Street SW									
west of South Tacoma Way	EB	1825	829	0.45	B	396	1225	0.67	C
east of Lakeview Drive SW	WB	2050	1084	0.53	C	404	1488	0.73	C
east of Lakewood Drive SW	EB	2050	959	0.47	B	293	1252	0.61	C
108th Street SW									
west of Pacific Highway SW	WB	720	551	0.77	D	112	663	0.92	E

¹ The Highway Capacity Manual was used as a guideline for estimating one-way capacities for these roadways, based on facility type, number of lanes, traffic control, and channelization.

- South Tacoma Way north of Steilacoom Blvd. SW
- South Tacoma Way south of 100th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W. west of Lakewood Drive SW

Table 3.6-17 summarizes the increased levels of arterial congestion that would result from the No Action Alternative compared to 1995 existing conditions.

Table 3.6-17: Existing Versus year 2017 No Action Corridor p.m. Peak Hour LOS and Average V/C Ratio.

Alternative:	Number of Arterial Segments Operating at:			Average V/C, Ratio
	LOS D	LOS E	LOS F	
Existing Conditions (1995)	6	0	3	0.58
No Action	10	8	4	0.74

As shown in Table 3.6-17, projected year 2017 traffic conditions for the No Action Alternative are nearly 28% more congested, on average, compared to 1995 existing conditions.

Mixed-Use Alternative

The Mixed-Use alternative represents a future condition with significant modifications to Lakewood's zoning code, and is the highest density alternative from a development perspective. As with the Preferred Alternative, the Mixed-Use Alternative was considered with and without the proposed I-5/SR-512 interchange improvements.

Table 3.6-18 compares future corridor p.m. peak levels of service in the year 2017 under the No Action and Mixed-Use Alternatives with and without the I-5/SR-512 interchange improvements.

Figure 3.6-12 shows year 2017 daily traffic volumes for the Mixed-Use Alternative without the I-5/SR-512 interchange improvements.

Figure 3.6-13 highlights the LOS D or worse arterial segments within the City of Lakewood under the Mixed-Use Alternative without the I-5/SR 512 interchange improvements in year 2017. The following roadway sections are projected to exceed LOS D during the p.m. peak hour:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)
- Ardmore Drive SW northwest of Whitman Avenue SW (LOS E)
- Gravelly Lake Drive SW south of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)

City of Lakewood Comprehensive Plan

Final Environmental Impact Statement

June 2000

This programmatic Environmental Impact Statement analyzes relevant impacts on the environment of the proposed action, adoption of the comprehensive plan by the City of Lakewood. In addition to the preferred alternative, the analysis addresses two other alternatives including a no action alternative and mixed use alternative in compliance with the State Environmental Policy Act (SEPA).

**City of Lakewood
Comprehensive Plan
Final Environmental Impact Statement**

June 2000

FACT SHEET

Project Title

City of Lakewood Comprehensive Plan Final Environmental Impact Statement.

The City of Lakewood Community Development Department has prepared this Environmental Impact Statement (EIS) to analyze the potential environmental impacts associated with adopting and implementing the City's comprehensive plan. The City prepared the comprehensive plan to satisfy requirements of Washington State's Growth Management Act (GMA). The EIS is intended to satisfy regulatory requirements of the State Environmental Policy Act (SEPA).

Project Description and Alternatives

The Proposed Action analyzed in this EIS is the City Council's adoption of a new City of Lakewood comprehensive plan. The EIS analyzes the effects of three alternative means of accomplishing the Proposed Action: (1) adopting the comprehensive plan, referred to as the Preferred Alternative in this EIS; (2) adopting a variation of the plan, known as the Mixed-Use Alternative; and (3) continued use of the City's interim comprehensive plan, known as the No Action Alternative.

Preferred Alternative: The Preferred Alternative proposes specific land uses in lieu of the mixed-use designations found in the other alternatives. This difference is particularly marked along the Bridgeport corridor and in the northeast section of the city. Other significant differences include the addition of an overlay district around Lakewood Station, changes to the boundaries of western Lakewood's low density residential areas to include additional lakefront parcels, and designation of an Urban Center and Manufacturing/Industrial Center consistent with regional policy objectives. It is also intended to curtail sprawl through more organized land use patterns and redevelopment while accommodating residential and employment growth with the least amount of adverse environmental impact. The principal strategy of the plan for guiding future growth is: (1) protecting established neighborhoods; (2) development intensification within the city's central spine, which stretches north along Bridgeport Way from the planned commuter rail station past the Mall and the Colonial Center through to the Custer neighborhood; (3) focused residential density in several neighborhoods, notably Springbrook, Tillicum, and Custer; and (4) increasing the employment base in eastern portions of the city. The plan seeks to preserve the existing character of large lot residential neighborhoods in west Lakewood and along the lake shores, and to protect riparian habitat along the major creeks. This alternative provides development capacity for an estimated 17,500 new residents and 12,275 new jobs by the year 2017.

No Action Alternative: If the City Council takes no action to adopt a new comprehensive plan, the existing City of Lakewood interim comprehensive plan will remain in effect. Thus, the interim comprehensive plan serves as the No Action Alternative for this SEPA analysis. This plan was adopted on February 20, 1996. The interim comprehensive plan contains the following GMA-required elements: Land Use, Housing, Transportation, Utilities, and Capital Facilities. The plan also contains elements on Essential Public Facilities, Environment, and Critical Areas. The plan does

not include growth targets and generally assumes continuation of current trends. New development capacity is estimated at 31,853 new residents and 9,982 new jobs.

Mixed-Use Alternative: This alternative was developed through a public process beginning in late 1997 and culminating in public workshops in mid 1998. This alternative assumes ambitious growth targets for over 30,000 new residents by the year 2017, and moderate employment growth of 11,237 jobs. Most of this growth would be located in a collection of mixed-use land use designations in the eastern half of the city. The highest concentration would be targeted toward an urban center clustered around a commuter rail station. This alternative would stabilize Lakewood's low density single-family neighborhoods dominating the city's western half.

Alternatives Considered But Not Analyzed for SEPA Impacts: A range of four distinct development scenarios was developed for public consideration early in the planning process. These four development scenarios were refined to the two action alternatives analyzed in this EIS: the Preferred Alternative and the Mixed-Use Alternative. The original development scenarios are not analyzed separately in this EIS.

Project Location	The Proposed Action affects the land contained within the existing Lakewood city limits and proposed annexation areas. Lakewood lies between the cities of University Place and Tacoma on the north, McChord Air Force Base (AFB) and the Fort Lewis Military Reservation on the east and south, and the town of Steilacoom on the west.
Proponent	The City of Lakewood
Date of Implementation	2000-2017
Lead Agency	The City of Lakewood Community Development Department
Responsible Official	Dave Bugher
Required Permits	N/A
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Date of DEIS Issue	January 20, 2000
Date Comments Due	February 19, 2000
Time and Place of Public Hearings	March 4, 1999 Lakewood City Hall, 10510 Gravelly Lake Drive, S.W., Lakewood, WA
Final EIS Issue Date	June 16, 2000
Prior Environmental Review	The Draft SEPA EIS was released for public review in January 2000.
Subsequent Environmental Review	No further environmental review is expected for the Comprehensive Plan. Individual development projects within the City will be subject to review for threshold determinations and potentially additional SEPA review.
Location of Background Information	City of Lakewood Community Development Department 10510 Gravelly Lake Drive, S.W. Lakewood, WA 98499-5013
Availability of Copies	Copies may be obtained for a fee of \$20.00 from the City of Lakewood Community Development Department 10510 Gravelly Lake Drive, S.W. Lakewood, WA 98499-5013

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Acronyms and Abbreviations

AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
APZ I	Accident Potential Zone I
APZ II	Accident Potential Zone II
avg	average
BMP	Best Management Practice
CBD	Central Business District
cfs	cubic feet per second
CIP	Capital Improvement Plan
CTR	Commute Trip Reduction
DU	dwelling unit
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FAZ	Forecast Analysis Zone
GIS	geographic information system
GMA	Growth Management Act
GMCC	Growth Management Coordinating Committee
gpm	gallons per minute
HCM	Highway Capacity Manual
HOV	high occupancy vehicle
HUD	Housing and Urban Development
I-5	Interstate 5
I-695	Initiative 695
IVHS	Intelligent Vehicle Highway Systems
LOS	level of service
mev	million entering vehicles
MG	million gallons
MGD	million gallons per day
mph	miles per hour
MVET	Motor Vehicle Excise Tax
NAAQS	National Ambient Air Quality Standards
NWI	National Wetlands Inventory
OFM	Office of Financial Management
PAB	Planning Advisory Board
PCTP	Pierce County Transportation Plan
PSE	Puget Sound Energy
PSRC	Puget Sound Regional Council
RCW	Revised Code of Washington
ROC	Record of Communication
ROW	right-of-way
s.f.	square foot
SEPA	State Environmental Policy Act

Acronyms and Abbreviations (continued)

SMP	Shoreline Master Program
SOV	single occupant vehicle
SR	State Route
SR-99	State Route 99 (South Tacoma Way)
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TSM	Transportation Systems Management
UGA	Urban Growth Area
LINOS	Urban Natural Open Space
UST	underground storage tank
V/C	Volume/Capacity Ratio
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

1.0 INTRODUCTION

1.1 Policy Background and Process

1.1.1 Description of the Proposed Action and Alternatives

As a recently incorporated city in the state of Washington, Lakewood is in the process of adopting its first 20-year comprehensive plan. The Proposed Action requiring analysis under the State Environmental Policy Act (SEPA) is the adoption of a new comprehensive plan by the Lakewood City Council. This Environmental Impact Statement (EIS) analyzes the impacts of two plan alternatives, as well as a No Action Alternative. The two action alternatives are the proposed comprehensive plan as endorsed by the City Council in its recent review as the Preferred Alternative, and a second alternative called the Mixed-Use Alternative. If the City Council takes no action adopting a new comprehensive plan, the City's interim comprehensive plan as initially adopted would remain in effect until a new plan is adopted. Thus, the No Action Alternative as addressed in the EIS is the continued use of the interim comprehensive plan. These alternatives are summarized in Chapter 2 of this EIS and analyzed in Chapter 3.

1.1.2 Lakewood's Comprehensive Planning Process

The Lakewood comprehensive plan (City of Lakewood 2000) is intended to be a reflection of the community's values and an expression of its vision for the future. Community-wide visioning sessions were held early in the plan's development to allow citizens an opportunity to identify positive and negative characteristics about Lakewood. This vision has remained as a foundation for comprehensive plan development throughout the process.

Development of the plan was a complex effort involving the contributions and reflections of members of the community, City staff, elected and appointed officials, and outside experts. The resulting plan is a cohesive structure to guide the many land use and other public policy decisions facing this dynamic community as it grows and changes over the next two decades. Because all City regulations are legally required to be consistent with the adopted comprehensive plan, it enables City government in its entirety to share a common starting point for developing regulations, reviewing legislation and proposed projects, and making crucial spending decisions.

1.1.3 GMA/SEPA Requirements

The comprehensive plan alternatives were developed to guide Lakewood's growth for the next 20 years in compliance with the State of Washington's Growth Management Act (GMA, Chapter 36.70 of the Revised Code of Washington [RCW]). The overall intent of the GMA is to focus future growth in established urban areas and preserve rural areas, resource lands, and open space. To accomplish this, GMA requires cities and counties to provide for projected growth of population and employment within designated urban areas

as established by each county. Under the GMA, cities and counties are required to prepare 20-year comprehensive plans that demonstrate their ability to accommodate additional households and employment according to projections provided by the State Office of Financial Management (OFM) to each county. Counties are responsible for allocating growth to cities within their jurisdiction. GMA requires that Lakewood adopt a comprehensive plan containing elements that address Land Use, Transportation, Housing, Capital Facilities, and Utilities. Lakewood has voluntarily prepared additional elements addressing Urban Design, Public Services, and Economic Development.

This EIS is required by the State Environmental Policy Act (SEPA) (RCW 43.21C.030 (2)(c)). The adoption of the Lakewood comprehensive plan by the Lakewood City Council constitutes the action requiring SEPA compliance.

1.1.4 EIS Preparation Process

Preparation of this EIS took place concurrently with development of the comprehensive plan, as is consistent with the purpose of SEPA/GMA integration¹. This concurrent development is intended to ensure that environmental analyses under SEPA would be an integral part of the planning and decision-making process under GMA. As a result, numerous goals, policies, and other provisions in the plan, initially developed as SEPA mitigation measures in the Draft EIS, are now included in the comprehensive plan as an integral part of that plan. This includes revisions to the Future Land Use Plan adopted in response to impacts noted in the DEIS. Additional mitigations have been added to this FEIS after review of the revised Land Use Plan.

One of the purposes of SEPA is to include public input into environmental review. This objective was accomplished through a public scoping period that took place in September and October 1999. The scoping allowed agencies, affected tribes, and members of the public to comment on the scope of analysis. Following the scoping period, this draft EIS was released for review and comment by agencies, affected tribes, and members of the public. Comments are published along with the response to each in this final EIS.

¹ Washington Administrative Code (WAC) 197-11-210 through 197-11-235.

1.2 Location and Background

1.2.1 Project Setting

The City of Lakewood is located in southwestern Pierce County (see Figure 1.2-1). Commencement Bay is approximately 8 miles to the northeast of the city, and Mount Rainier National Park is approximately 35 miles to the southeast. The cities of Tacoma and University Place form the northern boundary of Lakewood, with the Fort Lewis Military Reservation and McChord Air Force Base (AFB) defining the southern and eastern boundaries. Unincorporated Pierce County lies to the east, and the Town of Steilacoom lies to the west. For the most part, the jurisdictional boundaries and the urban growth, area (UGA) boundaries are contiguous, although the UGA does extend to and encompass the developed portions of the military bases. More specifically, the city limits are bounded as follows:

- On the north, by Chambers Creek, Leach Creek, and the corporate limits of the cities of University Place and Tacoma.
- On the east, by Interstate 5 (I-5), south to 95th Street S, east to Sales Road S to its southerly terminus, finally bounded by Steele Street, south of 104th Street S.
- On the south, by the north and west boundaries of McChord AFB and the north boundary of the Fort Lewis Military Reservation, west to a line established by 107th Avenue SW.
- On the west, bounded by 107th Avenue SW, between Fort Lewis and a line approximately 1/8 of a mile south of 100th Street SW, east to Far West Drive SW and then north along this line to the top of the Chambers Creek Canyon, and then north to Chambers Creek.

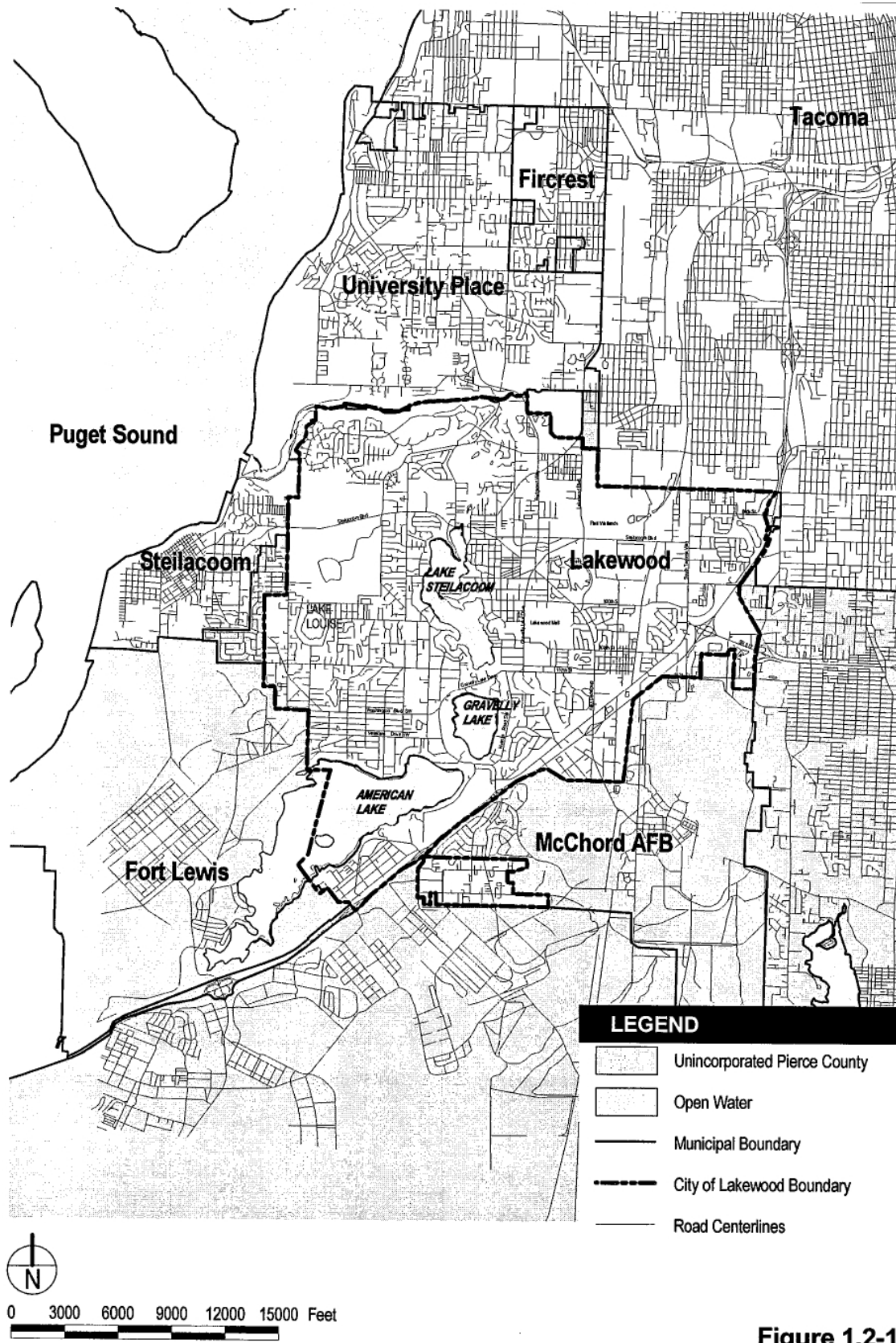
The City of Lakewood encompasses approximately 24 square miles (12,106 acres)². Of this total area, 1,098 acres are covered by lakes, and 1,725 acres are contained within public rights-of-way (ROW), leaving 9,979 total acres of net usable area. Elevations within the city begin at sea level and rise to approximately 300 feet above mean sea level.

1.2.2 Demographic Overview

In 1995, Pierce County estimated that the population of the City of Lakewood was 62,500 people (City of Lakewood 1996), or 9.2% of Pierce County's population. By way of comparison, other cities in Pierce County are Tacoma (27.5%), Puyallup (4.4%), University Place (4.3%), Edgewood (1.6%), Bonney Lake (1.4%), and Sumner (1.2%). The State OFM found the population in 1996 to be 65,182, in a separate estimation. The City of Lakewood is 1.1% of the state and 2% of the four-county³ Central Puget Sound Region population.

² City of Lakewood Geographic Information System (GIS).

³ King, Kitsap, Pierce, and Snohomish counties.



Source: Pierce County GIS / Lakewood Parcel Survey Database / EDAW Inc., 1999.

**Figure 1.2-1
Lakewood and Vicinity**

Pierce County is 12% of the state's population and 21.7% of the region's. Census tract boundaries for the city, as used by the U.S. Census Bureau for the 1990 census, are shown in Figure 1.2-2.

With some notable exceptions, Lakewood's demographic profile is very similar to that of Pierce County and the State of Washington as a whole. Lakewood has, and to some extent is known for, its concentration of wealthy households. However, these are outnumbered by more modest income households. This serves to lower the average household income to levels less than the county and state average, with larger proportions of people in poverty status. Lakewood's socioeconomics vary significantly among the different parts of the city. Wealth tends to concentrate along the lakeshores and in the northwestern parts of the city, with lower income households scattered throughout neighborhoods east of the lakes.

1.2.3 Community History

The City of Lakewood was incorporated on February 28, 1996. The long history of Lakewood dates back to Native American habitation for at least 9,000 years. White settlers arrived in the mid-1800s with the stationing of federal troops at Fort Steilacoom beginning in 1849. Early settlers were farmers, but the town became increasingly residential in the beginning of the 20th century with access provided by an electric trolley system. The name "Lakewood" was the winning entry in a contest held by a local land company in 1909, replacing the name "the Lakes District" as the residential and resort area had formerly been known. The U.S. Army founded Fort Lewis in 1917 and McChord AFB two decades later, adding an enduring military presence to the area. The Lakewood Colonial Center, the first planned shopping center west of the Mississippi, was built in 1937. This served the community's commercial needs until the late 1980s when the Lakewood Mall was built.

Land uses in the City of Lakewood are varied—from lakefront estates, to strip commercial, to industrial, to semi-rural. The western part of the city is almost entirely residential in character, due in part to the attractiveness of its many lakes as well as limited access. By contrast, land uses in the eastern part of the city are dominated by commercial development, although pockets of housing are scattered throughout this part of the city as well. This development pattern has in part been dictated by the many transportation arterials, which run through the eastern part of the city, especially Pacific Highway Southwest, Bridgeport Way, Steilacoom Boulevard, the Burlington Northern Railroad, and more recently I-5. Permissive pre-incorporation land use controls resulted in sprawl and an overabundance of widely distributed commercial activity. The city is generally developed and there are no meaningful amounts of resource lands (such as forestry, agricultural, or mining land uses) remaining in Lakewood.

Lakewood is surrounded on the east and south by two military installations — McChord Air Force Base and the Army's Fort Lewis.

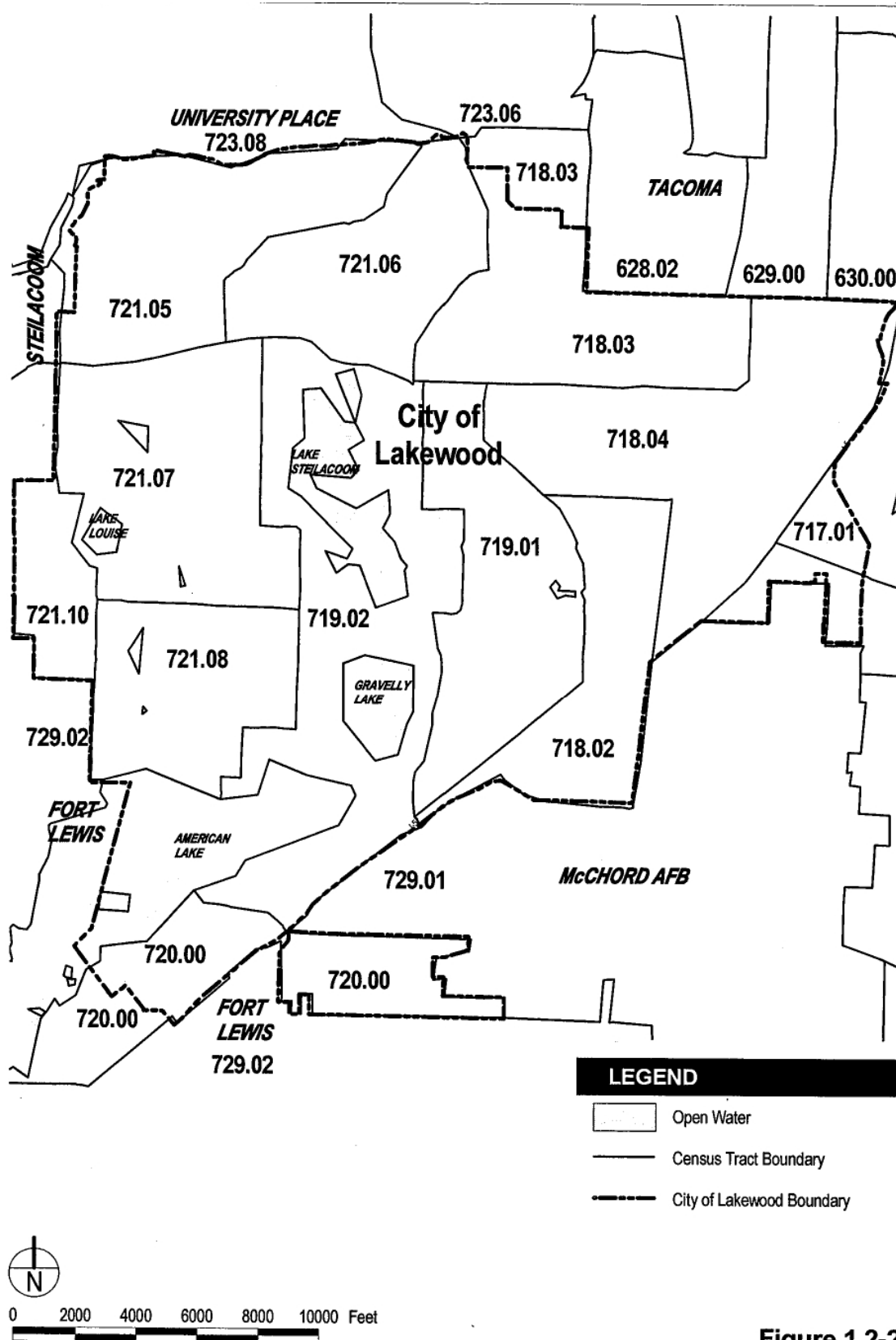


Figure 1.2-2
1990 Census Tract Boundary Map

Lakewood considers itself the host community for both. Most major entrances into these two large bases are through Lakewood, and many of the military personnel who serve at these bases live and/or shop in Lakewood, along with their families. The presence of these bases has a noticeable impact on Lakewood's demographics and, consequently, land use patterns.

1.3 Relationship of EIS to Other Documents

1.3.1 Comprehensive Plan

This EIS is a companion document to the comprehensive plan (EDAW 2000). The purpose of the EIS is: (1) to analyze environmental impacts associated with the alternatives, (2) to contribute to the final plan by incorporating the findings of this analysis in the form of revisions to the plan's goals and policies, and (3) as well as identify additional mitigation measures for adoption by the city. By design, the comprehensive plan is a focused document, comprised principally of the Future Land Use Plan, the land use designations, and the goals and policies, with a minimum of supporting discussion and documentation. Much of the work that contributed to the development of the plan is documented by this EIS, including most of the underlying details.

1.3.2 Background Report

The background report (EDAW 1997) was developed in preparation for both the comprehensive plan and this EIS. It lays the ground work for both of these documents by identifying existing conditions and trends in detail. Accordingly, the background report serves as a detailed technical appendix to the affected environment section of this EIS, particularly for data related to demographics, land use, housing, transportation, and utilities.

1.3.3 6-Year Capital Improvement Plan

Under the GMA, Lakewood is required to have a 6-year Capital Improvement Plan (CIP), detailing how it has budgeted funds for all major capital spending in support of the comprehensive plan. This is one mechanism for ensuring concurrency between growth and available infrastructure. The comprehensive plan identifies areas of growth, and the EIS identifies shortcomings of existing infrastructure, as well as current or future inability to provide services in support of that anticipated growth. The CIP identifies how the City intends to meet that shortfall.

1.4 Organization of this EIS

Following this Introduction (Chapter 1), this EIS contains the following chapters:

- Chapter 2, which describes the three alternatives analyzed in detail in this EIS (the Preferred Alternative, the No Action Alternative, and the Mixed-Use Alternative).

- Chapter 3, which describes the affected environment, potential impacts, proposed mitigation measures, and any significant environmental impacts associated with implementation of the various alternatives.
- Chapter 4, which includes the references cited in this document.
- Appendix material, including the development capacity analysis and transportation data.

1.5 Public Comment on the Draft EIS

The Draft EIS was issued by the City of Lakewood on January 20, 2000, followed by a 30-day comment period that closed on February 19, 2000. Numerous comment letters were received. As many letters contained similar comments, individual letters were not responded to; instead, these comments were summarized and responded to by issue. All letters, summarized comments, and official responses are included in Appendix C.

2.0

DESCRIPTION OF THE ALTERNATIVES AND SUMMARY OF IMPACTS

Each of the three comprehensive plan alternatives analyzed identifies a unique set of land use designations arranged geographically on the accompanying maps. Each Land Use Map controls the geographic distribution of growth and change within the city, identifying the size and location of residential areas, industrial and employment centers, commercial lands, and other uses through the land use designations. The land use designations control the relative densities and intensities of development as well as the permitted generalized land uses within these areas. Analyzed in conjunction with the existing baseline conditions, these alternatives represent Lakewood's approach to accommodating future growth as required by GMA.

2.1 Preferred Alternative

2.1.1 Summary: Preferred Alternative

The Preferred Alternative is the City Council's adoption and implementation of a comprehensive plan (EDAW 2000) that would focus growth in an urban center encompassing the Bridgeport Avenue corridor, Lakewood's central spine. An enlarged central business district (CBD) at the north end of this urban center would include the Lakewood Mall and the Colonial Center. These would synergistically form the community's commercial, civic, and cultural nucleus. Substantial redevelopment of this area including new streets, development of a new City Hall, and significant changes to the Mall itself and its immediate surroundings are part of the plan.

At the southeastern end of this spine, a new district would be catalyzed around a proposed commuter rail station. Development would consist of the commuter rail station itself, medical-related activity around St. Clare Hospital, and new office and commercial development along Pacific Highway Southwest. In between, blocks of new multi-unit housing would be built east of St. Clare Hospital, along with new trails and open space. New office/light industrial development is intended to cross 1-5 into Springbrook along the 47th Street corridor. High quality pedestrian improvements would be achieved in accordance within a defined Lakewood Station district.

A substantial portion of the American Lake Gardens neighborhood, currently an older residential neighborhood with a substantial amount of substandard housing, would be redesignated as Industrial. Although isolated, it has excellent freeway access and large level parcels of land suitable for industrial use. One intention of this Industrial designation is to create suitable land values to allow the extension of sewers to Tillicum and American Lake Gardens. Extension of sewers to Tillicum would permit the intensification of residential land uses in that neighborhood.

The Springbrook neighborhood would also have extensive redesignation of existing residential land to industrial. The intent is to position this land for

redevelopment in light industrial or business park uses, partially driven by proximity to the Sound Transit commuter rail station.

This alternative would also add to the supply of parks and open space to attract and mitigate for increased density. Land use designations restricting development to larger lots would protect habitat along stream corridors and lakeshores.

The Preferred Alternative envisions a more distinct land use pattern than either of the other two alternatives and, while still allowing for substantial growth, would accommodate less residential growth than the other alternatives. The Preferred Alternative is mapped on Figure 2.1-1.

2.1.2 Special Features: Preferred Alternative

A plan of this size and complexity, expected to guide growth over a 20-year period, obviously has considerable detail. Some of the special features of this alternative are identified below.

- A regional urban center that includes the entire CBD, adjacent higher density housing, and the Lakewood Mall and Colonial Center.
- Intensification of a more urban mix of uses around the Mall and Colonial Center, including a new City Hall, urban design improvements, and potentially the creation of new city ROWs.
- A Lakewood Station district with a new high quality pedestrian environment, moderate to high density housing, expanded medical campus and office employment, and expanded trails and open space.
- Increased residential density in Tillicum facilitated by new sewer service, public lake access, and services.
- A new industrial area encompassing most of American Lake Gardens, based on the excellent regional transportation access, land suitability, and need for redevelopment.
- A new industrial area encompassing a large portion of Springbrook, capitalizing on the excellent regional transportation access and lack of existing development.
- Numerous clusters of high density residential development supported by improved open space, services, and other amenities.

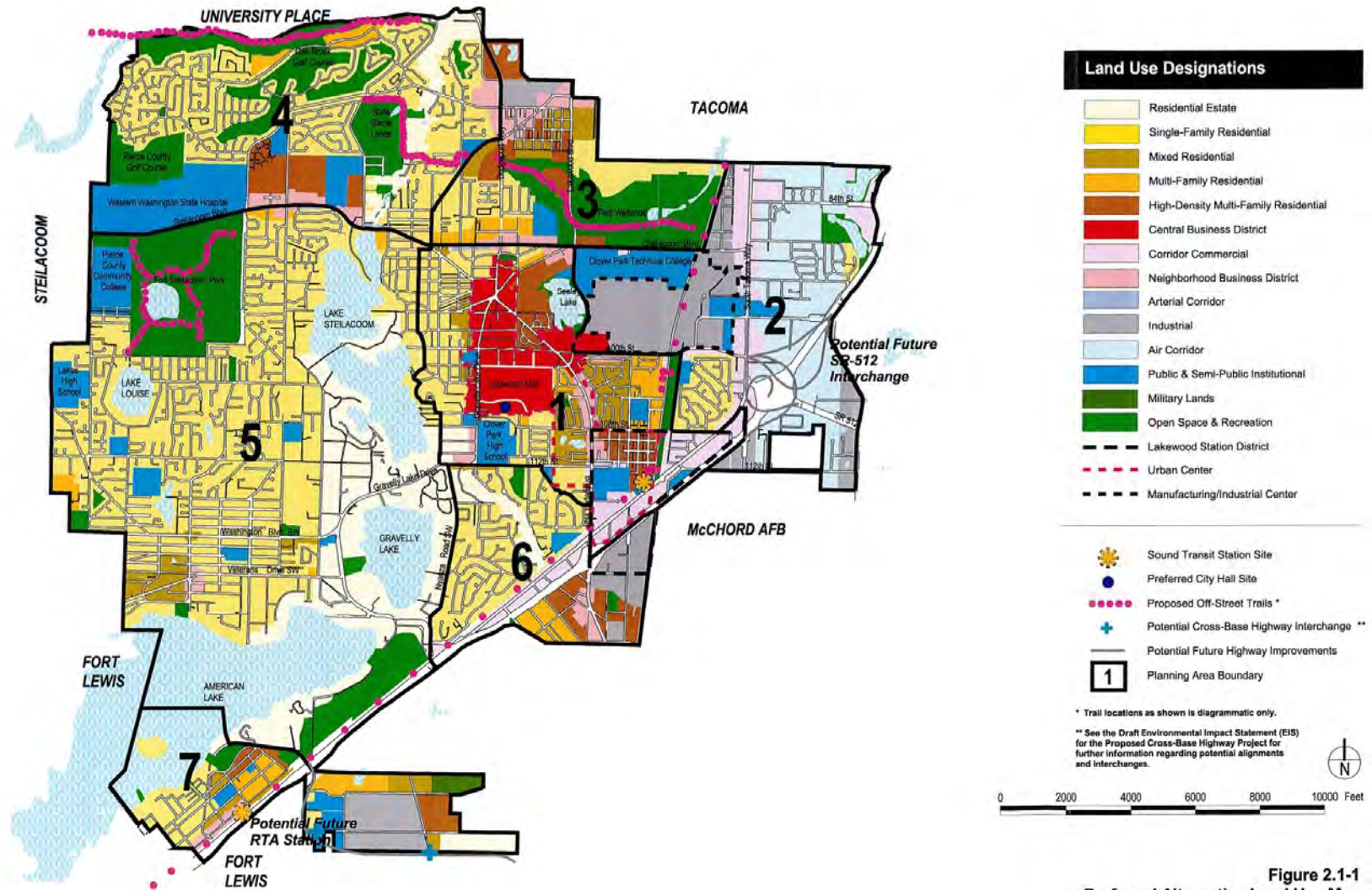


Figure 2.1-1
Preferred Alternative Land Use Map

- Moderate residential growth, with a projected capacity for 17,500 new residents in 2017.
- Improved bicycle and pedestrian facilities on arterials and local streets.
- A new land use designation along substantial portions of lake and streamfront property to stabilize established single-family neighborhoods by limiting subdivision opportunities, and to protect riparian habitat and water quality of the lakes and streams.
- An improved streetscape and urban design environment, with the focus of commercial development along Pacific Highway Southwest, especially in the Lakewood Station district.
- Improved streetscapes and city gateways within the CBD, along Bridgeport Way, and at other entries to the city.
- Reconstruction of the I-5/State Route (SR)-512 interchange to increase freeway access and connect 100th Street directly to the freeway.
- Support for construction of the Cross-Base Highway.
- Undergrounding of electrical utilities along key arterials leading to the city center.

2.2 No Action Alternative

2.2.1 Summary: No Action Alternative

Until a new comprehensive plan is adopted, the existing plan will remain in effect. This plan is the interim comprehensive plan (City of Lakewood 1996) as adopted upon incorporation. The interim comprehensive plan is largely based on the pre-existing policies and zoning regulations developed by Pierce County. This plan serves as the No Action Alternative by virtue of the fact that it has already been adopted by the City Council (although it lacks certain aspects of GMA comprehensive plans such as growth targets or a Future Land Use Map). The interim comprehensive plan, along with some specific temporary land use restrictions, has been guiding land use planning in the city since incorporation in compliance with GMA requirements. For the purposes of this SEPA analysis, the No Action Alternative is defined as the interim comprehensive plan without these temporary restrictions, notably the large lot overlay districts identified for the areas west of the Lakes. The No Action Alternative Land Use Map, as shown in Figure 2.2-1, is based on the zoning map adopted by the interim comprehensive plan.

The No Action Alternative would perpetuate existing land use patterns throughout Lakewood. Rather than concentrate growth, residential population would be distributed throughout the city, typically at low or moderate densities. Relatively small clusters of high density residential would be included in locations currently dominated by apartment style development. Commercial development would be co-mingled with other uses in strips of land zoned Mixed-Use District along Pacific Highway Southwest and other

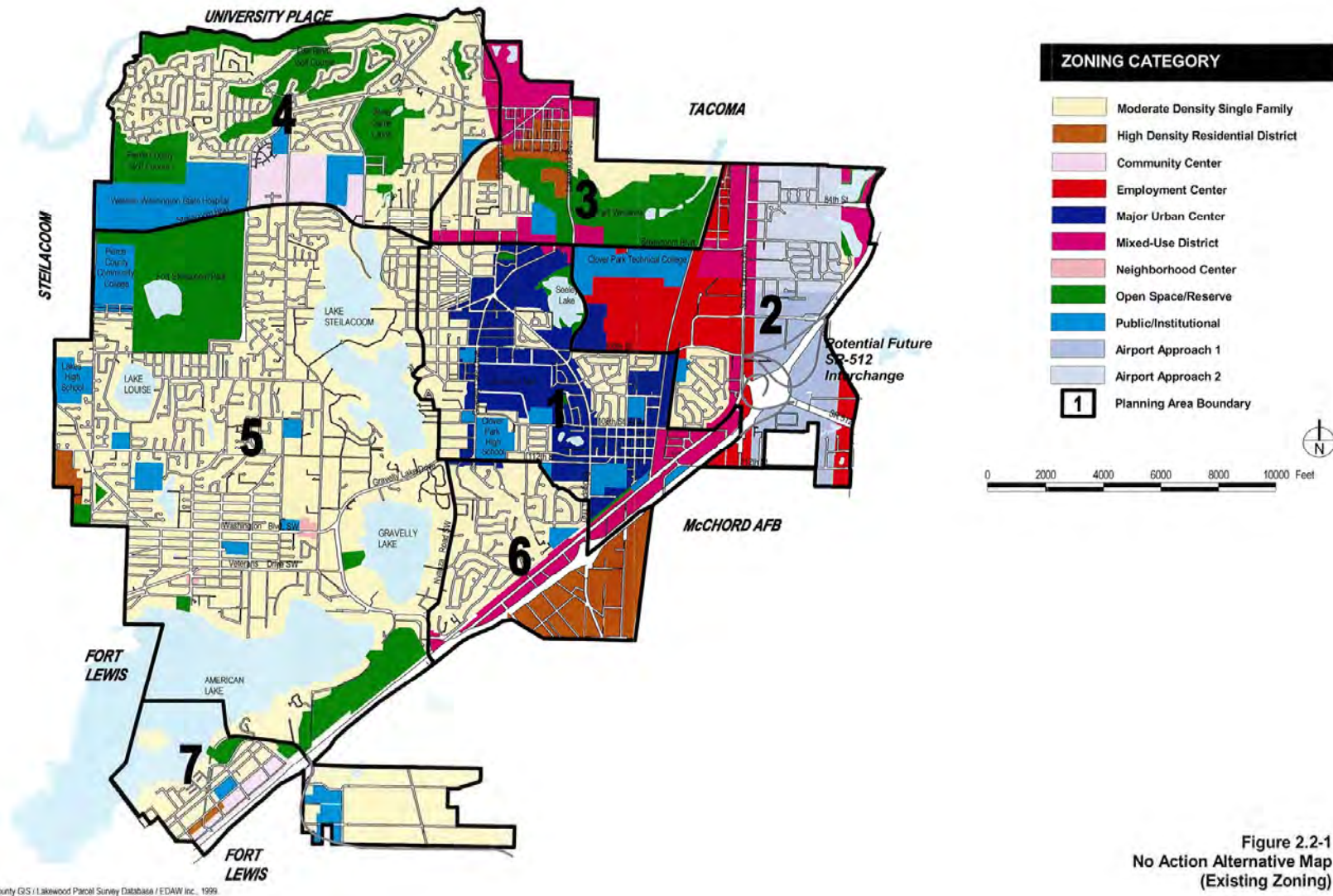
major corridors. Since these mixed-use designations offer few restrictions to most uses and permit market forces free reign, a broad range of land uses is possible under this alternative.

The organizational concept underlying this alternative is based on the existing land use pattern, which distributes growth of different land uses throughout the city. The western half of the city would primarily remain moderate density residential but would gain a significant number of households due to infill construction and subdivision of existing large lots. The sprawling mix of commercial, industrial, and residential uses would continue to dominate eastern Lakewood. The capacity for population growth under this alternative would greatly exceed anticipated population growth.

2.2.2 Special Features: No Action Alternative

Some of the distinctive features of the interim comprehensive plan are identified below.

- Continued sprawl, resulting in distributed growth throughout the city.
- The highest projected capacity for population growth of the three alternatives (increase of nearly 32,000 people).
- Significant residential growth in west Lakewood, with a substantial change of residential character in some areas.
- Limited employment growth, with little or no development of attractive office or business park type activities.
- High density growth in the Springbrook neighborhood.
- No additional park or open space development.
- Mixed-use rather than exclusive land use designations would predominate.
- Support for construction of the Cross-Base Highway.



2.3 Mixed-Use Alternative

2.3.1 Summary: Mixed-Use Alternative

The strategy and direction for the city's growth established by the Mixed-Use Alternative would shift population growth from the western half of the city to the central commercial area and the eastern half of the city.

The blend of land use designations identified by this alternative is less specific than that found in the Preferred Alternative. There are more designations that allow for a mix of residential, commercial, and other uses to be developed side by side. This alternative thus allows for a less pre-determined, more market-based evolution of land use patterns.

While the Mixed-Use Alternative identifies organizational principles and a Future Land Use Map, corresponding goals and policies have not been developed, as is the case for the Preferred Alternative and No Action Alternative. SEPA analysis is based on general land use patterns and densities identified by land use designation.

As the name indicates, this alternative retains much of the mixed-use land use patterns currently found in Lakewood. Nevertheless, residential densities are expected to increase significantly under this alternative. Job growth would also increase in mixed-use areas. The nucleus of this growth would occur around Lakewood Station, which would be converted into an urban core of low-rise apartment blocks and offices. Substantial residential and commercial growth would also be directed to areas surrounding Lakewood Mall, the Colonial Center, Custer, Ponders Corner, the Pacific Highway Southwest corridor, and other areas in northeast Lakewood. The character of much of this growth would be dictated by market factors due to the extensive reliance on mixed-use land use designations. The resulting land use patterns are therefore somewhat unpredictable. Although the patterns of change are similar to the Preferred Alternative, there are spatial differences in the location as well as the identity of land use designations. This alternative includes redevelopment of the Lakeview neighborhood for higher density residential use and retains residential (rather than industrial) uses in American Lake Gardens and most of Springbrook. The Mixed-Use Alternative is mapped on Figure 2.3-1.

2.3.2 Special Features: Mixed-Use Alternative

Special features of the Mixed-Use Alternative are as follows:

- An urban center clustered around Lakewood Station with new high density employment and housing.
- Capacity for population growth at a level between those of the No Action Alternative and the Preferred Alternative, with capacity for an additional 30,204 residents.

- Increased residential density in the Lakeview neighborhood.
- Numerous large, mixed-use designations, each with differing relative concentrations of housing and commercial uses.
- Land use protections (overlay zones) along the western shores of lakes to limit residential growth in established single-family neighborhoods.
- Increased residential density in Tillicum and American Lake Gardens facilitated by new sewer service to both neighborhoods.
- Improved streetscape design and focused commercial development, as well as potential for considerable residential development along Pacific Highway Southwest.
- Improved streetscapes and gateways within the urban center area and along Bridgeport Way.
- Reconstruction of the I-5/SR-512 interchange to increase freeway access and connect 100th Street directly to the freeway.
- Improved bicycle and pedestrian facilities on arterials and local streets.
- Support for construction of the Cross-Base Highway.
- Undergrounding of electrical utilities along key arterials leading to the city center.
- Urban design enhancements and improvements to the quality of development within the urban center and along entryways to the city.

2.4 Summary Description of the Alternatives

A summary description identifying the principal features of each alternative is provided in Table 2.4-1. This table highlights similarities and differences among the alternatives.

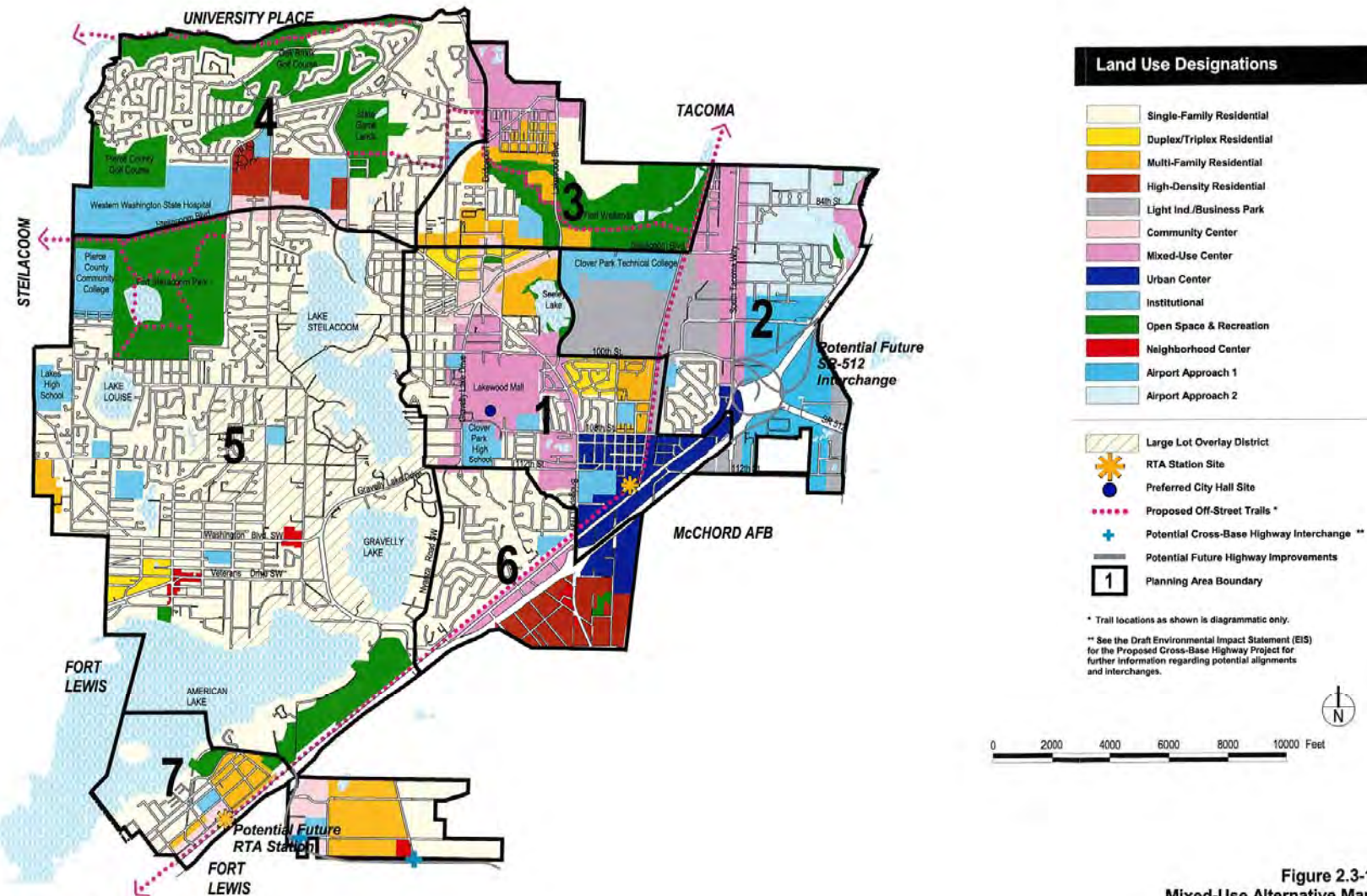


Table 2.4-1: Summary Description of the Alternatives.

Defining Features	Preferred Alternative	Mixed-Use Alternative	No Action Alternative
Projected Population	17,500 New Residents	30,204 Residents	31,853 Residents
Growth Capacity			
Projected Employment	12,275 New Jobs	11,237 Jobs	9,982 Jobs
Growth Capacity			
General Concept	Growth directed to urban center and several other urban neighborhoods in east Lakewood. More public services exist. Development in west Lakewood minimized. Moderate residential growth. Aggressive employment growth. Creation of additional parks and open space mitigates increased population density.	Growth directed to east Lakewood, particularly to the Pacific Highway SW corridor and commuter rail station vicinity. Aggressive residential growth. Development in west Lakewood minimized. Very aggressive employment growth. Clusters and corridors of mixed commercial and residential uses. Some new park and open space development.	Aggressive residential growth. Clusters of mixed commercial and residential uses. Land use decisions rely on market forces rather than policy guidance.
Key Features	Development of transportation-oriented Lakewood Station district. Redeveloped CBD along Bridgeport Way becomes a more urban downtown. Conversion to industrial uses in American Lake Gardens and Springbrook. Public investment focused on highest growth areas. Riparian protections identified through land use. Urban design measures incorporated as mitigation for increased density.	High intensity mixed-use regional center at Lakewood Station. Increased residential density in Tillicum and American Lake Gardens facilitated by new sewers. Intensive mixed-use development along Pacific Highway SW.	Extensive mixed-use rather than exclusive use land use designations. Significant residential growth through subdivision of large lots in west Lakewood. Continued sprawl; growth distributed throughout Lakewood. Lakewood Station-related development would be accommodated through existing mixed-use zoning provisions.

2.5 Alternatives Considered but Eliminated Prior to Full SEPA Analysis

A range of distinct development scenarios was developed for public consideration early in the planning process. Each of the scenarios was presented for public input as part of the alternatives development process. These eventually led to development of the Mixed-Use Alternative and ultimately to the Preferred Alternative. The preliminary alternatives are not subject to SEPA analysis because the alternatives being analyzed encompass a sufficiently broad range to satisfy SEPA requirements.

A summary of these preliminary conceptual alternatives is provided here to illustrate the depth of exploration that went into development of the SEPA alternatives. Each preliminary alternative proposed differing amounts of change, but all supported utility improvements; protection of most existing single-family neighborhoods; and intensification of land use in Tillicum, Springbrook, and American Lake Gardens. The four preliminary alternatives are summarized below.

2.5.1 Neighborhood Improvement

This preliminary alternative proposed the most modest level of growth and the maximum protection of the character of existing single-family neighborhoods. Significant recommendations included reinforcement of neighborhood centers, distribution of capital improvements throughout Lakewood, and better linkages and streetscape improvements, particularly for pedestrians.

2.5.2 Traditional Lakewood

This preliminary alternative most resembles the Mixed-Use Alternative. This alternative emphasized the Colonial Center as the city center, focusing housing, commercial development, and a new City Hall there. Development was also recommended for the Lakewood Mall and commuter rail station. Capital improvements would have been centered in the urban center area.

2.5.3 Highway 99 Corridor Revitalization

This preliminary alternative promoted redevelopment of the Highway 99 corridor by increasing the range of permitted uses, directing substantial development including housing to this corridor, and creating a distinctive design and streetscape.

2.5.4 Regional Employment Center

The organizing principle of this alternative was the creation of 13,000 new jobs, targeting northeast Lakewood for commercial development in particular. Land use changes would target regional land development markets and promote mixed-use development, especially that permitting residential uses around the Lakewood Mall. The focus was on economic growth over residential growth. This alternative proved unfeasible due to development limitations as the result of safety restrictions related to McChord AFB.

2.6 Summary of Impacts

Table 2.6-1 briefly summarizes the environmental impacts identified for each alternative, along with mitigation measures and significant unavoidable adverse impacts. Detailed analyses of impacts and related mitigation measures are provided in Chapter 3.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Resource Lands and Critical Areas				
<ul style="list-style-type: none">General impacts — Potential for localized increase in surface water runoff and storm discharge, decrease in surface water quality, infiltration and contamination of groundwater, and some reduction in fish and wildlife habitat due to ongoing development.Increased protection of riparian zones.Increased Springbrook development could impact two wells there.Potential effects to existing habitat from industrial development in American Lake Gardens.Water quality improvements due to sewerage Planning Area 7.	<ul style="list-style-type: none">Similar general impacts as Preferred Alternative, but more pronounced due to increased level of development and less specific land use pattern.Decreased forest cover and wildlife habitat in western Lakewood.Potential non-point pollution to adjacent streams and shorelines.	<ul style="list-style-type: none">Similar general impacts as Preferred Alternative, but more pronounced due to increased level of development.Increased Springbrook development could impact two wells there.Higher chance of runoff impacts to stream channels.Clustered development and pavement would indirectly affect water quality.	<ul style="list-style-type: none">Update the Site Development Regulations and the Zoning and Land Use Code to comply with comprehensive plan.Further define & develop Critical Area Regulations and Sensitive Areas Ordinance to protect environmentally sensitive resources. Supplement city's GIS system w/ critical area maps.Add new water quality policies to the comprehensive plan.Implement regional water quality plans in support of salmon recovery efforts.Add environmental professionals to City staff.	<ul style="list-style-type: none">Loss of some wildlife habitat and vegetation.Increase of impervious surface area.
Land Use				
<ul style="list-style-type: none">Projected growth capacity of 17,500 new residents, mostly housed in high density neighborhoods and single-family infill housing.Accommodation of 12,275 new jobs.Curtailed sprawl through organized land use patterns and redevelopment, and development of a high-density urban center.Portions of American Lake Gardens converted to industrial park, eliminating existing mixed-use and single-family residences.Goals and policies reflect new land uses.Portions of Springbrook converted to industrial park eliminating existing residential uses.	<ul style="list-style-type: none">Projected growth capacity of 31,853 new residents and 12,844 new households.Employment growth estimated at 9,982 new jobs.Widely distributed growth throughout the city. Residential infill in large undeveloped lots around lakes and streams in American Lake Gardens and west Lakewood.Continued commercial strip development on Pacific Hwy SW.Goals and policies controlled by existing zoning.Continued sprawl development through use of poorly defined mixed-use zoning.	<ul style="list-style-type: none">Projected growth capacity of 30,204 new residents.Employment growth estimated at 11,123 new jobs.Large lot overlay would restrict new development to preserve low density residential character.Urban Center designation to focus urban development between 1-5 and Pacific Highway SW.Mixed-Use Center designation to collocate complementary uses such as housing, services, and jobs.Continuation of extensive use of mixed-use designations.	<ul style="list-style-type: none">Street grid completed in the Lakewood Station District as well as better connections across RR tracks, Pacific Highway SW, and 1-5.If portions of American Lake Gardens are developed as an industrial park, careful planning for residential relocation and buffers for remaining residents.Sub-area plans prepared for individual neighborhoods experiencing substantial growth or change (e.g., CBD, Lakewood Station, Tillicum, American Lake Gardens, Custer, and Springbrook).	<ul style="list-style-type: none">None of the alternatives would produce adverse environmental impacts that cannot be mitigated.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Plans and Policies				
<ul style="list-style-type: none">No impacts identified.	<ul style="list-style-type: none">Interim comprehensive plan identifies no growth targets.Extensive use of general mixed-use zoning does not comply with county-wide policy on focused growth management.	<ul style="list-style-type: none">Lacks specific policy language so not possible to completely analyze.Seeks to reduce sprawl by focusing growth.	<ul style="list-style-type: none">Pierce County Ordinance #97-59 will need to be amended to reflect the revised comprehensive planning growth target of 17,000 additional residents.Development regulations to identify building standards to buffer airplane noise.	<ul style="list-style-type: none">In relation to other plans, policies, and ordinances, no unavoidable adverse impacts would result from any of the alternatives.
Parks, Recreation, and Open Space				
<ul style="list-style-type: none">Implementing land use goals would improve Lakewood's open space and recreation inventory (e.g., Burlington Northern RR track partially converted to park; new open space in Springbrook; Flett/Chambers creek shoreline designated open space; urban design treatments; creation of an off street trail; and new park in NE Lakewood).	<ul style="list-style-type: none">Inadequate land designated for recreation and open space.Public access to remaining natural areas extremely limited.	<ul style="list-style-type: none">Increased amount of open space and recreation facilities, but less than the Preferred Alternative.Creation of an off-street trail.Open space deficiencies in parts of the city.	<ul style="list-style-type: none">New bond initiative or other funding sources to fund park acquisition, maintenance, and improvement. Recreation improvements should target areas of population growth.Increased public access to existing shorelines. Developer incentives for semi-public open space creation.	<ul style="list-style-type: none">Increased growth would exacerbate existing open space and recreation deficiencies, especially in light of recent open space bond initiative failures.
Housing				
<ul style="list-style-type: none">Capacity provided for 7,107 new dwelling units (the fewest of the alternatives).Restricted housing development (especially mixed-use).Removal of some of housing in American Lake Gardens (potential displacement of 572 existing residences) and Springbrook (potential displacement of 298 existing residences).Lack of monitoring plan, as required by GMA.Supply of affordable housing likely to decrease significantly by 2017.	<ul style="list-style-type: none">Capacity provided for 12,844 new dwelling units.Greatest ability to respond to overall regional population pressure, while maintaining a supply of affordable housing.	<ul style="list-style-type: none">Capacity provided for 12,179 new dwelling units.Sewer upgrades in Tillicum and American Lake Gardens.	<ul style="list-style-type: none">Housing policies should be expanded to further support development and redevelopment of affordable housing for low and moderate income households.Implement monitoring program to accurately track housing needs.Housing policies and programs regarding relocation assistance should be strengthened in light of American Lake Gardens and Springbrook.Continue to identify and meet "fair share" housing goals.	<ul style="list-style-type: none">For Preferred Alternative —Loss of 870 dwelling units in American Lake Gardens and Springbrook.No Action Alternative—Gradual but significant transformation of character of neighborhoods surrounding the lakes.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Preferred Alternative	Impacts		Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
	No Action Alternative	Mixed Use Alternative		
Transportation				
<ul style="list-style-type: none">Growth would contribute to increased traffic and congestion.Without the proposed I-5/SR-512 interchange project, 9 intersections to operate at LOS E or F at p.m. peak hour in 2017; 12 intersections to operate at LOS D (V/C ratio of 0.73)With the proposed I-5/SR-512 interchange project, 6 intersections to operate at LOS E or F at p.m. peak hour in 2017; 14 intersections to operate at LOS D (V/C ratio of 0.72).	<ul style="list-style-type: none">Growth would contribute to increased traffic and congestion.12 intersections to operate at LOS E or F at p.m. peak hour in 2017; 10 intersections to operate at LOS D (VIC ratio of 0.74).Access to west Lakewood deteriorate, due to dramatic growth and physical constraints to road widening.	<ul style="list-style-type: none">Without the proposed I-5/SR-512 interchange project, 8 intersections to operate at LOS E or F at p.m. peak hour in 2017; 13 intersections to operate at LOS D (V/C ratio of 0.72)With the proposed I-5/SR-512 interchange project, 9 intersections to operate at LOS E or F at p.m. peak hour in 2017; 11 intersections to operate at LOS D (V/C ratio of 0.73).	<ul style="list-style-type: none">Multiple roadway improvement projects are recommended or scheduled.Recommended grade separation over the BNSF RR tracks on 100w St. SW. HOV Direct Access ramp project at the I-5/SR-512 interchange.Work with Pierce Transit and local employers to plan and implement a local mini-bus circulatory system between park & ride, commuter rail station, major office centers, the Mall, and other high density developments.Multiple sidewalk and bicycle lane improvements.Implement Transportation Demand Management and Transportation Systems Management strategies.	<ul style="list-style-type: none">There will be increased traffic on city arterials in 2017 as a result of anticipated growth and development. Traffic congestion on city arterials will increase by 23% to 26% by 2017 depending on which of the three alternatives is implemented.
Aesthetics/Views				
<ul style="list-style-type: none">Visual quality and quality of designed environment expected to improve over life of the comprehensive plan due to urban design measures.Visual character of portions of American Lake Gardens and Springbrook would change from residential to industrial.	<ul style="list-style-type: none">Loss of forested character of remaining coniferous forest areas.	<ul style="list-style-type: none">Large Lot Overlay district would protect community character in west Lakewood.	<ul style="list-style-type: none">Identify sensitive views, view corridors, and visual resources, and develop a program to protect these resources (especially views of Mt. Rainier and several of the lakes).	<ul style="list-style-type: none">Transformation of neighborhood character in portions of American Lake Gardens and Springbrook to industrial.Loss of specific public and private views as city develops
Public Services, Utilities and Capital Facilities				
<ul style="list-style-type: none">Police — Crime Prevention through Env. Design would increase crime resistance; managed growth will enable the Police Dept. to use its resources more efficiently; need for an additional 50 officers to provide officer to citizen ratio of 1.6:1,000; secondary impacts of increased traffic might reduce response times.	<ul style="list-style-type: none">Police - Need for an additional 151 officers to provide officer to citizen ratio of 1.6:1,000; secondary impacts of increased traffic might reduce response times.Fire — Need for additional fire fighting resources. Secondary impacts of increased traffic might reduce response times.	<ul style="list-style-type: none">Police - Need for an additional 72 officers to provide officer to citizen ratio of 1.6:1,000; secondary impacts of increased traffic might reduce response times. •Fire — Need for additional fire fighting resources, especially in American Lake Gardens. Secondary impacts of increased traffic might reduce response times.	<ul style="list-style-type: none">Increase police force as population grows to maintain officer to citizen ratio and continue crime prevention programs.Construct new fire stations to serve underserved high growth areas.	<ul style="list-style-type: none">Increased demands with population growth on all public services and utilities. Funding issues for mitigation are expected to be especially problematic with schools and parks. Areas with greatest growth and least existing services (e.g., Springbrook) most problematic.

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Preferred Alternative	Impacts		Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
	No Action Alternative	Mixed Use Alternative		
<ul style="list-style-type: none"> Fire — Conversion of portions of American Lake Gardens and Springbrook would change nature of Station #2-3, which may require additional equipment and training; secondary impacts of increased traffic might reduce response times. Schools — Proportional increase in student enrollment (1,567 elementary, 850 middle, and 717 high school students). Tyee Park, Carter Lake, Lakeview, Tillicum, and Dower schools most affected. Stormwater — Facility improvements required in Springbrook, Lakewood Station, NE Lakewood, and American Lake Gardens due to increased impervious surface (e.g., \$4 million of retention facilities in American Lake Gardens). Sanitary Sewers- Individual basins may require improvements as development occurs. Installation of sewer system in Tillicum and American Lake Gardens (\$12 to \$14 million). Water, Electricity, Telecommunications, Solid Waste, Natural Gas — Utility providers can accommodate planned growth. 	<ul style="list-style-type: none"> Schools - Proportional increase in student enrollment, especially in W portion of city. Most affected schools would be Lake City, Lake Louise, Idelwild, Custer, Dower, and Mann. Stormwater — Stormwater management concerns, especially in Springbrook and NE Lakewood, as well as related facility improvements. Greater impacts than the Preferred Alternative (however, no such impacts to American Lake Gardens). Sanitary Sewers- Individual basins may require improvements as development occurs. Water, Electricity, Telecommunications, Solid Waste, Natural Gas — Utility providers can accommodate planned growth. 	<ul style="list-style-type: none"> Schools - Proportional increase in student enrollment, especially in central part of city. Most affected schools would be Tyee Park, Carter Lake, Tillicum, and Lakeview. Stormwater— Land use changes would result in impacts to the Springbrook and American Lake Gardens areas, as well as the NE portion of the city. Additional retention facilities required. Sanitary Sewers- Individual basins may require improvements as development occurs. Water, Electricity, Telecommunications, Solid Waste, Natural Gas — Utility providers can accommodate planned growth. 	<ul style="list-style-type: none"> Coordinate planning efforts with the Clover Park School District, and work with individual schools affected by changes in surrounding land uses. Conduct lake management studies to determine pollutant sources. Ongoing water quality monitoring program for all public drainage systems that discharge to streams or lakes. Develop community education program for water quality. Implement a State-approved Comprehensive Stormwater/Water Quality Management Program. Provide sewer service to American Lake Gardens and Tillicum. Identify and develop additional stormwater retention facilities in Springbrook, Lakewood Station, NE Lakewood, and American Lake Gardens as development Occurs. 	

Table 2.6-1: Summary of Impacts, Mitigation Measures, and Unavoidable Adverse Impacts.

Impacts			Mitigation Measures (Preferred Alternative)	Unavoidable Adverse Impacts (Preferred Alternative)
Preferred Alternative	No Action Alternative	Mixed Use Alternative		
Air Quality				
<ul style="list-style-type: none">• Air quality could be affected by increasingly dense space heating.• Potential to emit would be proportional to 17,000-person increase in population.• New industrial facilities in American Lake Gardens and Springbrook could generate air pollution.• Traffic-related air quality impacts would be very similar among the three alternatives (for peak p.m. hour delays on arterials). Air quality could be degraded at affected locations.	<ul style="list-style-type: none">• Air quality could be affected by increasingly dense space heating and increased traffic.• Potential to emit would be proportional to 32,000-person increase in population.• New industrial facilities in American Lake Gardens could generate air pollution.• Traffic-related air quality impacts would be very similar among the three alternatives (for peak p.m. hour delays on arterials). Air quality could be degraded at affected locations.	<ul style="list-style-type: none">• Increased light industrial activity in the eastern employment center could change air quality depending on the nature of the industry.• Traffic-related air quality impacts would be very similar among the three alternatives (for peak p.m. hour delays on arterials). Air quality could be degraded at affected locations.	<ul style="list-style-type: none">• Transportation system improvements that decrease idling vehicles and congestion would protect air quality.• Restrictions on wood-burning stoves and incentives for energy efficiency would reduce emissions.	<ul style="list-style-type: none">• While localized air quality impacts could occur related to growth, no significant unavoidable effects to regional air quality are anticipated.

3.0

ELEMENTS OF THE ENVIRONMENT

This section is comprised of descriptions and analyses of each applicable element of the environment. These include: resource lands and critical areas; land use; plans and policies; parks, recreation, and open space and critical areas; housing; transportation; aesthetics; utilities; and air quality. Specific sections of this chapter address each of these elements. Each section contains a discussion of the affected environment, environmental impacts, proposed mitigating measures, and significant unavoidable adverse impacts (if any).

3.1 Resource Lands and Critical Areas

3.1.1 Affected Environment

Under the GMA, Lakewood is required to review its critical area regulations when adopting its comprehensive plan. The primary purpose of this subsection is to evaluate consistency between existing goals and objectives governing critical areas and each of the three alternatives under consideration. An additional function is to compare the impact of each alternative on resource lands.⁴

Critical areas in the City of Lakewood include wetlands, aquifer recharge areas, fish and wildlife habitat, flood-prone areas, geologically hazardous areas, shorelines, creeks, streams, and lakes. Each of these is described in the comprehensive plan background report (EDAW 1997) and in the Environment and Critical Areas sections of the interim comprehensive plan (City of Lakewood 1996). Wetlands, flood-prone areas, lakes, shorelines, and streams are shown graphically on Figure 3.1-1.

Resource Lands

There are no remaining economically functioning resource lands in the City of Lakewood. Although Pierce County's tax assessor database⁵ contains land use classifications for mineral extraction and agriculture, the actual parcels are either unused or being used for another purpose.

There are no commercial stands of timber in Lakewood. The largest contiguous parcel of forest lands in the city stretches along the northern border of Lakewood on the steep slopes adjacent to Chambers Creek. Remnants of forest cover are clustered at South Tacoma State Game Refuge, Seeley Lake Park, and Fort Steilacoom Park. Significant concentrations of forest cover are found scattered throughout the large lot residential areas west of Gravelly and Steilacoom lakes and east of Lake Louise, but these forest lands are potentially vulnerable to future residential development. Timber cover is mapped on Figure 3.1-2.

⁴ As defined by the Environment and Critical Areas Element of the interim comprehensive plan, "*Resource Lands* means those lands suitable for agriculture, forest or mineral extraction and protected by resource land regulations."

⁵ Parcel-level data used for SEPA analysis.

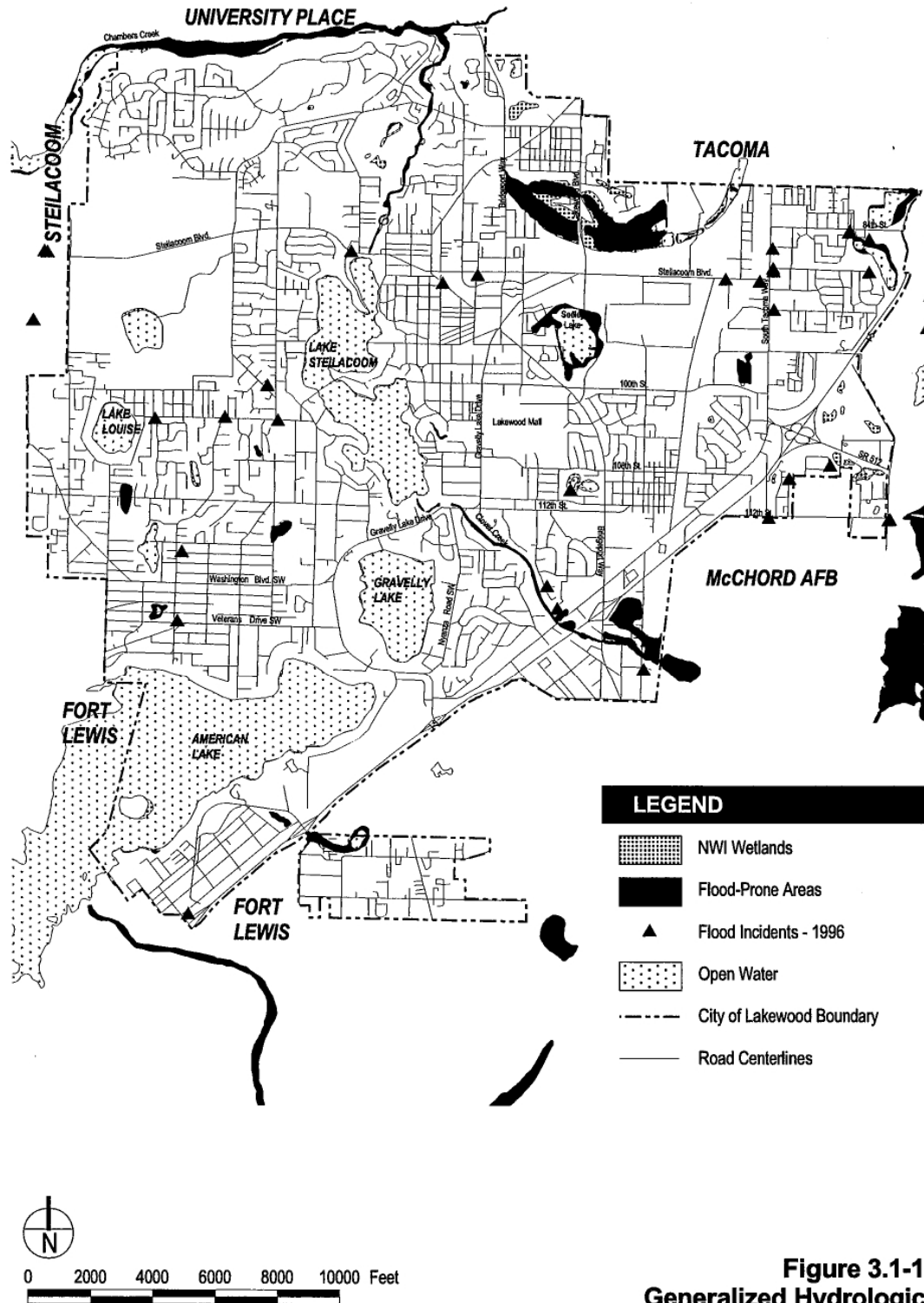


Figure 3.1-1
Generalized Hydrologic
Features Map

Wetlands

Lakewood has an estimated 155.3 acres of wetlands in addition to 955 acres of lakes (City of Lakewood 1996). The largest non-lacustrine wetland is the 106-acre Flett Creek floodplain in northeast Lakewood. The second largest wetland is the 37-acre Crawford Marsh comprising much of Seeley Lake Park. Both contain peatbogs and waterfowl and animal habitat. Other wetlands are scattered throughout Lakewood on both public and private property along stream corridors and in isolated depressions.

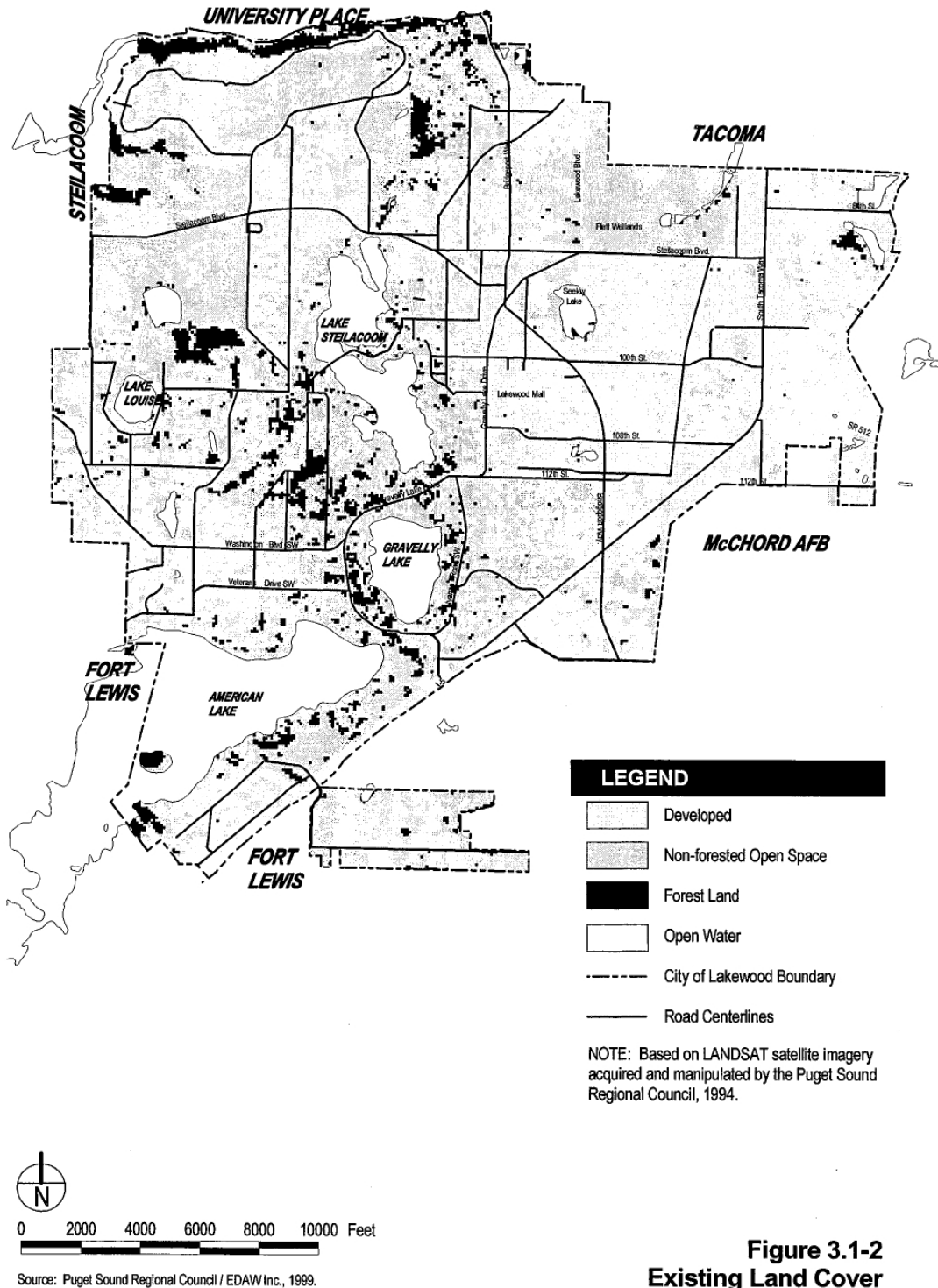
Aquifer Recharge Areas

Most of Lakewood is built above a series of four aquifer systems that supply the Lakewood Water District with well water, providing Lakewood with water for domestic and industrial use. Protection of these aquifers is the subject of a detailed Wellhead Protection Plan prepared for the District in 1997. The Wellhead Protection Plan delineated 23 sets of Wellhead Protection Areas. These protection areas cover 14 individual production wells, six well fields (containing a total of 12 wells), and three wells for possible protection (Economic and Engineering Services, Inc. and Robinson & Noble, Inc. 1997).

The Wellhead Protection Plan identifies Aquifer A as the shallowest aquifer with the most direct hydrologic relation to the surface. In addition, it is composed of highly permeable glacial deposits resulting in hydrologic conductivity values averaging approximately 1,650 feet per day (Economic and Engineering Services, Inc. and Robinson & Noble, Inc. 1997). Because of these factors, Aquifer A is the shallowest and most vulnerable of Lakewood's aquifer systems. This aquifer is generally located along the I-5 corridor in eastern Lakewood with water contribution flowing west from McChord AFB and Spanaway. American Lake is believed to have a direct hydrologic connection to the aquifer. This shallow aquifer also includes a smaller area in western Lakewood that includes Waughop Lake and Lake Louise, both of which are believed to contribute directly to three wells south of Fort Steilacoom Park.

Fish and Wildlife Habitat

Lakewood lies within the natural vegetation zone known as the western hemlock forest zone (Franklin and Dyrness 1988). In undisturbed areas, typical vegetation is characterized by forests of western hemlock (*Tsuga heterophylla*), Douglas-fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata*). Disturbed areas, which include areas that have been logged or developed as well as stream corridors, typically support a mix of deciduous trees including red alder and bigleaf maple. A regional variant of the western hemlock zone, characterized by treeless prairie openings and extensive stands of Garry oaks (*Quercus garryana*) intermixed with the more typical regional forests, is commonly found in the south Puget Sound area on soils formed from glacial drift and outwash. These soils are often poor in nutrients and excessively well drained. This regional variant is typical of much of the native vegetation of Lakewood. In the present era, most of Lakewood is composed of suburban and urban development, with remnant areas of native vegetation found in a patchy mosaic throughout the city. Significant remaining intact



**Figure 3.1-2
Existing Land Cover**

stands of native vegetation include the Flett wetlands, the Chambers Creek canyon, and Seeley Lake Park.

Wildlife habitat has been greatly reduced as a consequence of development, with little suitable habitat for large mammals remaining. Information provided by the Washington Department of Fish and Wildlife (WDFW) regarding lands meeting the criteria as priority wildlife habitats indicates a number of those habitats are present in the city, including wetlands, riparian zones, and urban natural open spaces (UNOS). The remaining habitat can support a variety of smaller mammals, reptiles, amphibians, and birds. Standing water in the form of lakes accounts for 955 acres, or 8% of Lakewood's surface area. These lakes support a variety of water and shorebirds, as well as aquatic fauna.

The Clover Creek watershed is the principal watershed in the city. Clover Creek empties into Lake Steilacoom. The lake then flows into Chambers Creek, which empties into Puget Sound immediately west of the city limits. Chambers Creek forms the boundary between the cities of Lakewood and University Place. Major tributaries of Chambers Creek include Leach Creek and Flett Creek. Chambers Creek has been dammed to form Steilacoom Lake. Two streams flow into Steilacoom Lake, Clover Creek and Ponce de Leon Creek. Chambers Creek, Leach Creek, Flett Creek, and Clover Creek are all identified by the WDFW as having anadromous fish runs⁶. In addition, there is a critical spawning habitat identified near the mouth of Chambers Creek. Two anadromous fish species listed under the Endangered Species Act (ESA) are present in the area, including chinook salmon (*Oncorhynchus tshawytscha*) and Puget Sound/Strait of Georgia coast coho salmon (*O. kisutch*) (WDFW 1997).

Because of the presence of endangered salmonids in the watershed, land use activity must conform to ESA regulations for Lakewood to receive protection under Section 4(d) of the ESA. These are identified in the National Marine Fisheries Service 4(d) rules, which identify the elements that must be present in an approved stormwater management plan. The Chambers/Clover Creek watershed forms Water Resource Inventory Area (WRIA) 12, as defined by the Washington Department of Ecology. The Chambers/Clover Creek Watershed Action Plan is the watershed-wide document under development to manage non-point source pollution within WRIA 12. This Action Plan contains a number of recommendations with regards to habitat, water quality, and related issues of importance to salmon recovery efforts, and has been approved by Lakewood as well as most other jurisdictions within WRIA 12.

Although Lakewood is generally a disturbed landscape, some federal or state plant and animal species of concern are known to occur. See the Lakewood background report (EDAW 1997) for a comprehensive discussion of these species of concern, as well as related priority habitats.

Flood-Prone Areas

Flooding is the most common natural disaster in Lakewood due the area's hydrologic conditions, topography, and development patterns. The most recent significant floods occurred in 1996 and 1997, which inundated significant

⁶ WDFW letter dated August 13, 1997.

sections of Chambers, Steilacoom, and Clover creeks as well as numerous isolated topographical depressions around Lakewood. Significant portions of northeast Lakewood, especially in the Clover and Flett Creek drainage area, are susceptible to flooding. Other areas prone to flooding include wetlands and adjacent low-lying upland areas. These areas are shown on Figure 3.1-1.

Flooding threatens lives and damages property. Its frequency and severity tend to increase as a result of development, specifically as permeable forest cover is replaced by impervious surfaces such as rooftops or concrete or even by semi-permeable ground covers such as lawns. The most effective way to limit increasing urbanization-related flood risk is to limit changes to natural hydrologic functions. Accordingly, natural drainage channels need to be preserved whenever possible, and permeable surfaces should be protected. Changes to these system functions should be compensated by engineered systems such as retention/detention basins, swales, and other approaches designed to simulate natural flood control mechanisms by allowing stormwater to slowly seep into the ground or gradually drain downstream.

Geologically Hazardous Areas

Geologically hazardous areas typically include areas subject to structural failure, usually as a result of mass wasting or seismic incident. Most of Lakewood is located on relatively flat lands sloping 8% or less. The steepest significant land area in Lakewood, and consequently the area most vulnerable to landslide, is the southern rim of the Chambers Creek canyon, which is the northwestern boundary of the city. Other sloping areas include hillsides with moderate slopes scattered in primarily residential areas and some former gravel quarries with slopes over 30% grade.

Creeks, Streams, and Lakes and their Shorelines

Much of Lakewood lies within the Chambers Creek drainage basin. Chambers Creek flows into Puget Sound between Steilacoom and University Place and forms Lakewood's northern boundary. Chambers Creek is joined by Leach and Flett Creeks near Lakewood's boundary with University Place and Tacoma. Flett Creek originates in southern Tacoma and drains the largest palustrine wetland system in the city, Flett wetlands.

As previously mentioned, there are numerous lakes in Lakewood, covering a total of 955 acres. Most of these lakes, including American, Gravelly, Waughop, and Seeley lakes and Lake Louise, are of glacial origin. Steilacoom Lake was formed as the result of damming Clover Creek to create a millpond. Chambers Creek flows from the south and drains Lake Steilacoom, which is impounded by the dam at Steilacoom Boulevard. The largest stream feeding Lake Steilacoom is Clover Creek, which flows from the southeast through Ponders Corner and Springbrook. A smaller stream, Ponce de Leon Creek, drains the Lakewood Mall site flowing past the current City Hall, emptying into Lake Steilacoom.

Many of Lakewood's lakes are fed by groundwater flow. The water table underlying the city is very shallow and moves rather freely through the permeable glacially deposited sandy and gravelly soils. Where the depressions

in local topography go deep enough, they intercept the water table and form lakes. Lake levels fluctuate seasonally with local water tables.

3.1.2 Environmental Impacts

Some inevitable impacts to critical areas will result from each of the alternatives as a result of increasing urbanization. These may include: an increase in erosion and sedimentation, an increase in surface water runoff and storm discharge, a decrease in surface water quality, infiltration and contamination of groundwater, and reduction in fish and wildlife habitat. Specific impacts on resource lands and critical areas are discussed below for each of the alternatives under consideration. Because there are no remaining economically functioning resource lands in Lakewood, no discussion of impacts to resource lands has been included in this section.

Preferred Alternative

Wetlands

No wetlands identified on National Wetlands Inventory (NWI) maps appear to be directly affected by land use changes comprising this alternative. In addition, wetland protection goals and policies in the Land Use chapter address mechanisms to protect wetland resources.

Aquifer Recharge Areas

The Preferred Alternative would designate the un-sewered parcels on the southeast shore of American Lake as Residential Estate. This designation would significantly restrict future development in this potentially sensitive area and would help protect Aquifer A. This alternative would also increase residential and industrial development in the Springbrook neighborhood, which could impact two wells located at the western edge of that neighborhood.

Fish and Wildlife Habitat

This alternative would increase residential densities to allow for an additional 7,056 new households, which is 5,787 households less than the No Action Alternative. Additionally, this alternative has identified adequate land uses to accommodate 12,275 new employees. In general, this intensification of development would occur in areas that are largely developed, avoiding major loss of intact valuable habitat.

Most of the remaining urban natural open spaces are identified for preservation in the Preferred Alternative. Lands designated as Open Space encompass 1,490 acres, an increase of 70% from the 876 acres identified under the No Action Alternative. This includes new parkland and stormwater retention areas planned for northeast Lakewood and Springbrook neighborhoods. It also designates some of the last remaining intact oak savanna landscape, contained in a parcel near the intersection of Steilacoom Boulevard and Lakewood Boulevard, as Open Space.

The Preferred Alternative includes a large lot land use designation that restricts development in specified areas to a density of up to 2 units per acre. This designation encompasses most residential properties on either side of Chambers and Clover Creeks, as well as much of the shoreline on three of the major lakes: American Lake, Gravelly Lake, and Lake Steilacoom. This designation greatly decreases potential for land development in these areas compared to the No Action Alternative.

Selection of the Preferred Alternative will make it easier for Lakewood to comply with the terms of the Chambers/Clover Creek Watershed Action Plan. Creation of a Residential Estate land use designation is unique to this alternative, affording protection to water quality by restricting development density adjacent the creek. It will also create a more compact development pattern, resulting in the creation of less impervious surface, again protecting water quality. The Preferred Alternative is therefore most beneficial of the three alternatives for salmonid species.

Substantial amounts of residential development are likely to occur, which would be distributed at varying densities throughout the city. Most of this development would occur in areas long designated for such uses at such intensities, with some impact on vegetation and habitat. In retaining these land uses, Lakewood is complying with the GMA goal of promoting growth within the UGA, reducing impacts to habitat outside of the UGA by accommodating growth with existing developed areas. This growth would result from redevelopment or infill within developed areas, not the development of rural or resource lands. Consequently, no significant adverse impacts to plants and animals from the overall residential growth are expected.

Commercial lands are overbuilt in Lakewood, as measured by the square footage of retail square footage per capita, and the amount of vacant commercial buildings (EDAW 1997). One goal of the Preferred Alternative is to limit sprawl of new commercial development in the city, and not expand the amount of future commercial development outside of the existing commercial land use footprint. No habitat would be affected due to commercial development under this alternative. Industrial lands have been expanded considerably with the designation of portions of the American Lake Gardens neighborhood and the Springbrook neighborhood for industrial development. This would potentially affect some habitat, as many of the affected parcels are currently developed with low density housing or are undeveloped. Future industrial development of American Lake Gardens would require installation of new sewer systems, which would improve habitat conditions in the long term.

Flood-Prone Areas

The areas targeted for the highest density development do not coincide with flood-prone areas, with the exception of a portion of the Springbrook neighborhood slated for industrial development. Although most of American Lake Gardens is not shown on Pierce County Environmental Constraint maps as flood-prone, industrial development could exacerbate flooding problems in flood-prone areas if impervious surfaces increase as a result of industrial

development in the central portion of the neighborhood. In either case, storm drainage controls mandated by Section 17.46.190 of the City's site development regulations should address this.

Geologically Hazardous Areas

The comprehensive plan would not impact the few geologically hazardous areas present in the city. No development would be permitted in or near the Chambers Creek canyon, where the greatest hazard is. In addition, the plan's Geological Risk Management policies include several measures to mitigate landslide, erosion, and seismic risk. Certain parcels bordering stream channels may be exposed to some risk from potential stream under-cutting. Under the Preferred Alternative, new residential development in these areas would be reduced through the Residential Estate designation.

Creeks, Streams, and Lakes and their Shorelines

This alternative would cluster urban growth in several target areas, limiting opportunities for non-point pollution. In addition, residential density would be limited along portions of the lake and stream shores by the Residential Estate designation. The redesignation of industrial lands in American Lake Gardens would result in positive impacts to water quality as it would replace many of the existing dwellings based entirely on septic systems with new sewered industrial facilities. In addition, several goals and policies in the Environmental Quality section of the Land Use chapter address shoreline and water quality protection.

No Action Alternative

Wetlands

Much of the area adjacent to and including the extensive Flett wetlands complex is identified for single-family residential uses under the No Action Alternative. Development of both multi-family and single-family on upland pockets within and adjacent to the Flett wetlands complex was permitted under zoning that would remain unchanged by this alternative. The valuable priority habitat in the Flett wetland complex will likely become more fragmented and reduced under this alternative because of its permissive land use controls. This alternative would not result in any other specific impacts to Wetlands other than non-point impacts from generally distributed growth, which would likely reduce natural areas including wetland buffers.

Aquifer Recharge Areas

Since this alternative would generally distribute growth in many parts Lakewood, Aquifer A, the shallowest and most vulnerable of Lakewood's aquifer systems, is not likely to be significantly affected by significant increases in impervious surface or additional pollutant sources in most areas. Of greatest concern is the eastern shore of American Lake, which would receive significant redevelopment under this alternative. Specifically, the large parcels between the lake and the Tillicum Country Club are likely to be subdivided, but this area has no sewer service. Additional home construction

here would add septic systems within one-year's water travel time from one of the Lakewood Water District's wells.

Fish and Wildlife Habitat

This alternative would increase residential densities to allow for an additional 12,844 new households, which is 5,787 households more than the Preferred Alternative. Additionally, the No Action Alternative is estimated to contain adequate land uses to accommodate 9,982 new employees. With regards to industrial and commercial growth, this intensification of development would occur in areas that are largely developed, avoiding major loss of intact valuable habitat. With regards to residential development, 61% of the city is dedicated to moderate density single-density family housing at a maximum density of 6 dwelling units (DUs) per acre. This density has the potential for adverse impacts to fish and wildlife habitat.

Almost 4,500 new single-family residences could be developed on Planning Area 5 alone under this designation. This level of development would have an adverse impact on the forest cover in Planning Area 5, which contains the most extensive remaining unprotected forests in Lakewood (EDAW 1997). This would cause an adverse impact on fauna reliant on habitat provided by the forests of western Lakewood, or the major streams and wetlands of Lakewood. Therefore, the No Action Alternative would have a significant environmental impact on plants and animals.

Because the level of development would be greatest for this alternative, it would result in the greatest amount of impervious surface being created, with subsequent negative effects on water quality. There are no lacustrine or riparian protection measures included in the proposed land uses under the No Action Alternative, such as larger lots adjacent to streams and lakes. This alternative would hamper Lakewood's efforts to comply with the policies identified in the Chambers/Clover Creek Watershed Action Plan with respect to improving water quality and salmon recovery.

Flood-Prone Areas

Although this alternative would expand urban growth, the interim comprehensive plan includes a number of objectives and policies in the Environment and Critical Areas Element aimed at preventing flood-related damage.

Geologically Hazardous Areas

The No Action Alternative would not appreciably increase landslide risk because no steep slopes are designated for developable uses; however, some additional single-family development would be permitted in neighborhoods in the western part of the city where moderate slopes are indicated⁷.

Creeks, Streams, and Lakes and their Shorelines

⁷ 15%-30% slope according to Pierce County (1994b).

This alternative would expand and distribute urban growth throughout the city, including areas adjacent to streams and shorelines, increasing opportunities for non-point pollution. The interim comprehensive plan does contain a number of objectives and policies in the Environment and Critical Areas Element that address water quality, including surface water and other natural drainage systems.

Mixed-Use Alternative

Wetlands

This alternative would not likely have a direct impact on NWI wetlands.

Aquifer Recharge Areas

This alternative is unlikely to significantly increase impervious surfaces or additional pollutant sources in most areas of the city, especially in areas recharging Aquifer A. Like the No Action Alternative, the eastern shore of American Lake would receive significant redevelopment, adding septic systems within one-year's water travel time from one of the Lakewood Water District's wells. This alternative would also increase development in the Springbrook neighborhood, which could impact two wells located at the western edge of that neighborhood.

Fish and Wildlife Habitat

The Mixed-Use Alternative would increase residential densities to allow for an additional 12,179 new households, which is 664 new households less than the No Action Alternative, but 5,123 new households greater than the Preferred Alternative. Additionally, the Mixed-Use Alternative has identified adequate land uses to accommodate 11,237 new employees. Like the Preferred Alternative, the Mixed-Use Alternative designates substantially more land as open space than the No Action Alternative. In general, intensification of development would occur in areas that are largely developed, avoiding major loss of intact valuable habitat. This alternative would protect some of the existing habitat east of Woodbrook Road in American Lake Gardens. There are some large lot protection measures in place in western Lakewood but no riparian protection measures, allowing much greater level of development adjacent to creeks and lakes than possible under the Preferred Alternative. The Mixed-Use Alternative may cause significant adverse environmental impacts to the important riparian habitats along Chambers and Clover Creeks, thus negatively affecting salmon recovery efforts.

Flood-Prone Areas

Impacts from this alternative would be similar to the Preferred Alternative except along stream channels, which could be developed at a higher density.

Geologically Hazardous Areas

The impacts of this alternative would be comparable to those under the No Action Alternative.

Creeks, Streams, and Lakes and their Shorelines

The Mixed-Use Alternative would cluster urban growth into several target areas but would likely result in significant pavement, which would indirectly affect water quality. This alternative would limit density along lakeshores to a moderate degree.

3.1.3 Mitigation Measures

The City's current Site Development Regulations⁸ and Zoning and Land Use Code⁹ mitigate some environmental impacts from development, although it is assumed both regulations would be updated in response to the new comprehensive plan.

The City needs to develop more complete Critical Area Regulations to protect the full spectrum of environmentally sensitive resources. The City's current Critical Areas Ordinance, Chapter 18.37 of the Lakewood Municipal Code, is limited to landscaping and buffering.¹⁰ Chapter 14.142, Critical Areas and Natural Resource Lands General Requirements, establishes general requirements but not clear criteria (,—) for defining critical areas, allowing for ambiguity. Clear, unambiguous criteria should be developed, and critical areas maps developed into the City's geographic information system (GIS) database. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new goal for Environmental Critical Areas, as well as three new policies for this goal (see Section 3.11.1 of the Comprehensive Plan).

The City should also update its Shoreline Master Program (SMP) in compliance with the State's Shoreline Management Act (90.58 RCW Shoreline Management Act of 1971) and Pierce County Shoreline Management Regulations (Ord. 97-84) to address regulated shorelines, including all major lake and stream shores. Lakewood's current SMP is Pierce County's Title 20, Shoreline Management Regulations (i.e., it has adopted Pierce County's SMP as its own). Due to differences in planning scale, not all water bodies in Lakewood meeting the criteria of 20 acres or 20 cubic feet per second (cfs) are discussed in the County document, which should be supplemented. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy under the Shorelines discussion in Section 3.11.3 (Shorelines).

Wetlands

The City's two largest wetland areas, Flett wetlands and Seeley Lake, are both protected from direct impacts through their Open Space designations. Natural buffer areas are required to protect documented wetlands and certain drainage courses from pollution and erosion. The City's Site Development Regulations make reference to "the wetlands section of the City's Critical Area and Natural Resource Land regulations" (Section 14.142 City Code), but these regulations are not comprehensive.

⁸ Title 17 Subdivisions 17.46 Site Development Regulations.

⁹ Title 18 Zoning and Land Use Code 18.

¹⁰ Adopted by ordinance #157 on February 17, 1998.

Aquifer Recharge Areas

New regulations need to be promulgated to protect aquifers consistent with the Wellhead Protection Plan. Sewers should also be extended to parcels bordering American Lake, and water quality should be monitored for contaminants. An ongoing water quality monitoring program will be implemented for all public drainage systems that discharge into lakes and streams.

Fish and Wildlife Habitat

The City must expand its current Sensitive Areas Ordinance and develop its own Critical Areas maps for fish and wildlife resources, beyond what has been adopted from Pierce County.

The City must develop its Shoreline Master Program further, beyond what has been adopted from the County, as discussed above. Further, the impacts of development to anadromous fish should be addressed in response to the recent listing of Puget Sound salmon species under the ESA. Lakewood should continue to support and participate in WRIA-12 watershed planning efforts, and otherwise ensure it is in compliance with NMFS' ESA 4(d) rules.

The City should develop an adequately staffed natural resources program to address issues pertaining to natural resource protection. Professional natural resources staff will be need to implement such a program, given the city's size (both in area and population).

Flood-Prone Areas

The regulations include measures to ensure that the capacity of watercourses is maintained. In addition, the Flood Damage Prevention Ordinances¹¹ contains specific requirements applying to construction and renovation projects intended to avoid flooding and minimize flood-related damage. The comprehensive plan also includes several general policy-level approaches to flood management. The Preferred Alternative would reduce residential density on parcels bordering stream channels, which would decrease the risk of flood damage. It also identifies stormwater detention areas for acquisition in northeast Lakewood. No additional mitigation measures are required.

Geologically Hazardous Areas

Development on steep slopes will be controlled by the City's Site Development Regulations and Critical Area Regulations. No additional mitigation measures are required.

Creeks, Streams, and Lakes and their Shorelines

The principal mechanisms for protecting these resources and mitigating development impacts will be the City's Shoreline Master Program and the Critical Area Regulations. Lakewood must promulgate both and enforce their provisions through the City's Development Regulations. In addition, the comprehensive plan contains goals and policies specifically addressing these

¹¹ 18.36 of the Lakewood Zoning and Land Use Code.

resources. Lake management studies for Lake Steilacoom, Gravelly Lake, and Lake Louise are needed to determine sources of pollutants and nutrients entering these water bodies and determine what can and cannot be done to control pollutant sources. The Pierce County Conservation District Stream Team Program will provide water quality education to the community.

The City's Site Development Regulations¹² and the Zoning and Land Use Code¹³ would mitigate some environmental impacts from development taking place under any of the alternatives. These regulations require storm drainage control systems intended to replicate the hydrologic performance of the site prior to development. Depending on the project, these regulations may require additional measures (such as oil-water separators) and conceptual drainage plans and offer protections to each category of critical area.

Additional Mitigation Measures

The following proposed policies, adapted from local wellhead protection programs (Brown and Caldwell et al. 1985; Tacoma-Pierce County Health Department 1997), were identified in the DEIS as being policies that should be added to the comprehensive plan's Water Quality section (3.11.7). The Comprehensive Plan has been revised to incorporate related policy language into that section; no further mitigation measures are needed.

New policy: Work with local water districts and Pierce County to establish development review procedures to notify the entities of all development applications within Wellhead Protection Areas that require hydrologic assessment or SEPA response.

New policy: Work cooperatively with the Lakewood Water District to maximize protection of aquifers. Establish ongoing efforts to:

- Educate citizens and employers about Lakewood's dependency on groundwater.
- Establish and maintain public awareness signs delineating the boundaries and key access points to the Lakewood Water District's Wellhead Protection Areas.
- Maintain groundwater monitoring programs.
- Implement a well decommissioning program for all unused wells.
- Coordinate planning and review of drainage, detention, and treatment programs within Wellhead Protection Areas.

New policy: Modify development regulations to limit impervious surfaces in aquifer recharge areas.

New policy: Cooperate with local water districts, adjoining jurisdictions, and military bases to:

¹² Title 17 Subdivisions 17.46 Site Development Regulations

¹³ Title 18 Zoning and Land Use Code 18

- Develop and implement a common system to reflect land use risks across all Wellhead Protection Areas.
- Establish and maintain an integrated regional wellhead protection data mapping, analysis, and updating system.
- Enhance stormwater drainage, detention, and treatment programs.

3.1.4 Unavoidable Adverse Impacts

Some wildlife and native vegetation would be lost as a result of population growth and development associated with all alternatives. The extent of habitat loss would be minimized under the Preferred Alternative in comparison with the other two alternatives due to designated growth patterns.

3.2 Land Use

3.2.1 Affected Environment

The City of Lakewood contains a total of 12,106 acres, including lakes. With an average population density of 5.2 people per acre (3,264 residents per square mile), Lakewood's land use distribution is slightly (9%) higher than the regional average of 2,961 residents per mile and roughly comparable to the density of Bellevue and Spokane (PSRC, October 1998). Public street ROWs comprise the second largest land use category, consuming 1,712 acres of the city's land area. Much of these streets serve low density, single-family neighborhoods, which comprise the single largest land use category. Other character-defining land uses include open space, parks, and lakes for which the city was named.

Land use patterns in Lakewood vary in different parts of the city. The western half of Lakewood is predominantly residential, with residential development ranging from modest single-family homes to spacious lake-front estates. This portion of the city contains the lakes, a college, a State hospital campus, and a large County park. The eastern half of Lakewood also has a sizable percentage of residences but has a more diverse mixture of land uses in addition to housing. Uses include retail and other commercial development along arterials and at the Lakewood Mall and Colonial Center, 1-5, Pacific Highway Southwest, an industrial park, and an assortment of other uses serving the city and adjacent military bases. The geographic distribution of Lakewood's land uses are depicted graphically on the existing Land Use Map (Figure 3.2-1).

For analysis purposes, the city has been divided into seven different planning areas (see Figure 3.2-2). By identifying these planning areas, the process of data gathering and summarizing is simplified and easier to communicate. The boundaries of the planning areas were based on existing zoning, current land use, census information, and jurisdictional boundaries. A detailed discussion of the boundary limits and character of each of the seven planning areas is provided in Chapter 3.0 of the background report. Data from the City's land use inventory has been summarized into 13 land use categories shown on Table 3.2-1 for each planning area.

Table 3.2-1: Baseline Land Use Summaries By Planning Area.

Land Use Categories	Area 1 (acres)	Area 2 (acres)	Area 3 (acres)	Area 4 (acres)	Area 5 (acres)	Area 6 (acres)	Area 7 (acres)	Summary by Land Use	% of Total Area
Access	4	21	3	0	6	14	0	48	.4
Agriculture	0	0	26	0	0	0	16	42	.3
Residential Single-Family	408	193	190	720	2021	340	229	4101	33.8
Mobile Home Park	12	99	1	0	0	10	33	154	1.3
Multi-Family Residential	143	104	102	107	106	104	97	764	6.3
Commercial	297	323	39	37	19	44	20	777	6.4
Manufacturing/Industrial	17	253	65	0	0	14	0	348	2.9
Public/Gov't Svcs	53	39	188	19	60	11	9	378	3.1
Education	68	110	1	57	160	10	39	445	3.7
Open Space/Recreation	44	35	105	650	560	0	32	1427	11.8
Street ROW	309	248	83	222	545	188	119	1712	14.1
Vacant	67	146	63	51	176	74	57	635	5.2
Water	0	0	0	0	928	0	170	1098	9.1
No Data	39	33	7	59	27	11	2	179	1.5
Acre Totals	1460	1603	872	1922	4607	820	822	12106	100
Percentage Totals	12	13.2	7.2	15.9	38	6.8	6.8	99.9	

Source: City of Lakewood, 1998.

3.2.2 Environmental Impacts

Environmental impacts related to land use are discussed below for each of the alternatives.

Preferred Alternative

Growth Targets and Assumptions

GMA requires that all jurisdictions preparing comprehensive plans demonstrate that these plans are capable of meeting specific population growth allocations targets.

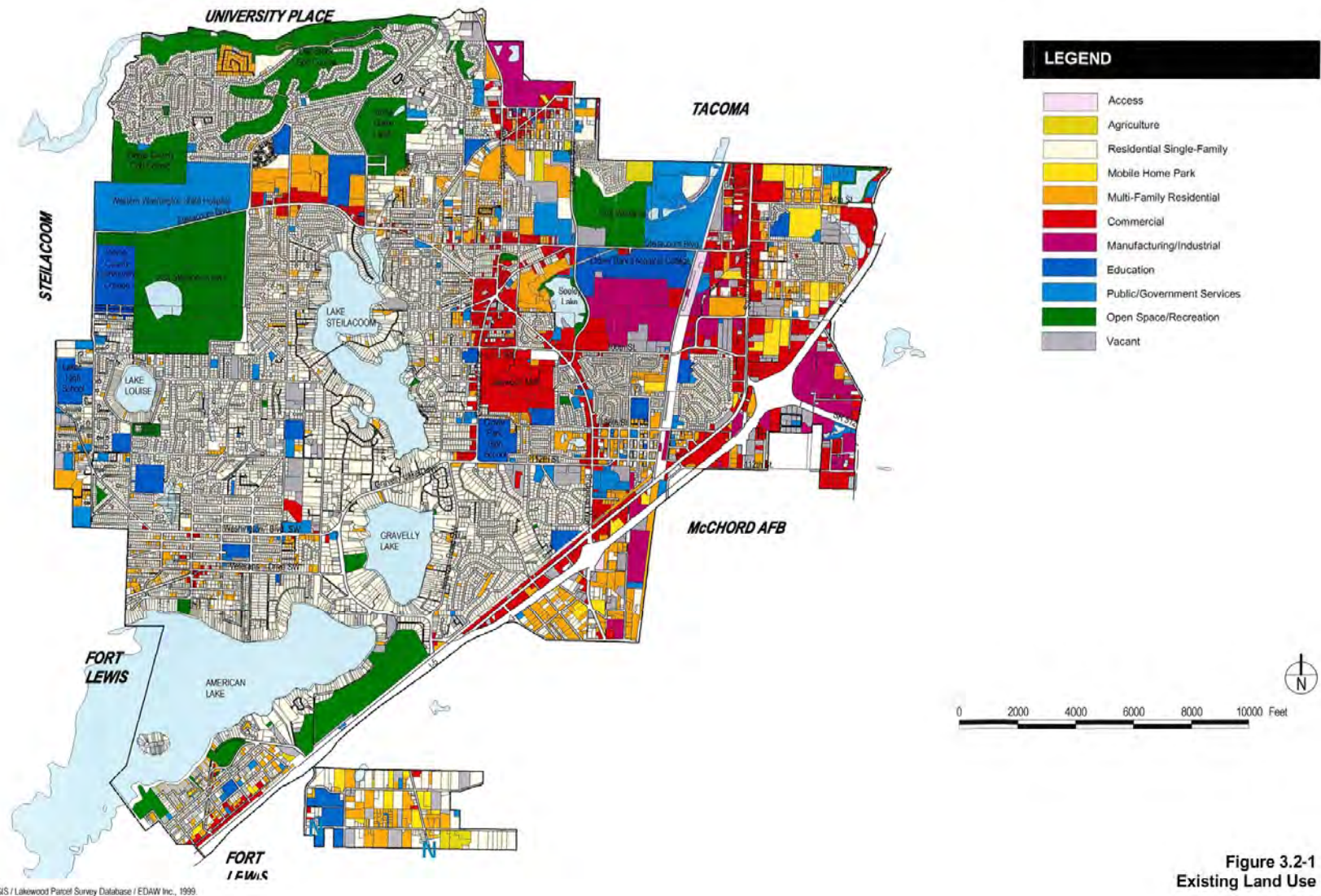
Lakewood's 20-year population growth target has evolved through the development of the comprehensive plan. The original number of 11,072 additional residents¹⁴ was derived from the population target assigned to Pierce County by the State's Office of Financial Management (OFM), and subsequently allocated to individual cities in the county by the Puget Sound Regional Council (PSRC) based on a county-wide distribution model. PSRC assigned a growth target allocation of 11,072 to the Lakewood area in 1995, prior to incorporation. After incorporation, the City successfully petitioned for a new target of 30,000 additional residents based on what the City initially felt was a realistic average annual growth rate, derived from growth rates experienced in the early 1990s.

The addition of over 30,000 new residents by the year 2017 therefore became the starting point for Lakewood's comprehensive plan development. However, to achieve this level of growth, the City would have to add population at an average rate of 1.71% per year throughout the life of the plan, a very high growth rate relative to historical growth data for Pierce County jurisdictions. Not all planners were in agreement with the new growth target. Pierce County transportation planners built a target 20-year population increase for Lakewood of 13,147 into the regional traffic distribution model. Land use

¹⁴ 2017 growth target.

capacity would have to be sufficient to accommodate the large number of new residents through significantly increased density in several parts of the city. Increasing awareness of limiting factors as the plan developed—including existing transportation limitations, cost of additional utility connections, limited existing land values, and a desire to maintain stable neighborhoods—contributed to downward adjustments in the original growth target. As a result, the Pierce County Growth Management Coordinating Council (GMCC) accepted a new 20-year growth target for Lakewood of 17,000 in the fall of 1999. This new growth target has yet to be formally adopted by the Pierce County Council. Both the GMCC and the Pierce County Regional Council (PCRC) have recommended approval. The Preferred Alternative is projected to have a growth capacity at build-out of approximately 17,500 new residents, resulting in a total projected residential population of approximately 82,670 for Lakewood, based on the 1996 population estimate of 65,182 provided by OFM.

This alternative also seeks to guide an increase in employment opportunities. Land use goals and policies specifically address the need to concentrate employment-generating commercial, office, and industrial activity in appropriate areas to provide the city with a healthy allotment of jobs, services, and a diversified tax base. Taken altogether, the different employment-generating land uses have the capacity to add approximately 12,275 new jobs by the year 2017.



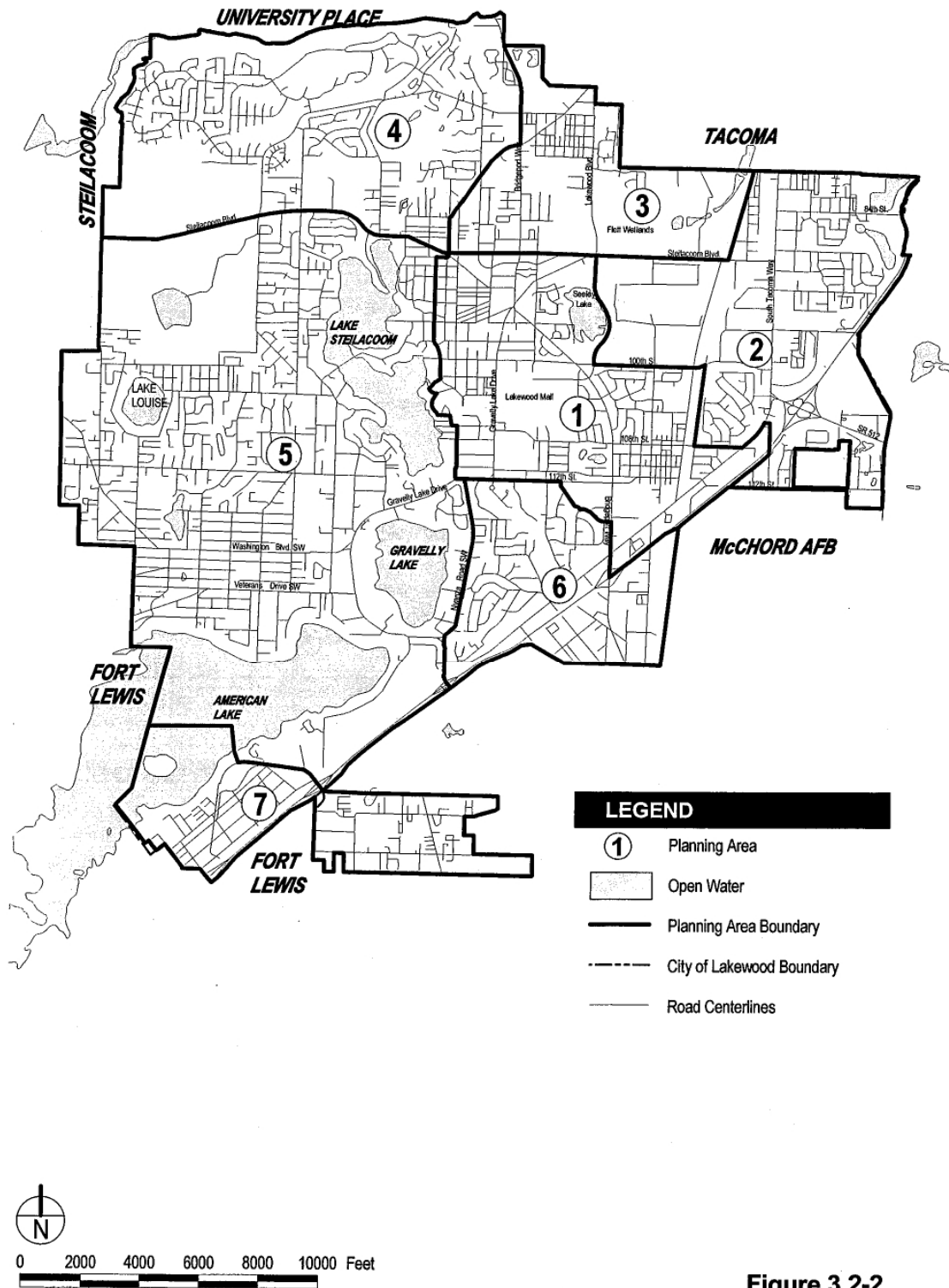


Figure 3.2-2
Lakewood Planning Areas

Population and Employment Growth

This alternative provides for the relatively moderate population growth of 17,500 residents. Much of this population would be housed in high density neighborhoods, as well as lower density infill housing in west Lakewood's single-family neighborhoods. This alternative has a development capacity of approximately 6,400 more residents than the number of residents as allocated to Lakewood by the PSRC in 1995.

This alternative would accommodate about 10,847 new private sector jobs over the next 20 years. The majority of these jobs would likely be retail/wholesale/service sector positions, with the balance comprised of industrial and office jobs.

Public sector and institutional employment growth would be very similar as other alternatives, creating approximately 1,428 new positions. Not surprisingly, most of these jobs would be located in existing employment areas within the central and northeastern portions of the city. Future growth projected for each alternative is graphically illustrated on Figure 3.2-3. This chart compares additional residents and jobs generated by the three alternatives. Future residential growth projected by planning area is graphically illustrated on Figure 3.2-4. This chart also compares the relative population growth generated by all the three alternatives. Future employment growth projected by planning area is graphically illustrated on Figure 3.2-5. This chart also compares the relative job growth generated by all the three alternatives.

Changes to Land Use

The Preferred Alternative is intended to curtail sprawl through more organized land use patterns and redevelopment while accommodating residential and employment growth with the least amount of adverse environmental impact. The principal strategy of the plan for guiding future growth is: (1) protecting established neighborhoods; (2) intensification of the city's central spine through planned redevelopment, which stretches north along Bridgeport Way from the planned commuter rail station past the Mall and the Colonial Center through to Custer; and (3) increasing the employment base in eastern portions of the city. The plan seeks to preserve the existing character of large lot residential neighborhoods in west Lakewood and along the lake shores, and to protect riparian habitat along the major creeks.

Future land use would be controlled by zoning regulations adopted to implement the new comprehensive plan. Many of the land use designation boundaries would be similar to those found in previous alternatives, even though many of the designations themselves would be different. The new land use designations are summarized in Table 3.2-2.

Several of the land use designations are shared in common with the Mixed-Use Alternative, while others are unique to this alternative. These are compared in Table 3.2-3. The Preferred Alternative proposes specific land uses in lieu of the mixed-use designations found in the other two alternatives.

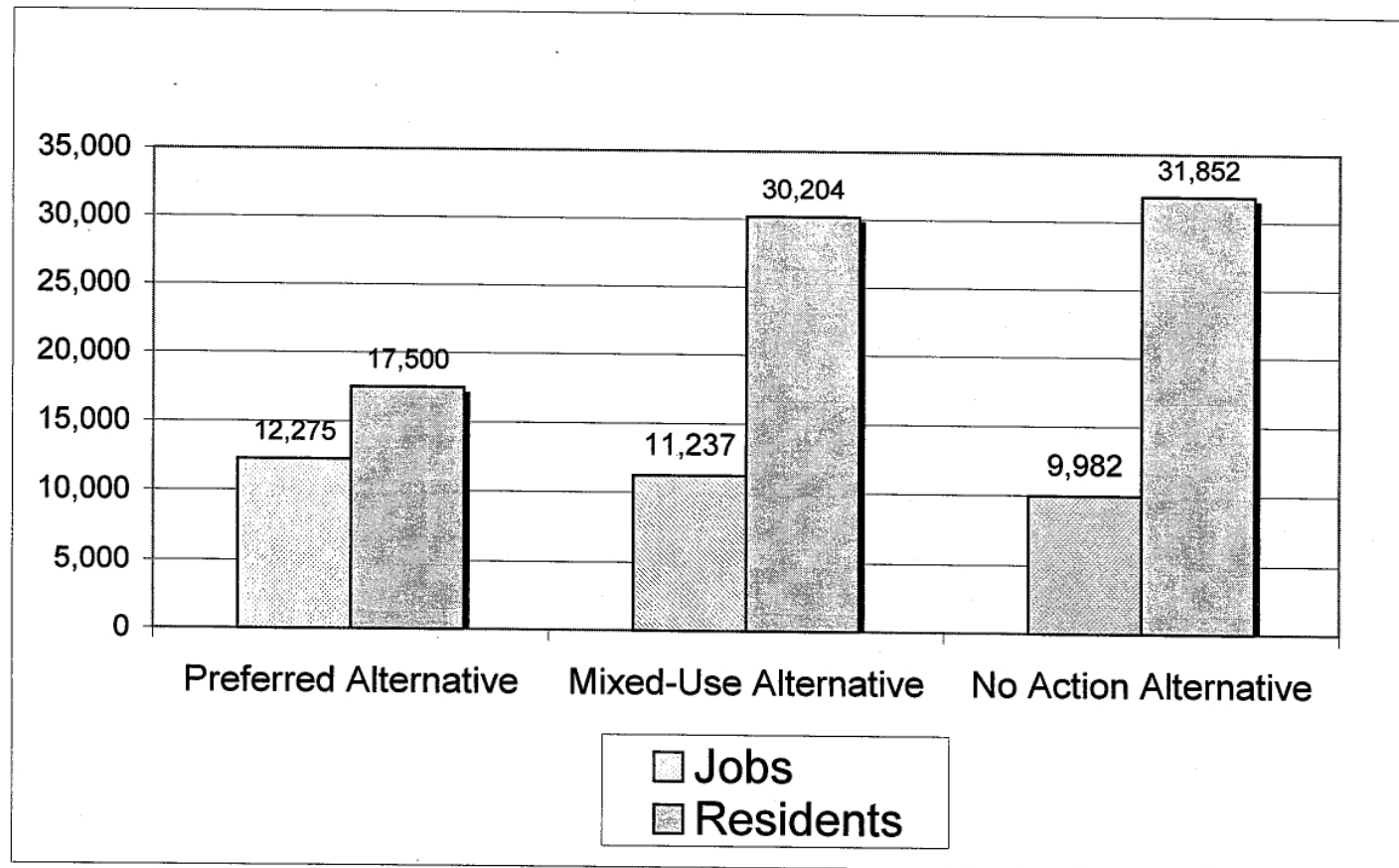
Figure 3.2-3: Comparison of Population and Employment Change

Figure 3.2-4 Residential Growth by Planning Area

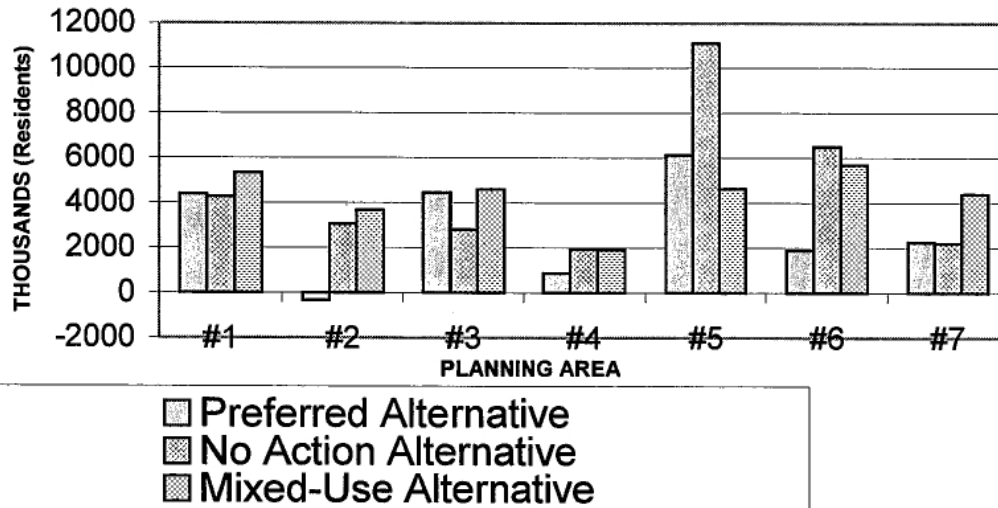


Figure 3.2-5 Employment Growth by Planning Area

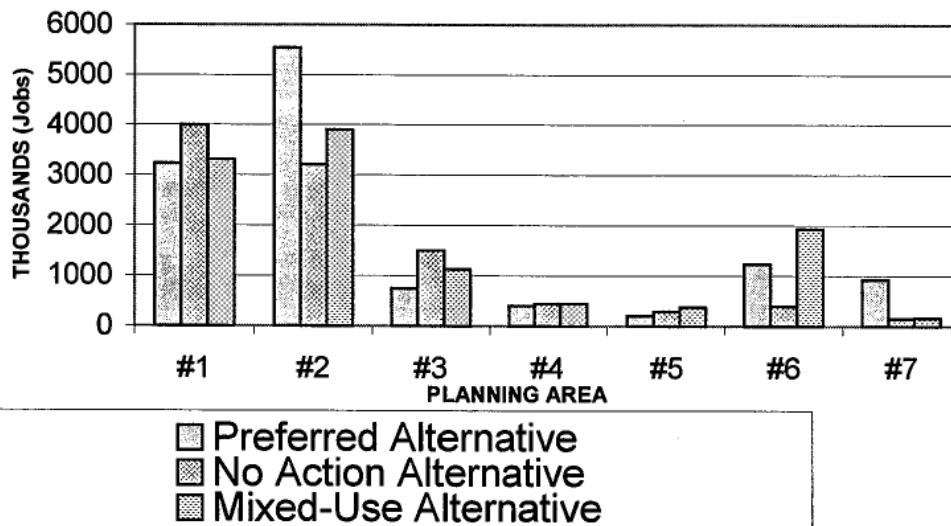


Table 3.2-2: Land Use Designation Summary for the Preferred Alternative.

Land Use Designation	Density (DU/acre)	General Description
Residential Estate	DU/acre: 1-2 avg jobs/acre: N/A	This designation is intended to protect the existing character of Lakewood's suburban neighborhoods that surround and lie immediately west of the lakes. Large lot protections are in place to preserve existing land use and vegetation patterns and to minimize traffic and other impacts.
Single-Family Residential	DU/acre: 4-6 avg jobs/acre: N/A	This designation is a low density residential environment allowing one house per parcel, including mobile homes. This is the dominant land use category in the city affecting about 33% of the land.
Mixed Residential	DU/acre: 8-14 avg jobs/acre: N/A	This designation is a low density residential environment allowing for an intensification of existing single-family residential uses in the form of duplexes, triplexes, and other moderate scaled multi-unit housing up to six units per structure. It also would include single attached houses on smaller (5,000 s.f.) lots allowing assorted density to ensure choice and flexibility.
Arterial Corridor	DU/acre: 4-6	This designation accommodates the unique circumstances of properties located along several major arterials in predominantly residential areas. Properties subject to this designation may be used for low-intensity, non-nuisance businesses as well as residences (home occupations).
Multi-Family Residential	DU/acre: 12-22 avg jobs/acre: N/A	This designation is a medium-density residential environment allowing for duplex, triplex, and four-plex units, as well as retirement/group homes and transitional housing.
High Density Multi-Family	DU/acre: 22-40 avg jobs/acre: N/A	This is a high-density residential environment allowing for concentrations of pedestrian-orientated condominiums and apartment buildings located near Lakewood Station and along major arterial streets, State highways, and major transit routes connecting to the CBD. This is a consolidation and intensification of existing multi-family residential housing. The purpose of this area is to provide significant housing opportunities on transit routes convenient to employment and services.
Central Business District	DU/acre: 30-54 avg jobs/acre: 45	The CBD would encompass both the Lakewood Mall and the Colonial Center, which would have slightly different zoning designations recognizing their distinct design and market attributes.
Corridor Commercial	DU/acre: N/A avg jobs/acre: 25	Corridor Commercial would accommodate existing commercial development fronting arterials such as Pacific Highway Southwest, Bridgeport Way, and Steilacoom Blvd. Commercial activity on these corridors caters to customers both within and beyond the surrounding neighborhoods due to placement on roadways used by residents of more than one community. The designation allows for an intensification of commercial uses and an increase in the number of jobs beyond existing auto-oriented and other land intensive commercial uses.
Neighborhood Business District	DU/acre: 12-22 (Level 1) 22-40 (Level 2) avg jobs/acre: 15	This designation is intended to provide convenient services to outlying neighborhoods. These districts would be limited commercial nodes supporting a concentrated mix of small scale retail and service commercial and office development serving the daily needs of residents in the immediate neighborhood at a compatible scale with surrounding neighborhoods. Moderate to high density residential is permitted on upper floors on a conditional basis.
Industrial	DU/acre: N/A avg jobs/acre: <15	This designation allows for manufacturing, repair, and other lower intensity, higher impact land uses. Although industrial generates only a low to moderate amount of jobs per acre, this designation would protect "family wage" jobs.
Public and Semi-Public Institutional	DU/acre: N/A avg jobs/acre: based on actual use data	This designation allows for major institutions including hospitals and colleges and other significant concentrations of government and institution-owned land.
Open Space and Recreation	DU/acre: N/A avg jobs/acre: 0	This designation includes designated natural areas; neighborhood, community, and regional parks; as well as linear trails and public golf courses. Private land included in this designation would include large outdoor recreation enterprises such as marinas, golf clubs, and riding stables. The purpose of this land use designation is to protect open space, critical habitats, and provide recreational uses on public property.*
Military Lands	DU/acre: N/A avg jobs/acre: N/A	This designation applies to land in Lakewood owned by the Department of Defense.
Air Corridor 1	DU/acre: N/A avg jobs/acre: <12	This designation applies specific provisions to land within the approach to the McChord AFB runway to reduce noise and increase public safety. Commercial and industrial zones within this designation minimize land use and occupancy intensity, structural height, smoke, dust, steam, electronic interference, birds, some vegetation, and glare. In addition, special development standards require additional noise insulation.
Air Corridor 2	DU/acre: 2 avg jobs/acre: 512	This designation applies specific provisions to land within the approach to the McChord AFB runway to reduce noise and increase public safety. Commercial and industrial zones within this designation minimize land use and occupancy intensity, structural height, smoke, dust, steam, electronic interference, birds, some vegetation, and glare. In addition, special development standards require additional noise insulation.
Lakewood Station District	30-54 (Depends on underlying designation)	The overlay provision would include design and development standards to enhance the pedestrian environment and encourage substantial redevelopment to create a diverse new urban neighborhood.

*This land use category is not intended for schools, fire stations, utility property, etc. which are permissible under other land use designations; however, such uses do appear on the map to prevent inaccurate employment and housing counts.

Table 3.2-3: Comparison of Land Use Designations for Preferred, No Action, and Mixed-Use Alternatives.

Preferred Alternative		No Action Alternative		Mixed-Use Alternative	
Land Use Designation	Density	Land Use Designation	Density	Land Use Designation	Density
<i>Residential Estate</i>	DU/acre: 1-2			<i>Large Lot Overlay District</i>	DU/acre: 2
<i>Single-Family Residential</i>	DU/acre: 4-6	<i>Moderate Density Single-Family</i>	DU/acre: 2-6	<i>Single-Family Residential</i>	DU/acre: 5
<i>Mixed Residential</i>	DU/acre: 8-14			<i>Duplex/Triplex Residential</i>	DU/acre: 6-12
<i>Arterial Corridor</i>	DU/acre: 6				
<i>Multi-Family Residential</i>	DU/acre: 12-22			<i>Multi-Family Residential</i>	DU/acre: 5-24
<i>High Density Multi-Family</i>	DU/acre: 22-40	<i>High Density Residential District</i>	DU/acre: 25	<i>High Density Residential</i>	DU/acre: >24
<i>Central Business District</i>	DU/acre: 30-54 avg jobs/acre: 45	<i>Major Urban Center</i>	DU/acre: 18 jobs/acre: 40	<i>Urban Center</i>	DU/acre: 25 avg jobs/acre: 45
<i>Corridor Commercial</i>	DU/acre: N/A avg jobs/acre: 25	<i>Mixed-Use District</i>	DU/acre: 18 jobs/acre: 25	<i>Mixed-Use Center</i>	DU/acre: 25 jobs/acre: 25
<i>Neighborhood Business District</i>	DU/acre: 12-40 avg jobs/acre: 15	<i>Community Center</i>	DU/acre: 14 jobs/acre: 15	<i>Community Center</i>	DU/acre: 25 avg jobs/acre: 15
<i>Industrial</i>	DU/acre: N/A avg jobs/acre: <15	<i>Employment Center</i>	jobs/acre: 8	<i>Light Industry/Business Park</i>	jobs/acre: 10
<i>Public and Semi-Public Institutional</i>	avg jobs/acre: actual data or projections	<i>Public/Institutional</i>	avg jobs/acre: actual data or projections	<i>Institutional</i>	avg jobs/acre: actual data or projections
<i>Open Space and Recreation Military Lands</i>	0	<i>Open Space Reserve</i>	0	<i>Open Space and Recreation</i>	0
	DU/acre: N/A avg jobs/acre: N/A	<i>Neighborhood Center</i>	jobs/acre: 15	<i>Neighborhood Center</i>	jobs/acre: 10
<i>Air Corridor 1</i>	DU/acre: 0 avg jobs/acre: <12	<i>Airport Approach Overlay 1</i>		<i>Airport Approach Overlay 1</i>	
<i>Air Corridor 2</i>	DU/acre: 2 avg jobs/acre: <12	<i>Airport Approach Overlay 2</i>		<i>Airport Approach Overlay2</i>	
<i>Lakewood Station Overlay District</i>	DU/acre: avg jobs/acre:				

This difference is particularly marked along the Bridgeport corridor and in the northeast corner of the city. Other significant differences include the addition of a special designation around Lakewood Station, and changes to the boundaries of western Lakewood's low density residential areas to include additional lakefront parcels.

Other distinguishing land use features of this alternative are described for each of the planning areas and land use categories as follows

Planning Areas

Planning Area 1: This planning area would be targeted for significant growth. Highest intensity development would be targeted in and around the Lakewood Mall. Both the Mall and the Colonial Center would be included in a CBD designation that would permit office and residential infill development to complement and bolster existing retail. The plan envisions major redevelopment aimed at creating a city center providing a balance of jobs, housing, and services in an urban setting. New streets would enhance connections to other neighborhoods.

The area around Lakewood Station would also be redeveloped into a higher density urban neighborhood comprised of blocks of multi-family residential developments with open space and pedestrian improvements. Several blocks would be identified for expansion of medical-related employment near St. Clare Hospital and other industrial land in the northeast corner of the district. This area would allow for a dense concentration of mixed-use urban development with a significant high density multi-unit residential presence in the center. Much of the district is within easy walking distance of the commuter rail station. The overlay provision would include design and

development standards to enhance the pedestrian environment and encourage substantial redevelopment.

Open space opportunities consistent with the existing auto-oriented commercial activity on Pacific Highway Southwest and Bridgeport Way would be recognized through designation as Corridor Commercial. To balance significant infill growth, several existing single-family neighborhoods such as Oak Park, Clover Park Plat, Lakeview, and Wildaire would be preserved and stabilized.

Planning Area 2: Industrial lands dominate much of this planning area. The other dominant designation is land constrained by the aircraft approach zone to McChord AFB where high intensity uses such as schools and apartment complexes would be phased out over time in favor of low-occupancy uses like storage, open space, and single-family housing. A narrow strip on either side of Pacific Highway Southwest would be designated Corridor Commercial. Overall, land uses within this planning area would be very similar to the other alternatives.

Planning Area 3: This alternative proposes a slightly less dense mix of housing intensity in the Custer area. A large amount of land would serve as a Neighborhood Business District, and the existing brick plant would be protected through industrial designation. Other significant designations include Mixed Residential and High Density Multi-Family. Overall, this planning area can expect the second highest net residential density after Planning Area 6.

Planning Area 4: Land use in this planning area would be the same as in the other two alternatives; thus, no substantive land use changes related to employment or residential growth are expected. This planning area is expected to remain the least densely populated in Lakewood.

Planning Area 5: In this alternative, west Lakewood's large lot zones would be designated Residential Estate areas rather than as an overlay applied to existing zones. The Preferred Alternative would extend the Residential Estate classification to the eastern shores of Gravelly and American Lakes as well as the northeastern shore of American Lake. The other distinguishing characteristic of this alternative would be a slight increase in land designations as residential at higher than single-family densities.

Planning Area 6: The residential growth potential of this planning area would decrease slightly in comparison to the Mixed-Use Alternative. This change would result from the inclusion of low density Residential Estate designation along both sides of Chambers Creek, the designation of Ponders Corner to Corridor Commercial, and a slightly lower intensity mix of residential uses in Springbrook. Nevertheless, Springbrook can expect the highest average net residential density of any planning area under this alternative. Likewise with 73 acres designated for industrial uses in Springbrook, this planning area can expect 1,218 new employment opportunities. This land use designation is expected to displace 296 multi-family housing units and two houses.

Planning Area 7: In Tillicum, the Preferred Alternative proposes a slightly lower density mix of housing but otherwise closely resembles the Mixed-Use

Alternative. The Preferred Alternative also includes neighborhood-specific urban design treatments to offset the impacts of greater density and make the neighborhood more attractive and functional.

American Lake Gardens is currently isolated from the rest of the city. It is surrounded on three sides by McChord AFB and Fort Lewis, and on the fourth side by I-5. Serious environmental problems exist due to the density of older rental housing placed entirely on septic systems, yet extension of sewer lines at present land values would be prohibitively expensive. American Lake Gardens has very good regional transportation access, which will increase if and when the Cross-Base Highway is built. The area's relative isolation from the rest of the city, low land values, good access to I-5, substandard housing conditions, and the prohibitive cost of providing sewer infrastructure make this area ripe for a major change in land use. Accordingly, the Preferred Alternative proposes to designate a substantial portion of American Lake Gardens as "industrial" for development as a new planned industrial campus. Industrial uses would require new sanitary sewer extension and other infrastructure, which are anticipated to be the responsibility of interested developers. As a result, the character of this neighborhood would shift from a mix of residential and other land uses to an industrial core surrounded by a mix of higher density residential uses. Overall, this planning area can expect approximately 800 new industrial jobs.

Over time, The Preferred Alternative would eliminate a substantial portion of the existing housing in American Lake Gardens as a result of Industrial designation. There are currently 572 existing dwelling units in this area, of which only 23 are single family. The remaining housing units consist of 57 mobile homes, 8 duplex units, and 484 apartments (ROC, D. Bugher, 5/18/00). Although much of this housing is considered affordable, this classification is a direct or indirect result of its poor physical condition and lack of sewer services. While changing this neighborhood to another use would end reliance on failing septic systems, resulting in positive impacts to public health and the natural environment, the loss of affordable housing would have a negative impact on its occupants.

In the city as a whole, American Lake Gardens constitutes approximately 5% of all housing units, including 8% of all apartments and 33% of the mobile homes. Apartments in the area have an average density of 11.6 DUs/acre with individual parcel densities as high as 24 DUs/acre. The mobile home parks have an average density of 8.5 DUs/acre and consist of mobile homes that predate Housing and Urban Development (HUD) standards for manufactured homes. In total, 34% of the land in American Lake Gardens supports 90% of the housing units at an average density of 10 DUs/acre utilizing on-site septic disposal.

Land Uses

The following land uses comprise the Preferred Alternative. The relative distribution by area and percentage is summarized in Table 3.2-4.

Residential Land Uses: Residential uses under the Preferred Alternative are similar to the Mixed-Use Alternative in type, distribution, and quantity. One

important difference between this and other alternatives related to housing is that the Corridor Commercial designation does not include residential uses, unlike the Mixed-Use Center or District zoning proposed for much of the same areas in the other alternatives. Another difference is the relatively larger proportion of Residential Estate at the lower end of the density spectrum and High Density Multi-Family at the other. In addition to comprising more area, both designations are also more geographically widespread. This alternative also includes an overlay zone permitting increased density for senior housing that will include the entire CBD, portions residentially zoned land west of Bridgeport Way, and much of the Lakeview neighborhood.

Table 3.2-4: Lakewood Preferred Alternative Land Use Distribution.

Designation	Intended Use	DU/ Acre	Jobs/ Acre	Acreage
Residential Estate	Large lot residential	1-2	N/A	961
Single-Family Residential	Single-family homes	4-6	N/A	3,165
Mixed Residential	Low density with multi-unit housing	8-14	N/A	292
Multi-Family Residential	Medium density residential	12-22	N/A	266
High Density Multi-Family	Apartment complexes	22-40	N/A	410
Corridor Commercial	Commercial development	N/A	25	347
Central Business District	Lakewood Mall and Colonial Center	30-54	45	244
Neighborhood Business District	Commercial Services	12-40	15	223
Arterial Corridor	Home Occupations	6	6	8
Industrial	Manufacturing, repair, etc.	N/A	15	618
Public & Semi-Public Institutional	Hospitals, colleges, etc.	N/A	Varies	753
Air Corridor 1	Approach to McChord AFB	N/A	12	282
Air Corridor 2	Approach to McChord AFB	2	12	200
Open Space & Recreation	Natural areas, parks	N/A	Varies	1,490
Military Lands	Department of Defense land	N/A	N/A	23
TOTAL				12,166

Source: Provided by EDAW, Inc.

Arterial Corridor: Residential properties located along several major arterials will be permitted for use as the site of low-intensity, non-nuisance businesses if located within this special land use designation.

Commercial and Industrial: This alternative attempts to reduce the surplus of commercial land and concentrate it into viable clusters within the CBD, along principal Commercial Corridors, and in compact Neighborhood Business Districts. Each of these designations would have a particular market focus that would be reflected in development standards and other provisions to be addressed by the zoning code.

Industrial land would be preserved in the Lakewood Industrial Park and north of McChord AFB. In addition, a 118-acre portion of American Lake Gardens and 73 acres in Springbrook would be designated Industrial. Industrial uses are further encouraged and protected through appropriate economic development and land use policies.

Industrial uses have not traditionally been considered compatible with residential uses due to concerns by adjacent residents over noise, air quality, truck traffic, and other potential impacts. The inclusion of larger areas of new industrial uses in predominantly residential neighborhoods such as American Lake Gardens and to a lesser degree in Springbrook could create ongoing land use conflicts between adjacent incompatible land uses proposed by this alternative.

Government Services/Institutional: Land used for colleges, hospitals, large government offices, and other public services would be re-designated to Public and Semi-Public Institutional, but actual uses or the amount of land devoted to such uses are unlikely to change under any of the alternatives.

Neighborhood and Central Business District: This alternative includes specific designations for each type of land use, although several would permit accessory and conditional uses in addition to the principal use. The most flexible designation in terms of acceptable land use is Central Business District, which supports commercial, office, and residential. This designation relies on strict development standards and other provisions to ensure that the mix of uses achieves a desirable balance of land uses and does not result in additional sprawl.

Open Space/Recreation: The most significant difference between the type and quantity of land proposed for open space and recreation uses in this alternative versus the other alternatives is due to the designation of portions of the railroad corridor as Open Space and Recreation land for trail development. Other open space designation is attributable to minor adjustments to locational criteria. Open Space and Recreation is addressed in further detail in Section 3.5.

Unique Designations: The Preferred Alternative addresses unique circumstances with unique designations for land affected by neighboring military operations. The Air Corridor designation applies to areas affected by potential risks and noise associated with military aircraft operations at McChord AFB. The Air Corridor designation restricts the intensity, type, and design of land uses within the designation to minimize these impacts to civilian activity on the ground as well as to flight operations overhead. The Military Lands designation applies to the portions of the federal and state military installations within the city. Currently, this designation only applies to a small portion of the American Lake Gardens neighborhood owned by the Air Force.

Goals and Policies

The comprehensive plan contains goals and mandates adopted from GMA (RCW 36.70A); Multi-County Planning Policies; County-Wide Planning Policies; and objectives, principles, standards, and policies specific to Lakewood. The Preferred Alternative assumes these would be implemented.

No Action Alternative

Population and Employment Growth

Potential impacts to land use are directly related to household and job growth. Under the interim comprehensive plan, no specific growth targets are assigned; thus, population growth would be limited under this alternative by the residential development capacity permitted under existing land use regulations. Based on the theoretical existing capacity of undeveloped and underdeveloped land within Lakewood, there is sufficient capacity to create 12,844 new housing units. Assuming that the average household population of 2.48 remains unchanged, Lakewood's residential population could increase by a

maximum of 31,853 by the year 2017, representing a population increase of close to 32% (see Appendix A). This maximum growth potential is generally consistent with the projected 30,000 initially allocated to Lakewood by the Pierce County Comprehensive Planning process but exceeds the PSRC's original allocation of 11,072 new residents. Population change is graphically illustrated in Figure 3.2-3.

The most recent employment estimate for Lakewood was 19,977 jobs in 1990 (City of Lakewood 1986). An analysis of potential employment growth was conducted based on the capacity of available land based on regional average employment densities and as regulated by existing land use controls to support employment growth. Based on this analysis, Lakewood could add up to 9,982 new jobs representing an increase of nearly 49% over the 1990 estimate. Population and employment change is graphically illustrated in Figure 3.2-3.

Changes to Land Use

Land use under the interim comprehensive plan is controlled by zoning regulations that were imposed by Pierce County prior to Lakewood's incorporation.¹⁵ Lakewood has eight different zoning designations, as summarized in Table 3.2-5.

Table 3.2-5: Existing Zoning Designations under the No Action Alternative.

Designation	Intended Use	DU/ Acre	Jobs/ Acre	Acreage
Community Center	Apartments & neighborhood commercial	14	15	281
Employment Center	Commercial and industrial	0	8	894
High Density Residential	Apartment complexes	18	0	436
Major Urban Center	High density commercial & residential	18	40	757
Mixed-Use District	Assorted uses	18	25	1,041
Moderate Density Single-Family	Single unit homes	4	0	6,673
Neighborhood Center	Commercial	0	15	15
Open Space Reserve	Parks	0	0	876

A capacity model was developed to model the maximum future growth allocation for each alternative. The development capacity analysis estimated how residential and employment growth would be distributed by land use category for each of the seven planning areas. Only parcels considered to be re-developable¹⁶ were considered for potential growth sites. For example, growth estimates for land zoned or designated for single uses such as Moderate Density Single-Family or Employment Center were based on estimated probable maximum density.¹⁷ For mixed-use zones, growth allocation was split between residential and employment land uses. Table 3.2-6 summarizes the relative growth of housing compared to employment in each planning area.

It is assumed that vacant and economically underutilized parcels will supply a majority of future growth opportunities. Potential development sites are scattered across Lakewood, facilitating a widely distributed growth pattern. A

¹⁵ Lakewood subsequently added a number of temporary overlay zones to protect large residential lot development patterns, but these are not considered part of the No Action Alternative within this SEPA analysis.

¹⁶ Parcels deemed to be vacant or underutilized based on relative valuation of improvement and real estate values through geographic information system (GIS) analysis. See Appendix A for more detailed explanation.

¹⁷ For example, the existing Land Use Code (18.35.020.B.2.) permits up to 25 DU/acre in non-single-family zones; the capacity analysis used the more realistic density of 18 DU/acre.

significant portion of residential growth under the No Action Alternative would be facilitated through subdivision of large single-family zoned lots bordering Lakewood's lakes and streams. Other recipients of this type of growth would be the west Lakewood and American Lake Gardens neighborhoods. Higher density infill would occur along the eastern edge of Springbrook. Employment could significantly expand, filling numerous underdeveloped sites around the Colonial Center, the Lakewood Mall, and the industrial/commercial strip between South Tacoma Way and the Lakewood Industrial Park.

Table 3.2-6: Growth Allocation by Planning Area.

Planning Area	Employment Growth	Residential Growth
1	3,997	4,263
2	3,213	3,049
3	1,498	2,802
4	444	1,932
5	287	11,106
6	392	6,503
7	151	2,197
TOTAL	9,982	31,853

The No Action Alternative would allow widely distributed growth throughout the city. Residential growth would result from development of single-family housing infilling the large underdeveloped and vacant lots around the lakes and streams in American Lake Gardens and west Lakewood. Higher density development would be limited to Springbrook and several large vacant parcels scattered around the city. Employment growth could result from continuation of existing strip commercial development along the Pacific Highway Southwest corridor, and in the central part of Planning Area 1. Smaller areas with employment capacity include Custer, Tillicum, and northeastern Lakewood. Other distinguishing land use features of this alternative are described for each of the planning areas and land use categories as follows.

Planning Areas

Planning Area 1: Most of this planning area would be comprised of Major Urban Center zoning, which emphasizes high density employment but also permits considerable concentrations of housing. Existing commercially dominated land use patterns would likely continue, with redevelopment dictated by economic trends. As a result, this planning area is expected to supply the largest percentage of future job growth of all the planning areas under this alternative. Housing built as infill within the Major Urban Center zone and in the Moderate Density Single-Family zone around the fringes of the planning area would also increase.

Planning Area 2: This planning area includes most of the Employment Center, including the Lakewood Industrial Park and existing industrial activity north of McChord AFB. Vacant and underutilized land zoned Employment Center and Mixed-Use District accounts for the other half of this planning area's employment capacity. Due to size, the two zones together, plus some Major Urban Center acreage, would supply the second largest number of jobs of any planning area after Planning Area 1, totaling 3,213 jobs, close to half of the

city's total under this alternative. A moderate number of new housing units could be accommodated in this planning area due to the significant number of underutilized mixed-use acres.

Planning Area 3: North central Lakewood would include large tracts of land zoned Moderate Density Single-Family, Mixed-Use District, High Density Residential, and Open Space Reserve. Most of the growth capacity is attributable to vacant and underutilized High Density Residential and Mixed-Use District parcels.

Planning Area 4: Most of this planning area would remain in its current single-family residential and open space uses. Additional undeveloped and underdeveloped single-family residentially zoned land along the Chambers Creek corridor could accommodate future residential growth in this planning area. A small cluster of underutilized Community Center at Hipkins and Steilacoom would supply a small employment increase in northwest Lakewood. This planning area is expected to supply a net average of 2.9 DU/acre, which is denser than under either of the other alternatives; nevertheless, Planning Area 4 would still be the least dense of the seven planning areas under the No Action Alternative.

Planning Area 5: West Lakewood comprises the largest planning area in the city consisting of about 38% of the city's total acreage (City of Lakewood 1998). It is generally developed in a pattern of single-family homes on residential streets. Although well-developed, there are still significant numbers of vacant parcels available for residential development under current zoning. There are even more underutilized parcels, many large enough to be subdivided into two or more lots, yielding additional housing sites. The large supply of land vulnerable to subdivision and new housing construction in this desirable section of the city could supply nearly 4,500 new housing units. By contrast, with minimal land zoned for employment or mixed uses, this planning area has the lowest job creation capacity of all planning areas in the city. As a result of this alternative, this planning area could develop a significant imbalance of housing to jobs and services.

Planning Area 6: The northern portion of this planning area would remain as a single-family neighborhood. A large number of underutilized lots along the Clover Creek corridor and around Ponders Corner could supply significant new single-family housing opportunities in this corner of the planning area, but the majority of residential growth would result from high density, multi-family construction within the Springbrook neighborhood on currently underutilized and vacant land. In total, this planning area could expect over 6,500 new residents, the second largest residential growth volumes of any planning area. As this is the smallest planning area, comprised of only 820 acres, the change in residential density would be considerable in this part of the city, resulting in a net average density of 7.7 DU/acre, denser than any of the other planning areas. A few vacant parcels of mixed-use land along the Pacific Highway Southwest corridor in Ponders Corner would accommodate a small amount of additional employment growth.

Planning Area 7: This planning area, comprised of Tillicum and American Lake Gardens, is zoned almost entirely Moderate Density Single-Family, with a few blocks of Community Center and several parcels zoned High Density Residential in the southeastern corner of American Lake Gardens. Although this part of the city has the lowest overall potential growth capacity of any planning area in Lakewood due to its relatively small size (6.8% of the city's land area), it has a high percentage of vacant and underdeveloped parcels resulting in significant potential localized redevelopment. As a result, an average net density of 6.8 DU/acre can be expected.

Land Uses

The following land uses comprise the No Action Alternative.

Residential: The predominant land use under the No Action Alternative would be Moderate Density Single-Family, covering 6,673 acres, approximately 55% of the city. High Density Residential would be limited to two large clusters located in Springbrook and Custer, as well as two smaller ones bordering Fort Lewis. A significant percentage of housing would be accommodated in mixed-use zones.

Commercial and Industrial: The only exclusively commercial and industrial non-residential land use designations are the Employment Center and Neighborhood Center. Employment Centers primarily serve industrial and warehousing uses in northeast Lakewood around the Industrial Park and in the area around the I-5/SR-512 interchange. Neighborhood Centers serve small retail/service clusters as a convenience to nearby residents. Most jobs and commercial activity would be located in mixed-use zones.

Government Services/Institutional: The No Action Alternative is based on existing zoning, which does not include specific designations for government services or institutional uses like schools, colleges, and hospitals. Instead, these uses are permitted within appropriate designations; thus, there are no substantive differences between this and other alternatives.

Mixed Land Uses: Mixed-use zones comprise major portions of the city under this alternative, particularly the Mixed-Use Districts in east Lakewood and the Major Urban Center along Bridgeport Way and other major arterials, as well as the Mall. Community Centers surrounded by residential zones provide a mix of uses with a more local focus.

Open Space Reserve: This zone includes large parks, golf courses, and the State Game Lands.

Goals and Policies

The interim comprehensive plan contains goals and mandates adopted from GMA (RCW 36.70A); Multi-County Planning Policies; County-Wide Planning Policies; and objectives, principles, standards, and policies specific to Lakewood. The No Action Alternative assumes these would remain unchanged. Consistency between County-Wide Planning Policies and local regulations is required by GMA. Land use under this alternative would be

controlled for the most part by the existing Zoning and Land Use Code¹⁸; however, this analysis assumes that any amendments to the Land Use Code subsequent to Lakewood's incorporation would not be included in this alternative. As a result, no protections associated with the temporary Residential Density, Residential-Urban, and Residential-Urban/Commercial overlay zones¹⁹ are considered part of this alternative. This alternative complies with GMA as an interim measure only. Additional policies, regulations, and adjustments to land use control mechanisms would be needed to ensure compliance on a long-term basis.

Mixed-Use Alternative

Population and Employment Growth

Under this alternative, population growth capacity would expand significantly. Potential redevelopment of Lakewood's 2,139.5 vacant or underutilized acres could provide housing for an additional 30,204 residents, which would represent an increase of over 40% above current estimates of the city's population by the year 2017 if the average household population of 2.48 remains unchanged²⁰ (see Appendix A). This alternative would accept considerably more residents than were initially allocated to Lakewood by the PSRC, but still less than the No Action Alternative would permit. Population change is compared graphically in Figure 3.2-3.

Increases to employment capacity would be even more dramatic under this alternative, which would potentially add 11,123 new jobs by 2017²¹. This would represent an increase of 55% over the present job supply and 14% more jobs than supported by the No Action Alternative. Employment change is graphically illustrated in Figure 3.2-1

Changes to Land Use

Overall, the three most distinguishing land use features of the Mixed-Use Alternative are: (1) the preservation of western Lakewood's low density residential landscape, (2) the creation of a high density Urban Center, and (3) large mixed-use areas. Changes to land use are summarized in Table 3.2-7.

Land use under this alternative would be classified by the land use designations comprising this alternative to be implemented by zoning regulations. The Mixed-Use Alternative would protect existing low density residential character by restricting new development through the continuation of large lot overlay protections within the zoning code. Permitted use (single-family residential) would remain unchanged, but limits on density would be established through development standards.

¹⁸ Title 18 Zoning and Land Use Code.

¹⁹ These zoning designations were adopted by the City of Lakewood as interim overlay zones following incorporation.

²⁰ Future household size is likely to be less than 2.48; thus estimated population increases are conservative.

²¹ Employment growth analysis assumed the following employment/housing split for mixed use zones:

Community Center: 40/60

Mixed-Use Center: 60/40

Urban Center: 70/30

Table 3.2-7: Land Use Designation Summary for the Mixed-Use Alternative.

Land Use Designation	Intended Use	DU/Acre	Jobs/Acre	Acreage
Large Lot Overlay District	Low density single family	2	0	864.87
Single-Family Residential	Moderate density single family	5	0	3453.02
Duplex/Triplex Residential	Low density multi family	6-12	0	112.2
Multi-Family Residential	Moderate density multi family	5-24	0	465.86
High Density Residential	Apartment complexes	>24	0	237.55
Urban Center	Urban-scale high density commercial & residential	25	45	249.54
Mixed-Use Center	Assorted uses	25	25	710.76
Community Center	Apartments & neighborhood commercial	25	15	193.89
Light Industry/Business Park	Industrial and office jobs	0	10	379.11
Institutional	Hospitals, colleges, and public schools	0	actual data or projections*	673.32
Open Space and Recreation	Open space and recreation	0	0	1395.76
Neighborhood Center	Neighborhood commercial	0	10	31.47

* Employment data provided by hospitals, school district, and public agencies were used in lieu of density-based employment estimates (see Appendix A).

The most dramatic land use change under this alternative would be the designation of the Urban Center. The Urban Center boundaries would extend only as far north as 108th Street and as far west as Bridgeport Way but would cross 1-5 to the south and encompass a 1^{1/2} mile portion of the strip between 1-5 and Pacific Highway Southwest. Under the Mixed-Use Alternative, this would be the target for long range urban development, intended to be the site for the highest density of both employment and residential growth. An underdeveloped mix of older rental housing, vacant land, auto-oriented businesses, and a hospital would become the site for a distinct, compact, recognizable downtown. The Urban Center would be anchored by the commuter rail station, as well as high density housing and employment. Retail, restaurants, theaters, corporate and government offices, human services, medical and related services, research and development, and other employers would generate up to 3,931 new jobs. Housing provided mostly through mixed-use and apartment/ condominium complexes would house an additional 3,498 new residents. Other distinguishing land use features of this alternative are described for each of the planning areas and land use categories as follows.

Planning Areas

Planning Area 1: The majority of the land designated as the Urban Center and close to half the employment and housing growth within the Urban Center would be located within this planning area. Since the land is currently underdeveloped, the proposed development intensity would dramatically alter the character of this corner of the city. Most other portions of this planning area would experience moderate employment and population growth, with the exception of the northwest corner of the planning area, which is likely to double its population. This is most likely attributable to the high percentage of land designated Community Center and High Density Residential.

Planning Area 2: This planning area has significant redevelopable acreage for employment but relatively modest residential capacity. Employment increases are projected to be equitably split between industrial and mixed-use areas, while housing CD-growth is mostly limited to mixed-use areas.

Planning Area 3: Significant growth is slated for this planning area. Employment is projected to double as a result of the significant capacity of the Mixed-Use Center and housing will increase at an even higher rate in the Mixed-Use Center and Multi-Family Residential parcels.

Planning Area 4: No substantive land use changes related to employment or residential growth are expected as a result of this alternative. This planning area will likely remain the least dense with only 2.8 DU/acre.

Planning Area 5: As discussed above, the Mixed-Use Alternative would dramatically reduce this planning area's growth capacity by establishing large lot zones on 300 acres within the planning area. These large lot zones would account for one of the most significant differences between this and the No Action Alternative because they would eliminate much of the residential development capacity in Planning Area 5. Under the No Action Alternative, Planning Area 5 would have the potential for 4,478 homes. By contrast, the large lot zoning designation limits potential new units to only 1,862, a reduction of 38%. As a result, this planning area should expect only minor housing and job growth during the life of the plan.

Planning Area 6: Land uses in Planning Area 6 are primarily designated High Density Residential, Single-Family Residential, and Urban Center. Since much of the land is vacant or under-utilized, the growth potential is substantial, with an estimated capacity for 5,685 new residents, the greatest total increase of any planning area. This planning area would host a substantial percentage of the Urban Center's total growth including 1,658 jobs and 1,595 new residents.

Planning Area 7: This planning area, comprised of Tillicum and American Lake Gardens, would be targeted for substantial residential development under this alternative. Geographically isolated from the rest of Lakewood yet conveniently close to 1-5 and Fort Lewis, both neighborhoods have substantial portions of vacant and underutilized property suitable for redevelopment if water and sewer service is improved.

This alternative would nearly double this planning area's population, increasing Tillicum's population by 722 new residents and increasing the population of American Lake Gardens by 1,049, resulting in net average density of 8.5 DU/acre. Thus, both neighborhoods would have considerably higher average densities than any other planning area for any of the three alternatives.

Employment growth by contrast would actually decrease under this alternative. Community centers in both neighborhoods would create modest job opportunities, but employment would be considerably less than the No Action Alternative (108 vs. 934, respectively).

Land Uses

The following land uses comprise the Mixed-Use Alternative.

Residential Land Uses: Five separate land use categories apply specifically to residential use. Residential densities vary from only two housing units per acre in the Large Lot Overlay designation to as many as 30 per acre in the High

Density Residential. Three additional mixed-use designations allow housing in combination with other uses.

There would be a minor net decrease overall in single-use residential land under the Mixed-Use Alternative. Nevertheless, overall residential capacity in the eastern part of the city, as well as Tillicum and American Lake Gardens, would be substantially increased due to upzoning of single-family land to high density and multi-family designations, as well as moderate to high density mixed-use areas. Coupled with the large lot zoning protections west of the lakes, Lakewood would expect residential growth to shift toward apartment and condominium development in eastern and southern portions of the city.

Overall housing capacity of this alternative would be 30,204 residents. Although a substantial portion of new residential growth would result from infill and redevelopment occurring in single-family areas of the city, most new growth would be facilitated by higher density development such as apartments and condominiums. This would occur in Lakewood's northern and eastern neighborhoods where such growth is encouraged by this alternative's Land Use Map.

Commercial and Industrial Land Uses: Most commercial land in Lakewood would be consolidated into one of three mixed-use designations: Community Center, Mixed-Use Center, or Urban Center. These three designations would permit low, moderate, and high employment density coupled with varying residential intensity. In addition, several small Neighborhood Centers would provide convenient commercial services near the residential neighborhoods they serve, but these would not be expected to play an economically significant role as employment generators.

This alternative would increase industrial land under the designation Light Industry/Business Parks. This designation would comprise much of eastern Lakewood's existing Employment Center and is intended to retain and attract a variety of industrial and business activity with low average employment density. Residential uses are considered incompatible and would be prohibited in these areas.

Government Services/Institutional: Land used for schools, hospitals, government offices, utilities, and other public services would be re-designated to Institutional, but actual uses or the amount of land devoted to such uses are unlikely to change.

Mixed Land Uses: A large amount of land would continue to be classified in one of several mixed-use designations, although the individual designations would be modified. These designations are intended to be locations of complementary uses including housing, services, and jobs clustered together at moderate to high density.

Open Space Recreation: This alternative includes significantly more land designated for parks and open space uses; however, this is due in part to more precise land use accounting than to actual land use allocation. See Section 3.5 for more information.

Goals and Policies

Since the Mixed-Use Alternative is more of a generalized land use concept than a fully developed comprehensive plan, no distinct goals and policies were developed.

3.2.3 Mitigation Measures

The following mitigation measures are primarily intended to address potential impacts associated with the Preferred Alternative but would also apply to the other two alternatives.

- Neighborhood or sub-area plans should be prepared under each of the alternatives for the neighborhoods with the greatest capacity for growth, especially those slated for the highest density, more complex land uses, or greatest change. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 3.2.2 (Living Environment).
- To achieve the desired vision for the Preferred Alternative's Lakewood Station District, a number of urban design solutions are ultimately needed, including completion of the existing street grid, creation of more open space opportunities, and better pedestrian and vehicular connections across the railroad tracks, Pacific Highway Southwest, and I-5. To address this mitigation measure, the City has revised the Comprehensive Plan to include new policies in Section 3.3.5 (Lakewood Station District).
- Ongoing planning for the CBD must emphasize the need to create a true mixed-use urban center that provides Lakewood a sense of identity as a city. Economic development efforts are needed to attract high quality development and tenants as well as residential uses to the downtown area. To address this mitigation measure, the City has revised the Comprehensive Plan to reword a goal in Section 3.3.2 (Central Business District, Land Use), as well as added a new policy in Section 5.2 (Goals and Policies, Economic Development).
- Creative funding mechanisms for urban design and open space improvements, such as grants, bond measures, creation of Local Improvement Districts, regional and state partnerships, and others, are needed to maintain and improve the quality-of-life as the city densifies. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new goal and its associated policies in Section 4.6 (Goals and Policies, Urban Design).
- Potential impacts associated with the Preferred Alternative to current residents of American Lake Gardens and Springbrook must be mitigated by careful planning of these neighborhoods' partial conversion to industrial use and by the provision of relocation assistance to residents (see Section 3.5.3 for mitigation measures specific to housing impacts) as well as buffering requirements to enhance compatibility and diminish possible use conflicts. To address this mitigation measure, the City has revised the Comprehensive Plan to expand the title of and add policies to

Section 3.4.3 (American Lake Gardens and Springbrook), as well as add new policies to Section 3.10 (Isolated Areas).

- City zoning and development regulations must be amended to reflect the goals of the Future Land Use Map and the attendant land use designations. Adequate development standards must be identified to ensure that proper site and architectural design measures are implemented through private as well as public development. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 4.6 (Goals and Policies, Urban Design).
- City economic development efforts will be needed to reinforce comprehensive planning goals and policies, and the envisioned future land use distribution.

3.2.4 Unavoidable Adverse Impacts

Land use designations under all alternatives will accommodate substantial amounts of population growth. Given population growth pressures being experienced in the Puget Sound region currently and for the projected future, it is expected that Lakewood will experience substantial population growth, with unavoidable impacts to the environment. Development capacity is less under the Preferred Alternative than under the other alternatives and will likely produce fewer overall impacts (although this is not entirely certain, given that growth will depend to a large extent on unpredictable market forces). Furthermore, the Preferred Alternative proposes a more compact and well-defined development pattern than other alternatives that will minimize these impacts while still accepting a fair regional share of growth.

The conversion of portions of American Lake Gardens and Springbrook from residential to industrial uses as intended by the Preferred Alternative will cause the loss of up to 868 housing units. A large percentage of these are relatively low cost housing, although many are substandard.

3.3 Plans and Policies

This section addresses conformance with County-Wide Planning Policies and GMA. In addition, this section evaluates possible conflicts with the plans and policies of adjacent jurisdictions and military bases.

3.3.1 Existing Policy Framework

Growth Management Act

The State of Washington adopted the Growth Management Act (RCW Chapter 36.70A) to address increasing problems stemming from uncoordinated growth in rapidly growing areas across the state. The GMA is based on the following 13 goals²²:

²² RCW § 36.70A020.

- *Urban growth.* Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
- *Reduce sprawl.* Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
- *Efficient multi-modal transportation.* Encourage efficient multi-modal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.
- *Increased availability of affordable 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.
- *Appropriate 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.
- *Protection of property rights.* Private property shall not be taken for public use without just compensation. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
- *Fair and timely permit processing.* Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.
- *Maintenance and enhancement of 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.
- *Support for 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.
- *Environmental protection.* Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
- *Participation by citizens in the planning process.* Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.
- *Provision of adequate 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.

- *Preservation of historic resources.* Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.

The principal method to achieve these goals is through comprehensive planning by cities and counties. The GMA specifies that comprehensive plans for cities contain the following five mandatory elements: Land Use, Housing, Capital Facilities, Utilities, and Transportation. In addition, the GMA encourages the inclusion of other elements that are consistent with the Act's goals as well as specific subarea plans.

Two of the key requirements of the GMA are consistency and concurrency. Consistency requires that a comprehensive plan be consistent with the Act's goals; that plan elements are internally consistent; that each element is consistent with the future Land Use Map; that transportation and land use decisions are consistent; that the transportation element is consistent with the 6-year Transportation Improvement Program (TIP); consistency between each City's comprehensive plan and the County comprehensive plan; consistency between the plans of neighboring jurisdictions; consistency between development regulations and the comprehensive plan; consistency between capital budget decisions and the comprehensive plan; and consistency between the State's capital budgeting actions and local comprehensive plans.

Concurrency requires that public facilities be adequate and ready in time to serve development. For transportation, meeting the concurrency requirement means denying approval to developers if level of service would fall below standards established by the comprehensive plan.

Multi-County Planning Policies

State laws including the GMA, as well as federal laws require the central Puget Sound region to have a regional growth management and economic development transportation strategy and a regional transportation plan. The PSRC complied with these mandates with VISION 2020 (PSRC 1994), an eight-part strategy for managing the region's growth, last updated in 1995. These parts, consisting of urban growth areas, contiguous and orderly development, regional capital facilities, rural areas, open space, resource protection and critical areas, economics, and transportation, meet GMA's multi-county planning requirements for all central Puget Sound planning areas. As the long range growth management strategy for the region, VISION 2020 establishes a policy framework articulating the vision of diverse, economically, and environmentally healthy communities framed by open space connected by a quality multi-modal transportation system.

County-Wide Planning Policies

Pierce County adopted County-Wide Planning Policies in 1992 (Pierce County 1992a, most recently amended December 17, 1996) in response to GMA goals

that the comprehensive plans of adjacent jurisdictions be consistent with one another. Issues addressed include: affordable housing; agricultural lands; economic development; education; fiscal impact; historic, archeological, and cultural preservation; natural resources, open space, and protection of environmentally sensitive lands; siting of regional public capital facilities; transportation; and urban growth areas. The Pierce County County-Wide Planning Policies generally reiterate GMA goals intended to guide the development of comprehensive plans prepared by each jurisdiction in the county. The policies with implications for land use in the City of Lakewood are summarized in Section 3.4 of the background report. For the purpose of SEPA analysis, the most critical of these are the policies addressing affordable housing and urban development. Housing is discussed in Section 3.5 of this EIS.

1992 Joint land Use Study

The Air Force and Army collaborated with adjacent jurisdictions to develop a joint land use study, McChord AFB and Fort Lewis Joint Land Use Study published in February of 1992 (Joint Land Use Study Team 1992). Since Lakewood is more directly affected by flight operations at McChord AFB than by Army exercises at Fort Lewis, the portions of the study most relevant to Lakewood address flight obstructions, aircraft safety, and aircraft-generated noise. Safety and noise data provided the locational criteria for Compatible Use Districts (CUDs). Each CUD corresponds to a specific accident potential zone (APZ) or to areas affected by excessive noise levels. Depending on severity of safety risk or noise, detailed compatibility use guidelines determined permissible land uses. Not surprisingly, the guidelines substantially limit the allowable uses and total development capacity in the northeast sector of the city. Pierce County incorporated the land use limitations in the Joint Land Use Study and the County's land use regulations. Upon incorporation, the City of Lakewood followed the County's lead by adopting these land use controls into its interim zoning.

1998 AICUZ Study

The Air Force prepared a new Air Installation and Compatible Use Zone (AICUZ) study in 1998 (McChord AFB 1998). This study updated the findings of the 1993 McChord Air Force Base Air Installation Compatible Use Zone (AICUZ) Study (McChord AFB 1993) by addressing changes in the base's flying mission. The most significant changes included the replacement of aging C-141 with new C-17 aircraft and the increase in the air traffic pattern altitude by 300 feet. The study included numerous recommendations on how to address noise and safety risks associated with military activity.

The Air Corridor areas are located at the final approach to the McChord AFB's runway and are subject to noise and safety impacts of military flight operations. The AICUZ study determined that potential risk to life and property from hazards associated with aircraft operations within the Air Corridor necessitate control of the intensity, type, and design of lands uses within the designation. To address these concerns, the Air Force included a table of land use compatibility guidelines listing appropriate and inappropriate

land uses based on the U.S. Department of Transportation's Standard Land Use Coding manual (SLUCM). This table addresses both the accident potential zones (Clear Zone, APZ I, and APZ II) and the four noise classifications (65-69 Day-Night Level [DNL], 70-74 DNL, 75-79 DNL, and over 80 DNL).

While the Air Corridor designations generally recognize the restrictions recommended by the AICUZ study, these designations also recognize that the City cannot render property economically useless without risk of a takings judgment. In the Air Corridor designation, non-residential uses are permitted subject to performance and intensity standards. These City land use designations would prohibit high-intensity retail and services activities and multi-story office space or additional dwelling units. All existing high intensity retail uses, duplexes, apartments, and mobile home parks would become nonconforming uses.

Chambers-Clover Creek Watershed Action Plan

As required by the Washington Administrative Code 400-12, Pierce County has prepared a Watershed Action Plan for the Chambers and Clover Creek watersheds which include the land within the boundaries of the City of Lakewood. This plan has not been endorsed by the Pierce County Council but is expected to be by mid 2000. The purpose of the plan is to address non-point water pollution sources through a number of specific action items. Following the plan's endorsement, a Basin Advisory Committee will be formed to steward the plan's implementation. This committee will include representation from state and local agencies, tribes, major employers, and private organizations (ROC, Erkkinen, 5/19/00).

Lakewood Water District Wellhead Protection Plan

In compliance with the Washington State Department of Health Guidelines, the Lakewood Water District published a Wellhead Protection Plan in 1997 (Economic Engineering Services, Inc. and Robinson & Noble 1997). The plan delineates Wellhead Protection Areas, inventories potential contaminant sources, assesses susceptibility to contamination, and includes a number of planning recommendations intended to protect groundwater resources. Since Lakewood is completely dependant on groundwater for domestic, industrial, and irrigation water uses, consistency with the Lakewood Water District Wellhead Protection Plan is critical.

Plans of Adjacent Jurisdictions

GMA requires that comprehensive plans be consistent between jurisdictions. In addition to Fort Lewis and McChord AFB (see discussion under McChord AFB AICUZ Study), Lakewood shares jurisdictional boundaries with the Tacoma, Steilacoom, University Place, and unincorporated areas of Pierce County.

Compatibility issues related to adjoining land use on opposite sides of the corporate limits are also discussed below.

3.3.2 Relationship to Plans, Policies, and Ordinances

Preferred Alternative

Growth Management Act

The GMA requires that the comprehensive plans of local jurisdictions contain five elements (Land Use, Housing, Capital Facilities, Utilities, and Transportation). The Lakewood comprehensive plan is organized by chapter rather than element. The document does not necessarily follow the order recommended by GMA; however, all GMA requirements have been addressed by the Preferred Alternative. Each chapter generally contains goals and policies, accompanied by explanatory text. Some information required by GMA is contained in the background report as well as this EIS. The following paragraphs explain where GMA-required information is located within the draft Lakewood comprehensive plan and its supporting documents.

Land Use Element (36.70A.070(1)): GMA land use requirements are addressed in several locations. The bulk of issues related to land use are addressed in Chapters 2 and 3 of the comprehensive plan. Chapter 2 discusses land use designations and locations, while Chapter 3 consists primarily of related goals and policies. The land use chapter contains an Environmental Quality section that addresses GMA-required groundwater quality protection and drainage, flooding, and stormwater runoff issues. In addition, some physical characteristics such as building intensities are addressed at greater detail in the Urban Design chapter. Future population is estimated according to a development capacity model included in this EIS chapter, with greater detail presented in Appendix A.

Housing Element (36.70A.070(2)): Required housing issues are addressed in the Land Use chapter and several other locations. Technical analysis of needs and capacity is contained in the background report and the EIS. The comprehensive plan land use designations and map identify areas of the city targeted for different housing types. The Land Use chapter addresses goals and policies related to a variety of housing issues.

Capital Facilities Element (36.70A.070(3)): The GMA Capital Facilities requirements are addressed in Chapter 9 of the comprehensive plan as well as in the background report and in the 1999-2004 Capital Improvement Plan (CIP). Chapter 9 contains a typology of the different categories of service providers and goals and policies pertaining to each. Specific capital improvement projects are listed as required in the Lakewood 1999-2004 CIP.

Utilities Element (36.70A.070(4)): The most detailed discussion of utility capacity, needs, and locational issues is contained in the Utilities section of the background report. The Public Services, Utilities, and Capital Facilities section of this EIS also contains relevant information, especially pertaining to impacts and proposed mitigation associated with the comprehensive plan.

Transportation Element (36.70A.070(6)): The Transportation section of the comprehensive plan establishes the overall transportation framework for Lakewood's transportation planning through long-range goals and policies. This plan also designates arterial street classifications, bicycle and pedestrian trails, and establishes level of service standards. Analysis of traffic, safety, and

level of service impacts; road improvements proposed by the State and County; and funding options are contained in detail in the Transportation section of this EIS. Specific transportation projects led by the City are listed in the CIP.

Optional Elements (36.70A.080(1)): Lakewood opted to include chapters addressing urban design, economic development, and public services, along with the five required elements discussed above. In addition, other issues such as parks and recreation and environmental quality are included in the Land Use chapter.

Multi-County Planning Policies

The Preferred Alternative shares many of the VISION 2020 goals, especially expanding housing choice and increasing job opportunities for community residents. The proposed Lakewood Station District, a new area of intensive commercial and residential development intended to be catalyzed by the Sound Transit commuter rail station in southeast Lakewood, exemplifies the type of urban growth envisioned by VISION 2020. Numerous other features from improved pedestrian and bicycle networks to compact urban design types to balanced employment and housing exemplify this consistency.

County-Wide Planning Policies

The Preferred Alternative is consistent with the County-Wide Planning Policies²³. The Lakewood comprehensive plan consists of goals and policies that reflect the emphasis of each of the major County-Wide Planning Policy issue areas, and the Future Land Use Map is based on the land use principles of GMA (and the County-Wide Planning Policies).

The Future Land Use Map in particular exemplifies compliance with the County-Wide Planning Policies. The map illustrates how Lakewood's land base is to be allocated through the completion of the comprehensive plan's 20-year life span. This Future Land Use Map has been developed in accordance with the County-Wide Planning Policies for Pierce County, and has been integrated with all other planning elements to ensure consistency throughout the comprehensive plan. The development of the Future Land Use Map has specifically considered the general distribution and location of land uses, the appropriate intensity and density of land uses given current development trends, the protection of the quality and quantity of public water supplies, the provision of public services, the control of stormwater runoff, and the costs and benefits of growth. The Land Use chapter includes corresponding goals and policies associated with the map.

The City of Lakewood executed an interlocal agreement with Pierce County in 1996 authorizing amendments to the County-Wide Planning Policies²⁴ that established standards for urban and manufacturing/industrial centers. The Lakewood Urban Center (as shown in Figure 2.2 of the draft comprehensive plan) meets or exceeds some of the minimum guidelines for urban center

²³ Resolution #1996-39.

²⁴ Ordinance #96-127 Section 6.1.

designation as defined by VISION 2020 as shown in Table 3.3-1 but does not meet others. At 552 acres, the Lakewood Urban Center is just over half the 1.5 square mile maximum area for an urban center set by VISION 2020. Proportionately, the Lakewood Urban Center is expected to employ slightly more than half the 15,000 minimum employees of an Urban Center. The Lakewood Urban Center's density of 15.1 jobs and 6.6 households per acre falls short of the regional criteria of 25 jobs and 10 per acre. With the addition of commuter rail service and a park-and-ride lot at Lakewood Station, the Urban Center will meet the regional transit criteria. The Lakewood Manufacturing/Industrial Center (as shown in Figure 2.2 of the draft comprehensive plan) also meets the criteria of appropriate County-Wide Planning Policies.

Table 3.3-1: Urban Center Comparison.

Guidelines	VISION 2020/Pierce County	Lakewood
Employees per Acre	25 (minimum)	151
Households per Acre	10 (minimum)	6.6
Total Employees	15,000 (minimum)	8,352
Total Area	1.5 square miles (Maximum)	0.86 square miles

One planning policy unique to Pierce County²⁵ is the requirement of net density of four units per acre. Full build-out of the Preferred Alternative is expected to yield a capacity of 32,250 potential dwelling units on 6,580 net buildable acres. Net buildable acres is arrived at in this case by eliminating all land that is unbuildable due to designation from consideration. This includes public rights-of-way, open water, open space, air corridor, and public and semi-public institutional. Lakewood's density would be 4.9 DUs/acre, which exceeds the County-mandated minimum ratio. This compares favorably to the current density of approximately 2.5 units per acre based on a 1995 population of 62,500 and a net buildable acreage of 10,082 acres (excluding lakes and public ROWs), based on zoning. Neither number takes critical areas into account; however, removing critical areas from net buildable area would increase calculated density slightly.

Under the GMA, each affected jurisdiction is expected to meet certain assigned growth targets assigned by the Office of Financial Management (OFM). Accordingly, in 1997 OFM assigned growth targets to each GMA county for use in each jurisdiction's comprehensive planning efforts. The growth estimates were developed using the cohort survival method and presented as ranges, consisting of low, medium, and high projections. Because the estimates were aggregated at the county-wide level, Pierce County worked with the PSRC to distribute the estimated growth by Forecast Analysis Zone (FAZ). This allowed the county to assemble growth estimates for each jurisdiction. As previously discussed, PSRC estimated Lakewood's 20-year growth using an econometric model to be 76,254, representing an addition of 11,072 residents above the 1996 population as estimated by OFM of 65,182. Pierce County subsequently assigned Lakewood a 2017 target of 93,200 residents at Lakewood's request.²⁶ Subsequent comprehensive planning efforts

²⁵ Ordinance #96-127 Section 6.1.

²⁶ Per Pierce County Ordinance #97-59 adopted May 13, 1997.

developed alternative land use concepts, which were refined into land use alternatives for environmental review, including analysis of development capacity. The capacity analysis determined the current Preferred Alternative (i.e., Recommended Future Land Use Map) to have a build-out capacity of 17,500 new residents. In general, this lower number results from a reduction in residential density in west Lakewood combined with a more critical assessment of market-driven development patterns.

While falling short of earlier expectations as presented to Pierce County, Lakewood is still anticipating a substantial share of the region's growth above original PSRC targets. Since Lakewood will not achieve the current 2017 target of 93,200 residents as required under County-Wide Planning Policies, the growth targets will have to be adjusted to ensure consistency between the growth projected by the plan and the County-Wide Planning Policies and PSRC allocations. In addition to the more general growth management focus discussed above, the County-Wide Planning Policies also addressed the following specific subject areas:

Housing: County-Wide Planning Policies on housing identify a number of alternative strategies for housing all segments of the population projected during the planning period. The Preferred Alternative addresses housing in the Land Use chapter, which includes numerous policies aimed at accommodating the City's housing needs. The plan designates a variety of geographically distributed residential areas with different densities and housing types. Additional analysis of housing issues is included in Section 3.5 of this EIS.

Economic Development: The Preferred Alternative complies with the County-Wide economic development policies in several ways. Chief among these is by designating ample commercial and industrial land areas to provide a significant employment base. Attention was paid to the geographical relationship between residential and employment generating land uses, to transportation connections, and to ensuring viability of new industrial areas.

Urban Growth Areas: The GMA requires the designation of urban growth areas (UGAs) within the county. Locational criteria state that an urban growth area needs to be of sufficient size to accommodate projected urban growth over a 20-year period. The county and municipalities must work together to manage this growth within the designated UGA to produce a fiscally sound growth pattern for all government bodies.

As a mechanism for managing this growth, the "principles of understanding between Pierce County and the municipalities in Pierce County," as outlined in the County-Wide Planning Policies, identify a number of categories of "centers," within which specific policies are adopted directing the type and nature of growth. These include metropolitan centers, urban centers, town centers, and manufacturing centers. These centers are priority locations for accommodating growth, each of a different type and size. Lakewood has two centers: an urban center (focused on the Lakewood Mall) and a manufacturing center, focused on the Lakewood Industrial Park.

Policy numbers 12 through 35 in the Principles of Understanding identify a series of criteria and treatments for urban centers. Among others, they are to be

characterized by clearly defined geographic boundaries, high capacity transit and sufficient land intensity to support it, pedestrian-oriented land uses and amenities, and sufficient public open spaces and recreational opportunities. Specific design treatments are encouraged, including streetscape amenities, defined setbacks and building massing, and a rich mixture of land uses, including higher residential densities. Urban centers must plan for and meet the following criteria:

- a minimum of 25 employees per gross acre of non-residential lands;
- a minimum of 10 households per gross acre;
- a minimum of 15,000 employees; and
- shall not exceed a maximum of 11/2 square miles in size.

Policy numbers 35 through 42 in the Principles of Understanding identify a series of criteria and treatment for manufacturing centers. Among other characteristics, planning for manufacturing centers is to encourage clearly defined geographic boundaries, direct access to regional transportation systems, and provision to prohibit housing. Development of offices and retail uses is to be discouraged beyond that needed to serve employees, while land assemblage to provide efficient-sized parcels for manufacturing is to be encouraged. Design and provision of efficient modern transportation system is a high priority.

Chambers-Clover Creek Watershed Action Plan

The Preferred Alternative generally complies with the Chambers-Clover Creek Watershed Action Plan. The same Lakewood City staff participated in the development of both the Watershed Action Plan and the Preferred Alternative. Goals and policies addressing water quality and stormwater are consistent with watershed plan action items.

Lakewood Water District Wellhead Protection Plan

The Wellhead Protection Plan concentrates on three priorities: (1) enhancing and improving local aquifer and wellhead protection through cooperative inter-jurisdictional processes; (2) making effective use of available committees or groups to provide focus and coordination; and (3) selecting action recommendations based on priority of outcome, effectiveness in achieving that outcome, and low cost. These objectives are reiterated in the plan's 36 individual recommendations, which are generally directed at the Lakewood Water District and Pierce County, the principal agencies responsible for well head protection.

The Preferred Alternative generally complies with the Wellhead Protection Plan. References to the Wellhead Protection Plan's recommendations (such as efforts to coordinate emergency response and land use planning efforts with the water district) are included as secondary wellhead protection measures in the environmental protection goals and policies and elsewhere.

McChord AFB AICUZ Study

The McChord AFB AICUZ Study (McChord AFB 1998) established two zones to address noise and safety risks associated with military aircraft use: Accident Potential Zone I (APZ I) and Accident Potential Zone II (APZ II). The AICUZ Study recommended severe land use restrictions in either Accident Potential Zone. Uses that: attract concentrations of people; would stockpile explosive or combustible materials; release substances, light, or electronic emissions that interfere with flight operations; or attract birds would be prohibited. No residential uses would be allowed in Accident Potential Zone I, and housing would be limited to one DU/acre in Accident Potential Zone II. Commercial and industrial uses would be restricted in a similar fashion.

The Preferred Alternative would designate significant portions of the northeastern corner of the City as Air Corridor 1 and Air Corridor 2. This land use designation corresponds to Airport Overlay Zones adopted by Pierce County in response to the AICUZ Study and the APZ I and APZ II zones. The Air Corridor is mapped in Figure 3.3-1.

The Preferred Alternative includes a number of goals and policies aimed at ensuring consistency with the AICUZ Study's recommended aircraft-related land use restrictions north of the runway. Land use restrictions would be implemented through new zoning, which would restrict commercial and industrial uses to those that generate an average maximum of 12 jobs per acre. New housing would be prohibited in Air Corridor 1 designation, corresponding to APZ I, and limited to very low densities (2 DU/acre) in Air Corridor 2. The development capacity analysis identified the potential for development of 86 new dwelling units in Air Corridor 2.

Adjacent Jurisdictions

Town of Steilacoom: The Town of Steilacoom lies to the west of Lakewood. Designated land uses appear consistent on both sides of the boundary with Steilacoom. Both jurisdictions have designated the majority of the area Single-Family Residential. A small area on the Steilacoom side of the line is designated Industrial, but most of this is isolated geographically at the foot of steep slopes rising up from Chambers Creek.

City of University Place: University Place lies northwest of Lakewood on the opposite side of Chambers Creek. Like Lakewood, University Place has designated the Chambers Creek canyon for open space and recreation uses. Land at the top of the bluff is zoned for Single-Family Residential on the University Place side and a mixture of Single- and Multi-Family Residential on the Lakewood rim of the canyon.

City of Tacoma: The City of Tacoma is located north of Lakewood, with both jurisdictions sharing a significant boundary. Tacoma has designated a number of land uses along its southern boundary, which generally mimic those on the Lakewood side of the jurisdictional boundary. Most of the land on the Tacoma side is zoned R2 (One Family Dwelling District), which is analogous to the Single-Family Residential designation on the Lakewood side. A few small

areas of Lakewood's other designations are also compatible with adjoining uses in Tacoma.

Pierce County: A small area of unincorporated Pierce County is located between Lakewood and Steilacoom. It is likely that this area will be annexed in the future by one of these jurisdictions.

No Action Alternative

Growth Management Act

The interim comprehensive plan was developed in response to GMA requirements; as an interim planning document, however, it was not required to fully comply with GMA; thus, no growth targets are included.

Nevertheless, the interim comprehensive plan contains the five required elements (Land Use, Housing, Capital Facilities, Utilities, and Transportation.) The plan also contains elements addressing optional issue areas.

County-Wide Planning Policies

As a portion of the Pierce County comprehensive plan (Pierce County 1993), the interim comprehensive plan is consistent with the County-Wide Planning Policies in terms of content and general structure. It is difficult to ascertain how the plan can comply with the focused growth management strategy of the County-Wide Planning Policies because the structure of the plan is limited to very general mixed-use zoning. Average net density under this alternative would exceed the County's minimum.

McChord AFB Joint Land Use and AICUZ Studies

The interim comprehensive plan would continue to govern land uses within the approach to McChord AFB according to the Airport Approach Overlay Zones generally developed in response to the Joint Land Use Study (Joint Land Use Study Team 1992); thus, this alternative would be consistent with this document as well as the 1998 AICUZ study (McChord AFB 1998), which is very similar.

Chambers-Clover Creek Watershed Action Plan

Although development of the Interim Comprehensive Plan pre-dates the Chambers-Clover Creek Watershed Action Plan, the two appear to be consistent. This is due the former's emphasis on environmental protection measures including watershed and surface drainage considerations.

Lakewood Water District Wellhead Protection Plan

The No Action Alternative complies with the Wellhead Protection Plan. This alternative includes a discussion of aquifer protection issues as well as a number of goals and policies specifically addressing surface and groundwater quality under ENV Objective 5.

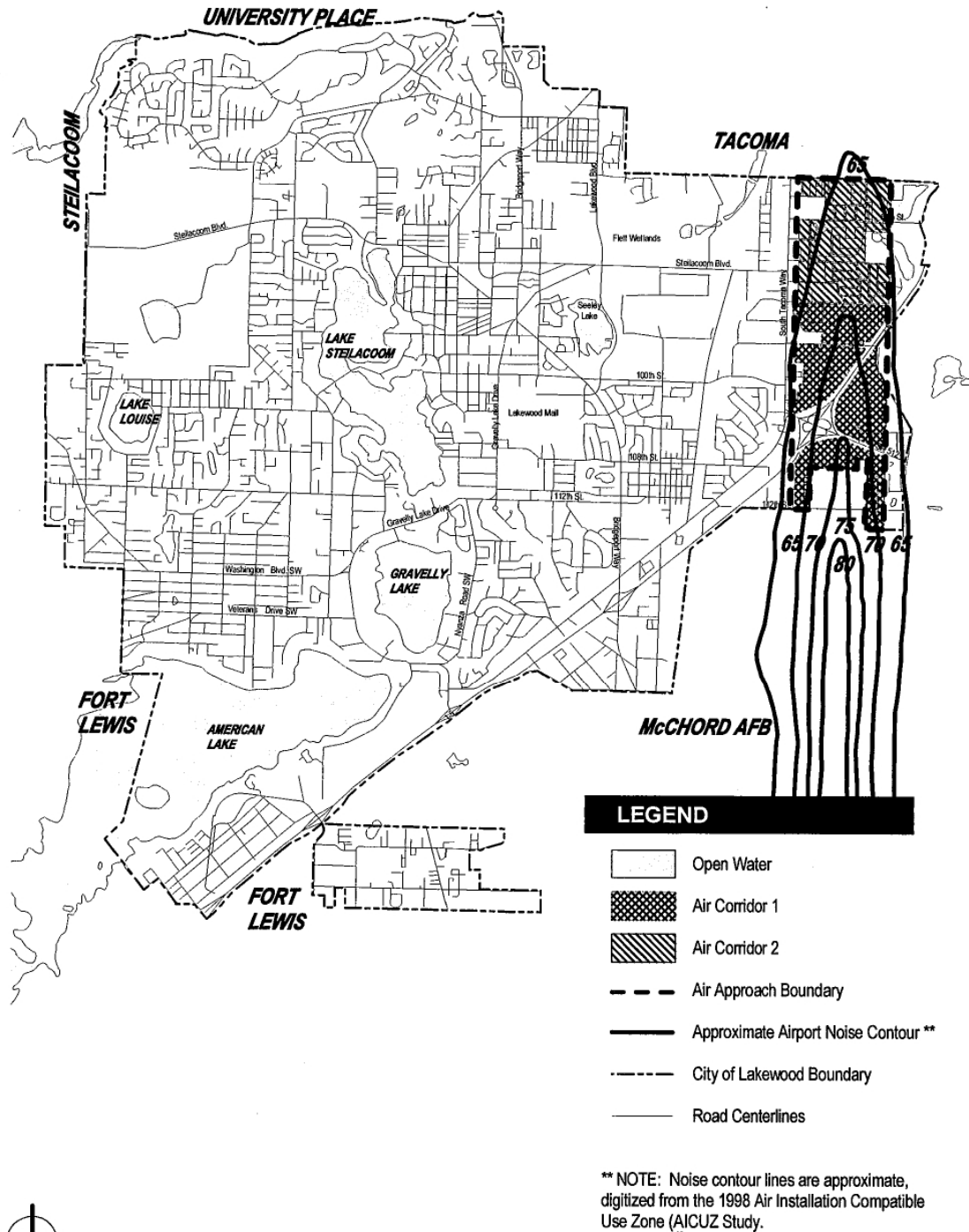


Figure 3.3-1
Airport Approach Area Map

Adjacent Jurisdictions

The interim comprehensive plan would generally preserve the status quo in terms of land use and policy direction, generating no obvious inconsistencies with adjacent jurisdictions.

Mixed-Use Alternative

The Mixed-Use Alternative consists of a land use and distribution concept with the goals and policies associated with the other two alternatives previously discussed. Consistent with the vision of the GMA, VISION 2020, and County-Wide Planning Policies, the Mixed-Use Alternative seeks to reduce sprawl by focusing growth in a high-density urban center and in moderate density mixed-use centers. Land uses would facilitate a variety of residential densities and improve the jobs/housing balance.

McChord AFB AICUZ Study

The Mixed-Use Alternative would also regulate land uses within the approach to McChord AFB according to the Airport Approach Overlay Zones developed in response to the AICUZ Study; thus, this alternative would be consistent with the Joint land Use Study as well.

Chambers-Clover Creek Watershed Action Plan

Since the Mixed-Use Alternative contains no goals and policies, no evaluation can be made of consistency with the Chambers-Clover Creek Watershed Action Plan.

Lakewood Water District Wellhead Protection Plan

Since the Mixed-Use Alternative contains no goals and policies, no evaluation can be made of consistency with the Wellhead Protection Plan.

Adjacent Jurisdictions

The Mixed-Use Alternative would retain the existing residential uses bordering Steilacoom and University Place. The existing mix of uses would likely remain along the boundary with Tacoma; thus, no land use inconsistencies with adjacent jurisdictions would result.

3.3.3 Mitigation Measures

Pierce County Ordinance #97-59, adopted May 13, 1997, established Lakewood's targeted population growth for 2017 as 93,200 residents, at Lakewood's request. That ordinance should be amended by the Growth Management Coordinating Committee (GMCC) to recognize a more realistic population increase number of 17,000 and set the 2017 population target at a lower number. In 1996, PSRC estimated Lakewood's 20-year growth to be 76,254, using an estimated population growth of 11,072 residents²⁷. Lakewood will request that the GMCC amend the ordinance to reflect new capacity

²⁷ EDAW memo to Lakewood staff, date: May 20, 1999

increase target of 17,000 new residents, for a revised 2017 target of 82,670, based on the OFM's 1996 population estimate of 65,182.

The County's ordinance will need to be amended to reflect the revised comprehensive planning growth target of 17,000 additional residents.

3.3.4 Unavoidable Adverse Impacts

In relation to other plans, policies, and ordinances, no unavoidable adverse impacts would result from any of the alternatives.

3.4 Parks, Recreation, and Open Space

This section discusses the affected environment, environmental impacts, mitigation measures, and unavoidable adverse impacts on parks, recreation, and open space associated with implementation of the alternatives considered in this EIS.

3.4.1 Affected Environment

Nearly 12% of Lakewood's land area is classified as Open Space/Recreation Area (EDAW 1997) This includes City-owned parks and open space, Pierce County parkland, lands belonging to the State of Washington, school playgrounds and college campuses, greenbelts, and privately owned recreation facilities. Specifically designated park and recreation resources in Lakewood currently total only 698 acres, or roughly 5% of the City's land area. Parks and recreation facilities in Lakewood are shown graphically on Figure 3.4-1 and summarized in Table 3.4-1.

Table 3.4-1: Park and Recreation Facilities in Lakewood.

Park Site	Total Acres	Number of Sites
City-Owned Parks and Facilities	31.6	8
Neighborhood Parks	8.5	3
Community Parks	17.4	2
Special Use Areas	4.9	2
Undeveloped Park Land	.8	2
Pierce County Owned Parks and Facilities	583	4
Regional Parks	270	1
Special Use Areas	110	1
Natural Open Space/Greenways	202	2
State of Washington	82	1
Natural Open Space/Greenways	82	1
Other	1.3	1
Neighborhood Parks	1.3	1
TOTAL	697.9	14

Source: JC Draggoo & Associates 1997.

City-Owned Parks and Facilities

With the exception of American Lake North Park and Harry Todd Park, most parks and recreation facilities owned by the City of Lakewood are

considerably underdeveloped, and all have some degree of deficiencies resulting from deferred maintenance. In addition, park facilities are not well distributed geographically, leaving many neighborhoods completely un-served by park resources (JC Draggoo & Associates 1997).

Pierce County Owned Parks and Facilities

Pierce County continues to be the largest park facility operator in Lakewood, owning and operating four major parks in the city. The largest of these is Fort Steilacoom County Park, a large regional park with sports fields, trails, a playground, and historic barns. Other County facilities in northwest Lakewood include nearby Fort Steilacoom Golf Course and Chambers Creek Canyon Park, a natural riparian corridor with trails. Lakewood's other county park is Seeley Lake, a centrally located, partially developed wetland open space.

State of Washington

The WDFW maintains the South Puget Sound Wildlife Reserve, an 82-acre game farm with trails and natural areas for wildlife in northern Lakewood.

Public School Facilities

Local public schools maintain the majority of sports facilities such as sports fields, gymnasiums, and playgrounds; however, public access is only possible during non-school hours. Middle and high schools typically have a football stadium with a track, a gym, several baseball/softball fields, and at least three tennis courts. Lakes High School also has a swimming pool. Elementary schools are usually equipped with a soccer field, multi-use backstop, and a covered basketball court; in addition, several have gyms. Recreation facilities owned by the school district are listed in Table 3.4-2.

Private Facilities

A large amount of recreation land is in private ownership in Lakewood. This includes facilities with some public access including two golf courses and Lakewold Gardens, as well as privately maintained parks serving residential subdivisions. Private indoor recreation facilities include the YMCA, the Lakewood Racquet Club, a senior center, community center, and Boys and Girls Club. Pierce College and St. Francis Cabrini School also have recreation facilities for their students. Privately owned recreation facilities are listed in Table 3.4-2.

More detailed information on the existing environment is contained in the City of Lakewood Parks and Recreation Master Plan prepared by JC Draggoo & Associates, November 14, 1997.

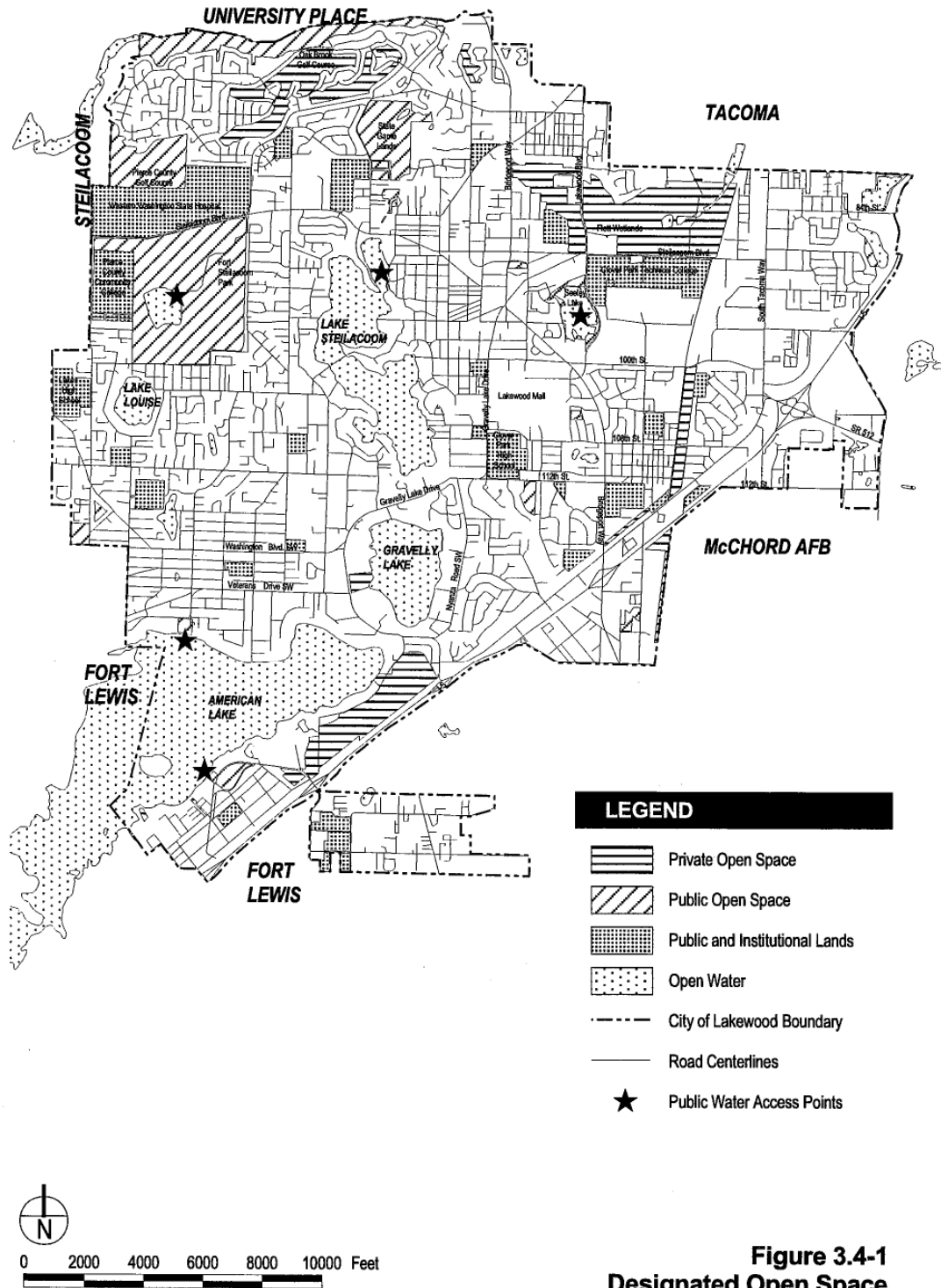


Figure 3.4-1
Designated Open Space
and Recreation Area Map

3.4.2 Environmental Impacts

Environmental impacts related to parks and recreation are discussed below for each of the alternatives under consideration.

Preferred Alternative

The Preferred Alternative includes goals and policies primarily pertaining to the Open Space and Recreation land use designation. These goals and policies also address trails as well as arts, culture, and history. The Preferred Alternative would rely on the 1997 Lakewood Parks and Recreation Master Plan²⁸ as a strategic document that sets priorities for park and recreation resources. The Preferred Alternative would also improve Lakewood's open space and recreation inventory to implement land use goals as illustrated by the following examples:

- Portions of the Burlington Northern Railroad track right-of-way would be designated Open Space to facilitate development of a linear park.
- New open spaces would be designated in the Springbrook neighborhood to provide amenities and natural drainage opportunities for higher density residential and industrial development.
- Undevelopable lands bordering Flett and Chambers creeks would be designated Open Space to protect habitat values.
- A number of private facilities providing significant public and semi-public recreation opportunities would be designated as Open Space.
- Urban design measures would be used, such as improved street trees, sidewalks, and other improvements, to enhance the livability of higher density areas and enhance connections with parks, schools, and other pedestrian destinations.
- A new park would be created in northeast Lakewood, serving open space, recreation, and hydrologic functions.

Given the scarcity of public open space and recreation land, increasing public shoreline access would be one very cost-effective and land efficient way to increase recreational opportunities for Lakewood citizens. This could be accomplished through a number of mechanisms ranging from enhancing existing public street ends to acquiring new waterfront park sites.

²⁸ The City of Lakewood commissioned Draggoo Associates, a parks planning consultant, to develop a citywide Parks and Recreation Master Plan, which was accepted by City Council in 1997. No SEPA review was performed, and the document has no adopted or official status.

Table 3.4-2: Public & Quasi-Public Park and Recreation Facilities By Planning Area.

Facilities	Description	Agency	Acreage
Planning Area 1			
Lakewood Active Park	neighborhood playground	City of Lakewood	2.2
Lakewood Kiwanis Park	neighborhood playground	City of Lakewood	2.8
Seeley Lake Park	lake and trails	Pierce County	47
Primley's Replat Park	undeveloped	City of Lakewood	.3
Clover Park H.S.	sports facilities	School District	34.3
Park Lodge Elementary	sports facilities	School District	5.8
Lakeview Elementary	sports facilities	School District	9.4
Lakewood Community Center	community center	Pierce County ¹	N/A
Boys and Girls Club	youth center	Private nonprofit	N/A
St. Francis Cabrini	softball & soccer fields	Private school	--
Planning Area 2			
Oakwood Elementary	sports facilities	School District	9.8
Southgate Elementary	sports facilities	School District	7.8
Lakewood YMCA	indoor recreation facility	Private nonprofit	N/A
Planning Area 3			
Lochburn Middle School	sports facilities	School District	21.4
Clover Park Technical College Trust	wetland	Private nonprofit	--
Lakewood Racquet Club	health club	Private club	N/A
Planning Area 4			
Chambers Creek Park	natural area & trails	Pierce County	155
Ft. Steilacoom Golf Course	public golf course	Pierce County	110
South Puget Sound Wildlife Area	game farm	State of Washington	82
Huddloff Middle School	sports facilities	School District	25.3
Oakbrook Elementary	sports facilities	School District	10
Custer Elementary	sports facilities	School District	11.6
Dower Elementary	sports facilities	School District	10
Oakbrook Country Club	private golf course	Private	--
Oakbrook 7 th Addition	open play area	Oakbrook 7 th Addition Park and Rec. District	1.3
Planning Area 5			
Ft. Steilacoom Park	regional park	Pierce County	270
Forest Park	neighborhood park	City of Lakewood	3.5
American Lake North Park	swimming beach and boat ramp	City of Lakewood	4.1
Lakeland Park	undeveloped water access	City of Lakewood	.5
Lakes High School	sports facilities	School District	.8
Mann Middle School	sports facilities	School District	39.2
Lake Louise Elementary	sports facilities	School District	22
Lake City Elementary	sports facilities	School District	9
Idlewild Elementary	sports facilities	School District	9.5
Lakewood Gardens	formal gardens	Private nonprofit	10
Tacoma Golf & Country Club	private country club	Private	--
Pierce College	swimming pool, fitness	Private college	--
Glenwood Acres Park	pool, tennis, playground	Private	1.1
Planning Area 6			
Tyee Park Elementary	sports facilities	School District	11.7
Planning Area 7			
Harry Todd Park	multi-use waterfront park	City of Lakewood	17.4
Tillicum Community Center	community center	Pierce County ²	--
Woodbrook Middle School	sports facilities	School District	38
Tillicum Elementary	sports facilities	School District	5

¹ Leased to Clover Park Technical College² To be operated and maintained by Tillicum Community Center Board after July 1, 2000

No Action Alternative

Parks and recreational facilities are classified by GMA as Public Facilities (RCW 36.70A.030). As such, these facilities can be addressed in the capital facilities element of a comprehensive plan, in a parks and recreation element of the comprehensive plan, or in a separate plan. As a newly incorporated city, Lakewood was not required to have a Capital Facilities Plan, and the Capital Facilities Element of the interim comprehensive plan does not address parks and recreation per se. This alternative assumes that park and recreation resources would remain as they are described in Section 3.4.1.

The quantity of land currently designated for recreation and open space is inadequate to support projected future population levels. Existing recreation and open space lands form a pattern of isolated patches, with no network of connecting greenways to link parks and provide wildlife habitat. While Lakewood has an abundance of natural assets, public access to these areas is and would likely remain extremely limited under this alternative.

Mixed-Use Alternative

The Mixed-Use Alternative would also increase the amount of open space and increase recreation facilities, including a proposed off-street trail. Given the relatively large population increases proposed under this alternative, existing open space deficiencies would likely increase in several areas of the city. The Mixed-Use Alternative would likely incorporate the 1997 Lakewood Parks and Recreation Master Plan.

3.4.3 Mitigation Measures

In recognition of the parks deficiencies identified above, the City sought additional public resources through a parks bond initiative on the September 1999 ballot. This ballot sought over \$14 million to implement the City's Parks and Recreation Master Plan. The City's September 1999 measure failed for lack of validation. It was placed on the November ballot in the hope of validation but again failed due to majority vote. Until funding can be secured to support parks acquisition, existing deficiencies will remain. Future parks ballots will need to make this issue compelling to voters.

Given the scarcity of public open space and recreation land, increasing public shoreline access would be one very cost-effective and land-efficient way to increase recreational opportunities for Lakewood citizens. This could be accomplished through a number of mechanisms ranging from enhancing existing public street ends for public use to acquiring new waterfront park sites.

3.4.4 Unavoidable Adverse Impacts

All three alternatives will result in growth, which will exacerbate existing open space and recreation deficiencies. These vary depending on neighborhood location and recreation need.

3.5 Housing

3.5.1 Affected Environment

Data and analysis about the affected environment are provided in the City of Lakewood background report to the comprehensive plan.

3.5.2 Environmental Impacts

Under SEPA (Chapter 197-11 WAC), housing impacts are generally confined to issues of addition or removal of units and indication of whether these units serve low, moderate, or higher income households. Questions relating to the role of community and the effects of displacement on residents are considered socioeconomic and outside the scope of environmental review under SEPA.

Environmental impacts for the Housing Element of the comprehensive plan are discussed below for the Preferred Alternative, the No Action Alternative, and the Mixed-Use Alternative. Impacts to housing capacity and location under these three alternatives are described in the Land Use chapter of this EIS. That section analyzes the City's ability to meet a targeted range of new households over the 20-year planning period.

As shown in the Land Use Element, the Preferred Alternative provides capacity for a net 7,107 new dwelling units. The No Action Alternative provides capacity for 12,844 new dwelling units, and the Mixed-Use Alternative provides capacity for 12,179 new units.

Under all three alternatives, future population growth in the City of Lakewood is likely to increase demand for housing to serve a broad range of household incomes and needs. The ability of the market to provide housing to meet these needs adequately depends on a number of factors, one of which is more prevalent in Lakewood than other Puget Sound cities. Lakewood has a fairly high rental vacancy rate, over 8% in 1999. While this represents a decline from vacancy levels in previous years, it still leaves some room for accommodating new households. Utilization depends in part on modernization and rehabilitation of these units; many may be vacant because of poor condition and/or insufficient size and configuration by current standards. In general, much of the multi-family housing stock is older. In particular, there is an excess supply of one-bedroom apartments that are not desirable in today's market.

Other factors in meeting population growth include the supply of developable land; availability of land zoned for higher densities; existence of incentives, such as density bonuses, for the provision of affordable units; preservation of the existing stock of affordable units; and the ability of development regulations to facilitate development in a timely and cost effective manner (e.g., streamlined review, impact fee waivers).

Under the No Action and Mixed-Use Alternatives, there is not likely to be difficulty meeting Pierce County's affordability goals that deal with a proportion of new housing being affordable to below-median income households. These goals have been accepted by the City of Lakewood. It may

be difficult to significantly reduce the current affordable housing deficit under the alternatives being considered by the City.

The City has limited powers and resources to produce or rehabilitate subsidized housing. Lakewood has already provided a significant amount of the regional supply of affordable housing. Significant change to the housing affordability picture will have to come from a regional financing effort. Pierce County will be reviewing affordability goals and fair share formulation shortly after the availability of data from the 2000 census. While the County does not have numeric targets at this time, the City could review its housing production and affordability in relation to state housing policies. (See Pierce County's Guidelines from GMCC to PCRC dated 9/9/93. See also the Countywide Planning Policies on pp 6-22 to 6-24 of the City of Lakewood Background Report to the Comprehensive Plan [EDAW 1997]).

Preferred Alternative

Changes in Housing

The Preferred Alternative provides the fewest new housing units, with 7,107 new units projected. This alternative focuses on preservation of existing single-family neighborhoods and the concentration of higher density housing in a limited number of neighborhoods. Protection of the large lot neighborhoods near the lakes is more expansive in this alternative than in the Mixed-Use Alternative. Property bordering lakes and stream corridors is also reduced to low density residential use.

Opportunities for development of housing are more restricted in the Preferred Alternative than in the Mixed-Use Alternative since single use designations replace mixed-use areas in the Bridgeport and Northeast portions of the city.

Perhaps the most significant feature of the Preferred Alternative from a residential perspective is the change in use of portions of the American Lake Gardens area and the Springbrook area from residential to a largely industrial designation. In total, 868 housing units, including mostly affordable units, could be lost as this area converts to industrial use. Some of these units are currently in need of modernization and repair, and are substandard in quality or served by failing septic systems. Many of these units can be expected to become vacant.

Seventy-five percent of the housing units built in the 1980s are renter-occupied. As of 1990, about one quarter of single-family units were renter-occupied (U.S. Bureau of the Census 1990).

Based on the land use patterns established in the Future Land Use Map, about 3,829 new single-family homes would be built, mostly in the Single-Family Residential designation. Approximately 4,466 new units of multi-family housing would be built, the majority (3,218) constructed in High Density Multi-Family land use designation. In addition, 544 new units of varied housing types would be built within the mixed-residential designation for the city as a whole. A portion of these housing gains will be offset by housing losses during redevelopment. In addition, on overlay zone permitting increased

density for senior housing is expected to add a relatively modest number of additional housing units for seniors.

Pierce County's fair share allocation of affordable housing (September 1993) sets targets for numbers of affordable units that cities and unincorporated areas should provide, although there are currently no adopted goals for Lakewood. These are based on current levels of moderate income households paying more than 30% of their income for housing and earning less than 95% of county median income (\$28,891 in 1999). The targets are adjusted according to a formula relating to jobs. The county is planning to rework these formulae based on the 2000 census data.

It is advisable for the City of Lakewood to monitor housing production and costs on an ongoing basis to ensure compliance with affordable housing goals as these are set by the County. County-wide policies currently require monitoring on a 5-year basis. While Lakewood housing prices and rents are currently affordable, house sales prices are rising. There are a number of means available to the City so that Lakewood can assist in continuing to meet goals in the future, such as development of policies encouraging accessory units. In addition, Lakewood may cooperate with other cities and public-private partnerships to respond to housing needs on a regional or subregional level.

According to an estimate based on the 1990 census, there were 4,835 households paying more than 30% of their income on housing who earn below 95% of county median income. This represents a little over 22% of the city's 22,754 households in 1990. To provide housing affordable to the same percent of new households, 1,604 housing units will need to be affordable to people earning under 95% of the county median income in 2017.

Goals and Policies

The goals and policies of the Housing Element support many of the objectives of the GMA, which include preserving existing neighborhoods and providing a range of housing opportunities.

In addition, current and forecast housing demand and the need for affordable housing are identified in the draft comprehensive plan. This information provides the basis for the draft comprehensive plan's policies, which meet Lakewood's particular needs and market conditions while fulfilling a number of GMA and County-Wide Planning Policies.

The Preferred Alternative would have an impact on residents of portions of American Lake Gardens and Springbrook who would be displaced by new development of industrial uses in these areas. The policies do not fully mitigate the loss of large numbers of units in American Lake Gardens and Springbrook nor do they provide specific opportunities for replacement housing. They do include methods to encourage production and modernization of housing. They do identify the possible use of CDBG funds for relocation for displaced residents. However, these funds would not be adequate for the purpose. If the policies included the statement that plans for redevelopment of

American Lake Gardens and Springbrook would change if adequate relocation resources were not found, they might provide sufficient mitigations.

The Lakewood comprehensive plan must be accompanied by a monitoring program and implementation strategies to comply with GMA (WAC 365-195-310-2). These are discussed in some policies, but are not sufficiently spelled out or quantified in the plan. Certain land use policies provide for annual reporting on affordable housing, but this is not an adequate monitoring program. These are not currently in the plan. When developed, the plan will provide all required sections of a housing element and can be evaluated in relation to adopted housing impacts. The proposed monitoring program and implementation strategies would mitigate some of the likely impacts on housing resulting from the Preferred Alternative.

No Action Alternative

Changes in Housing

No changes to the land uses described in the interim comprehensive plan would occur for the No Action Alternative. Future changes could occur as residential development proposals are submitted to the City of Lakewood. Their environmental impact would be evaluated on a case-by-case basis. Under this alternative, as many as 12,844 new households could be accommodated in the City of Lakewood.

Additional single-family residences would be accommodated through infill on existing zoned lots and new subdivisions. Some increase in housing units results from accessory dwelling units. Additional multi-family housing would be built in areas currently zoned for this use. Given the large number of new households that could be accommodated under the zoning associated with the interim comprehensive plan, the No Action Alternative would have minimal negative impact on the ability of the City to respond to population pressure.

Goals and Policies

Under the No Action Alternative, policies in the Lakewood interim comprehensive plan would continue to guide residential development in the City of Lakewood. The residential development concepts of the interim comprehensive plan provide a broad array of objectives and techniques to encourage the production and preservation of housing and neighborhoods for all segments of the population, including low income and special needs groups. They also provide for innovative design solutions, changes in regulatory environment, and development and implementation of financial tools to achieve the GMA housing goals²⁹.

The interim comprehensive plan includes sufficient policies and strategies to fulfil GMA and County-Wide Planning Policies in Pierce County.³⁰

²⁹ See pages 147-158 of interim comprehensive plan.

³⁰ For a discussion of GMA and County-Wide Planning Policies regarding housing, see the background report, p. 6-22.

Some policies relating to the location of different residential densities are covered in the Land Use Element of the comprehensive plan.

Implementation Strategies and Monitoring

The interim comprehensive plan includes strategies under each objective that are specific enough to define a public approach to housing. The interim comprehensive plan does not include a monitoring element as required under GMA.

Mixed-Use Alternative

Changes in Housing

This alternative has aggressive growth targets: approximately 12,179 new units by the year 2017. Moderate-density multi-family housing would develop near retail centers in a number of areas in the eastern half of the city. Additional residential development is concentrated in new designations that allow duplexes and some townhouses. The distribution of housing types varies by neighborhood. Accessory units are allowed within the single-family designation. The location of housing near services may lead to a better relationship between housing and other land uses.

The provision of sewers to Tillicum and American Lake Gardens opens the possibilities of higher quality residential development in these areas. Both areas are proposed for a mixture of single-family and multi-family housing. The size of the area designated as Community Center in Tillicum is reduced in comparison to the No Action Alternative, thus strengthening residential use in the neighborhood.

Goals and Policies

Since the Mixed-Use Alternative is more of a generalized land use concept than a fully developed comprehensive plan, no distinct goals and policies were developed.

3.5.3 Mitigation Measures

General

Provide a monitoring program to track housing availability and affordability, as called for in State and County-wide policies. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 3.2.1 (Housing Goals and Policies).

Provide a strategy plan, possibly as a separate document referred to in the plan, with quantified targets and timelines to build on housing policies.

Preferred Alternative

Housing policies should be expanded to include policies for replacement of existing housing for low and moderate income households. Additional policies to encourage housing production could be added if residential capacity does not meet the housing needs of future Lakewood residents as required under the

GMA and found in Pierce County's population targets. Examples of suggested new policy language include:

Additional Policies under GOAL LU-5:

- Improve the existing multi-family housing stock by encouraging, through public-private partnerships, revitalization and replacement of existing apartment complexes in appropriate locations throughout the city.
- Encourage improving management practices of apartment projects by providing technical assistance and other support to apartment management organizations.

Additional Policies under GOAL LU-7:

- Establish public programs and/or public-private partnerships to encourage and assist redevelopment of outdated or substandard multi-family dwellings aimed at providing opportunities for affordable housing.
- Provide incentives for developers to increase the supply of affordable housing through mechanisms such as density bonuses or fee waivers.
- Develop strategies, including financial assistance, to support the relocation of households displaced by City actions, including rezoning.

No Action Alternative

This alternative would accommodate the largest number of households. Other variables being equal, the large supply can help keep prices and rents lower than in options with tighter controls on supply.

The policies in the interim comprehensive plan³¹ that indicate the intention to orient regulations toward development feasibility, develop financial tools, encourage redevelopment-rehabilitation, and promote the availability of special needs housing would mitigate possible loss of units or reduction in affordability.

A monitoring program could provide additional mitigation. Mixed-Use Alternative

The Mixed-Use Alternative would require mitigation measures similar to the No Action Alternative.

3.5.4 Unavoidable Adverse Impacts

Preferred Alternative

Under the Preferred Alternative, the loss of up to 572 existing dwelling units in American Lake Gardens and 298 dwelling units in Springbrook is likely to be an unavoidable adverse impact. Even if some attempt is made to accommodate other multi-family or lower cost units elsewhere in the city, the lower overall capacity of this alternative and the limited opportunities for

³¹ Lakewood interim comprehensive plan Housing Element, 1996 pp 136-158.

multi-family housing are likely to adversely impact a substantial portion of low and moderate income households now living in American Lake Gardens and Springbrook.

No Action Alternative

Under the policies of the interim comprehensive plan, gradual change in the residential districts around the lakes is highly likely as large lots are subdivided. From the point of view of City policies proposed in the comprehensive plan, this would be a negative impact. However, under the standards in SEPA, the likely result would be a greater number of housing units. Thus, it would not be an adverse impact under SEPA.

The policies in the interim comprehensive plan appear to support GMA goals and policies in most respects. However, without a monitoring plan, it would be difficult to track the production and affordability of housing relative to GMA goals and SEPA standards.

Mixed-Use Alternative

This alternative also provides a large capacity for new residential units, similar to the No Action Alternative. The slightly lower supply due to lower capacity might contribute to rising rents and house prices but is unlikely to be a significant negative impact.

3.6 Transportation

3.6.1 Affected Environment

For this transportation analysis, elements of the affected environment include the existing roadway characteristics, traffic volumes, traffic operations (including level-of-service), accident history, transit service, pedestrian and bicycle facilities, transportation demand management, and transportation deficiencies.

Existing Roadway Characteristics

The City of Lakewood's arterial street classifications are shown in Figure 3.6-1. These roadway classifications identify roads according to their uses and serve as the basis for planning roadway improvements. The following definitions serve as a general guide for classifying streets:

- Principal arterials - are roadways that provide access to principal centers of activity. These roadways serve as corridors between principal suburban centers, larger communities, and between major trip generators inside and outside the plan area. Service to abutting land is subordinate to travel service to major traffic movements. The principal transportation corridors within the City of Lakewood are principal arterials. These roadways typically have daily volumes of 15,000 vehicles or more.
- Minor arterials - are intra-community roadways connecting community centers with principal arterials. They provide service to medium-size trip generators, such as commercial developments, high schools and some

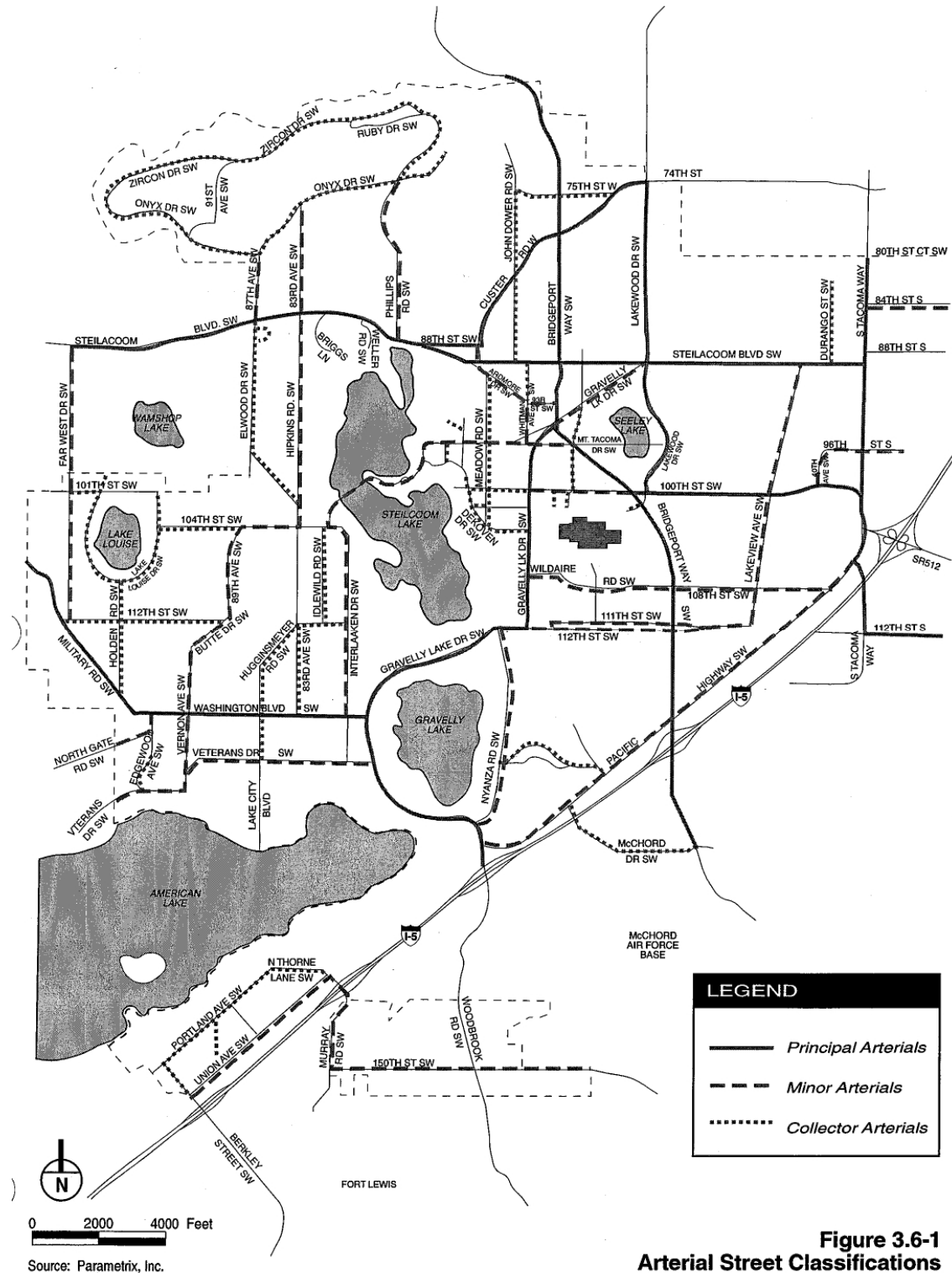


Figure 3.6-1
Arterial Street Classifications

junior high/grade schools, warehousing areas, active parks and ballfields, and other land uses with similar trip generation potential. These roadways place more emphasis on land access than do principal arterials and offer lower traffic mobility. In general, minor arterials serve trips of moderate length, and have volumes of 5,000 to 20,000 vehicles per day.

- **Collector arterials** - connect residential neighborhoods with smaller community centers and facilities as well as provide access to the minor and principal arterial system. These roadways provide both land access and traffic circulation within these neighborhoods and facilities. Collector arterials typically have volumes of 2,000 to 8,000 vehicles per day.
- **Local access roads** - include all non-arterial public city roads and private roads used for providing direct access to individual residential or commercial properties. Service to through traffic movement usually is deliberately discouraged.

Planning for the comprehensive plan transportation needs primarily focuses on the arterial street system within the City of Lakewood since local access streets typically do not have capacity deficiencies. As shown in Figure 3.6-1, principal arterials in the City of Lakewood include South Tacoma Way, Pacific Highway Southwest, Steilacoom Boulevard, Bridgeport Way, a portion of Gravelly Lake Drive, Custer Road, 100th Street SW, Lakewood Drive, Washington Boulevard, Military Road, and a small segment of 112th Street SW.

Existing intersection traffic control devices are shown on Figure 3.6-2. All major arterial street intersections are signalized. Figure 3.6-2 also depicts existing high-accident intersection locations.

Existing Traffic Volumes

Year 1995 daily and p.m. peak hour traffic volumes were obtained from the City of Lakewood and Pierce County Public Works Department for all principal and minor arterials within the City of Lakewood. The existing daily traffic volumes are shown in Figure 3.6-3. As shown, high daily traffic volumes are generally experienced along principal arterials, which carry volumes ranging from approximately 13,000 to 43,000 trips per day. Traffic volumes are the highest in the vicinity of interchanges with 1-5, with the highest daily volume occurring at South Tacoma Way north of the 1-5/SR-512 interchange (about 43,800 vehicles per day). Volumes are generally lower in the southern and western areas of the city, where many residential neighborhoods currently exist.

Some p.m. peak hour turning movement volumes were also obtained from Pierce County or were derived from counts performed by Parametrix, Inc. (a contractor to the City of Lakewood). The p.m. peak hour turning movement volumes were available for the following signalized intersections:

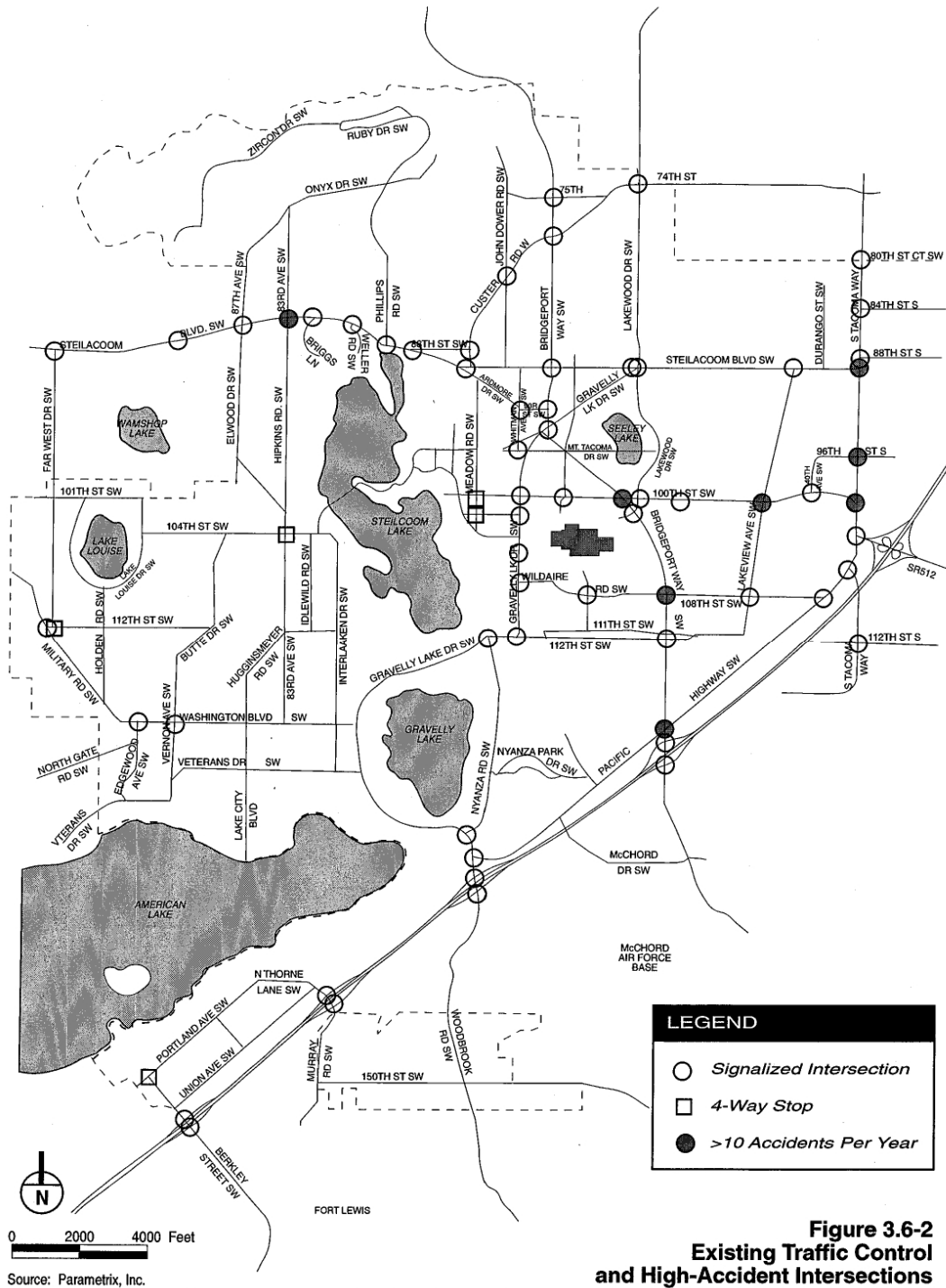


Figure 3.6-2
Existing Traffic Control
and High-Accident Intersections



- Steilacoom Boulevard SW/83rd Avenue SW
- Steilacoom Boulevard SW/87th Avenue SW
- Steilacoom Boulevard SW/88th Avenue SW
- Bridgeport Way SW/Custer Road
- Bridgeport Way SW/108th Street SW
- Bridgeport Way SW/112th Street SW
- Gravelly Lake Drive SW/100th Street SW
- Lakeview Drive SW/100th Street SW
- Lakeview Drive SW/108th Street SW

Existing Traffic Operations

Level of service (LOS) is an estimate of the quality and performance of transportation facility operations in a community. The methodology outlined in the 1997 Highway Capacity Manual (HCM) (Transportation Research Board 1994) is commonly used for determining LOS. According to the HCM, the degree of traffic congestion and delay is rated using the letter “A” for the least amount of congestion to the letter “F” for the highest amount of congestion (i.e., LOS A through LOS F). GMA requires the City of Lakewood to establish LOS standards. The choice of a particular LOS threshold can vary by planning subarea, roadway classification, or specific corridor or street. LOS D is usually considered the minimum acceptable standard in urban areas. With this level of service, some delays are expected for certain traffic movements.

The following LOS categories provide general descriptions of the different levels of service defined in the HCM:

- **LOS A** - represents a free-flow condition. Travel speeds are at or near the speed limit and little to no delay exists. Freedom to select desired speeds and to make turns and maneuver within the traffic stream is extremely high.
- **LOS B** - represents a zone of stable flow. Drivers still have reasonable freedom to select their travel speeds. Minor average delays of 5 to 15 seconds per vehicle are experienced at signalized intersections.
- **LOS C** - still falls within the zone of stable flow, but travel speeds and vehicle maneuverability are more closely controlled by the higher volumes. The selection of speed is not affected by the presence of others, and maneuvering within the traffic stream requires vigilance on the part of the driver. Longer average delays of 15 to 25 seconds per vehicle are experienced at signalized intersections.
- **LOS D** - approaches unstable flow. Travel speed and freedom to maneuver are somewhat restricted, with average delays of 25 to 40

seconds per vehicle at signalized intersections. Small increases in traffic flow can cause operational difficulties at this level.

- **LOS E** - represents operating conditions at or near the capacity of the roadway. Low speeds (approaching 50% of normal) and average intersection delays of 40 to 60 seconds per vehicle are common. Freedom to maneuver within the traffic stream is extremely difficult. Any incident can be expected to produce a breakdown in traffic flow with extensive queuing.
- **LOS F** - describes forced flow operation at very low speeds. Operations are characterized by stop-and-go traffic. Vehicles may progress at reasonable speeds for several hundred feet or more, and then be required to stop in a cyclic fashion. Long average delays of more than 60 seconds per vehicle occur at signalized intersections.

A more technical method of measuring LOS is described in the HCM, which involves the calculation of the volume-to-capacity ratio (V/C) of a roadway or intersection. The V/C ratio ranges shown in Table 3.6-1 have been developed for determining planning level mid-block LOS on urban and rural roadways.

Table 3.6-1: Level of Service Criteria for Urban and Rural Roadways.

LOS		Volume to Capacity (V/C) Ratio
A	less than or equal to	0.3
B	less than or equal to	0.5
C	less than or equal to	0.75
D	less than or equal to	0.90
E	less than or equal to	1.0
F	greater than	1.0

V/C ratios and LOS were calculated for mid-block arterial roadway sections throughout the City of Lakewood, based on current p.m. peak hour traffic volumes. The results are shown in Table 3.6-2.

Table 3.6-2: City of Lakewood Existing Corridor Levels of Service.

Street Name/Section	Highest One-Way Peak Hour Volume			V/C		LOS	
	a.m.	p.m.	One-Way Capacity ¹	a.m.	p.m.	a.m.	p.m.
Ardmore Drive SW							
southeast of Steilacoom Blvd. SW	486	641	720	0.68	0.89	C	D
northwest of Whitman Avenue SW	451	579	720	0.63	0.80	C	D
Bridgeport Way W							
north of Gravelly Lake Drive SW	865	1182	2050	0.42	0.58	B	C
north of Custer Road W	1068	1021	2050	0.52	0.50	C	B
north of 75th Street W	1105	1336	2050	0.54	0.65	C	C
north of 111th Street SW	997	1100	2050	0.49	0.54	B	C
south of Lakewood Drive SW	865	1166	2050	0.42	0.57	B	C
south of Pacific Highway SW	1008	1191	2050	0.49	0.58	B	C
north of Pacific Highway SW	1065	1336	2050	0.52	0.65	C	C
at Clover Creek bridge south of I-5	947	1298	2050	0.46	0.63	B	C
Custer Road SW/W							
north of 88th Street SW	969	1118	1825	0.53	0.61	C	C
northeast of Bridgeport Way SW	1103	1039	1825	0.60	0.57	C	C
southwest of Bridgeport Way SW	1050	1038	1825	0.58	0.57	C	C
Gravelly Lake Dr. SW							
south of Mount Tacoma Drive SW	798	1130	2050	0.39	0.55	B	C
west of 112th Street SW	886	1195	2050	0.43	0.58	B	C
south of Pacific Highway SW	1325	1583	2050	0.65	0.77	C	D
north of Pacific Highway SW	1240	2147	2050	0.60	1.05	C	F
west of end Nyanza Rd. SW (south)	882	869	975	0.90	0.89	D	D

Table 3.6-2: City of Lakewood Existing Corridor Levels of Service.

Street Name/Section	Highest One-Way Peak Hour Volume			V/C		LOS	
	a.m.	p.m.	One-Way Capacity ¹	a.m.	p.m.	a.m.	p.m.
Hipkins Road SW							
south of Steilacoom Blvd. SW	367	411	720	0.51	0.57	C	C
north of 104th Street SW			720				
Interlaaken Drive SW							
east of Bridge #3192A	184	374	720	0.26	0.52	A	C
Lakewood Drive SW							
north of Steilacoom Blvd. SW	664	937	1825	0.36	0.51	B	C
south of Steilacoom Blvd. SW	528	683	2050	0.26	0.33	A	B
north of 74th Street W	799	1082	1825	0.44	0.59	B	C
south of 74th Street W	602	723	1825	0.33	0.40	B	B
north of 100th Street SW	517	577	2050	0.25	0.28	A	A
Military Road SW							
south of 112th Street SW	372	613	975	0.38	0.63	B	C
Mount Tacoma Drive SW							
west of Gravelly Lake Drive	422	498	975	0.43	0.51	B	C
Murray Road SW							
north of 146th Street SW	498	727	720	0.69	1.01	C	F
North Thorne Lane SW							
southeast of Union Avenue SW	275	523		0.38	0.73	B	C
Nyanza Road SW							
north of Gravelly Lake Drive SW	434	673	975	0.45	0.69	B	C
Pacific Highway SW							
east of Gravelly Lake Drive SW	231	392	720	0.32	0.54	B	C
Phillips Road SW							
north of Steilacoom Blvd. SW	462	448	720	0.64	0.62	C	C
South Tacoma Way							
south of Steilacoom Blvd. SW	965	1209	2050	0.47	0.59	B	C
north of Steilacoom Blvd. SW	1050	1356	2050	0.51	0.66	C	C
north of 96th Street S	976	1182	2050	0.48	0.58	B	C
south of 100th Street SW	1672	1977	2900	0.58	0.68	C	C
south of SR-512	834	1147	2050	0.41	0.56	B	C
Steilacoom Blvd. SW							
west of 83rd Ave. SW/Hipkins Rd. SW	995	1330	2050	0.49	0.65	B	C
west of 87th Avenue SW	1063	985	1825	0.58	0.54	C	C
east of Phillips Road	1629	1759	2050	0.79	0.86	D	D
west of Phillips Road SW	1235	1636	1825	0.68	0.90	C	D
southeast of 88th Street SW	776	1068	1825	0.43	0.59	B	C
Union Avenue SW							
northeast of Berkeley Street SW	420	362	720	0.58	0.50	C	B
southwest of North Thorne Lane SW	195	421	720	0.27	0.58	A	C

Table 3.6-2: City of Lakewood Existing Corridor Levels of Service.

Street Name/Section	Highest One-Way Peak Hour Volume			V/C		LOS	
	a.m.	p.m.	One-Way Capacity ¹	a.m.	p.m.	a.m.	p.m.
Veterans Drive SW							
west of Gravelly Lake Drive SW	307	399	720	0.43	0.55	B	C
Washington Blvd. SW							
east of Vernon Avenue SW	551	706	975	0.57	0.72	C	C
west of Edgewood Drive SW	698	665	975	0.72	0.68	C	C
west of Vernon Avenue SW	349	660	975	0.36	0.68	B	C
west of Gravelly Lake Drive SW	1007	985	975	1.03	1.01	F	F
74th Street W							
west of Lakewood Drive SW	1065	1397	2050	0.52	0.68	C	C
87th Avenue SW							
south of Steilacoom Blvd. SW	118	170	720	0.16	0.24	A	A
north of Steilacoom Blvd SW	439	552	975	0.45	0.57	B	C
88th Street SW							
east of Steilacoom Blvd. SW	1014	836	1825	0.56	0.46	C	B
100th Street SW							
east of Lakeview Drive SW	829	1084	2050	0.40	0.53	B	C
104th Street SW							
west of Hipkins Road SW	246	388	720	0.34	0.54	B	C
108th Street SW							
west of Pacific Highway SW	453	551	720	0.63	0.77	C	D
112th Street SW/S							
west of Bridgeport Way SW	454	314	720	0.63	0.44	C	B

¹ The Highway Capacity Manual was used as a guideline for estimating one-way capacities for these roadways, based on facility type, number of lanes, traffic control, and channelization.

LOS D was selected as the initial threshold to identify system deficiencies. This is the LOS standard used in most urban areas in the Puget Sound region and serves as a reasonable initial threshold to begin identifying deficiencies in the network. Figure 3.6-4 highlights the LOS D or worse arterial segments within the City of Lakewood under existing conditions (1995).

The following existing roadway sections exceed the LOS D threshold during the a.m. and/or p.m. peak hour:

- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F, p.m. peak)
- Murray Road SW north of 146th Street SW (LOS F, p.m. peak)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F, a.m. and p.m. peak)

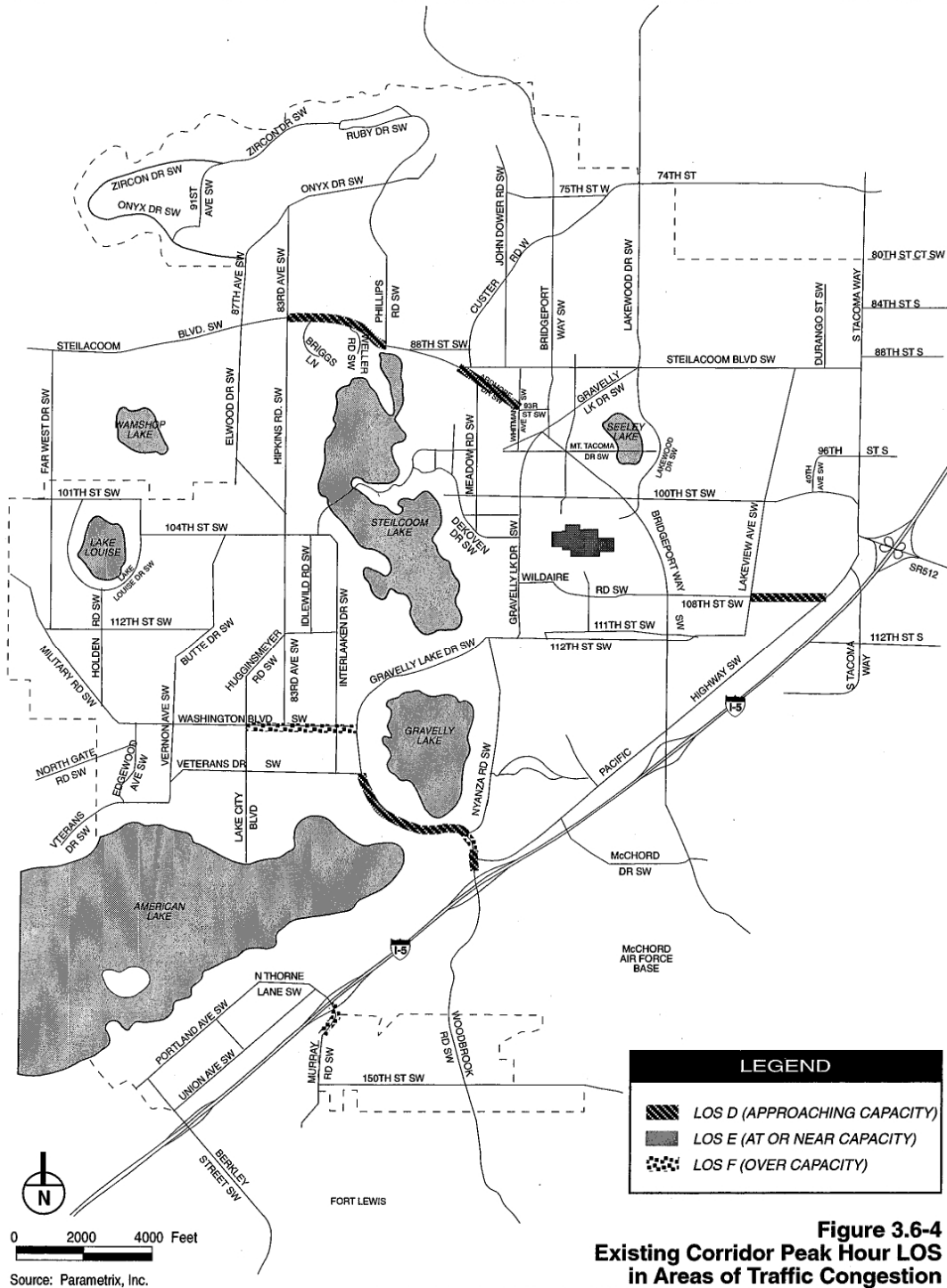


Figure 3.6-4
Existing Corridor Peak Hour LOS
in Areas of Traffic Congestion

In addition, seven arterial segments along Ardmore Drive SW, Gravelly Lake Drive C) SW, Steilacoom Blvd. SW, and 108th Street SW operate at the LOS D threshold during the p.m. peak hour. One arterial segment on Steilacoom Blvd. SW and one segment of Gravelly Lake Drive SW operate at LOS D during the a.m. peak.

The HCM methodology for signalized intersection analysis was also used at several major traffic signal-controlled intersections. At these intersections, level of service is related to the average delay experienced by all vehicles as they approach the intersection. Table 3.6-3 summarizes the relationship between level of service and average delay for signalized intersections.

Table 3.6-3: Level of Service Criteria for Signalized Intersections.

Level of Service	Average Delay (seconds per vehicle)
A	≤ 5.0
B	> 5.0 - ≤ 15.0
C	> 15.0 - ≤ 25.0
D	> 25.0 - ≤ 40.0
E	> 40.0 - ≤ 60.0
F	> 60.0

Based on discussions with City of Lakewood Public Works staff, the following signalized intersections were selected for analysis:

- Steilacoom Boulevard SW/83rd Avenue SW
- Steilacoom Boulevard SW/87th Avenue SW
- Steilacoom Boulevard SW/88th Avenue SW
- Bridgeport Way SW/Custer Road
- Bridgeport Way SW/108th Street SW
- Bridgeport Way SW/112th Street SW
- Gravelly Lake Drive SW/100th Street SW
- Lakeview Drive SW/100th Street SW
- Lakeview Drive SW/108th Street SW

The results of the signalized intersection LOS analysis are summarized in Table 3.6-4. As shown, all analyzed intersections are currently operating at acceptable levels of service (LOS C or better).

Table 3.6-4: City of Lakewood Existing Levels of Service for Signalized Intersections.

Signalized Intersection	Level of Service	Delay
Steilacoom Boulevard SW/83 rd Avenue SW	C	19.4
Steilacoom Boulevard SW/87 th Avenue SW	B	13.8
Steilacoom Boulevard SW/88 th Avenue SW	B	8.6
Bridgeport Way SW/Custer Road	C	23.6
Bridgeport Way SW/108 th Street SW	B	14.8
Bridgeport Way SW/112 th Street SW	B	10.4
Gravelly Lake Drive SW/100 th Street SW	B	10.5
Lakeview Drive SW/100 th Street SW	B	11.6
Lakeview Drive SW/108 th Street SW	C	17.2

Accident History

Accident records for the City of Lakewood were reviewed for the years 1992 through June 1996. Accident rates and accident severity (property damage only, personal injury, fatality) were reviewed for all signalized intersections and roadway segments in the City of Lakewood. The detailed results of this analysis are included in Appendix B.

The following intersections have averaged close to 10 or more accidents per year for the past 5 recorded years:

- 100th Street SW/Lakeview Avenue SW
- Bridgeport Way SW/Pacific Highway SW
- Bridgeport Way SW/108th Street SW
- Bridgeport Way SW/100th Street SW
- South Tacoma Way/100th Street SW
- South Tacoma Way/96th Street SW
- South Tacoma Way/Steilacoom Blvd. SW
- Steilacoom Blvd. SW/83th Avenue SW

A closer review of the accidents at these intersections shows that no fatalities have occurred at these locations in the 5-year period represented. Furthermore, these intersections averaged accident rates below 1.0 per million entering vehicles (mev), with the exception of the South Tacoma Way/Steilacoom Blvd. SW intersection. Therefore, for the most part, the intersections experiencing frequent accidents tended to also carry the highest traffic volumes. The intersection of 100th Street SW/59th Avenue SW should be noted for its high accident rate of 1.1 accidents per mev, despite its relatively average history of accident occurrences.

Transit Service

Pierce Transit provides transit service to the City of Lakewood. There are currently nine local routes serving the City of Lakewood, offering connections to McChord AFB, Parkland Transit Center, Fort Lewis, Steilacoom, Tacoma Mall, and downtown Tacoma. Eight of these routes connect at the Lakewood Transit Center, adjacent to the north side of Lakewood Mall.

In addition to the local transit routes, regional express routes to Seattle and Olympia also serve the SR-512 Park and Ride, located at the junction of SR-512 and South Tacoma Way. Table 3.6-5 lists Pierce Transit's bus routes currently serving the City of Lakewood. Service for many of these routes may decrease due to voter approval of Initiative 695 (1-695). In January 2000, all revenues from the motor vehicle excise tax (MVET), a major source of funding for Pierce Transit, will be eliminated due to 1-695.

Pierce Transit also provides door-to-door service for the mentally ill and physically impaired via the Shuttle. This service is available through the Pierce Transit Dispatch Office. Rideshare and ridematch programs are also available for commuters who want to start or join a carpool or vanpool.

Table 3.6-5: Pierce Transit Bus Service Routes.

Route No.	Route Description	Service Area	Schedule
48	Sheridan-M Street	Lakewood Mall to Downtown Tacoma	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
200	Bridgeport	Tacoma Community College to Lakewood Mall	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
202	S. 72nd Street	Lakewood Mall to Sumner	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
204	Lakewood-Parkland	Parkland to Lakewood Mall	Weekdays - every 30 minutes Sat./Sun. - every 1 hour
206	Fort Lewis	Lakewood Mall to Fort Lewis	Weekdays - every 30 minutes Saturdays - every 30 minutes Sundays - every 1 hour
210	Lakewood	Downtown Tacoma to Lakewood Mall	Weekdays - every 15 minutes Saturdays - every 30 minutes Sundays - every 1 hour
212	Steilacoom	Lakewood Mall to Steilacoom	Weekdays - every 30 minutes Weekends - every 1 hour
214	Washington	Lakewood Mall to Pierce College	Weekdays(AM)-every 30 min. Weekdays(PM)-every 1 hour Sat./Sun. - every 1 hour
300	S. Tacoma Way	Tacoma Mall to McChord Commissary	Weekdays - every 30 minutes Saturdays - every 30 minutes Sundays - every 1 hour
591X, 592X, 594X	Seattle Express	Downtown Seattle (all), Tacoma Dome (591X, 594X), Downtown Tacoma (594X), SR-512 Park & Ride (all)	Wkdys (5-8am)-every 15 min. Wkdys (8am-6pm)-every 30 min. Saturdays - every 30 minutes Sundays - every 1 hour
601X, 603X, 605X, 620X	Olympia Express	Olympia (all), SR-512 P&R (all), Tacoma Community College (601X), Tacoma (602X, 605X, 620X)	Wkdys -every 15 min. to 1 hour Sat./Sun. - no service

Source: Pierce Transit, 1997.

Pedestrian and Bicycle Facilities

Table 3.6-6 lists the locations of non-motorized transportation facilities in the City of Lakewood. Most other areas in the City of Lakewood lack sidewalks or paved shoulders. A review of City of Lakewood traffic accidents was conducted to determine the number of accidents involving pedestrians and/or bicyclists that occurred between 1990 and September 1996. The results of the review are shown in Table 3.6-7.

Other Project-Related Issues

Other future issues that could have a significant impact on roadway capacity in different areas of the city include:

- Construction of the proposed Cross-Base Highway and potential land use changes in American Lake Gardens.
- Redevelopment of the South Tacoma Way (SR-99) corridor.
- Reconstruction of the 1-5/SR-512 interchange and connection to 100th Street SW.
- Location of the Sound Transit commuter rail station and associated redevelopment in the station area.

Table 3.6-6: Existing Non-Motorized Transportation Facilities.

Location	Facility
Fort Steilacoom Park Trails	Multi-Use Trails
84th St. S - S. Tacoma Way to Tacoma City Limit	Sidewalks
87th Ave. SW - Steilacoom Blvd. to Onyx Dr. SW	Paved Shoulders
96th St. S - 40th Ave. SW to 26th Ave.	Sidewalks
108th St. SW - Davisson Rd. SW to Lakeview Ave. SW	Sidewalks
112th St. SW - Military Rd. SW to Butte Dr. SW	Paved Shoulders
Berkeley St. SW (156th St. - Portland Ave. SW to SR 5 Northbound Access)	Sidewalks
Bridgeport Way - Arrowhead Rd. to Lakewood Dr. SW	Sidewalks
Bristol Ave. SW - Lakewood Mall to 100th St. SW	Sidewalks
Hipkins Rd. SW - Angle Lane SW to Steilacoom Blvd.	Paved Shoulders Exist: (Narrow - 92nd St. to Angle)
Lake St./Maple St./Orchard St./Washington St. SW (Tillicum Sidewalks)	Sidewalks
Gravelly Lake Dr. SW - North End Nyanza Rd. SW to Bridgeport Way	Sidewalks
Whitman Ave. - Motor Ave. to Ardmore Ave.	Sidewalks

Table 3.6-7: Year 1990 to 1996 Traffic Accidents Involving Pedestrians or Bicyclists.

Type	Year						
	1990	1991	1992	1993	1994	1995	1996 ¹
Pedestrian	19	19	23	24	20	14	14
Bicycle	10	19	16	11	15	15	12

¹ January through September only.

- Location of the proposed City Hall/Civic Center complex and potential redevelopment around the complex.
- Increase in freight and passenger rail service that may require grade separation of existing at-grade crossings.. 100th Street SW and Bridgeport Way have been mentioned as possible locations.

As shown in Table 3.6-7, more traffic accidents involved pedestrians than bicycles. Almost all of the accidents were personal injury accidents. Only two of the listed accidents, both of which involved bicyclists, resulted in property damage only. Ten fatalities were experienced in the accidents. Of these, nine accidents involved pedestrians and one accident involved a bicyclist. Fatalities occurred at the following locations:

- Farwest Drive SW south of Steilacoom Blvd. SW (involved bicyclist)
- Farwest Drive SW north of 102nd Street SW
- Military Road SW southeast of Wildwood Avenue SW
- Pacific Highway SW southwest of the BNSF railroad bridge
- Pacific Highway SW northeast of Clover Creek bridge
- Pacific Highway SW northeast of 47th Avenue SW
- Pacific Highway SW southwest of 112th Street SW
- Pacific Highway SW northeast of New York Avenue SW
- South Tacoma Way south of 86th Street South
- 108th Street SW at Kendrick Street SW

Transportation Demand and Systems Management

Travel Demand Management (TDM) and Transportation Systems Management (TSM) strategies attempt to optimize the capacity of the existing transportation system through signalization and other traffic engineering mechanisms. TSM strategies focus on managing transportation facilities and the supply of transportation options. The goal of TSM is to maintain and enhance optimal system efficiency for moving people and goods. TDM strategies use the same concepts to affect travel behavior and the demand to use transportation facilities. The goal of TDM is to reduce, eliminate, or shorten trips, or shift trips to non-peak periods.

Washington State currently has its own TDM law in effect, the Commute Trip Reduction Act (CTR). This law requires companies with 100 or more full-time employees that begin work between 6:00 and 9:00 a.m. to establish and implement a TDM program. The law includes trip reduction goals for all qualifying businesses of 20% by 1997, 25% by 1999, and 35% by 2005. Washington State's CTR program is currently funded by the Clean Air Fund, which could be affected by the passage of I-695.

The Washington State Department of Transportation (WSDOT) recently published a summary of CTR effects on travel in the eight counties affected by the act, between 1993 and 1995. The report shows that the total number of single-occupant vehicle (SOV) trips decreased by 5.6% during this period. SOV trips in Pierce County areas that include CTR companies decreased by 5.4%. A total of 57 companies in the urbanized Tacoma/Fife area showed reductions of 5.9%, and 28 companies in rural Pierce County showed reductions of 4.6% in SOV trips.

CTR applies to several major employers in and around the City of Lakewood, as listed in Table 3.6-8.

Table 3.6-8: CTR Affected Employers in the City of Lakewood.

Company	Location
Fort Lewis Veterans Administration Medical Center	American Lake (West of I-5)
U.S. Army/Fort Lewis	East of I-5, South of 150th St. SW/Perimeter Rd.
McChord AFB	East of I-5, North of 150th St. SW/Perimeter Rd.
Pierce College	Steilacoom
Western State Hospital	Fort Steilacoom
Clover Park Technical College	Lakeview (West of I-5)

Source: Pierce County

3.6.2 Environmental Impacts

Travel Demand Forecasting and Model Development

A citywide transportation planning model was developed using the EMME/2 computer software package. An important function of a model is its ability to analyze future development scenarios in terms of traffic impacts. This model calculates trip generation based on land use characteristics, allowing the impact of different land use types and development intensities to be evaluated.

To project future transportation demand, three alternative land use and development scenarios were assumed (the Preferred Alternative, the No Action Alternative, and the Mixed-Use Alternative). For the Preferred and Mixed-Use Alternatives, the I-5/SR-512 interchange improvements, including a direct connection to 100th Street SW, was evaluated by incorporating a “with” and “without improvement” case into the analysis.

For the No Action Alternative, the future land use assumptions contained in the Pierce County EMME/2 travel demand forecasting model were adjusted to reflect more recent information developed for this EIS. These future land use assumptions for the No Action Alternative are based on current zoning. For the Preferred and Mixed-Use Alternatives, land use assumptions within Lakewood were modified to reflect changes in the type and intensity of future land use and development. (Refer to Section 3.2.2 for information on land use totals by planning area.)

EMME/2 model output includes peak hour roadway traffic volumes given specific land use or transportation network scenarios. The model developed for the City of Lakewood provides peak hour arterial link volumes on all streets.

The land use data used for developing the traffic model were divided into Transportation Analysis Zones (TAZs) within the seven designated planning areas identified and described in Section 3.2 (Land Use). These TAZs are shown in Figure 3.6-5. Population growth forecasts based on land use within these planning areas were linked to the TAZs and used as inputs to drive the travel demand forecasting models.

The seven designated planning areas for the City of Lakewood (illustrated in Figure 3.2-2) include:

Table 3.6-9 lists the projected resident and job populations for the No Action, Preferred and Mixed Use Alternatives by planning area. These were the assumptions used to conduct the traffic impact analyses.

Table 3.6-9: Summary of Revised Lakewood Capacity Analysis of Residential and Employment Growth

Planning Areas	Residents			Jobs ³²		
	Preferred	No Action	Mixed Use	Preferred	No Action	Mixed Use
#1	4,392	4,263	5,330	3,233	3,997	3,307
#2	343	3,049	3,673	5,538	3,213	3,905
#3	4,450	2,802	4,587	742	1,498	1,126
#4	866	1,932	1,920	405	444	487
#5	6,137	11,106	4,618	206	287	375
#6	1,885	6,503	5,685	1,230	392	1,935
#7	2,265	2,197	4,391	921	151	167
Total	17,500³³	31,852	30,204	12,275	9,982	11,237

³² Includes public sector employment located in public and institutional employment areas estimated based on actual employment and employment projections.

³³ Assumes reduction of 2,153 residents due to housing units lost to industrial designation.

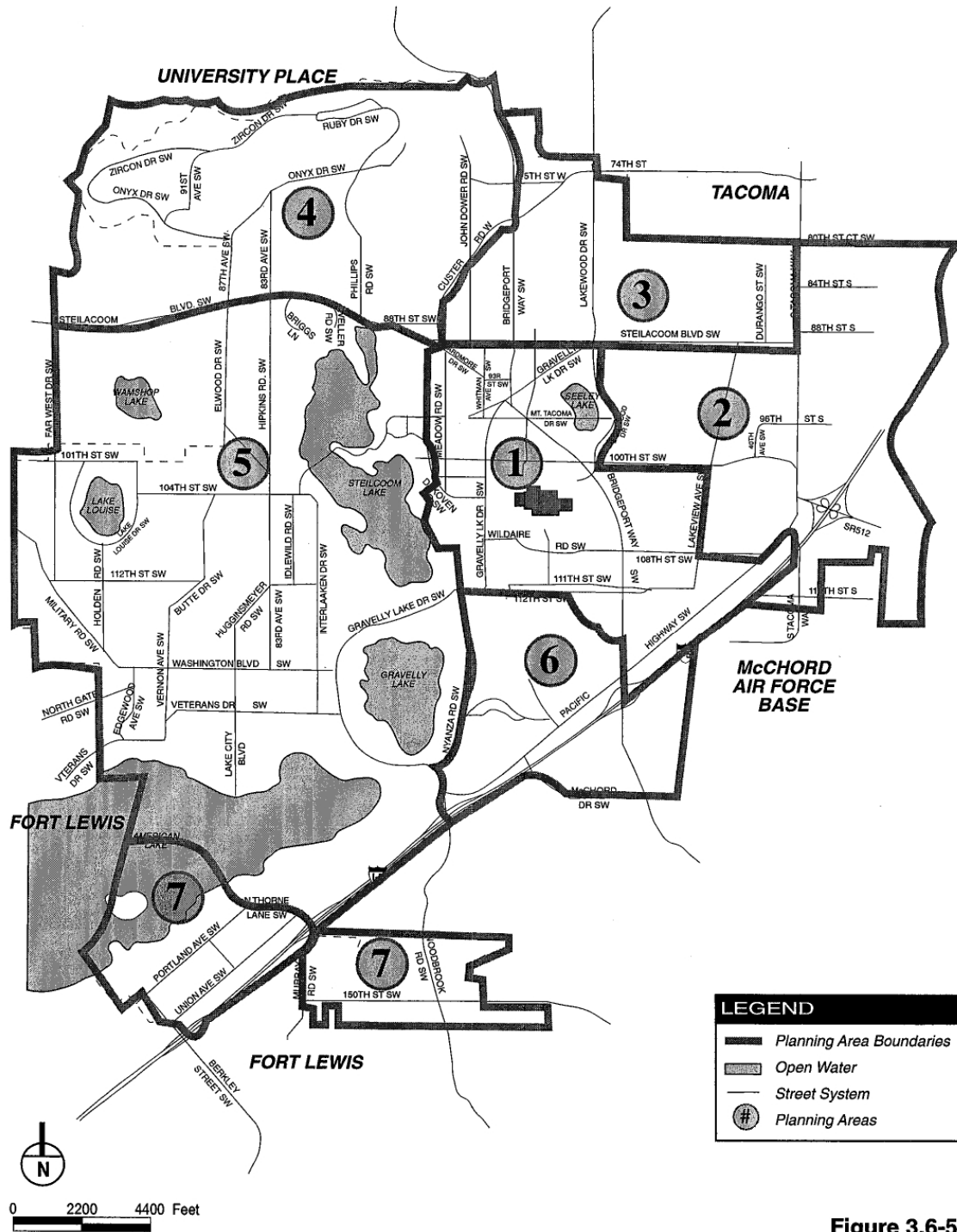


Figure 3.6-5
Planning Area Boundaries

Land uses contained in the planning areas were grouped into two main categories:

- Residential dwelling units, including single- and multi-family dwelling units; and
- Retail and non-retail employees — this category includes employees for retail uses and non-retail uses such as office, light industrial, school, hospital, and service employees.

Planned Transportation Improvements

City of Lakewood Six-Year Comprehensive Transportation Program (2000-2005)

The City of Lakewood Six-Year Comprehensive Transportation Program includes projects that would be constructed between the years 2000 and 2006, depending on when funding is provided. Anticipated annual transportation revenues and expenditures are displayed in the Capital Facilities Program and Finance Plan shown in Tables 3.6-10 and 3:6-11.

Table 3.6-10: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Revenues
(All amounts are times \$1,000)

Sources of Funds	Totals						
Existing Revenues							
<i>Non-City Sources</i>							
Woodbrook Settlement Funds	625						
UATA	2,101						
ISTEA	850						
TEA-21	2,403						
TIB	1,690						
CDBG	3,460						
Pierce College	20						
HES	468						
Sound Transit	18,000						
Private Development	468						
Clover Park School District	50						
Community Service Organizations	90						
<i>Total of Non-City Existing</i>	<i>\$30,225</i>						
	2000	2001	2002	2003	2004	2005	Total
City Sources							
Beginning Fund Balance	3065						\$3,065
Transfer from Fund 110	350	350	350	350	350	350	\$2,100
Motor vehicle fuel tax (Arterial Streets Fund)	419	419	419	419	419	419	\$2,094
Vehicle license fee	460	460	460	460	460	460	\$2,760
Real estate excise tax (Arterial Street Fund)	900	900	900	900	900	900	\$5,400
Utility tax	1200	1200	1200	1200	1200	1200	\$7,200
Electrical Contract	80	80	80	80	80	80	\$480
Right of Way Permits	24	24	24	24	24	24	\$144
Community service organizations	15	15	15	15	15	15	\$90
<i>Total of City Existing</i>	<i>\$6,513</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$3,448</i>	<i>\$23,752</i>
Less Operations and Maintenance	924	956	989	1023	1059	1097	\$6,048
Less Operating Fund Balance	750						\$750
<i>Total Existing Services</i>	<i>\$4,839</i>	<i>\$2,492</i>	<i>\$2,459</i>	<i>\$2,425</i>	<i>\$2,389</i>	<i>\$2,351</i>	<i>\$16,954</i>

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
SECTION 1							
NEW CONSTRUCTION							
ARTERIAL STREET PROJECTS							
1.1 108th St SW Lakeview to So. Tacoma Way - Reconstruct	0.00	1,100.00	200.00	0.00	0.00	0.00	\$1,300.00
1.2 Nyanza Road and I-5 Right Turn Lane	0.00	60.00	720.00	0.00	0.00	0.00	\$780.00
1.3 Cross Base Highway	1.00	0.00	0.00	0.00	0.00	0.00	\$1.00
1.4 Union Ave Berkeley to Thorne Ln. - Reconstruct	0.00	0.00	100.00	100.00	2,300.00	0.00	\$2,500.00
1.5 146th St	0.00	0.00	425.00	0.00	0.00	0.00	\$425.00
1.6 Interlaaken Drive PE Only	0.00	20.00	0.00	0.00	0.00	0.00	\$20.00
1.7 Interlaaken Drive / 104th St /Beach Ln Cul-de-sac	0.00	20.00	0.00	0.00	0.00	0.00	\$20.00
1.8 Hipkins Traffic Calming	60.00	340.00	0.00	0.00	0.00	0.00	\$400.00
1.9 Reconstruction of Intersection of Gravelly Lake Drive/Steilacoom Blvd./Lakewood Drive	380.00	1,520.00	0.00	0.00	0.00	0.00	\$1,900.00
1.10 Lakewood Drive Right Turn Lane at So. 74th	45.00	255.00	0.00	0.00	0.00	0.00	\$300.00
1.11 Gravelly Lake Drive and 112th Intersection Improvement	40.00	10.00	0.00	0.00	0.00	0.00	\$50.00
1.12 112th Street between BPW & Lakeview - Reconstruct	0.00	116.00	910.00	0.00	0.00	0.00	\$1,026.00
1.13 47th Ave SW I-5 to 123rd /St SW	26.00	0.00	0.00	0.00	0.00	0.00	\$26.00
1.14 Elwood & Dresden Intersection PE Only	5.00	0.00	0.00	0.00	0.00	0.00	\$5.00
1.15 Bridgeport Way Lakewood Drive to 59th Avenue	1,000.00	0.00	0.00	0.00	0.00	0.00	\$1,000.00
1.16 Main Street and Wildaire	1,000.00	0.00	0.00	0.00	0.00	0.00	1,000.00
Section 1 Sub-Totals	2,557.00	3,441.00	2,355.00	100.00	2,300.00	0.00	10,753.00
SECTION 2							
NEW CONSTRUCTION							
SIDEWALK PROJECTS							
2.1 59th Ave SW (one side) Seeley Lk Apts to 100th Street	38.00	212.00	0.00	0.00	0.00	0.00	\$250.00
2.2 Pacific Street (south side) Kline to Lakeview Avenue	8.00	58.00	0.00	0.00	0.00	0.00	\$66.00
2.3 121st Street, No. side Vernon - Alameda, So. side Lake City Blvd on 83rd; east side Lake City Blvd. - Washington to 121st	20.00	170.00	0.00	0.00	0.00	0.00	\$190.00
2.4 John Dower Road (east side) Custer to 75th Street West	0.00	0.00	45.00	335.00	0.00	0.00	\$380.00
2.5 Idlewild Road SW (east side) 104th to 112th	45.00	370.00	0.00	0.00	0.00	0.00	\$415.00
2.6 104th St SW (south side) Hipkins to Idlewild	7.00	78.00	0.00	0.00	0.00	0.00	\$85.00
2.8 Onyx - Garnet to Coral (east side)	20.00	120.00	0.00	0.00	0.00	0.00	\$140.00
2.9 So. Tacoma Way (east side) 92nd to Steilacoom Blvd.	23.00	177.00	0.00	0.00	0.00	0.00	\$200.00
2.10 So. Tacoma Way (east side) 92nd to Pierce Transit Base Expansion	23.00	177.00	0.00	0.00	0.00	0.00	\$200.00

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
2.10 Steilacoom Blvd. (south side) Chambers Creek Bridge to Lake Steilacoom Point Road	20.00	95.00	0.00	0.00	0.00	0.00	\$115.00
2.11 East side of I-5 between American Lake Gardens and Gravelly Lake Drive	0.00	0.00	200.00	0.00	0.00	0.00	\$200.00
2.12 Hillhurst Drive & Montrose Ave.	12.00	92.00	0.00	0.00	0.00	0.00	\$104.00
2.13 Bridgeport Way - San Francisco to I-5	0.00	60.00	490.00	0.00	0.00	0.00	\$550.00
2.14 101st St SW & Lake Louise Drive SW Farwest Drive to 104th St PE Only	0.00	0.00	0.00	60.00	0.00	0.00	\$60.00
2.15 104th St SW (PE Only) Lake Louise Drive to Butte Drive	0.00	0.00	0.00	0.00	30.00	0.00	\$30.00
2.16 SW Corner 93rd St SW & Whitman Avenue	0.00	0.00	22.00	138.00	0.00	0.00	\$160.00
2.17 So. Tacoma Way (west side) Steilacoom Blvd. to 92nd	20.00	145.00	0.00	0.00	0.00	0.00	\$165.00
2.18 So. Tacoma Way (west side) 92nd to Pierce Transit	15.00	110.00	0.00	0.00	0.00	0.00	\$125.00
2.19 Pacific Highway Bridgeport Way to BNSF	115.00	885.00	0.00	0.00	0.00	0.00	\$1,000.00
2.20 Custer Road (east side) Meadow to Steilacoom	0.00	0.00	30.00	230.00	0.00	0.00	\$260.00
2.21 Custer Road (south side) John Dower to Meadow	40.00	220.00	0.00	0.00	0.00	0.00	\$260.00
2.22 Bridgeport Way (PE only) No. City Limits to Custer Road	0.00	0.00	160.00	0.00	0.00	0.00	\$160.00
2.23 80th Ave. W./Onyx Dr. (PE only); 85th Ave. W. to Coral Ln.	0.00	30.00	0.00	0.00	0.00	0.00	\$30.00
2.24 Pacific Highway BNSF Trestle to 108th St.	140.00	1,060.00	0.00	0.00	0.00	0.00	\$1,200.00
2.25 Bridgeport Way - 59th Avenue to Steilacoom Blvd.	0.00	900.00	0.00	0.00	0.00	0.00	\$900.00
2.26 Sidewalks in vicinity of schools	0.00	800.00	800.00	800.00	800.00	800.00	\$4,000.00
2.27 88th Street (north side) Edgewater to Custer	0.00	0.00	0.00	0.00	30.00	350.00	\$380.00
2.28 Pacific Street (south side) Cronin to 47th	0.00	120.00	0.00	0.00	0.00	0.00	\$120.00
2.29 Steilacoom Blvd. Custer Road to 88th	0.00	0.00	0.00	0.00	80.00	620.00	\$700.00
2.30 San Francisco Ave. (one side) Lincoln to Bridgeport	0.00	0.00	0.00	0.00	130.00	0.00	\$130.00
2.31 100th Street (south side) Bridgeport to Lakeview	0.00	0.00	0.00	0.00	125.00	975.00	\$1,100.00
2.32 Lakewood Drive (one side) Steilacoom Blvd. to Flett Creek	0.00	0.00	0.00	45.00	355.00	0.00	\$400.00
2.33 Oakwood Elementary Sidewalks	61.20	0.00	0.00	0.00	0.00	0.00	\$61.20
2.34 Custer Road (south side) Bridgeport to John Dower	312.00	0.00	0.00	0.00	0.00	0.00	\$312.00
2.35 All Weather Surface Bus Stops	24.00	0.00	0.00	0.00	0.00	0.00	\$24.00
2.36 Flashing Lights at School Crossings	40.00	0.00	0.00	0.00	0.00	0.00	\$40.00
2.37 Holden Road Military Road to Mann Jr High	120.00	0.00	0.00	0.00	0.00	0.00	\$120.00

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
2.38 Tillicum Sidewalks	25.00	0.00	0.00	0.00	0.00	0.00	\$25.00
Section 2 Sub-Totals	1,128.20	5,879.00	1,747.00	1,608.00	1,550.00	2,745.00	14,657.20
SECTION 3							
TRAFFIC SIGNALS							
3.1 Steilacoom Blvd. and Durango	15.00	165.00	0.00	0.00	0.00	0.00	\$180.00
3.2 Gravelly Lake Drive and School St	0.00	0.00	0.00	18.00	132.00	0.00	\$150.00
3.3 Union Avenue & Berkeley	30.00	195.00	0.00	0.00	0.00	0.00	\$225.00
3.4 Motor Avenue & Whitman	0.00	0.00	0.00	180.00	0.00	0.00	\$180.00
3.5 Traffic Signal Timing (Steilacoom Blvd.) Gravelly Lake Drive	0.00	0.00	20.00	0.00	0.00	0.00	\$20.00
3.6 Red Signal Detection Equipment	0.00	160.00	0.00	0.00	0.00	0.00	\$160.00
3.7 Bridgeport Way and San Francisco Avenue.	225.00	0.00	0.00	0.00	0.00	0.00	\$225.00
Section 3 Sub-Totals	270.00	520.00	20.00	198.00	132.00	0.00	1,140.00
SECTION 4							
TRANSPORTATION PLANNING							
4.1 Pavement Management System	35.00	5.00	35.00	5.00	35.00	5.00	\$120.00
4.2 Geographic Information System	20.00	20.00	20.00	20.00	20.00	20.00	\$120.00
Section 4 Sub-Totals	55.00	25.00	55.00	25.00	55.00	25.00	240.00
SECTION 5							
BIKEWAYS							
5.1 Misc. Bikeway Markings	1.00	1.00	1.00	1.00	1.00	1.00	\$6.00
5.2 Lakewood Drive So 74th St to Bridgeport Way (PE Only)	0.00	0.00	0.00	0.00	100.00	0.00	\$100.00
5.3 80th Street West Connection (PE Only)	0.00	0.00	0.00	0.00	0.00	57.00	\$57.00
5.4 Misc. Bike Lane Construction	20.00	20.00	20.00	20.00	20.00	20.00	\$120.00
Section 5 Sub-Totals	21.00	21.00	21.00	21.00	121.00	78.00	283.00
SECTION 6							
STREET LIGHTING							
6.1 Residential Street Lighting	60.00	60.00	60.00	60.00	60.00	60.00	\$360.00
6.2 Arterial Street Lighting	5.00	60.00	60.00	60.00	60.00	60.00	\$305.00
Section 6 Sub-Totals	65.00	120.00	120.00	120.00	120.00	120.00	665.00
SECTION 7	5.00	0.00	5.00	0.00	5.00	0.00	\$15.00
BRIDGE INSPECTION							
SECTION 8							
BEAUTIFICATION PROJECTS							
8.1 Bridgeport Way and Pacific Highway	0.00	75.00	0.00	0.00	0.00	0.00	\$75.00
8.2 Steilacoom Blvd. and Farwest Drive	0.00	40.00	0.00	0.00	0.00	0.00	\$40.00
8.3 Arterial Street Tree Planting	100.00	100.00	100.00	100.00	100.00	100.00	\$600.00
8.4 Misc. Right-of-Way Beautification	15.00	35.00	35.00	35.00	35.00	35.00	\$190.00
8.5 112th Street and Gravelly Lake Drive R/W	15.00	0.00	0.00	0.00	0.00	0.00	\$15.00
8.6 Ardmore/Steilacoom	15.00	0.00	0.00	0.00	0.00	0.00	\$15.00
Section 8 Sub-Totals	145.00	250.00	135.00	135.00	135.00	135.00	935.00
SECTION 9							
ROADWAY RESTORATION PROJECTS							
9.1 Pacific Highway Bridgeport to BNSF Trestle	0.00	440.00	0.00	0.00	0.00	0.00	\$440.00
9.2 Pacific Highway BNSF Trestle to SR512	0.00	520.00	0.00	0.00	0.00	0.00	\$520.00

Table 3.6-11: City of Lakewood Transportation Capital Facilities Program and Finance Plan-Expenditures

(All amounts are times \$1,000)							
Uses of Funds	2000	2001	2002	2003	2004	2005	Total
9.3 Gravelly Lake Drive Nyanza (south) to BNSF Trestle.	0.00	140.00	0.00	0.00	0.00	0.00	\$140.00
9.4 Bridgeport Way Flett Creek to North City Limits	0.00	0.00	250.00	0.00	0.00	0.00	\$250.00
9.5 Gravelly Lake Drive Nyanza (north) to Bridgeport Way	0.00	0.00	0.00	0.00	0.00	780.00	\$780.00
9.6 Misc. Resurfacing	0.00	0.00	0.00	250.00	250.00	250.00	\$750.00
9.7 112th Street from Union Avenue to Steel Street.	30.00	0.00	0.00	0.00	0.00	0.00	\$30.00
Section 9 Sub-Totals	30.00	1,100.00	250.00	250.00	250.00	1,030.00	2,910.00
SECTION 10							
TRAFFIC CIRCLES							
10.1 Misc. Traffic Circles	8.00	8.00	8.00	8.00	8.00	8.00	\$48.00
SECTION 11	20.00	20.00	20.00	20.00	20.00	20.00	\$120.00
EMERGENT NATURE PROJECTS							
SECTION 12	911.00	13,627.00	1,000.00	0.00	0.00	0.00	\$15,538.00
LAKEWOOD STATION							
TOTAL COSTS	\$5,215.20	\$25,011.00	\$5,736.00	\$2,485.00	\$4,696.00	\$4,161.00	\$47,304.20

PE = Preliminary Engineering

Source: City of Lakewood, June 2000.

The Capital Facilities Program for transportation projects shown in Table 3.6-11, was developed to be consistent with and in support of goals identified in the Comprehensive Plan. Table 3.6-12 lists the transportation projects programmed over the 2000-2005 period and identifies the corresponding Comprehensive Plan goals that are supported by each project.

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
SECTION 1 NEW CONSTRUCTION ARTERIAL STREET PROJECTS		
1.1 108th St SW Lakeview to So. Tacoma Way - Reconstruct	\$1,300	Goals T-7, T-10
1.2 Nyanza Road and I-5 Right Turn Lane	\$780	Goals T-10, T-21
1.3 Cross Base Highway	\$1	Goals T-2, T-3, T-10
1.4 Union Ave Berkeley to Thorne Ln. - Reconstruct	\$2,500	Goals T-7, T-10
1.5 146th St	\$425	Goals T-3, T-14
1.6 Interlaaken Drive PE Only	\$20	Goals T-3, T-7, T-9, T-14
1.7 Interlaaken Drive / 104th St / Beach Ln Cul-de-sac	\$20	Goals T-5, T-12
1.8 Hipkins Traffic Calming	\$400	Goals T-5, T-12
1.9 Reconstruction of Intersection of Gravelly Lake Drive/Steilacoom Blvd./Lakewood Drive	\$1,900	Goals T-5, T-7, T-10, T-14
1.10 Lakewood Drive Right Turn Lane at So. 74th	\$300	Goals T-4, T-5, T-7, T-9, T-10, T-14
1.11 Gravelly Lake Drive and 112th Intersection Improvement	\$50	Goals T-5, T-7, T-10

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
1.12 112th Street between BPW & Lakeview - Reconstruct	\$1,026	Goal T-7
1.13 47th Ave SW I-5 to 123rd /St SW	\$26	Goals T-7, T-10
1.14 Elwood & Dresden Intersection PE Only	\$5	Goals T-7, T-10
1.15 Bridgeport Way Lakewood Drive to 59th Avenue	\$1,000	Goals T-7, T-10
1.16 Main Street and Wildaire	\$1,000	Goals T-7, T-10
SECTION 2		
NEW CONSTRUCTION		
SIDEWALK PROJECTS		
2.1 59th Ave SW (one side) Seeley Lk Apts to 100th Street	\$250	Goals T-7, T-14
2.2 Pacific Street (south side) Kline to Lakeview Avenue	\$66	Goals T-7, T-14
2.3 121st Street, No. side Vernon - Alameda, So. side Lake City Blvd on 83rd; east side Lake City Blvd. - Washington to 121st	\$190	Goals T-7, T-14
2.4 John Dower Road (east side) Custer to 75th Street West	\$380	Goals T-7, T-14
2.5 Idlewild Road SW (east side) 104th to 112th	\$415	Goals T-7, T-14
2.6 104th St SW (south side) Hipkins to Idlewild	\$85	Goals T-7, T-14
2.8 Onyx - Garnet to Coral (east side)	\$140	Goals T-7, T-14
2.9 So. Tacoma Way (east side) 92nd to Steilacoom Blvd.	\$200	Goals T-7, T-14
2.10 So. Tacoma Way (east side) 92nd to Pierce Transit Base Expansion	\$200	Goals T-7, T-14
2.10 Steilacoom Blvd. (south side) Chambers Creek Bridge to Lake Steilacoom Point Road	\$115	Goals T-7, T-14
2.11 East side of I-5 between American Lake Gardens and Gravelly Lake Drive	\$200	Goal T-14
2.12 Hillhurst Drive & Montrose Ave.	\$104	Goals T-7, T-14
2.13 Bridgeport Way - San Francisco to I-5	\$550	Goals T-7, T-14
2.14 101st St SW & Lake Louise Drive SW Farwest Drive to 104th St PE Only	\$60	Goals T-7, T-14
2.15 104th St SW (PE Only) Lake Louise Drive to Butte Drive	\$30	Goals T-7, T-14
2.16 SW Corner 93rd St SW & Whitman Avenue	\$160	Goals T-7, T-14
2.17 So. Tacoma Way (west side) Steilacoom Blvd. to 92nd	\$165	Goals T-7, T-14
2.18 So. Tacoma Way (west side) 92nd to Pierce Transit	\$125	Goals T-7, T-13, T-14
2.19 Pacific Highway Bridgeport Way to BNSF	\$1,000	Goals T-7, T-14
2.20 Custer Road (east side) Meadow to Steilacoom	\$260	Goals T-7, T-8, T-9, T-14
2.21 Custer Road (south side) John Dower to Meadow	\$260	Goals T-7, T-8, T-9, T-14
2.22 Bridgeport Way (PE only) No. City Limits to Custer Road	\$160	Goals T-7, T-8, T-9, T-14
2.23 80th Ave. W./Onyx Dr. (PE only); 85th Ave. W. to Coral Ln.	\$30	Goals T-3, T-7, T-13, T-14
2.24 Pacific Highway BNSF Trestle to 108th St.	\$1,200	Goal T-14
2.25 Bridgeport Way - 59th Avenue to Steilacoom Blvd.	\$900	Goals T-7, T-14
2.26 Sidewalks in vicinity of schools	\$4,000	Goals T-7, T-14

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
2.27 88th Street (north side) Edgewater to Custer	\$380	Goals T-7, T-14
2.28 Pacific Street (south side) Cronin to 47th	\$120	Goals T-7, T-14
2.29 Steilacoom Blvd. Custer Road to 88th	\$700	Goals T-7, T-14
2.30 San Francisco Ave. (one side) Lincoln to Bridgeport	\$130	Goals T-7, T-14
2.31 100th Street (south side) Bridgeport to Lakeview	\$1,100	Goals T-7, T-14
2.32 Lakewood Drive (one side) Steilacoom Blvd. to Flett Creek	\$400	Goals T-7, T-14
2.33 Oakwood Elementary Sidewalks	\$61	Goals T-7, T-14
2.34 Custer Road (south side) Bridgeport to John Dower	\$312	Goals T-7, T-14
2.35 All-Weather Surface Bus Stops	\$24	Goals T-7, T-13, T-14
2.36 Flashing Lights at School Crossings	\$40	Goals T-13, T-14
2.37 Holden Road Military Road to Mann Jr High	\$120	Goals T-7, T-14
2.38 Tillicum Sidewalks	\$25	Goals T-7, T-14
SECTION 3		
TRAFFIC SIGNALS		
3.1 Steilacoom Blvd. and Durango	\$180	Goals T-5, T-10
3.2 Gravelly Lake Drive and School St	\$150	Goals T-5, T-10
3.3 Union Avenue & Berkeley	\$225	Goals T-5, T-10
3.4 Motor Avenue & Whitman	\$180	Goals T-5, T-10
3.5 Traffic Signal Timing (Steilacoom Blvd.) Gravelly Lake Drive	\$20	Goals T-5, T-10
3.6 Red Signal Detection Equipment	\$160	Goal T-10
3.7 Bridgeport Way and San Francisco Avenue.	\$225	Goals T-5, T-10
SECTION 4		
TRANSPORTATION PLANNING		
4.1 Pavement Management System	\$120	Goal T-7
4.2 Geographic Information System	\$120	Goals T-2, T-13
SECTION 5		
BIKEWAYS		
5.1 Misc. Bikeway Markings	\$6	Goals T-11, T-12, T-14
5.2 Lakewood Drive So 74th St to Bridgeport Way (PE Only)	\$100	Goals T-11, T-12, T-14
5.3 80th Street West Connection (PE Only)	\$57	Goals T-11, T-12, T-14
5.4 Misc. Bike Lane Construction	\$120	Goals T-11, T-12, T-14
SECTION 6		
STREET LIGHTING		
6.1 Residential Street Lighting	\$360	Goal T-9
6.2 Arterial Street Lighting	\$305	Goal T-9
SECTION 7		
BRIDGE INSPECTION		
SECTION 8		
BEAUTIFICATION PROJECTS		
8.1 Bridgeport Way and Pacific Highway	\$75	Goal T-8
8.2 Steilacoom Blvd. and Farwest Drive	\$40	Goal T-8
8.3 Arterial Street Tree Planting	\$600	Goal T-8
8.4 Misc. Right-of-Way Beautification	\$190	Goal T-8

Table 3.6-12: City of Lakewood Capital Facilities Transportation Projects and Corresponding Comprehensive Plan Goals

SECTION	Project Cost (\$1,000's)	COMPREHENSIVE PLAN GOALS SUPPORTED BY PROJECT
8.5 112th Street and Gravelly Lake Drive R/W	\$15	Goal T-8
8.6 Ardmore/Steilacoom	\$15	Goal T-8
SECTION 9 ROADWAY RESTORATION PROJECTS		
9.1 Pacific Highway Bridgeport to BNSF Trestle	\$440	Goal T-7
9.2 Pacific Highway BNSF Trestle to SR512	\$520	Goal T-7
9.3 Gravelly Lake Drive Nyanza (south) to BNSF Trestle.	\$140	Goal T-7
9.4 Bridgeport Way Flett Creek to North City Limits	\$250	Goal T-7
9.5 Gravelly Lake Drive Nyanza (north) to Bridgeport Way	\$780	Goal T-7
9.6 Misc. Resurfacing	\$750	Goal T-7
9.7 112th Street from Union Avenue to Steel Street.	\$30	Goal T-7
SECTION 10 TRAFFIC CIRCLES		
10.1 Misc. Traffic Circles	\$48	Goals T-5, T-8
SECTION 11 EMERGENT NATURE PROJECTS		
SECTION 12 LAKEWOOD STATION		
	\$15,538	Goals T-2, T-10, T-11, T-12, T-13, T-14, T-17
TOTAL COSTS	\$46,755	

WSDOT's State Highway System Plan

The State Highway System Plan (WSDOT 1998) provides service objectives and action strategies for maintaining, operating, preserving, and improving our state highways. Table 3.6-13 lists the 20-year Transportation Improvement Program (TIP) proposed for the City of Lakewood.

One WSDOT project that would relieve congestion around the existing I-5/SR-512 interchange and along Pacific Highway SW and 100th Street SW is the I-5/SR-512 interchange improvement project. The project is not currently included in the WSDOT's 20-year State Highway Systems Plan but has been planned at the conceptual design level. Through a series of flyover ramps, the project would provide direct access connections between I-5 and 100th Street SW from the north and south. It would also provide a direct flyover ramp connecting southbound I-5 to eastbound SR-512. Because of its expected level of congestion relief along 100th Street SW and Pacific Highway/Tacoma Way, the project alternatives were analyzed under "with" and "without" scenarios for the I-5/SR-512 interchange improvements. Approval of I-695 may decrease the likelihood of obtaining funds for this project.

Table 3.6-13: WSDOT 20-year Transportation Improvement Program (TIP) - 1997 to 2016.

Project/Mileposts	Description	Cost Estimate (Million \$)
I-5		
122.00 to 123.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$18.42M to \$24.57M
123.00 to 123.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$14.37M to \$19.17M
124.00 to 125.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$18.42M to \$24.57M
125.00 to 126.00	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$16.02M to \$21.36M
126.00 to 127.48	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$13.72M to \$18.29M
123.00 to 124.50	TSM	\$1.80M to \$2.40M
126.00 to 127.00	TSM	\$1.80M to \$2.40M
123.00 to 127.48	Interchange Improvements, Construct HOV Lanes, IVHS, Enhanced Transit.	\$13.72M to \$18.29M
I-5 Subtotal		\$745,600
SR-512		
0.00 to 2.27	Widen to 8 lanes creating HOV lanes, IVHS, and Enhanced Transit.	\$25.80M to \$34.40M

IVHS: Intelligent Vehicle Highway System.

HOV: High Occupancy Vehicle

Pierce Transit Planned Service and Capital Improvements

Pierce Transit service and capital programs are implemented through their Service Plan, Capital Plan, Regional Coordination Initiatives, Marketing and Promotion Plan, and Financial Plan. Key elements of Pierce Transit's plans that relate to the City of Lakewood's transportation plan are summarized as follows:

- Increase in fixed-route service by 26% (ridership by 25%) by the year 2004. Service improvements will be primarily focused on increased frequencies and expanded hours for the core urban area, new routes to growing communities with good transit ridership potential, and feeder services connecting to new Sound Transit regional transportation stations. The City of Lakewood will benefit from improvements in each of these areas.
- Expansion of the number of vanpools by 15% per year, with 386 vans in service by 2004 (167 vans were in service in 1997). In Lakewood, actual vanpool growth is dependent upon private sector employment and employer support.
- Increase of Shuttle ridership through coordination with social service providers. Pierce Transit will strive to improve productivity and reduce operating costs for the Shuttle paratransit program.
- Encouraging ridership with a new computer ridematching system, expansion of the Flexpass program, and development of local CTR enhancement grants.

- Provisions for bringing signal-priority systems to the local transit network, which will improve transit travel times, make transit services more reliable, and improve operating efficiency. In the City of Lakewood, Bridgeport Way and South Tacoma Way have been identified as transit signal-priority corridors.
- More convenient regional travel via transit service with the introduction of a single fare medium (the Smart Card) in late 2000 or early 2001, which will allow for regionally consistent fare policies, including seamless inter-jurisdictional transfers. In the interim period, Pierce Transit will collaborate with Sound Transit, Metro, Community Transit, and Everett Transit to implement an interim regional pass in late 1999 when Sound Transit expects to begin operation of Regional Express bus service.
- Design and implementation of a regional (King, Pierce, and Snohomish counties) automated customer trip planning system. Pierce Transit's customer information staff will use computerized tools to assist customers in planning transit trips within or between any of the three transit service areas. The project will also explore opportunities for customers to directly access transit and other ridesharing information via personal computers and kiosks placed in public areas.
- Coordination with Sound Transit on the design of bus routes, stop locations, and schedules. A commuter rail station is currently planned in Lakewood on Pacific Highway SW between Sharondale Street SW and Bridgeport Way SW. Pierce Transit will provide feeder bus service to this facility.

Some of these programs/improvements may be revised or delayed due to voter approval of 1-695.

Level of Service Standards and Concurrency

GMA requires the adoption of LOS standards for arterial streets to gauge the performance of the transportation system. The LOS standards for streets in the City of Lakewood will be based on peak hour arterial link level of service.

Level of service standards required by the GMA are closely related to the issue of concurrency. The GMA requires that transportation improvements be made concurrent with new development. Once a street exceeds its level of service standard, a street project must be funded within 6 years to improve level of service back to within the LOS standard. If funds to improve the street are not approved within the 6-year timeframe, new development that would add traffic to the street could not be permitted.

Level of service standards need to be carefully chosen for each city and for different arterials within a city. It is desirable that levels of service should be the same on both sides of a city/county boundary; however, different goals on either side of a boundary can be legitimate reasons for two jurisdictions to establish different standards.

Establishing appropriate level of service standards for the City of Lakewood was discussed with the Planning Advisory Board (PAB) and Public Works department staff at several meetings. From these discussions, the following level of service standards are proposed in the Comprehensive Plan (Chapter 6, page 17):

- Maintain LOS F with a V/C ratio threshold of 1.10 in the Steilacoom Blvd. corridor between 88th St. SW and 83rd Ave. SW.
- Maintain LOS F with a V/C ratio threshold of 1.30 on Gravelly Lake Drive between 1-5 and Washington Blvd. SW.
- Maintain LOS F with a V/C ratio threshold of 1.25 on Washington Blvd. SW, west of Gravelly Lake Drive.
- Maintain LOS F with a V/C ratio threshold of 1.05 on Ardmore Drive SW between Steilacoom Blvd. SW and Whitman Avenue SW.
- Maintain LOS F with a V/C ratio threshold of 1.05 on Murray Road SW north of 146th Street SW.
- Maintain LOS E with a V/C ratio threshold of 1.00 on 108th Street SW between Pacific Highway SW and Bridgeport Way W.
- Maintain LOS E with a V/C ratio threshold of 1.00 on South Tacoma Way between 84th Street South and Steilacoom Blvd. SW.
- Maintain LOS E with a V/C ratio threshold of 1.00 on Bridgeport Way SW between Pacific Highway SW and 108th Street SW.
- Maintain LOS D with a V/C ratio threshold of 0.90 on all other arterial streets in the city, including state highways of statewide significance.

Future Traffic Volumes and Levels of Service

Preferred Alternative

The Preferred Alternative was considered with and without the proposed I-5/SR-512 interchange improvements and direct connection to 100th Street SW. This is a WSDOT project that is currently not listed on the WSDOT's 20-year fiscally-constrained State Highway Systems Plan. Funding for the project has not yet been identified. If the project were constructed, it would have a significant effect on traffic distribution and flow through the I-5/Tacoma Way and 100th Street SW corridors.

Table 3.6-14 compares future corridor p.m. peak hour levels of service in the year 2017 under the No Action and Preferred Action Alternatives with and without the I-5/SR-512 interchange improvements. The Preferred Alternative represents future conditions with some zoning changes to allow for increased development densities.

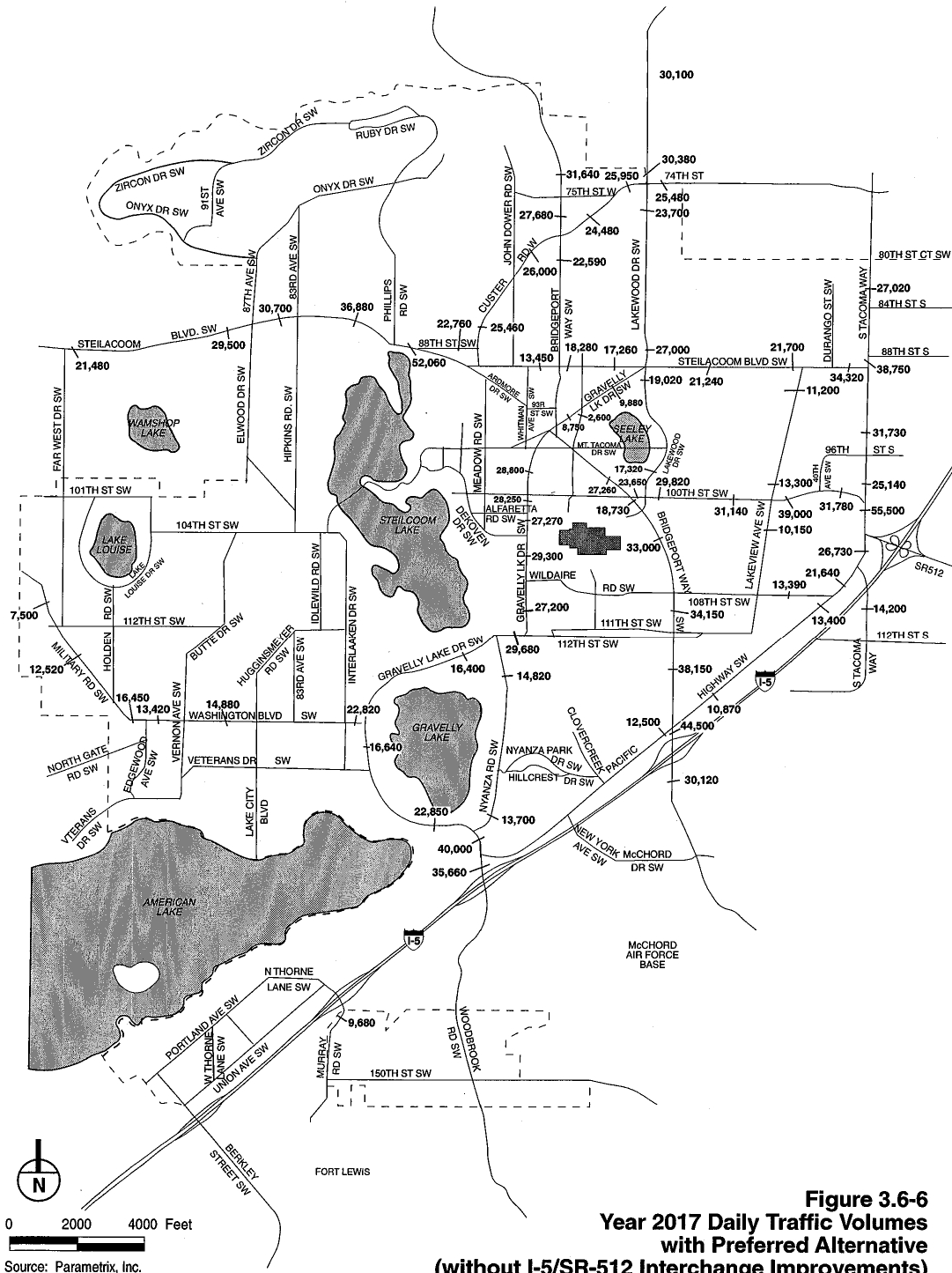
Figure 3.6-6 shows year 2017 daily traffic volumes for the Preferred Alternative without the I-5/SR-512 interchange improvements.

Figure 3.6-7 highlights the LOS D or worse arterial segments within the City of Lakewood under the Preferred Alternative without the I-5/SR 512 interchange improvements. The following roadway sections are projected to exceed LOS D during the p.m. peak hour in the year 2017:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)
- Ardmore Drive SW northwest of Whitman Avenue SW (LOS E)
- Bridgeport Way W north of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW south of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)

Table 3.6-14: City of Lakewood Year 2017 Corridor p.m. Peak Hour LOS for No Action and Preferred Alternatives.

Street Name/Section	No Action (2017)			Preferred Alternative (2017) with I-5/SR-512 Improvements			Preferred Alternative (2017) without I-5/SR-512 Improvements		
	Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Highest One-Way Peak Hour Volume	V/C Ratio	LOS
Ardmore Drive SW									
southeast of Steilacoom Blvd. SW	683	0.95	E	723	1.00	F	735	1.02	F
northwest of Whitman Ave. SW	650	0.90	E	651	0.90	E	655	0.91	E
Bridgeport Way W									
north of 75th Street W	1736	0.85	D	1720	0.84	D	1717	0.84	D
north of Gravelly Lake Drive SW	1323	0.65	C	1369	0.67	C	1369	0.67	C
south of Lakewood Drive SW	1490	0.73	C	1470	0.72	C	1493	0.73	C
north of Pacific Highway SW	1925	0.94	E	1813	0.88	D	1922	0.94	E
at Clover Creek bridge south of I-5	1393	0.68	C	1564	0.76	D	1292	0.63	C
Custer Road SW/W									
north of 88th Street SW	1388	0.76	D	1357	0.74	C	1379	0.76	D
northeast of Bridgeport Way SW	1376	0.75	D	1270	0.70	C	1292	0.71	C
Gravelly Lake Dr. SW									
northeast of Bridgeport Way SW	811	0.44	B	817	0.45	B	833	0.46	B
south of Pacific Highway SW	1901	0.93	E	1820	0.89	D	1862	0.91	E
north of Pacific Highway SW	2657	1.30	F	2547	1.24	F	2606	1.27	F
west of end Nyanza Rd. SW (south)	1080	1.11	F	1082	1.11	F	1101	1.13	F
Lakeview Avenue SW									
south of 100th Street SW	452	0.25	A	548	0.30	B	439	0.24	A
north of 100th Street SW	703	0.39	B	666	0.36	B	731	0.40	B
south of Steilacoom Blvd. SW	560	0.31	B	500	0.27	A	577	0.32	B
Lakewood Drive SW									
north of Steilacoom Blvd. SW	1669	0.91	E	1370	0.75	D	1396	0.76	D
north of 74th Street W	1764	0.97	E	1493	0.82	D	1505	0.82	D
north of 100th Street SW	742	0.36	B	748	0.36	B	773	0.38	B
Military Road SW									
south of 112th Street SW	734	0.75	D	752	0.77	D	746	0.77	D
Murray Road SW									
north of 146th Street SW	578	0.80	D	732	1.02	F	727	0.1.01	F
Nyanza Road SW									
north of Gravelly Lake Drive SW	817	0.84	D	778	0.80	D	800	0.82	D
South Tacoma Way									
north of 84th Street S.	1309	0.64	C	1336	0.65	C	1327	0.65	C
north of Steilacoom Blvd. SW	2024	0.99	E	1861	0.91	E	1921	0.94	E
north of 100th Street SW	1268	0.62	C	1460	0.71	C	1262	0.62	C
south of 100th Street SW	2486	0.86	D	1941	0.67	C	2505	0.86	D
south of SR 512	1351	0.66	C	1165	0.57	C	1314	0.64	C
Steilacoom Blvd. SW									
east of Farwest Drive SW	1029	0.56	C	1050	0.58	C	1044	0.57	C
west of Phillips Road SW	1909	1.05	F	1937	1.06	F	1948	1.07	F
southeast of 88th Street SW	1448	0.79	D	1441	0.79	D	1446	0.79	D
east of Lakewood Drive SW	924	0.45	B	953	0.46	B	938	0.46	B
west of South Tacoma Way	1320	0.64	C	1386	0.68	C	1395	0.68	C
Washington Blvd. SW									
east of Vemon Avenue SW	740	0.76	D	757	0.78	D	755	0.77	D
west of Gravelly Lake Drive SW	1158	1.19	F	1188	1.22	F	1183	1.21	F
74th Street W									
west of Lakewood Drive SW	1617	0.79	D	1626	0.79	D	1667	0.81	D
100th Street SW									
west of South Tacoma Way	1225	0.67	C	1393	0.76	D	1281	0.70	C
east of Lakeview Drive SW	1488	0.73	C	1641	0.80	D	1531	0.75	C
east of Lakewood Drive SW	1252	0.61	C	1298	0.63	C	1287	0.63	C
108th Street SW									
west of Pacific Highway SW	663	0.92	E	667	0.93	E	681	0.95	E





- Murray Road SW north of 146th Street SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)
- Steilacoom Blvd. SW west of Phillips Road SW (LOS F)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F)
- 108th Street SW west of Pacific Highway SW (LOS E)

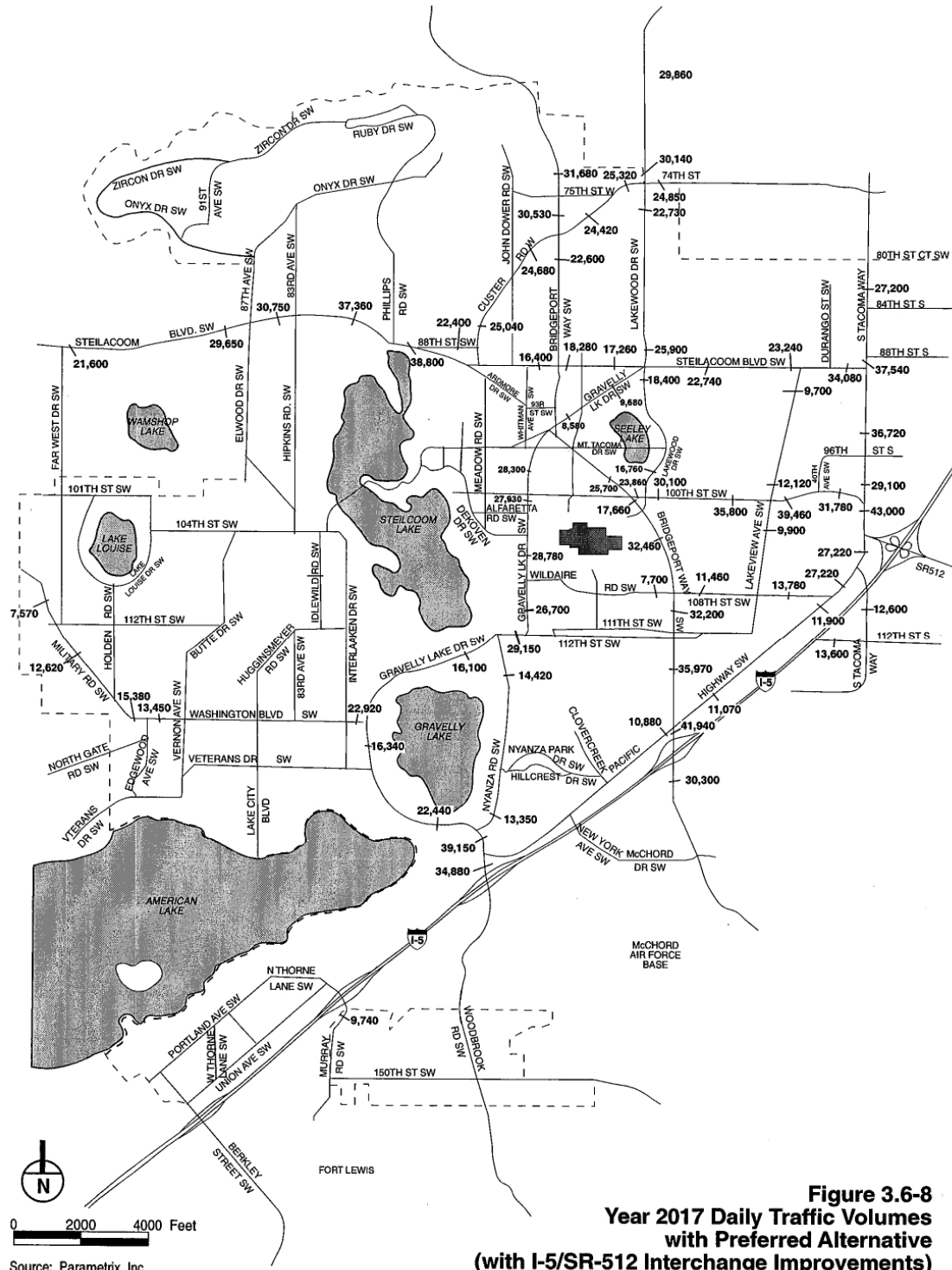
In addition, multiple arterial segments would operate at LOS D in year 2017 with the Preferred Alternative (without the I-5/SR-512 interchange improvements). These include:

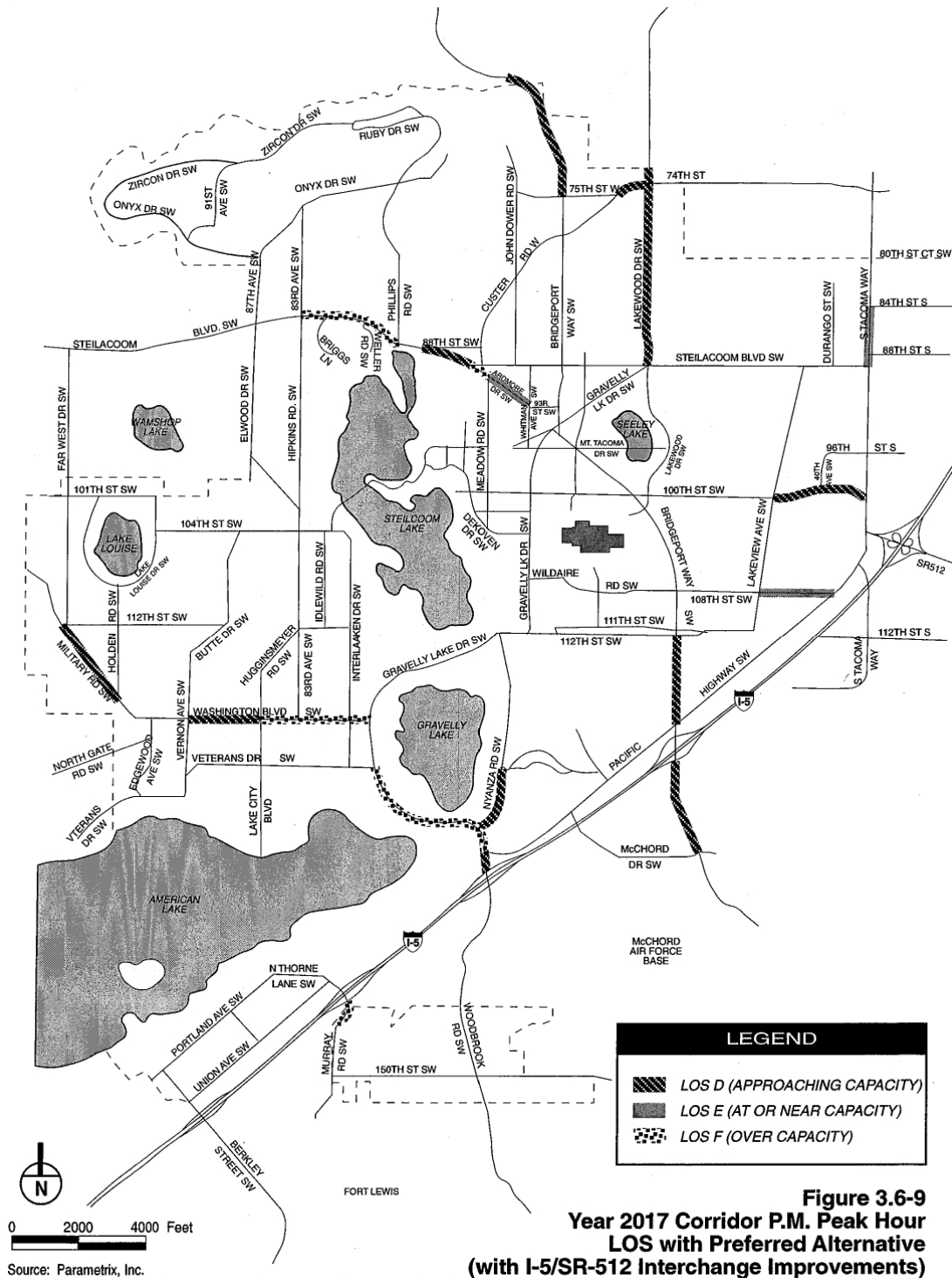
- Bridgeport Way West north of 75th Street W
- Custer Road SW north of 88th Street SW
- Lakewood Drive SW north of Steilacoom Blvd. SW
- Lakewood Drive SW north of 74th Street W
- Military Road SW south of 112th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- South Tacoma Way south of 100th Street SW
- Steilacoom Blvd. SW southeast of 88th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W west of Lakewood Drive SW

Figure 3.6-8 shows year 2017 daily traffic volumes for the Preferred Alternative with the I-5/SR-512 interchange improvements.

Figure 3.6-9 highlights the LOS D or worse arterial segments within the City of Lakewood under the Preferred Alternative with the I-5/SR 512 interchange improvements in the year 2017. The following roadway sections are projected to exceed LOS D during the p.m. peak hour:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)
- Ardmore Drive SW northwest of Whitman Ave. SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)
- Murray Road SW north of 146th Street SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)
- Steilacoom Blvd. SW west of Phillips Road SW (LOS F)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F)
- 108th Street SW west of Pacific Highway SW (LOS E)





In addition, multiple arterial segments would operate at LOS D in year 2017 with the Preferred Alternative (with the I-5/SR-512 interchange improvements). These include:

- Bridgeport Way West north of 75th Street W
- Bridgeport Way West north of Pacific Highway SW
- Bridgeport Way West at Clover Creek bridge south of I-5
- Gravelly Lake Drive SW south of Pacific Highway SW
- Lakewood Drive SW north of Steilacoom Blvd. SW
- Lakewood Drive SW north of 74th Street W
- Military Road SW south of 112th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- Steilacoom Blvd. SW southeast of Se Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W west of Lakewood Drive SW
- 100th Street SW west of South Tacoma Way
- 100th Street SW east of Lakeview Drive SW

Table 3.6-15 summarizes the increased levels of arterial congestion that would result from the Preferred Alternative with and without the I-5/SR-512 interchange improvements compared to 1995 existing conditions and the No Action Alternative.

Table 3.6-15: Existing Versus Year 2017 No Action and Preferred Alternatives (with and without I-5/SR-512 interchange improvements) Corridor p.m. Peak Hour LOS and Average V/C.

Alternative	Number of Arterial Segments Operating at:			Average V/C Ratio
	LOS D	LOS E	LOS F	
Existing Conditions (1995)	6	0	3	0.58
No Action Alternative	10	8	4	0.74
Preferred Alternative (without I-5 interchange connection)	10	5	6	0.733
Preferred Alternative (with I-5 interchange connection)	13	3	6	0.725

As shown in Table 3.6-15, the Preferred Alternative would utilize approximately 2% less of overall street system capacity than the No Action Alternative in the year 2017 with the proposed I-5/SR 512 interchange improvements, and about 1% less capacity than the No Action Alternative without the proposed interchange improvements. Traffic operations for Lakewood streets overall would be only marginally improved with the construction of the I-5/SR-512 interchange improvements.

No Action Alternative

The No Action Alternative represents a future development density that assumes no changes in the City of Lakewood's existing zoning. Future arterial traffic volumes are shown in Figure 3.6-10.



Table 3.6-16 compares existing LOS with year 2017 LOS for Lakewood arterials with the No Action Alternative.

Figure 3.6-11 highlights the LOS D or worse arterial segments within the City of Lakewood under the No Action Alternative. The following roadway sections are projected to exceed LOS D during the p.m. peak hour:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW
- Ardmore Drive SW northwest of Whitman Ave. SW
- Bridgeport Way W north of Pacific Highway SW
- Gravelly Lake Drive SW south of Pacific Highway SW
- Gravelly Lake Drive SW north of Pacific Highway SW
- Gravelly Lake Drive SW west of end Nyanza Rd. (south)
- Lakewood Drive SW north of Steilacoom Blvd. SW
- Lakewood Drive SW north of 74th Street W
- South Tacoma Way north of Steilacoom Blvd. SW
- Steilacoom Blvd. SW west of Phillips Road SW
- Washington Blvd. SW west of Gravelly Lake Drive SW
- 108th Street SW west of Pacific Highway SW

In addition, several arterial segments would operate at LOS D in year 2017, including:

- Bridgeport Way West north of 75th Street West
- Custer Road SW/W north of 88th Street SW
- Custer Road SW/W northeast of Bridgeport Way SW
- Military Road SW south of 112th Street SW
- Murray Road SW north of 146th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- South Tacoma Way south of 100th Street SW
- Steilacoom Blvd. SW southeast of 88th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W. west of Lakewood Drive SW

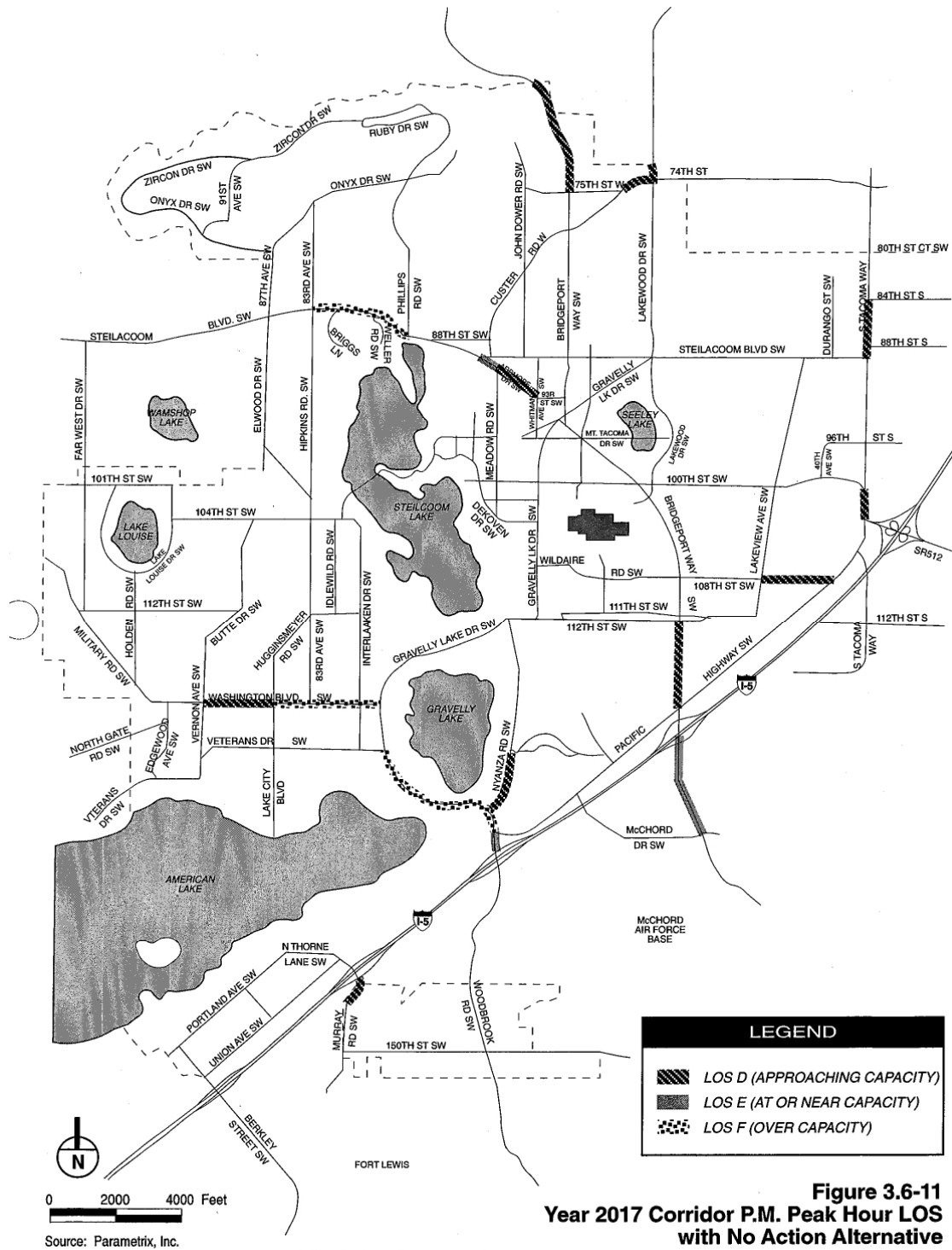


Table 3.6-16: City of Lakewood Corridor p.m. Peak Hour LOS for Existing Conditions and Year 2017 No Action Alternative.

Street Name/Section	Direction	One-way Capacity	Existing (1995)			Change in Volume 1995 to 2017	No Action (2017)		
			Highest One-Way Peak Hour Volume	V/C Ratio	LOS		Highest One-Way Peak Hour Volume	V/C Ratio	LOS
Ardmore Drive SW									
southeast of Steilacoom Blvd. SW	NW	720	641	0.89	D	42	683	0.95	E
northwest of Whitman Ave. SW	NW	720	579	0.80	D	71	650	0.90	E
Bridgeport Way W									
north of 75th Street W	NB	2050	1336	0.65	C	400	1736	0.85	D
north of Gravelly Lake Drive SW	NB	2050	1182	0.58	C	141	1323	0.65	C
south of Lakewood Drive SW	NB	2050	1166	0.57	C	324	1490	0.73	C
north of Pacific Highway SW	NB	2050	1336	0.65	C	589	1925	0.94	E
at Clover Creek bridge south of I-5	NB	2050	1298	0.63	C	95	1393	0.68	C
Custer Road SW/W									
north of 88th Street SW	SB	1825	1118	0.61	C	270	1388	0.76	D
northeast of Bridgeport Way SW	SW	1825	1039	0.57	C	337	1376	0.75	D
Gravelly Lake Dr. SW									
northeast of Bridgeport Way SW	SW	1825	638	0.20	A	173	811	0.44	B
south of Pacific Highway SW	NB	2050	1583	0.77	D	318	1901	0.93	E
north of Pacific Highway SW	SB	2050	2147	1.05	F	510	2657	1.30	F
west of end Nyanza Rd. SW (south)	WB	975	869	0.89	D	211	1080	1.11	F
Lakeview Avenue SW									
south of 100th Street SW	SB	1825	291	0.16	A	161	452	0.25	A
north of 100th Street SW	SB	1825	467	0.26	A	236	703	0.39	B
south of Steilacoom Blvd. SW	NB	1825	345	0.19	A	215	560	0.31	B
Lakewood Drive SW									
north of Steilacoom Blvd. SW	NB	1825	937	0.51	C	732	1669	0.91	E
north of 74th Street W	NB	1825	1082	0.59	C	682	1764	0.97	E
north of 100th Street SW	SB	2050	577	0.28	A	165	742	0.36	B
Military Road SW									
south of 112th Street SW	NB	975	613	0.63	C	121	734	0.75	D
Murray Road SW									
north of 146th Street SW	NB	720	727	1.01	F	—149	578	0.80	D
Nyanza Road SW									
north of Gravelly Lake Drive SW	NB	975	673	0.69	C	144	817	0.84	D
South Tacoma Way									
north of 84th Street S.	NB	2050	991	0.48	B	318	1309	0.64	C
north of Steilacoom Blvd. SW	SB	2050	1356	0.66	C	668	2024	0.99	E
north of 100th Street SW	SB	2050	1034	0.50	B	234	1268	0.62	C
south of 100 th Street SW	NB	2900	1977	0.68	C	509	2486	0.86	D
south of SR 512	SB	2050	1147	0.56	C	204	1351	0.66	C
Steilacoom Blvd. SW									
east of Farwest Drive SW	WB	1825	805	0.44	B	224	1029	0.56	C
west of Phillips Road SW	WB	1825	1636	0.90	D	273	1909	1.05	F
southeast of 88th Street SW	EB	1825	1068	0.59	B	380	1448	0.79	D
east of Lakewood Drive SW	WB	2050	788	0.38	B	136	924	0.45	B
west of South Tacoma Way	WB	2050	863	0.42	B	457	1320	0.64	C
Washington Blvd. SW									
east of Vernon Avenue SW	WB	975	706	0.72	C	34	740	0.76	D
west of Gravelly Lake Drive SW	WB	975	985	1.01	F	173	1158	1.19	F
74th Street W									
west of Lakewood Drive SW	WB	2050	1397	0.68	C	220	1617	0.79	D
100th Street SW									
west of South Tacoma Way	EB	1825	829	0.45	B	396	1225	0.67	C
east of Lakeview Drive SW	WB	2050	1084	0.53	C	404	1488	0.73	C
east of Lakewood Drive SW	EB	2050	959	0.47	B	293	1252	0.61	C
108th Street SW									
west of Pacific Highway SW	WB	720	551	0.77	D	112	663	0.92	E

¹ The Highway Capacity Manual was used as a guideline for estimating one-way capacities for these roadways, based on facility type, number of lanes, traffic control, and channelization.

- South Tacoma Way north of Steilacoom Blvd. SW
- South Tacoma Way south of 100th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W. west of Lakewood Drive SW

Table 3.6-17 summarizes the increased levels of arterial congestion that would result from the No Action Alternative compared to 1995 existing conditions.

Table 3.6-17: Existing Versus year 2017 No Action Corridor p.m. Peak Hour LOS and Average V/C Ratio.

Alternative:	Number of Arterial Segments Operating at:			Average V/C Ratio
	LOS D	LOS E	LOS F	
Existing Conditions (1995)	6	0	3	0.58
No Action	10	8	4	0.74

As shown in Table 3.6-17, projected year 2017 traffic conditions for the No Action Alternative are nearly 28% more congested, on average, compared to 1995 existing conditions.

Mixed-Use Alternative

The Mixed-Use alternative represents a future condition with significant modifications to Lakewood's zoning code, and is the highest density alternative from a development perspective. As with the Preferred Alternative, the Mixed-Use Alternative was considered with and without the proposed I-5/SR-512 interchange improvements.

Table 3.6-18 compares future corridor p.m. peak levels of service in the year 2017 under the No Action and Mixed-Use Alternatives with and without the I-5/SR-512 interchange improvements.

Figure 3.6-12 shows year 2017 daily traffic volumes for the Mixed-Use Alternative without the I-5/SR-512 interchange improvements.

Figure 3.6-13 highlights the LOS D or worse arterial segments within the City of Lakewood under the Mixed-Use Alternative without the I-5/SR 512 interchange improvements in year 2017. The following roadway sections are projected to exceed LOS D during the p.m. peak hour:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)
- Ardmore Drive SW northwest of Whitman Avenue SW (LOS E)
- Gravelly Lake Drive SW south of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)

Table 3.6-18: City of Lakewood Year 2017 Corridor p.m. Peak Hour LOS for No Action and Mixed-Use Alternatives.

Street Name/Section	Change in Volume 1995 to 2017	No Action (2017)			Mixed-Use (2017) with I-5/SR-512 Improvements				Mixed-Use (2017) without I-5/SR-512 Improvements			
		Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Change in Volume 1995 to 2017	Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Change in Volume 1995 to 2017	Highest One-Way Peak Hour Volume	V/C Ratio	LOS
Ardmore Drive SW												
southeast of Steilacoom Blvd. SW	42	683	0.95	E	82	723	1.00	F	95	736	1.02	F
northwest of Whitman Ave. SW	71	650	0.90	E	63	642	0.89	D	75	654	0.91	E
Bridgeport Way W												
north of 75 th Street W	400	1736	0.85	D	363	1699	0.83	D	375	1711	0.83	D
north of Gravelly Lake Drive SW	141	1323	0.65	C	188	1370	0.67	C	176	1358	0.66	C
south of Lakewood Drive SW	324	1490	0.73	C	286	1452	0.71	C	221	1387	0.68	C
north of Pacific Highway SW	589	1925	0.94	E	498	1834	0.89	D	418	1754	0.86	D
at Clover Creek bridge south of I-5	95	1393	0.68	C	938	2236	1.09	F	377	1675	0.82	D
Custer Road SW/W												
north of 88 th Street SW	270	1388	0.76	D	238	1356	0.74	C	227	1345	0.74	C
northeast of Bridgeport Way SW	337	1376	0.75	D	214	1253	0.69	C	215	1254	0.69	C
Gravelly Lake Dr. SW												
northeast of Bridgeport Way SW	173	811	0.44	B	156	794	0.44	B	150	788	0.43	B
south of Pacific Highway SW	318	1901	0.93	E	301	1884	0.92	E	305	1888	0.92	E
north of Pacific Highway SW	510	2657	1.30	F	499	2646	1.29	F	482	2629	1.28	F
west of end Nyanza Rd. SW (south)	211	1080	1.11	F	199	1068	1.10	F	218	1087	1.11	F
Lakeview Avenue SW												
south of 100 th Street SW	161	452	0.25	A	246	537	0.29	A	129	420	0.23	A
north of 100 th Street SW	236	703	0.39	B	205	672	0.37	B	223	690	0.38	B
south of Steilacoom Blvd. SW	215	560	0.31	B	165	510	0.28	A	215	560	0.31	B
Lakewood Drive SW												
north of Steilacoom Blvd. SW	732	1669	0.91	E	412	1349	0.74	C	429	1366	0.75	C
north of 74 th Street W	682	1764	0.97	E	391	1473	0.81	D	392	1474	0.81	D
north of 100 th Street SW	165	742	0.36	B	164	741	0.36	B	162	739	0.36	B
Military Road SW												
south of 112 th Street SW	121	734	0.75	D	122	735	0.75	D	122	735	0.75	D
Murray Road SW												
north of 146 th Street SW	-149	578	0.80	D	-142	585	0.81	D	-145	582	0.81	D
Nyanza Road SW												
north of Gravelly Lake Drive SW	144	817	0.84	D	143	816	0.84	D	123	796	0.82	D
South Tacoma Way												
north of 84 th Street S.	318	1309	0.64	C	310	1301	0.63	C	341	1332	0.65	C
north of Steilacoom Blvd. SW	668	2024	0.99	E	506	1862	0.91	E	507	1863	0.91	E
north of 100 th Street SW	234	1268	0.62	C	404	1438	0.70	C	246	1280	0.62	C
south of 100 th Street SW	509	2486	0.86	D	-29	1948	0.67	C	566	2543	0.88	D
south of SR 512	204	1351	0.66	C	-3	1144	0.56	C	227	1374	0.67	C
Steilacoom Blvd. SW												
east of Farwest Drive SW	224	1029	0.56	C	219	1024	0.56	C	220	1025	0.56	C
west of Phillips Road SW	273	1909	1.05	F	260	1896	1.04	F	238	1874	1.03	F
southeast of 88 th Street SW	380	1448	0.79	D	366	1434	0.79	D	360	1428	0.78	D
east of Lakewood Drive SW	136	924	0.45	B	158	946	0.46	B	143	931	0.45	B
west of South Tacoma Way	457	1320	0.64	C	523	1386	0.68	C	502	1365	0.67	C
Washington Blvd. SW												
east of Vernon Avenue SW	34	740	0.76	D	48	754	0.77	D	31	737	0.76	D
west of Gravelly Lake Drive SW	173	1158	1.19	F	188	1173	1.20	F	192	1177	1.21	F
74th Street W												
west of Lakewood Drive SW	220	1617	0.79	D	230	1627	0.79	D	205	1602	0.78	D
100th Street SW												

Table 3.6-18: City of Lakewood Year 2017 Corridor p.m. Peak Hour LOS for No Action and Mixed-Use Alternatives.

Street Name/Section	Change in Volume 1995 to 2017	No Action (2017)			Mixed-Use (2017) with I-5/SR-512 Improvements				Mixed-Use (2017) without I-5/SR-512 Improvements			
		Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Change in Volume 1995 to 2017	Highest One-Way Peak Hour Volume	V/C Ratio	LOS	Change in Volume 1995 to 2017	Highest One-Way Peak Hour Volume	V/C Ratio	LOS
west of South Tacoma Way	396	1225	0.67	C	536	1365	0.75	C	394	1223	0.67	C
east of Lakeview Drive SW	404	1488	0.73	C	505	1589	0.78	D	457	1541	0.75	D
east of Lakewood Drive SW	293	1252	0.61	C	311	1270	0.62	C	314	1273	0.62	C
108th Street SW												
west of Pacific Highway SW	112	663	0.92	E	69	620	0.86	D	96	647	0.90	D

- Steilacoom Blvd. SW west of Phillips Road SW (LOS F)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F)

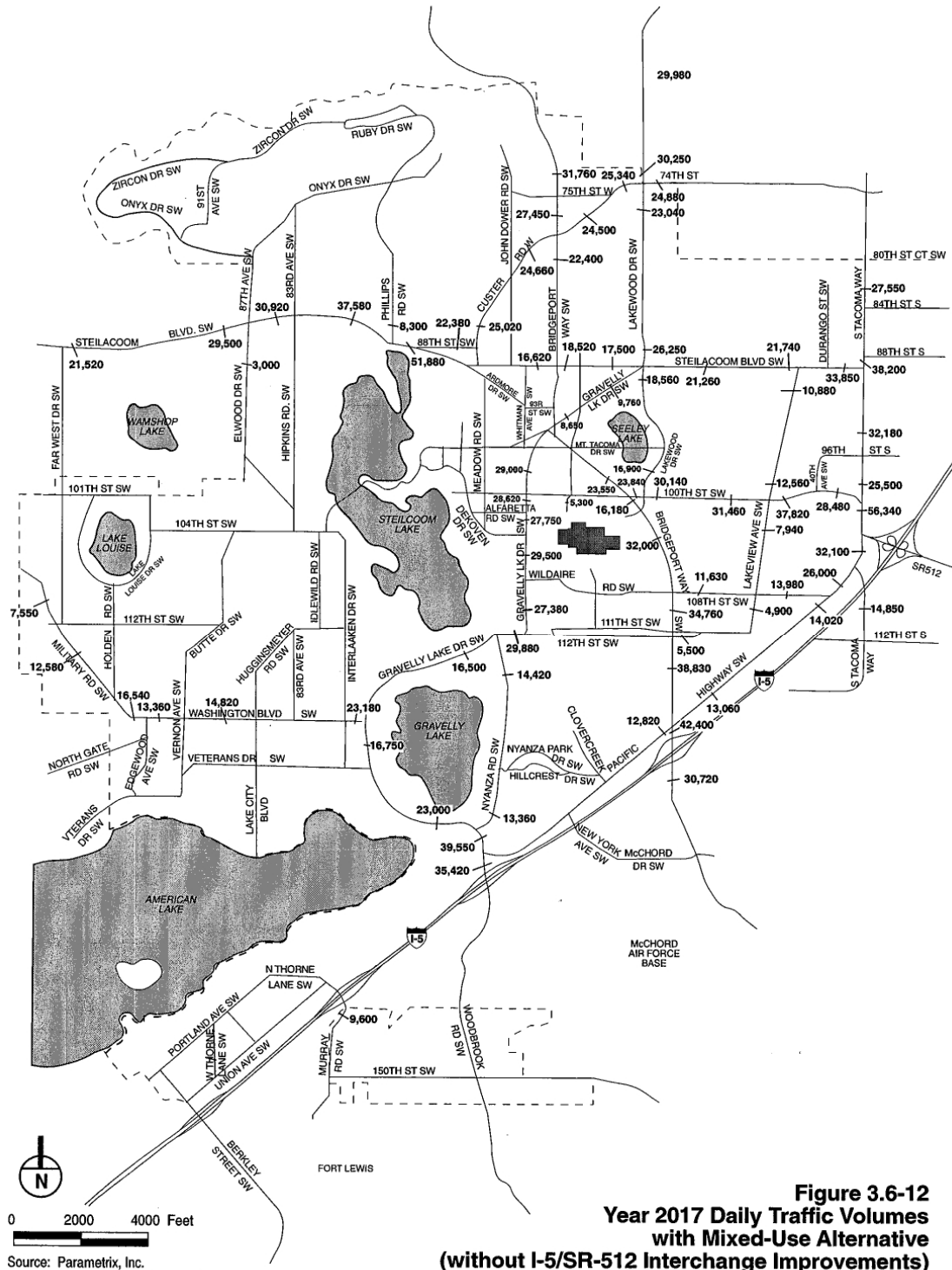
In addition, multiple arterial segments would operate at LOS D in year 2017 with the Mixed-Use Alternative (without the I-5/SR-512 interchange improvements). These include:

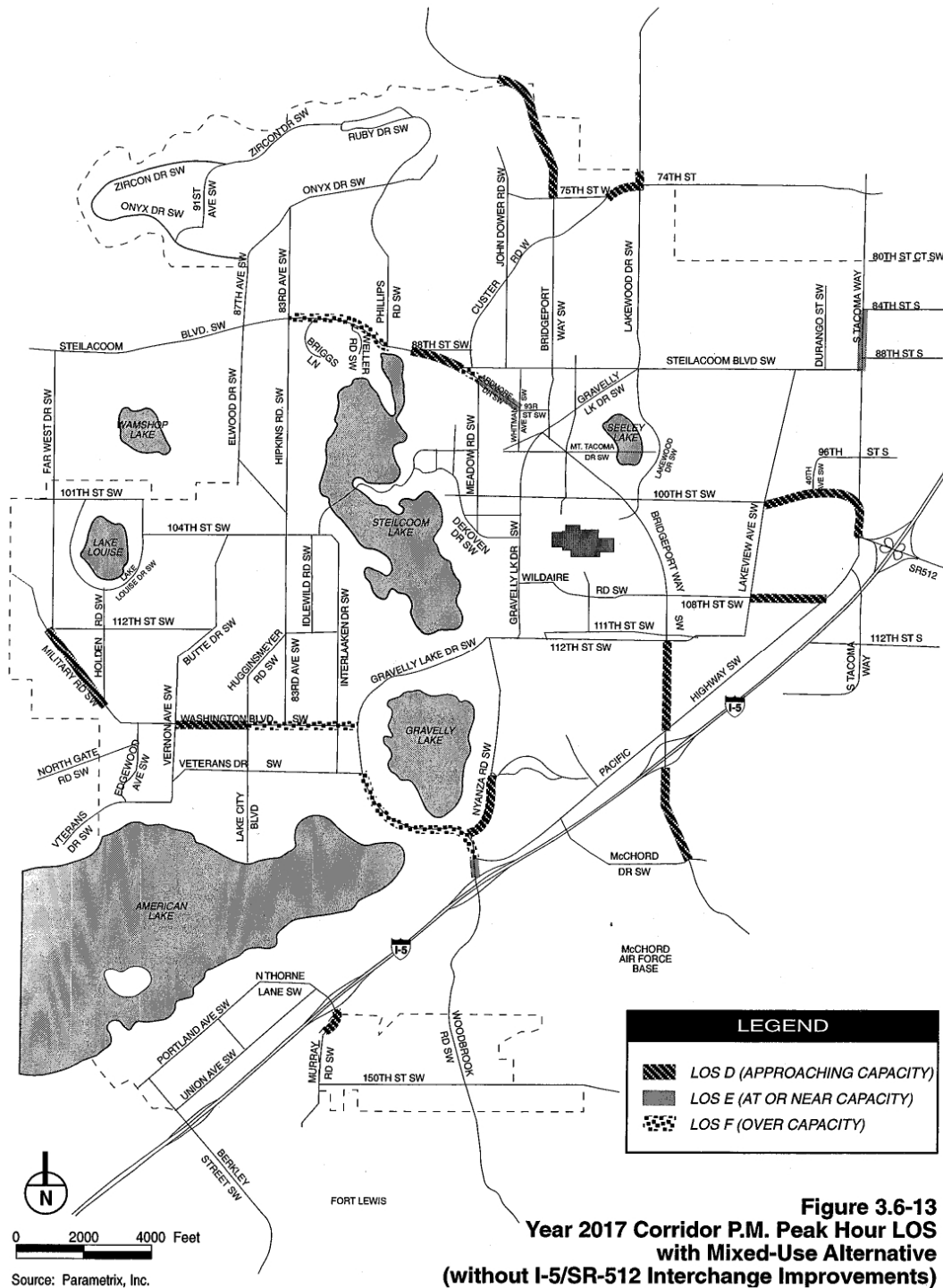
- Bridgeport Way West north of 75th Street SW
- Bridgeport Way West north of Pacific Highway SW
- Bridgeport Way West at Clover Creek Bridge south of I-5
- Lakewood Drive SW north of 74th Street W • Military Road SW south of 1121 Street SW
- Murray Road SW north of 146th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- Steilacoom Blvd. SW southeast of 88th Street SW
- South Tacoma Way south of 100th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street SW west of Lakewood Drive SW
- 100th Street SW east of Lakeview Drive SW
- 108th Street SW west of Pacific Highway SW

Figure 3.6-14 shows year 2017 daily traffic volumes for the Mixed-Use Alternative with the I-5/SR-512 interchange improvements.

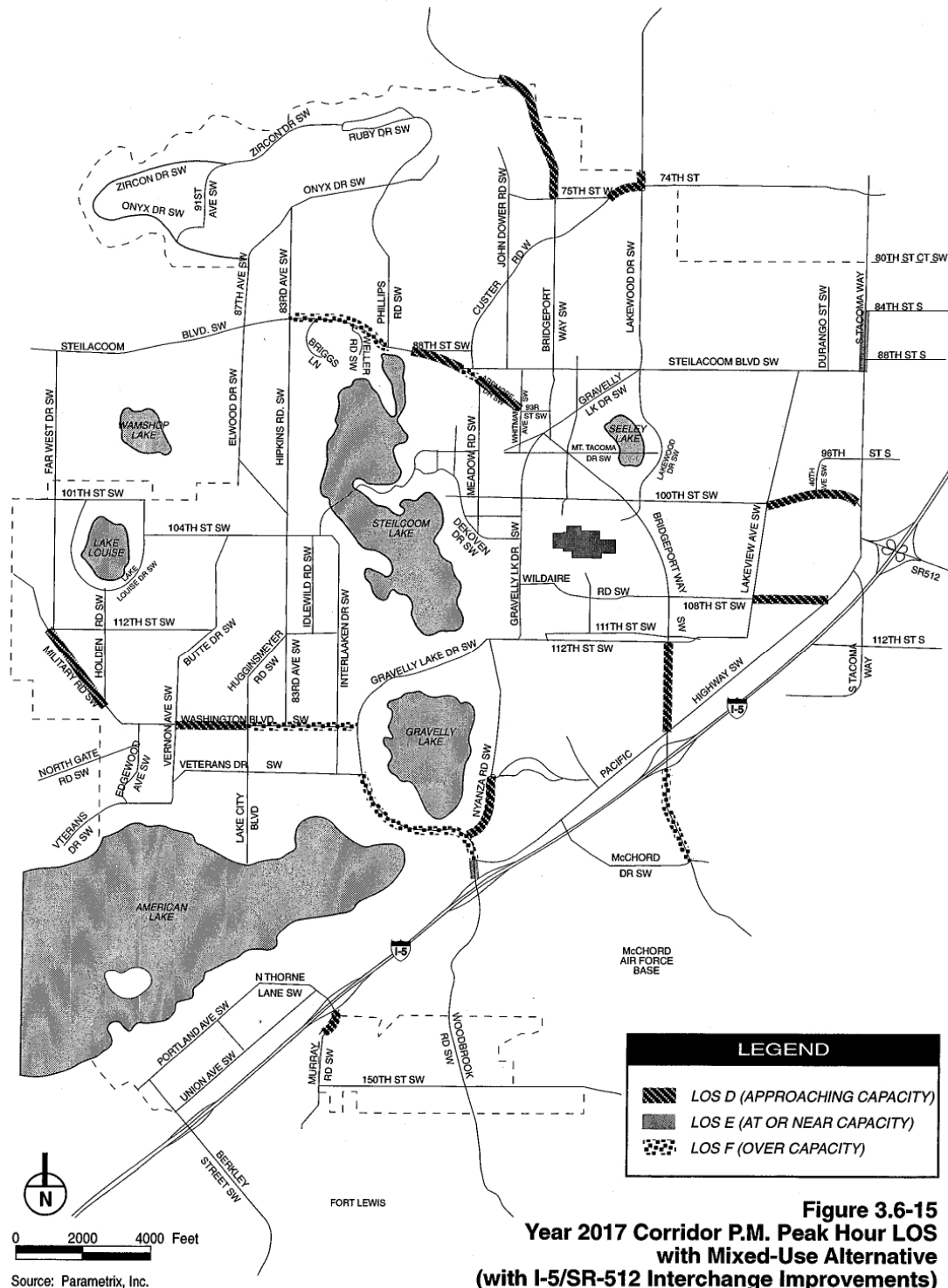
Figure 3.6-15 highlights the LOS D or worse arterial segments within the City of Lakewood under the Mixed-Use Alternative with the I-5/SR 512 interchange improvements. The following roadway sections are projected to exceed LOS D during the p.m. peak hour in year 2017:

- Ardmore Drive SW southeast of Steilacoom Blvd. SW (LOS F)









- Bridgeport Way West at Clover Creek bridge south of I-5 (LOS F)
- Gravelly Lake Drive SW south of Pacific Highway SW (LOS E)
- Gravelly Lake Drive SW north of Pacific Highway SW (LOS F)
- Gravelly Lake Drive SW west of end Nyanza Road SW (LOS F)
- South Tacoma Way north of Steilacoom Blvd. SW (LOS E)
- Steilacoom Blvd. SW west of Phillips Road SW (LOS F)
- Washington Blvd. SW west of Gravelly Lake Drive SW (LOS F)

In addition, multiple arterial segments would operate at LOS D in year 2017 with the Mixed-Use Alternative (with the I-5/SR-512 interchange improvements). These include:

- Ardmore Drive SW northwest of Whitman Avenue SW
- Bridgeport Way West north of 75th Street SW
- Bridgeport Way West north of Pacific Highway SW
- Lakewood Drive SW north of 74th Street W
- Military Road SW south of 1121 Street SW
- Murray Road SW north of 146th Street SW
- Nyanza Road SW north of Gravelly Lake Drive SW
- Steilacoom Blvd. SW southeast of 88th Street SW
- Washington Blvd. SW east of Vernon Avenue SW
- 74th Street W west of Lakewood Drive SW
- 108th Street SW west of Pacific Highway SW
- 100th Street SW east of Lakeview Drive SW

Table 3.6-19 summarizes the increased levels of arterial congestion that would result from the Mixed-Use Alternative with and without the I-5/SR-512 interchange improvements, compared to 1995 existing conditions and the No Action and Preferred Alternatives.

As shown in Table 3.6-19, the Mixed-Use Alternative would utilize approximately 1.5-2% less overall street system capacity than the No Action Alternative in the year 2017, depending on whether the proposed I-5/SR-512 interchange improvements and direct connection to 100th Street SW are constructed. Projected traffic conditions under the Mixed-Use Alternative are slightly better without the I-5/SR-512 interchange improvements than with them.

Table 3.6-19: Existing Versus Year 2017 No Action, Preferred, and Mixed-Use Alternatives Corridor p.m. Peak Hour LOS and Average V/C.

Alternative:	Number of Arterial Segments Operating at:			Average V/C Ratio
	LOS D	LOS E	LOS F	
Existing Conditions (1995)	6	0	3	0.58
No Action Alternative	10	8	4	0.74
Preferred Alternative (without I-5/SR-512 interchange improvements)	10	5	6	0.733
Preferred Alternative (with I-5/SR-512 interchange improvements)	13	3	6	0.725
Mixed-Use Alternative (without I-5/SR-512 interchange improvements)	13	3	5	0.725
Mixed-Use Alternative (with I-5/SR-512 interchange improvements)	12	2	6	0.729

3.6.3 Mitigation Measures

Roadway Improvements

Proposed corridor level of service thresholds for Lakewood arterial streets were previously described. Table 3.6-20 describes the number of arterial segments that would exceed or approach those proposed thresholds for the No Action, Preferred, and Mixed-Use Alternatives. Improvements are not currently planned for many of these arterial segments.

Table 3.6-20: Year 2017 No Action, Preferred, and Mixed-Use Alternatives LOS Threshold Comparison.

Alternative:	Number of Arterial Segments	
	Exceeding LOS Threshold	Approaching LOS Threshold
No Action Alternative	3	7
Preferred Alt. (without I-5/SR-512 interchange improvements)	0	7
Preferred Alt. (with I-5/SR-512 interchange improvements)	0	5
Mixed-Use Alternative (without I-5/SR-512 interchange improvements)	1	6
Mixed-Use Alternative (with I-5/SR-512 interchange improvements)	2	4

The recommended transportation improvements for the City of Lakewood would mitigate some of the congestion along major and minor arterials, particularly through proposed channelization and road widening improvements. In addition, the proposed I-5/SR-512 interchange improvements would reduce congestion along Pacific Highway SW, Tacoma Way, and 1001 Street SW corridors. However, it is important to note that the Preferred Alternative will not require any specific transportation improvements as mitigation as there are no future LOS deficiencies anticipated, based on the LOS thresholds previously described.

A grade separation over the BNSF railroad tracks on 100th Street SW has been discussed as a possible future improvement. Currently, there are only limited freight train movements that serve local industry spur tracks from this segment of track, which does not cause sufficient delay to street traffic to

warrant a major capital improvement. However, if at some time in the future, traffic congestion resulting from commuter rail, intercity rail, and freight rail movements becomes intolerable, the concept may warrant further consideration.

In some locations beyond those identified in the Pierce County Transportation Plan, it may be possible to widen roadways and improve channelization on approaches to major arterial street intersections. However, the majority of Lakewood's arterials are built out to the limits of City-owned right-of-way, making it difficult and expensive to implement any wide-scale road-widening program. For this reason other mitigation strategies, such as transportation demand and systems management programs, are emphasized in this transportation section.

Transit Service and Facility Improvements

The WSDOT has included the HOV Direct Access ramps project in the vicinity of the 1-5/SR-512 interchange within its 20-year State Highway System Plan. The proposed HOV ramps will provide direct connections between a planned transit park-and-ride/commuter rail station on Lakeview Drive and planned HOV lane expansion along 1-5. These projects combined will enhance regional commuter connections by rail or bus, throughout the day.

In addition to these planned facility improvements, the City of Lakewood should consider working with Pierce Transit and local employers to plan and implement a local mini-bus circulator system to provide efficient connections between Pierce Transit park-and-ride lots, the planned commuter rail station, major office centers, Lakewood Mall, local high schools, and other high density developments with high transit ridership potential. Such a circulator system should provide service throughout the workday to reduce work-related trips during the day and to improve mobility for transit patrons. This service would potentially be marketed to promote commuting to work by transit and would complement Pierce Transit's planned service increases and Sound Transit's commuter rail service.

Some of these programs/improvements may be revised or delayed due to voter approval of I-695.

Pedestrian and Bicycle Improvements

The City of Lakewood's Six-Year Comprehensive Transportation Program (2000-2005) includes 27 sidewalk and/or bicycle lane improvement projects along multiple pedestrian/bicycle routes throughout the city. The total cost of these projects, which are currently supported with \$3.6 million in City of Lakewood funds, is about \$11.1 million. In addition, there are at least four roadway improvement projects budgeted at approximately \$3.5 million that will include sidewalks and/or bike lanes/trails as significant project components. The City anticipates that additional funding for these projects will be secured from state, federal, and other local sources. This is consistent with the success the City has had in winning outside grants in recent years. Since 1996, about \$7.9 million in federal and state grants have been awarded

for transportation enhancements. It is also anticipated that the current level of City expenditures on pedestrian and bicycle improvements (about \$600,000 annually) will continue beyond the current six-year transportation program, as the need for sidewalks and bicycle enhancements will continue beyond the year 2005. For a complete list of pedestrian and bicycle improvement projects, refer to the City of Lakewood Capital Facilities Program and Finance Plan (shown in Tables 3.6-10 and 3.6-11).

Concurrency Management and Implementation

Under the GMA, all Washington municipal comprehensive plans are required to show a fiscal comparison of estimated transportation improvement costs against the potential revenue generated from existing and future sources. A key requirement of the GMA is that the estimated transportation revenues must be sufficient to fund the improvements identified in the plan. If revenues fall short of anticipated costs, the City must identify additional funding sources. If additional funding sources cannot be identified, or are not desired, the level of service threshold or land use assumptions contained in the plan must be adjusted to maintain a balance of costs and revenues.

Before the passing of Initiative 695 in 1999, the City of Lakewood typically received annual revenues of about \$4.4 million from real estate excise taxes, state gasoline, fuel and motor vehicle excise taxes (MVET) and utility taxes. After 1-695, the City anticipates receiving about \$3.45 million in revenue per year on average. The City has developed a Capital Facilities Program and Finance Plan (see Tables 3.6-10 and 3.6-11) that accounts for the loss of the MVET revenues due to 1-695.

To begin the transportation plan implementation process, a Transportation Improvement Program was developed for the first six years. As required by the GMA, estimated revenues must be sufficient to cover anticipated expenditures. Table 3.6-21 summarizes the estimated transportation revenues and expenditures for the first six years of the plan.

Table 3.6-21: City of Lakewood Six-Year Transportation Funding and Projects Summary (in \$1,000s).

TRANSPORTATION REVENUE	2000	2001	2002	2003-2005	Total
City of Lakewood	\$6,513	\$3,448	\$3,448	\$10,344	\$23,753
Federal/State/County/Other ¹	\$5,037	\$5,037	\$5,037	\$15,114	\$30,225
PROJECTS (expenditures)					
Arterial Street Construction Projects	\$2,557	\$3,441	\$2,355	\$2,400	\$10,753
Sidewalk Construction Projects	\$1,128	\$5,879	\$1,747	\$5,903	\$14,657
Traffic Signal Upgrades and Construction	\$270	\$520	\$20	\$330	\$1,140
Bikeway Construction	\$21	\$21	\$21	\$220	\$283
Street Lighting	\$65	\$120	\$120	\$360	\$665
Bridge Inspection	\$5	\$0	\$5	\$5	\$15
Beautification Projects	\$145	\$250	\$135	\$405	\$935
Roadway Restoration Projects	\$30	\$1,100	\$250	\$1,530	\$2,910
Traffic Circles	\$8	\$8	\$8	\$24	\$48
Emergent Nature Projects	\$20	\$20	\$20	\$60	\$120
Lakewood Commuter Rail Station	\$911	\$13,627	\$1,000	\$0	\$15,538
Maintenance	\$924	\$958	\$989	\$3,179	\$6,048
Transportation Planning	\$55	\$25	\$55	\$105	\$240
TOTAL	\$5,215	\$25,011	\$5,736	\$11,342	\$47,304
SURPLUS/DEFICIT	\$2,411	(\$3,482)	(\$240)	\$1,437	\$626

Source: City of Lakewood Six-Year Transportation Program, July 1999.

¹ Estimated revenue from non-City of Lakewood sources; all revenues are committed except for about \$1.58 million which are anticipated from new grants and/or partner contributions.

As shown in Table 3.6-21, anticipated revenues are more than adequate to finance the improvements contained in the transportation Capital Facilities Program.

Over the longer term, the GMA requires that the level of transportation investment must keep pace with growth in traffic volumes so that the level of service thresholds established in the comprehensive plan are maintained. The following corridor level of service thresholds are proposed in the comprehensive plan Transportation Element:

- Maintain LOS F with a V/C ratio threshold of 1.10 in the Steilacoom Blvd. corridor between 88th St. SW and 83rd Ave. SW.
- Maintain LOS F with a V/C ratio threshold of 1.30 on Gravelly Lake Drive between 1-5 and Washington Blvd. SW.
- Maintain LOS F with a V/C ratio threshold of 1.25 on Washington Blvd. SW, west of Gravelly Lake Drive.
- Maintain LOS F with a V/C ratio threshold of 1.05 on Ardmore Drive SW between Steilacoom Blvd. SW and Whitman Avenue SW.
- Maintain LOS F with a V/C ratio threshold of 1.05 on Murray Road SW north of 146th Street SW.
- Maintain LOS E with a V/C ratio threshold of 1.00 on 108th Street SW between Pacific Highway SW and Bridgeport Way SW.
- Maintain LOS E with a v/c ratio threshold of 1.00 on South Tacoma Way between 84th Street South and Steilacoom Blvd. SW.
- Maintain LOS E with a V/C ratio threshold of 1.00 on Bridgeport Way SW between Pacific Highway SW and 108th Street SW.
- Maintain LOS D with a V/C ratio threshold of 0.90 on all other arterial streets in the city, including state highways of statewide significance.

Reassessment Strategy

The arterial level of service thresholds established above will be monitored over time. For locations that may exceed the level of service threshold in the future, a different threshold would need to be established or a specific facility improvement would need to be identified and programmed for funding within six years.

While the future of transportation financing from state and federal sources is uncertain over the long term, there are mechanisms available to municipalities to generate revenue for, or otherwise encourage private investment in, transportation facilities. If the above proactive policies fail to maintain future levels of service within the established LOS thresholds, the City of Lakewood will resort to some combination of the following TDM/TSM strategies to bring any LOS deficiencies back into compliance under GMA concurrency requirements:

- Coordinate timing of new development in LOS-deficient areas with fully-funded improvements identified in the required 6-year transportation improvement plan;
- Provide for routing traffic to other roads with under-used capacity to relieve LOS standard deficiencies, as long as the impact of additional traffic on the safety and comfort of existing neighborhoods does not worsen;
- Aggressively pursue federal and state grants for specific transportation improvements on LOS-deficient roadway segments;
- Support charging for employee parking and providing monetary incentives for car and vanpooling;
- Partner with Pierce Transit to identify public and/or private funding for expanded transit service during peak and off-peak times along LOS-deficient corridors.

In addition, through its authority to establish and modify land use policy, the City of Lakewood can have a significant effect on personal travel behavior, particularly in how it chooses to manage the overall supply of parking. After major improvements to transit and commuter rail have been fully implemented and transit and ridesharing programs are fully established as viable transportation alternatives, the City of Lakewood should aggressively pursue one or more of the following:

- Install parking meters on streets within and adjacent to commercial centers;
- Develop public parking facilities and use cost pricing to discourage SOV commuting;
- Institute a municipal parking tax;
- Set maximum parking space development standards and reduce over time to further constrain parking supply;
- Make development density bonuses available to developers who provide additional transit, bicycle, and pedestrian-friendly amenities beyond the minimum requirements.
- Reassess commercial and residential development targets by planning area and make adjustments to channel development away from LOS-deficient corridors.
- Effectively target population and employment growth in mixed-use centers to reduce overall travel demand.

These parking management strategies should be implemented in conjunction with the TDM/TSM measures listed above that would reduce parking demand by enhancing the attractiveness of alternative transportation modes.

If these mitigation measures prove to be infeasible, or fail to bring LOS-deficient corridors back into compliance with GMA concurrency, then the City of Lakewood may choose to adjust LOS thresholds to accept higher levels of traffic congestion.

3.6.4 Unavoidable Adverse Impacts

There will be more traffic on City of Lakewood arterials in the year 2017 compared to existing conditions as a result of anticipated growth and development. Traffic congestion on city arterials will increase by 25.8% to 28.5% by the year 2017 depending on which of the three alternatives (No Action, Preferred or Mixed Use) is implemented.

3.7 Aesthetics and Views

This section discusses the impacts on the visual environment of Lakewood associated with the alternatives discussed in this EIS.

3.7.1 Affected Environment

The visual environment in Lakewood is characteristic of an older established suburban city. The landscape is a mixture of affordable tract home subdivisions on smaller lots, more expensive homes on larger wooded lots around the lakes in the western part of the city, limited amounts of light industrial and warehousing development, and significant amounts of auto-oriented commercial sprawl. The city is largely developed, with few remaining unbuilt areas. There are some significant institutional campuses in Lakewood, notably Western Washington State Hospital and) Pierce County Community College, which act as landmarks and create memorable semi-public landscapes. Despite the degree of development in the city, there are few examples of notable architecture. The Colonial Center is one of the few, a shopping plaza developed in the 1930s with a neo-colonial motif. The visual environment is generally dominated by the automobile and auto-related improvements. Several state and federal highways bisect the eastern part of the city, including 1-5 and Highway 99.

Green spaces are generally limited to a few parks and undevelopable natural areas. The original landscape consisted of predominantly open prairies and oak savanna, but little of this landscape remains. Fort Steilacoom Park is a 342-acre regional park in the western part of the city that provides some recreational opportunities and a sense of open green space. The Flett wetlands on the northeastern edge of the city provide a sense of openness, with a wide sweep of wetland vegetation. The forested canyon of Chambers Creek on the northern border of the city provides opportunities to experience a more natural landscape. There are almost no lands dedicated to agriculture, pasture, or forestry in the city.

There are a number of magnificent views of Mount Rainier in many places around the city, which also represent a significant visual resource. Despite its proximity, there are few views of Puget Sound due to topography and the intervening landscape. There are many beautiful lakes in Lakewood, including Lake Steilacoom, Gravelly Lake, Lake Louise, Lake Waughop, and American

Lake. Most of these lakes are surrounded by privately owned lands with minimal opportunities for public access, visual or otherwise.

In general, the aesthetic experience of the Lakewood environment, outside of certain residential neighborhoods, is one characterized by visually chaotic strip commercial development, undistinguished commercial architecture, bland and repetitive tract housing, and the occasional powerful view of Mount Rainier. There is little public art or memorable landscapes to act as landmarks, nor are there any distinctive gateways at the entrances to the city or individual neighborhoods to give them identity or orient the visitor.

3.7.2 Environmental Impacts

None of the three alternatives include measures to protect existing views of Mount Rainier. Without such protection, an important visual resource that adds character to the visual environment will be lost as development occurs. Additionally, none of the alternatives include measures for protecting or adding views of the lakes. Of the three alternatives, only the Preferred Alternative provides for additional public access to the lakes. Adverse impacts associated with each of the alternatives are summarized below.

Preferred Alternative

The Preferred Alternative would eliminate most of the mixed-use zoning that has contributed to much of the commercial sprawl and, ultimately would help reduce the visual chaos found in Lakewood. It includes only three mixed-use designations: the Central Business District, the Neighborhood Business District, and the Arterial Corridor. Each of these land use designations is intended to accommodate complementary land uses for the benefit of employees, residents, and customers alike. Under this alternative, the City proposes to do additional detailed neighborhood planning for specific high visibility neighborhoods, which would guide development in an orderly manner and result in a more coherent and attractive public environment. Additionally, creation of the Residential Estate designation would prevent major subdivision activity in some of the forested areas west of Gravelly Lake and Lake Steilacoom, preventing deforestation and loss of community character.

The Preferred Alternative contains an Urban Design chapter, a new planning tool for the city. This chapter identifies five major pieces to an overall urban design strategy: (1) design requirements for land use designations; (2) urban design criteria for transportation elements; (3) an overall urban design framework plan; (4) focused urban design strategies for three high-visibility neighborhoods of the city; and (5) basic urban design goals and policies. The intent of this chapter is to identify high intensity public use areas of the city where the application of good urban design measures through capital projects will, over time, result in an attractive and well-functioning public environment and provide the greatest improvement to the visual character of the city as a whole. It is particularly focused on public rights-of-way, which comprise most of the land under City control, but also addresses the issue of design standards for private development. Among the urban design elements identified are the development of civic boulevards, green pedestrian streets, and city gateways.

Together, these elements are intended to create a sense of dignity and identity along key thoroughfares, improve the memorability and functioning along key pedestrian routes, and provide a sense of entry into the city. Under the Preferred Alternative, the visual quality and functioning of the built environment is expected to improve over the life of the comprehensive plan, as a result of the urban design measures that would be adopted as part of that alternative.

No Action Alternative

Under the No Action Alternative, Lakewood would continue to have an environment with development guided by multiple mixed-use zoning categories. The zoning categories would allow a broad range of development types to occur. City officials would have fewer controls over development, and the most likely result would be increased auto-oriented commercial sprawl and high-density housing with little visual coherence. This would cause some additional adverse impact on the visual quality of the environment, although the change would be one of degree, not type, resulting in an additional increment of the same development pattern. Therefore, the impacts are considered adverse but not significant. Housing construction would continue to occur in the western portion of the city at a density much higher than that which currently exists. This would result from the subdivision of larger lots into smaller mini-subdivisions. The result would be the removal of much of the remaining native coniferous forest in the city, which gives it its distinct identity in the eyes of its citizens. In the most recent period for which data are available, 3% of the existing natural land was lost to development between 1984 and 1992 in Lakewood, mostly in the northern and western portions of the city³⁴. This loss of forested character would be considered a significant adverse impact to visual resources..

Mixed-Use Alternative

The impacts to the eastern part of the city would be similar to the Preferred Alternative in that mixed-use land use designations would still predominate, although these are somewhat more refined and focused, as well as much reduced in area. In the western portions of the city, a Large Lot Overlay district would be identified to protect existing housing areas vulnerable to subdivision. This would further reduce deforestation and loss of community character in these neighborhoods that would result as consequence of higher density redevelopment. Therefore, the Mixed-Use Alternative would not cause significant visual impacts.

3.7.3 Mitigation Measures

Regardless of the alternative selected, the City will identify sensitive views, view corridors, and/or visual resources, as well as develop a program to protect these resources. These could include specific notable views of Mount Rainier, as well as particular lake views.

³⁴ PSRC (1994) - the result of change detection analysis in the Puget Sound region using satellite images. See also Chapter 3.3 of the Lakewood background report.

The City will prepare and adopt development standards tied to zoning to identify specific treatments for site development. These standards may or may not address such areas as site planning, landscaping, lighting, signage, architecture, and other site characteristics, as necessary. This could potentially be extended to detailed design guidelines in certain high profile districts, such as the CBD, Lakewood Station, neighborhood business districts, and neighborhoods targeted for maximum growth at some point in the future, depending on City resources. To address these mitigation measures, the City has revised the Comprehensive Plan by adding a new goal, revising an existing policy, and adding two new policies in Section 4.6 (Goals and Policies, Urban Design).

3.7.4 Unavoidable Adverse Impacts

If the Preferred Alternative is adopted as the City's comprehensive plan, the character of American Lake Gardens, parts of which remain attractively rural, would be greatly altered with the development of industrial uses. Much of this character might be lost regardless of this plan due to the development of the Cross-Base Highway.

3.8 Public Services and Utilities

3.8.1 Affected Environment

Public services analyzed in this EIS include police, fire, and public schools. Utilities analyzed in this EIS include stormwater, sewer, water, electricity, telecommunications, solid waste, and natural gas. The City of Lakewood provides stormwater management. All other utility services are provided by other purveyors. Existing conditions for each are described in the background report.

3.8.2 Environmental Impacts

Preferred Alternative

Police

Law enforcement in Lakewood is provided by the Lakewood Police Department through contract with the Pierce County Sheriffs Department. The Police Department operates one police station located at 5504 12th Street, near the center of the city. The Police Department has divided Lakewood into six districts or neighborhoods for patrol and data analysis purposes (see Figure 3.8-1). Currently, the Lakewood Police Department employs approximately 76 officers, one officer for every 820 residents, equivalent to 1.2 officers per 1,000 residents. Since incorporation, the Lakewood Police Department has prioritized its limited resources toward combating serious criminal activity such as violent crimes, gang activity, and vice rather than property and other less serious crimes. Response to Priority 1 calls averages 2 to 3 minutes (Record of Communication [ROC], Saunders, 1/3/00).

Land use and policy changes associated with the Preferred Alternative are expected to affect public safety in areas of the city where change is greatest. Examples of such areas include Springbrook, American Lake Gardens, and the

CBD. These neighborhoods are included in the Springbrook, Ponders, Tillicum, Woodbrook, and Lakewood Center police districts. Redevelopment efforts proposed by the plan in these areas should improve the present socioeconomic and physical conditions that contribute to criminal behavior in these areas. New construction, renovation, and higher standards of maintenance associated with the comprehensive plan's Crime Prevention through Environmental Design policies will further increase crime resistance. In addition, the comprehensive plan's adult business restrictions will supplement crime prevention and law enforcement efforts aimed at breaking up concentrations of illicit activity, particularly along the Pacific Highway Southwest corridor.

Managed growth under the Preferred Alternative will allow the Police Department to utilize its resources more efficiently than the existing unfocused land use patterns. Nevertheless, increasing population in these areas will require additional police to maintain current police/citizen ratios, much less increase them to a more desirable ratio of at least 1.6 officers per 1,000 residents³⁵ (ROC, Saunders, 1/3/00).

To maintain the current ratio, the Police Department would need 20 additional officers by 2017. To increase the police officer to citizen ratio of 1.6:1,000, 50 officers would need to be added. In addition, response times could be indirectly affected by increased traffic volumes, particularly along constricted corridor segments (addressed in Section 3.6.2).

Fire Prevention and Response

Fire prevention and response in Lakewood are the responsibility of the Lakewood Fire District #2. This Fire District consists of four divisions: Operations, Prevention, Support Services, and Fire Communications. The Operations division handles fire fighting response dispatched to different parts of the city from four engine companies. Each company is located in one of the district's four stations at the center of a 1 1/2 mile radius response ring, shown on Figure 3.8-2. By design, these rings overlap to allow response coverage from more than one engine company. In 1998, response times from dispatch averaged 4 minutes 30 seconds on high priority calls, with an average arrival time of 5 minutes 25 seconds from dispatch on all calls (Lakewood Fire District #2 1999). In addition, mutual aid agreements exist between the Lakewood Fire District and the fire departments of all adjoining jurisdictions, including the military bases.

³⁵ The City is in the process of conducting a Police Operation Study that will include recommendations on the optimal citizen/police officer ratio. The study is scheduled to be released in February 2000.

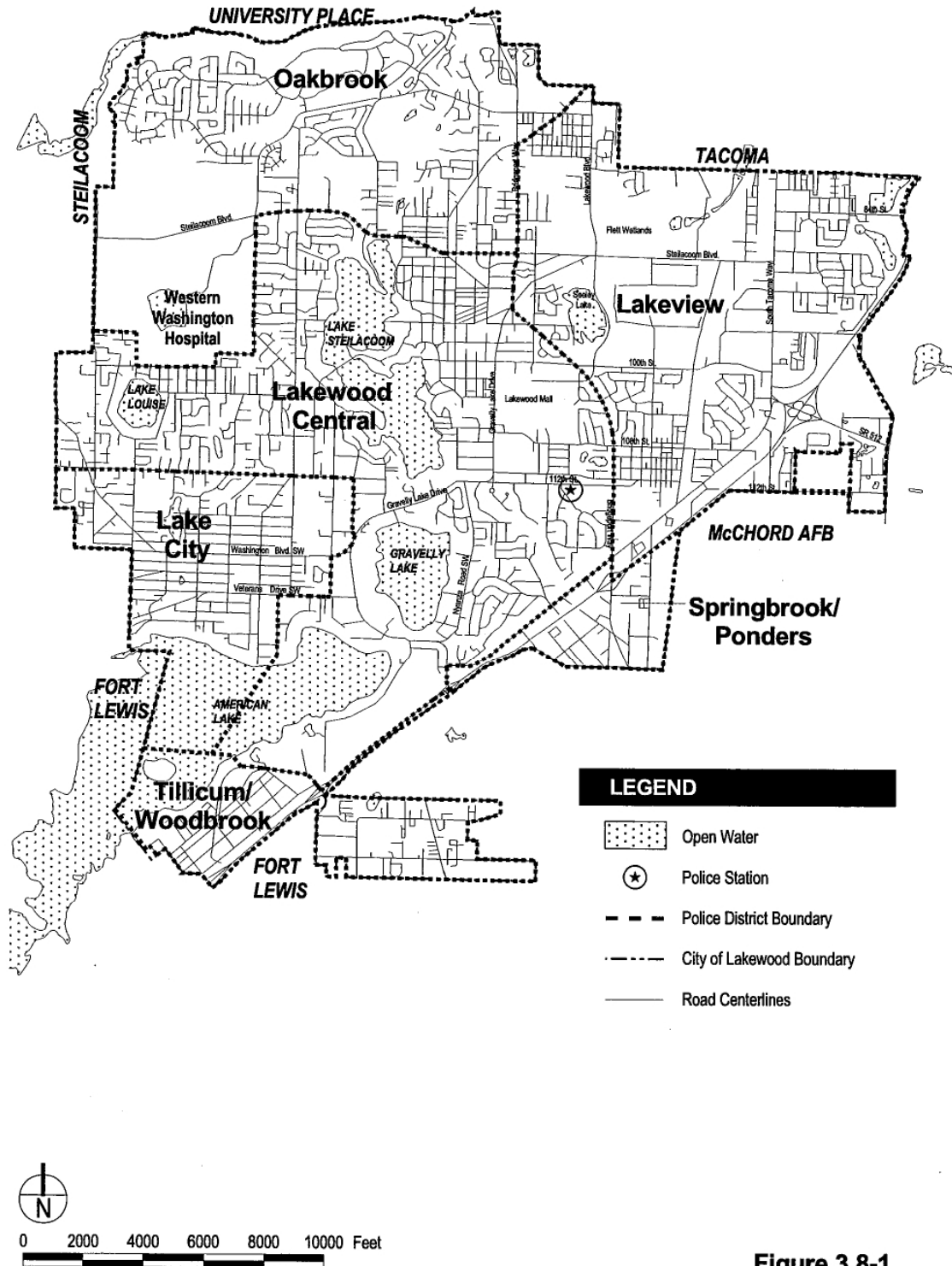


Figure 3.8-1
Police Districts

Several parts of Lakewood lie outside of the response rings, but the only portions of the city located farther than 1 1/2 miles from a fire station that would receive a significant amount of growth under the Preferred Alternative are Springbrook and Lakewood Station. The City is investigating the possibility of a new fire station to be co-located with the Lakewood Transit Station on property purchased from Sound Transit. This new station would serve both the Springbrook and Lakewood Station neighborhoods. Without this station, these neighborhoods may be underserved for fire protection.

Conversion of portions of American Lake Gardens and Springbrook to industrial areas would alter the nature of response by the engine company based at Station #2-3 in Tillicum to industrial response. This may require additional training and/or special equipment, such as a medical unit. Likewise, the designation of 97 acres of industrial land to an area outside the 1.5 mile response ring would leave the industrial part of Springbrook vulnerable in the event of an industrial fire or other emergency.

Secondary impacts associated with the Preferred Alternative may include increased response times for emergency response vehicles due to increased traffic volumes, particularly along constricted corridor segments (addressed in Section 3.6.2). As a result, localized impacts would include delayed response times in the southeastern portion of Station #2-2's response area as well as the northern half of Station #2-3's response area.

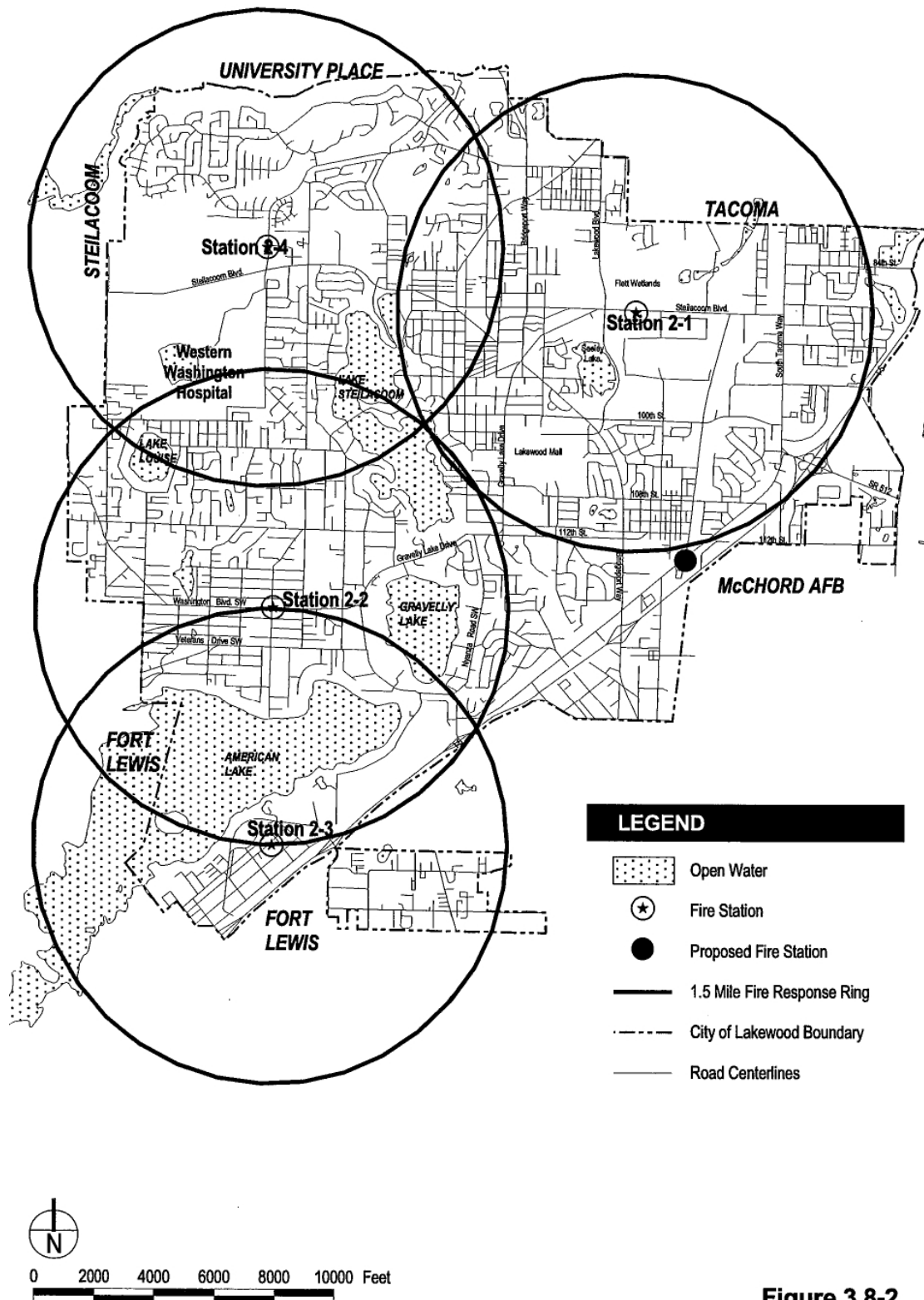


Figure 3.8-2
Fire Stations and Response Rings

Source: Pierce County GIS / Lakewood Parcel Survey Database / EDAW Inc., 1999.

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Public Schools

The Clover Park School District provides public education to most of Lakewood, along with students living on both McChord AFB and Fort Lewis. As of the 1997-1998 school year, the district enrolled more than 12,000 students, most of whom lived in Lakewood and attended one of the district's 18 schools located within Lakewood's city limits or one of the schools on McChord AFB and Fort Lewis. The School District has divided Lakewood into approximately 14 neighborhoods, each served by a specific elementary school.

The large number of elementary schools allows most elementary students to be educated within their own neighborhood. By contrast, middle schools and especially high schools educate students from a broader geographic area, increasing reliance on bussing. The district maintains a feeder system to determine which students attend the district's four middle and two high schools. The district's facilities within Lakewood's boundaries are listed in Table 3.8-1.

Student enrollment is expected to grow proportionately with population growth. Assuming comparable demographics, the Preferred Alternative would add an estimated 1,567 elementary school students, 850 middle school students, and 717 high school students.

Table 3.8-1: Public School Facilities By Planning Area.

Facilities	Description	1997-1998 Enrollment	Acreage
Planning Area 1			
Clover Park High School	Public High School	1,385	34.3
Park Lodge Elementary	Public Elementary School	304	5.8
Lakeview Elementary	Public Elementary School	373	9.4
Planning Area 2			
Oakwood Elementary	Public Elementary School	293	9.8
Southgate Elementary	Public Elementary School	428	7.8
Planning Area 3			
Lochburn Middle School	Public Middle School	769	21.4
Planning Area 4			
Hudtloff Middle School	Public Middle School	663	25.3
Oakbrook Elementary	Public Elementary School	358	10
Custer Elementary	Public Elementary School	287	11.6
Dower Elementary	Public Elementary School	305	10
Planning Area 5			
Lakes High School	Public High School	1359	.8
Mann Middle School	Public Middle School	553	39.2
Lake Louise Elementary	Public Elementary School	289	22
Lake City Elementary	Public Elementary School	264	9
Idlewild Elementary	Public Elementary School	246	9.5
Planning Area 6			
Tyee Park Elementary	Public Elementary School	277	11.7
Planning Area 7			
Woodbrook Middle School	Public Middle School	688	38
Tillicum Elementary	Public Elementary School	352	5

Source: prepared by EDAW based on: (1) ROC, Espinosa, 10/20/99; and (2) JC Draggoo and Associates 1997.

Since residential growth would be concentrated in Springbrook, Custer, and Tillicum (Planning Areas 3, 6, & 7), the most affected elementary schools would likely be Tyee Park, Carter Lake, Lakeview, Tillicum, and Dower. The most affected middle schools would be Woodbrook and Lochburn.

The conversion of portions of American Lake Gardens from residential to industrial uses would have an additional effect on the Woodbrook Middle School. In addition to American Lake Gardens where this school is located, Woodbrook serves students from Tillicum, Fort Lewis, and McChord AFB. Enrollment losses from American Lake Gardens are expected to be offset by population growth in Tillicum; thus, Woodbrook would likely gain additional students as a result of higher density redevelopment in Tillicum. An additional concern for the School District is compatibility with adjacent land uses, especially if existing housing is replaced by incompatible uses such as heavy industry. To prevent this, the City should regulate adjoining uses to buffer the school from excessive noise and air pollution. If the school is displaced by future land use changes permitted by the Preferred Alternative, the City should assist the school's relocation to Tillicum or another appropriate location.

Capacity increases resulting from the Preferred Alternative would increase school enrollment in Springbrook (Planning Area 6). No schools are currently located in this neighborhood; thus, students from this isolated neighborhood attend several schools in other parts of the city and on McChord AFB.

This alternative would essentially freeze the population of the northeastern corner of the city, stabilizing enrollment of the Oakwood School.

The School District does not have data on capacity but is currently in the process of developing a Capital Facilities Plan (scheduled for completion in late 2000) that will evaluate capacity issues. The plan will be consistent with the Lakewood Comprehensive Plan (ROC, Espinosa, 1/4/00). This plan will also include recommendations for school impact fees to finance new construction. Until new facilities can be added to its inventory, the School District will likely reassign neighborhoods from over-crowded to less crowded schools through a school boundary adjustment process. Substantial facility growth will be needed under all alternatives. To meet the projected enrollment growth expected to occur as a result of this alternative, the School District would need to significantly increase capacity, adding the equivalent of 5 new elementary schools, one new middle school, and approximately 0.5 high schools over the 20-year life of the plan. New school construction should be directed to areas slated for the most residential growth. If sufficient capital resources are available to fund facility growth, through impact fees or other means, this alternative will not have a significant negative impact.

Stormwater

Land use changes associated with the Preferred Alternative are expected to affect stormwater management in Springbrook, American Lake Gardens, near Lakewood Station, and in the northeast section of Lakewood beyond what the funded stormwater capital projects are intended to address.³⁶ Each of these areas is described further below.

In the Springbrook neighborhood, approximately 156 acres of currently vacant or underutilized land is designated for High Density Multi-Family or Industrial development. These land use designations allow over 40 DU/acre or 15

³⁶ These projects are listed in Table A6.1 in the background report.

jobs/acre. As this development occurs, the amount of impervious area in this neighborhood is expected to increase, requiring additional improvements to convey stormwater and prevent flooding. The stormwater facilities would be designed and constructed on a per-development basis. Developer financing is anticipated for retention basin projects associated with new development in the Springbrook neighborhood.

In total, 113 acres of American Lake Gardens is designated Industrial. Currently, much stormwater in this area is piped to drywells. The development of 113 acres of industrial facilities, which is likely to be largely impervious, would require significant stormwater system improvements. Stormwater conveyance from the western part of American Lake Gardens is currently handled through an existing 30-inch stormwater line crossing under 1-5, then paralleling and eventually crossing Thorne Lane, and then emptying into American Lake. Stormwater conveyance from the proposed 113 acres of industrial facilities using the existing method of conveyance under 1-5 and into American Lake would require upsizing the existing line to a 36- to 60-inch diameter line, depending on the amount of impervious area.

Installing pipes of this size would result in grade problems associated with minimum cover requirements over underground pipes and extreme depths of pipes (up to 18 feet deep). Since the American Lake Gardens area contains three drainage basins, stormwater pump stations would also be required. For these reasons, retention ponds would be needed to accommodate large-scale industrial development in American Lake Gardens. Preliminary sizing of required retention basins is based on an infiltration rate of 3 inch/hour and a 3-foot depth for each pond, resulting in a requirement of an estimated 7 acres of retention facilities for the industrial portion of American Lake Gardens. At an estimated cost of \$250,000 per acre of retention facility, these retention facilities would cost \$1,750,000. These facilities would be built as development occurs and would be funded by developers.

95 acres of land, much currently undeveloped and floodprone, is designated for industrial development in northern Springbrook. No preliminary engineering studies have been done for this acreage. However, using a similar ratio of detention requirements as for the industrial area in American Lake Gardens yields a requirement of 5.8 acres of detention ponds, at a cost of \$1.4 million. Again, the cost of constructing these facilities is expected to be borne by the developers.

In the Lakewood Station Area, the Sound Transit commuter rail station and associated parking facilities would add significant impervious areas. The impervious area is expected to include a 1,000-stall on-grade parking lot and a six-story parking garage with a total of 1,000 stalls. Stormwater facilities to serve this station have not yet been identified. Nevertheless, the station site selection process did address stormwater detention to some degree, and conceptual site plans identified potential detention/retention pond locations. As part of the separate EIS process for the design, construction, and operation of the station, the City will identify specific stormwater improvements.

In the northeast section of the city, there are nearly 150 vacant acres and an additional 150 “underutilized” acres zoned for commercial/employment development. For this EIS, it was assumed that development in this area would consist of mostly impervious surfaces and therefore would require an additional 12 acres of land for retention purposes. This equates to an average of one acre of retention per 25 acres of development. As with the previously mentioned projects, these retention facilities would be built on an as-needed basis as development occurs within the region and would be funded by developers.

If adequate retention/detention facilities are constructed simultaneously with new development, the Preferred Alternative would not have a significant negative impact.

Sanitary Sewer

Throughout most of Lakewood, sanitary sewer service is provided by the Pierce County Department of Public Works and Utilities. In its 1991 General Sewerage Plan Update, Pierce County planned for a projected increase in service to serve an area population of approximately 400,000 before the year 2040 (Pierce County 1991). While this planning process should allow Pierce County to provide sanitary sewer service to the City of Lakewood, individual basins within Lakewood and Steilacoom may require additional review as new projects are proposed. Sewer basins are illustrated in Figure 3.8-3.

To determine the overall impact on the existing sewer system, planning areas were roughly grouped by sewer basin and projected populations were added. Existing sewer basin LK-E includes Planning Areas 1, 3, and 6 as well as portions of 2, 4, and 5 (see Table 3.8-2 for a summary of projected residential growth and wastewater demand through the planning period). Existing sewer basin LK-W includes Planning Area 7 as well as most of 4 and 5. A small portion of the STAC sewer basin lies within the northeast corner of the City of Lakewood that includes about half of Planning Area 2.

Overall population growth in Sewer Basin LK-E would be lowest under the Preferred Alternative with a total projected dwelling unit increase of 3,693 due largely to less dense residential development and greater commercial development in the vicinity of the Lakewood Mall in Planning Areas 1 and 6. The projected 2017 residential growth for the LK-W Sewer Basin is the lowest of the three alternatives, at 3,591 new units, due to planned light industrial development in American Lake Gardens and Springbrook and the proposed RTA Station on the east side of 1-5. Adoption of the Preferred Alternative would keep requirements for new sewer service to a minimum. Planning Area 2 makes up the western end of the STAC Sewer Basin, extending slightly into the LK-E Basin at its southern end. The Preferred Alternative would result in a decline in total dwelling units in Planning Area 2 with a projected loss of 69 units by 2017.

Employment growth would be greatest of the three alternatives, with an estimated 10,846 new jobs created (Table 3.8-3). Most of these jobs are expected to affect the LW-E Sewer Basin (3,307 new jobs in Planning Area 1) and the STAC Sewer Basin (3,905 new jobs in Planning Area 2).

Table 3.8-2: Projected 2017 Residential Growth and Related Sewer Demand for Pierce County Sewer Basins in the City of Lakewood.

Sewer Basin	Residential Growth and Demand* Increase					
	Preferred Alternative		No Action Alternative		Mixed-Use Alternative	
	New DUs	Demand	New DUs	Demand	New DUs	Demand
LK-W						
Planning Area 4 (80%)	279	61,424	623	137,104	582	127,952
Planning Area 5 (95%)	2,421	532,532	4,254	935,902	1,766	388,531
Planning Area 7	891	196,020	886	194,920	1,758	386,760
LK-W subtotal	3,591	789,976	5,763	1,267,926	4,106	903,243
LK-E						
Planning Area 1	1,771	389,620	1,719	378,180	1,736	381,920
Planning Area 2 (50%)	-70	-15,290	767	168,630	438	96,360
Planning Area 3	1,795	394,900	1,130	248,600	1,415	311,300
Planning Area 4 (20%)	70	15,356	156	34,276	145	31,988
Planning Area 5 (5%)	127	28,028	224	49,258	93	20,449
Planning Area 6	760	167,200	2,622	576,840	2,189	481,580
LK-E subtotal	3,693	979,814	6,618	1,455,784	6,016	1,323,597
STAC						
Planning Area 2 (50%)	-69	-15,290	776	168,630	438	96,360

*Based on an assumption of 220 gallons per unit per day.

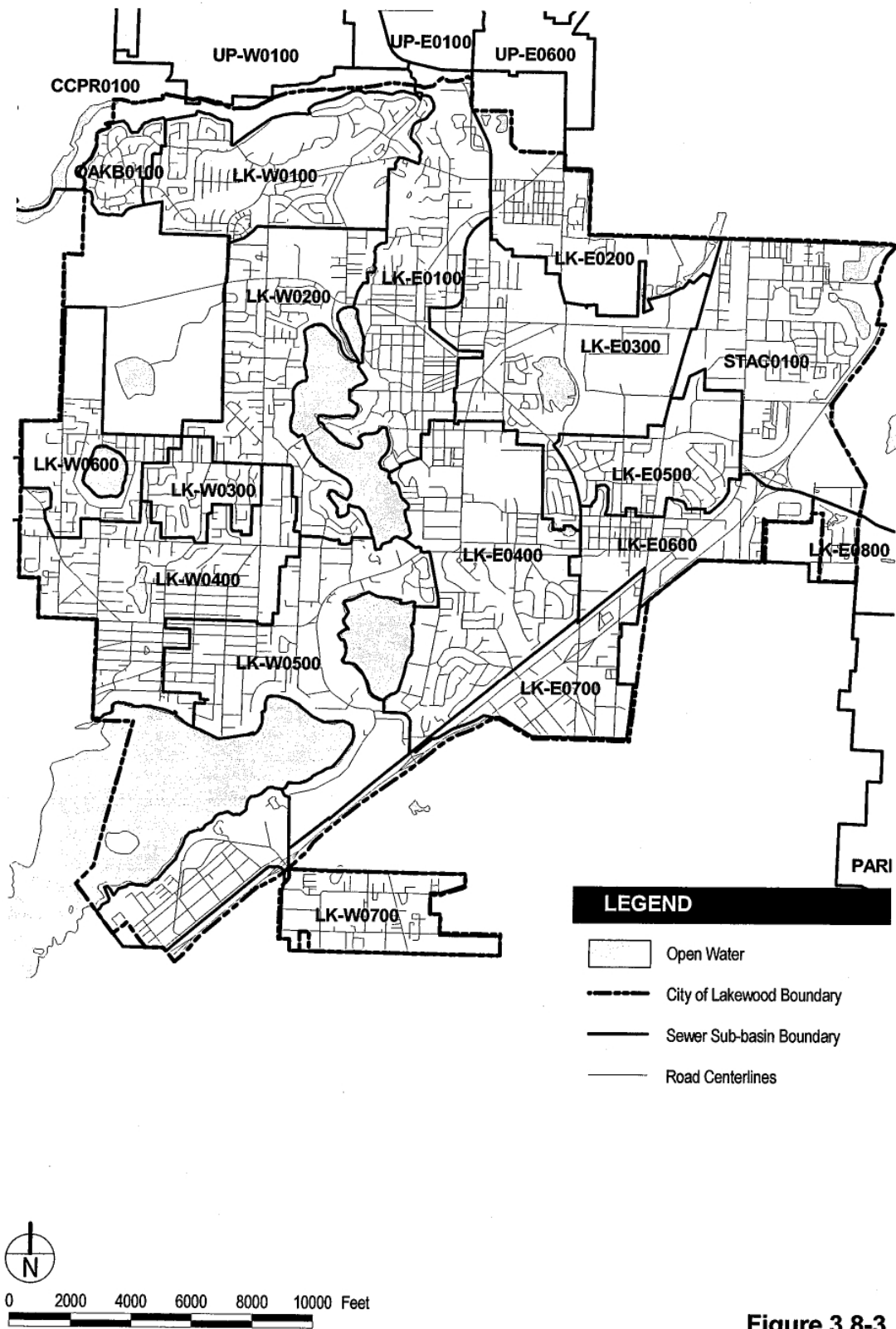
Source: EDAW 1997, Pierce County Public Works and Utilities

Table 3.8-3: Projected 2017 Employment Growth and Related Sewer Demand for Pierce County Sewer Basins in the City of Lakewood.

Sewer Basin	Job Growth and Demand Increase ⁽¹⁾					
	Preferred Alternative		No Action Alternative		Mixed-Use Alternative	
	Acres	Demand	Acres	Demand	Acres	Demand
LK-W						
Planning Area 4 (80%)	11	11,224	5.8	5,832	6.2	6,160
Planning Area 5 (95%)	3.8	3,876	2.7	2,660	12.5	12,540
Planning Area 7	79	78,870	6.7	6,730	9	9,000
LK-W subtotal	93.8	93,970	15.2	15,222	27.7	27,700
LK-E						
Planning Area 1	118	118,310	127.8	127,800	108.9	108,900
Planning Area 2 (50%)	176.5	176,370	111.4	111,435	107.9	107,900
Planning Area 3	60	60,240	77.3	77,330	55.4	55,400
Planning Area 4 (20%)	2.8	2,806	1.3	1,458	1.5	1,540
Planning Area 5 (5%)	0.2	204	0.1	140	0.7	660
Planning Area 6	86	85,640	18.7	18,650	50.5	50,500
LK-E subtotal	443.5	443,570	336.6	336,813	324.9	324,900
STAC						
Planning Area 2 (50%)	176.5	176,370	111.4	111,435	107.9	107,900
TOTAL GROWTH	710.8	713,910	463.2	463,470	460.5	460,500

⁽¹⁾ Assumes 1,000 gallons per acre per day

*Source: EDAW 1999.



Source: Pierce County GIS / Lakewood Parcel Survey Database / EDAW Inc., 1999.

**Figure 3.8-3
Sewer Basins**

Environmental impacts associated with developing infrastructure for new development would be typical of those associated with installation of sewer lines and the associated disturbance of soil and runoff patterns. Use of best management practices (BMPs) for erosion and sedimentation control, consultation with resource agencies, and implementation of recommended mitigation should minimize environmental impacts associated with construction of these infrastructure improvements.

The Preferred Alternative includes significant land use changes in the Tillicum, Springbrook, and American Lake Gardens neighborhoods (the latter are the only developed portions of the city lacking sewer systems). These land use changes would require installation of sewers to handle increased sewer flows from higher density redevelopment, particularly in the portions of Tillicum designated Multi-Family Residential, High Density Multi-Family, Mixed Residential, and Corridor Commercial. In American Lake Gardens, sewers would be required to serve the 113 acre proposed industrial area.

Tillicum would require a 15,000 lineal foot gravity collection system. American Lake Gardens would need a separate 21,000 lineal foot gravity collection system. Both would discharge to a common pump station and force main to convey sewage approximately 7,000 feet and discharge into the Pierce County collection system near the Gravelly Lake freeway interchange. An additional pump station and force main would be required in American Lake Gardens, and a separate small pump station and force main may be required in Tillicum, depending on the actual location of proposed multi-family development along South Thorne Lane.

The total cost for providing sewer service to both neighborhoods has been estimated in the \$12-\$17 million range. No funding sources have yet been identified to finance this infrastructure. Likely sources include property-owner assessments through formation of a Local Improvement District and by developer financing for the industrial portion. Attempting to finance the system entirely through residential assessments would result in a significant impact to homeowners in Tillicum.

Water

Most population and employment growth projected under the plan would occur in areas served by the Lakewood Water District. In 1996, the District served an estimated population of 66,400. The total number of connections served by the District in 1996 was 15,600, of which 1,060 were commercial. In 1996, the average day water demand in the Lakewood Water District was estimated to be 9.5 million gallons per day (MGD), and 1996 peak day demand was estimated at 19.9 MGD. A minimum fire flow requirement of 3,000 gallons per minute (gpm) for a 2-hour duration has been established for high density residential, commercial, and industrial land uses.

Based on population projections made as part of the City's comprehensive plan, the District has provided revised demand and capital improvement projections. Growth projections produced as part of the City's comprehensive plan call for overall population increases ranging from 17,500 (Preferred Alternative) to 30,204 (Mixed-Use Alternative). The District indicates that the

Preferred Alternative 20-year population growth would result in a peak day demand of 25.1 MGD and an average day use of 12.6 MGD. This represents a peak day demand growth of 5.2 MGD and an average day use growth of 3.1 MGD. Based on an existing production capacity of 46.9 MGD, the District has more than sufficient capacity to meet the demands of the projected population increases (ROC, Black, 10/1/99). A small portion of Lakewood is served by the SE Tacoma Mutual Water Company. Upon review of projected population growth, representatives of the company confirmed that they have adequate capacity to meet projected growth demands (ROC, Olive, 10/1/99).

The District reports that an analysis of required storage uses three factors: (1) Department of Health guideline of 200 gallons of standby storage per connection, (2) additional 15% equalization storage, and (3) 360,000 gallons of fire flow storage (3,000 gpm for 120 minutes). This equates to a required storage volume of 7.6 million gallons (MG), which is less than the District's current system storage capacity of 26.8 MG. The District indicates that an analysis of Lakewood Water District's four pressure zones (pumping and storage) shows allowable growth (or capacity) for these zones of 300% to 1,786% of 1995 needs.

The Lakewood Water District reports that Tillicum is currently adequately supplied by recent improvements in the American Lake Gardens area, including 3.5 MG of storage and 12-inch and 16-inch water mains that cross 1-5. In the near future, the water main along Tillicum's Union Avenue will be upgraded to a 12-inch diameter line. As new construction occurs, laterals will be upgraded to 8-inch diameter to better serve the area. The District also intends to replace the Tillicum reservoir. The District reports that this combination will ensure that both fire flow and supply needs are met as growth occurs. The conversion of portions of American Lake Gardens and Springbrook to industrial use would likely increase fireflow requirements or require sprinklers in individual buildings, to be determined during review of individual projects.

The portions of Lakewood served by Parkland Light and Water Company and South East Tacoma Mutual Water Company are within industrial areas or the Air Corridor designation; thus, major land or water use changes are not anticipated, and existing facilities will be adequate to serve these areas. The alternative has no significant impact.

Electricity

Lakewood's electricity is provided by three electric utilities — Tacoma City Power, Puget Sound Energy (PSE), and Lakeview Light and Power. Tacoma City Power, which supplies customers in northern and central parts of the city, projects future load growth based on information from the PSRC and local municipalities. In 1999 correspondence, Tacoma City Power indicated that regardless of the land use options considered by the City of Lakewood, additional substation and feeder facilities would be required, as the forecast load increases in Planning Areas 1, 3, and 4 ranging from 27,643 kW (Preferred Alternative) to 35,781 kW (Mixed-Use Alternative) would equal and/or slightly exceed existing substation nameplate capacity by the end of the

2017 planning horizon. Tacoma City Power also states that it will continue to monitor and plan for its system to ensure accommodation for growth (ROC, C. Leone-Woods, 7/20/99).

Puget Sound Energy (PSE), which provides electricity to most of Planning Areas 5 and 7, has determined that sufficient electrical capacity exists to serve projected residential and commercial growth within its service area. Additionally, capacity exists to serve proposed industrial development in the American Lake Gardens area, provided the industrial development would not create certain above average industrial load demand on the existing system on either an average or peak demand basis. Industrial development with excessive energy requirements would need to be evaluated on a case-by-case basis. PSE is planning to rebuild its 115 kV line through Lakewood by the end of 2001. This line should be adequate for any of the projections considered. Should additional capacity be required during the planning period, a 230 kV line that currently reaches the Dupont area could be extended through Lakewood. This would not require any additional infrastructure.

Approximately 40% of the projected population growth and two-thirds of the projected employment growth would occur in the Lakeview Light and Power service area. Lakeview Light and Power does not anticipate requiring any new facilities to accommodate this projected population and employment growth, provided that the future commercial and/or industrial development is not substantially more energy-intensive than existing commercial and industrial development in the city (ROC, Markos, 9/9/99). Lakeview Light and Power currently has approximately 100 MW of excess power delivery capacity (ROC, Geiselman, 10/1/99). This alternative has no significant impacts.

Telecommunications

Telecommunication needs for the City of Lakewood are currently being provided by US West. By state law, US West has an "obligation to serve." This requires that the company provide service to every customer requesting telephone service. Therefore, it is anticipated that insufficient telecommunication capacity will not be an issue under this alternative or any of the alternatives presented in this EIS. For planning purposes, it should be noted that US West typically forecasts their projections for six years. With the constantly changing telecommunications technology, this short projection period allows them to balance capital need with capital requirements.

Solid Waste

Based on current projections for transfer station requirements, the existing system will be adequate to handle future waste needs under most disposal scenarios through the year 2009, and possibly through the year 2017. The following options are being explored to increase transfer capacity to meet the needs of an out-of-county disposal system for the long term:

- Increase the capacity of the Hidden Valley transfer station.
- Compact and containerize waste at Purdy transfer station.

- Increase the capacity of the Murrey's transfer station and Lakewood facilities.
- Site and construct a new centrally located transfer station.

Natural Gas

PSE provides natural gas to 4,800 customers in Lakewood via a 12-inch gas main installed in 1996. PSE is considering installation of an additional source loop to increase capacity in Lakewood and rural Pierce County. PSE has determined that sufficient natural gas capacity exists to serve projected residential and commercial growth within the Lakewood City limits. Additionally, capacity exists to serve proposed industrial development in the American Lake Gardens area, provided the industrial development would not create certain above average industrial load demand on the existing system on either an average or peak demand basis. Industrial development with excessive energy requirements must be evaluated on a project-level basis.

According to PSE, the existing 12-inch natural gas line has the capacity to provide service to approximately 46,000 customers in the Lakewood area. Projections to 2009 anticipate approximately 6,450 customers in the area at that time. PSE believes that system supply and capacity should be able to serve the area throughout the 2017 planning horizon (ROC, Markos, 9/9/99).

No Action Alternative

Police

The No Action Alternative would permit nearly twice the population growth as the Preferred Alternative. Compounding the added police burden of additional population would be the lack of land use cohesiveness, resulting in disproportionately greater demands on the police force. As a result, Lakewood would need to drastically increase its police force to a minimum of 115 police officers to maintain current police/citizen ratios, although 151 officers would be preferable to meet the ratio of 1.6:1,000 recommended by the Lakewood Police Department (ROC, Saunders, 1/3/00).

The largest increases in population are expected to result from new single-family homes constructed on subdivided lots near the lakes in the Lakewood Central Police District. This type of infill would alter the socioeconomic balance of Lakewood, with the addition of higher income families. However, to attract higher income residents, Lakewood would have to be perceived to be a safe community, which among other things will require a high ratio of police to citizens.

The low density residential growth west of the lakes resulting from the No Action Alternative would increase traffic congestion, especially along constricted corridor segments, such as along Washington Boulevard SW (as addressed in Section 3.6.2), indirectly affecting police response times. This alternative would result in significant impacts to police service if service expansion is not funded by growth.

Fire Prevention and Response

The significant influx of population under this alternative is likely to require additional fire fighting resources. The western half of the city would be particularly affected by residential growth under this alternative, placing additional responsibility on Station #s 2-2 and 2-4. As of this writing, the Fire District is negotiating with the Town of Steilacoom to serve the town from a new fire station in Steilacoom, which could also provide fire service to western Lakewood. This alternative would result in significant impacts to fire service if service expansion were not funded.

Indirect impacts associated with the No Action Alternative may include increased response times from increased traffic congestion, particularly along Washington Boulevard SW and other constricted corridor segments (addressed in Section 3.6.2).

Public Schools

The No Action Alternative would increase student enrollment significantly in response to population growth. The largest individual segment of this growth would be single-family households that, on average, generate approximately three times as many elementary and middle school students and twice as many high school students as multi-family housing. Since the western part of the city has the largest capacity for residential growth, this planning area can expect an estimated 1,538 elementary school students, 879 middle school students, and 659 high school students. The most affected elementary schools would likely be Lake City, Lake Louise, Idelwild, Custer, and Dower. The most affected middle school would be Mann. If sufficient capital resources are available to fund facility growth through impact fees or other means, this alternative will not have a significant negative impact.

Stormwater

Similar to the Preferred Alternative, the No Action Alternative would result in stormwater impacts to the Springbrook area as well as the northeast section of Lakewood. The increased level of pollutants within these areas is expected to parallel the increase in growth and development of these locations. Stormwater management and water quality will be of concern for these areas in the years to come. Possible solutions to anticipated stormwater problems are addressed below.

Under the No Action Alternative, the Springbrook area would contain a greater amount of residential units than the Preferred Alternative (an approximate difference of 685 DUs). This would result in a greater amount of impervious surface. As with the Preferred Alternative, additional stormwater improvements such as conveyance systems, infiltration trenches, drywells, or retention ponds would be needed to accommodate the increase in runoff. These improvements would be constructed on an as-needed basis as development occurs in this area.

Stormwater impacts resulting from the No Action Alternative would be similar to the Preferred Alternative since similarities between the land uses would

generate comparable percentages of impervious surface. As a result, the No Action Alternative would require approximately 12 acres of land for stormwater retention purposes in this area. These retention systems would be built on an as-needed basis by developers.

It should be noted that unlike the Preferred Alternative, the No Action Alternative is expected to result in little to no additional stormwater impacts within the American Lake Gardens vicinity. Under this alternative, the land use would remain the same as it exists today and no additional stormwater impacts would occur.

If adequate retention/detention facilities are constructed simultaneously with new development, this alternative will not have a significant negative impact.

Sanitary Sewer

Pierce County either has the capacity to provide service to the City of Lakewood under the No Action Alternative, or has a planning system in place to develop the capacity to provide service through the planning period. Overall residential density would be somewhat higher for this alternative, with an average planning unit density increases of approximately 0.7 DU/acre in comparison with the Preferred Alternative, with the most significant changes occurring in Planning Areas 6 and 7. Industrial inputs to the sewer system would be somewhat lower than those under the Preferred Alternative due to increased residential development in Planning Areas 6 and 7.

The No Action Alternative would result in the greatest population increase in the LK-E Basin, with a total projected population of 34,223 (Table 3.8-4). The No Action Alternative would result in the lowest growth in Planning Area 3 of the time alternatives, while concentrating extensive growth in Planning Areas 1 and 6. Under the No Action Alternative, the population in the LK-W Sewer Basin would be the highest of the alternatives being considered, with a projected 2017 population capacity of 45,937. This is due primarily due to greater residential development in the Tillicum, American Lake Gardens, and Steilacoom areas. Extending sewer service to the American Lake Gardens and Tillicum areas represents the greatest sewer service improvement requirement for the Pierce County Sewer System in the Lakewood area through the planning period. Planning Area 2 makes up the western end of the STAC Sewer Basin, extending slightly into the LK-E Basin at its southern end. Population expansion in this basin would be the greatest under the No Action Alternative with a projected 2017 population of 14,476. Employment growth under this alternative would be the least of the three alternatives, with a projected potential for 9,982 new jobs.

Table 3.8-4: Projected 2017 Population Density for Pierce County Sewer Basins in the City of Lakewood under the No Action Alternative.

Sewer Basin	Existing Population*	No Action Alternative	Net Population Change
LK-W			
Planning Area 4	7,032	8,964	1,932
Planning Area 5	17,203	28,309	11,106
Planning Area 7	6,467	8,664	2,197
LK-W subtotal	30,702	45,937	15,235
LK-E			
Planning Area 1	11,238	15,501	4,263
Planning Area 3	3,955	6,757	2,802
Planning Area 6	5,462	11,965	6,503
LK-E subtotal	20,655	34,223	13,568
STAC			
Planning Area 2	11,427	14,476	3,049
OAKB			
Planning Area 4	minimal change	minimal change	minimal change

*Source: EDAW 1997.

Individual basins in Lakewood and Steilacoom may require additional review as new projects are proposed. Environmental impacts associated with developing infrastructure for new development would be typical of those associated with installation of sewer lines and the associated disturbance of soil and runoff patterns. Use of BMPs for erosion and sedimentation control, consultation with resource agencies, and implementation of recommended mitigation measures should minimize environmental impacts associated with construction of these infrastructure improvements.

Water

Coordination with the water purveyors serving the Lakewood community indicated that adequate water rights and supplies are available to serve the Lakewood area through the end of the planning period under the No Action Alternative (ROC, Block, 10/1/99; Olive, 10/1/99).

Electricity

Consultation with the suppliers of electricity for the Lakewood area indicated that adequate capacity exists, or is planned, to provide power to each of the planning areas throughout the planning period under the No Action Alternative. Tacoma City Power has five distribution substations to serve Planning Areas 1, 3, 4, and 5 (i.e., Clover Park, Custer, Flett, Plaza, and McNiel). They are currently utilizing 61% of capacity. Under any of the alternatives being reviewed, Tacoma City Power anticipates that additional substation and feeders will be required to serve growth through the planning period (ROC, Leone-Woods, 7/2/99).

Telecommunications

As stated in the Preferred Alternative, telecommunication needs will be satisfied on an as-needed basis. In addition to constantly updating their network with services being placed today, US West projects and plans for six years into the future.

Solid Waste

As stated under the Preferred Alternative, solid waste disposal sites for the Lakewood area are predicted to be adequate until 2009 and possibly to the year 2017. As the population within this area increases, the demand for disposal will increase. The additional money collected for this service will be used to pay for the added vehicle and manpower needed to handle the increased demand for services within this area.

Natural Gas

PSE will be able to provide adequate gas service to the City of Lakewood throughout the planning period under each of the alternatives being considered, including the No Action Alternative (ROC, Markos, 9/9/99).

Mixed-Use Alternative*Police*

The Mixed-Use Alternative would permit significant population growth, but most of the additional population would be accommodated by specific areas including the urban center around Lakewood Station, Springbrook, and American Lake Gardens. With the possible exception of the large Mixed-Use Centers themselves, this alternative would guide future growth in a way that supports law enforcement efforts as opposed to more random development patterns allowed under the No Action Alternative. Nevertheless, the relatively large amount of residential growth would require significant police staffing increases: 37 officers would need to be added to maintain the current officer/citizen ratio. A ratio of 1.6:1,000 would require 72 new patrol officers and may delay response times due to traffic congestion in some areas (ROC, Saunders, 1/3/00). This alternative would result in significant impacts to police service if service expansion is not funded by growth.

Fire Prevention and Response

The significant influx of population under this alternative is likely to require additional fire fighting resources. American Lake Gardens would be particularly affected by residential growth under this alternative, placing additional responsibility on Station #s 2-2 and 2-4.

As of this writing, the Fire District is negotiating with the Town of Steilacoom to serve the town from a new fire station in Steilacoom, which could also provide fire service to western Lakewood. This alternative would result in significant impacts to fire service if service expansion were not funded.

Secondary impacts associated with the Mixed-Use Alternative may include increased response times from increased traffic volumes, particularly along constricted corridor segments addressed in Section 3.6.2. Especially affected would be the Station #2-2 due to traffic on the Gravelly Lake/Washington Boulevard/Military Road corridor.

Public Schools

The Mixed-Use Alternative would increase student enrollment significantly in the central part of Lakewood, including Springbrook and American Lake Gardens. Schools that could anticipate the greatest enrollment growth under this alternative include Tyee Park, Carter Lake, Tillicum, and Lakeview. If sufficient capital resources are available to fund facility growth through impact fees or other means, this alternative will not have significant negative impact.

Stormwater

Land use changes under the Mixed-Use Alternative would result in stormwater impacts for the Springbrook and American Lake Gardens areas as well as the northeast portion of the city.

Springbrook would require a number of stormwater enhancements to accommodate the high density zoning planned under the Mixed-Use Alternative. Similar to the No Action Alternative, these stormwater enhancements would be designed on a per-development basis to meet the runoff and water quality needs of the development. These enhancements would be funded by developers.

Under this alternative, American Lake Gardens would require approximately 10 acres of retention to accommodate the flow from multi-family and commercial zones located in the western portion of the area. The eastern portion of American Lake Gardens is expected to continue its use of existing drywells since the single-family zoning planned under the Mixed-Use Alternative for this area relates to what is currently in place today.

In the northeast section of the city, minimal land use changes exist between the Mixed-Use Alternative and the Preferred Alternative. The Mixed-Use Alternative classifies the area as Light Industry/Business Park, whereas the Preferred Alternative classifies the area as Industrial. These classifications pose a minimal difference in terms of stormwater due to the large amount of impervious surface needed for both types of land use. Therefore, like the Preferred Alternative, the Mixed-Use Alternative would require 12 acres of retention in the northeast portion of the city. This equates to approximately one acre of retention for every 25 acres of development. As with the Springbrook neighborhood, these retention facilities would be designed and funded by developers on an as-needed basis.

If adequate retention/detention facilities are constructed simultaneously with new development, this alternative will not have a significant negative impact.

Sanitary Sewer

Pierce County either has the capacity to provide service to the City of Lakewood under the Mixed-Use Alternative, or has a planning system in place to develop the capacity to provide service through the planning period. Overall residential density under the Mixed-Use Alternative would be intermediate between the No Action and Preferred Alternatives. Industrial loading to the sewage system would be somewhat higher than either the Preferred Alternative or the No Action Alternative; however, industrial inputs are

generally lower than those associated with residential development, so the impact on the Pierce County sewage treatment facilities should not be significantly different than either of the other two alternatives.

The projected population in the LK-E Sewer Basin under the Mixed-Use Alternative would be slightly lower than the No Action Alternative at 33,897 (Table 3.8-5). The Mixed-Use Alternative would allow most growth in Planning Areas 1 and 3, with intermediate growth in Planning Area 6. In the LW-W Sewer Basin, projected population capacity in 2017 would be 41,513. The projected population under the Mixed-Use Alternative for Planning Area 2 would be intermediate between the two alternatives at 13,695 residents. The potential for employment growth is greatest, with capacity for up to 11,237 new jobs

Table 3.8-5: Projected 2017 Population Density for Pierce County Sewer Basins in the City of Lakewood under the Mixed Use Alternative.

Sewer Basin	Existing Population*	Mixed Use Alternative	Net Population Change
LK-W			
Planning Area 4	6,914	8,834	1,920
Planning Area 5	17,203	21,821	4,618
Planning Area 7	6,467	10,858	4,391
LK-W subtotal	30,584	41,513	10,929
LK-E			
Planning Area 1	10,213	15,543	5,330
Planning Area 3	2,877	7,464	4,587
Planning Area 6	5,205	10,890	5,685
LK-E subtotal	18,295	33,897	15,602
STAC			
Planning Area 2	10,022	13,695	3,673
OAKB			
Planning Area 4	minimal change	minimal change	minimal change

*Source: Lakewood Background Report, EDAW 1997.

Individual basins in Lakewood and Steilacoom may require additional review as new projects are proposed. Environmental impacts associated with developing infrastructure for new development would be typical of those associated with installation of sewer lines and the associated disturbance of soil and runoff patterns. Use of BMPs for erosion and sedimentation control, consultation with resource agencies, and implementation of recommended mitigation should minimize environmental impacts associated with construction of these infrastructure improvements.

Water

Coordination with the water purveyors serving the Lakewood community indicated that adequate water rights and supplies are available to serve the Lakewood area through the end of the planning period under the Mixed-Use Alternative.

Electricity

Consultation with the suppliers of electricity for the Lakewood area indicated that adequate supplies and facilities exist, or are planned, to provide power to each of the planning areas throughout the planning period under the Mixed-Use Alternative.

Tacoma City Power has five distribution substations to serve Planning Areas 1, 3, 4, and 5 (i.e., Clover Park, Custer, Flett, Plaza, and McNiel). They are currently utilizing 61% of capacity. Under any of the alternatives being reviewed, Tacoma Power anticipates that additional substation and feeders will be required to serve growth through the planning period (ROC, Leone-Woods, 7/2/99).

Telecommunications

As with the other two alternatives, telecommunication needs will be addressed by US West on an ongoing basis. As required by law, US West must ensure enough capacity for the growth in this area.

Solid Waste

Similar to the Preferred and No Action Alternatives, forecasts pertaining to solid waste disposal in the City of Lakewood will be sufficient under the Mixed-Use Alternative. That is, future waste needs will be handled adequately through the year 2009 and possibly up to 2017.

Natural Gas

PSE will be able to provide adequate gas service to the City of Lakewood throughout the planning period under the Mixed-Use Alternative.

3.8.3 Mitigation Measures

The following mitigation measures are proposed to address public service and water quality impacts potentially resulting from existing development of any of the alternatives:

Police

- Increasing the strength of the police force to maintain effective citizen to police ratios.
- Continue crime prevention programs such as the Crime Free Multi-Family Housing Program, Neighborhood Policing, applying Crime Prevention through Environmental Design techniques as part neighborhood redevelopment, Weed and Seed, and others.

To address these mitigation measures, the City has revised the Comprehensive Plan by rewording an existing policy in Section 8.3 (Emergency Medical Services).

Fire

- Construct new fire stations to serve underserved high growth areas such as Springbrook and Lakewood Station neighborhoods under the Preferred Alternative or west Lakewood under the No Action Alternative.
- Provide Station # 2-3 with special capacity for industrial response, such as a medical unit.

To address these mitigation measures, the City has revised the Comprehensive Plan by rewording an existing policy in Section 8.2 (Fire Protection).

Schools

- Coordinate planning efforts with the Clover Park School District.
- Work with the Clover Park School District to authorize impact fee legislation to finance new school facilities.
- Encourage appropriate land uses adjacent to the Woodbrook Middle School to buffer the school from excessive noise and air pollution. This could be achieved through special zoning provisions such as through the use of industrial buffer zones, the requirement for large setbacks from incompatible uses, through individual project review, or other measures.

To address these mitigation measures, the City has revised the Comprehensive Plan by adding new policies in Section 8.6 (Schools).

Stormwater

- Acquisition of land for stormwater storage functions to compensate for increasing impervious surface in areas of the city targeted for future growth and increasing density.
- Lake management studies for Lake Steilacoom, Gravelly Lake, and Lake Louise are needed to determine sources of pollutants and nutrients entering these water bodies and determine what can and cannot be done to control pollutant sources. To address this mitigation measure, the City has revised the Comprehensive Plan to include a new policy in Section 3.11.7 (Water Quality).
- Ongoing water quality monitoring program for all public drainage systems that discharge into lakes and streams.
- Development and implementation of a state-approved Comprehensive Storm Water Management Program.
- Use of the services of the Pierce County Conservation District Stream Team Program to provide water quality education to the community.

To address these mitigation measures, the City has revised the Comprehensive Plan by inserting new policies in Section 7.2 (Stormwater).

Sanitary Sewer

- Extension of sewer service to American Lake Gardens and portions of Tillicum slated for density increases. It is expected that the costs of extending sewers under 1-5 to American Lake Gardens will be born by private industrial developers. To address this mitigation measure, the City has revised the Comprehensive Plan by inserting new policies in Section 7.3 (Sanitary Sewers).

3.8.4 Unavoidable Adverse Impacts

Unavoidable adverse impacts pertaining to public services and utilities are expected to be minimal in the Lakewood area. Growth-derived traffic congestion is expected to increase police and fire response times under any alternative. Although BMPs will be applied during the implementation of stormwater enhancement projects, there is a slight chance that pollutants such as metals and oils will evade these projects and would continue toward neighboring surface waters. Continuing education involving the latest science pertaining to stormwater improvements will minimize these adverse impacts. Ongoing development will place increased demands on the wastewater treatment capacity in Pierce County.

3.9 Air Quality**3.9.1 Affected Environment**

Air quality is generally assessed in terms of whether concentrations of air pollutants either exceed or comply with ambient air quality standards set to protect human health and welfare. Based on monitoring information collected over a period of years, agencies responsible for air quality at the local (Puget Sound Clean Air Agency), state (Washington Department of Ecology) and federal (U.S. Environmental Protection Agency) levels work cooperatively to classify regions as “attainment” or “nonattainment” areas for particular air pollutants. Attainment status is therefore a measure of whether air quality in an area complies with the National Ambient Air Quality Standards (NAAQS). Once an area that has been classified as nonattainment achieves compliance with the standard(s), the area is considered an air quality “maintenance” area until the standard has been attained for 10 years.

The City of Lakewood is included in air quality maintenance areas for both carbon monoxide and ozone. It is not adjacent to any non-attainment areas for any air pollutants. During most periods of the year, air quality in the area is generally good to excellent. During prolonged periods of stagnant meteorological conditions, however, it is possible that emissions from the many sources in the area could elevate some pollutant concentrations beyond established health standards.

Because Lakewood is in a maintenance area for carbon monoxide, projects that affect major elements of the transportation system are subject to special review under state and federal air quality “conformity” rules. These rules are designed to ensure that changes to the transportation system will not cause new air quality problems or extend the period required to attain or maintain an

air quality standard. Because this type of analysis requires “design-level” data for the transportation system and traffic operations, a conformity analysis is not appropriate for this level of planning. Future projects that affect major roads or intersections in the city will be subject to conformity review.

Typical existing sources of air pollution in the study area include ground transportation vehicles, residential and commercial space heating, airplane approaches and departures, construction activities, and a variety of industrial/commercial sources. According to the Department of Ecology, the largest single air pollution source in the City of Lakewood is motor vehicles (Ecology 1999).

3.9.2 Environmental Impacts

Any of the future alternatives being considered (including No Action) would cause some degree of impact to air quality in the study area because any alternative would increase potential emissions from a variety of pollution sources. Existing pollution sources that could increase with any future alternative include the following:

- Construction-related sources (e.g., unpaved and paved roads, fuel-burning equipment, etc.);
- transportation-related sources (e.g., cars, trucks, buses, etc.);
- industrial air pollution sources;
- commercial air pollution sources (e.g., gas stations, dry cleaners, restaurants, etc.); and
- household-related sources (e.g., space heating, barbeques, lawn mowers, paints and solvents, etc.).

Of these sources, the largest single source type would likely remain ground transportation vehicles. Within limits, it is possible to speculate about future air quality impacts from such traffic sources by examining future use of the city’s transportation system, based on the results of the transportation impact analysis presented previously in this document (see the Transportation section for more specific information regarding the transportation system and traffic volumes). The air quality impact analysis presented below is based on peak hour traffic stop delay and peak hour traffic volumes for major arterials. The analysis does not include specific changes in the transportation system other than a review of the impacts of the SR-512 interchange improvements. Further analyses would be required if any major changes to the transportation system are proposed in the future.

By examining the data produced by the transportation analysis of potential traffic volumes and levels of service on major arterial links throughout the city, it is possible to estimate the effects of expected traffic changes on air quality citywide. Because the traffic analysis was limited to consideration of the major arterial streets, however, this precludes close examination of air quality changes at the level of specific intersections, as is appropriate at this programmatic level of analysis. Within these limits, potential air quality

implications of the alternatives were reviewed at the planning area level by tabulating traffic data.

Specifically, roadways considered in the traffic analysis were grouped within the city's seven planning areas. Roads on the boundary between two planning areas were classed in the lower numbered area. Then for each planning area, peak-hour link levels of service were converted to total seconds of "stop delay" using equations from the Highway Capacity Manual (Transportation Research Board 1994). Then "per vehicle" delay was multiplied times peak-hour 2-way traffic volumes to derive total hours of stop delay in each of the seven planning areas. Because traffic-related air pollution is usually a function of congestion, this tabulation gives a general indication of the potential air quality implications of the various alternatives for each of the seven planning areas in the city. Results of these calculations are discussed below in relation to each alternative and depicted in charts that follow, for conditions with and without development of a 100th Street connector to SR-512.

Preferred Alternative

Due to increasingly stringent vehicle emission requirements and a continuing vehicle inspection and maintenance program, the vehicle fleet in the Puget Sound Region is expected to have lower emission rates by 2017 than under existing conditions. All future alternatives would benefit from these lower future emission rates.

The Preferred Alternative includes moderate planned growth in population and employment in the area and is intended to curtail sprawl through more organized land use patterns. Nonetheless, air quality could be affected by increasingly dense space heating and by increased use of the transportation system in the area as discussed below.

With the Preferred Alternative, with or without the 100th Street/SR-512 connector, total peak-hour traffic volumes on main arterial links would remain comparable to the No Action Alternative. Citywide, peak hour traffic volumes would be virtually indistinguishable among all alternatives, resulting in equal effects to air quality.

In general, increases in traffic volumes in the absence of increases in road capacity and improvements in levels of service usually cause deteriorations in air quality. Any future changes in the transportation system or any specific planned projects that would affect one or more major components of the transportation system would be subject to project-level conformity reviews during the environmental assessments for any such projects.

The Preferred Alternative would result in a capacity for population increase of 17,500 people, which would be much less than the capacity for population increase with either No Action or the Mixed-Use Alternatives. In general, this would reduce the related "potential to emit" air pollution because there would simply be fewer people and cars.

This alternative may also affect air quality due to the change of portions of American Lake Gardens and Springbrook from residential to industrial uses.

This shift in use could affect both traffic flows in these areas as well as the potential for direct emissions from whatever industrial sources might locate in these locations. The specific effects on air quality would depend on the nature of any new industry included in this area. Any major emissions sources would likely be subject to review and permitting by the Puget Sound Clean Air Agency and/or the Department of Ecology.

The Preferred Alternative would increase peak-hour traffic volumes and stop delay on principal arterials compared with existing conditions (Figures 3.9-1 through 3.9-4). The largest increase would occur in Planning Area 5, and the smallest increase would occur in Planning Area 6.

Figure 3.9-1. Peak-Hour Traffic Volumes Without 100th Street/SR-512 Connector

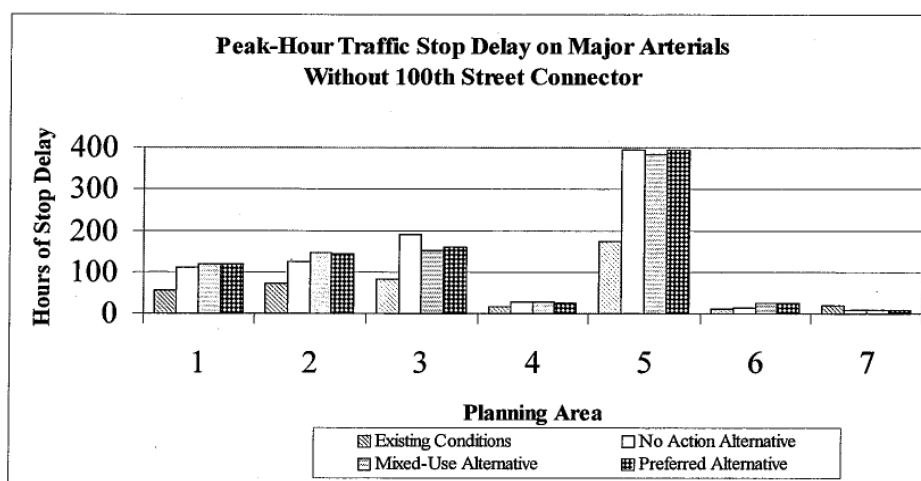


Figure 3.9-2: Peak-Hour Stop Delay Without 100th Street/SR-512 Connector

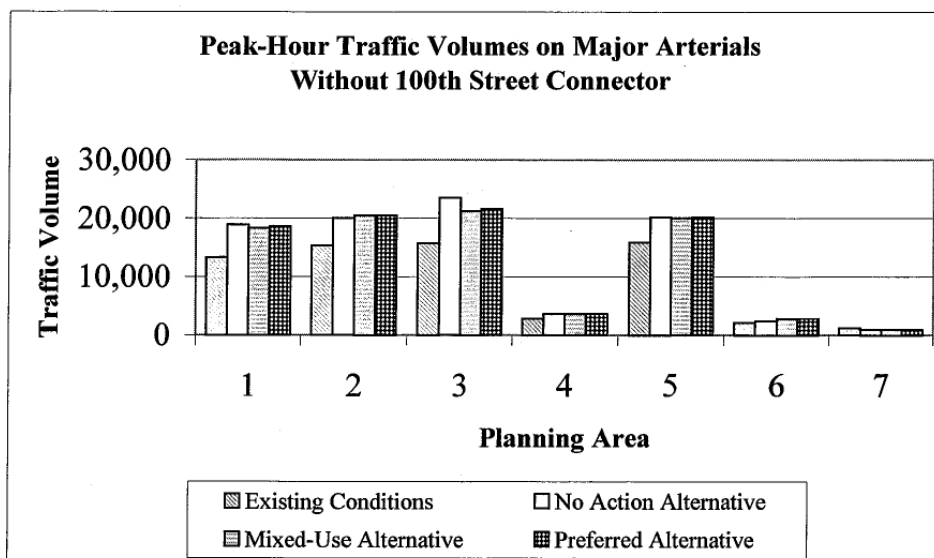
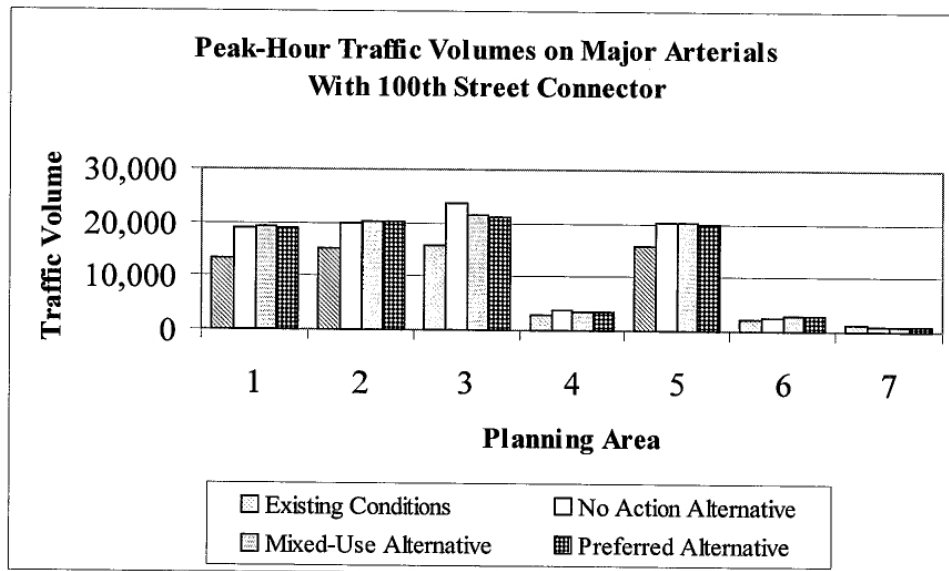
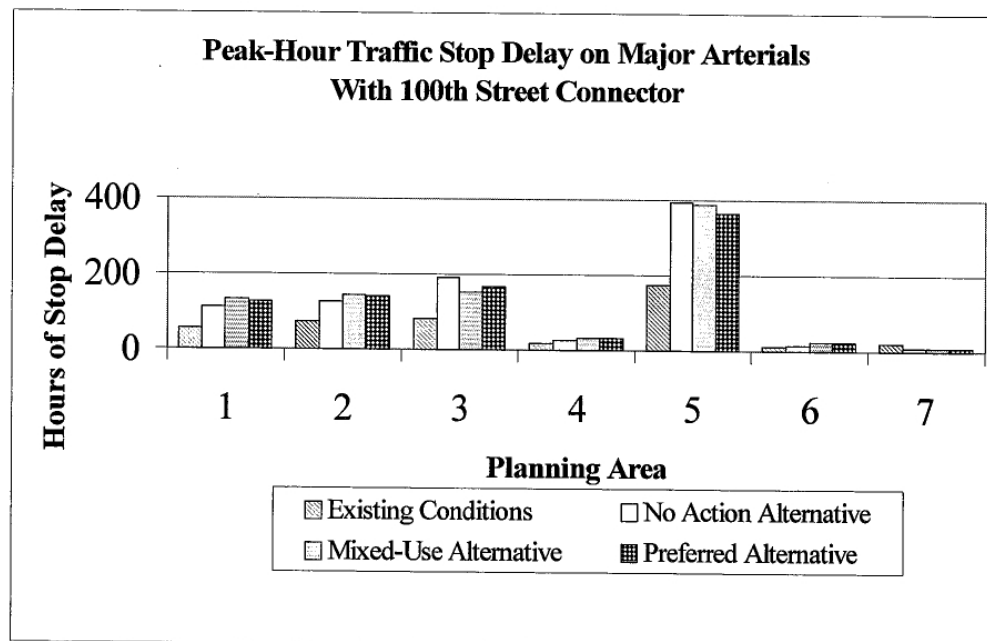


Figure 3.9-3: Peak-Hour Traffic Volumes With 100th Street/SR-512 ConnectorFigure 3.9-4: Peak-Hour Stop Delay With 100th Street/SR-512 Connector

In Planning Areas 1 and 2, this alternative would increase stop delay slightly more than with the No Action Alternative; in Planning Areas 3-5, it would cause slightly smaller increases than with No Action. At the general level of this review, neither the peak-hour traffic volumes nor the stop delay show an effect from the presence or absence of the 100th Street interchange.

No Action Alternative

With the No Action Alternative, peak-hour volumes in 2017 on the major components of the Lakewood transportation system examined as part of the transportation impact analysis would increase from the existing 64,500 vehicles per hour to 80,400 vehicles per hour. This increase would occur slowly over the intervening years but nevertheless could increase congestion in one or more areas of the city. Because increasing congestion leads to increased delays and higher emissions from idling vehicles, this alternative could degrade existing air quality at affected locations.

The planning areas targeted for the highest population density under the existing Land Use Map (i.e., No Action) do not coincide with any known carbon monoxide hot spots. Any future changes in the transportation system or any specific planned projects that would affect one or more major components of the transportation system would be subject to project-level conformity reviews during the environmental assessments for any such projects.

In terms of the possible air quality impacts stemming from the expected population increase allowed under the No Action Alternative, the greatest potential for impact would be associated with related traffic and with residential space heating. The possible increase of 12,844 new housing units or up to about 32,000 additional people (see Land Use section) would increase the potential to emit represented by residential use areas of the city, as indicated by the discussion of traffic above. This potential to emit would double under the No Action Alternative compared to the Preferred Alternative, based on population increase. Since there is a predominance of single-family residential units with No Action, there also is a potential for increasing the number of residential wood-burning devices in the city. Both such increases could degrade air quality conditions.

The analysis of potential peak-hour stop delay derived from the expected volumes and link levels of service indicates that the No Action Alternative would increase stop delay in six of the seven planning areas. With or without the 100th Street interchange, No Action Alternative would increase existing stop delay on principal arterials in every planning area except number 7 (where no arterials were evaluated). The largest increase would occur in Planning Area 5 (the largest planning area), and smallest increase would occur in Planning Area 6. Refer to Figures 3.9-1 through 3.9-4 for graphic representations of the tabulated traffic volume and stop delay information. While these data are not definitive indications of air quality problems, they point to potential increases in traffic-related emissions due to escalating congestion along principal arterials. As previously indicated, the degree of these emissions increases along principal arterials are indistinguishable among

the alternatives. As previously indicated, the degree of the emission increases along principal arterials is indistinguishable among the alternatives.

Mixed-Use Alternative

The Mixed-Use Alternative would allow significant increases in both population and density, and shift the focus of growth from the western half of the city to the central commercial and transportation corridor along Bridgeport Way. This increased densification would cluster air pollution sources in a smaller area and could degrade localized air quality if solid fuel residential space heating (i.e., wood burning) were allowed to increase as well. If wood burning were restricted and/or controlled during periods of poor dispersion, air quality would likely be no worse than in other dense urban areas in the Puget Sound region.

With the Mixed-Use Alternative, with or without the 1001 Street interchange, total peak-hour traffic volumes on main arterial links would remain comparable to the No Action Alternative. Citywide, peak hour traffic volumes would be virtually indistinguishable among all alternatives, resulting in equal effects to air quality. Local air quality conditions could degrade based on specific changes to land use, and could result in somewhat worse conditions than with No Action Alternative. For example, creating a high density Urban Center clustered around the Lakewood Mall and the Lakewood Station likely would generate higher traffic volumes at intersections in this area.

The Mixed-Use Alternative would foster a small net decrease in single-family housing units and shift residential growth into apartments and condominiums in the eastern and southern portions of the city. This alternative would allow an overall increase in residential capacity of the city of about 30,000 people (see the Land Use section). Such an increase in population would increase the city's "potential to emit" air pollution as it relates to the many sources associated with residential uses, including primarily traffic and space heating. This "potential to emit" would be roughly at the same level as the No Action Alternative.

The Mixed-Use Alternative also would increase available light industrial lands in the city's existing eastern Employment Center. The effect of this change on air quality would depend on the nature of any new industry included in this area.

The Mixed-Use Alternative would increase peak-hour traffic volumes and stop delay on principal arterials compared with existing conditions (Figures 3.9-1 through 3.9-4). The largest increase would occur in Planning Area 5 and the smallest increase would occur in Planning Area 6. In Planning Areas 1 and 2, this alternative would increase stop delay slightly more than with the No Action Alternative; in Planning Areas 3-5, it would cause slightly smaller increases than with the No Action Alternative. At the general level of this review, neither the peak-hour traffic volumes nor the stop delay show an effect from the presence or absence of the 100th Street interchange.

In all planning areas, the differences among the tabulated peak-hour stop delay for any of the three future alternatives are very small. This is likely due to the

fact that the traffic and air quality review focused on traffic along principal arterials, where changes due to local land uses may be masked by the effects of regional traffic.

3.9.3 Air Quality Conformity

The City of Lakewood is committed to meeting federal and state air quality requirements. The City will work with state, regional, and local agencies and jurisdictions to develop transportation control measures and/or similar mobile source emission reduction programs that may be warranted to attain or maintain air quality requirements. Any such programs will be developed after further analyses of the potential impacts to and from the transportation system allow consideration of means to ameliorate any identified localized hot spots as well as any identified impacts from regional emissions levels.

3.9.4 Mitigation Measures

At this planning level of analysis, it is possible to indicate general planning measures to minimize potential future air quality problems in the study area, as summarized below.

Transportation Sources

Carbon monoxide emissions from vehicles increase dramatically as travel speeds decrease and are highest when traffic stands idle for any period of time. Any transportation system improvements being considered that reduce congestion and increase average travel speeds would reduce traffic-related air pollution. Possible improvements could include means to reduce the vehicle-miles-traveled in single-occupancy vehicles by enhancing use of public transportation systems, car and van pooling, and other forms of clean transportation such as walking and bicycling. Other potential measures that would improve long-term air quality include optimizing traffic signal operations to improve traffic flow along major routes, and prohibiting parking along major routes during peak travel times.

Space-Heating Sources

Restricting the installation of residential wood burning devices in the forms of wood stoves and fireplaces would prevent air quality degradation from this significant emission source. Minimizing emissions from such sources is important in both single- and multi-family residential developments, because a small number of poorly operating stoves or fireplaces can easily degrade air quality in an entire neighborhood. Similarly, measures to reduce heating demands, such as increased insulation and weather-sealing requirements, also reduce emissions stemming from any associated space-heating equipment, no matter the fuel source. To address this mitigation measure, the City has revised the Comprehensive Plan by inseting a new policy in Section 3.11.9 (Air Quality).

3.9.5 Significant Unavoidable Adverse Impacts

While localized significant air quality impacts associated with any of the future alternatives could occur, these will be addressed in conjunction with

specific traffic improvements or proposed developments. At a general planning level of analysis, based on traffic planning analysis, indications are that none of the proposed alternatives cause significant unavoidable impacts to city-wide or regional air quality.

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Appendix A

Capacity Analysis Data

APPENDIX A:

LAKEWOOD DEVELOPMENT CAPACITY ANALYSIS

Future development capacity was estimated for each of these comprehensive plan land use alternatives based on GIS parcel level data for the City of Lakewood. GIS provided the area, existing use, and information about current development for all parcels within each planning area. Raw numbers produced by GIS were used to build separate spreadsheets for each of the three alternatives. The spreadsheets calculate the number of potential residents and jobs to be generated by each alternative for each planning area by the year 2017. These numbers are presented for each of seven planning areas which comprise the city. In general terms, this analysis is based on probable density, i.e. number of dwelling units and jobs per redevelopable acre. Limiting factors include maximum density as determined by land use designation, realistic market conditions, and ratio of current improvements to land value.

Information on existing land use was provided by the City of Lakewood based on field surveys performed in 1996/1997. The Pierce County Assessor's Office provided land and improvement value information which was used to quantify underutilized acreage.

The methodology for this calculation is explained for the Mixed Use Alternative and the Preferred Alternative in the text below. The No Action Alternative is explained graphically by the attached flow chart. The Excel spreadsheets for each alternative are also included.

MIXED USE ALTERNATIVE

Population and Employment Development Capacity Analysis Explanation and Assumptions

A development capacity analysis of the Mixed Use Land Use Alternative was calculated to determine if there was an adequate amount of vacant and underutilized land in the City of Lakewood to accommodate the projected population and employment figures for the year 2017. This alternative was analyzed using a very similar spreadsheet model as was used for the Preferred Alternative. Aside from a slightly different mix of land use designations, the principal difference is that no capacity was projected for the Large Lot Overlay District or Air Corridor 1 and 2 in order to further differentiate this alternative from the other two. The methodology used for capacity analysis is explained in detail below.

Table A-1 summarizes the outcome of the development capacity analysis. A step-by-step explanation of assumptions used in the development capacity analysis follows.

Table A-1: Total New Population and Employment Figures by Mixed Use Alternative

Land Use Category	New Residential Population	New Employees*
Single Family Residential	7,852	0
Single Family Overlay Zone	416	0
Duplex/Triplex Residential	143	0
Multi Family Residential	5,495	0
High Density Residential	3,279	0
Light Industry/Business Park	-3	1,343
Community Center	1,068	265
Mixed Use Center	8,456	3,882
Urban Center	3,498	3,931
Neighborhood Commercial	0	182
Total	30,205	9,603

* Does not include employment figures for institutional uses, such as schools, hospitals, or government agencies which were added to the final results from data shown in Table A-2.

The following is a description of the methodology for the carrying capacity analysis. The bulleted items refer to the column headings in the Mixed Use Alternative spreadsheet which is attached. The land use category, "Community Center," from Planning Area 1 is used to illustrate the explanation. A discussion of each step in the process for determining "Community Center" population and employment figures for the Preferred Alternative is highlighted in *Italics*. Please refer to the attached capacity analysis spreadsheet for the resultant numbers.

- **Vacant and Underutilized Acres**

Vacant and underutilized acreage figures were derived from Geographic Information System (GIS) analysis. For residential use categories, such as Single Family Residential, Duplex/Triplex Residential, Multi-Family and High-Density Residential, underutilized acreage was calculated as any parcel with 1 dwelling unit on a lot greater than or equal to 18,000 square feet, outside of the large lot overlay zone. This is because the minimum lot size is 9,000 square feet. New residential development would most likely occur on lots which fall into this category. The underutilized acreage figures were combined with vacant acreage to arrive at a total amount of developable land for these residential categories.

For employment and mixed use categories, underutilized acreage was calculated as including all parcels having an improved value of less than or equal to 25% total assessed value, as well as half of those parcels with improved value from 26-50% total assessed value, based on the likelihood of redevelopment. New employment-based development would most likely occur on the lots which fall into this category, where the value of the lot is much greater than the value of the improvements on the lot. This figure was combined with vacant acreage to identify a total developable land for these employment and mixed use categories.

Through GIS analysis, it was determined that the amount of vacant and underutilized acreage in the Community Center land use category within Planning Area 1 is 29.13 acres.

- **Acres Available for Employment Development**

Acres available for employment development are excluded from residential land use categories. For land uses that are solely intended for employment, such as the Light Industry/Business Park and Neighborhood Commercial, the vacant and underutilized acreage was carried over from the preceding column and rounded to the nearest 10th of an acre. For mixed use zones, different ratios of employment to housing land uses were assumed. Community Center assumes a employment/housing split of 40/60, Mixed Use 60/40, and Urban Center 70/30. For example, 40% of the vacant and underutilized acreage would be available for employment uses in the Community Center land use category.

Forty percent of the 29.13 vacant and underutilized acres in the Community Center land use category equals 11.7 acres. This is the amount of land available for employment land uses in the Community Center category.

- **Employees Per Acre**

Different land use categories generate different levels of employment, depending on the intensity of the use. Employment averages for these land use categories are based on an analysis of comparable cities in the region.

On average, a typical Community Center land use category is assumed to generate 15 employees per acre.

- **Gross new employees**

The number of acres available for employment development is multiplied by the number of employees per acre to arrive at a gross number of employees.

11.7 acres available for employment use, multiplied by 15 employees per acre, equals 175 gross new employees for the Community Center land use category.

- **Net New Employees**

To avoid double counting the number of workers currently employed in the employment areas, the number of gross new employees are reduced by 20% to reach net new employees. This figure was determined by estimating current levels of employment, believed to be low in these properties which are either vacant or have marginal levels of improvement.

175 gross new employees are reduced by 20% to arrive at 140 net new employees for the Community Center land use category.

- **Acres Available for Housing Development**

For residential uses, vacant and underutilized acreage figures are carried over from the first column and rounded to the nearest 10th of an acre. For land uses that are solely intended for employment, such as the Light Industry/Business Park and Neighborhood Commercial, no acreage is available for residential use. For mixed use areas, Community Center assumes a employment/ housing split of 40/60, Mixed Use 60/40, and Urban Center 70/30. For example, 60% of the vacant and underutilized acreage would be available for residential uses in the Community Center land use category.

Sixty percent of the 29.13 vacant and underutilized acres in the Community Center land use category equals 17.5 acres. This is the amount of land available for new residents in this land use category.

- **Dwelling Units Per Acre**

Different residential land use categories provide different levels of dwelling units per acre, depending on the intensity of the use. Dwelling unit per acre averages for the Single Family Residential and Single Family Overlay Zone areas are based on the densities allowed under current zoning. For example, these areas allow an average of four and two single family dwelling units per acre respectively. Dwelling units per acre averages for new land use categories were derived from an analysis of comparable cities in the region.

On average, a typical Community Center land use category would allow for 14 dwelling units per acre.

- **Gross New Dwelling Units**

The number of acres available for residential development is multiplied by the number of dwelling units per acres to arrive at a gross number of dwelling units.

17.5 acres available for residential use, multiplied by 14 dwelling units per acre, equals 245 gross new residential units for the Community Center land use category.

- **Existing Dwelling Units**

Through GIS analysis, the number of existing residential dwelling units were calculated for each land use category. This figure is subtracted from the gross number to reach net new dwelling units in a given land use category.

Nine dwelling units currently exist in the Community Center land use category.

- **Net New Dwelling Units**

To avoid double counting the number of residential units that currently exist in the various land use categories, the number of gross new dwelling are subtracted by the number of existing dwelling units to reach the net new figure.

Nine existing dwelling units are subtracted from 245 gross new dwelling units to arrive at 236 net new units for the Community Center land use category.

- **New Residential Population**

Net new dwelling units are multiplied by an average household size of 2.48 persons per dwelling unit to reach new residential population. The source for this assumption is the 1990 Census.

236 net new dwelling units is multiplied by the average household size of 2.48 to arrive at 585 total new residents in the Community Center land use category.

- **New Employees**

The figures presented under the “Net New Employees” column is reproduced here for comparison purposes with the new residential population.

Public Sector Employment

All three alternatives include land use designations or zones reserved for governmental or institutional purposes. These are called *Public* and *Semi-Public Institutional*, *Public/Institutional*, and *Institutional* respectively, but are essentially the same under the three alternatives. Rather than estimate employment according to a factor of density (jobs/acre), future institutional employment was based on projections provided by the institutions and agencies themselves. For regional institutions and agencies (St. Clare Hospital, Clover Park Technical College, Pierce County Transit, Western Washington State Hospital, Washington State Department of Fish and Wildlife³⁷, Pierce County Park/Golf Course¹, and Pierce County Community College which serve more than just Lakewood, employment growth is based on internal projections provided by each institution or agency and is the same for each alternative. By contrast, employment rates for the City of Lakewood and Clover Park School District were projected as a factor of population growth, thus the rates vary between alternative.

Public sector employment estimates used in the development capacity are summarized in Table A-3 below for employer and planning area. To determine incremental growth for each alternative, subtract base year employment figures from future growth estimates:

³⁷ these employers are located within land classified as Open Space and Recreation but employment figures are tabulated along with institutional land use designations.

Table A-2: Public Sector Employment and Future Growth Estimates

Planning Area	Employer	Base Year (1999)	Preferred Alternative	No Action Alternative	Mixed Use Alternative
1	City of Lakewood	64	81	95	89
	St. Clare Hospital	361	445	445	445
	Clover Park School District	224	280	336	316
	Planning Area Total	649	806	876	850
2	Clover Park School District	110	137	165	155
	Clover Park Technical College	276	306	306	306
	Pierce County Transit	750	1500	1500	1500
	Planning Area Total	1136	1943	1971	1961
3	Clover Park School District	76	95	114	107
	Planning Area Total	76	95	114	107
4	Clover Park School District	264	330	396	372
	Pierce County Park/Golf Course	5	5	5	5
	Western Washington State Hospital	1800	1962	1962	1962
	Washington State Department of Fish and Wildlife	16	28	28	28
	Planning Area Total	2085	2325	2391	2367
5	Clover Park School District	372	465	558	524
	Pierce County Community College	582	646	646	646
	Planning Area Total	954	1111	1204	1170
6	Clover Park School District	49	61	73	69
	Planning Area Total	49	61	73	69
7	Clover Park School District	145	181	217	204
	Planning Area Total	145	181	217	204
All	Grand Total:	5094	6836	6846	6728

PREFERRED FUTURE LAND USE ALTERNATIVE

Population and Employment Development Capacity Analysis Explanation and Assumptions

The Preferred Alternative is the most complex of the three alternatives as a result of the relatively larger number of land use designations but the method used to estimate capacity was generally similar to the other two. The capacity analysis methodology for this alternative is explained in detail below:

An analysis of the Preferred Future Land Use Alternative was calculated to determine the relative growth capacity for jobs and residents likely to result from the Preferred Land Use Alternative. This analysis considered both vacant and underutilized land using the same approach as the analysis of the Mixed Use Alternative. Table A-3 summarizes the outcome of the development capacity analysis for this alternative. A step-by-step explanation of assumptions used in the development capacity analysis follows.

Table A-3: Projected New Population and Employment

Land Use Category	New Residential Population	New Employees*
Residential Estate	243.3	0.0
Single Family	8056.6	0.0
Mixed Residential	1165.5	0.0
Multi Family Residential	1036.5	0.0
High Density Residential	7981.3	0.0
Corridor Commercial	-677.0	3416.3
Neighborhood Business District	94.6	816.5
Arterial Corridor	0.0	2.0
Central Business District	1915.3	1873.5
Industrial	-414.2	3652.8
Air Corridor 1 & 2	213.3	1085.0
Military Lands	38.1	0.0
Total	19,653	10,846

* Does not include employment figures for institutional uses, such as schools, hospitals, or government agencies.

The following is an abbreviated description of the methodology for the development capacity analysis. See the attached spreadsheets for the full capacity analysis. The bulleted items refer to the column headings in the Preferred Land Use Alternative spreadsheet which is attached. Since the methodology is closely based on the development capacity analysis used to analyze the other alternatives, only the major issues are explained. Refer to the attached flow chart and discussion of the Mixed Use Alternative for a more detailed explanation.

- **Vacant Acres**

All vacant parcels have the capacity to be developed, thus this analysis assumed that all vacant lots would be redeveloped at maximum allowable densities. Vacant parcels were considered for all land use designations.

- **Underutilized Acres (Residential)**

For residential use categories such as Single Family Residential, Mixed Residential, Multi-Family and High-Density Residential lot size was the basis of determining underutilization. Underutilized acreage was calculated as any parcel with 1 dwelling unit on a lot greater than or equal to 18,000 square feet. This is because the minimum lot size is 9,000 square feet. New residential development would most likely occur on lots which fall into this designation.

The Residential Estate is similar to the Large Lot Overlay District found in the Mixed-Use Alternative. Growth in this designation would presumably result from development of vacant parcels as well as subdivision of parcels larger than one acre, thus only vacant lots and parcels large enough to divide into two or more parcels were considered. Existing residences were deducted from the totals to avoid double counting. In addition a market factor was applied which assumed development of all vacant parcels designated "Residential Estate" but only 25% of developed parcels requiring subdivision. For Residential Estate, underutilized

acreage was calculated as any parcel with 1 dwelling unit on a lot greater than or equal to 21,780 square feet, since this designation allows up to two parcels per acre.

- **Underutilized Acres >25% (50% of land)**

For employment and mixed use categories, underutilized acreage was calculated as including all parcels having an improved value of less than or equal to 25% total assessed value according to Assessor's data. Parcels with improved value from 26-50% of total assessed value were also determined to be underutilized. Since the likelihood of redevelopment is expected to be less than the previous category of underutilized land, the ratio of relative improvement to land value is significantly greater. The difference is addressed in the "Redevelopment Factor" column below.

- **Redevelopment Factor**

A factor of 50% was included in the analysis formula in order to account for the moderate probability of re-development of parcels with improved value between 26% and 50% total assessed value. In other words, only half of parcels with moderate-level improvements were expected to be redeveloped.

- **Acres Available for Employment Development**

For land uses that are solely intended for employment such as the Corridor Commercial and Industry, acres available for employment development were determined by adding vacant acres to the two categories of underutilized acres. For mixed use designations, different ratios of employment to housing land uses were assumed. Central Business District assumes a employment/housing split of 75/25 and 85/15 for Neighborhood Business District.

- **Employees Per Acre**

Different land use categories generate different levels of employment, depending on the intensity of the use. Employment averages for these land use categories are based on an analysis of similar land uses in comparable cities in the region, thus the Central Business District is expected to employ 45 employees per acre; Corridor Commercial will employ 25 workers per acre; and employment densities will average 15 jobs per acre in the Neighborhood Business District and Industrial designations and 12 in Air Corridor.

- **Gross new employees**

The number of acres available for employment development is multiplied by the number of employees per acre for each land use category to arrive at a gross number of employees.

- **Net New Employees**

To avoid double counting the number of workers currently employed in designations permitting employment, the number of gross new employees are reduced by 20% to reach "net new employees." This factor was based on estimates of current employment levels in these areas.

- **Acres Available for Housing Development**

For residential uses, vacant and underutilized acres available for residential uses were estimated by adding vacant acres to the two categories of underutilized acres. For mixed use

designations, different ratios of employment to housing land uses were assumed. Central Business District assumes a employment/housing split of 75/25 and 85/15 for Neighborhood Business District.

- **Dwelling Units Per Acre**

Different residential land use categories provide different levels of dwelling units per acre, depending on the intensity of the use. Dwelling units per acre averages for new land use categories were derived from a combination of factors including an analysis of comparable cities in the region and projections based on urban design objectives.

- **Gross New Dwelling Units**

The number of acres available for residential development is multiplied by the number of dwelling units per acres by land use category to arrive at a gross number of dwelling units.

- **Existing Dwelling Units**

Through GIS analysis, of the City's general land use data base, the number of existing residential dwelling units were calculated for each land use category.

- **Net New Dwelling Units**

To avoid double counting the number of residential units that currently exist in the various land use categories, the number of gross new dwelling are subtracted by the number of existing dwelling units to reach the net new figure.

- **New Residential Population**

Net new dwelling units are multiplied by an average household size of 2.48 persons per dwelling unit to reach new residential population. The source for this multiplier is the 1990 Census. Because re-designation of portions of American Lake Gardens and Springbrook are estimated to displace 572 existing housing units from American Lake Gardens and 296 current housing units in Springbrook, 2,153 residents were subtracted from the estimated development capacity, resulting in a final tally of 17,500 potential new residents expected by the year 2017.

- **New Employees**

The figures presented under the "Net New Employees" column includes all jobs anticipated to be generated by redevelopment of vacant and underutilized privately owned commercial, industrial, and mixed-use parcels. Together, these lands are expected to generate 10,847 private sector jobs. In addition, public agencies and other institutions with employees in Lakewood anticipate adding another 1,428 jobs, for a total of 12,275 new employment opportunities by 2017.

Special Land Use Designations

The Preferred Alternative includes several designations which cannot clearly be categorized as either employment or residential uses. These include Public and Institutional; Open Space and Recreation; Military Lands; Arterial Corridor; and Air Corridor I and II. The development capacity assumptions for each are as follows:

Public and Institutional: This category includes hospitals, school district property, utility parcels, colleges, government-owned facilities, etc. This category includes no residences but

it does have significant existing and potential employment. Rather than estimate public and institutional employment based on jobs per acre, actual data and official projections to be obtained from the City, School District, hospital, colleges, etc. were used. The methodology was explained under “Public Sector Employment”.

Open Space and Recreation: This category primarily consists of parks, private golf courses, and other public and private recreation uses. This designation contains a small number of residences however no additional housing units will be permitted in this designation. The relatively few jobs created by this category was not determined to be statistically significant for inclusion in this capacity analysis with the exception of employment generated by the State Game Lands and the Fort Steilacoom Golf Course which were included under the Public and Institutional designation.

Military Lands: Three parcels of land within the American Lake Gardens neighborhood are owned by the Air Force and used for housing for the adjacent McChord Air Force Base.

Air Corridor: This designation incorporates use and development restrictions currently in place through overlay zones consistent with military airfield land use practices. Two separate land use designations, Air Corridor 1 and Air Corridor 2 correspond to the U.S. Air Force’s APZ I and APZ II designations. Accordingly, employment capacity is limited to 12 jobs per acre in both designations while new residential use is limited to 2 dwelling units per acre in the Air Corridor 2 and prohibited outright in Air Corridor 1.

Arterial Corridor: This designation accommodates the unique circumstances of properties located along several major arterials in predominantly residential areas. Properties subject to this designation may be used for low-intensity, non-nuisance businesses as well as residences (home occupations).

Lakewood Station Overlay District: Capacity for uses within the Lakewood Station Overlay District would be determined by underlying land use designations, thus the overlay was not considered a factor for capacity analysis purposes.

NO ACTION ALTERNATIVE

Rather than use a new set of land use designations as is the case with the other two alternatives, this alternative would rely on zoning in use at the time of Lakewood's incorporation. To compare the full range of land use options for the purpose of SEPA review, temporary overlay zones adopted by Lakewood subsequent to incorporation were not considered. As a result, capacity analysis under this alternative does not recognize the large lot and other overlay zones which were adopted after the city's incorporation but does include the Airport Approach overlay zones inherited from Pierce County. Because of the rather simple mix of zones (two residential zones, two employment zones, and three mixed-use zones), a slightly different spreadsheet structure was used, but the methodology remained unchanged. Table A-4 summarizes the outcome of the development capacity analysis.

Table A-4: Total New Population and Employment Figures by No Action Alternative

Land Use Category	New Residential Population	New Employees*
Moderate Density Single Family	16,764	0
High Density Residential	5,733	0
Major Urban Center	1,409	3,420
Mixed Use District	8,447	3,517
Community Center	386	102
Employment Center	-133	1,152
Neighborhood Center	0	37
Total	31,853	8,229

* Does not include employment figures for institutional uses, such as schools, hospitals, or government agencies which were added to the final results from data shown in Table A-2.

Table A-5: Summary of New Population and Employment Figures for Each Alternative**Mixed Use Alternative**

Planning Area	Residents	Private Jobs	Public Jobs	Total Jobs
1	5,330.0	3,106	201	3,307
2	3673	3,080	825	3,905
3	4,587.0	1,095	31	1,126
4	1,920.0	140	282	422
5	4,618.0	159	216	375
6	5,685.0	1,915	20	1,935
7	4,391.0	108	59	167
Total	30,204.0	9,603	1,634	11,237

No Action Alternative

Planning Area	Residents	Private Jobs	Public Jobs	Total Jobs
1	4,263	3,770	227	3,997
2	3,049	2,378	835	3,213
3	2,802	1,460	38	1,498
4	1,932	138	306	444
5	11,106	37	250	287
6	6,503	368	24	392
7	2,197	79	72	151
Total	31,852.0	8,230	1,752	9,982

Preferred Alternative

Planning Area	Residents	Private Jobs	Public Jobs	Total Jobs
1	4,392	3,076	157	3,233
2	-343	4,731	807	5,538
3	4,450	723	19	742
4	866	165	240	405
5	6,137	49	157	206
6	1,885	1,218	12	1,230
7	2,265	885	36	921
Total	19,652	10,847	1,428	12,275
Revised Total:	17,500			

Residential Capacity Analysis

Vacant Land

Moderate Density

Total Vacant Land that is zoned Moderate Density Single Family by Planning Area (acres)

Times the Projected Density/Acre for that zone (4 du/acre)

Equals the projected new units on Moderate Density Single Family vacant land by Planning Area (du's)

High Density

Total Vacant Land that is zoned High Density Residential by Planning Area (acres)

Times the Projected Density/Acre for that zone (18 du/acre)

Equals the projected new units on High Density Residential zoned vacant land by Planning Area (du's)

Total New dus by Planning Area

Times Average household size

Total new population by Planning Area

Underutilized Land

Moderate Density

Moderate Density Single Family parcels likely to experience intensified development (parcels with 1 or fewer du's per 18,000 sq.ft. of area).

Times an estimated 1 new du for every 9,000 sq. ft. of land.

Minus Existing units that would remain or be replaced (to avoid double counting)

Equals the projected new units on Moderate Density Single Family zoned underutilized land by Planning Area (du's)

High Density

Total underutilized land (improvement value/landvalue<26%) zoned High Density Residential (HDR) by Planning Area (acres)

Times the Projected Density/Acre for that zone (18 du/acre)

Equals the projected new units on HDR zoned land from redevelopment by Planning Area (du's)

Minus Existing units that would remain or be replaced (to avoid double counting)

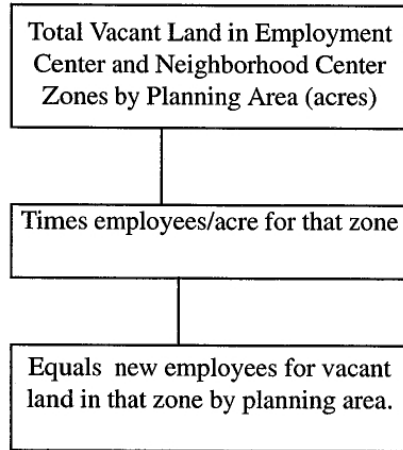
Equals the projected new units on HDR zoned underutilized land by Planning Area (du's)

Employment Capacity Analysis

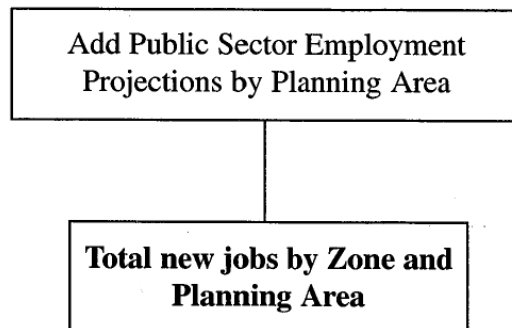
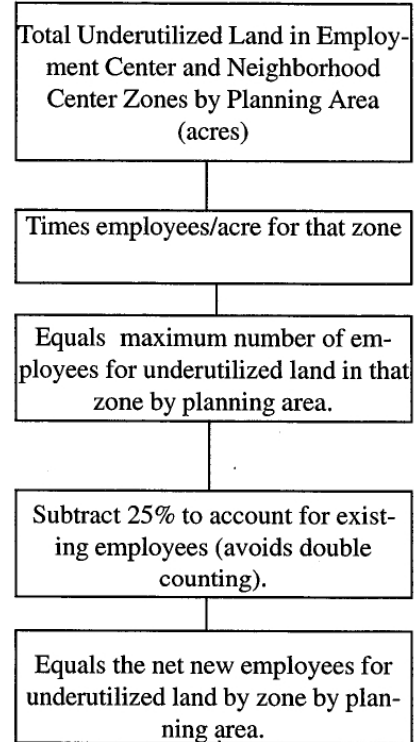
Methodology for Employment Center and Neighborhood Center Zones

(note--these zones do not allow residential uses)

Vacant Land

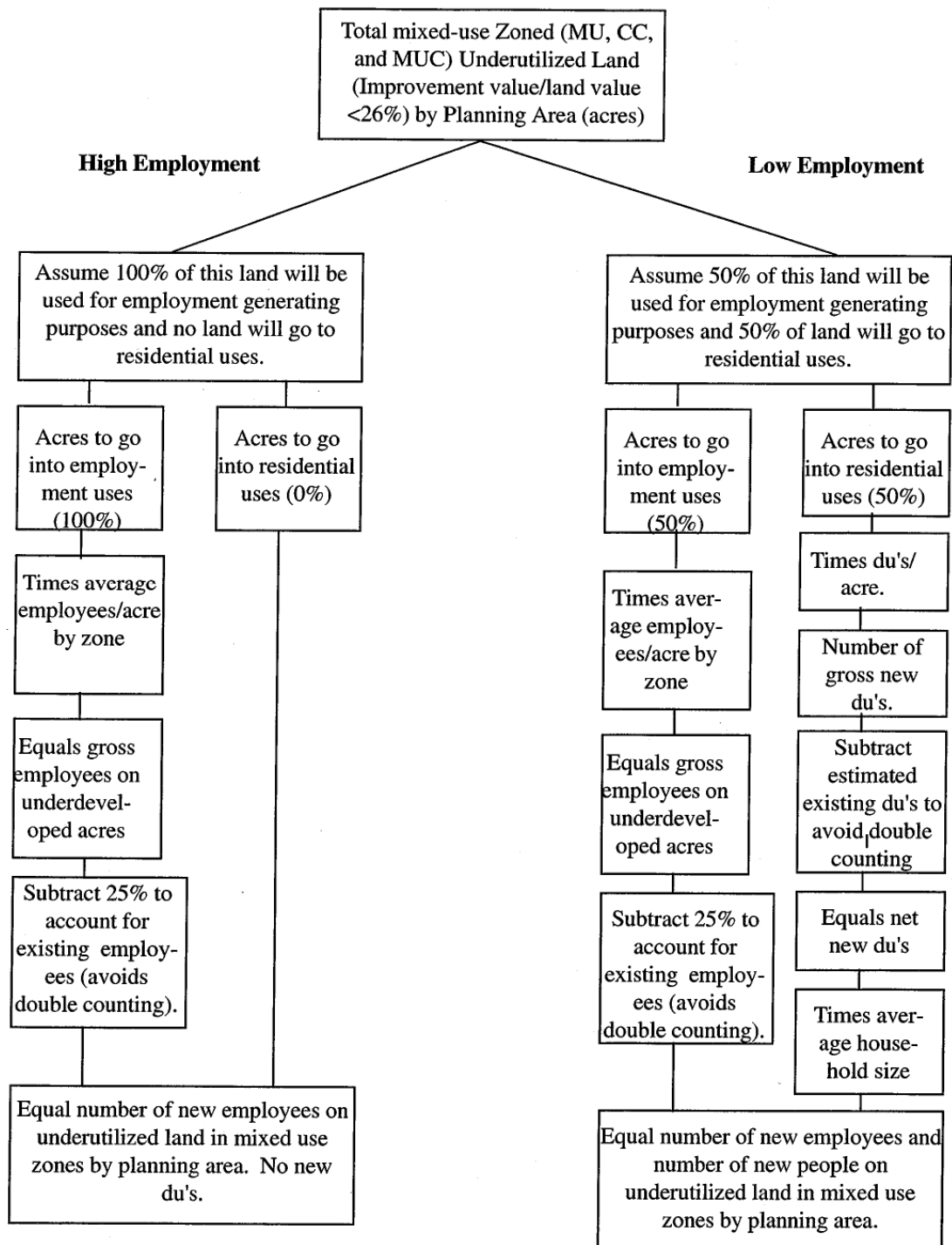


Underutilized Land (Improvement Value/Land Value <26%)



Capacity Analysis in Mixed-Use Areas: Underdeveloped Land

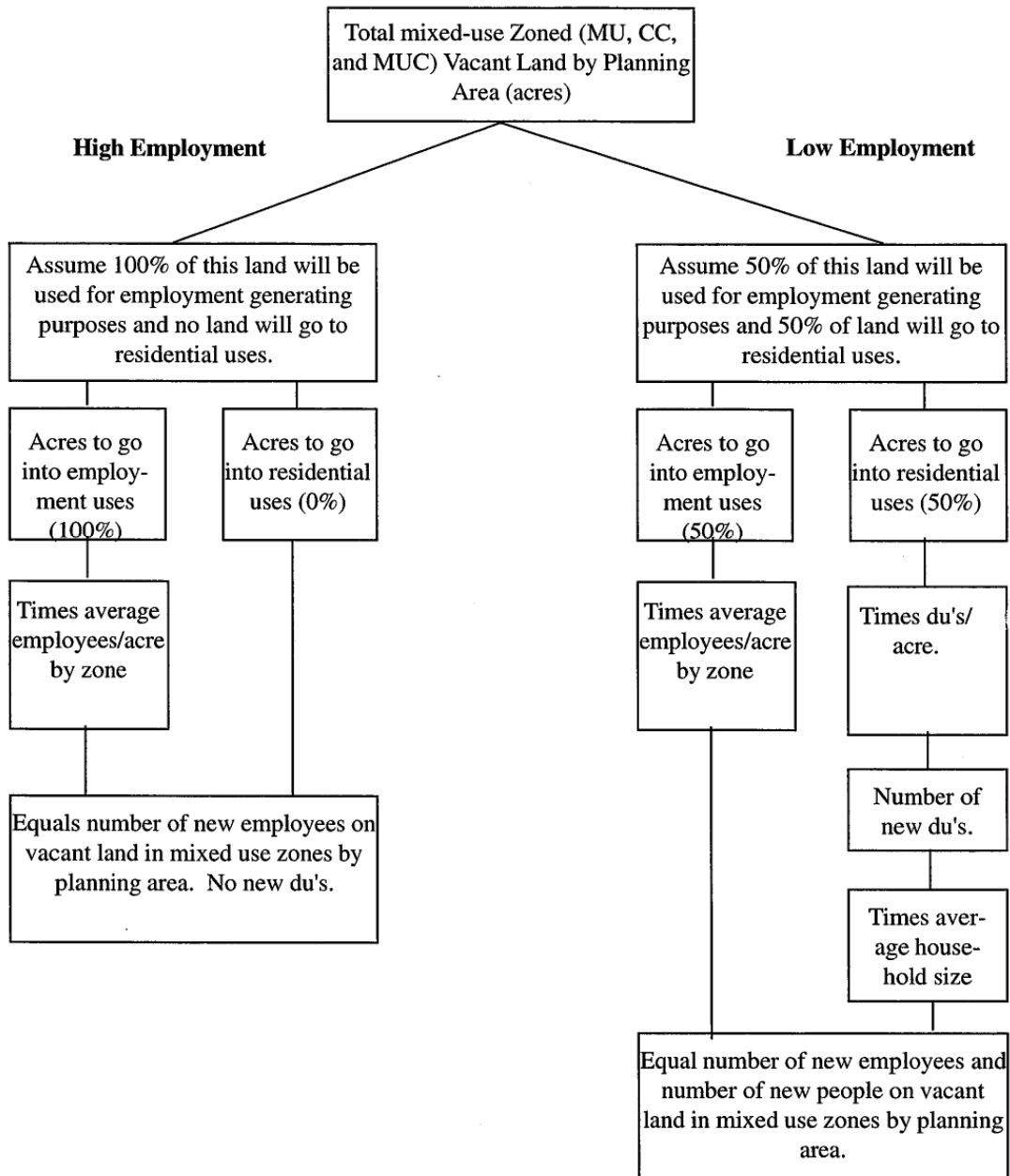
(Mixed Use, Community Center, and Major Urban Center Zones)



Capacity Analysis in Mixed-Use Areas: Vacant Land

(Mixed Use, Community Center, and Major Urban Center Zones)

Vacant Land



Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

Future Land Use - Revised Preferred Alternative Population and Employment Development Capacity																
Plan Area	Land Use Designation	Vacant Acres ^A	Under-utilized Acres <=25%	Under-utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelopment ^B	Acres for Employment Development ^{C,D}	Employees/Acre ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Development ^C	DU's per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
1	Residential Estate	0.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.44	2	1	1	0	0	N/A
	Single Family	6.43	33.00	0.00	0.00	N/A	0	0	0	39.43	6	237	90	147	363	0
	Mixed Residential	1.95	11.89	0.40	0.20	N/A	0	0	0	14.05	14	197	23	174	431	0
	Multi Family	1.94	3.41	5.95	2.97	N/A	0	0	0	8.33	22	183	20	163	405	0
	High Density Multifamily	3.02	11.02	4.12	2.06	0.00	0	0	0	16.10	40	644	36	608	1,508	0
	Central Business District	8.54	32.55	55.20	27.60	51.52	45	2,318	1,855	17.17	54	927	155	772	1,915	1,855
	Corridor Commercial	2.79	36.35	26.77	13.38	52.53	25	1,313	1,051	0.00	0	0	82	-82	-203	1,051
	Neighborhood Business District	4.21	5.76	13.62	6.81	14.27	15	214	171	2.52	22	55	66	-11	-26	171
	Public and Institutional	7.95	ND								N/A					
	Open Space and Recreation	10.09	N/A								N/A					
	Totals for Area 1	47.15	133.99	106.05		118.31		3,845	3,076	98.03		2,244	473	1,771	4,392	3,076
2	Single Family	0.31	5.00	0.00	0.00	0.00	0	0	0	5.31	6	32	10	22	54	0
	Central Business District	0.00	0.70	0.00	0.00	0.53	45	24	19	0.18	54	0	1	-1	0	19
	Corridor Commercial	10.59	53.17	61.55	30.77	94.53	25	2,363	1,891	0.00	0	0	138	-138	-342	1,891
	Industrial	48.07	69.93	53.31	26.66	144.66	15	2,170	1,736	0.00	0	0	108	-108	-268	1,736
	Air Corridor 1	44.95	58.63	18.88	9.44	113.02	12	1,356	1,085	0.00	0	0	257	0	0	1,085
	Air Corridor 2	1.73	29.05	24.07	12.04	0.00	12	0	0	42.82	2	86	504	86	213	0
	Public and Institutional	16.45									N/A					
	Open Space and Recreation	18.43									N/A					
Totals for Area 2		140.54	216.48	157.81		352.74		5,913	4,731	48.30		118	1,018	-139	-343	4,731

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

Future Land Use - Revised Preferred Alternative Population and Employment Development Capacity																
Plan Area	Land Use Designation	Vacant Acres ^A	Under-utilized Acres <=25%	Under-utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelopment ^B	Acres for Employment Development ^{C,D}	Employees/Acre ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Development ^C	DU's per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
3	Single Family	20.89	9.00	0.00	0.00	0.00	0	0	0	29.89	6	54	117	-63	-156	0
	Mixed Residential	6.00	1.03	15.29	7.65	0.00	0	0	0	14.67	14	205	26	179	445	0
	Multi Family	2.05	0.97	2.95	1.47	0.00	0	0	0	4.49	22	99	20	79	195	0
	High Density Multifamily	8.86	29.33	2.53	1.26	0.00	0	0	0	39.46	40	1578	10	1568	3890	0
	Neighborhood Business District	5.82	19.06	12.60	6.30	26.50	15	398	318	4.68	22	103	67	36	89	318
	Industrial	0.00	33.74	0.00	0.00	33.74	15	506	405	0.00	0	0	5	-5	-12	405
	Public and Institutional	0.00									0					
	Open Space and Recreation	34.28									0					
	Totals for Area 3	77.91	93.12	33.37		60.24		904	723	93.19		2,040	245	1,795	4,450	723
4	Residential Estate	21.79	N/A	N/A	0.00	N/A	N/A	N/A	N/A	22.37	2	45	21	24	59	N/A
	Single Family	17.02	56.00	0.00	0.00	0.00	0	0	0	73.02	6	438	154	284	705	0
	High Density Multifamily	0.00	0.52	0.00	0.00	0.00	0	0	0	0.52	40	21	1	20	49	0
	Neighborhood Business District	4.56	3.96	14.83	7.41	13.54	15	203	163	2.39	22	53	31	22	54	163
	Arterial Corridor	0.49	0.00	0.00	0.00	0.49	6	3	2	0.49	6	3	3	0	0	2
	Public and Institutional	0.00									0					
	Open Space and Recreation	0.00									0					
	Totals for Area 4	43.85	60.48	14.83		14.03		206	165	98.78		559	210	349	866	165

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

Future Land Use - Revised Preferred Alternative Population and Employment Development Capacity																
Plan Area	Land Use Designation	Vacant Acres ^A	Under-utilized Acres <=25%	Under-utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelopment ^B	Acres for Employment Development ^{C,D}	Employees/Acre ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Development ^C	DUs per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
5	Residential Estate	42.69	N/A	N/A		N/A	N/A	N/A	N/A	71.30	2	143	68	75	185	N/A
	Single Family	117.47	401.00	0.00	0.00	0.00	0	0	0	518.47	6	3,111	794	2,317	5,746	0
	Mixed Residential	4.35	1.81	2.65	1.33	0.00	0	0	0	7.48	14	105	31	74	0	0
	Multi Family	1.29	2.82	0.00	0.00	0.00	0	0	0	4.11	22	90	6	84	209	0
	Neighborhood Business District	0.69	3.36	1.48	0.74	4.08	15	61	49	0.72	22	16	17	-1	-3	49
	Public and Institutional	0.00									N/A					
	Open Space and Recreation	7.20									N/A					
	Totals for Area 5	173.69	408.99	4.13		4.08		61	49	602.07		3,464	916	2,348	6,137	49
6	Residential Estate	2.72	N/A	N/A		N/A	N/A	N/A	N/A	2.71	2	5	6	-1	-1	N/A
	Single Family	16.38	86.00	0.00	0.00	0.00	0	0	0	102.38	6	614	217	397	985	0
	Multi Family	0.54	3.94	0.00	0.00	0.00	0	0	0	4.48	22	99	7	92	227	0
	High Density Multifamily	2.70	5.56	0.21	0.10	0.00	0	0	0	8.37	40	335	14	321	795	0
	Corridor Commercial	5.76	13.15	9.69	4.84	23.75	25	594	475	0.00	0	0	53	-53	-131	475
	Industrial	-	-	-	-	58.00	15	870	696	0.00	0	0	22			696
	Neighborhood Business District	1.79	2.33	0.92	0.46	3.89	15	58	47	0.69	22	15	11	4	10	47
	Open Space and Recreation	10.76									N/A					
	Totals for Area 6	40.65	110.98	10.81		85.64		1,522	1,218	118.63		1,068	330	760	1,885	1,218

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

Future Land Use - Revised Preferred Alternative Population and Employment Development Capacity																
Plan Area	Land Use Designation	Vacant Acres ^A	Under-utilized Acres <=25%	Under-utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelopment ^B	Acres for Employment Development ^{CJ}	Employees/Acre ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Development ^C	DU's per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
7	Residential Estate	1.23	N/A	N/A		N/A	N/A	N/A	N/A	1.23	2	2	2	0	1	N/A
	Single Family	11.00	24.00	0.00	0.00	0.00	0	0	0	35.00	6	210	65	145	360	0
	Mixed Residential	3.35	3.88	7.67	3.83	0.00	0	0	0	11.06	14	155	38	117	290	0
	Multi Family	5.40	7.25	4.44	2.22	0.00	0	0	0	14.87	22	0	22	-22	0	0
	High Density Multifamily	6.78	9.22	4.00	2.00	0.00	0	0	0	18.01	40	720	19	701	1,739	0
	Neighborhood Business District	0.51	5.48	1.57	0.79	5.76	15	86	69	1.02	22	22	34	-12	-29	69
	Industrial	18.78	-	-	-	68.00	15	1020	816	0.00	0	0	54	-54	-134	816
	Public and Institutional	0.38						0	0	0.00	0	0		0	0	0
	Military Lands	5.11	0.00	0.00		5.11		0	0	5.11	3	16	1	15	38	0
	Open Space and Recreation	4.12									N/A					
	Totals for Area 7	56.66	49.83	17.68		78.87		1,106	885	86.29		1,126	235	891	2,265	885
	Totals for Preferred Alternative	580.44	1073.88	344.67		713.90		13,558	10,846	1145.30		10,619	3,427	7,975	19,653	10,846
														New Residential Population	7,975	19,653
														Population displaced by Industrial designation(I)	-868	-2,153
														Final Development Capacity	7,107	17,500 Persons
<p>A. Vacant and underutilized acreage derived from GIS analysis. Underutilized Residential Estate acreage was calculated as any parcel large enough to be subdivided into more than one lot.</p> <p>Underutilized Single Family residential acreage was calculated as any parcel with 1 DU and >18,000 sf.</p> <p>B. Underutilized employment acreage was calculated as 100% of parcels with improved value <25% of total assessed value, and 50% of parcels with improved value from 26-50% of total assessed value.</p> <p>C. Assume an employment/housing split of 75/25 for Central Business District, and 85/15 for Neighborhood Business District.</p> <p>D. Employment averages are based on analysis of comparable cities in the region.</p> <p>E. Net new (private sector) employees are reduced by 20% from gross new employees to avoid double counting existing employees.</p> <p>F. Existing DUs are subtracted from gross new DUs to reach net new DUs and avoid double counting.</p> <p>G. Net new DUs are multiplied by average household size of 2.48 persons per DU to reach new residential population. Source: 1990 Census</p> <p>H. Shows private employees only. Public sector and institutional employees are accounted for elsewhere.</p> <p>I. Includes 296 units in Springbrook and 572 units in American Lake Gardens</p> <p>J. 60% of industrial acreage identified in Plan Areas 6 & 7. Remainder goes to site development requirements: roads, detention basins, buffers, etc.</p>																

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

Under-utilized res <=25%	Under- utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelop- ment ^B	Acres for Employment Development ^{C,J}	Employees/Acr e ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Develop- ment ^C	DU's per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.44	2	1	1	0	0	N/A
33.00	0.00	0.00	N/A	0	0	0	39.43	6	237	90	147	363	0
11.89	0.40	0.20	N/A	0	0	0	14.05	14	197	23	174	431	0
3.41	5.95	2.97	N/A	0	0	0	8.33	22	183	20	163	405	0
11.02	4.12	2.06	0.00	0	0	0	16.10	40	644	36	608	1,508	0
32.55	55.20	27.60	51.52	45	2,318	1,855	17.17	54	927	155	772	1,915	1,855
36.35	26.77	13.38	52.53	25	1,313	1,051	0.00	0	0	82	-82	-203	1,051
5.76	13.62	6.81	14.27	15	214	171	2.52	22	55	66	-11	-26	171
ND								N/A					
N/A								N/A					
133.99	106.05		118.31		3,845	3,076	98.03		2,244	473	1,771	4,392	3,076
5.00	0.00	0.00	0.00	0	0	0	5.31	6	32	10	22	54	0
0.70	0.00	0.00	0.53	45	24	19	0.18	54	0	1	-1	0	19
53.17	61.55	30.77	94.53	25	2,363	1,891	0.00	0	0	138	-138	-342	1,891
69.93	53.31	26.66	144.66	15	2,170	1,736	0.00	0	0	108	-108	-268	1,736
58.63	18.88	9.44	113.02	12	1,356	1,085	0.00	0	0	257	0	0	1,085
29.05	24.07	12.04	0.00	12	0	0	42.82	2	86	504	86	213	0
								N/A					
								N/A					
216.48	157.81		352.74		5,913	4,731	48.30		118	1,018	-139	-343	4,731

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

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er-utilized res <=25%	Under- utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelop- ment ^B	Acres for Employment Development ^{C,I}	Employees/Acr e ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Develop- ment ^C	DU's per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
9.00	0.00	0.00	0.00	0	0	0	29.89	6	54	117	-63	-156	0
1.03	15.29	7.65	0.00	0	0	0	14.67	14	205	26	179	445	0
0.97	2.95	1.47	0.00	0	0	0	4.49	22	99	20	79	195	0
29.33	2.53	1.26	0.00	0	0	0	39.46	40	1578	10	1568	3890	0
19.06	12.60	6.30	26.50	15	398	318	4.68	22	103	67	36	89	318
33.74	0.00	0.00	33.74	15	506	405	0.00	0	0	5	-5	-12	405
								0					
								0					
93.12	33.37		60.24		904	723	93.19		2,040	245	1,795	4,450	723
N/A	N/A	0.00	N/A	N/A	N/A	N/A	22.37	2	45	21	24	59	N/A
56.00	0.00	0.00	0.00	0	0	0	73.02	6	438	154	284	705	0
0.52	0.00	0.00	0.00	0	0	0	0.52	40	21	1	20	49	0
3.96	14.83	7.41	13.54	15	203	163	2.39	22	53	31	22	54	163
0.00	0.00	0.00	0.49	6	3	2	0.49	6	3	3	0	0	2
								0					
								0					
60.48	14.83		14.03		206	165	98.78		559	210	349	866	165

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

Under-utilized res <=25%	Under- utilized Acres >25% (<=50% of land) ^B	Redev. Factor: Assumes 50% redevelop- ment ^B	Acres for Employment Development ^{C,J}	Employees/Acr e ^D	Gross New Employees	Net New Employees ^E	Acres for Housing Develop- ment ^C	DU's per Acre	Gross New DUs	Existing DUs	Net New DUs ^F	New Residential Population ^G	Total New Employees ^H
N/A	N/A		N/A	N/A	N/A	N/A	71.30	2	143	68	75	185	N/A
401.00	0.00	0.00	0.00	0	0	0	518.47	6	3,111	794	2,317	5,746	0
1.81	2.65	1.33	0.00	0	0	0	7.48	14	105	31	74	0	0
2.82	0.00	0.00	0.00	0	0	0	4.11	22	90	6	84	209	0
3.36	1.48	0.74	4.08	15	61	49	0.72	22	16	17	-1	-3	49
								N/A					
								N/A					
408.99	4.13		4.08		61	49	602.07		3,464	916	2,548	6,137	49
N/A	N/A		N/A	N/A	N/A	N/A	2.71	2	5	6	-1	-1	N/A
86.00	0.00	0.00	0.00	0	0	0	102.38	6	614	217	397	985	0
3.94	0.00	0.00	0.00	0	0	0	4.48	22	99	7	92	227	0
5.56	0.21	0.10	0.00	0	0	0	8.37	40	335	14	321	795	0
13.15	9.69	4.84	23.75	25	594	475	0.00	0	0	53	-53	-131	475
-	-	-	58.00	15	870	696	0.00	0	0	22			696
2.33	0.92	0.46	3.89	15	58	47	0.69	22	15	11	4	10	47
								N/A					
110.98	10.81		85.64		1,522	1,218	118.63		1,068	330	760	1,885	1,218

Development Capacity Analysis:
"Preferred Alternative"
City of Lakewood

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Development Capacity Analysis:
 "No-Action Alternative"
 City of Lakewood

Future Land Use -No Action Alternative

Population and Employment Development Capacity

PA 1	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	8.78	8.78	4	0	0	0	35.12	0
		Under-Utilized	49.16	49.16	4	87	0	0	150.9344	0
	High Density Res.	Vacant	3.4	3.4	18	0	0	0	61.2	0
		Under-Utilized	10.9	10.9	18	0	0	0	196.2	0
	Mixed Use	Vacant	1.56	0.624	18	0	0.936	25	11.232	23.4
		Under-Utilized	44.18	17.672	18	54.5	26.508	25	740.74	497.025
	Major Urban Ctr.	Vacant	35.52	10.656	18	0	24.864	40	191.808	994.56
		Under-Utilized	107.27	32.181	18	247.5	75.089	40	331.758	2252.67
	Employment Ctr.	Vacant	0	0	0	0	0	8	0	0
		Under-Utilized	0.4	0	0	0	0.4	8	0	2.4
TOTAL:			261.17	133.373		389	127.797		1718.992	3770.055
PA 2	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	1.1	1.1	4	0	0	0	4.4	0
		Under-Utilized	4.63	4.63	4	8	0	0	14.4092	0
	Mixed Use	Vacant	14.1	5.64	18	0	8.46	25	101.52	211.5
		Under-Utilized	80.25	32.1	18	23	48.15	25	1421.5	902.8125
	Major Urban Ctr.	Vacant	0	0	18	0	0	40	0	0
		Under-Utilized	8.23	2.469	18	0	5.761	40	44.442	172.83
	Employment Ctr.	Vacant	63.81	0	0	0	63.81	8	0	510.48
		Under-Utilized	96.69	0	0	53.5	96.69	8	-53.5	580.14
TOTAL:			268.81	45.939		84.5	222.871		1229.431	2377.763
PA 3	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	8.83	8.83	4	0	0	0	35.32	0
		Under-Utilized	29.39	29.39	4	25	0	0	117.2476	0
	High Density Res.	Vacant	3.54	3.54	18	0	0	0	63.72	0
		Under-Utilized	5.11	5.11	18	2.5	0	0	89.48	0
	Mixed Use	Vacant	23.77	9.508	18	0	14.262	25	171.144	356.55
		Under-Utilized	92.78	37.112	18	15	55.668	25	653.016	1043.775
	Major Urban Ctr.	Vacant	0	0	18	0	0	40	0	0
		Under-Utilized	0	0	18	0	0	40	0	0

Development Capacity Analysis:
"No-Action Alternative"
City of Lakewood

	Employment Ctr.	Vacant	7.4	0	0	0	7.4	8	0	59.2
		Under-Utilized	0	0	0	0	0	8	0	0
TOTAL:			170.82	93.49		42.5	77.33		1129.928	1459.525
PA 4	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s.	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	42.59	42.59	4	0	0	0	170.36	0
		Under-Utilized	138.18	138.18	4	163	0	0	505.7912	0
	Community Ctr.	Vacant	0.6	0.36	14	0	0.24	15	5.04	3.6
		Under-Utilized	4.38	2.628	14	1	1.752	15	35.792	19.71
	Mixed Use	Vacant	4.01	1.604	18	0	2.406	25	28.872	60.15
		Under-Utilized	4.83	1.932	18	1.5	2.898	25	33.276	54.3375
	Major Urban Ctr.	Vacant	0	0	18	0	0	40	0	0
		Under-Utilized	0	0	18	0	0	40	0	0
TOTAL:			194.59	187.294		165.5	7.296		779.1312	137.7975
PA 5	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s.	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	173.36	173.36	4	0	0	0	693.44	0
		Under-Utilized	1008	1008	4	1178	0	0	3700.72	0
	High Density Res.	Vacant	4.68	4.68	18	0	0	0	84.24	0
		Under-Utilized	0	0	18	0	0	0	0	0
	Neighborhood Ctr.	Vacant	1.6	0	0	0	1.4	15	0	21
		Under-Utilized	1.4	0	0	1	1.4	15	0	15.75
	Community Ctr.	Vacant	0	0	14	0	0	15	0	0
		Under-Utilized	0	0	14	0	0	15	0	0
TOTAL:			1189.04	1186.04		1179	2.8		4478.4	36.75
PA 6	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s.	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	26.47	26.47	4	0	0	0	105.88	0
		Under-Utilized	146.61	146.61	4	242	0	0	467.5924	0
	High Density Res.	Vacant	23.06	23.06	18	0	0	0	415.08	0
		Under-Utilized	77.23	77.23	18	1	0	0	1389.14	0
	Mixed Use	Vacant	4.82	1.928	18	0	2.892	25	34.704	72.3
		Under-Utilized	26.27	10.508	18	263	15.762	25	209.86	295.5375
	Major Urban Ctr.	Vacant	0	0	18	0	0	40	0	0
		Under-Utilized	0	0	18	0	0	40	0	0
TOTAL:			304.46	285.806		506	18.654		2622.256	367.8375

Development Capacity Analysis:
"No-Action Alternative"
City of Lakewood

PA 7	ZONE		ACRES	R. Acres	D.U./ACRE	Exist. D.U.s	E. Acres	JOBS/ACRE	D.U.s	JOBS
	Mod. Density Res.	Vacant	50.01	50.01	4	0	0	0	200.04	0
		Under-Utilized	132.72	132.72	4	84	0	0	558.3648	0
	High Density Res.	Vacant	0.04	0.04	18	0	0	0	0.72	0
		Under-Utilized	1.08	1.08	18	7.5	0	0	11.94	0
	Community Ctr.	Vacant	2.19	1.314	14	0	0.876	15	18.396	13.14
		Under-Utilized	14.63	8.778	14	26.5	5.852	15	96.392	65.835
TOTAL:			200.67	193.942		118	6.728		885.8528	78.975

TOTALS

P. Areas	Jobs	Dwelling Units	Residents	Vacant and Underutilized Acres
1	3770	1719	4263	261.17
2	2378	1229	3049	268.81
3	1460	1130	2802	170.82
4	138	779	1932	194.59
5	37	4478	11106	1189.04
6	368	2622	6503	304.46
7	79	886	2197	200.67
TOTAL:	8229	12844	31853	2589.56

Development Capacity Analysis:
"Mixed-Use Alternative"

Future Land Use - Mixed-Use Alternative

Population and Employment Development Capacity

Plan Area	Land Use Category	Vacant and Underutilized Acres ^A	Acres for Employment Development ^B	Employees/Acre ^C	Gross New Employees	Net New Employees ^D	Acres for Housing Development ^B	DU's per Acre	Gross New DU's	Existing DU's	Net New DU's ^E	New Residential Population ^F	Total New Employees ^G
1	Single Family	50.95	0.0	0	0	0	51.0	4	204	79	125	310	0
	SF Overlay Zone	0.22	0.0	0	0	0	0.2	2	0	0	0	1	0
	Duplex/Triplex	2.67	0.0	0	0	0	2.7	10	27	2	25	61	0
	Multi Family Resid.	20	0.0	0	0	0	20.0	18	360	203	157	389	0
	High Density Resid.	0	0.0	0	0	0	0.0	30	0	0	0	0	0
	Light Industry/B.P.	2.42	2.4	12	29	23	0.0	0	0	1	-1	-2	23
*	Community Center	29.13	11.7	15	175	140	17.5	14	245	9	236	585	140
	Mixed Use Center	85.45	51.3	25	1282	1025	34.2	18	615	64	551	2392	1025
	Urban Center	62.25	43.6	55	2397	1917	18.7	40	747	104	643	1595	1917
	Neighborhood Commercial	0.0	0.0	15	0	0	0.0	0	0	0	0	0	0
	Totals for Area 1	253.09	108.9		3882	3106	144.2		2198	462	1736	5330	3106
2	Single Family	12.1	0.0	0	0	0	12.1	4	48	16	32	80	0
	SF Overlay Zone	0.0	0.0	0	0	0	0.0	2	0	0	0	0	0
	Duplex/Triplex	0.0	0.0	0	0	0	0.0	10	0	0	0	0	0
	Multi Family Resid.	0.0	0.0	0	0	0	0.0	18	0	0	0	0	0
	High Density Resid.	0.0	0.0	0	0	0	0.0	30	0	0	0	0	0
	Light Industry/B.P.	137.5	137.5	12	1650	1320	0.0	0	0	39	-39	0	1320
	Community Center	0.0	0.0	15	0	0	0.0	14	0	0	0	0	0
	Mixed Use Center	117.1	70.2	25	1756	1405	46.8	18	843	98	745	3252	1405
	Urban Center	11.5	8.1	55	444	355	3.5	40	138	1	137	341	355
	Neighborhood Commercial	0.0	0.0	15	0	0	0.0	0	0	0	0	0	0
	Totals for Area 2	278.2	215.8		3850	3080	62.4		1030	154	876	3673	3080
* Detailed, step-by-step explanations of the calculations in this land use category are provided in the coversheet													

Future Land Use - Mixed-Use Alternative
Population and Employment Development Capacity

Plan Area	Land Use Category	Vacant and Underutilized Acres ^A	Acres for Employment Development ^B	Employees/Acre ^C	Gross New Employees	Net New Employees ^D	Acres for Housing Development ^B	DU's per Acre	Gross New DU's	Existing DU's	Net New DU's ^E	New Residential Population ^F	Total New Employees ^G
3	Single Family	33.5	0.0	0	0	0	33.5	4	134	21	113	280	0
	SF Overlay Zone	0	0.0	0	0	0	0.0	2	0	0	0	0	0
	Duplex/Triplex	0.3	0.0	0	0	0	0.3	10	3	1	2	4	0
	Multi Family Resid.	36.5	0.0	0	0	0	36.5	18	658	15	643	1593	0
	High Density Resid.	0.0	0.0	0	0	0	0.0	30	0	0	0	0	0
	Light Industry/B.P.	0.0	0.0	12	0	0	0.0	0	0	0	0	0	0
	Community Center	3.7	1.5	15	22	18	2.2	14	31	0	31	77	18
	Mixed Use Center	89.8	53.9	25	1347	1077	35.9	18	646	10	636	2656	1077
	Urban Center	0.0	0.0	55	0	0	0.0	40	0	10	-10	-25	0
	Neighborhood Commercial	0.0	0.0	15	0	0	0.0	0	0	0	0	0	0
	Totals for Area 3	163.8	55.4		1369	1095	108.5		1472	57	1415	4587	1095
4	Single Family	188.1	0.0	0	0	0	188.1	4	752	145	607	1506	0
	SF Overlay Zone	0	0.0	0	0	0	0.0	2	0	0	0	0	0
	Duplex/Triplex	0.0	0.0	0	0	0	0.0	10	0	0	0	0	0
	Multi Family Resid.	0.0	0.0	0	0	0	0.0	18	0	0	0	1	0
	High Density Resid.	0.5	0.0	0	0	0	0.5	30	16	0	16	39	0
	Light Industry/B.P.	0.0	0.0	12	0	0	0.0	0	0	0	0	0	0
	Community Center	4.6	1.8	15	28	22	2.8	14	39	0	39	96	22
	Mixed Use Center	9.8	5.9	25	148	118	3.9	18	71	3	68	286	118
	Urban Center	0.0	0.0	55	0	0	0.0	40	0	3	-3	-7	0
	Neighborhood Commercial	0.0	0.0	15	0	0	0.0	0	0	0	0	0	0
	Totals for Area 4	203.1	7.7		175	140	195.3		878	151	727	1920	140

Development Capacity Analysis:
"Mixed-Use Alternative"

Future Land Use - Mixed-Use Alternative

Population and Employment Development Capacity

Plan Area	Land Use Category	Vacant and Underutilized Acres ^A	Acres for Employment Development ^B	Employees/Acre ^C	Gross New Employees	Net New Employees ^D	Acres for Housing Development ^B	DU's per Acre	Gross New DU's	Existing DU's	Net New DU's ^E	New Residential Population ^F	Total New Employees ^G
5	Single Family	510.1	0.0	0	0	0	510.1	4	2040	552	1488	3691	0
	SF Overlay Zone	79.62	0.0	0	0	0	79.6	2	167	0	167	415	0
	Duplex/Triplex	3.6	0.0	0	0	0	3.6	10	36	5	31	78	0
	Multi Family Resid.	4.7	0.0	0	0	0	4.7	18	84	0	84	209	0
	High Density Resid.	2.0	0.0	0	0	0	2.0	30	61	0	61	150	0
	Light Industry/B.P.	0.0	0.0	12	0	0	0.0	0	0	0	0	0	0
	Community Center	3.7	1.5	15	22	18	2.2	14	31	1	30	75	18
	Mixed Use Center	0.0	0.0	25	0	0	0.0	18	0	0	0	0	0
	Urban Center	0.0	0.0	55	0	0	0.0	40	0	0	0	0	0
	Neighborhood Commercial	11.8	11.8	15	176	141	0.0	0	0	3	-3	0	141
	Totals for Area 5	615.6	13.2		199	159	602.3		2420	561	1859	4618	159
6	Single Family	171.5	0.0	0	0	0	171.5	4	686	230	456	1131	0
	SF Overlay Zone	0	0.0	0	0	0	0.0	2	0	0	0	0	0
	Duplex/Triplex	0.0	0.0	0	0	0	0.0	10	0	0	0	0	0
	Multi Family Resid.	0.0	0.0	0	0	0	0.0	18	0	0	0	0	0
	High Density Resid.	41.6	0.0	0	0	0	41.6	30	1248	2	1246	3090	0
	Light Industry/B.P.	0.0	0.0	12	0	0	0.0	0	0	0	0	0	0
	Community Center	0.0	0.0	15	0	0	0.0	14	0	0	0	0	0
	Mixed Use Center	21.4	12.8	25	321	257	8.6	18	154	310	-156	-130	257
	Urban Center	53.8	37.7	55	2072	1658	16.1	40	646	3	643	1595	1658
	Neighborhood Commercial	0.0	0.0	15	0	0	0.0	0	0	0	0	0	0
	Totals for Area 6	288.3	50.5		2393	1915	237.8		2734	545	2189	5685	1915

Future Land Use - Mixed-Use Alternative
Population and Employment Development Capacity

Plan Area	Land Use Category	Vacant and Underutilized Acres ^A	Acres for Employment Development ^B	Employees/Acre ^C	Gross New Employees	Net New Employees ^D	Acres for Housing Development ^B	DU's per Acre	Gross New DU's	Existing DU's	Net New DU's ^E	New Residential Population ^F	Total New Employees ^G
7	Single Family	97.8	0.0	0	0	0	97.8	4	391	47	344	854	0
	SF Overlay Zone	0	0.0	0	0	0	0.0	2	0	0	0	0	0
	Duplex/Triplex	0.0	0.0	0	0	0	0.0	10	0	0	0	0	0
	Multi Family Resid.	81.8	0.0	0	0	0	81.8	18	1473	141	1332	3303	0
	High Density Resid.	0.0	0.0	0	0	0	0.0	30	0	0	0	0	0
	Light Industry/B.P.	0.0	0.0	12	0	0	0.0	0	0	0	0	0	0
	Community Center	14.0	5.6	15	84	67	8.4	14	118	23	95	235	67
	Mixed Use Center	0.0	0.0	25	0	0	0.0	18	0	0	0	0	0
	Urban Center	0.0	0.0	55	0	0	0.0	40	0	0	0	0	0
	Neighborhood Commercial	3.4	3.4	15	51	41	0.0	0	0	13	-13	0	41
	Totals for Area 7	197.1	9.0		135	108	188.0		1982	224	1758	4391	108
	Totals for Preferred Alternative	1,999.05	460.60		12,004	9,603	1,538.45		12,713	2,154	10,559	30,205	9,603

- A. Vacant and underutilized acreage derived from GIS analysis. Underutilized residential acreage was calculated as any parcel outside of large lot overlay zone with 1 DU and >18,000 sf. Underutilized employment acreage was calculated as all parcels with improved value <25% of total assessed value and half of those parcels with improved value from 26-50% of total assessed value.
- B. For mixed use zones, Community Center assumes a employment/housing split of 40/60, Mixed Use 60/40, and Urban Center 70/30.
- C. Employment averages for these zones are based on analysis of comparable cities in the region.
- D. Gross new employees are reduced by 20% to reach net new employees and avoid double counting
- E. Existing DU's are subtracted from gross new DU's to reach net new DU's and avoid double counting
- F. Net new DU's are multiplied by ave. household size of 2.48 persons per DU to reach new residential population. Source: 1990 Census
- G. Shows private employees only. Public sector and institutional employees are accounted for elsewhere.

Appendix B

Transportation Analysis Data

Table B-1. 1992-1996 Total Annual Accidents - Signalized Intersections.

Intersection	1992	1993	1994	1995	1996	Total
100th St. SW/40th Ave. SW	4	8	9	10	1	32
100th St. SW/Lakeview Ave. SW	7	9	6	12	9	43
100th St. SW/David Lane SW	4	3	7	6	1	21
100th St. SW/Lakewood Dr. SW	9	3	3	7	2	24
100th St. SW/59th Ave. SW	8	10	5	11	0	44
108th St. SW/Bridgeport Way SW	0	0	2	0	0	2
108th St. SW/Lakeview Ave. SW	0	1	1	0	0	2
108th St. SW/Pacific Highway SW	0	0	1	0	1	2
Ardmore Dr. SW/Whitman Ave. SW	6	3	5	7	1	22
Bridgeport Way SW/Pacific Highway SW	17	12	13	15	2	59
Bridgeport Way SW/112th Street SW	10	7	4	7	1	29
Bridgeport Way SW/108th Street SW	8	12	14	8	5	49
Bridgeport Way SW/Lakewood Mall Blvd. SW	8	7	10	6	6	37
Bridgeport Way SW/100th Street SW	15	12	3	14	2	46
Bridgeport Way SW/59th Avenue SW	4	2	5	8	2	21
Bridgeport Way SW/Gravelly Lake Drive SW	6	7	4	6	6	29
Bridgeport Way SW/93rd Street SW	6	1	5	6	0	18
Bridgeport Way SW/Steilacoom Blvd. SW	7	8	11	5	3	34
Bridgeport Way W/Custer Road W.	8	11	8	9	4	40
Bridgeport Way W./75th Street W.	7	5	6	6	0	24
Custer Road SW/88th Street SW	2	2	3	6	1	14
Custer Road SW/John Dower Road SW	7	5	6	11	3	32
Gravelly Lake Dr. S/Pacific Highway SW	6	2	6	4	1	19
Gravelly Lake Dr. S./Nyanza Road SW	0	1	2	7	1	11
Gravelly Lake Dr. S./Veterans Drive SW	4	5	4	8	2	23
Gravelly Lake Dr. S./Washington Blvd. SW	2	3	5	2	3	15
Gravelly Lake Dr. S./Nyanza Road SW	3	0	2	2	0	7
Gravelly Lake Dr. S./112th Street SW	7	8	5	9	0	29
Gravelly Lake Dr. S./Wildaire Road SW	5	3	1	6	0	15
Gravelly Lake Dr. S./Lakewood Mall	2	6	3	5	3	19
Gravelly Lake Dr. S./Alfaretta Dr. SW	6	9	6	6	2	29
Gravelly Lake Dr. S./100th Street SW	4	7	4	9	0	24
Gravelly Lake Dr. S./Mount Tacoma Dr. SW	2	3	7	7	0	19
Gravelly Lake Dr. S./Bridgeport Way SW	0	1	0	0	1	2
Lakeview Ave. SW/108th St. SW	4	2	5	3	6	20
Lakewood Dr. S./100th St. SW	0	1	0	1	0	2
Lakewood Dr. W/Steilacoom Blvd. SW	1	0	1	0	0	2
Lakewood Dr. W/Custer Road W	7	6	16	15	0	44
Military Rd. SW/112th St. SW	5	1	2	2	2	12
Pacific Highway SW/Gravelly Lake Dr. SW	0	0	1	0	0	1
Pacific Highway SW/108th St. SW	3	7	6	7	1	24
South Tacoma Way/112th St. S	2	4	9	10	3	28
South Tacoma Way/Pacific Highway SW	6	4	16	11	4	41
South Tacoma Way/SR-512	15	8	11	9	0	43
South Tacoma Way/100th St. SW	17	13	9	14	6	59
South Tacoma Way/96th St. S	16	25	16	15	2	74
South Tacoma Way/Steilacoom Blvd. SW	13	13	16	14	6	62
South Tacoma Way/88th St. S	6	4	2	5	2	19
South Tacoma Way/84th St. S	5	8	5	8	4	30
Steilacoom Blvd. S/Farwest Dr. SW	8	4	5	3	4	24
Steilacoom Blvd. S/87th Ave. SW	6	8	4	6	2	26
Steilacoom Blvd. S/83rd Ave. SW	8	14	14	11	5	52
Steilacoom Blvd. S/Briggs Ln. SW	5	6	10	5	3	29
Steilacoom Blvd. S/Weller Rd. SW	2	0	1	6	1	10
Steilacoom Blvd. S/Phillips Rd. SW	3	11	4	8	0	26
Steilacoom Blvd. S/88th St. SW	9	7	11	7	0	34
Steilacoom Blvd. S/Ardmore Dr. SW	10	3	3	3	1	20
Steilacoom Blvd. S/Bridgeport Way SW	2	0	0	0	0	2
Steilacoom Blvd. S/Gravelly Lake Dr. SW	1	4	4	0	1	10
Steilacoom Blvd. S/Lakewood Dr. W	9	8	6	12	5	40
Steilacoom Blvd. S/Lakeview Ave. SW	3	5	5	2	1	16
Steilacoom Blvd. S/South Tacoma Way	0	0	1	0	0	1
Washington Blvd. S/Edgewood Ave. SW	0	3	0	3	0	6
Washington Blvd. S/Vernon (92nd) Ave. SW	5	6	4	3	1	19

Table B-2. 1992-1996 Average Annual Accident Frequency and Rates at Signalized Intersections.

Intersection	Accident Frequency (accidents per year)			Average Annual Accidents	Average Rate (per mev)
	PDO	By Severity PI	F		
100th St. SW/40th Ave. SW	2.7	4.4	0	7.1	0.65
100th St. SW/Lakeview Ave. SW	3.8	5.8	0	9.6	
100th St. SW/David Lane SW	2.7	2.0	0	4.7	
100th St. SW/Lakewood Dr. SW	2.7	2.7	0	5.3	
100th St. SW/59th Ave. SW	3.8	3.8	0	7.6	1.19
108th St. SW/Bridgeport Way SW	0.2	0.2	0	0.2	0.03
108th St. SW/Lakeview Ave. SW	0.2	0.2	0	0.2	0.07
108th St. SW/Pacific Highway SW	0.4	0	0	0.4	0.05
Ardmore Dr. SW/Whitman Ave. SW	2	2.9	0	5	0.72
Bridgeport Way SW/Pacific Highway SW	7.3	5.8	0	13.3	0.85
Bridgeport Way SW/112th Street SW	2.7	3.8	0	6.7	0.56
Bridgeport Way SW/108th Street SW	7.6	3.3	0	10.6	0.81
Bridgeport Way SW/Lakewood Mall Blvd. SW	5.1	3.1	0	8.1	0.68
Bridgeport Way SW/100th Street SW	5.6	4.7	0	10.6	0.76
Bridgeport Way SW/59th Avenue SW	1.8	2.9	0	4.8	0.54
Bridgeport Way SW/Gravelly Lake Drive SW	2.7	3.8	0	6.7	0.53
Bridgeport Way SW/93rd Street SW	1.8	2.2	0	3.8	0.33
Bridgeport Way SW/Steilacoom Blvd. SW	4	3.6	0	8	0.59
Bridgeport Way W/Custer Road W.	4.4	4.4	0	8.8	0.56
Bridgeport Way W/75th Street W.	2.9	2.4	0	5.3	0.54
Custer Road SW/88th Street SW	1.6	1.6	0	3.2	0.39
Custer Road SW/John Dower Road SW	3.3	3.8	0	7.1	0.81
Gravelly Lake Dr. S/Pacific Highway SW	3.1	1.1	0	4.2	0.35
Gravelly Lake Dr. S/Nyanza Road SW	1.8	0.7	0	2.5	0.22
Gravelly Lake Dr. S/Veterans Drive SW	1.3	3.8	0	5.1	0.64
Gravelly Lake Dr. S/Washington Blvd. SW	1.6	1.8	0	3.4	0.36
Gravelly Lake Dr. S/Nyanza Road SW	0.4	1.1	0	1.5	0.17
Gravelly Lake Dr. S/112th Street SW	4.2	2.2	0	6.4	0.65
Gravelly Lake Dr. S/Wildaire Road SW	2.4	0.9	0	3.3	0.35
Gravelly Lake Dr. S/Lakewood Mall	2.4	1.8	0	4.2	0.42
Gravelly Lake Dr. S/Alfaretta Dr. SW	3.1	3.3	0	6.4	0.74
Gravelly Lake Dr. S/100th Street SW	2.4	2.9	0	5.3	0.46
Gravelly Lake Dr. S/Mount Tacoma Dr. SW	1.8	2.4	0	4.2	0.44
Gravelly Lake Dr. S/Bridgeport Way SW	0.2	0.2	0	0.4	0.05
Lakeview Ave. SW/108th St. SW	1.8	2.7	0	4.5	0.68
Lakewood Dr. S/100th St. SW	0.4	0	0	0.4	0.03
Lakewood Dr. W/Steilacoom Blvd. SW	0.2	0.2	0	0.4	0.04
Lakewood Dr. W/Custer Road W	5.1	4.7	0	9.8	0.64
Military Rd. SW/112th St. SW	1.6	1.1	0	2.7	0.51
Pacific Highway SW/Gravelly Lake Dr. SW	0.2	0	0	0.2	0.02
Pacific Highway SW/108th St. SW	2.7	2.7	0	5.4	0.62
South Tacoma Way/112th St. S	2.4	3.8	0	6.2	0.66
South Tacoma Way/Pacific Highway SW	4.4	4.7	0	9.1	0.76
South Tacoma Way/SR-512	4.7	4.9	0	9.6	0.68
South Tacoma Way/100th St. SW	7.6	5.3	0	12.9	0.79
South Tacoma Way/96th St. S	8.0	8.4	0	16.4	0.99
South Tacoma Way/Steilacoom Blvd. SW	5.6	8.2	0	13.8	1.00
South Tacoma Way/88th St. S	1.6	2.7	0	4.3	0.40
South Tacoma Way/84th St. S	3.3	3.3	0	6.6	0.59
Steilacoom Blvd. S/Farwest Dr. SW	2.4	2.9	0	5.3	0.49
Steilacoom Blvd. S/87th Ave. SW	4.4	1.3	0	5.7	0.49
Steilacoom Blvd. S/83rd Ave. SW	7.6	4.0	0	11.6	0.54
Steilacoom Blvd. S/Briggs Ln. SW	2.2	4.2	0	6.4	0.86
Steilacoom Blvd. S/Weller Rd. SW	1.3	0.9	0	2.2	0.19
Steilacoom Blvd. S/Phillips Rd. SW	2.7	3.1	0	5.8	0.36
Steilacoom Blvd. S/88th St. SW	3.6	4.0	0	7.6	0.50
Steilacoom Blvd. S/Ardmore Dr. SW	1.8	2.7	0	4.5	0.35
Steilacoom Blvd. S/Bridgeport Way SW	0.2	0.2	0	0.4	0.03
Steilacoom Blvd. S/Gravelly Lake Dr. SW	1.3	0.9	0	2.2	0.39
Steilacoom Blvd. S/Lakewood Dr. W	3.6	5.3	0	8.9	0.78
Steilacoom Blvd. S/Lakeview Ave. SW	2.0	1.6	0	3.6	0.42
Steilacoom Blvd. S/South Tacoma Way	0.2	0	0	0.2	0.02
Washington Blvd. S/Edgewood Ave. SW	0.7	0.7	0	1.3	0.24
Washington Blvd. S/Vernon (92nd) Ave. SW	2.9	1.3	0	4.2	0.67

Appendix C

Comments and Responses - PDEIS

Appendix C — Comments & Responses on the Draft EIS

Introduction

In compliance with SEPA regulations (WAC 197-11-455), the City of Lakewood made the Draft EIS, issued on January 20, 2000, available for public review and comment. During the 30-day comment period, 11 individuals/organizations submitted comments on the contents of the draft document. Commentors included representatives of federal organizations (including the Department of the Air Force); County agencies; regional organizations; interest groups; and private citizens/residents of Lakewood. Comments addressing the draft Comprehensive Plan were also received but these are not responded to in this appendix. Letters received on the Draft EIS are listed below in Table C-1.

Table C-1: List of Letters Received on the Draft EIS

Letter #/Date	Commentor	Affiliation
1. 2/22/00	B. Bodner, Lt Col	U.S. Air Force
2. 2/20/00	A. Braedt	Resident
3. 2/20/00	L. Braedt	Resident
4. 2/22/00	D. Clarke	Resident (comment received via e-mail)
5. 2/17/00	L. Ishem	Pierce County Department of Community Services
6. 2/18/00	K. Kauffman	Water Rights, Inc.
		Puget Sound Regional Council
7. 2/18/00	A. Marshall-Dody	Pierce County Public Works and Utilities
8. 2/16/00	I. Miller and S. Kiehl	Puget Sound Regional Council
9. 2/21/00	M. Mirra	Columbia Legal Services
10. 2/19/00	C. Vincent	Pierce County Department of Planning and Land Services

Comments received on the Draft EIS were carefully reviewed and considered when revising the document (with this Final EIS representing the revised version). While SEPA does not require the City of Lakewood to respond directly to each comment received, it does require that the City address comments received on the Draft EIS when preparing the Final EIS. To accomplish this goal, the City reviewed the letters received, grouped comments into similar categories (e.g., Comments on American Lake Gardens), excerpted in writing the comments received (by category), and prepared detailed responses summarizing specific issues. In some cases, one response was adequate to address a similar comment raised by more than one commentor. Where appropriate, the EIS text, tables, and figures were modified to reflect new information.

This Appendix documents the results of the comment and response process. Following this introduction, Table C-2 presents the City's summary of comments received, as well as the responses to these comments. This table represents the City's official response to all commentors. Following the summary of comments and responses, all letters received on the Draft EIS are reproduced in their entirety.

The contents of the letters have been coded by category to correspond to prepared responses, with the code noted in the letters' margin. For example, there were ten distinct comments received in various letters regarding American Lake Gardens; these comments were coded "ALG 1-C" through "ALGIO-C," ("C" indicating comment) The City's responses to these distinct comments were likewise coded "ALG1-R" through "ALG10- R," ("R" indicating response). Therefore, on the reproduced letters included at the back of this appendix, a

designation of “ALG1” in the margin of the letter refers to comment summary ALG1-C, and Lakewood’s response ALG1-R.

The Puget Sound Regional Council’s (PSRC) comments (letter from I. Miller, PSRC, February 16, 2000) have been addressed separately, due to that agency’s responsibility for specific oversight associated with comprehensive plans. Comments and responses associated with the PSRC letter are coded “PS-#” and included at the end of Table C-2.

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
General Comments (G)		
G1	<p><u>G1-C:</u> Insufficient notice. The DEIS was only made available in late January 2000, which left very little time to incorporate its contents prior to the deadline for commenting on the draft comprehensive plan. As the EIS is the source document referenced for the comprehensive plan's compliance with many GMA issues, it should have been made available for the full comment period. Also [the commentor] only became aware of its existence by specifically asking about it. It is not noted anywhere on the City's website (unlike the draft comprehensive plan, which is available in its entirety). <u>Source: E-mail from Dave Clarke dated February 22, 2000; #1</u></p>	<p><u>G1-R:</u> The City met legal notification requirements for both the draft comprehensive plan and the draft EIS. The City's website, while a useful tool, is fledgling in its design and does not represent itself as a fully-rounded picture of the City's activities.</p> <p>The draft plan is a policy document, and every attempt was made to make the standalone document as timeless as possible by incorporating hard data into the EIS, where it is most appropriate as a basis of impact analysis. These are discrete but complementary documents, each with its own review and approval process. One's ability to comment on the policies contained in the draft plan should not have been hindered by the lack of the companion document.</p>
G2	<p><u>G2-C:</u> Throughout the DEIS, the sections on mitigation measures usually discuss actions the City "should" take in order to mitigate impacts. These actions should be included in the policies of the comprehensive plan. . <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p.1, #2</u></p>	<p><u>G2-R:</u> Comment acknowledged. Consistent with SEPA/GMA integration, the City has used the SEPA-mandated environmental analysis of the comprehensive plan alternatives as a vehicle to inform the process and refine the plan. As a result, the final comprehensive plan evolved from the draft plan in large part as a result of efforts to avoid adverse environmental impacts identified in the DEIS. This task was accomplished by creating individual goals and policies directly based upon the mitigation measures. Mitigation measures included in the DEIS will then translate into additional policies to be incorporated into the final plan. Because of the construct of the City's appeal process with regard to environmental review, it would have been inappropriate for the City Council to review these measures as a part of its review of the draft comprehensive plan because they also act as an appellate body for any appeal of environmental determinations. Therefore, measures are being taken forward in the final draft of the plan, which will not be reviewed by the Council until the final EIS appeal period is passed.</p>
G3	<p><u>G3-C:</u> Most of the mitigation is put off into the future when the zoning code is written or critical areas and shoreline regulations are updated. Because of this, it is very difficult to assess how well the mitigation is addressing the impacts. The City needs to include strong policy language that clearly anticipates the direction for the regulatory implementation. . <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 1, #3</u></p>	<p><u>G3-R:</u> Comment acknowledged.</p>
G4	<p><u>G4-C:</u> The document frequently refers to I-695 and states that funding or conditions may change as a result of the initiative. However, the City needs to go further in defining courses of action when these conditions change. : <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 1, #4</u></p>	<p><u>G4-R:</u> See the Capital Facilities and Improvement chapter of the draft comprehensive plan. The goals and policies within this chapter provide for continuous review, modification, and amendment of projects, plans, and services to accommodate changes in funding for the City or a service provider.</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
American Lake Gardens (ALG)		
ALG1	<p><u>ALG1-C:</u> Insufficient economic analysis (housing impacts). The DEIS does not discuss in sufficient detail how the loss of housing in American Lake Gardens will affect the City's status as a Community Development Block Grant community. This discussion is necessary to ensure compliance with federal regulations regarding the receipt of such funds. Further, discussion is necessary to ensure that a sufficient portion of these funds is available to address the issues of low-income residents displaced by the change in the [land use] designation from Residential to Industrial. The current level of detail "the loss of up to 1,165 units..." as stated in the DEIS is an entirely inappropriate level of detail for such an important issue. Discussion should include policies to retain housing, the effects during the transition period from residential to industrial uses, and contingency plans in case economic development occurs more slowly than expected (or not at all.) .) <u>Source: E-mail from Dave Clarke dated February 22, 2000: #2</u></p>	<p><u>ALG1-R:</u> In response to public concerns, the comprehensive plan was substantially changed to decrease the area of land to be redesignated Industrial in order to lessen housing impacts in American Lake Gardens. In addition, new policies intended to minimize housing impacts citywide were included in Chapter 3 of the final comprehensive plan.</p>
ALG2	<p><u>ALG2-C:</u> Insufficient economic analysis (American Lake Gardens). The document does not discuss the long- or short-term effects of the change in the land use designation in American Lake Gardens from Residential to Industrial. It should include a specific plan for how this change will be implemented, what infrastructure will be provided by the City, what infrastructure would be required to be provided by new development, and sources of and plans for accessing available state and federal funds. Also, the economic effect on existing high-density residential uses should be provided, and a discussion of plans for compensation of these land owners, if any (and if not, why not) necessary. In short, the EIS' discussion of American Lake Gardens' land use designation should spell out why this land use change makes sense, how it will happen, what is projected to happen, and how the City will assist and/or compensate those adversely affected. The existing documentation does not support this proposal. <u>Source: E-mail from Dave Clarke dated February 22, 2000: #3</u></p>	<p><u>ALG2-R:</u> As noted above, the comprehensive plan was changed to reduce housing impacts in American Lake Gardens and elsewhere in Lakewood; however, as a comprehensive plan and programmatic EIS, specific details such as "a specific plan for how this plan will be implemented" would be inappropriate. The EIS should, and does, comment on the adequacy of policies to address relocation impacts. New land-use policies, including several in LU 7 and 15.4 address this question [TP-1]. The specifics of plan implementation are the subject of subarea plans, changes to the City's zoning and development regulations, and other implementation strategies which may be subject to separate SEPA review as specific details become known. An evaluation of land-use changes proposed for American Lake Gardens and elsewhere is included in Section 3.2, the Land Use impact analysis in the FEIS. Additionally, it should be noted that at the state level, environmental review does not address socio-economic issues.</p>
ALG3	<p><u>ALG3-C:</u> The proposed rezoning of the American Lake Gardens area from residential to industrial uses, as well as the proposed reduction of housing density in the area north of McChord AFB, have implications that are not fully addressed in the DEIS. The population development capacity analysis model used to determine future population capacity based on zoned land uses is flawed. The model does not factor in the housing units that will be lost by zoning changes. As a result, the model accounts for new growth but not the relocation of current residents who will be displaced. Therefore, the potential for population growth anticipated by the capacity analysis is overestimated. The analysis determined a capacity of 6,492 housing units (Chapter 3, Page 56) and,</p>	<p><u>ALG3-R:</u> EDAW: The development capacity analysis is, at best, an approximate estimate, as growth forecasting is as much an art as a science. Early in the planning process, it was clear that traffic concerns associated with population and employment growth would present a major issue for citizens and agencies alike. The traffic analysis is based on a trip generation model which, in turn, is based on residential and employment densities associated with proposed land-use designations. The reason the capacity analysis model deliberately overestimated growth by using a relatively large household size multiplier (2.48) was to ensure that the traffic analysis was conservative. In other words, the decreases in levels of service (LOS) to actually result from growth permitted under the comprehensive plan would not likely be greater than predicted by this analysis. This methodology</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
	<p>based on a persons-per-unit ratio of 2.48:1, a population growth capacity of 16,099.</p> <p>The overestimate is due to three factors. First, the persons-per-housing-unit ratio is based on historical trends. As pointed out in Footnote 18, Chapter 3, Page 32, that ratio is likely to be less than 2.48:1 and, therefore, a growth capacity of 16,099 would be the upper limit using this model. For example, if the ratio dropped to 2.40:1, the capacity would decrease to 15,580.</p> <p>Second, the analysis did not subtract the 1,268 housing units (1990 Census) already existing in American Lake Gardens that will not be replaced or renovated. Had those units been subtracted in the analysis, the population capacity would have dropped to 12,955 units, using the 2.48:1 ratio.</p> <p>Nor does the model subtract the approximately 1,056 multi-family housing units (1990 Census) in the air corridor that would become nonconforming and eventually phased out. A simple subtraction of those units in the model would have yielded a growth capacity of 10,337. This additional loss would drop the growth capacity below the original growth target of 11,072 as described in Chapter 3, Page 16 of the DEIS.</p> <p>However, due to several contradictory statements throughout the text, it is difficult to determine if a simple subtraction would be appropriate, or if some level of housing unit replacement should also be factored in. For example, it is not clear if, once a multi-family complex is removed, it will be possible to replace it with a single-family unit. Several references to this issue are made in Chapter 3. On Page 40 it is stated that "These city land use designations would prohibit...additional dwelling units." On the other hand, on Page 25, it is stated that land use in the area would be "very similar to other alternatives." Under the No Action Alternative, housing growth is described as "moderate"(Page 30) while under the Mixed-Use Alternative it is described as "modest" (Page 33). Finally, on page 46, it states that "For practical reasons, new residential development in these areas would be minimal, if any occurs at all. The development capacity analysis assumed no net new housing development in the Air Corridor." Without a clear analysis of development policies in Planning Area 2, it is impossible to accurately determine the impact the zoning change will have on development capacity. . Source: <u>Letter from Linda Ishem, Pierce Co. Community Services, dated February 17, 2000; pp. 1-5</u></p>	<p>assumed that population and employment growth, in and of themselves, would not constitute impacts, but would be the potential source of traffic and other measurable impacts.</p> <p>The capacity analysis was originally designed to estimate housing and employment change resulting from moderate adjustments to land use designations, rather than the wholesale redesignations proposed in the preferred alternative. For this reason, the capacity analysis model includes factors to account for likely redevelopment based on market factors such as property redevelopment potential estimated on the basis of ratio of improvements to land value. In order to be internally methodologically consistent, the DEIS did not attempt to adjust the capacity analysis methodology for individual parts of the city or specific alternatives, even though the market factors were not as applicable to the wholesale redesignation of American Lake Gardens.</p> <p>In the Air Corridor designation north of McChord AFB, no change relative to existing conditions was estimated for the preferred alternative because the air corridor restrictions severely limit development of any type, and limited undeveloped parcels exist. Unlike the American Lake Gardens, where the draft comprehensive plan actively sought redevelopment of nearly the entire neighborhood to employment generating uses, the plan assumes the current low-intensity land-use mix within will remain within the air corridors. The only existing land use likely to be phased out is a limited amount of multifamily housing; however, dwelling units lost are likely to be compensated for by a comparable number of new single-family homes.</p> <p>Finally, contradictory terminology appearing in the DEIS has been replaced with clear language in the FEIS.</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
ALG4	<p><u>ALG4-C:</u> The vast majority of housing units that will be lost in Planning Areas 2 and 7 serve as rental units for low-to-moderate income households. The transition of American Lake Gardens from residential to industrial and the reduction in density in the Air Corridor would represent a significant loss in the regional affordable housing stock. [Reference is made to a comment letter dated October 8, 1999, in response to the EIS scoping notice, in which the commentor stated that the EIS should provide "...details on how relocation will be effected, sufficient to allow residents as well as social service agencies to plan for a smooth and predictable transition. Plans for residential land uses should show how the city would accommodate not only projected population growth, but also the current residents that will be displaced by the proposed land use changes."]</p> <p>The DEIS does not provide the level of analysis necessary for residents, social service agencies, or neighboring jurisdictions to determine the impacts of the proposed land use changes. The analysis that is presented is contradictory. For example, in the table Summary of Impacts, Chapter 2, page 2-15, under Land Use, mitigation measures include:</p> <p>a. "If American Lake Gardens is converted to an industrial park, careful planning for residential relocation."</p> <p>b. "Sub-area plans prepared for individual neighborhoods experiencing substantial change or growth (e.g., CBD, Lakewood Station, Tillicum, American Lake Gardens, Custer and Springbrook)."</p> <p>Under the column heading Unavoidable Adverse Impacts, it states, "None of the alternatives would produce adverse environmental impacts that cannot be mitigated." Yet, on the following page under Housing, an unavoidable adverse impact is listed as: "For Preferred Alternative - Loss of 1,165 dwelling units in American Lake Gardens." Further, Chapter 3, page 59 states, "Housing policies should be expanded to include policies for replacement of existing housing for low and moderate income households." But on the following page it says, "Even if some attempt is made to accommodate other multi-family or lower cost units elsewhere in the city, the lower overall capacity of this alternative and the limited opportunities for multi-family housing are likely to adversely impact significant numbers of low and moderate income households now living in American Lake Gardens." It also states, in Chapter 3, page 57, "The policies do not mitigate the loss of large numbers of units in American Lake Gardens nor do they provide specific opportunities for replacement housing or relocation funds for displaced residents." It is</p>	<p><u>ALG4-R:</u> New comprehensive plan goals in part address this issue. New policies create flexibility in the zoning regulations, which encourage the development of affordable housing (LU 7.5, LU 7. 6, LU 7.7, LU 7.8, LU 7.15). Other policies call for programs which will help to maintain affordable housing or make it easier for low-income families to rent in Lakewood (LU 7.9, LU 7.10, LU 7.12, LU 7.14, L.U. 7.17, LU 7.18, LU7.19). Goal L.U. 7.11 calls for the a monitoring plan to evaluate housing affordability within Lakewood. These policies comprise much of what would be a housing strategy. The City's recently approved Consolidated Plan identifies priority housing needs and the estimated number of housing needs by category (Table 2A, Appendix, page 10).</p> <p>In order to implement the policy, the City will need to create a housing strategies document with quantifiable targets. This will help to assess the mitigating polices and the impact of the goals listed above.</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
	<p>unclear what actions, if any, will be taken to mitigate the loss of affordable housing units under the Preferred Alternative.</p> <p>The DEIS goes on to say that when developed, "the plan will provide all required sections of a housing element and can be evaluated in relation to adopted housing impacts." However, the "Request for Comments on Scope of EIS" stated that housing was one of the areas identified for discussion in the EIS. Neither the DEIS nor the draft comprehensive plan provide enough detail, analysis or policy language to allow a clear understanding of how affordable housing issues will be addressed. The Background Report for the EIS was not available for review at the Lakewood Library, hence it could not be used to further clarify the issue. <u>Source: Letter from Linda Ishem, Pierce Co. Community Services, dated February 17, 2000; pp. 6-12</u></p>	
ALG5	<p>ALG5-C: There is no clear justification for the change in zoning at American Lake Gardens. The DEIS states that "Serious environmental problems exist due to the density of older rental housing placed entirely on septic systems..."(Chapter 3, page 25) and that "...changing this neighborhood to another use would end reliance on failing septic systems, resulting in positive impacts to public health and the natural environment..." (Chapter 3, page 26). Yet the Lakewood Water District Comprehensive Plan dated March 1998 states that "In summary, the District does not appear to have any significant water quality problems at this time." Further a review of Tacoma/Pierce County Health Department records shows that the Lakewood area has a lower incidence of septic system failures than most other areas of Pierce County. No evidence is presented to substantiate claims of severe environmental distress due to on-site sewage disposal. Further Goal U-8-2 of the draft comprehensive plan is to "coordinate with other entities to conduct studies to evaluate the aquifer and its long-term capabilities," implying that the research required to produce such evidence has not been conducted. Because no support for the claim of serious environmental conditions is presented, there is no basis to evaluate the claim that "Future industrial development of this area...would improve (fish and wildlife) habitat conditions in the long term"(Chapter 3, page 8). <u>Source: Letter from Linda Ishem, Pierce Co. Community Services, dated February 17, 2000; pp. 16</u></p>	<p>ALG5-R: In response to this comment, the City reviewed three databases maintained by the Tacoma-Pierce County Health Department (TPCHD). The databases provide baseline information on the number of complaints received about malfunctioning on-site septic systems, the number of on-site septic system repair applications, and the number of failed on-site septic systems in the Tillicum and American Lake Gardens neighborhoods.</p> <p>The first and second categories provide data from 1987 through March 2000. The latter category, the number of failed septic systems, is from the period of April 1998 through March 2000.</p> <p>In collecting these data, TPCHD personnel acknowledged that the records relating to on-site septic systems were incomplete. Data was either lost or inaccurately entered in the data system. However, the data provides a glimpse of the status of septic systems in this part of Lakewood.</p> <p>The TPCHD received 50 complaints of on-site septic system malfunctions; there were 28 applications filed in Tillicum for on-site septic system repair. There were also another 25 applications filed in American Lake Gardens for on-site septic system repair.</p> <p>The TPCHD has on record 13 cases of failed on-site septic systems in Tillicum and American Lake Gardens, the most significant occurring on properties within mobile home parks and apartment complexes.</p> <p>As part of the City's code enforcement program, City employees are regularly present in the Tillicum and American Lake Gardens neighborhoods. These same employees have experience dealing with and knowledge about on-site septic system repairs since, prior to their employment with the City, they worked in the TPCHD compliance program. Their observations indicate that that there are a</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
		<p>significant number of septic system repairs occurring without TPCHD review and authorization. County officials acknowledge that this is an ongoing problem not only in Lakewood, but also in other parts of the county. Therefore, the Community Development Department estimates that the number of on-site septic system repairs exceeds that which has been reported to TPCHD.</p> <p>Also, since incorporation, the City has received numerous complaints from property owners and tenants regarding failed septic systems in these areas. In response, the City's practice is for staff to respond to the initial complaint. In some cases, the problems have been found to be serious. Raw sewage has been visible on subject properties. Within the past year, one restaurant in Tillicum was closed twice because of a failed system. Another notable system failure occurred at the Acorn Meadows Mobile Home Park.</p> <p>Structures within Tillicum and American Lake Gardens are older, with an average age of 45-years. Most on-site septic systems are designed to last, on average, 25 years. The city has a substantial population, about 6,500, residing and working in a relatively compact area that is currently without sewers. More on-site failures are expected to occur.</p> <p>Comments were received that there is no evidence of water quality problems in these neighborhoods or Lakewood as a whole.</p> <p>Tillicum and American Lake Gardens receive their water supply from three groundwater wells, only one of which is located in these two neighborhoods (the other two wells are located in Ponders, Planning Area 6). The Lakewood Water District identifies this well as Well A-6. Well A-6 provides these two communities with 70 percent of its water supply.</p> <p>Well A-6 is located in Aquifer Zone E and has a depth of 590 feet. There are two aquatards located between the bottom of the well and the ground surface. These aquatards acts as barriers protecting the groundwater from contamination. The commentor is correct that there are no water quality problems since the well is relatively deep and protected from non-point sources of pollution.</p>
ALG6	<p><u>ALG6-C:</u> ...The environment will be adversely affected by rezoning American Lake Gardens to mixed use or light industrial, especially light industrial. [The commentor goes on to discuss noise and wildlife conditions in the area without specific reference to the DEIS.]</p> <p>The alleged need for sewers should not be used as an excuse for rezoning. Dave [Bugher] said at one meeting that CAMAS has not been looked into as a possibility for bringing in sewers for the residents. This should be done again and again long before the City of Lakewood should change the zoning and disrupt people's homes.</p>	<p><u>ALG6-R:</u> American Lake Gardens is located within Lakewood's urban area. In accordance with state growth management policies, it is subject to higher intensities of use in order to encourage the conservation of forest and agricultural lands located elsewhere in the region.</p> <p>The purpose behind the change of land-use designation in American Lake Gardens is twofold. First, the Industrial designation potentially increases property values, which, in turn, acts as a catalyst to encourage private reinvestment in the American Lake Gardens and Tillicum.</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
	<p>The City of Lakewood says that the land east of Woodbrook Road will probably remain residential for some time. The rezoning to mixed use would not be as incompatible to residential use of properties as would rezoning to light industrial for what should be very obvious reasons. Mixed use zoning allows for some semblance of normal residential properties by its very nature. Living next door to noise, lights, and pollution of a light industrial area is not healthy for people, deer, owls, or eagles and should not be a consideration for American Lake Gardens since it is currently residential and areas will likely remain residential for some time to come. <u>Source: Letter from Lynn Braedt dated February 20, 2000; pp. 1: 6-7</u></p>	<p>Second, pursuing the installation of a sewer system potentially increases the water quality of the American Lake watershed. Past environmental documents have indicated that American Lake watershed has found to contain excessive concentrations of nitrate-nitrogen and chloride. The source of these pollutants has not been verified, but it is suspected to be on-site septic systems in Tillicum and American Lake Gardens. There is a moderate potential for an excessive amount of nutrients and pesticides to escape from these areas, either in groundwater or surface water.</p> <p>The City has considered alternative forms of sewage treatment in areas that do not have sanitary sewers. A "packaged sewer treatment plant" has been proposed in conjunction with a specific development project, although it was not constructed because of its high costs and the applicant's inability to obtain a discharge permit from the state. However, as an alternative to installation of sanitary sewers, the City has considered and approved wastewater treatment facilities using a pressurized, sand-lined community drainfield, in addition to construction of a dry sewer service system. These alternative systems are not the preferred systems of choice, but they are permitted lacking sanitary sewers.</p> <p>The commentor mentions the establishment of a Mixed-Use Residential designation east of Woodbrook Road SW. The comprehensive plan shows that this area would be designated Mixed Residential, High-Density Residential, Military Lands, and Residential Estate. These designations were chosen to generally correspond to current development patterns.</p>
ALG7	<p>ALG7-C: The failing septic tank and drainfield systems in Woodbrook/American Lake Gardens and the alleged need for sewers is being exaggerated by the City of Lakewood for the purpose of swaying public opinion to justify their unconstitutional use of the right of eminent domain to acquire property for the development of the Great Northwest Theme Park. [The commentor goes on to make observations about septic conditions in the area, rezoning and the need for sewers in the context of the Great Northwest Theme Park proposal, and eminent domain, without specific reference to the DEIS.] <u>Source: Letter from Al Braedt dated February 20, 2000; pp. 1</u></p>	<p>ALG7-R: Please see responses ALG5-R and ALG6-R.</p>
ALG8	<p>ALG8-C: Section 3.5.2 of the DEIS states that effects of displacement on residents is a socio-economic issue outside of the scope of SEPA review. That is not the standard [the commentor has] been told by DOE personnel. Environmental justice -- the fairness of an environmental impact across economic classes -- is an appropriate and even a necessary consideration under any environmental analysis. It is obvious that the change in land use for American Lake Gardens will displace many low-income families and that the equivalent housing is not</p>	<p>ALG8-R: In response to several comments, additional and considerable housing policies were added to the comprehensive plan in order to mitigate housing impacts in general and those affecting low income residents in particular. The FEIS housing section was rewritten to take into consideration these new goals and policies.</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
	available in Lakewood or even in Pierce County for that matter. Failure to address this in the EIS may raise suspicions about the thoroughness of the environmental analysis. <u>Source: Letter from Lt. Col. Bryan J. Bodner, United States Air Force, dated February 22, 2000; #2</u>	
ALG9	ALG9-C: The DEIS makes clear that the plan will fail to fulfill the requirements of the GMA with regard to affordable housing [RCW 36.70A.070(2)] and Pierce County's county-wide planning policies and, in fact, through its proposed loss of American Lake Gardens units, will actually reduce the supply of affordable housing. The DEIS projects that the city needs an additional "1,604 housing units to be affordable to people earning under 95% of the county median income in 2017." (page 3-57) This projection understates the extent and depth of the housing affordability crisis facing families with incomes far below 95% of AMI. Even taking this projection at face value, however, the City's plan will apparently fail to achieve it. In fact, the DEIS indicates that the loss of American Lake Gardens will worsen the situation. [Commentor refers to pages 56, 60, and 3-57 of the DEIS.] <u>Source: Letter from Michael Mirra, Columbia Legal Services, dated February 21, 2000; p. 6, pp.3</u>	ALG9-R: The displacement of low and moderate-income households from American Lake Gardens and Springbrook is likely to occur over time as the area converts to industrial use. As stated above, the City has strengthened its housing policies, including addressing the creation of new affordable housing units. Monitoring is increased to an annual basis instead of every five years. One policy may be viewed as weakened to requiring housing impact studies rather than replacement of lost units. However, the earlier policy would have been controversial, and it is not clear that requiring private owners to replace lost units is legal in Washington, lacking government funding. Without a funding source, Lakewood is unable to commit to such a policy.
ALG10	ALG10-C: [Commentor] must concur with the DEIS conclusion that, absent any specific and effective replacement policy, displacing American Lake Gardens will prevent Lakewood from meeting its affordable housing obligations. [Commentor refers to page 3-56.] <u>Source: Letter from Michael Mirra, Columbia Legal Services, dated February 21, 2000; p. 7, pp.3</u>	ALG10-R: See ALG4-R.
Other Specific Comments (OS)		
OS1	OS1-C: It is confusing how the No Action Alternative would result in a higher population than the Preferred Alternative. More explanation of how this difference occurs should be provided. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000;p. 1, #1</u>	OS1-R: The FEIS included additional explanation of population change resulting from the three alternatives.
OS2	OS2-C: The No Action alternative, Section 2.2, and Figure 2.2-1 don't accurately portray the degree of high-density multi-family housing that has been approved and constructed under Pierce County and City of Lakewood administration. For example, the majority of the sections on the north side of Steilacoom Boulevard between 87th Avenue and Phillips Road that are identified as Community Center are actually apartment complexes. <u>Source: Letter from Lt. Col. Bryan J. Bodner, United States Air Force, dated February 22, 2000; #3</u>	OS2-R: The section and figure are accurate. The noted high-density multi-family housing is intended to be a permitted use in the Community Center designation and zone and will be borne out by subsequent zoning.

Table C-2: Summary of Comments and Responses.

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OS3	OS3-C: It would be helpful to have Table 2.4-1 list the density differences between each alternative. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #1</u>	OS3-R: Throughout the EIS, efforts were made to present information in a thorough but understandable manner, with a conscious effort to avoid oversimplification. No densities were listed in Table 2.4-1 since this table is merely a summary of the salient features of the three alternatives. Average density (total population:total land area) is meaningless since it is only an amalgamation of many different land use designations, each with different development characteristics and areas.
OS4	OS4-Ca: Table 2.6-1. Four comments apply to this table: a. Table 2.6-1 identifies two wells that could be impacted in Springbrook as a result of the Preferred Alternative. Mitigation measures should be included to address this problem and if no mitigation is available, then the potential contamination of the wells should be listed in the "unavoidable impacts" column.	OS4-Ra: Not all impacts are necessarily "unavoidable adverse impacts." The preferred alternative contains numerous mitigation measures included to avoid groundwater contamination. Several of these are listed in the "Mitigation Measures" column.
	OS4-Cb: b. Page 8 states: "The areas targeted for the highest density development do not coincide with flood-prone areas; a possible exception is a small portion of the Springbrook neighborhood, which is slated for higher density housing." The potential flooding of Springbrook should be included in Table 2.6-1. The table should identify the impacts of flooding and mitigation measures.	OS4-Rb: The comprehensive plan land-use map that has evolved during the public review process differs from the alternatives analyzed in the DEIS. In general terms, the final plan for Springbrook is a combination of the preferred and the mixed-use alternatives. The frequently flooded area is now planned for industrial use rather than high density residential, as was shown under the preferred alternative. The final comprehensive plan includes policies intended to mitigate potential flooding impacts, consistent with the mitigation measures included in the FEIS.
	OS4-Cc: c. Table 2.6-1 identified increased protection of riparian zones; however, the intent of the table is to identify impacts of flooding and mitigation measures. Is this a misprint? (Also, Springbrook is increasing housing to the point of potential flooding. It is confusing how the protection would be increased.)	OS4-Rc: The intent of Table 2.6-1 is to summarize the impacts, mitigation measures and unavoidable adverse impacts by resource area for the preferred and mixed use alternatives. The column where "increased protection of riparian zones" appears addresses the salient features of the preferred alternative, not impacts, which is the subject of the next column. (The issue of flooding in Springbrook is addressed in the previous response.)
	OS4-Cd: d. The City might want to consider mitigation measures (in relationship to Table 2.6-1) that include passing a resolution or ordinance that puts low-impact development practices in place or other actions such as tree preservation or tree retention. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #2</u>	OS4-Rd: The City already has a tree retention ordinance, and the draft comprehensive plan already includes policies to this end. See Goal LU-57 and Policies LU 57.1 through 3 under Section 3.11.5, Urban Forestry.
OS5	OS5-C: Chapter 3, Page 3: It would be helpful if a map were provided of the wells. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #3</u>	OS5-R: A map of wells by aquifer is included in the FEIS.
OS6	OS6-C: Chapter 3, Page 5: The Fish and Wildlife Habitat section discusses Flett wetlands, Chambers Creek canyon, and Seeley Lake Park as the most significant remaining intact stands of native vegetation. City policies and proposed actions to preserve these areas should be clearly articulated. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #4</u>	OS6-R: The subject areas are designated Open Space and Recreation in the preferred alternative. Goals LU-42, LU-53, LU-54, LU-55, LU-56, LU-57, and LU-58 provide specific policies for natural areas within the City.
OS7	OS7-C: Chapter 3, Page 8: The Fish and Wildlife Habitat section states: "One goal of the Preferred Alternative is to limit sprawl of new commercial	OS7-R: Numerous goals and policies comprising the land-use section (Chapter 3) of the comprehensive plan address the subject of sprawl. For example, the plan

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	development outside of the existing commercial land use footprint." However, this should be clearly articulated in policy rather than just stated in the DEIS. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #5.a</u>	emphasizes the development of a Central Business District as the primary location of businesses. Throughout the planning process, significant discussion has occurred as part of the public record relating to the importance of containing commercial growth, both as a sound economic development mechanism and as a means of avoiding intrusion on neighborhoods. A comparison of the envisioned land-use map with current (interim) comprehensive plan policies and current zoning is illustrative of this attempt in practice.
OS8	<u>OS8-C:</u> Chapter 3, Page 8: The Fish and Wildlife Habitat section states that industrial development would require installation of new sewer systems, "which would improve habitat conditions in the long term." How the installation of sewers within an industrial area would improve habitat should be explained. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #5.b</u>	<u>OS8-R:</u> The purpose behind the change in the land use designation in American Lake Gardens from Residential to partially Industrial is to increase property values, thereby acting as a catalyst to stimulate the installation of a sewer trunk line into both the Tillicum and the American Lake Gardens neighborhoods. Previous environmental documents indicate that the groundwater in the American Lake watershed, which includes both of these communities, has been found to contain excessive concentrations of nitrate-nitrogen. The source of these pollutants has not been verified, but is suspected to be, in part, high-density residential areas served by on-site septic systems. Should industrial redevelopment occur, a sewer system which serves both communities would reduce the concentrations of nitrate-nitrogen within the groundwater and could potentially have a positive effect on the greater American Lake watershed and fish and wildlife in general.
OS9	<u>OS9-C:</u> Chapter 3, Page 8: The discussion of flood-prone areas states: "The areas targeted for the highest density development do not coincide with flood-prone areas: a possible exception is a small portion of the Springbrook neighborhood, which is slated for higher density housing." At a minimum, mitigation measures should be included in this mitigation section and policies included in the comprehensive plan that outline a strategy for this potential problem. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 2; #5.c</u>	<u>OS9-R:</u> Please refer to OS4-Rb above.
OS10	<u>OS10-C:</u> Chapter 3, Page 8: The flood-prone areas section should discuss how Seeley Lake and Flett wetlands have flooding problems and how those problems are addressed through the new comprehensive plan. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #5d</u>	<u>OS10-R:</u> See Figure 3.1.1 "Generalized Hydrological Features Map." Subject areas are identified. The subject flood prone areas are designated Open Space and Recreation in the preferred alternative and are thus not addressed as a development issue in the "Flood-Prone Areas" section on page 3-8.
OS11	<u>OS11-C:</u> Chapter 3, Page 9: The section on creeks and streams discusses the fact that the Preferred Alternative clusters urban growth and the Residential Estate designation would limit pollution. However, the land use designations and densities between each of the alternatives are not significantly different in the areas of Flett wetland and Seeley Lake, two areas the City wants to preserve and that are prone to flooding. These two areas should be discussed in further detail in this section. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #6</u>	<u>OS11-R:</u> Additional discussion detail on Flett Wetlands and Seeley Lake targeted for significant increases in development intensity under the Preferred Alternative. Also, this alternative includes additional protection measures not included in other alternatives.

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OS12	<p>OS12-C: Missing from the DEIS analysis is a clear picture of employment sectors likely to be impacted by the land use changes proposed under the Preferred Alternative. While the DEIS states that the plan would accommodate about 9,661 new jobs over 20 years, "The majority of those jobs would likely be retail/wholesale/service sector positions..." (Chapter 3, page 16). Household income directly affects the ability to obtain housing. Some discussion regarding projected potential income from the new jobs anticipated by the plan and how economic development efforts would impact housing affordability issues would be very helpful. <u>Source: Letter from Linda Ishem, Pierce Co. Community Services, dated February 17, 2000; pp. 15</u></p>	<p>OS12-R: This comment refers to the DEIS land-use section's discussion of population and employment estimates. Consistent with WAC 197-11-448, impacts on specific employment sectors are outside the scope of this EIS. Affordable housing impacts associated with the final comprehensive plan are discussed in the housing impacts section of the FEIS.</p>
OS13	<p>OS13-C: Chapter 3, Page 16: The total projected residential population of approximately 82,000 is not consistent with the GMCC recommendation that has been forwarded to the Puget Sound Regional Council. That number is 76,200. Please correct this information. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #7</u></p>	<p>OS13-R: The noted disparity appears to refer to differences in what 20-year population growth number was used. The GMCC's recommendation was to accept the City's request to lower its growth threshold from 30,000 over 20 years to 17,000. In today's numbers -- based on the latest OFM population transmitted to the City the week of June 5, 2000 -- that equals 80,790. Additionally, it should be noted that, at this point, Lakewood does not have a solid Census population number upon which to base its projected growth. Available data is ten years old and is based on what were, at the time, County census tracts. This discussion is somewhat semantical.</p>
OS14	<p>OS14-C: The EIS, which focuses on the Preferred Alternative, assumes that the area east of the lakes is [Single Family] (up to six units per acre), not Residential Estate (two units per acre) as published in the draft comprehensive plan, as revised and upon which the City Council held its hearing. The land use designation of Residential Estate on Table 3.2.2 (Chapter 3, page 23) specifies that "The designation is intended to protect the existing character of Lakewood's suburban neighborhoods that surround and lie immediately west of the lakes." Assuming that the density data displays reflect the earlier version of the proposed zoning, they would also not be a correct interpretation of the draft comprehensive plan being considered by the City. Follow-up with regard to the flow of this data throughout the EIS and the implications on the degree of nonconforming uses created by the Preferred Alternative should be addressed. <u>Source: Letter from Kris G. Kauffman, Water Rights, Inc., dated February 18, 2000; pp. 1-4</u></p>	<p>OS14-R: It appears the premise of this comment is flawed. Land-use designations will direct the eventual zoning of properties within Lakewood which, in turn, will both set densities through allowable lot sizes and will set forth allowed uses. If a property is rendered nonconforming by the imposition of zoning which requires larger lot sizes than the property happens to be, that does not constitute the creation of a nonconforming use. If, likewise, a property happens to be smaller than the minimum lot size set by zoning, this does not mean that it is rendered unbuildable, therefore requiring its removal from the buildable lands inventory. The land-use plan was modified during development of the final comprehensive plan. A new capacity analysis model based on the final land-use plan was developed and run to ensure accuracy and consistency with the proposed land-use designations.</p>
OS15	<p>OS15-C: Table 3.2-2: Please clarify whether the densities listed in the table are gross or net. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #8</u></p>	<p>OS15-R: Densities listed in Table 3.2-2 exclude public rights of way, but include driveways, parking, setbacks, and other development constraints.</p>
OS16	<p>OS16-C: Chapter 3, Page 37, Plans and Policies: This section does a good job of discussing the various plans that are related to the comprehensive plan; however, it is difficult to understand how some of the</p>	<p>OS16-R: Compliance with relevant plans and policies is addressed in Section 3.3.2 of the DEIS. Additional analysis of certain policy consistency issues was added to the FEIS as warranted by modifications to the final comprehensive plan.</p>

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	plans are incorporated into policy statements in the comprehensive plan or incorporated by reference, etc. These relationships should be clarified, especially in the case of the watershed plans and the wellhead protection plan. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #9</u>	In addition, a new section has been added to the FEIS which addresses consistency with the Chambers-Clover Creek Watershed Action Plan as a response to this comment.
OS17	OS17-C: A table is presented in Chapter 3, page 53, that lists "Public and Quasi-Public Park and Recreation Facilities by Planning Area." The table contains a column that appears to list the controlling agency for each of the facilities. The agency listed for both the Lakewood Community Center and the Tillicum Community Center is the City of Lakewood. On the following page, the DEIS states, "The City has acquired Fort Steilacoom Regional Park from Pierce County and is now in a position to control how this significant resource will be developed to satisfy the recreation needs of its citizens." As of February 17, 2000, the City of Lakewood does not have a controlling interest in those facilities. <u>Source: Letter from Linda Ishem, Pierce Co. Community Services, dated February 17, 2000; pp. 17</u>	OS17-R: Table 3.4-2 contains errors as noted by the commentor. Pierce County maintains a controlling interest in the Lakewood Community Center and leases the facility to the Clover Park Technical College. Controlling interest in the Tillicum Community Center, until July 1, 2000, also rests with Pierce County. After July 1, 2000, however, the Tillicum Community Center Board will operate and maintain the center. Fort Steilacoom Park, including the public golf course, is operated and maintained by Pierce County. The City of Lakewood continues to work toward transfer authority of the park to the City.
OS18	OS18-C: Given that the housing impacts deriving from the draft comprehensive plan will fall mainly on low to moderate income households, and given the contradictions and lack of analysis [point out elsewhere in this commentor's remarks], it is difficult to evaluate statements that "The Preferred Alternative shares many of the VISION 2020 goals, especially expanding housing choice..." (Chapter 3, page 42), or to what degree Pierce County's housing affordability goals "have been accepted by the City of Lakewood" (Chapter 3, page 56). It is also difficult to see how the proposed changes will allow the City of Lakewood to remain in compliance with Title IV of the Civil Rights Act of 1964 (PL 88-352, 42 USC 2000 d et. seq.), the Fair Housing Act (PL 90-284, 42 USC 3601-3620) or Executive Order 11063 as they relate to fair housing planning and impediments to fair housing choices. <u>Source: Letter from Linda Ishem, Pierce Co. Community Services, dated February 17, 2000; pp. 18</u>	OS18-R: The commentor appears to be referencing the American Lake Gardens neighborhood where, originally, the draft land-use map designated large sections of this area as Industrial. Currently, this neighborhood is composed primarily of low-income households. The draft land-use map has been amended and the amount of land designated for industrial purposes has been significantly pared back. Draft housing policies have been added to recognize and address relocation issues brought about by demolition or conversion. The commentor is referred to draft policies LU-15.1, LU-15.2, LU-15.3, LU-15.4, and LU-15.5. New housing policies have been added where the City will examine the viability of inclusionary housing programs within its incorporated limits. Further, a new housing policy has been introduced to encourage development of an interjurisdictional approach to regional inclusionary zoning practices to better provide for and distribute affordable housing throughout the county. The commentor is referred to draft policies LU-7.8 and LU-8.7. The amended housing policies include monitoring programs to track the creation and loss of housing in order to establish benchmarks to evaluate housing affordability within Lakewood. Specific policies are listed in LU-7.11 and LU-15.1. The commentor further notes that Lakewood's comprehensive plan may be inconsistent with the federal Civil Rights Act, the Fair Housing Act, and executive administrative order. These remarks are not directly environmental issues but instead comprise legal questions that are not within the scope of the EIS. Nonetheless, the City does take the position that it is in compliance with federal fair housing regulations.

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		<p>The expanded housing goals address broadening housing choices in terms of changes in regulations and new housing programs. On May1, 2000, the City approved <i>An Analysis of Impediments to Fair Housing Plan for the City of Lakewood</i>. This plan identifies potential concerns related to fair housing with regard to American Lake Gardens and calls for the City to monitor impediments to fair housing and develop solutions to mitigate such barriers.</p>										
OS19	<p><u>OS19-C:</u> The DEIS does not describe or analyze the different income groups and the different housing problems they face, but refers only and briefly to "people earning under 95 percent of the county median income." (Page 3-57). This limited analysis is not adequate. It does not provide the City with a basis to make important housing policy decisions required by the GMA. It has the effect of masking the housing crisis among poor people by including them in a larger undifferentiated population of higher income persons in quite dissimilar circumstances. [The commentor recommends] that the City of Lakewood conduct its housing inventory and analysis of housing needs for the following separate income groups:</p> <table><tr><td>Extremely low-income households (AMI)</td><td>Under 30% of Area Median Income</td></tr><tr><td>Very low-income households (AMI)</td><td>Between 30% and 50% of AMI</td></tr><tr><td>Low-income households (AMI)</td><td>Between 50% and 80% of AMI</td></tr><tr><td>Moderate-income households (AMI)</td><td>Between 80% and 95% of AMI</td></tr><tr><td>Middle-income households</td><td>Between 96% and 120% of AMI</td></tr></table> <p>The GMA regulations recommend these income groupings for cities to use when drafting their comprehensive plans. [WAC 365-195-310(2)(g)] [The commentor goes on to suggest other approaches as well.] <u>Source: Letter from Michael Mirra, Columbia Legal Services, dated February 21, 2000: p. 2, pp. 4, through p. 3, pp.1</u></p>	Extremely low-income households (AMI)	Under 30% of Area Median Income	Very low-income households (AMI)	Between 30% and 50% of AMI	Low-income households (AMI)	Between 50% and 80% of AMI	Moderate-income households (AMI)	Between 80% and 95% of AMI	Middle-income households	Between 96% and 120% of AMI	<p><u>OS19-R:</u> The commentor indicates that the comprehensive plan does not provide sufficient statistical data with regard to housing problems and income levels.</p> <p>In its entirety, Lakewood's comprehensive plan is composed of the background report, the plan's associated environmental impact statement (EIS), and the comprehensive plan policy document. The background report was developed in preparation for both the comprehensive plan and EIS. It lays the groundwork for both of these documents by identifying existing trends and conditions. Accordingly, it is this document which contains the housing and income data. The data is found in Chapter 2 of the background report, which contains information on demographic patterns, income levels in Lakewood by planning areas, poverty status by planning areas and comparisons of poverty status by age and planning areas.</p> <p>It appears that the commentor is not familiar with the background report and, therefore, is not aware that such data was provided in that document. Page 1-7 of the DEIS references the background report as a technical appendix to the DEIS, particularly related to demographics and housing.</p> <p>The commentor also recommends that the City conduct a housing inventory and analysis of housing needs for specific income groups and quotes a specific state code, WAC 365-195-310(2)(g). This WAC does not require that housing needs be analyzed by separate income groups, it only recommends that planning jurisdictions consider this approach.</p> <p>Since preparation of the background report, the City has prepared a Consolidated Plan for the Community Development Block Grant and HOME Investment Partnership Act programs. The Consolidated Plan contains additional information with respect to a citywide housing inventory and analysis of housing needs for specific income groups. These data already support the information contained in the background report. However, since the data does provide greater housing needs details, it will be incorporated into the background report.</p> <p>The extent of housing needs for different income population groups is identified in the Consolidated Plan. See Table VI-6 for Renter Households in Need of</p>
Extremely low-income households (AMI)	Under 30% of Area Median Income											
Very low-income households (AMI)	Between 30% and 50% of AMI											
Low-income households (AMI)	Between 50% and 80% of AMI											
Moderate-income households (AMI)	Between 80% and 95% of AMI											
Middle-income households	Between 96% and 120% of AMI											

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		Assistance by Type of Household, Income and Housing Need (page VI, page 43), and Table VI-7 for Owner Households in Need of Assistance by Type of Household, Income, and Housing Need (page VI, page 45).
OS20	OS20-C: Chapter 3, Page 69: Gravelly Lake Drive, Murray Road, and Washington Blvd. are currently at LOS F in the am and pm peak hours. As required by GMA, the comprehensive plan must identify specific actions and requirements for bringing into compliance any facilities or services that are below the established LOS. The document or comprehensive plan must complete this information. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #10</u>	OS20-R There are no existing level-of-service (LOS) thresholds established for Lakewood's arterials. Proposed LOS thresholds for Gravelly Lake Drive and Washington Boulevard were included in the draft comprehensive plan under Goal T-20 on page 6-16 and in the Draft EIS on pages 3-108 and 3-109. Both arterials currently operate within the proposed LOS standard and will continue to operate within their LOS F thresholds through the year 2017 under the preferred alternative scenario. The final comprehensive plan will include an arterial LOS F standard for Murray Road, with a v/c ratio threshold of 1.05. Murray Road is projected to continue operating within this threshold through the year 2017 with the preferred alternative.
OS21	OS21-C: A number of statements are made in the Transportation Section of the DEIS that should be included in policy language: a. Chapter 3, Page 105: The City should consider working with Pierce Transit and local employers to plan and implement a local mini-bus circulator system. b. All of the bulleted items on Pages 106-109 should be articulated in policy. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 4; #12</u>	OS21-R The statements referenced in the DEIS on pages 105-109 have been incorporated in the final comprehensive plan, either as explicit policy statements or as future actions included in a reassessment strategy to be implemented if future LOS deficiencies arise.
OS22	OS22-C: GMA outlines the requirements of transportation elements. After reviewing the draft plan and DEIS, some of the required information appears to be missing: OS22-Ca: a. e transportation element spells out the assumptions that were input into the EMME II model in terms of road improvements and connections; however, it is unclear what land use assumptions were used to estimate travel.	OS22-Ra: Table 1 in Appendix A of the DEIS, "Summary of Revised Lakewood Capacity Analysis of Residential and Employment Growth," depicts the land-use assumptions used to conduct the EMME II modeling and traffic impacts analyses. The final EIS text is amended to include this table with updated growth capacity projections.
	OS22-Cb: b. Specific actions for bringing deficient facilities in line with the adopted standards are unclear.	OS22Rb: The LOS thresholds proposed in the DEIS have been modified so that no "planned" deficiencies will result from implementing the preferred alternative. In the event that LOS deficiencies do arise in the future, a reassessment strategy will be implemented at that time.
	OS22-Cc: c. System expansion needs and transportation system management needs to meet current and future demands must be identified.	OS22Rc: Table 3.6-11 in the FEIS lists the transportation capital projects that are programmed for funding in the City's six-year capital plan in anticipation of future transportation system needs. Transportation system management strategies are clearly integrated within the final Comprehensive Plan goals and policies (see Section 6.3 in the final Comp. Plan).
	OS22-Cd: d. analysis of funding capacity measured against probable funding resources must be provided, especially in light of I-695.	OS22-Rd: Comment acknowledged. The City has prepared a fully funded six-year capital facilities plan within the existing limitations set forth by I-695. The plan includes a listing of capital projects and their subsequent operating and maintenance costs. Please see response OS22-Cf for further explanation.

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	OS22-Ce: e. The comprehensive plan must include a multi-year financing plan.	OS22-Re: Comment acknowledged. A draft capital facilities plan has been prepared and is currently under review. The plan lists capital improvement projects over a six-year period by type of public facility. These public facility sections include transportation, stormwater, parks and recreation and the construction of a new city hall. The facilities plan also contains an inventory of existing facilities, adopted LOS standards, concurrency requirements, and estimates of future operating and maintenance costs of new capital projects.
	OS22-Cf: f. Finally GMA requires all jurisdictions to address how needs will be met if funding falls short. This is critical information in the changing world of I-695. <u>Source: Letter from Chip Vincent, Pierce Co. Planning and Land Services, dated February 19, 2000; p. 3; #11</u>	OS22-Rf: The draft capital facilities plan contains a financing plan. It lists specific sources and amounts of revenue used to pay for the proposed capital projects and their subsequent operation and maintenance costs. The forecast of operating impacts is not required by GMA but is included because the substantial cost impacts of some facilities may be a factor in the City's decision to construct the project (and to adopt the LOS that causes the need for the project). The plan also forecasts existing revenue and expenditures to determine the City's overall financial position and identify existing City revenue that can be used for future capital facility projects. An appendix is included in the plan, which identifies and briefly describes all revenue sources allowed by law that could be made available for capital facilities development. Revenues are presented in the following categories: taxes, special assessments, fees and charges, and grants. Some of the sources can be used for both capital facilities and for maintenance and operating costs. Should the City find itself in a position that it cannot afford the standards of service that it adopts, or if probable funding falls short of meeting existing needs, the City must reassess the comprehensive plan. That assessment would either reduce the adopted LOS standards or place limits on development activity. Policy CF-2.1 would require the City to deny land-use and/or development permit requests when capacity to serve the project is projected to be inadequate, and/or the level of service is projected to be unmet, at the time of occupancy.
OS23	OS23-C: Wastewater projections are not provided for the major commercial and industrial developments being proposed. Prior to development, project-specific environmental review must be conducted and wastewater flows and a funding source for necessary improvements determined. The identification of potential funding sources for sewer improvements, Utility Local Improvement Districts and developer extensions is consistent with Pierce County Wastewater Utility policy. However, the analysis of impacts to the Pierce County Wastewater Utility under each of the alternatives is incomplete. Please make the following changes: a. Table 3.8-2 on population is missing information about the Mixed Use Alternative and the No Action Alternative. The title of the table includes the term "Population Density," yet the table does not contain information about population density.	OS23-R: This section of the FEIS was rewritten in greater detail in response to this comment. Specifically, a new table (Table 3.8-2) which compares residential growth and resulting increases in sewer demand among all three alternatives was added. Other tables and accompanying text were revised or updated..

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	<p>b. For consistency with the methods used by the Wastewater Utility in projecting future wastewater flows, population estimates for the sewerage subbasins need to be converted to density of housing units with a Level of Service Standard of 220 gallons per residential unit. Estimates for commercial and industrial lands should use a standard multiplier of 1,000 gallons of wastewater per acre (minus 20 percent for roadways).</p> <p>c. The FEIS should identify the wastewater generated for each of the sewerage subbasins given each of the three alternatives. The City's consultant was provided a GIS coverage of the sewerage subbasins for this purpose. Information for the No Action Alternative can be provided by the Pierce County Wastewater Utility. <u>Letter from Anne-Marie Marshall-Dody, Pierce Co. Public Works and Utilities, dated February 18, 2000; pp. 3-6</u></p>	
OS24	<p>OS24-C: The DEIS adequately analyzes potential impacts to solid waste management under each of the alternatives. Continued coordination between the jurisdictions and the Tacoma-Pierce County Solid Waste Management Plan will ensure that future solid waste systems are in place to handle the city's needs. Source: <u>Letter from Anne-Marie Marshall-Dody, Pierce Co. Public Works and Utilities, dated February 18, 2000; pp. 2</u></p>	<p>OS24-R: Comment acknowledged.</p>

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Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
OS25	<p>OS25-C: In its comments on the draft comprehensive plan, the Air Force recommended incorporation of the Air Force guidance on land uses, densities, and compatible development identified in the 1998 Air Installation Compatible Use Zone (AICUZ) study. The full incorporation of these AICUZ recommendations into Lakewood's planning and zoning is key to ensuring only compatible development proposals are approved and eliminating existing and/or avoiding incompatible development. This, in turn, ensures the Air Force minimizes exposure of the off-base community to noise impacts and aircraft accident potential, as well as assuring the long-term air operational viability of McChord AFB. [The Air Force goes on to request that its comments in relationship to the draft comprehensive plan be incorporated into the comprehensive plan and reflected in the environmental review.] <u>Source: Letter from Lt. Col. Bryan J. Bodner, United States Air Force, dated February 22, 2000: #1</u></p>	<p>OS25-R: McChord AFB has attempted to work in partnership with local communities to achieve voluntary compliance with the AICUZ standards. However, the City is not legally or contractually bound to utilizing the AICUZ standards; even though the Air Force recommended incorporation of the AICUZ guidelines in its comments on the draft comprehensive plan, the City is not bound to incorporating them. As proposed in the draft comprehensive plan, the Air Corridors (ACs) 1 and 2 land-use designations attempt to strike a balance between the legitimate need to protect ground users from any adverse affects of McChord's use of the air space above, the rights of property owners to use their land in an economically feasible fashion, and the zoning authority afforded to the City by law.</p> <p>At question at the comprehensive plan level is the boundaries of these AC designations. The proposed boundaries differ from the Air Force's boundaries in that, rather than following a 3,000-foot-wide strip extending northward from the runway that is indiscriminate as to property lines, they are aligned with the rear property lines of lots fronting onto Pacific Highway SE. This partially accommodates the AICUZ principles, while building in certainty for property owners as to the potential uses of these sites and enabling cleaner administration of local zoning. There are very few instances where "cutting" a property with a zoning line would be appropriate; this practice is consistent with what is being done elsewhere in the city and in planning practice in general. Additionally, the dividing line between the ACs 1 and 2 -- which previously corresponded with McChord's dividing line between the Accident Potential Zones (APZs) 1 and 2 -- has been likewise adjusted to align with a right-of-way edge rather than cutting through properties.</p> <p>The AICUZ Clear Zone is not designated separately under the proposed comprehensive plan. Along with the APZ 1 area, it is part of the AC 1 designation and will probably share the same zoning as the APZ 1 as well. While "ensuring the long-term air operational viability of McChord AFB" is a valid interest of the Air Force and may be an economic development consideration for Lakewood and the greater Pierce County community, the Air Force appears to be approaching this goal solely through seeking local controls rather than through its own acquisition of the property to fully afford it the control it desires. It is the military's responsibility to purchase the Clear Zone property, or development rights to it, if the military desires absolutely no development there. While the City wholeheartedly supports McChord AFB, it is not in a financial position to carry out, nor should Lakewood taxpayers be expected to shoulder the burden of, a regulatory taking that would be of sole benefit to McChord.</p>
OS26	<p>OS26-C: A very detailed 12-page letter was received from Columbia Legal Services. This letter challenged the adequacy of the housing section in the draft comprehensive plan and the fair housing analysis contained in the draft environmental impact statement. The letter asserted that none of the alternatives analyzed would adequately address present and projected</p>	<p>OS26-R: Many of the points raised by the Columbia Legal Services letter were similar to those raised by other commentators or were already addressed in relation to American Lake Gardens. In such cases, the previous comment response should be consulted. Examples include OS19 which explains the relationship between the Comprehensive Plan, the EIS, and the Background Report, ALG9</p>

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
	<p>needs for affordable housing without additional policies. Much of the text of the letter documented local and regional housing needs, homelessness, affordability goals, and fair housing implications. The letter also recommended a number of mechanisms to address these issues. <u>Source: Letter from M. Mirra, Columbia Legal Services, dated February 21, 2000</u></p>	<p>which discusses the relationship between land use changes in American Lake Gardens and meeting affordability goals, and ALG10 which pertained to loss of affordable housing units resulting from re-designation of residential neighborhoods to industrial areas.</p> <p>The FEIS contains additional discussion related to several housing issues relevant to the different alternatives analyzed. In addition, numerous new policies have been added to the final comprehensive plan to strengthen housing provisions in order to further mitigate potential housing impacts. The most serious housing impact addressed by the letter, "the loss of up to existing 1,165 dwelling units in American Lake Gardens," has been greatly reduced to only 572 housing units displaced to industrial redevelopment. However, even this lesser number of households displaced is recognized by the FEIS as an unavoidable adverse impact.</p> <p>Finally, the City has prepared a Consolidated Plan for the Community Development Block Grant and HOME Investment Partnership Act programs. The Consolidated Plan contains additional information with respect to a citywide housing inventory and analysis of housing needs for specific income groups.</p>
PSRC Letter (PSRC) (letters from I. Miller and S. Kiehl, PSRC, both dated February 16, 2000)		
PS1	PS1-C: The City should consider how it will combine the important elements of the three separate documents (DEIS, draft plan and Report).	PS1-R: Comment acknowledged.
PS2	PS2-C: The Growth Management Act (GMA) indicates that transportation requirements be included in the comprehensive plan, or at least adopted by reference – therefore, the DEIS will need to be adopted in some manner.	PS2-R: Comment acknowledged.
PS3	PS3-C: While many tables and text are seemingly duplicate, they are not always identical (for example, the level-of-service thresholds set in the DEIS (3-108) and the Plan (6-16)). These discrepancies need to be resolved if documents are to be adopted into the comprehensive plan. At a minimum, a more thorough cross-referencing between documents seems necessary.	PS3-R: The LOS thresholds shown on page 6-16 in the draft comprehensive plan were corrected in the final comprehensive plan so they are in agreement with the LOS thresholds shown on page 3-108 of the DEIS. In addition, cross-references were provided in both final documents.
PS4	PS4-C: The Background Report states that "for the City of Lakewood, the 20-year allocation is approximately 30,000 new people by 2017..." (Report 1-15). In the DEIS, however, the "Preferred Alternative" land use leaves the projected population growth capacity at only 16,099 residents. Either the text is incorrect or the City is considering adopting a preferred land use alternative that meets only approximately 54% of its growth target. If the city is in the process of trying to have a new allocation set, this should be discussed with a description of the process that will be followed. Also, the DEIS states that the rezoning of all the parcels in the American Lake Gardens area will "displace 1165 dwelling units" (DEIS 3-60). If these units are displaced, the city should address the impact of this action on the city's	PS4-R: Modifications to the preferred alternative future land-use map will result in a projected population growth capacity of approximately 17,000 residents. The preferred alternative will require adjustments to Lakewood's assigned growth target. The specific process for this, amendment of Pierce County Ordinance #97-59 by the Pierce County Council, is addressed in section 3.3.3 of the FEIS. This revision is in progress and is awaiting coincidental changes in other jurisdictions' allocations. Housing displacement in American Lake Gardens has been addressed through changes to the final comprehensive plan as well as through additional analysis in the final EIS. (See discussion above.)

Table C-2: Summary of Comments and Responses.

Comment Category/Code	Summary of Comment (primary source underlined)	Summary of Response
	ability to meet its growth targets.	
PS5	<p><u>PS5-C: Land use assumptions and traffic forecasts</u> The draft Plan and DEIS present a detailed description of current and future land uses in each of the planning areas which are the basis of the traffic forecasts. A new requirement under House Bill 1487 (the "level-of-service" bill) requires by December 2000 that your travel forecasts also estimate traffic impacts on "transportation facilities and services of statewide significance."</p>	<p><u>PS5-R:</u> SR 512 and I-5 are the only state facilities that transect Lakewood that have been designated as "state facilities of statewide significance." Interstate 5 is exempt from the traffic impacts requirement under House Bill 1487. Traffic LOS on SR 512 was not analyzed as part of the comprehensive plan traffic model. This facility is a regional connector between I-5, the city of Puyallup, and the cities of the Kent Valley via SR 167. Several recent improvements have been made to SR 512 by the state Department of Transportation. These include adding a signal and triple left turn lanes to accommodate the heavy movements from southbound I-5 to eastbound SR 512, and interconnecting the new signal with the existing signal at SR 512/South Tacoma Way. These improvements were made specifically to reduce congestion for the regional movements from I-5 to Puyallup, Spanaway and other areas to the east. The arterial sections along South Tacoma Way north and south of the intersection with SR 512 currently operate at LOS C (v/c of 0.68 north and 0.56 south of SR-512) and are projected to operate at LOS C (v/c of 0.64 for segment south of 512) and LOS D (v/c of 0.86 for north segment) through the year 2017 with the preferred alternative (without the I-5/SR 512 interchange improvements). Currently, the intersection of SR 512 at South Tacoma Way operates at LOS D (v/c of 0.72).</p> <p>It is unlikely that impacts associated with implementation of the comprehensive plan preferred alternative will directly result in an arterial LOS deteriorating beyond the current WSDOT LOS D threshold. In the event that LOS worsens to LOS E or F over time, WSDOT has conceptual plans for reconfiguring the I-5/SR 512 interchange with a direct connection to 100th Street SW that would greatly improve operations along SR 512. The projected LOSs for South Tacoma Way north and south of SR 512 are LOS C (v/c of 0.67 north of SR-512, and 0.57 south of 512) under the preferred alternative with the I-5/SR 512 interchange improvements.</p> <p>House Bill 1487 actually requires amendment of comprehensive plans by December 2000, and does not differentiate as to jurisdictions that have already adopted comprehensive plans and those that have not. If further analysis is determined to be necessary in order to meet this requirement, the City will undertake amendments as required.</p>
PS6	<p><u>PS6-C: Level-of-service standards for arterials and transit</u> The relationship between the level-of-service thresholds in the DEIS (DEIS 3-108) and the draft Plan (Plan 6-16) and the list of roadway sections projected to exceed level-of-service D during the p.m. peak hour in the year 2017 under the "preferred alternative" (DEIS 3-83) is somewhat confusing. Not all items on the list are discussed in the level-of-service thresholds – it is unclear if this is an oversight or if the draft Plan intends to have sections exceed the thresholds.</p>	<p><u>PS6-R:</u> The LOS thresholds shown in the draft comprehensive plan and DEIS were reviewed and adjusted so they are synonymous in the final documents. The thresholds were also amended to include arterial segments on Ardmore Drive SW, 108th Street SW and Murray Road SW which were previously shown to exceed their LOS D thresholds either under existing conditions or in the future with preferred alternative case. The preferred alternative will have no arterial segments projected to exceed their LOS thresholds.</p>

Appendix A

City of Lakewood Comprehensive Plan

Background Report

November 1997

This Background Report was prepared as part of the initial groundwork for development of the Lakewood Comprehensive Plan. The contents reflect the condition of Lakewood shortly after incorporation. Some of these conditions will have changed as part of the ongoing development of the City of Lakewood.

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CHAPTER 1: INTRODUCTION TO THE BACKGROUND REPORT

The 1990 Washington State Legislature enacted the Growth Management Act (GMA) to guide Washington State as it grows into the future. The GMA requires the state's fastest growing counties (which include Pierce County), and cities within those counties, to prepare comprehensive plans. Because the City of Lakewood is located in Pierce County, it is required to prepare a comprehensive plan. This Background Report, which provides a baseline understanding of the city, is the first step toward completion of the City of Lakewood's Comprehensive Plan. This Background Report was prepared in 1997 at the beginning of Lakewood's comprehensive planning process. The original purpose of the document was to provide a detailed analysis of conditions pertinent to each of the issue areas to be addressed by the Comprehensive Plan and Environmental Impact Statement. Throughout the three-year planning process, the background report has continued to document baseline conditions. With the possible exception of when previously unavailable data became available after 1997, most of this document has deliberately not been updated to preserve this snapshot in time.

All county and city comprehensive plans are required by the GMA to address the following five elements: Land Use, Housing, Capital Facilities, Utilities, and Transportation. In addition to these required elements, Lakewood has elected to include three optional elements: Economic Development, Urban and Community Design, and Parks and Recreation.

In accordance with GMA, the City of Lakewood prepared and adopted the Lakewood Interim Comprehensive Plan (ICP) in 1996 when it incorporated on February 28th of that year. The ICP is essentially that portion of the 1990 Pierce County Comprehensive Plan policies and guidelines that relates to the Lakewood area. Lakewood zoning was modified from the Pierce County Zoning, and preparation of a Future Land Use Plan was delayed awaiting preparation of the Lakewood GMA Comprehensive Plan. The goals and policies contained in the ICP will serve to guide Lakewood development and growth in the interim until the Comprehensive Plan is adopted, sometime in 2000. The Comprehensive Plan will replace the Lakewood ICP.

The city has taken other planning steps since incorporation which provide for special zoning considerations based on unique characteristics of the land, environment, or economy. These include the adoption of two new overlay zones: the Temporary Residential Density Overlay Zone and the Office and Limited Business Overlay Zone, as well as other legislative actions.

This Background Report provides a detailed overview of current conditions and trends in and around the City of Lakewood. The purpose of this report is to establish a common understanding of the character of Lakewood, including the current state of physical and socio-economic development, and to set the tone for establishing the goals, policies, and objectives of the Comprehensive Plan, and with that, the future direction of the City of Lakewood. This Background Report has also been prepared to serve as the basis for the “affected environment” section of the Environmental Impact Statement (EIS) on the Comprehensive Plan.

This introductory chapter includes a brief history of the Lakewood area, defines the boundaries for planning purposes, describes a future vision of the community as developed through public consensus, and concludes with an overview of policies and guidelines of the state GMA. Chapter 2 provides a statistical profile of city demographics. Chapters 3 through 8 describe baseline information for each Comprehensive Plan element in terms of existing conditions, trends, projections, and planning implications.

The maps in this document were produced from a geographic information system (GIS) prepared specifically for the Comprehensive Plan. The data came from a variety of sources including the City of Lakewood, Pierce County, various state agencies, the Puget Sound Regional Council (PSRC), as well as research by EDAW, Inc., consultants to the city for the Comprehensive Plan.

1.1 A Short History of Lakewood

Lakewood was covered for most of the past million years by a mile thick sheet of ice. Between 10,000 and 14,000 years ago, the last remnants of the Ice Age glaciers retreated leaving the Lakewood plains. The glacial residue remaining, estimated to be as much as 2000 feet thick, had been compacted by the weight of the glacial ice. As

the ice retreated the compacted clays, silt, sands, gravel, scattered cobbles and boulders rebounded an estimated 300 feet to the current elevation.

The glaciers left behind a rolling topography of thin soil and gravel extending from the waters of the Pacific Ocean and Puget Sound to the foothills of the Cascade and Olympic mountain ranges. The soil conditions favor only a narrow range of native evergreens and rough grasses, although certain valleys produce broader arrays of vegetation. The climate, forests, prairies, and bodies of water have made western Washington home to large populations of fish, shellfish, and fur-bearing animals. These, with abundant roots, berries, and cedars, provided sustenance for the first people who migrated to the Lakewood area shortly after the retreat of the glaciers. Evidence has been found of a 7,000 year old Native American camp on the banks of Chambers Creek near 75th West. Numerous sites of early human habitation have been documented in and around Lakewood. Southern Puget Sound's Indian population probably numbered in the thousands before it was decimated by exposure to diseases brought by early settlers of European decent (Densley, 1997).

The few artifacts discovered in the Puget Sound area indicate that Indians have lived here for at least 9,000 years. The Indians' semi-nomadic, hunting, and gathering way of life left only slight impressions on the land. Three tribes, the Nisqually, Steilacoom, and Puyallup, shared the area known now as the City of Lakewood in Pierce County, until treaties removed them to reservations. These are Coastal Salish people, related by language to the Salish tribes of northern Idaho and Montana. Early explorers named streams and rivers after the tribes they found living where those waters entered the Sound. Of all the tribes of western Washington, only the Nisqually kept horses. The others relied mainly on canoes or walking for transportation. The Nisqually have always been closely associated with the horse-owning Yakamas of central Washington. The horses made visiting across the Cascade passes relatively easy.

In 1833, the first documented Europeans explored Lakewood. That year they camped, built houses, then erected a fur trading post at the mouth of Sequelichew Creek for the Hudson Bay Company. On the bluffs above creek, Fort Nisqually was established as a safe haven for the fur traders and the local settlers. The trading post and fort was located just south of the present day Lakewood city boundary. In 1838, Puget Sound Agricultural Company (PSAC), a subsidiary of the Hudson Bay Company began

raising livestock and farming, on land between the Puyallup and Nisqually rivers including the present Lakewood area.

In 1841, the first fourth of July celebration west of the Missouri was conducted by Commander Charles Wilkes. The Wilkes Expedition contributed greatly to the geography and cartography of the Pacific Northwest. He was the first known American to cross the Cascades and to estimate the height of Mount Rainier. The tribes of Puget Sound welcomed the first white traders because of the blankets, guns, and ammunition they could obtain in exchange for furs.

By treaty since 1818, the Oregon Country, consisting of the modern states of Idaho, Oregon, and Washington, was administered by both the United States and Great Britain. Via an 1846 treaty, Britain relinquished all claim to the country but retained the right of the Hudson's Bay Company (HBC) to do business in what was to become Washington Territory. Some of the earliest white settlers in the Lakewood area were recruited by the HBC. A small party known as the Red River Settlers set out in 1841, from an HBC community which is now Winnipeg, Canada to settle what is now Lakewood. Prominent among that band was John Flett. His son-in-law, George Chapman, developed the existing Flett Dairy in 1903.

In 1844, just 6 miles north of the Fort Nisqually, Joseph Thomas Heath settled and undertook management of a farm for the PSAC. Heath died of pneumonia in March of 1849. In August of 1849, Captain Bennett Hill and his army artillery company of "23 men and a bugler" arrived in the area to establish a suitable place for a military post to protect settlers. The Heath farm was selected and rented. By October of 1849, Fort Steilacoom was established and had a complement of 5 officers and 75 men, Company M of the US Army Artillery.

In 1853, Washington became a territory and Andrew F. Byrd built a dam, which created Steilacoom Lake and built a sawmill at the outlet of lake and start of Chambers Creek.

The Oregon Donation Land Claim Act, passed in 1850, permitted Americans to claim up to 640 acres for homesteading, depending on their marital status. This act was in effect until 1855. The tribes were given reservations lands as a result of the Medicine

Creek Treaty signed in 1854 by Governor Isaac I. Stevens. The reservations were enlarged by the Fox Island Council of 1856.

Upset with the influx of white settlers, approximately 12,000 Native Americans revolted in 1855, beginning the Indian Wars. Forts and blockhouses were built all over the territory. One of these, the Bradley barn, made of squared timbers, was located near the intersection of Bridgeport and Custer. The same year the first school north of the Columbia was built near the current site of Park Lodge School. The school was built of lumber from the Byrd Mill and provided instruction for the children in the area to as far away as Spanaway. The Byrd school building was moved in 1856 to another site near Lakewood Drive and Steilacoom Blvd. where it remained until it burned in 1885. In 1857, Byrd added a gristmill a hundred yards down stream from the sawmill and dam on Chambers Creek. On February 18, 1858, Chief Leschi of the Nisqually tribe was hanged from a tree east of Fort Steilacoom in a hollow near Lake Steilacoom.

In April of 1868, Fort Steilacoom was abandoned. In 1870, the fort was purchased by Washington Territory and in 1874, Congress approved the transfer to the territory, for use as the territorial insane asylum, now known as Western State Hospital.

A pre-1900 corduroy road a road built from split cedar logs is located near the end of 59th Ave between 79th and 86th Streets spanning a Flett Creek delta.

In 1903, a National Guard Training Camp was established on the banks of American Lake, the Camp was named Camp Murray after Maj. Gen. Authur Murray in 1915. Joint Federal and Guard exercises were held at Camp Murray and in 1917, Camp Lewis named after Captain Meriwether B. Lewis, was established in preparation for training for W.W.I. On September 30, 1927, Camp Lewis was officially designated Fort Lewis.

The early settlers of the Lakewood area were primarily farmers, but some built dams, saw mills, and grist mills. It was not, however, until the Northern Pacific Rail Road selected Tacoma as a terminus in 1888 that the affluence of that city's population began to change the basic rural character of the Lakewood area. In 1900 an eastern businessman, Frederick Weyerhaeuser, began an empire by purchasing 900,000 acres of forest land, at \$6 per acre, from the Northern Pacific Rail Road. Mr.

Weyerhaeuser's heirs still live in Lakewood and the corporate headquarters of the Weyerhaeuser Company still exists in Tacoma.

Lakewood, originally known as the Lakes District, grew as a residential and resort area. In 1909 the Tallman-Thompson Land Company held a contest to name the town they were attempting to develop. Howard Nicholson of Fern Hill, submitted the winning suggestion of Lakewood out of 400 entries. The name of Lakewood was approved at a Tacoma election in 1910. An electric trolley system that served much of the county brought full-time residents to the community.

On the 4th of July 1912, the first Indianapolis 500 style automobile race was held near the corner of Lakeview and Steilacoom Blvd. The Tacoma Speedway held 500 mile races through 1922 with many top racing names participating, Rickenbacker, Chevrolet, Oldfield, DePalma and Tetzlaff to name a few. The grandstands burned in 1922 and were rebuilt for the race that year but the Speedway Association went bankrupt and the property was sold. The property was bought in 1923 and the Mueller-Harkins Airport was established. The first Air Mail Service flight came into Mueller-Harkins Airport in 1926. The airport was the main airport for Tacoma, becoming the Tacoma Municipal Airport in the late thirties.

World War I brought a military boom to the state, county, and Lakewood. The military presence grew in the late 1930s with the addition of McChord Air Force Base and the Naval Supply Depot. In 1938, McChord Field was established from the old Pierce County -Tacoma Field which was about 3 miles east of Mueller-Harkins Airport.

In 1937, a far-seeing entrepreneur, Norton Clapp, built the first planned shopping center west of the Mississippi River in the heart of the Lakewood now known as Lakewood Colonial Center.

On July 21, 1944, Mueller-Harkins Airport was condemned and taken to support the war effort. The property then became a Naval Advance Base, (Naval supply depot). In 1949, some of the old Navy base was declared surplus and signed over to the Clover Park School District. By 1954 Clover Park Vocational Technical Institute had received the northern section of the Navy base.

In 1957, a second shopping center, the Villa Plaza, was constructed, followed in 1960 by the Thunderbird Shopping center. Lakewood General Hospital opened in 1961, and

in 1963, the Flora B. Tenzler Memorial Library was opened. In 1965, an industrial park was developed on the southern portion of the old Navy Base and the State Legislature authorized Fort Steilacoom Community College in 1967, now known as Pierce College.

Lakewood General Hospital was replaced in 1988 by St. Clare Hospital. The area experienced additional growth and commerce by the completion of Interstate-5 in 1963. The Oakbrook Addition, a residential subdivision, was begun in 1964.

The military presence in the area resulted in growth spurts during major military conflicts, including the Korean Conflict of the early 1950s, the prolonged engagement in South East Asia lasting until the mid-1970s, and the Cold War that lasted until the early 1990s.

As the economy of the Puget Sound area became more global, Lakewood's role in that economy changed, but it is still primarily a residential community with a predominantly blue-collar workforce. Aside from government work, many Lakewood residents are employed by the larger timber, aircraft manufacturing, and electronic firms well known in the region. Local industry is mostly light manufacturing and freight forwarding.

Since cityhood in 1996, Lakewood has steered more vigorously in the direction its residents wanted. Crime, taxes, and the economy have become focal points of the city's administration. Currently, Lakewood encompasses 24 square miles, 4 of which are water, and a population of just over 63,000.

1.2 Jurisdictional Boundaries

The City of Lakewood is in southwestern Pierce County (see Figure 1-1). Commencement Bay is approximately 8 miles to the northeast of the city and Mt. Rainier National Park is approximately 35 miles to the southeast. The City of Tacoma lies just north of Lakewood, with Fort Lewis, Army Reserve, and McChord Air Force Bases at the southern boundaries. Unincorporated Pierce County lies to the east and the City of Steilacoom lies to the west. For the purposes of the Comprehensive Plan, the jurisdictional boundaries and the urban growth area (UGA) boundaries are contiguous, as shown in Figure 1-1. The city boundaries are:

- On the north bounded by Chambers Creek, Leach Creek, and the City of Tacoma's corporate limits;
- On the east bounded by Interstate 5 (I-5), south to 95th Street S, east to Sales Road S to its southerly terminus, finally bounded by Steele Street, south of 104th Street S;
- On the south bounded by the north and west boundaries of McChord Air Force Base and the north boundary of the Fort Lewis Military Reservation, west to a line established by 107th Avenue SW; and
- On the west bounded by 107th Avenue SW, between Fort Lewis and a line south of 100th Street SW, east to Far West Drive SW and then north along this line to the top of the Chambers Creek Canyon and then north to Chambers Creek.

The City of Lakewood encompasses approximately 24 square miles (12,800 acres). Elevations within the city begin at sea level and rise to approximately 300 feet. Census tract boundaries for the city, as determined by the U.S. Census Bureau, are shown in Figure 1-2.

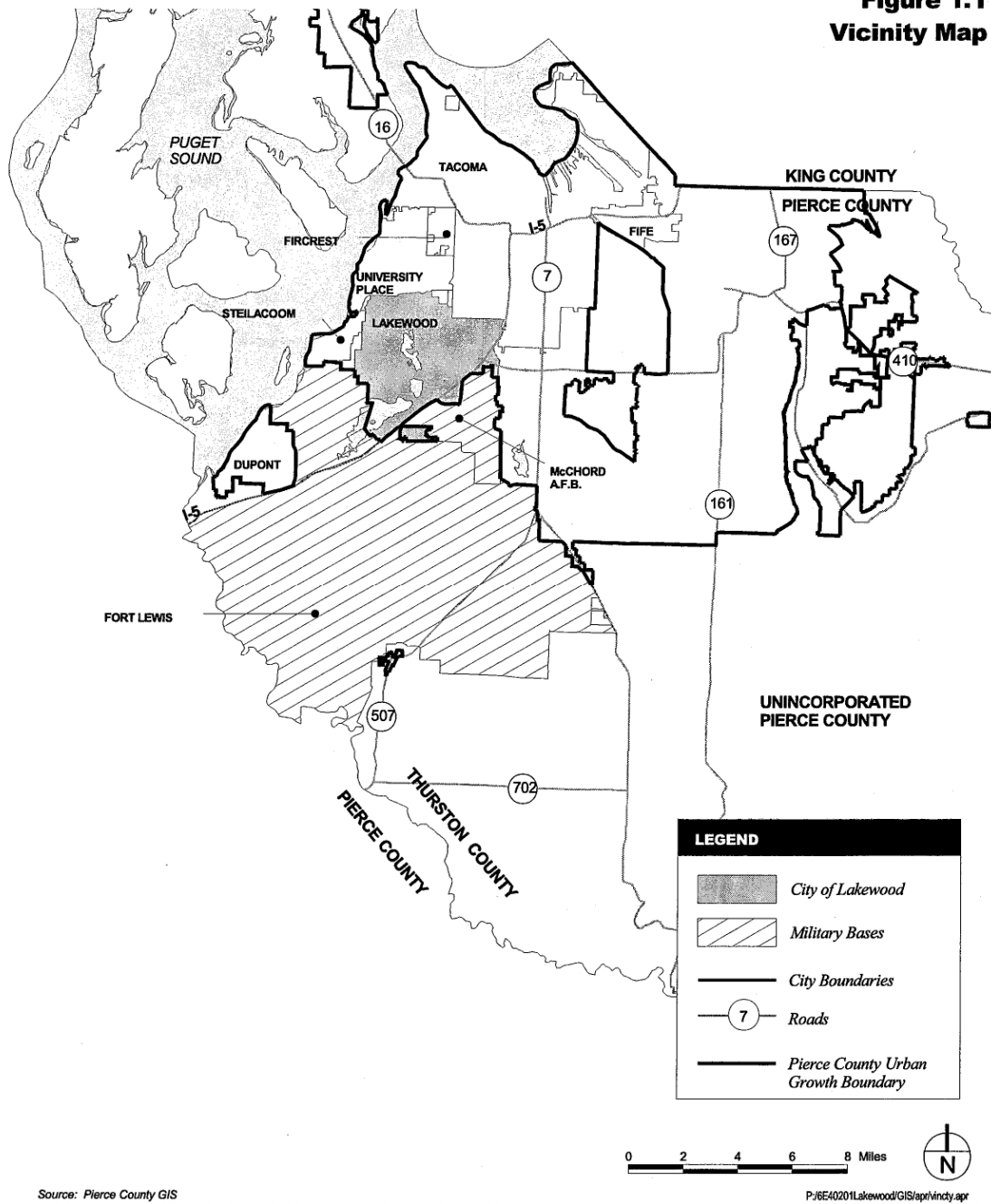
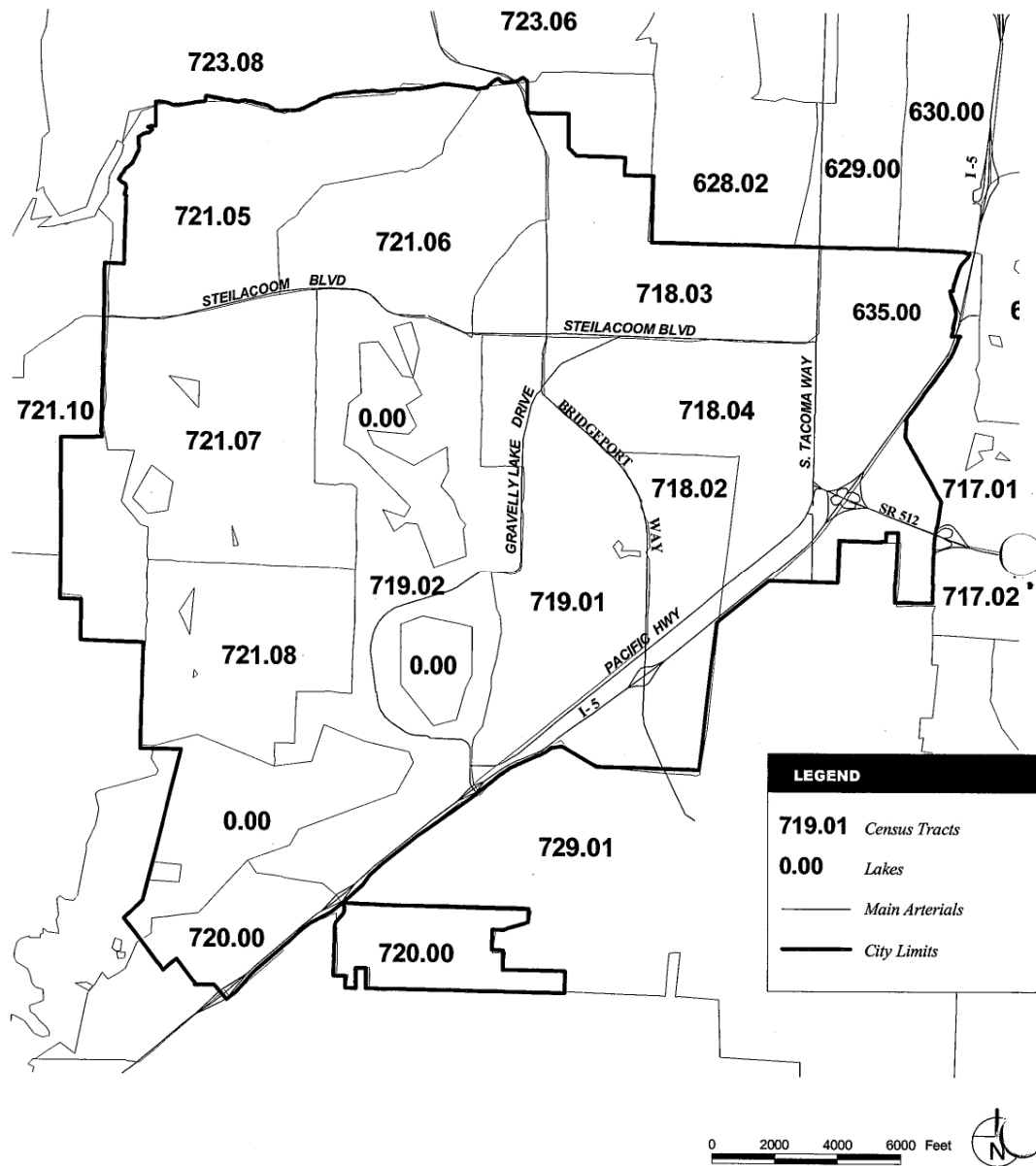
**Figure 1.1
Vicinity Map**

Figure 1.2
Census Tract Boundary Map



1.2.1 Planning Areas

The City of Lakewood is characterized by a variety of residential, commercial, and industrial lands. To facilitate the planning process and the analysis needed in preparing the Comprehensive Plan, a set of seven discrete planning areas was defined (see Figure 1-3). By identifying these smaller planning areas, the process of data gathering and summarizing is simplified and becomes more understandable, and easier to communicate. These planning areas were identified to aid in preparing the Background Report. The boundaries of the planning areas were based on current zoning, current land use, census information, and jurisdictional boundaries. A detailed discussion of the boundary limits and character of each of the seven planning areas is provided in Chapter 3.0-Land Use. The seven planning areas and their corresponding census tracts are:

- **1. Urban Core** - census tracts 718.02*, 718.04*, 719.02*, 719.01*
- **2. Northeast Area** - census tracts 718.04*, 717.02, 717.01, 719.023
- **3. North Central Area** - census tracts 718.03, 718.037, 723.06
- **4. Northwest Area** - census tracts 721.05, 721.06, 723.08
- **5. West Area** - census tracts 721.07, 721.08, 719.02*, 721.074, 721.10
- **6. South Central Area** - census tract 719.01*, 718.02*
- **7. Southwest Area** - census tract 720

* denotes census tract split between multiple Planning Areas

1.3 A Vision of Lakewood

The city is conducting an extensive Public Participation program as part of the comprehensive planning process called Lakewood 2020-Visioning. This section describes the city's public participation process, provides a summary of community goals and values for the city in the year 2020.

1.3.1 Public Participation Process

As part of the Lakewood 2020 - Visioning process, the City of Lakewood held two community meetings to determine the public's vision of the city's future. The first visioning session, held on May 31, 1997, focused on the desires of the community and

the basic strengths and weaknesses of Lakewood. In addition, citizens made over 280 vision statements describing the City of Lakewood in 2020.

The objective of the second visioning session, held on June 12, 1997, was to create recommended actions to implement the goals and general vision statements from the first session. Attendance for both sessions totaled nearly 250 people and included citizens, City Council, appointed boards, city staff, and consultants. It was important to the Lakewood City Council and appointed board members to hear the values, concerns, and future visions of the larger Lakewood community to gain a solid knowledge of the citizens' expectations for their city. These expectations will ultimately be reflected in the goals and policies of the Comprehensive Plan, which will provide the "road map" to Lakewood's future.

1.3.2 Summary of Community Values

The citizens who commented during the visioning process had a wide range of opinions about the Lakewood community, including its past, present, and future. Each of the visioning meetings was facilitated and attended by City Council and the Lakewood Planning Advisory Board (PAB) members, in addition to city staff. The first visioning session identified the following top five strengths and weaknesses of Lakewood:

Strengths

- Natural beauty
- City government and staff
- Economic potential and business climate
- Civic involvement
- Schools, libraries, and higher educational opportunities

Weaknesses

- Crime
- Existing commercial/retail development problems (including a lack of an anchor at Lakewood Mall, unattractive hotels and motels, strip mall development hindering development of Lakewood Mall)
- Conditions and appearance of the gateways to the city
- History of poor planning and land use history
- Condition and/or lack of streets, sidewalks, and bikepaths

Over 280 vision statements that were presented in the first session were summarized into general goal statements distributed into 11 functional categories. These goal statements, sorted by functional category, embody the citizen's desires for Lakewood in the year 2020, and are summarized in Table 1-1. Each goal statement is stated as a description of the reigning conditions in Lakewood in the year 2020.

Table 1-1 General Goal Statements by Category

Category	Goal Statement
1. Capital Facilities	Lakewood has attractive, well designed civic facilities which are a source of pride to the community
2. Economic Base	Lakewood supports a strong, diverse employment base.
3. Environment	Lakewood continues to cherish and protect the natural environment including its lakes, woods, and natural amenities.
4. Government	City government in Lakewood functions to preserve and protect the values of its diverse population.
5. Human Services	Lakewood has paid close attention to the needs of all its citizens and provided excellent human services.
6. Land Use - Residential	Lakewood has preserved its lovely existing single-family neighborhoods while creating an urban center that supports multi-family residential in planned areas with high levels of public services.
7. Land Use - Commercial	Lakewood has both thriving community centers and a downtown. The unique downtown has become the "heart" of the city, but a regional urban center where commerce, culture, and government flourish.
8. Land Use - Amenities	Lakewood is a beautiful city marked by an abundance of parks, open spaces, and attractive, landscaped corridors.
9. Transportation	Lakewood has an excellent, integrated transportation system that supports all modes of transportation - private vehicles, public transportation, bicycles, and walking.
10. Urban Design	Lakewood is now a city with a "heart." Friendly, diverse neighborhoods with distinctive character are now linked to a dynamic unique city center that is truly a blending of lakes and woods.
11. Utilities	Utilities have been extended throughout the majority of the city to provide citizens with efficient and reliable services.

During the second session, the citizens formed discussion groups on the 11 basic topic areas. The objective of each group was to develop a list of possible actions that would implement the specific goal. Each of the members in each group then voted on these action items to create a priority list of recommended actions. Of all the action items, urban design received the most votes. Some of the categories and recommended actions that people felt strongly about are listed below:

- **Urban Design** - Define a sense of place through a quality built environment.
- **Land Use - Residential** - Maintain the character of single-family homes, especially large suburban lots or estates in the Lakewood urban area.
- **Land Use - Amenities** - Develop zoning/re-zoning that emphasizes the preservation of open space and additional wildlife habitat.

- **Capital Facilities** - Acquire a land base for a city/civic center, and parks and open space.
- **Human Services** - Provide opportunities for job training and community service for teens and older youth.

The Lakewood 2020 - Vision process is the measuring stick by which staff planners, consultants, and the Planning Advisory Board members will continue to evaluate the direction desired by the citizens of Lakewood during the development of the Comprehensive Plan. At certain times during the comprehensive planning process, citizens will be asked again to confirm specific statements in the *Lakewood 2020* - Vision and provide more details to their visions. The planning process is designed to allow for change and the introduction of more facts and ideas into the future vision of the City of Lakewood.

1.4 Growth Management Act Policies and Guidelines

1.4.1 An Overview of State Growth Management Requirements

The 1990 Washington State Legislature enacted the landmark Growth Management Act (GMA) to guide Washington State as it grows into the future. The GMA was a significant first step in setting basic guidelines for growth management. Along with it, the Legislature approved several other measures that provide important new resources to assist with growth management, including increases in state transportation funding, new tax sources for local government open space acquisition, appropriations for habitat and recreation land acquisition, and new funding sources for local facilities financing.

The GMA requires the state's fastest growing counties (which includes Pierce County), and cities within those counties, to prepare comprehensive plans.¹ Because the City of Lakewood is located in Pierce County, it is required to prepare a comprehensive plan. The GMA also requires all counties to inventory agricultural,

¹ The Growth Management Act requires that comprehensive plans be prepared in counties that: (1) have a population over 50,000 and have a population growth of more than 10% in the past ten years until 5/16/1995 or more than 17% after 5/16/1995 (RCW 36.70A-040); or (2) have a growth rate of more than 20% in the previous ten years regardless of population size.

forest lands, and critical areas, and all cities and counties to make their zoning consistent with their comprehensive plans.

Those cities and counties required to prepare comprehensive plans must designate urban growth areas, coordinate their plans with adjacent cities and counties, and include public participation in plan development.

The GMA has established 13 broad goals that cities and counties are required to follow (Revised Code of Washington {RCW} 37.70A.020). The goals are described below.

1. Urban Growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
2. Reduce Sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low density development.
3. Transportation. Encourage efficient multi-modal transportation systems based on regional priorities and coordinated with city and county comprehensive plans.
4. Housing. Encourage the availability of affordable housing to all economic segments of the population of the state, promote a variety of residential densities and housing types, and encourage preservation of existing housing.
5. Economic Development. Encourage economic development throughout the state that is consistent with adopted comprehensive plans; promote economic opportunity for all citizens of the state, especially for unemployed and disadvantaged persons; and encourage growth, all within the capacities of the state's natural resources, public services, and public facilities.
6. Property Rights. Private property shall not be taken for public use without just compensation. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
7. Permits. Applications for both state and local government permits shall be processed in a timely and fair manner to ensure predictability.
8. Natural Resource Industries. Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries.

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.
10. Environment. Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
11. Citizen Participation and Coordination. Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.
12. Public Facilities and Services. Ensure that those public facilities and services necessary to support development shall be adequate at the time the development is available, without decreasing current service levels below locally established minimum standards.
13. Historic Preservation. Identify and encourage the preservation of lands, sites, and structures with historical or archaeological significance.

The GMA requires counties, in collaboration with their cities, to designate urban growth areas (UGAs), within which urban growth is to be encouraged and outside of which growth may occur only if it is not urban in nature. UGAs are to be sized to accommodate the growth projected for the next 20 years, as forecasted by the State Office of Financial Management. For the City of Lakewood, the 20-year allocation is approximately 30,000 new people by 2017, for a total population of approximately 93,200 (pers. com., Dan Cardwell, Pierce County Planning and Land Services, 8/8/97). UGAs may contain more than one city and may contain unincorporated territory if the territory is already characterized by urban growth or is adjacent to other territory characterized by urban growth.

The GMA requires that all county and city comprehensive plans address the following elements:

1. Land Use. The Land Use Element shall designate land for housing, commerce, industry, recreation, open space, public facilities, and other uses, and include densities, building intensities, and estimates of future population growth.

2. Housing. The Housing Element shall include an inventory and analysis of existing and projected needs; describe goals, policies, and objectives to preserve, improve, and develop housing; identify sufficient land for housing; and provide for existing and projected needs of all economic segments of the community.
3. Capital Facilities. The Capital Facilities Element shall include an inventory of existing capital facilities owned by public entities; a forecast of the future needs for such capital facilities; proposed locations and capacities of expanded or new facilities; at least a six-year plan to finance facilities; and a requirement to reassess the Land Use Element if probable funding falls short of meeting needs. Under the law, development is not allowed unless and until capital facilities are adequate to serve the development at an adopted level of service standard.
4. Utilities. The Utilities Element shall consist of the general location, proposed location, and capacity of existing and proposed utilities, including but not limited to electrical lines, telecommunication lines, and natural gas lines.
5. Transportation. The Transportation Element shall include land use assumptions; inventory of existing facilities; facility needs based on adopted level of services standards; traffic forecasts for at least 10 years; system expansion and management needs; a financing plan; and intergovernmental coordination. As was the case with the Capital Facilities. Element, the law states that development is not to be allowed unless and until transportation systems are adequate to serve the development at an adopted level of service standard.

In addition to the above required elements, Lakewood has elected to include three optional elements:

1. Economic Development. The Economic Development Element shall profile the city's business community and provide goals, policies, and actions to promote vibrant and sustainable economic activity.
2. Urban and Community Design. The Community Design Element shall include goals, policies, and actions to enhance the aesthetic character of the city through the application of building, landscaping, and site and neighborhood design techniques.

3. Parks and Recreation. The Parks and Recreation Element shall include goals, policies, and actions to enhance the quality and quantity of Lakewood's active and passive recreation opportunities, as well as to preserve open space.

The GMA requires cities and counties to adopt interim critical areas regulations to protect wetlands, frequently flooded areas, geologically hazardous areas, fish and wildlife habitat conservation areas, and aquifer recharge areas prior to adoption of comprehensive plans. When plans are adopted, jurisdictions are required to revisit the interim critical areas regulations, make modifications if warranted, and adopt permanent regulations.

The GMA requires newly incorporated cities to adopt their comprehensive plans and the development regulations necessary to implement those plans within four years after incorporation. Since the City of Lakewood was incorporated on February 28, 1996, the deadline to complete the Lakewood Comprehensive Plan is February 28, 2000.

Finally, the GMA authorizes cities and counties to establish impact fees to pay for a proportionate share of certain public improvements necessary to mitigate the impacts from new development. Impact fees may not be collected to correct existing deficiencies, and financing for new system improvements may not rely solely on impact fees. Any capital facilities proposed to be financed with impact fees must be included in the jurisdiction's capital facilities or transportation elements.

1.4.2 A Summary of Multi-County and Countywide Planning Policies

To ensure consistency among the comprehensive plans of neighboring cities and counties, the GMA mandates the adoption of multi-county and countywide planning policies. These policies, according to state law, are written statements used solely for establishing a countywide (or multi-county) framework from which county and city plans are developed and adopted. By law, multi-county policies and countywide planning policies are required to address the following:

- Policies to implement urban growth areas;
- Policies to promote contiguous and orderly development and provide urban services to such development;
- Policies for siting public capital facilities of a countywide or statewide nature;

- Policies for countywide transportation facilities and strategies;
- Policies for joint city and county planning within urban growth areas;
- Policies for countywide economic development and employment; and
- An analysis of the fiscal impact.

Vision 2020, produced by the PSRC, contains multi-county policies affecting King, Snohomish, Pierce, and Kitsap counties. In addition, Pierce County adopted countywide planning policies that provide a framework for Lakewood's comprehensive plan. Further information regarding Vision 2020 is provided below.

1.4.2.1 Vision 2020

Vision 2020 is the regional long-range growth and transportation strategy for central Puget Sound. Adopted in 1991 by the regional council of governments, Vision 2020 provides the framework for countywide planning policies and local comprehensive planning efforts, as mandated by the GMA. In May 1995, Vision 2020 was updated to reflect current countywide planning efforts and to establish an integrated regional vision (PSRC, 1995). These policies “promote diverse, economically healthy and environmentally sensitive communities that offer affordable housing for all economic segments of the population and are connected and served by a high-quality, efficient transportation system” (PSRC, 1995). The framework policies that guide regional development are listed below and their reference number within Vision 2020 1995 Update is shown in parentheses (i.e., RF-#).

1. Urban Growth Areas. Locate development in urban growth areas to conserve natural resources and enable efficient provision of services and facilities. Within urban growth areas, focus growth in compact communities and centers in a manner that uses land efficiently, provide parks and recreation areas, is pedestrian-oriented, and helps strengthen communities with an efficient, transit-oriented, multi-modal transportation system (RG-1).
2. Contiguous and Orderly Development. Coordinate provision of necessary public facilities and services to support development and to implement local and regional growth planning objectives. Provide public facilities and services in a manner that is efficient, cost-effective, and conserves resources. Emphasize interjurisdictional planning to coordinate plans and implementation activities

and to achieve consistency. Protect critical areas, conserve resource lands, and preserve lands and resources of regional significance (RC-2).

3. Regional Capital Facilities. Strategically locate public facilities and amenities in a manner that adequately considers alternatives to new facilities (including demand management), implements regional growth planning objectives, maximizes public benefit, and minimizes and mitigates adverse impacts (RF-3).
4. Housing. Provide a variety of choices in housing types to meet the needs of all segments of the population. Achieve and sustain an adequate supply of low-income, moderate-income, and special needs housing located throughout the region (RH-4).
5. Rural Areas. Preserve the character of identified rural areas by protecting and enhancing the natural environment, open space, recreational opportunities, and scenic and historic areas; supporting small-scale farming and forestry uses; and permitting low-density residential living and cluster development maintained by rural levels of service. Support cities and towns in rural areas as locations for a mix of housing types, urban services, cultural activities, and employment that serve the needs of rural areas (RR-5).
6. Open Space, Resource Protection, and Critical Areas. Use rural land and open space to separate and delineate urban areas and to create a permanent regional greenspace network. Protect critical areas, conserve natural resources, and preserve lands and resources of regional significance (R0-6).
7. Economics. Foster economic opportunity and stability, promote economic well-being, and encourage economic vitality and family wage jobs while managing growth. Support effective and efficient mobility for people, freight, and goods that are consistent with the region's growth and transportation strategy. Maintain region-wide information about past and present economic performance. Assess future economic conditions that could affect the central Puget Sound region (RE-7).
8. Transportation. Develop a transportation system that emphasizes accessibility, includes a variety of mobility options, and enables the efficient movement of people, goods and freight, and information (RT-8).

Urban Centers. Vision 2020 also identifies three types of centers: (1) Urban Centers, (2) Town Centers, and (3) Manufacturing/Industrial centers. The Vision 2020 strategy is to reinforce and diversify existing Urban Centers by targeting a significant portion of the region's growth, services, and facilities into areas that are already urban focal points. Urban Centers are targeted for employment, residential growth, efficient and frequent transportation service, and for investment in major public facilities

Urban Centers are intended to be areas of concentrated employment and/or housing within urban growth areas which serve as the hubs of transit and transportation systems. They are integral to creating compact urban development that conserves resources and creates additional transportation, housing, and shopping choices. Centers are an important part of the regional strategy (Vision 2020) for urban growth as they will become focal points for growth within the county and will be areas where public investment is directed.

Urban Centers are intended to:

- Be priority locations for accommodating growth;
- Strengthen existing development patterns;
- Promote housing opportunities close to employment;
- Support development of an extensive transportation system which reduces dependency on automobiles; and
- Maximize the benefit of public investment in infrastructure and services.

In addition, Vision 2020 has established future density and transit characteristics for a typical Urban Center, which include the following:

- a minimum gross density of 25 employees per acre;
- at least 10 households per acre;
- a minimum of 15,000 employees; and
- fast and frequent high capacity transit.

City of Lakewood Urban Center Study Area. The PSRC has designated a 1,350-acre area within the City of Lakewood as an urban center study area (PSRC Urban Centers Baseline Report, 1996). The study area boundaries have not been locally adopted and are likely to change with the comprehensive planning process to become

a more defined urban center. This study area is bordered to the north by Steilacoom Boulevard, to the south by 1-5, to the west by moderate density single-family neighborhoods, and to the east by the City of Lakewood Manufacturing Center which includes the 170-acre Lakewood Industrial Park. Commercial retail and services, as well as single-family residential development, have historically dominated much of the development within the urban center study area. The urban center study area contains the Colonial Center, Lakewood's oldest commercial development. The urban center study area also surrounds the 99-acre Lakewood Mall west of Gravelly Lake Drive SW. This complex was originally constructed in 1957 as a community shopping center and was later redeveloped in 1989 to become the Lakewood Mall. The urban center study area also contains the Post Office, City Hall, the Lakewood Library, the Clover Park School District Headquarters, Clover Park High School, and St. Claire Hospital.

1.4.2.2 Pierce County

Pierce County's Countywide Planning Policies were adopted by the Pierce County Regional Council in November 1994 and amended in November 1995. These policies provide a framework for coordinating development between Pierce County and the 20 incorporated cities within it (pers. corn., Carolyn Pendle, Pierce County Council, 10/14/97). The Pierce County Countywide Planning Policies were developed by the Growth Management Planning Council (the Planning Council), which is responsible for identifying Urban Centers, adopting 20-year target numbers for projected population and employment, and identifying the Urban Growth Area within the county.

The countywide policies are divided into ten topic areas. A brief summary of the overall intent of the policies provided below. Specific policies for each of these ten areas are summarized in this report at the end of each respective planning element.

1. Affordable Housing. The goals and policies in this section encourage the availability of affordable housing to all economic segments of the population, promote a variety of residential densities and housing types, and encourage preservation of the existing housing stock.

2. Agricultural Lands. The goals and policies in this section are intended to maintain and enhance natural resource-base industries, including productive agricultural industries, and the conservation of productive agricultural lands.
3. Economic Development and Employment. The policies found in this section encourage economic development, promote economic opportunity for all citizens, especially for unemployed and disadvantaged persons, and encourage growth in areas experiencing insufficient economic growth.
4. Education. The goals and policies in this section ensure the provision of high quality educational facilities, encourage excellence in education, and offer diverse educational opportunities for all residents.
5. Fiscal Impact. The goals and policies in this section mandate fiscal impact analysis used to determine the relative costs of governmental decisions, such as the provision and siting of public facilities and services, which may affect jurisdictional responsibilities.
6. Historic, Archaeological, and Cultural Preservation. The goals and policies in this section identify and encourage the identification and preservation of lands, sites, and structures that have historical significance.
7. Natural Resources, Open Space, and Protection of Environmentally Sensitive Lands. The goals and policies in this section maintain and enhance natural resource-based industries; encourage the conservation of productive timber lands, agricultural lands, and fisheries; encourage the retention of open space; and protect environmentally sensitive lands.
8. Siting of Public Capital Facilities of a County-wide or State-wide Nature. The goals and policies in this section relate to the identification and siting of essential public facilities, such as airports, state educational facilities, state or regional transportation facilities, solid waste facilities, and other difficult to site facilities.
9. Transportation Facilities and Strategies. The goals and policies in this section are related to land use assumptions used in estimating travel characteristics, facilities and service needs, finance, intergovernmental coordination efforts to assess the impacts of transportation plans, and demand management strategies.

10. Urban Growth Areas. The goals and policies in this section encourage development in urban areas where adequate public facilities and services exist, seek to reduce sprawl, and provide adequate public facilities services necessary to support urban development at the time the development is available for occupancy.

CHAPTER 2: DEMOGRAPHIC DESCRIPTION

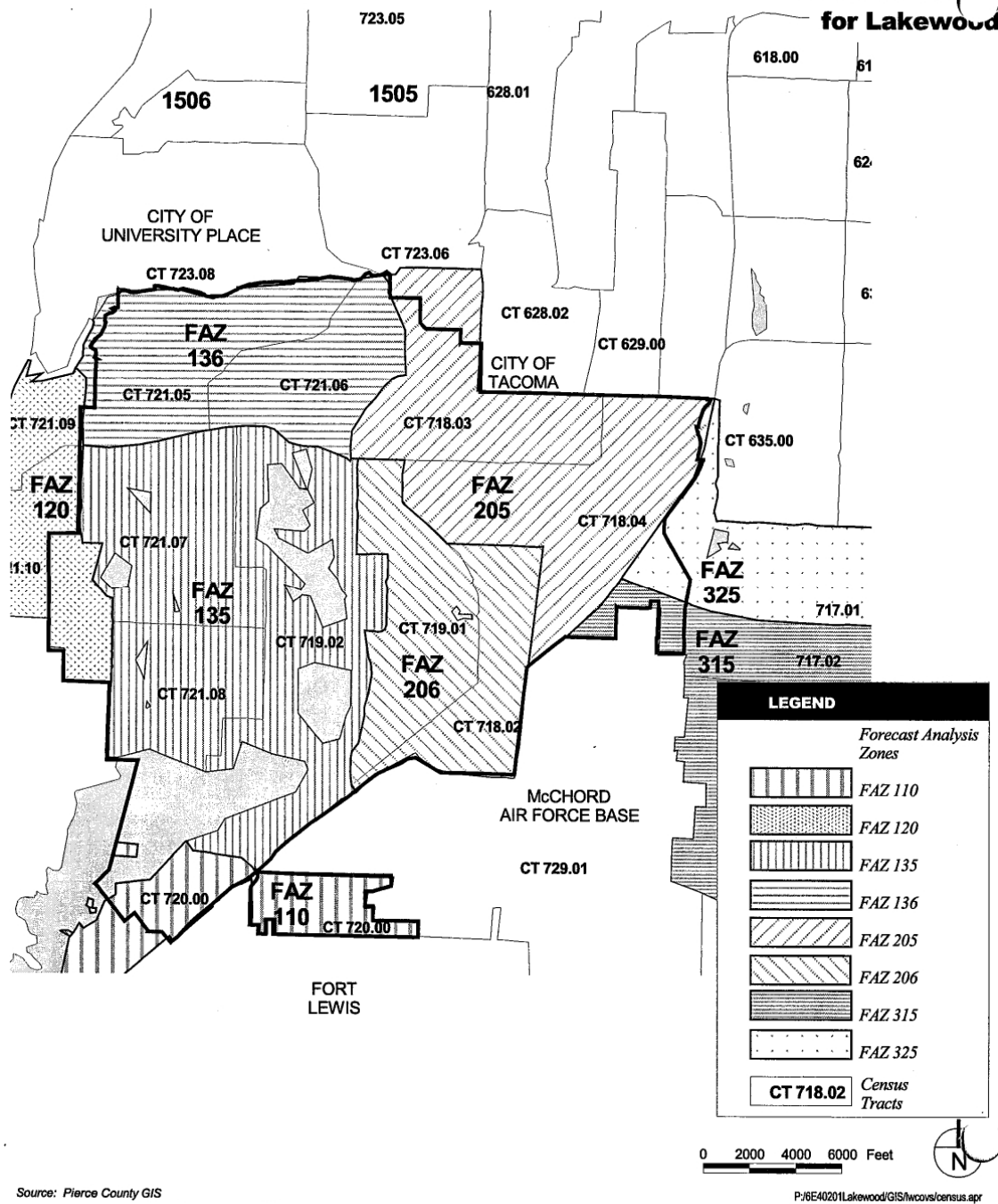
The Lakewood area has long been a development center in Pierce County. That role has historically related to providing residences for the area as well as for personnel from the military installations. Businesses have primarily provided goods and services for local residents and businesses, the military and to a lesser extent the regional economy. Demographic data are a good way of understanding that the residents of Lakewood are, and projecting demand for goods and services.

2.1 Background on Data

The City of Lakewood is newly incorporated. Not only does that provide a special character, it also presents some challenges for gathering, presenting, and analyzing data. For some planning purposes the exact and specific number of dwelling units, acres, etc. are important. For economic and demographic purposes, overall patterns, trends, and general relationships are more important. Data used to describe economic, demographic, and real estate conditions, character, and trends are often generated for purposes for which they are not intended; arranged by areas that do not coincide with economic purposes or comparable areas; are often collected periodically and published with some lags; therefore, exact comparisons over time and between and among areas are often difficult.

Economic and demographic data are routinely collected by census tract, postal zip code, or municipal jurisdiction. When a new municipal jurisdiction is formed it is not typically consistent with past census or existing postal areas. This has been true for the new City of Lakewood. Figure 2-1 compares census tracts and postal zip codes to the cities incorporated boundaries. In addition, the PSRC combines data on population, households, and employment into forecast analysis zones (FAZs). These FAZs are composed of several census tracts (see also Figure 2-1). In the tables and graphs that follow, every attempt has been made to gather data for areas that are coincident with city boundaries. This was not always possible or necessary. In many instances it was not possible because the patterns, conditions, character, and trends are not necessarily restricted by these data gathering conveniences.

Figure 2.1
FAZ's/Census Tracts
for Lakewood



Where appropriate in the tables and graphs that follow, comparisons were made to larger areas such as the county (Pierce) or the state. These larger areas represent typical patterns that can be used to gain perspective on Lakewood's particular and specific character.

For planning purposes, the current city has been divided into seven planning areas, as discussed in Chapter 1. When appropriate and comparable data were available, comparisons are presented for areas within the City of Lakewood.

Finally, the text material in this chapter was condensed from many tables and data sources to provide a succinct description and analysis of the demographic situation of this city for purposes of the Comprehensive Plan and its Economic Development Element. The City of Lakewood, through its Economic Development Advisory Board, has provided a separate document that not only analyzed the local economy, but contains the city's economic development strategy. In addition, a community profile is available that not only provides a large amount of information, it also contains data sources and methodologies for updating later by the city and/or Chamber of Commerce. The purpose of this chapter and the community profile was to help individuals and businesses both within the city and outside to develop a better understanding of this city. In addition, both internal and external government and community leaders and decision-makers will have a solid basis to understand the city's various policy issues.

2.2 Population Growth and Dynamics

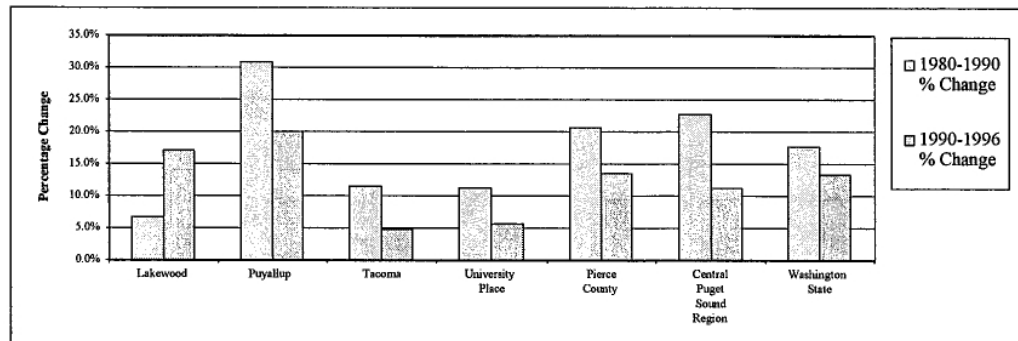
2.2.1 Population Growth: Past & Future

Population growth and size are often taken as an index of the relative strength of a city. This is half of the basis for evaluating the significance of a city's role (i.e., population). The other half of the basis for viability is economic activity. In 1997 the State of Washington estimated that the population base in the City of Lakewood is 62,240 people. This represents 9.2% of Pierce County's population compared to Tacoma (27.5%), Puyallup (4.4%), University Place (4.3%), Edgewood (1.6%), Bonney Lake (1.4%), and Sumner (1.2%). The City of Lakewood is 1.1% of the state

and 2% of the four-county¹ Central Puget Sound Region population. Pierce County is 12% of the state's population and 21.7% of the region's.

Figure 2-2 compares the recent population growth in the City of Lakewood, Pierce County, region, state and three similar cities in Pierce County. Table 2-1 compares the rates of growth among City of Lakewood, similar Pierce County cities, the county, the region, and state.

Figure 2-2 Regional Population Growth Trends: 1980–1996



Source: US Census and State Office of Financial Management

Table 2-1 Regional Population Trends: 1990–1996

Jurisdiction	1996	% Average Annual Change 1980–1990	% Average Annual Change 1990–1996	% Average Annual Change 1980–1996
Lakewood	62,786	0.6	2.7	1.4
Puyallup	28,660	2.7	3.1	2.9
Tacoma	185,000	1.1	0.8	1.0
University Place	38,751	1.1	0.9	1.0
Pierce County	665,200	1.9%	2.1%	2.0%
Region ²	3,056,800	2.1	1.8	2.0
Washington State	5,516,800	1.6	2.1	1.8

Source: Office of Financial Management, State of Washington

Over the past 16 years the City of Lakewood has grown slower (on an annual basis) than Puyallup, Pierce County, the region, and state. However, during the period 1980-1996 the City of Lakewood grew faster than Tacoma and University Place. Estimates indicate that the area that is now Lakewood added over 12,000 persons since 1980 or roughly 7% of the county's population gain; Tacoma added 15% of the growth in Pierce County and Puyallup 6%.

¹ King, Kilsap, Pierce and Snohomish Counties.

² King, Kitsap, Pierce and Snohomish Counties.

Table 2-1 does not include those persons who lived on the military installations (McChord or Fort Lewis). The census tract that is McChord Air Force Base (729.01) had 4,538 persons; the Fort Lewis census tract (729.02) had 22,224 persons in 1990. These together would add roughly 45% more population to Lakewood. In 1996, the total was reported to be 25,152 enlisted personnel.³

The City of Lakewood is projected⁴ to continue its growth, but at a pace roughly two-thirds of that of the past two decades. Table 2-2 compares the projected growth from 1995-2020 in the region, county, city, and subareas. Lakewood is projected to add 18,000 persons in the next 25 years or 7% of the county's population gain. Alternatively, the Pierce County Comprehensive Planning process allocated the Lakewood area a total of 96,000 persons by the year 2020. This is a significantly faster pace of local population growth, 1.7% per year and 13% of Pierce County's expected population growth.

Table 2-2 Population Projections: 1995–2020, City of Lakewood, Region, County and City's Subareas

	Average Annual % Change	Persons Added	% of Region, County or City's Growth
Central Puget Sound	1.37%	1,102,000	--
Pierce County	1.44	257,000	23.3%
Thurston County	2.19	136,000	--
City of Lakewood	1.1 – 1.7	18,000 – 33,000	7.0 – 13%
•Southeast	0.4 – 0.6	490 – 900	2.7
•West	0.9 – 1.3	3,980 – 7,300	22.1
•Northwest	1.5 – 2.3	5,260 – 9,600	29.2
•North Central & Northeast	0.8 – 1.3	1,850 – 3,400	10.3
•Core & South Central	1.5 – 2.3	6,430 – 11,800	35.7

Source: Puget Sound Regional Council, 1995. Pierce County Comprehensive Plan, 1994.

2.2.2 Demographic Character

The number and expected growth of persons is important to Lakewood's economic future, as well as for other comprehensive planning issues. The type of persons and households are also an important variable in Lakewood's economic future, the type of potential economic activity, and need for public services and facilities. Demographic comparisons are noted between the City of Lakewood, Pierce County, and the state. These comparisons are made to indicate how different Lakewood is from the typical patterns found in this area of the Pacific Northwest. Over larger areas these patterns

³ State of Washington, Office of Financial Management

⁴ by the Puget Sound Regional Council, 1995.

tend to ameliorate extremes. Table 2-3 compares the pattern for the whole City of Lakewood to these broader patterns, whereas Tables 2-4 and 2-5 and Figures 2-3, 2-4, 2-5, and 2-6 below compare the patterns within the City of Lakewood. To some extent these patterns are dated because they are derived from US census data collected in 1989 or 1990. However, this data source is the only comprehensive means to have valid comparisons across jurisdictions.

The demographic patterns summarized in Table 2-3 indicate that typically there tend to be fewer school-aged children and pre-schoolers in the Lakewood area than the county and state; about the same percentage of residents older than 65 years as the county but slightly less than the state. The median age of persons in 1990 in Lakewood was slightly less than the county, but markedly less than the state's median population age.

In summary, the characteristics of the population base are very similar to that of Pierce County and the State of Washington. There are some notable exceptions. The ethnic, cultural, and racial diversity present in the Lakewood community is more typical of the nation and older metropolitan areas than new suburbs. While Lakewood has, and to some extent is known for, its concentration of wealthy households, these are outweighed by more modest income households. The measures of income and wealth that represent Lakewood as a whole are indicated by levels less than county and state, with larger proportions of people in poverty status. In addition to the ethnic, cultural, and racial diversity, the various sub-areas of Lakewood have very different levels of household and personal per capita income and home values. In many ways using any one number to represent Lakewood's demographic character masks the range and diversity among its population and sub-areas.

Table 2-3 Demographic Patterns: Lakewood, Pierce Co., and Washington State, 1990

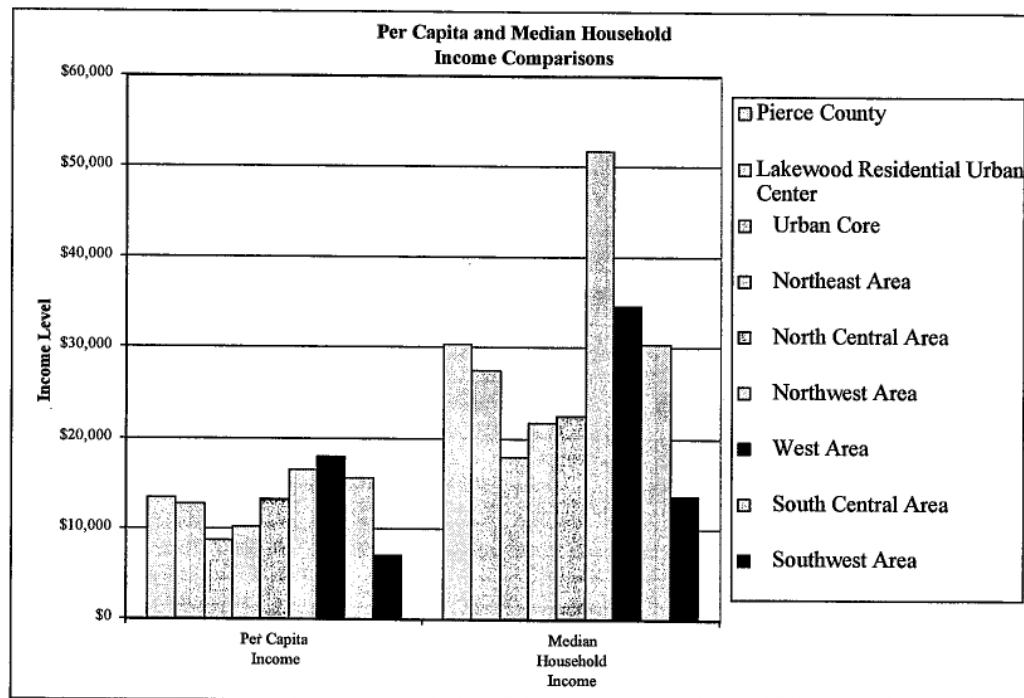
Characteristic	Lakewood*	Pierce County	Washington State
Age			
•median age	30.7 years	31.3 years	33.1 years
•% under 18	24.9%	27.2%	25.9%
•% over 65	10.7%	10.5%	11.8%
Household Income			
•median household income	\$27,522	\$30,412	\$31,183
•% of County	90.5%	--	--
•% of State	88.3	97.5%	--
Per Capita Income	\$12,758	\$13,439	\$14,923
•% of County	94.9%	--	--
•% of State	85.5	90.1%	--
Persons Living in Poverty Status	8,819	64,068	--
•% of City	16.9%	--	--
•% of County	13.8%	10.9%	--
•% of State	--	--	10.6%
•% Children <18	7.4	4.0	3.5%
•% Seniors >65	0.6	0.9	1.0
Households	22,754	214,652	1,872,431
•Avg Persons/HH	2.48	2.62	2.53
•% in Group Qtrs	3.4%	4.0%	2.5%
•% Single Person	24.1	23.4	25.4
•% Family HH	69.9	70.7	67.6
-couple w/child	23.9	28.4	26.2
-couple w/o child	30.3	28.0	28.8
-male/female single parent	15.7	14.3	12.6
-non-family HH	6.0	5.9	7.0
Race/Ethnicity			
•White	74.5%	85.1%	88.5%
•Black	12.7	7.2	3.1
•American Indian	1.4	1.4	1.7
•Asian	9.5	5.0	4.3
•Other	2.0	1.4	2.4
•Hispanic	5.5	3.5	4.4
Housing Units	24,230	228,842	2,032,378
•Vacant	6.1%	6.2%	7.9%
•Owner Occupied	47.5	60.3	62.6
•Renter Occupied	52.5	39.7	37.4
•Units in Structure			
-single family	53.5	64.6	65.0
-duplex, triplex, multifamily	40.1	25.7	24.8
-mobile home or trailer	5.7	8.9	9.2
-other	0.7	0.8	1.0
Median Value Owner-Occupied	\$88,300	\$82,500	\$93,400
•% of County	107.0%	--	--
•% of State	94.5	88.3%	--
Median Rent (Per Month)	\$355	\$374	\$383
•% of County	94.9%	--	--
•% of State	92.6	97.7%	--

Source: US Census of Population and Housing, 1990

*Note: for purposes of this table the Lakewood Census Designated Place was used—this does *not* include Fort Lewis (Census Tract 729.02) or McChord (Census Tract 729.01) nor a small portion of Census Tract 717.01 east of I-5 or the Steilacoom portion of Census Tract 721.10.

Residents of Lakewood have median income for households nearly 10% less than typical for the county and nearly 12% less than the state in 1990. Per capita average income, which is more influenced by extremes (high or low), was 95% of the county's per capita personal income and 85.5% of the state's level. Even though there are concentrations of higher income households in Lakewood (as discussed below), overall this index of community well-being shows that the typical household and/or individual does not do as well as in the whole county or state.

Figure 2-3 Income Lakewood Subareas



Source: US Census of Population, 1990

Approximately one of every six persons (16.9%) of all ages living in Lakewood in 1990 was considered living in poverty status, compared to one of every seven persons in the county (10.9%) or 10.6% of persons in the state. Lakewood has more than twice the percentage of children, defined as persons less than 19 years of age, living in poverty (7.4%) than did the state (3.5%) and the county (4.0%). Lakewood area had roughly 9% of the county's population in 1990, but 13.8% of the county's persons living in poverty status.

Figure 2-4 Poverty Status: Lakewood Subareas

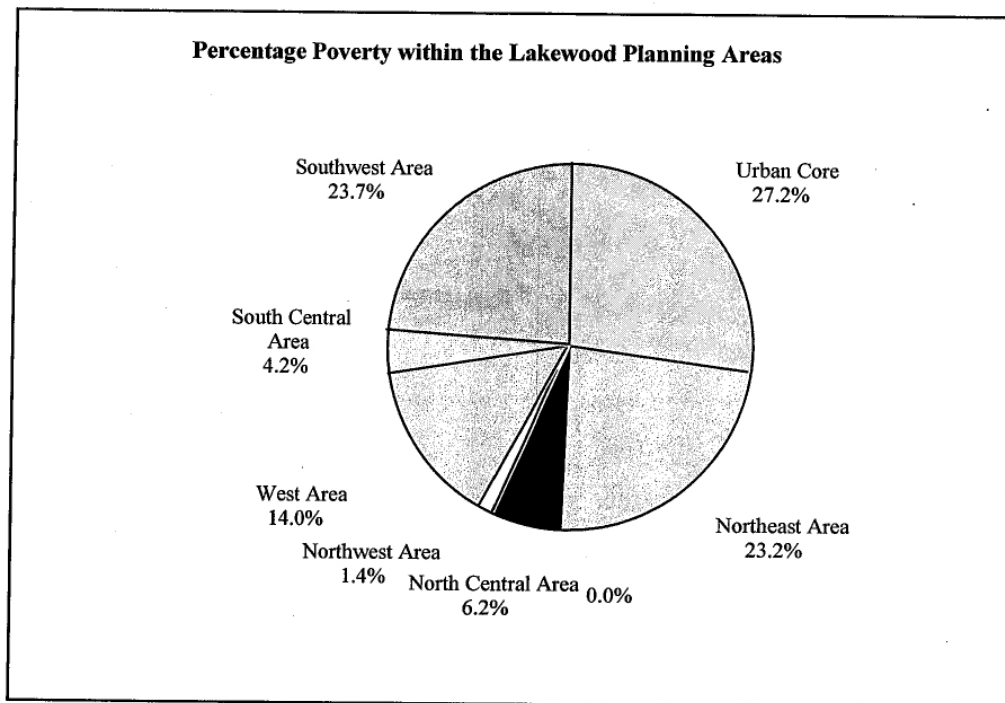


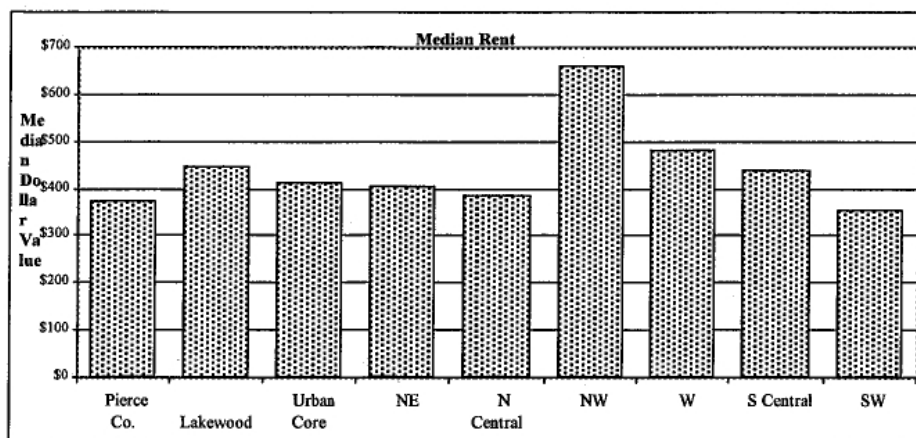
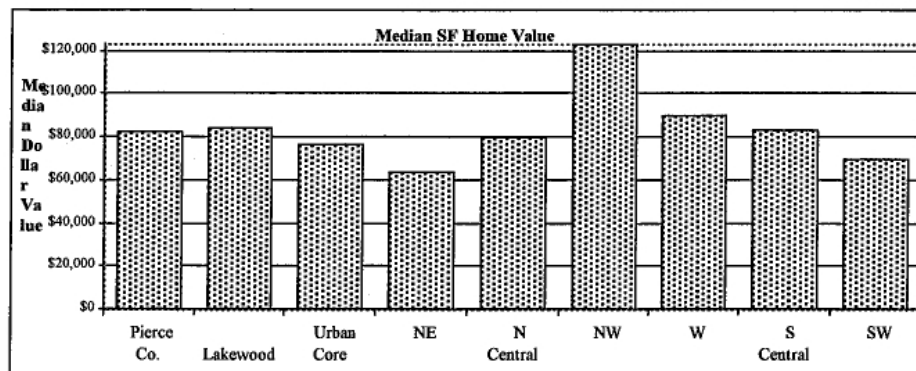
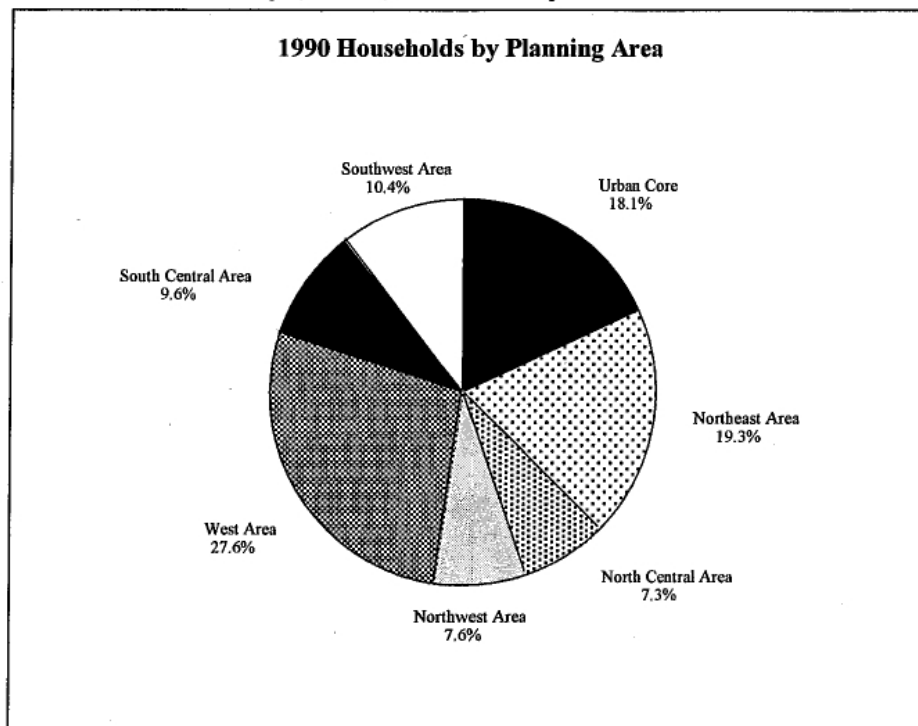
Table 2-4 Household Income and Poverty Status by Lakewood Subarea

Region/Jurisdiction	Income		Poverty Status
	Median Household	% of County Median	% of Area Population
Washington State	\$31,183	102.5%	10.6%
Pierce County	\$30,412	100.0	10.9
Lakewood Planning Areas	\$27,522	90.5%	16.9
•Urban Core	\$17,978	59.1	25.8
•Northeast Area	\$21,734	71.5	21.6
•N Central Area	\$22,400	73.7	16.6
•Northwest Area	\$51,713	170.0	2.2
•West Area	\$34,674	114.0	8.6
•S Central Area	\$39,472	129.8	8.1
•Southwest Area	\$13,680	45.0	39.1

Source: 1990 Census of Population and Housing.

The median value of housing units seven years ago was higher by 7% than the county, \$88,300 versus \$82,500, although lower (by 5.5%) than the state. More recent information is provided in the real estate section below. Rent levels in the census year for housing units in Lakewood were 94.9% of the county's median monthly rent of \$374 or \$355 and 92.6% of the state's (\$383). Comparing these to the county and city's income levels indicates that an average household in Lakewood then paid a higher portion of their incomes in rent and housing than in the county and state. The section on housing discusses housing issues more fully.

Figure 2-6 Households, Ownerships, Value, and Rents by Subarea



The typical size of households (2.48 persons per household) in Lakewood was slightly less than the county (2.62) and state (2.53). The percentage of single person households (24.1%) was similar to the county (23.4%) and state (25.4%). Single parent households were higher as a percentage of all households in Lakewood (15.7%) than the county (14.3%) or state (12.6%).

There is relatively more cultural, ethnic, or racial diversity in Lakewood than the county or state's pattern. Non-white persons made up 25.5% of the 1990 residents in the Lakewood area, versus 14.9% of the county's and 11.5% of the state's residents. Hispanic persons also made up a higher proportion of the Lakewood area's population (5.5%) versus the county (5.5%) and state (4.4%).

Table 2-5 Household Size, Tenure, Home Value, and Rent by City and Subarea

Region/Jurisdiction	Households		Housing Value and Rent	
	Household Size	Renters % of Total Households	Median SF Home Value	Median Rent
Washington State	2.53	37.4%	\$92,800	\$382
Pierce County	2.62	39.7	\$82,500	\$374
Lakewood Planning Areas	2.45	51.8	\$83,879	\$450
•Urban Core	2.46	78.6	\$76,267	\$415
•Northeast Area	2.47	49.9	\$64,150	\$405
•N Central Area	2.15	79.6	\$80,200	\$386
•Northwest Area	2.56	20.0	\$122,900	\$663
•West Area	2.61	29.0	\$90,033	\$485
•S Central Area	2.31	43.2	\$83,700	\$441
•Southwest Area	2.57	80.9	\$69,900	\$354

Source: 1990 Census of Population and Housing.

Proportionally, there were more renters in Lakewood (52.5% of households in housing units in 1990) which is dramatically different than the 39.7% and 37.4% of renters households in the county and state, respectively. This parallels the composition of housing types in Lakewood (i.e., 45% multifamily, 55% single family), compared to the county (25.7% multifamily, 64.6% single family) and the state 24.8% multifamily (65.0% single family residences). The Lakewood area at the census year (1990) had 16.5% of the county's multifamily units though retaining 10.6% of all county housing units. Lakewood has a significantly lower percentage of mobile home/trailer housing units (5.7%) than the county (8.9%) or state (9.2%).

After incorporation in 1997, the State's Office of Financial Management estimated that the pattern holds within the City of Lakewood's boundaries as indicated in Tables 2-6 and 2.7.

Table 2-6 Composition of Housing Units in Lakewood: 1997

	# of Units	% of Units	% of County's Units
Single Family	13,119	49.4%	7.7%
Multifamily	11,889	44.8	17.1
Mobile Homes, Trailers & Other	1,526	5.8	5.0
	26,534	100.0%	9.8%

Source: Office of Financial Management, State of Washington, 1997.

This pattern of predominance of multifamily units compares to the patterns in the following cities in Pierce County (Table 2-7):

Table 2-7 Comparison of Multifamily Units among Pierce County Cities: 1997

	% Multifamily Units
Lakewood	44.8%
University Place	42.3
Sumner	38.3
Gig Harbor	37.3
Steilacoom	34.0
Puyallup	33.8
Tacoma	33.7
Edgewood	10.8
Incorporated Pierce County	35.0
Unincorporated Pierce County	12.7
Total Pierce County	25.6

Source: Office of Financial Management, State of Washington, 1997.

The pattern of multifamily residences in areas of South King County and Thurston County are shown in Table 2-8.

Table 2-8 Percentage of Multifamily Units in Region: 1997.

	% Multifamily Units
Incorporated King County	43.2%
All of King County	36.3
•Auburn	42.5
•Burien	38.6
•Des Moines	41.9
•Federal Way	41.8
•Kent	46.7
•Normandy Park	16.8
•Renton	48.0
•Sea-Tac	36.3
•Seattle	47.3
•Tukwila	54.1
Thurston County	
•Olympia	37.8
•Lacey	31.7
•Tumwater	40.9

Source: Office of Financial Management, State of Washington, 1997.

This characteristic (i.e., large percentage of multifamily units) results from several factors: Lakewood is as much a central place as it is a suburb; there is a large concentration of employment (both public [military] and private) nearby; and, as is the case with several of the jurisdictions cited above, county government regulations and permitting tended to allow multifamily development. The City of

Lakewood is a fairly densely developed area. Table 2-9 compares the development density for cities near to Lakewood and of similar size.

Table 2-9 Population Density of Pierce County, South King County and Cities of Comparable Size to the City of Lakewood: 1996 (persons per square mile)

City	County	Persons per Square Mile
Lakewood	Pierce	2,616
Tacoma	Pierce	3,772
Fircrest	Pierce	3,687
University Place	Pierce	3,658
Lakewood	Pierce	3,139
Puyallup	Pierce	2,577
Milton	Pierce	2,345
Gig Harbor	Pierce	2,165
Sumner	Pierce	1,453
Bonney Lake	Pierce	1,404
Fife	Pierce	1,384
Edgewood	Pierce	1,148
Des Moines	King (South)	4,942
Burien	King (South)	4,057
Federal Way	King (South)	3,584
Renton	King (South)	2,659
Bellevue	King	3,375
Kent	King (South)	2,237
Sea-Tac	King (South)	1,839
Tukwila	King (South)	1,696
Auburn	King (South)	1,756
Bellingham	Whatcom	2,380
Everett	Snohomish	2,645
Spokane	Spokane	3,199

Source: 1997 Washington State Almanac: An Economic and Demographic Overview of Counties and Cities.

2.2.3 Lakewood Households in Need of Assistance

1. Renter Households

There were 11,941 renter-occupied units in Lakewood in 1990. Forty-five percent (or 5,373 households) had housing problems, and need assistance. These are households lacking a complete kitchen, lacking complete plumbing, having more than 1.01 persons per room, or paying more than 30 percent of their income for rent. In all, 2,175 renter households were paying more than 50 percent of their income for rent, which represents an extreme cost burden. The level of need varies, predictably, by income.

Very Low Income - 0 to 30 Percent of Median. Over 80 percent of households in this income group had housing problems. Seventy-eight percent were over 30

percent cost-burdened and almost two-thirds (64 percent, or 1,675 households) were paying over half of their income for rent. Almost all (93 percent) of large family households (more than 5 people in the household) in this income range had housing problems.

Low Income - 31 to 50 Percent of Median. As above, over 80 percent of households in this income range had housing problems. A higher percentage of large family households had problems (92 percent). About three-quarters of households were paying more than 30 percent of their income for rent and 21 percent (452 households) were 50 percent or more cost-burdened. A higher percentage of elderly households were burdened at this level.

Moderate Income - 51 to 80 Percent of Median. Forty-five percent (1,195 households) in this income range had housing problems. A greater percentage (64 percent) of large family households had problems. However, a higher percentage of elderly households were burdened with housing costs in excess of 30 percent and 50 percent of their income.

Middle Income - 81 to 95 Percent of Median. Far fewer households (237) in this income range had housing problems. More elderly households faced cost burdens than other types of renters.

Table 2-10 Lakewood Renter Households in Need of Assistance by Type Household, Income Level, and Housing Need 1990

Income Level and Housing Need	Type of Household				Total
	Elderly	Small Family	Large Family	Other	
0-30% Median Income	239	1,075	478	835	2,627
With housing problems	62%	84%	93%	80%	82%
Cost burdened (>30%)	60%	81%	80%	79%	78%
Cost burdened (>50%)	43%	67%	63%	66%	64%
31-50% Median Income	176	1,015	430	528	2,149
With housing problems	70%	82%	92%	77%	82%
Cost burdened (>30%)	69%	78%	69%	73%	74%
Cost burdened (>50%)	29%	20%	19%	22%	21%
51-80% Median Income	126	1,433	621	447	2,627
With housing problems	55%	39%	64%	38%	45%
Cost burdened (>30%)	54%	33%	30%	36%	34%
Cost burdened (>50%)	10%	0%	1%	4%	1%
81-95% Median Income	35	597	287	156	1,075
With housing problems	38%	17%	37%	11%	22%
Cost burdened (>30%)	38%	7%	10%	10%	9%
Cost burdened (>50%)	15%	1%	0%	0%	1%
Total Households	702	5,970	2,388	2,881	11,941
With housing problems	50%	40%	56%	44%	45%

2. Owner Households

A similar analysis of owner households indicates that about 16 percent of owner households need assistance because of housing problems. That represents 1,726 households in all, about 30 percent of which are elderly.

There were 10,813 owner-occupied units in Lakewood in 1990. Fifteen percent, or 1,632 households, are paying in excess of 30 percent of their income for housing. A smaller portion (533 households, 5 percent of the total) are paying 50 percent or more of their income for housing.

Very Low Income - 0 to 30 Percent of Median. About two thirds of elderly households at this income range have problems, as do almost 90 percent of other households. Over 30 percent (118) elderly households pay half or more of their monthly income for housing. Sixty-six percent (176) non-elderly households pay 50 percent or more of their income for housing.

Low Income - 31 to 50 Percent of Median. There were estimated 865 owner households in this income range. Just over 60 percent were elderly households, 25 percent of who had housing problems and potentially needed assistance.

A much larger share of other owner households in this income range were estimated to have housing problems. Almost 70 percent were cost-burdened and 34 percent were extremely cost-burdened.

Moderate Income - 51 to 80 Percent of Median. In this income category, 38 percent of owner households are estimated to have housing problems. Just over one-third are paying 30 percent or more of their income for housing and 6 percent (84 households) are paying 50 percent or more of their income for housing.

Middle Income - 81 to 95 Percent of Median. While fewer owners need assistance at this income range, 260 households (27 percent) had housing problems. Twenty-four percent were 30 percent or more cost-burdened. Just 1 percent was paying 50 percent or more of their income for housing.

Table 2-11 Lakewood Owner Households in Need of Assistance by Type Household, Income Level, and Housing Need 1990

Income Level and Housing Need	Type of Household		Total
	Elderly	Other Owners	
0-30% Median Income	382	267	649
With housing problems	67%	88%	76%
Cost burdened (>30%)	67%	87%	75%
Cost burdened (>50%)	31%	66%	45%
31-50% Median Income	541	324	865
With housing problems	25%	72%	43%
Cost burdened (>30%)	25%	68%	41%
Cost burdened (>50%)	7%	34%	17%
51-80% Median Income	732	891	1,623
With housing problems	16%	55%	37%
Cost burdened (>30%)	15%	50%	34%
Cost burdened (>50%)	3%	7%	5%
81-95% Median Income	286	687	973
With housing problems	7%	35%	27%
Cost burdened (>30%)	7%	31%	24%
Cost burdened (>50%)	0%	1%	1%
Total Households	3,182	7,631	10,813
With housing problems	17%	16%	16%

2.2.4 Update of Demographic Character

The US census provides a periodic standard and uniform method and procedure to ensure that demographic, population, and housing patterns can be compared. Unfortunately, the census data are published every ten years. Currently those data are 7-8 years old. In addition, the relatively new status of Lakewood precluded publication of recent detailed state population and housing estimates until very recently.

Updating the information on the City of Lakewood's demographic character is somewhat problematic. The last comprehensive US Census of Population and Housing in 1990 provided a whole range of data by specific local jurisdictions and small areas within jurisdictions, census tracts. State and local sources update population estimates and housing unit estimates, but demographic detail are not available. What is available is collected for counties, not smaller areas. Several local agencies and the school district contracted to obtain data since the census. In addition, there are national data services that provide intracensal estimates based on formulas derived from national patterns. These non-census data sources are not necessarily comparable.

Several trends were considered in attempting to update local demographic descriptions of Lakewood:

- Population growth - the general population growth in the areas of Lakewood covered by state agencies appears to have increased at a pace faster than historically for the area. The national data source did not match this, but estimated recent population growth at historic rates.
- Household incomes - the only intracensal estimates are for Pierce County for per capita personal and median household income. While the per capita income in Pierce County increased at the same pace as the state and nation (1990 to 1995-20.8%, 21.0% and 21.2% respectively), the median household income estimates for Pierce County were slower, 31.5% versus 37.6% for the state from 1989 to 1997. The national data source information provided by the T.A.T. indicated comparable household income increases for the county, but the rate of increase for the Lakewood area was slightly less than 50% faster than the county's and the national data source had the Lakewood area's per capita income increase at more than twice the county's estimated pace. These results do not seem comparable. School district data indicated that students eligible for free and reduced price lunches have increased, while enrollment has tended to be stable.
- Ethnicity - the school district monitors the racial/ethnic composition for enrollment. During the past 15 years the Asian, American Indian, Black, and Hispanic students have increased as a percentage of school enrollment. The racial/ethnic composition of the school enrollment is much more diverse than the community's population at large.
- Home ownership - there are no data comparable to the census data; however, the national data system estimated that whereas 1990 census data showed a 47.5% ownership rate, their 1996 estimate was 50.2%; this is a fairly significant change to have occurred in six years if in fact the information is comparable.

Just as with any enterprise, periodic updating and monitoring of data, information, and performance are important; this is also true for local communities. Typically monitoring economic, land use/real estate, and public finance trends are possible,

albeit with a lag of from one to three years. Demographic trends are harder to monitor but typically also do not change as rapidly.

As the city continues to grow, it will be able to take advantage of state, local, and regional data sources to monitor its trends and conditions within its own specific boundaries. The city's GIS system; and housing and building permits will allow it to make periodic estimates of the amount of population if not its composition.

2.2.5 Diversity Among Planning Areas of Lakewood

There is wide variation among the seven planning subareas. The demographic patterns within the city around the overall or typical patterns are described above. The share of population of each sub-area also ranges from 6.3% of the city's population (North Central Planning Area) to 27.4% (West Planning Area). The distribution of population and housing units in 1990 is shown in Table 2-12. Detailed land use inventory provides a refinement of this pattern (see Chapter 3).

Table 2-12 Distribution of Population and Housing Units within Lakewood: 1990

Lakewood Planning Area	% of Population	% of Housing Units
Urban Core	17.9	18.2
Northeast	18.2	19.5
North Central	6.3	7.5
Northwest	11.1	7.6
West	27.4%	26.8%
South Central	8.7	9.6
Southwest	10.3	10.8

Source: US Census of Population: 1990.

The only place in the city where the percentage of population exceeds the percentage of housing units is the Northwest Planning Area. This area includes the area known as Oakbrook. The Northwest Planning Area had the highest (170% of county) median household income; the second highest number of persons per household and per capita personal income; lowest percentage of total persons (2.2%) and children (0.4%) living in poverty status; highest percentage of home ownership (69.1%); highest median home value (49% above county median); and rental rate per month 77.3% above the county average.

The subareas less well-off based on the decennial census data were:

- lowest percent of owner-occupied housing—North Central and Southwest
- lowest median house value—Northeast and Southwest

- lowest median monthly rent—North Central and Southwest
- smallest household size—North Central and South Central
- lowest average per capita income—Urban Core and Southwest
- lowest median household income—Northeast and Southwest
- lowest percentage of persons in poverty status—Urban Core and Southwest

The minority population groups are distributed throughout the Lakewood planning areas as shown in Table 2-13.

Table 2-13 Distribution of Minority and Hispanic Population in Lakewood

Subarea	% of City's Minority Population	% of Hispanic Population
Urban Core	40.1%	7.0%
Southwest	33.0	7.3
Northeast	25.8	3.8
North Central	25.0	5.6
South Central	22.6	4.6
West	15.9	4.0
Northwest	14.8	2.2
Citywide	24.8%	4.8%

Source: US Census of Population: 1990.

2.2.6 Summary

The dimensions of demographic diversity in Lakewood are very important to understand for the planning process. They are also not necessarily relevant since these are all areas of one city that will increasingly be called upon to function as one place, now that it is incorporated.

An important reason to examine the statistics for planning areas is to appreciate that the residents of Lakewood are complex and not easily described by reference to a few generalizations. These patterns exist for complex historic economic, social, and lifestyle reasons. The main vehicle by which different areas of a community exhibit a diverse pattern is a combination of real estate market and lifestyle choices. Size, price, age, condition, and type of housing and neighborhood attract demographic groups who find old or new housing to fit their budgets and housing preferences. The local housing stock does not change rapidly. Typically, the demographic character of neighborhoods does not change rapidly, although they can. Rapid change usually occurs by two means:

- a large amount of new construction of housing units on vacant ground that are different than the existing stock of housing units; or

- substantial numbers of new households are attracted because of some “natural” economic or demographic change; for example, a frequent pattern is new younger families with children moving into a neighborhood of older less expensive homes that are being sold by smaller older households with grown children.

Demographically, the City of Lakewood has more in common with older urban centers than with newer rapidly growing suburbs. These areas emerging at the edge of the metropolitan area tend to be more homogeneous and better off with high home values. Lakewood can be expected to grow at more moderate rates compared to outlying areas. The current diversity patterns for Lakewood are more consistent with urban centers than edge suburbs.

CHAPTER 3: LAND USE

Although Lakewood has been an independent city for only 18 months, land use patterns are clearly defined and mature. Most of the easily developed land within the city boundary has been improved in some manner. Current land use patterns in the City of Lakewood are largely the result of two different forces, the first being single family neighborhood development. The western part of the city is almost entirely residential in character, due in part to the attractiveness of its many lakes. By contrast, land uses in the eastern part of the city are dominated by long established commercial development. This development pattern has in part been dictated by the many transportation arterials, especially State Highway 99, Bridgeport Way, Steilacoom Boulevard, the Burlington-Northern Railroad, and more recently Interstate 5.

The presence of the two adjacent military installations—McChord Air Force Base and the Fort Lewis Army installation—is another major regional force influencing land use patterns. Lakewood is surrounded on the east and south by these two installations and considers itself the host community for both. Most major entrances into these two large bases are through Lakewood, and many of the military personnel who serve there live and/or shop in Lakewood, along with their families. The presence of these bases has a noticeable impact on Lakewood's demographics and, consequently, land use patterns.

The purpose of this chapter is to describe existing land use patterns within Lakewood. In general, the discussion is restricted almost entirely to conditions within the city limits, although occasionally mention will be made of adjacent conditions. It begins with a discussion of existing conditions, including: (1) identification of the county Urban Growth Boundary; (2) land cover and development patterns; (3) existing land use; and (4) existing city zoning, including a discussion of several zoning changes implemented since the adoption of the Interim Comprehensive Plan at the time of incorporation. This is followed by a discussion of land use trends and projections, including identification of development patterns based on recent satellite imagery and projections for population, housing demand, and employment growth for the 20-year timeframe encompassed by the Comprehensive Plan. This chapter also includes a summary

of countywide land use policies as established by the Pierce County Comprehensive Plan. As mandated under the GMA, city land use policies must support the broader county-wide land use policy. The chapter concludes with a discussion of the implication for planning of the data presented.

A number of different data sources were relied upon in developing this chapter. First, spatial data for map images, as well as data on natural resources, came from the Geographic Information System (GIS) departments of various government agencies, including the Department of Natural Resources, the Department of Ecology, the Department of Fish and Wildlife, and most importantly, Pierce County. Data on existing land use and housing conditions came from an extensive database developed by the City of Lakewood Planning Department, based on a parcel-by-parcel survey undertaken in 1996 and 1997. Additional data on land cover patterns and development trends came from the Puget Sound Regional Council, including imagery based on satellite images and aerial photography.

3.1 Existing Conditions

3.1.1 Planning Areas

As described in Chapter 1, Lakewood was divided into 7 distinct planning areas:

1. Urban Center Planning Area
2. Northeast Lakewood Planning Area
3. North Central Lakewood Planning Area
4. Northwest Lakewood Planning Area
5. West Lakewood Planning Area
6. South Central Lakewood Planning Area
7. Southwest Lakewood Planning Area

Identification of these 7 planning areas is intended to simplify discussion of the land use and census data throughout this Background Report. To a large degree, the boundaries of these areas are based on 1990 census tracts, allowing for relationships to be drawn between land use and socioeconomic data with relative ease. In some cases, a census tract may be split between several planning areas. For example, the boundaries of the Urban Center Planning Area follow those identified by the Puget Sound Regional Council in their study of Urban Centers

throughout the Puget Sound region (PSRC 1997). PSRC used physical boundaries such as streets and significant development rather than census tracts to define the Urban Center.

3.1.2 Land Cover & Development Patterns

Land cover information provides a way to understand general development and environmental patterns present in Lakewood. Unlike other land use statistics presented in this section, land cover information is not related to specific parcels but rather identifies what is actually present on the ground. An individual parcel may contain multiple types of land covers.

Land cover data for the City of Lakewood are shown in Figure 3-1. This information was obtained from 1992 satellite imagery obtained from the Puget Sound Regional Council. Six land cover classifications are shown that were generated from an August 1992 LANDSAT Thematic Mapper image. These classifications are. Developed, Agricultural, Natural Open Land, Forest Land, Water, and Barren Land (see Table 3-1). A description of each of these land cover classifications follows:

- Developed - modified for human use (e.g., roads, buildings, houses).
- Agriculture - Pasture and farm land (e.g., livestock grazing, turf farms, crops).
- Natural Open Land - land that has not been significantly modified by human activity and contains low vegetation (e.g., grasslands and scrubs).
- Forest Land — trees.
- Water - lakes, ponds, streams, etc.
- Barren Land - land devoid of vegetation and developed structures (e.g., gravel pit, bare lots).

Figure 3.1
Existing Land Co

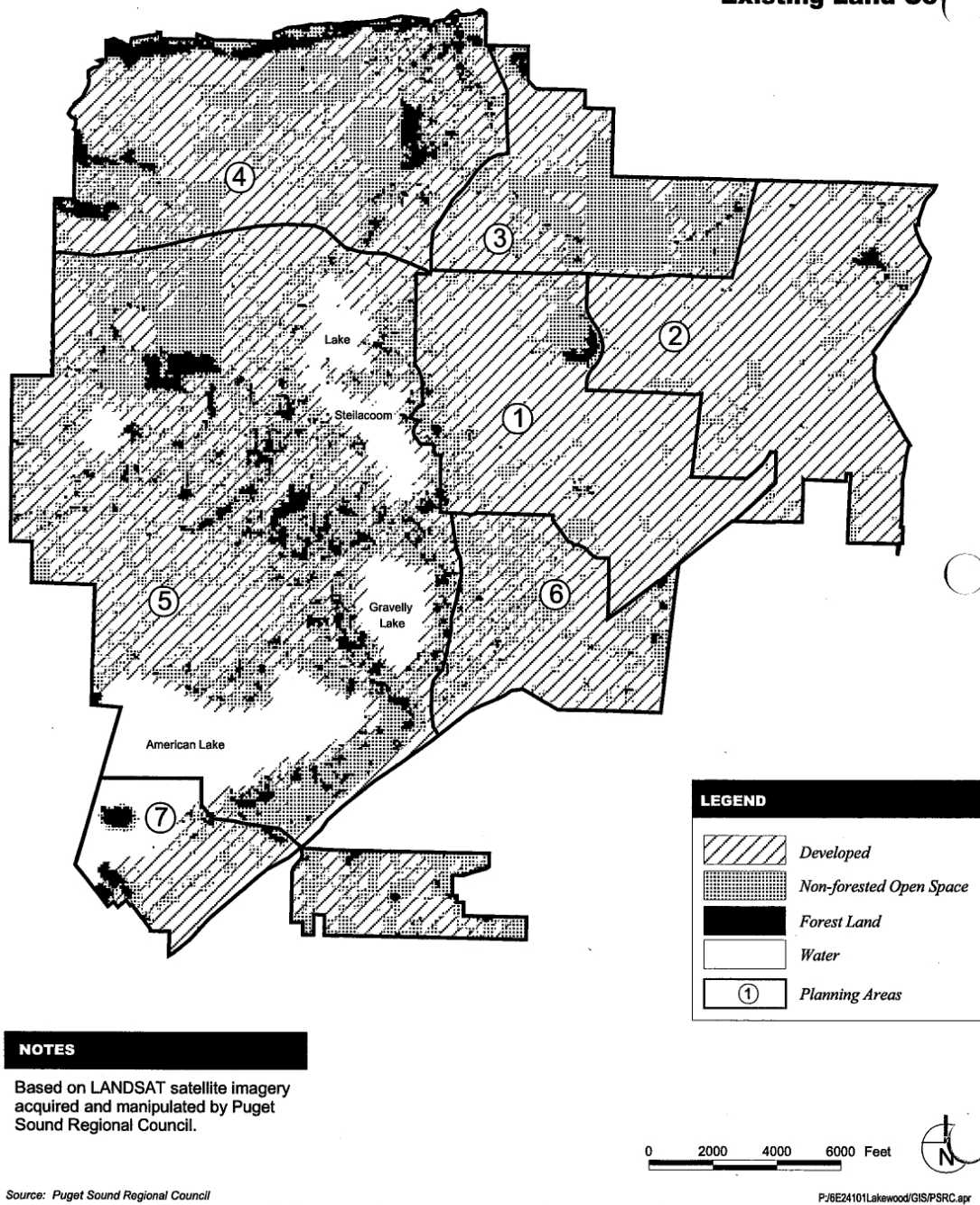


Table 3-1 Land Cover in the City of Lakewood

Land Cover	Area (acres)¹	Percentage of Total
Developed	7,245	59%
Agriculture	50	<1%
Natural Open Land	3,297	27%
Forest Land	624	5%
Water	955	8%
Barren Land	15	<1%
Total²	12,186	100%

Note:

1 Acreages were calculated from a GIS coverage and rounded to the nearest whole number.

2 Area totals may vary from totals in other tables due to discrepancies in GIS data sources.

Source: Puget Sound Regional Council and EDAW, Inc., 1997.

As apparent in Figure 3-1, developed land is the predominant land cover type in the City of Lakewood and is relatively abundant in all parts of the city. While it is particularly dominant in the Urban Center and Northeast Planning Areas, Developed land represents close to or above 50% of the total land area in each of the 7 planning areas.

There are some large areas of open land found in many areas of the city. However, little of this represents public open space. The largest areas of public open space are found in Planning Area 1, with the Flett wetlands, and in Planning Area 5, represented by Steilacoom County Park. Other large areas of open land include golf courses in Planning Areas 4 and 5, and open space associated with Western Washington Hospital in Planning Area 4.

Two significant concentrations of forested land are apparent in Figure 3-1. One of these, the largest contiguous parcel of forest lands in the city, stretches along the northern border of Lakewood on the steep slopes adjacent to Chambers Creek. The second significant concentration of forest cover is found scattered throughout the large lot residential areas west of Gravelly and Steilacoom Lakes, and east of Lake Louise. These forest lands are potentially vulnerable to future residential development.

Open water is a major land cover type present in Lakewood due to the many lakes. These are found predominantly in Planning Areas 5 and 7. Agricultural or barren lands are present in small pockets throughout Lakewood but amount to minimal land area.

3.2 Land Use

Two major sources of data were used to assemble statistical information about land use within Lakewood. The first and most important of these is a comprehensive parcel-by-parcel existing land use survey conducted by the City of Lakewood during 1996 and 1997. City planning interns conducted a physical survey of all land within the city boundaries and created a database of the results. Organized by tax assessor parcel number, the database consists of these survey data as well as additional information from the county assessor's office. For the purposes of this report, all data identifying parcel areas within this survey are assumed to be identical with the county assessor's records. Land use statistics presented in this report are based on this parcel survey database, unless otherwise noted.

The other important source of information is the city's GIS. This GIS was assembled from existing GIS data sources, including Pierce County information services, the Puget Sound Regional Council, and various state agencies such as the Department of Natural Resources, the Department of Ecology, and the Department of Fish and Wildlife. The Lakewood GIS has been used to create most of the map-based figures in the Background Report and serves as a valuable cross-reference regarding area tabulations.

It should be noted that for various unavoidable historical and cartographic reasons, physical descriptions of individual parcels (e.g., square footage) vary between these two sources. When this is the case, the city's parcel survey database was used rather than the GIS system. As mentioned above, the parcel database is assumed to be equal to the assessor's data.

The city's land use survey assigns all parcels to 1 of 27 categories of land use, as identified in Table 3-2. Although very useful for the City of Lakewood's planning purposes, these categories are too finely divided for purposes of this report, which is intended to summarize general land use patterns throughout the city. Therefore, these land uses were reclassified into a total of 13 summary categories. The basis of this reclassification is also shown in Table 3-2. Existing land use, classified by these summary categories, is also shown in Figure 3-2.

Figure 3.2
Existing Landuse

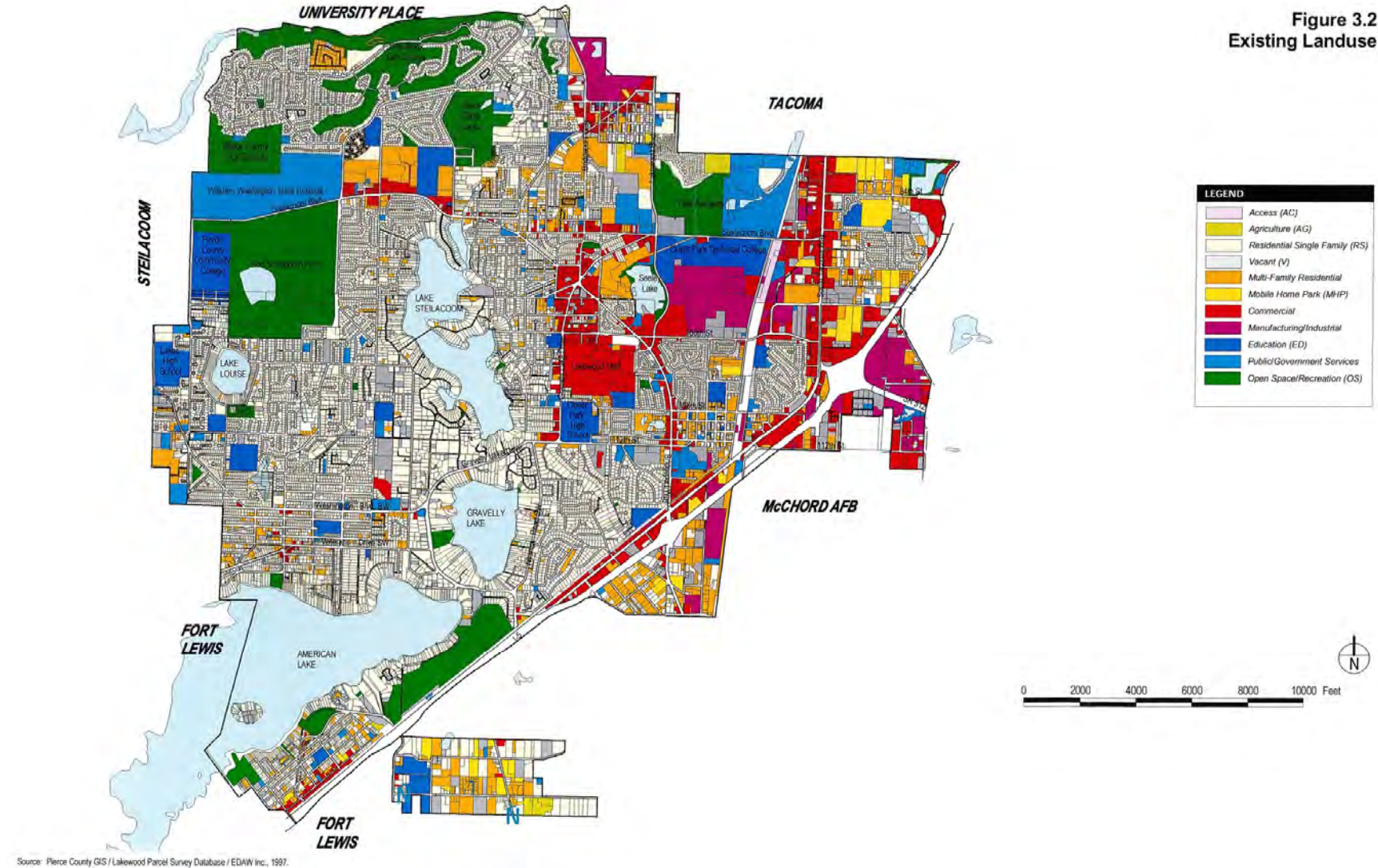


Table 3-2 Categories of Existing Land Uses in the Lakewood Parcel Database

Summary Categories	Land Use Survey Categories	Symbol	Definition
Access	Access	AC	parcel is used entirely as a driveway
Agriculture	Agriculture	AG	land used for growing crops
Residential Single Family	Residential Single Family	RS	one house per parcel, including mobile homes
Mobile Home Park	Mobile Home Park	MHP	four or more mobile homes
Multi-Family Residential	Residential-Duplex	DUP	two residences per building
	Residential-Triplex	TRI	three residences per building
	Residential-Fourplex	4P	four residences per building
	Retirement/Group Homes	GH	five or more people per room
Commercial	Transitional Housing	TH	residential hotels
	Adult Entertainment Communication	AD CMU	classified by city ordinance land used for telephone, radio, television operations
	Commercial Retail	CR	retail sales such as gas, groceries, restaurants, bars, etc.
	Commercial Services	CS	professional offices, hair salons, auto repair, etc.
Manufacturing/Industrial	Commercial Vacant	CV	empty building/storefront
	Heavy Manufacturing	HI	wood products, cements, chemicals, metals
	Light Manufacturing	LI	food, clothing, newspapers, scientific instruments
	Mineral Commercial Warehouse	MIN CW	sand & gravel operations automotive, hardware, construction material
Education	Education	ED	schools, technical institutes, colleges
Public/Government Services	Government Services	GOV	military, police, fire, postal, administration
	Public Assembly	PA	theaters, stadiums, arenas, auditoriums
	Quasi-Public	QP	churches, libraries, museums, historic sites, cemeteries
Open Space/Recreation	Utilities	UT	substations, water towers, drainfields, catch basins
	Open Space/Recreation	OS	parks, playing fields, greenbelts
Street Right-of-way	Street Right-of-way	ROW	public street ROW
Vacant	Vacant	V	no buildings on lot
Water (Lakes)	Water	Water	lake surface
No Parcel Data Available	No Parcel Data Available	No Data	No parcel data available

Source: City of Lakewood Planning Department, 1998.

Of Lakewood's total area of 12,118 acres, 11,927 acres are accounted for in the city's parcel survey database. The remaining 191 acres consist of unclassified parcels and land outside all planning areas. Table 3-3 shows how the 12,106 acres are distributed by land use and by planning area. Several facts are immediately apparent from a quick review of this table. First, Lakewood is a mature developed community, with a scarcity of large undeveloped tracts of land. Land used for Agriculture accounts for only 42 acres of the city total, while Open Space/Recreation land accounts for only 1,427 acres, or less than 12% of the land base, excluding lakes and rights-of-way. This represents 1 acre of Open Space land for every 3.5 acres currently occupied by residential uses. There is no land identified as 'Resource' land. In the future, growth will occur through infill or redevelopment. Secondly, Lakewood is a predominantly residential community, with 41% of the total area occupied by homes, apartments, mobile homes, and other residential uses. Combined residential uses occupy 5,019 acres, with the majority of that being devoted to single family residences. Each of the seven planning areas is described further below.

Table 3-3 Planning Area Acreage Summaries

Land Use	Area 1 (acres)	Area 2 (acres)	Area 3 (acres)	Area 4 (acres)	Area 5 (acres)	Area 6 (acres)	Area 7 (acres)	Summary by Land Use	% of Total Area
Access	4	21	3	0	6	14	0	48	0.4%
Agriculture	0	0	26	0	0	0	16	42	0.3%
Residential Single Family	408	193	190	720	2021	340	229	4101	33.8%
Mobile Home Park	12	99	1	0	0	10	33	154	1.3%
Multi-Family Residential	143	104	102	107	106	104	97	764	6.3%
Commercial	297	323	39	37	19	44	20	777	6.4%
Manufacturing/ Industrial	17	253	65	0	0	14	0	348	2.9%
Public/ Government Services	53	39	188	19	60	11	9	378	3.1%
Education	68	110	1	57	160	10	39	445	3.7%
Open Space/ Recreation	44	35	105	650	560	0	32	1427	11.8%
Street ROW	309	248	83	222	545	188	119	1712	41.1%
Vacant	67	146	63	51	176	74	57	635	5.2%
Water	0	0	0	0	928	0	170	1098	9.1%
No Data	39	33	7	59	27	11	2	179	1.5%
Acre Totals	1460	1603	872	1922	4607	820	822	12106	100%
Percentage Totals	12%	13.2%	7.2%	15.9%	38%	6.8%	6.8	100%	

Source: City of Lakewood Parcel Survey Database, 1998.

3.2.1 Planning Area 1: Lakewood Urban Center

The Urban Center Planning Area (Planning Area 1) consists of 1,460 acres located in the heart of Lakewood (Table 3-4). It is bounded by Steilacoom Boulevard and 100th Street on the north, 112th Street on the south, 1-5 on the southeast, and Halcyon Road on the east. To the west the boundary follows a series of residential streets, placing most of the residential area on the east side of Steilacoom Lake within Planning Area 5. Planning Area 1 contains all of Census Tract 718.02, splits Census Tract 718.04 with Planning Area 2, and Census Tract 719.02 with Planning Area 5.

Table 3-4 Distribution of Existing Land Uses in Planning Area 1

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	3.7	0.2%	0.0%
Agriculture	0.0	0.0%	0.0%
Residential Single Family	408.3	28.0%	3.4%
Mobile Home Park	11.7	0.8%	0.1%
Multi-Family Residential	143.0	9.8%	1.2%
Commercial	296.5	20.3%	2.4%
Manufacturing/Industrial	16.7	1.1%	0.1%
Public/Government Services	53.3	3.7%	0.4%
Education	68.0	4.7%	0.6%
Open Space/Recreation	43.9	3.0%	0.4%
Street Rights-of-Way	308.7	21.1%	2.5%
Vacant	67.4	4.6%	0.6%
Water (Lakes)	0.0	0.0%	0.0%
No Parcel Data Available	39.0	2.7%	0.3%
TOTALS	1460.2	100%	12%

Source: City of Lakewood Parcel Survey Database, 1998.

Although Planning Area 1 contains almost all of the commercial areas on either side of Bridgeport Way and Gravelly Lake Drive and includes the Lakewood Mall, existing commercial land uses comprise up only 20% of the planning area. With 297 acres of combined commercial lands, Planning Area 1 has the second largest amount of commercial lands of any planning area. Public/Government Services and Education make up another 8.4%, including the Clover Park High School, while Manufacturing/Industrial lands comprises only 1.1%. All in all, these categories of land use, often thought of as defining land uses in terms of urban centers, include only a total of 30% of the planning area.

In contrast, a total of 39% of existing land use in the Urban Center consists of residential land uses, most of which (408 acres) serves single-family residences and comprises the planning area's dominant land use. Much of this single-family

housing is found in unified, well-maintained, owner-occupied neighborhoods. Some areas are beginning to experience higher rates of renter-occupied units and infill of multiple-family units. Only about 3% of land area in the Urban Center is categorized as Open Space/Recreation. A total of 4.6% of the land in the planning area consists of vacant parcels. These are mostly vacant developed lands in this older developed neighborhood.

3.2.2 PLANNING AREA 2: NORTHEAST LAKEWOOD

The Northeast Planning Area (Planning Area 2) consists of 1,603 acres in the northeast corner of Lakewood, including all of the area east of 1-5 north of McChord AFB, making it the third largest planning area (Table 3-5). This planning area includes a designated industrial and manufacturing center centered on the Lakewood Industrial Park on 100th Street SW, the Clover Park Technical School, four of five potential sites for the terminus of the RTA Commuter rail station, and Lakewood's International District, a substantial Korean community centered on South Tacoma Way. The boundaries of the Northeast Planning Area consist of the city boundaries to the north and the east, the Burlington Northern tracks and Steilacoom Boulevard on the northwest, and the Urban Center Planning Area on the south and west. Planning Area 2 contains Census Tract 717.02, and that part of Census Tract 717.02 found within the Lakewood boundaries. It splits Census Tract 718.04 with Planning Area 1.

Table 3-5 Distribution of Existing Land Uses in Planning Area 2

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	20.5	1.3%	0.2%
Agriculture	0.0	0.0%	0.0%
Residential Single Family	193.1	12.0%	1.6%
Mobile Home Park	98.6	6.1%	0.8%
Multi-Family Residential	103.8	6.5%	0.9%
Commercial	323.4	20.2%	2.7%
Manufacturing/Industrial	252.9	15.8%	2.1%
Public/Government Services	39.5	2.5%	0.3%
Education	109.9	6.9%	0.9%
Open Space/Recreation	34.7	2.2%	0.3%
Street Rights-of-Way	247.7	15.4%	2.0%
Vacant	146.1	9.1%	1.2%
Water (Lakes)	0.0	0.0%	0.0%
No Parcel Data Available	33.2	2.1%	0.3%
TOTALS	1603.4	100.10%	13.30%

Source: City of Lakewood Parcel Survey Database, 1998.

The largest single land use component in Planning Area 2 consists of Commercial properties, which account for 20% of the land base in the area. With 323 acres identified as Commercial, the Northeast Planning Area has the most commercial land of any planning area. The second largest land use component in Planning Area 2 is Manufacturing/Industrial, with 253 acres, or 16%. This largely reflects the presence of the Lakewood Industrial Park, and also manufacturing facilities in the former gravel quarry north and east of the I-5/SR 512 intersection. It also contains 146 acres of land classified as Vacant, which accounts for 9% of the planning area. Vacant lands are scattered throughout the planning area, including in the Lakewood Business Park. Most of the Commercial parcels consist of property located on either side of Highway 99, and in the Lakewood Industrial Park on 100th Street. Other significant clusters of Commercial lands are found along the east side of the Burlington Northern line and at the intersections of I-5 with 84th Street and with SR 512.

Multi-Family residences account for another 6.5% of the planning area, with 104 acres; Residential Single Family land accounts for another 193 acres. Much of this single-family housing is found in two relatively isolated residential neighborhoods - Sylvan Park and South Gate, which are surrounded by Commercial and other land uses. A significant portion of the residential property consists of mobile home parks, with at least 14 found in Planning Area 2, most of them located between Highway 99 and I-5, north of SR 512. Mobile home parks (MHP) account for 99 acres of Planning Area 2, or 64% of the total MIHP land found in Lakewood. A number of residential areas in Planning Area 2 are affected by flight noise from McChord AFB, which helps account for the prevalence of MHPs, sometimes considered a transient land use.

A large parcel classified as open space is found in the northeast corner. This is a former gravel quarry which now serves as stormwater overflow for the City of Tacoma. No other parcels classified as Open Space/Recreation are found in Planning Area 2, which could serve the 396 acres of residential land uses. Some recreation opportunities are found in school playgrounds. The remainder of the planning area consists mostly of small areas of Education, Public and Government Service uses, including the Pierce Transit headquarters at 96th Street and S. Tacoma Way.

3.2.3 PLANNING AREA 3: NORTH CENTRAL LAKEWOOD

The North Central Planning Area (Planning Area 3) consists of 872 acres in the northern part of Lakewood, including a significant portion of the Flett wetlands, possibly the most significant natural open space area within the city boundaries. Planning Area 3 is defined by the boundaries of Census Tract 718.03, except that portion east of the Burlington Northern tracks. The physical boundaries are the city boundary to the north, Bridgeport Way (in part) on the west, Steilacoom Boulevard on the south, and the Burlington Northern tracks on the east. It also contains any assessor's parcels included in Census Tracts 718.036 and 723.06 that are within the boundaries of Lakewood.

Planning Area 3 has the most balanced distribution of land uses of any planning area in Lakewood (Table 3-6). No single category of land use dominates. Seven categories have at least 7% of the total planning area, yet no land use category has more than 22% of the total area. Planning Area 3 has the greatest amount of land classified as Agricultural of any planning area, but it also has a significant component of Manufacturing/Industrial lands.

Table 3-6 Distribution of Existing Land Uses in Planning Area 3

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	2.66	0.3%	0.0%
Agriculture	26.04	0.0%	0.0%
Residential Single Family	189.65	21.8%	1.6%
Mobil Home Park	1.19	0.1%	0.0%
Multi-Family Residential	102.25	11.7%	0.8%
Commercial	38.57	4.4%	0.3%
Manufacturing/Industrial	64.62	7.4%	0.5%
Public/Government Services	187.63	21.5%	1.5%
Education	1.24	0.1%	0.0%
Open Space/Recreation	104.99	12.0%	0.9%
Street Right-of-Way	82.8	9.5%	0.7%
Vacant	63.28	7.3%	0.5%
Water (Lakes)	0.0	0.0%	0.0%
No Parcel Data Available	7.0	0.8%	0.1%
TOTALS	871.92	96.90%	6.90%

Source: City of Lakewood Parcel Survey Database, 1998.

The most common land uses in Parcel Area 3 are Public/Government Services and Residential Single Family each with 22% of the planning area. It is the only planning area where Public/Government Services comprises a significant portion of a planning area's land use (see Table 3-6). The statistics regarding land defined as Public/Government Services include a number of important cemeteries, which

are classified as quasi-public (QP) in the city database, and identified as Public/Government Services in this report. Other parcels identified as vacant may be difficult to develop due to the difficulties associated with wetland development. The Flett wetlands stretch through this area and potentially constrain many of those parcels.

Approximately 34% of the area consists of residential uses, with 22%, or 190 acres, consisting of single family residences, and 12%, or 102 acres, consisting of multi-family residences, much of the latter built in recent years. Although there is limited designated park land in this planning area, there is a sizable percentage of open space in the form of public and private conservation land available for passive recreation.

3.2.4 PLANNING AREA 4: NORTHWEST LAKEWOOD

The Northwest Lakewood Planning Area (Planning Area 4) is the second largest planning area in Lakewood, with 1,922 acres. It contains significant open space areas (south side of Chambers Creek, several golf courses) and major institutions and historical resources (Western Washington State, Fort Steilacoom). The boundaries of Planning Area 4 are the city boundaries on the north and west sides, Steilacoom Boulevard on the south, and Bridgeport Way on the east. It includes Census Tract 721.05, and those parts of 721.06 and 723.08 in the city.

Northwest Lakewood is perceived as having a residential character, with Residential Single Family as the largest component, accounting for 37% of Planning Area 2. Most of this land is in a large golf-course oriented planned unit development in the far northwest corner of Lakewood. There are 107 acres of multi-family housing as well, mostly along Hipkins Road north of Steilacoom Boulevard. Public/Government Services lands account for 19 acres, much of that being Western Washington State Hospital, while another 51 acres are classified as Vacant. This planning area has the largest share of land classified as Open Space/Recreation, (650) or approximately 0.8 acre for every acre of residential property. This open space consists primarily of Chambers Creek Park, the Fort Steilacoom Golf Course (public), and the Oakbrook Golf Course (private).

Table 3-7 Distribution of Existing Land Uses in Planning Area 4

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	0.37	0.0%	0.0%
Agriculture	0.0	0.0%	0.0%
Residential Single Family	719.63	37.5%	5.9%
Mobile Home Park	0.0	0.0%	0.0%
Multi-Family Residential	107.27	5.6%	0.9%
Commercial	36.5	1.9%	0.3%
Manufacturing/Industrial	0.0	0.0%	0.0%
Public/Government Services	18.54	1.0%	0.2%
Education	57.15	3.0%	0.5%
Open Space/Recreation	650.41	33.8%	5.4%
Street Right-of-Way	221.65	11.5%	1.8%
Vacant	50.96	2.7%	0.4%
Water (Lakes)	0.0	0.0%	0.0%
No Parcel Data Available	59.0	3.1%	0.5%
TOTALS	1921.48	100.10%	15.9%

Source: City of Lakewood Parcel Survey Database, 1998.

3.2.5 PLANNING AREA 5: WEST LAKEWOOD

The West Lakewood Planning Area is by far the largest planning area, at 4,607 acres. It has a predominantly residential character and is marked by neighborhoods that surround its many lakes. Over 20% of the planning area is covered by lake water; most of Lakewood's lake area is in Planning Area 5, including Lake Steilacoom, Gravelly Lake, Lake Louise, and American Lake. Other prominent non-residential land uses include Fort Steilacoom County Park and Pierce County Community College. Planning Area 5 is bounded by the city boundary on the west, Steilacoom Boulevard on the north, American Lake and 1-5 on the south, and Nyanza Road on the east. It contains Census Tracts 721.07 and 721.08, and splits 729.02 with Planning Area 1. It also contains that part of Census Tract 721.10 in the city.

As noted, the West Lakewood Planning Area is predominantly residential, with 46% of its land area classified residential (Table 3-8). Of this, 2,021 acres are zoned Residential Single Family, and 106 acres are zoned multi-family. The West Lakewood single family residential component accounts for 17% of the entire land area of the city. No other planning area is so completely dominated by a single land use. Open Space/Recreation is the third largest category of land use, with 560 acres. The greater part of this is found in a single parcel - Fort Steilacoom Regional Park.

Table 3-8 Distribution of Existing Land Uses in Planning Area 5

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	5.8	0.1%	0.0%
Agriculture	0.0	0.0%	0.0%
Residential Single Family	2021.27	43.9%	16.7%
Mobil Home Park	0.0	0.0%	0.0%
Multi-Family Residential	106.33	2.3%	0.9%
Commercial	18.62	0.4%	0.2%
Manufacturing/Industrial	0.0	0.0%	0.0%
Public/Government Services	59.63	1.3%	0.5%
Education	160.04	3.5%	1.3%
Open Space/Recreation	559.87	12.2%	4.6%
Street Right-of-Way	544.54	11.8%	4.5%
Vacant	175.98	3.8%	1.5%
Water (Lakes)	928.02	20.1%	7.7%
No Parcel Data Available	27.0	0.6%	0.2%
TOTALS	4607.1	100.00%	38.10%

Source: City of Lakewood Parcel Survey Database, 1998.

Education uses, which are compatible with the residential nature of the area, total 160 acres. A number of public school facilities are found here, including elementary and middle schools and Lakes High School. Pierce County Community College also contributes to this number. This planning area also holds the greatest share of street rights-of-way, not surprising considering the high percentage of residential streets and cul-de-sacs.

Vacant lots are the fifth largest category of existing land use in Planning Area 5, at 4% or 176 acres. This would appear to indicate a capacity to absorb a fair amount of new residential construction in the area. It may also account for much of the forested character of the area. Figure 3-1, Existing Land Cover, shows that Planning Area 5 has the greatest amount of remaining forest cover in the city outside of the Chambers Creek valley.

There is only a small amount of land use in the Commercial and Public/Government Services land use categories, consisting mostly of small neighborhood retail areas and utility service providers facilities. This would indicate that residents seek services in other parts of the city. There is no agricultural, manufacturing, or industrial land in this planning area.

3.2.6 PLANNING AREA 6: SOUTH CENTRAL LAKEWOOD

The South Central Planning Area consists of the mixed residential/commercial neighborhoods south of the main urban core on either side of I-5, including the

McChord Gate area. The smallest of the planning areas, it contains 820 acres and includes the main entrance into McChord Air Force Base, on Bridgeport east of I-5. It is bounded by McChord AFB on the east; 112th Street, Bridgeport Way, and 1-5 on the north; Fort Lewis and 1-5 on the south; and Nyanza Road on the west. It contains Census Tracts 719.01, and splits Census Tract 718.02 with the Urban Center Planning Area.

Planning Area 6 has roughly the same proportion of its land area in residential use as Planning Area 5, at 41.5%, yet it has a very different character (Table 3-9). While Planning Area 5 residential uses were almost entirely single family, 13% of the residential land in Planning Area 6 is multi-family, and half of that is in duplex units. Furthermore, the South Central Planning Area has 5% of its land area designated Commercial, compared with less than 1% for the West Lakewood Planning Area, most of it in large areas of strip commercial along Highway 99, Bridgeport Way, or other arterials. Together, residential and commercial uses account for 61% of the land area in Planning Area 6.

Table 3-9 Distribution of Existing Land Uses in Planning Area 6

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	14.11	1.7%	0.1%
Agriculture	0.0	0.0%	0.0%
Residential Single Family	340.39	41.5%	2.8%
Mobil Home Park	9.59	1.2%	0.1%
Multi-Family Residential	104.42	12.7%	0.9%
Commercial	43.61	5.3%	0.4%
Manufacturing/Industrial	13.77	1.7%	0.1%
Public/Government Services	10.59	1.3%	0.1%
Education	9.55	1.2%	0.1%
Open Space/Recreation	0.39	0.0%	0.0%
Street Right-of-Way	187.55	22.9%	1.5%
Vacant	74.33	9.1%	0.6%
Water (Lakes)	0.0	0.0%	0.0%
No Parcel Data Available	11.0	1.3%	0.1%
TOTALS	820	99.90%	6.80%

Source: City of Lakewood Parcel Survey Database, 1998.

Vacant land accounts for 9% of Planning Area 6. Other than Right-of-Way, no other category of land use accounts for more than 2% of the land area on Planning Area 6. Education uses total only 10 acres of land, despite the very significant residential land use component, which would appear to indicate that many children must leave their neighborhood to attend school. Less than a single acre of land is categorized as Open Space/Recreation, indicating almost no recreation

opportunities are available to serve the extensive residential development in Planning Area 6.

3.2.7 PLANNING AREA 7: SOUTHWEST LAKEWOOD

Southwest Lakewood is relatively isolated from the rest of Lakewood due to the convergence of American Lake, Fort Lewis, and 1-5 at Ponders Corner. It consists of the two neighborhoods of Tillicum and American Lake Gardens, each separated by 1-5. At 822 acres, it is the second smallest planning area. The boundaries of the planning area are coincident with the city boundaries, except where it meets Planning Area 6 at Ponders Corner, just north of the Tillicum Country Club. Its boundaries are coincident with the boundaries of Census Tract 720.

Residential uses account for 44% of the land area, with Residential Single Family accounting for 28%, Mobile Home Parks 4%, and Multi-Family Residential another 12% (Table 3-10). There is a wide disparity in housing quality, with residences ranging from the Castle, a turn-of-the-century timber baron mansion on the shores of American Lake, to a number of older substandard rental housing developments scattered throughout the area. There is a considerable amount of Vacant land in Planning Area 7 — 57 acres, or 7%. This would seem to indicate a capability to accommodate additional development pressure in the Southwest Lakewood Planning Area for the near future using existing undeveloped land. Indeed, a new housing development of 54 units on 20 acres was just approved on a desirable American Lake shoreline property. However, housing development in Planning Area 7 is constrained by a lack of any available sewer connection. The development of these neighborhoods is already unusually dense for areas served only by individual drain fields and septic tanks.

All other land use categories are present only in small amounts, or absent altogether. With 32 acres, Open Space/Recreation accounts for 4% of the land area, mostly in Harry Todd Park, a city park on the shores of American Lake in Tillicum. There is a small component of Commercial land, mostly along Highway 99 in Tillicum. There are 39 acres of Education lands, in Tillicum Elementary School and Woodbrook Middle School in American Lake Gardens. Southwest Lakewood is one of only two planning areas with any designated agricultural land use, the 16-acre Brookwood Stables in American Lake Gardens.

Table 3-10 Distribution of Existing Land Uses in Planning Area 7

LAND USE	ACRES	% of PLANNING AREA	% of LAKEWOOD TOTAL
Access	0.41	0.0%	0.0%
Agriculture	16.1	0.0%	0.0%
Residential Single Family	228.56	27.8%	1.9%
Mobil Home Park	33.08	4.0%	0.3%
Multi-Family Residential	96.86	11.8%	0.8%
Commercial	19.92	2.4%	0.2%
Manufacturing/Industrial	0.0	0.0%	0.0%
Public/Government Services	8.55	1.0%	0.1%
Education	38.82	4.7%	0.3%
Open Space/Recreation	32.39	3.9%	0.3%
Street Right-of-Way	118.94	14.5%	1.0%
Vacant	56.74	6.9%	0.5%
Water (Lakes)	169.52	0.0%	0.0%
No Parcel Data Available	2.0	0.2%	0.0%
TOTALS	821.89	77.20%	5.40%

Source: City of Lakewood Parcel Survey Database, 1998.

3.2.8 Highway Overlay Zone

In addition to the seven planning areas, an additional functional area was analyzed. This was identified as the Highway Overlay Zone, as the purpose was to identify the land use breakdown for the area along the 2 major north-south regional road systems, I-5 and old Highway 99. The Overlay District was defined as that area bounded by I-5 on the east, the Burlington-Northern line on the west, the city limits on the north, and Ponders Corner on the south. The results are shown in Table 3-11.

Interestingly enough, the predominant land use is residential, with a combined 42% in residential land use. Perhaps even more surprising is that Residential Single Family formed almost half of that amount, while Multi-family units formed less than a third. Commercial and Manufacturing/Industrial lands form a bit more than a third, at 35%. A glance back at Figure 3-2 will show much of this in a narrow corridor one lot deep on either side of Highway 99. The next most prominent land use is Vacant.

Table 3-11 Summary of Existing Land Use in the Highway Overlay Zone

Land Use Category	Acres	Total Parcels	Area as % of Overlay Zone
Residential Single Family	187	664	19%
Mobile Home Park	105	15	10%
Multi-family	130	108	13%
Commercial	304	314	30%
Manufacturing/Industrial	51	31	5%
Public/Government Service	31	17	3%
Education	17	3	2%
Vacant	125	83	12%
Other	61	76	6%
Totals	1,011	1,131	100%

Source: City of Lakewood Parcel Survey Database, 1997.

3.2.9 Zoning

There are eight general zoning classifications in the City of Lakewood, as shown in Figure 3-3, most of which were inherited from Pierce County after incorporation. The acreages for each of these zones are shown in Table 3-12. The eight general zoning classifications are described below:

Table 3-12 Existing Lakewood Zoning By Acres

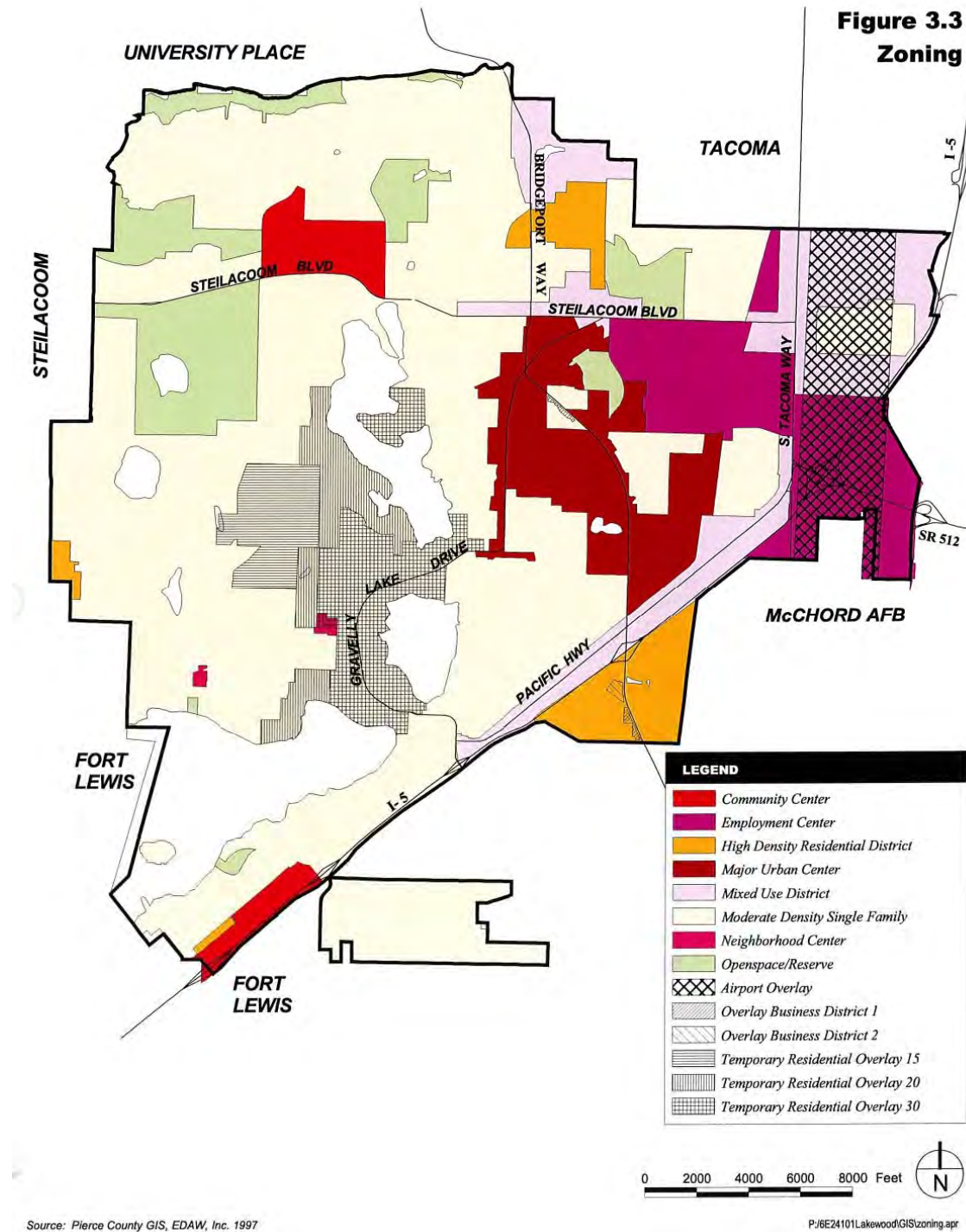
Zone	Acreage	Percent of Total ¹
Employment Center	894	8.1%
Major Urban Center	757	6.9%
Community Center	281	2.6%
Neighborhood Center	15	0.1%
Mixed Use District	1,041	9.5%
High Density Residential District	436	4.0%
Moderate Density Single Family	6,673	6.1%
Open Space/Recreation	876	8%

source: EDAW, GIS coverage

(1) Does not include area in open water. Does include public ROW's.

- Employment Center - The Employment Center zone classification provides for a concentration of office parks, manufacturing, other industrial development, or a combination thereof to meet the needs of a growing, job-based economy. This zone also allows for commercial development as a part of the center, so long as the commercial development is incidental to the employment activities of the center and supports and serves the needs of the workforce. The Employment Center zone classification accommodates light industrial type uses, warehousing, and corporate offices which have a low impact on the surrounding land uses. Areas in Lakewood that are currently within the Employment Center zone include the Clover Park Technical College, the Lakewood Industrial Park, and areas near the intersection of I-5 and SR 512.

- Major Urban Center - The Major Urban Center zone classification allows for a highly dense concentration of urban development with a commercial focus. The purpose of this zone is to provide for major concentrations of employment, shopping, services, and multi-unit housing. A significant high density multi-unit residential presence in the area is encouraged. Areas in Lakewood that are currently within the Major Urban Center zone include the Lakewood Mall, the Colonial Center, certain portions of Gravelly Lake Drive, and areas surrounding the Lakeview neighborhood.
- Community Center - The Community Center zone classification has as its focus a significant commercial traffic generator, around which develops a concentration of other commercial office services, and some high density multi-unit developments and high density single-unit housing. The commercial activity within the center is directed to a customer base drawn from more than one neighborhood, but should be at a scale which is compatible with surrounding residential areas. Areas in Lakewood that are currently within the Community Center zone include areas surrounding the intersection of Steilacoom Blvd. and 83rd Avenue to the west of Western Washington State Hospital, and areas surrounding Union Avenue in Tillicum.
- Neighborhood Center - The Neighborhood Center zone allows for a concentrated mix of small scale retail and service commercial and office development that serves the daily needs of residents in the immediate neighborhood. Areas in Lakewood that are currently within the Neighborhood Center zone include areas surrounding the intersection of Washington Street and Interlaken Drive to the west of Gravelly Lake, and areas surrounding the intersection of 92nd Avenue and Veterans Drive SW north of American Lake.
- Mixed Use District - The Mixed Use District zone classification provides for a concentrations of commercial, office, and multi-unit developments located



along major arterial streets. Commercial activity in the Mixed Use District caters to a customer base beyond the surrounding neighborhoods or community due to its placement on a roadway used by residents of more than one community. Auto-oriented commercial and land intensive commercial with a low number of employees per acre is the primary use within the Mixed Use District. Areas in Lakewood that are currently within the Mixed Use District zone include nearly all of the areas to either side of Pacific Highway SW, the areas to either side of Steilacoom Blvd. near the intersection of Bridgeport Way, and the areas surrounding 75th Street and Bridgeport Way near the northern border of Lakewood.

- High Density Residential District - The High Density Residential District zone classification allows for multi-unit and high density single-unit housing located along major arterial streets, state highways, and major transit routes connecting to Community, Employment, or Urban Centers. The purpose of this zone classification and the Mixed Use District are to allow multi-unit, office, and other commercial uses that provide economic diversity and housing opportunities near transit routes and business activities. Areas in Lakewood that are currently within the High Density Residential District zone include the entire triangular portion of land along Bridgeport Way southeast of I-5, and the areas between Lakewood Drive and Bridgeport Way near the northern border of Lakewood.
- Moderate Density Single Family - The Moderate Density Single-family zone classification covers geographic areas that fall outside the other zoning classification areas discussed in this section. The purpose is to provide for single and two-unit residential living in a residential environment. Areas in Lakewood that are currently within the Moderate Density Single Family zone include the majority of the acreage in the city.
- Open Space/Recreation - The Open Space/Recreation zone classification includes designated natural areas, neighborhood, community, and regional parks, as well as linear trails and public golf courses. The purpose of this zone is to protect open space areas and provide recreational properties and facilities located on public property. This zone classification was adopted after

incorporation, on February 3, 1997 (Ordinance # 114). The previous Lakewood Municipal Code and its zoning did not provide for this zoning classification. Areas in Lakewood that are currently within the Open Space/Recreation zone include Fort Steilacoom Park, the Fort Steilacoom golf course, Harry Todd Park, North American Lake Park, areas along Chambers Creek, the Flett Dairy, Seeley Lake Park, and the Washington State Game Farm.

- Overlay Zones Adopted Since Incorporation - Two new overlay zones were adopted since incorporation in order to provide for special zoning considerations based on unique characteristics of the land, environment, or economy. The overlay zones are further described below:
- Temporary Residential Density Overlay Three temporary residential density overlay zones were adopted on July 21, 1997 to control residential density pending completion of the Comprehensive Plan (Ordinance # 134). This overlay zone was intended to return these neighborhoods to the previously existing historical development patterns of large lot, single-family home development. The overlay zone upheld the uses allowed within the underlying Moderate Density Single-family zone, but established that no lot shall be occupied by more than one dwelling unit (no new duplexes). The overlay zone also established development, density, and dimension standards. Areas in Lakewood that are currently within the Temporary Residential Density Overlay zone include the areas in and around Gravelly Lake and the southern portion of Lake Steilacoom.
- Office and Limited Business Overlay Two overlay zones; Office and Limited Business District - Level 1 (OLB-1) and Limited Business and Office Districts -Level 2 (OLB-2), were adopted on (Ordinance # 128). These overlay zones allow certain residential properties in proximity to commercial property to be eligible for limited office and business uses where the proximity affects the residential use. The OLB-1 zoning district is a transitional land use buffer between residential and more intensively developed properties, and allows the location of low-intensity business, financial, and professional service offices.

This zone buffers established single family residential areas from adjacent traffic impacts.

The OLB-2 overlay zone is also a transitional land use buffer but is large enough to provide a community focus. The primary function is to provide for the location of integrated complexes of offices, hotels and motels, eating establishments, and retail sales. Such districts are located in areas that abut, or have convenient access to, freeways, major highways, and major arterial streets. Both overlay zones also establish development, density, and dimension standards. Areas in Lakewood that are currently within the OLB-1 zone are a linear strip along Bridgeport Way adjacent to the Oak Park residential neighborhood, and three parcels along Bridgeport Way to the southeast of I-5. Areas in Lakewood that are currently within the OLB-2 zone include an area adjacent to Clover Creek and Bridgeport Way to the southeast of I-5.

- Airport Overlay Zone Classification - The purpose of the Airport Overlay Zone classification is to minimize land use incompatibilities in the Noise Zones and Accident Potential Zones (APZ) I and II from McChord Air Force Base, which lies southeast of Lakewood. The City of Lakewood adopted Pierce County's existing overlay zone when it incorporated in 1996. The provisions of the zone classification address reduction of incompatibilities with McChord Air Force Base through performance standards, building coverage, limitation on the number of persons on site at any one time, and/or construction of buildings with noise attenuation features. Areas in Lakewood that are currently within the Airport Overlay zone include the Sylvan Park and Monte Vista neighborhoods (see Figure 3-3).

Under the Airport Overlay zone, no additional residential units shall be permitted on a lot within the McChord Clear Zone and APZ I, and all non-residential uses shall be subject to a conditional use permit and Administrative Review for compliance with performance standards. New residential units within McChord APZ II shall be limited to a density of six dwelling units per acre.

3.2.9 Environmental Constraints to Development

This section describes the key natural environment components found within the Lakewood area as a basis for land use planning and for regulation of critical areas. This section discusses the natural environment in terms of sensitive hydrologic (water) and geologic (soil) areas. Hydrologic resources encompass five of the critical areas defined by the GMA: fish and wildlife habitat, water quality, frequently flooded areas, wetlands, and aquifers. Geologic resources encompass two types of critical areas: geologic hazard areas and aquifer recharge areas.

The GMA requires that local jurisdictions designate critical areas and adopt development regulations to protect these areas. The Lakewood City Council adopted Critical Areas Ordinance in February 1996 for protection of geologically hazardous areas, aquifer recharge areas, and frequently flooded areas and wetlands. It is anticipated that these regulations will be revised based on the findings and conclusion of the Comprehensive Plan. Changes and/or clarifications to these regulations may require additional analyses on the sensitive environmental areas discussed in this section as well as other sensitive areas not included herein.

Lakewood's natural environment includes sensitive hydrologic areas and sensitive geologic areas, as discussed below. Much of the following descriptions of Lakewood's hydrologic and geologic areas were derived from the Lakewood Interim Comprehensive Plan.

3.2.9.1 Sensitive Hydrologic Areas

Hydrologic areas include rivers, streams, lakes, ponds, wetlands, and floodplains (see Figure 3-4). Hydrologic areas are often defined geographically according to the watershed basin of which they are a part. A watershed may be defined as a landscape catchment basin, including terrestrial slopes, streams, and lakes, drained by a common stream outlet. For study and management, a watershed is a conveniently sized ecosystem with definable boundaries that operates as a unified, co-dependant ecosystem.

Of the four regional watershed basins in Pierce County, Lakewood is located within the Tacoma Watershed. The regional watershed was further divided into 25 subwatershed basins and ranked for the purposes of prioritizing planning and

stormwater management, with “1” ranking having the highest protection priority. Rankings were based on the extent of impairment, likelihood of increased development, and potential for water quality problems. Lakewood encompasses portions of Chambers Bay, Steilacoom Lake/Clover Creek, and American Lake/Sequalitchew Creek subwatersheds. Chambers Bay has been ranked “2,” Clover Creek “5,” and American Lake “9.” These rankings were done as part of the effort by Pierce County in response to the mandate of the Puget Sound Water Quality Authority (PSWQA), as described in the 1987 Puget Sound Water Quality Management Plan (PSWQMP). Each of the three subwatersheds within Lakewood is further described below.

Chambers Bay Subwatershed The Chambers Bay Subwatershed is the principal drainage outlet for the entire Clover/Chambers Creek drainage basin. The flow from Clover Creek entering Steilacoom Lake to the south is carried out by Chambers Creek to the north, and eventually out into Puget Sound. The topography of this subwatershed is composed of level flatlands for the eastern portion with deeply incised ravines in the Leach Creek basin, most of Chambers Creek, and the downstream portion of Flett Creek.

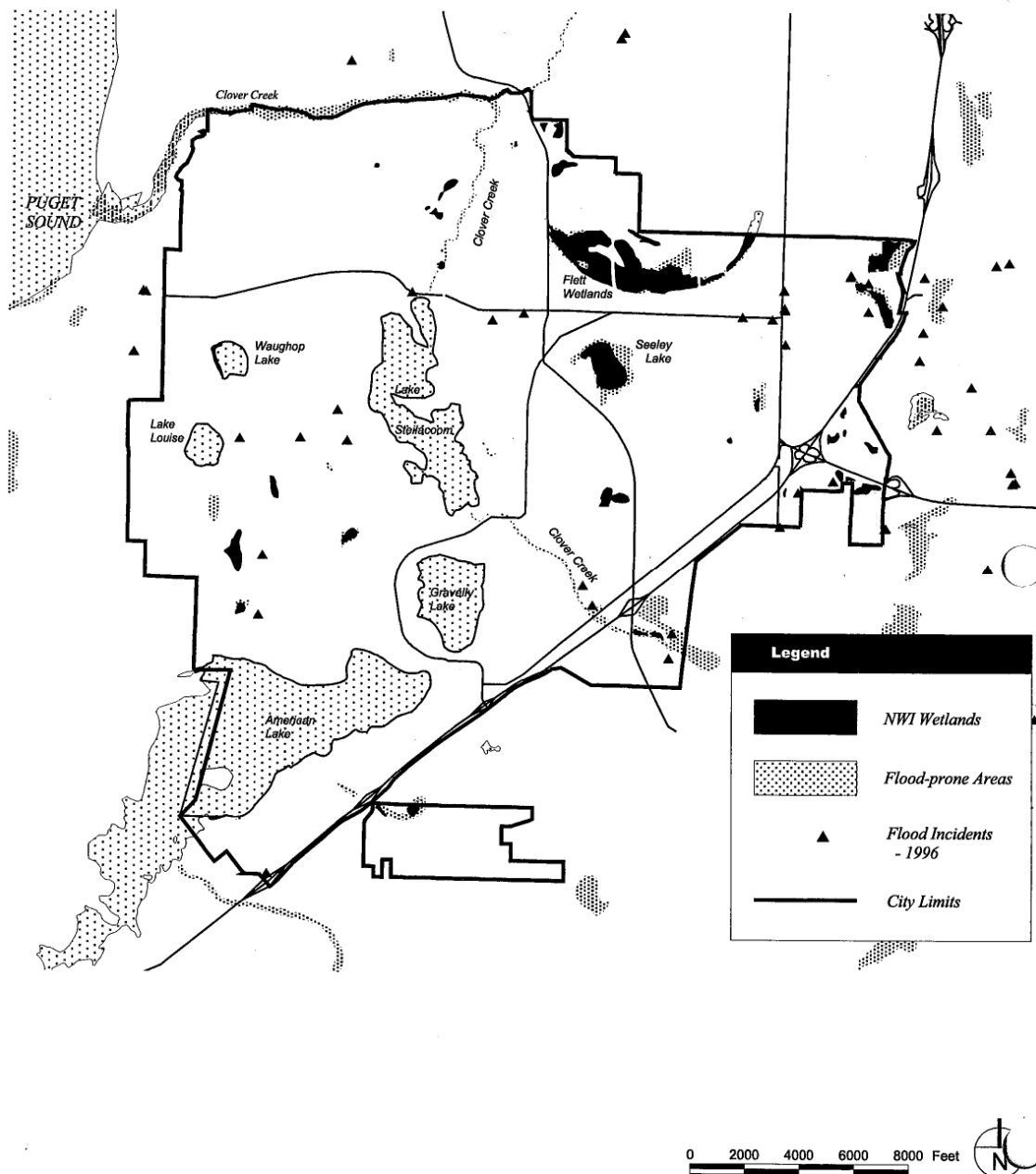
The area is composed almost entirely of typically level, somewhat excessively drained, gravelly soils that were formed in glacial outwash. Chambers Creek carries flow from Leach Creek, Flett Creek, and outflow from Steilacoom Lake to Chambers Bay. Waughop Lake, Seeley Lake, and other lakes do not have surface outlets connecting them to Puget Sound, but are formed as groundwater intercept lakes.

Steilacoom Lake/Clover Creek Subwatershed - Most of the Steilacoom Lake/Clover Creek Subwatershed consists of level flatlands which drain into Steilacoom Lake and is covered with a gravel subsoil which maximizes infiltration and minimizes runoff. Steilacoom Lake, in addition to Spanaway Lake, is large enough to lessen flood impacts from intense storm events.

American Lake/Sequalitchew Creek Subwatershed - The prominent drainage channel emptying into American Lake is Murray Creek. A weir located at the southern tip of American Lake diverts the water into a channel to Sequalitchew Lake which empties into Sequalitchew Creek and finally into Puget Sound. Runoff

is generally low in the subwatershed, which is covered almost exclusively by a gravel subsoil with small isolated patches of peat and fine grained materials.

Figure 3.4
Sensitive Hydrologic Features



Source: Pierce County GIS

P:\6E40201\Lakewood\GIS\maps\cons.apr

Fish and Wildlife Habitat

Lakewood contains a rich variety of fish and wildlife habitats, and wildlife in the area is typical of those found in coniferous forest habitats found throughout Pierce County. Black-tailed deer is the only big game species found in Lakewood. Other game may include pheasant, blue grouse, ruffed grouse, quail, band-tailed pigeon, turkey, marmot, and cottontail rabbit. Lakewood is also home to a variety of waterfowl, and other birds and mammals.

Federally listed endangered species in the Lakewood area include bald eagles (*Haliaeetus Leucocephalus*). This species may winter in the area from about October 31 through March 31, and a total of eight bald eagle nesting territories are located in the Lakewood area (U.S. Fish and Wildlife Service, letter dated 9/9/97). Most of these territories are in and around American Lake and Steilacoom Lake. In addition, peregrine falcon (*Falco peregrinus*) and water howelia (*Howelia aquatilis*) may also occur in the Lakewood area. Species which are candidates for listing and may occur in the Lakewood area include the Oregon spotted frog (*Rana pretiosa*). In addition, the following species of concern which may occur in the Lakewood area include: long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), Northwestern pond turtle (*Clemmys marmorata marmorata*), olive-sided flycatcher (*Contopus borealis*), and the Pacific western big-eared bat (*Corynorhinus townsendii townsendii*) (U.S. Fish and Wildlife Service, letter dated 9/9/97).

Three anadromous fish species that are currently candidates for listing under the ESA are known to be present in the Lakewood area, including Chambers Creek, Flett Creek, Steilacoom Lake, and Clover Creek. The species present are the chum salmon (*Oncorhynchus keta*), chinook salmon (*O. tshawytscha*), and the Puget Sound/Strait of Georgia coast coho salmon (*O. kisutch*). It is important to note that candidate species have no status under the ESA (National Marine Fisheries Service, letter dated 8/14/97).

Rare plant species of concern in the Lakewood area include isolated stands of white-top aster (*Aster curtus*) (Washington Natural Heritage Program, Natural Heritage Data Map, Steilacoom and Tacoma Quadrangles, printed 8/25/97). The status of these plants are considered “sensitive” by the state, just below the

thresholds of threatened and endangered. In addition, water howelia (*Howelia aquatilis*) may occur in Lakewood.

The following areas in Lakewood are considered priority wildlife habitats by the Washington Department of Fish and Wildlife (WDFW). All information was provided by the WDFW Important Wildlife Information Public Release Map, Steilacoom and Tacoma South Quadrangles, printed 8/7/97, as well as the WDFW Priority Habitats and Species Database and the Wildlife Heritage GIS Data Report, printed 8/7/97.

American Lake and Gravelly Lake. The wooded areas surrounding these lakes are home to bald eagles (a federal and state threatened species). This species nests primarily in the cottonwood trees on the shorelines of American Lake. The open water habitat provided by these lakes also support large concentrations of waterfowl.

Steilacoom Lake. Bald eagles can also be found at this lake, in addition to large concentrations of waterfowl. Anadromous fish and other Washington state priority fish species can be found at this lake. These fish species can also be found in Clover Creek which runs through a portion of Lakewood and into McChord Air Force Base to the southeast of the city.

Fort Steilacoom Park, Waughop Lake, and Lake Louise. Naturally vegetated open space at Fort Steilacoom Park provides general wildlife habitat for a variety of birds and mammals. At Waughop Lake, naturally vegetated open space at the western edge of the lake and wetland areas on the lakeshore provide habitat for large concentrations of waterfowl and other birds and mammals.

Seeley Lake. Essentially a wetland, Seeley Lake provides general habitat for a variety of waterfowl. Naturally vegetated open space areas south of the lake also provide general habitat for a variety of birds and mammals.

South Puget Sound Wildlife Area. This area, north of Steilacoom Lake and west of Chambers Creek in the northern section of Lakewood includes naturally vegetated open space, riparian, and wetland areas that provide general habitat for a variety of birds and mammals.

Chambers Creek. Naturally vegetated open space and riparian corridors provide bald eagle habitat as well as habitat for large concentrations of waterfowl, especially along the steeper canyon walls. Some lagoons and wetland areas where Chambers Creek empties into Chambers Bay also provide important habitat areas.

Flett Creek. Anadromous and priority fish runs occur through Fleet Creek and into Chambers Creek. Wetland areas and other naturally vegetated open space provide habitat for large concentrations of waterfowl along Flett Creek.

The approximately 12,500 acres of land in Lakewood include Douglas-fir, cedar, red alder, big-leaf maple, and western hemlock. Cottonwood, dogwood, pussywillow, and cascara trees also occur in the area. Brush species include Oregon grape, red-flowering currant, salal, serviceberry, elderberry, wild blackberry, salmonberry, Idnikinnick and various types of ferns, mosses, and lichens. Lakewood also contains several groves of Oregon white oak which are becoming rarer in western Washington and Oregon. Major groves are located at Bridgeport Way and Custer Road southwest, the crest of Flett Creek at the end of Tyler Street between Steilacoom Boulevard and South 74th Street, and at South 80th Street and Pine Street. Ponderosa pine, another species rare west of the Cascades, exists on Fort Lewis property and may exist in the Lakewood area.

Frequently Flooded Areas

Flooding is the most common natural disaster to occur in Lakewood, placing lives, properties, and resources at risk. In January 1990, site-specific areas in Lakewood experienced floods. These floods occurred primarily because of heavy rains coupled with inadequate stormwater facilities in the flooded areas. The risk of flooding increases with increasing development density. The South Tacoma Way corridor is an example of densely developed commercial/industrial areas extensively utilizing both subsurface recharge and stormwater disposal systems. During an unusually heavy storm event, the designed capacity of these systems can be overloaded, which can cause extensive flooding over roadways and parking lots¹.

¹ Lakewood Interim Comprehensive Plan.

Floodplains are identified on the Flood Insurance Rate Maps (FIRMs) for Pierce County, which are prepared by the Federal Emergency Management Agency (FEMA). These maps illustrate the predicted flood area in a 100-year storm event. FEMA has defined ten insurance flood hazard zones or risk rate zones; however, only three exist in Lakewood—Zone A, Zone B, and Zone C. Flood Zone A are flood hazard areas inundated by the 100-year flood, determined by approximate methods. Areas within Lakewood designated Flood Zone A include a narrow strip of shoreline surrounding Seeley Lake, Steilacoom Lake, Gravelly Lake, Lake Louise, American Lake, Flett Creek, and Chambers Creek. Areas designated Flood Zone B include areas between the limits of the 100-year flood areas and the limits of the 500-year flood; areas protected from the 100-or 500-year floods by dike, levee, or other local water-control structure; areas subject to certain types of 100-year shallow flooding where depths are less than one foot; and areas subject to 100-year flooding from sources with drainage areas less than one square mile. Waughop Lake, Barlow Pond, Carp Lake, Lost Lake, Boyles Lake, and a few areas west of Steilacoom Lake are considered to be Zone B. Flood Zone C areas represent minimal flood hazard. The remainder of Lakewood falls into this category.

Wetlands

Wetlands are areas which have saturated soils or standing water for at least part of the year, contain hydric soils (soils which have changed over time due to frequent or prolonged saturation with water), and which contain hydrophylic (water-loving) vegetation. Lakewood has an estimated 155.3 acres of wetlands within its boundaries (see Figure 3-4). Of the total area, approximately 105 acres are within the Flett Creek 100-year floodplain region. Together with the 37-acre Crawford Marsh (Seeley Lake) these two wetland areas comprise 143 acres of the total wetland area in Lakewood. Both are areas where peatbogs are present, and open space areas which provide habitat to a variety of waterfowl, other birds, and other local wildlife. The remaining wetland areas are composed of relatively small sites dispersed throughout Lakewood. Some are man-made either through mining operations or as mitigation for wetlands lost to property development. Others are surrounded by residential housing.

Aquifers

Lakewood is underlain by soils that are highly permeable and allow for the infiltration of surface water into groundwater. At a depth below the surface, the infiltration water enters the aquifer, which is a saturated geologic layer that can yield sufficient quantities of water to be used as a source of public or private water supply. Where these conditions exist, the areas are known as aquifer recharge areas.

Aquifers provide the primary source of domestic and industrial water for most of Lakewood and large portions of urban Pierce County. Land uses which contaminate surface stormwater can eventually contaminate groundwater in aquifer recharge areas. Any activity which degrades the water quality of an aquifer can detrimentally impact the health of local citizens.

Groundwater flow systems can be divided into three major patterns: regional, intermediate, and local. Generally, regional flow systems exhibit the greatest chemical quality changes and the longest flow paths and residence times. Local systems, however, show little water quality change and have the shortest flow paths and flow times. Within the Lakewood area, recharge is predominantly through local and intermediate flow systems. Regional recharge occurs mainly east of the Clover/Chambers Creek basin in the Cascade Mountains, while regional discharge is primarily to Puget Sound, the Puyallup, and Nisqually rivers².

The Lakewood Water District (District) is completely dependent on groundwater sources for meeting the drinking water requirements of its customers. In compliance with Washington State Department of Health (DOH) guidelines and mandates, the District has developed a comprehensive wellhead protection plan (WHPP) for these sources. The study delineated 23 wellhead protection areas (WHPAs), or capture zones, for each of the groundwater sources that supply water to the District³.

The WHPP found that Lakewood has three primary aquifer zones used for water production by the District, labeled Aquifers Zones A, C, and E, are overlain by Lakewood. Aquifer Zone A is in the shallowest of the aquifer systems in the area. Water in Zone A is often in direct or nearly direct hydraulic connection with the local surface water bodies and as a result is the most sensitive to potential

² Lakewood Interim Comprehensive Plan

³ Lakewood Water District Wellhead Protection Plan

contaminants entering the aquifer. Areas in Zone A include the surface drainage areas surrounding Lake Louise, Waughop Lake, and American Lake. Other areas in Zone A are in the eastern boundary of the District and extend south and east into Fort Lewis, McChord Air Force Base, and Parkland.

Aquifer Zone C is usually encountered between 100 feet above and 100 feet below sea level. This zone has a good level of protection from transfer of surface contaminants. Zone E is typically encountered about 200 feet below sea level and has a high level of protection throughout the majority of the District's study area.

The WHPP outlines a number of proper protocols and recommendations to deal with the potential hazards of aquifer contamination in the Lakewood Water District⁴. In general, the plan recommends that the District establish a surface water quality monitoring program to address the following primary and secondary hydrogeologic features of the Lakewood area:

- Primary: (1) American Lake, (2) Waughop Lake, and (3) Lake Louise.
- Secondary: (1) Gravelly Lake, (2) Lake Steilacoom, and (3) Clover Creek.

In addition, the plan recommends that both the city and county notify the District on any construction or land use project within the District's WHPAs that requires a hydrogeologic assessment or a State Environmental Policy Act (SEPA) response. In this way, the District can serve as a partner to the city and county in assessing the impact of land use on drinking water quality in the Lakewood area.

3.2.9.2 Sensitive Geologic Areas

Sensitive geologic areas include landslide and erosion problem areas, landslide hazard areas, and seismic hazard areas. Each of these sensitive areas, including a description of Lakewood soils, are described below.

Landslide and Erosion Problem Areas

Landslide and erosion hazards are common in hillside areas with steep and unstable slopes. The topography of Lakewood is generally characterized by flat plains and gently rolling hills with slopes measuring between 0-8%. The central western

⁴ Lakewood Water District Wellhead Protection Plan

section of the city around Carp Lake, Lake Louise, and Waughop Lake is characterized by potholes and hills measuring between 8 and 30%. The steepest slopes within the city are located along the northeast boundary in the Chambers Creek Canyon with slopes measuring over 30% (see Figure 3-5). The risk for landslide and erosion problems is highest in this area.

Soils

The City of Lakewood is comprised of two general soil classifications. These soil classifications, also called “associations,” have distinct patterns of soils, relief, and drainage. They also have their own unique natural landscape and are suitable for certain types of land uses. The two soil classifications in Lakewood are the Spanaway Association and the Alderwood-Everett Association . In general, these soils are suitable for urban uses, although use is somewhat limited in the Alderwood soil association. In both soil associations, septic waste from drain fields endangers the groundwater supplies because the soil is moderately to highly permeable⁵.

The Spanaway Association, which consists of the largest portion of the city, is a nearly level to undulating (0-6% slope), somewhat excessively drained soil. It is formed in glacial outwash, mixed in the upper part with volcanic ash. This soil has no limitations for urban development; however, septic waste from drain fields endangers the groundwater supplies because the soil is moderately permeable.

The Alderwood-Everett Association, mostly surrounding Lake Louise and Waughop Lake, contain slopes ranging from 0 to 30%, with moderately to excessively drained soils that formed in glacial till and glacial outwash. The majority of this area contains Alderwood gravelly sandy loam with slopes ranging from 0 to 30%. Homesite excavation is limited by the weakly cemented and compact substratum and areas of moderately steep slopes. In areas with moderate to high populations, on-site sewage disposal systems may fail during heavy rainfall due to the restrictive substratum layer.

Small portions of this area also contain Everett gravelly sandy loam with slopes ranging from 0 to 15%. One of the most desirable for homesites and as a source for

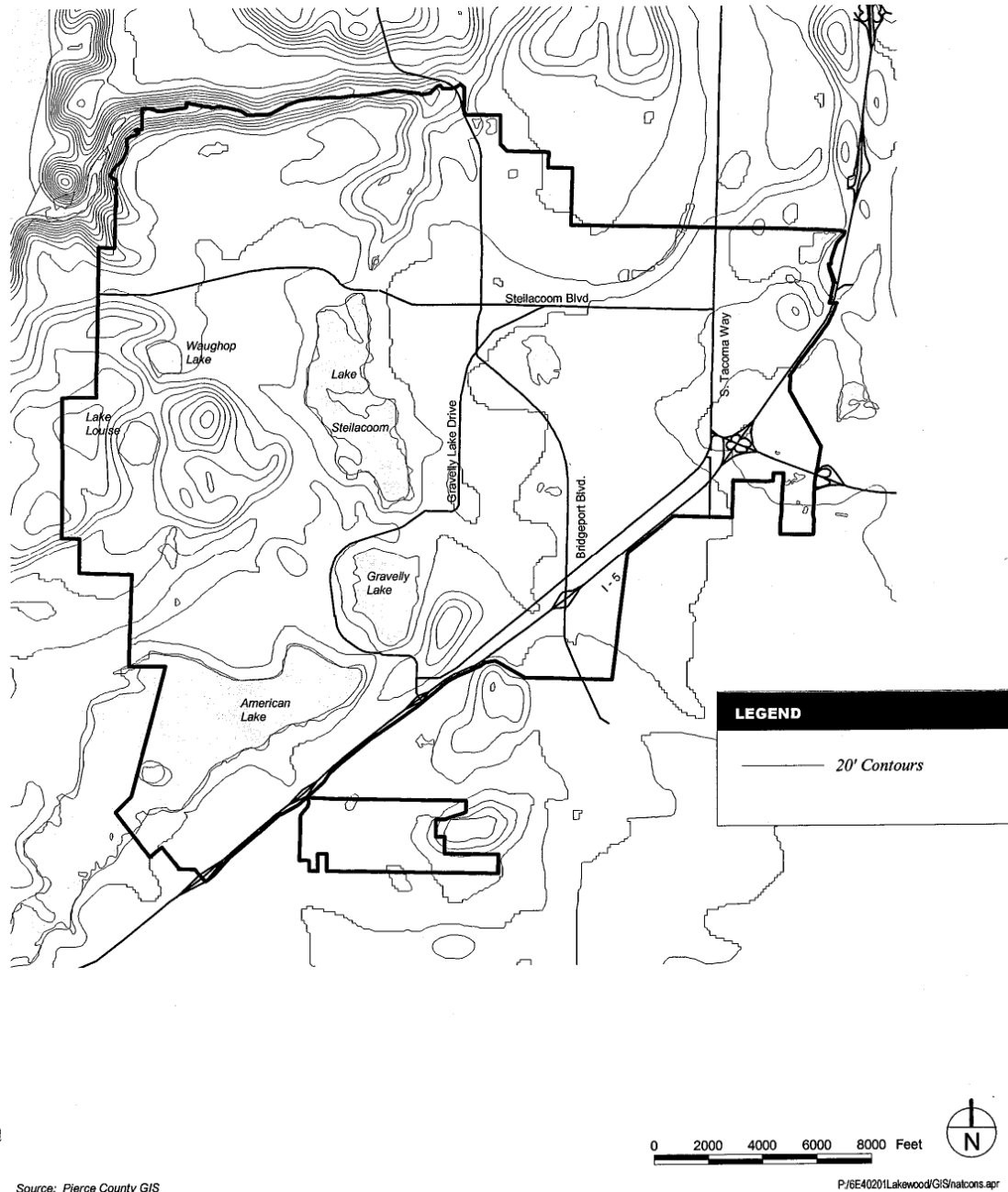
⁵ Soil Survey of Pierce County, 1979.

gravel for construction. Septic tank drainage fields function properly throughout the year; however, there is a potential of contaminating the groundwater due to the highly permeable soils.

Seismic Areas

Three criteria are generally used to establish the seismic risk potential for a specific site: (1) the local geological conditions, (2) the rate of earthquake activity, and (3) the maximum historical intensity experienced at a site. As a result of these criteria, a majority of the Lakewood area is classified as having a slight to moderate risk of structural damage due to an earthquake within the Puget Sound region. However, the entire Puget Sound region is located in seismic zone three according to the Uniform

Figure 3.5
Sensitive Geologic Features



Building Code (UBC). The UBC assigns a seismic zone to different regions of the country, with zone four being the highest risk. Compared to the rest of the United States, Lakewood is a high risk area for damage due to seismic activity.

3.3 Trends and Projections

3.3.1 Historic Development Patterns

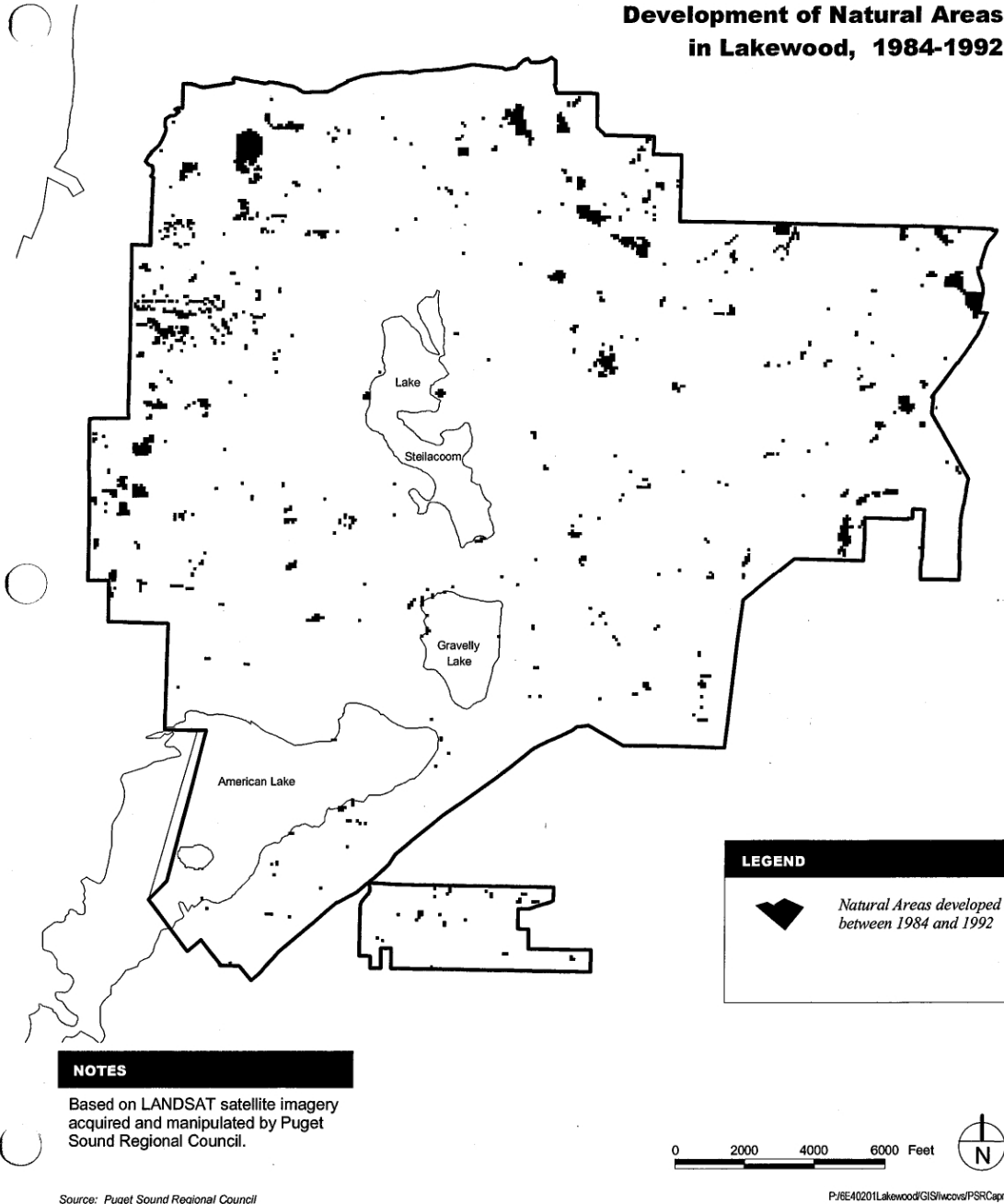
As a complement to the land classification coverage, the Puget Sound Regional Council also conducted a change detection analysis of the Puget Sound region. This analysis compared satellite images from 1984 to 1992 to determine those lands that have been converted from natural lands (i.e., Forest, Natural Open Land, Agriculture) to developed. The goal of this change detection analysis was to identify past development trends and project potential future land development.

It is important to note that the GIS-produced change detection coverage describes land now categorized as developed that was previously natural (i.e., Natural Open Land, Forest, Agriculture). The change detection coverage did not identify lands that have been redeveloped. The change detection was conducted by analyzing the spectral (color) change between the two satellite images on a pixel-by-pixel basis. An assessment of the data found a classification accuracy of 84.5%, based on a limited field verification analysis and is considered to be adequate for regional planning purposes (Puget Sound Regional Council, 1994).

An illustration of the development of natural areas between 1984 and 1992 is shown in Figure 3-6.

Within the City of Lakewood, approximately 291 acres of natural land were developed during the change detection period (i.e., between 1984 and 1992). This represents development of 3% of the land acreage in Lakewood in that 8-year period. Although this development was widely scattered throughout the city, it can be seen on Figure 3-6 as generally located within a band along the northern and western boundaries. Again, it must be noted that Figure 3-6 does not portray all lands developed in that period, but only those lands which made the transition from natural to built. Other development in Lakewood in that timeframe consisted of redevelopment of existing built land.

Figure 3.6
Development of Natural Areas
in Lakewood, 1984-1992



3.3.2 Growth Forecast

According to the GMA, all cities and counties required to prepare a comprehensive plan must accommodate additional population and employment according to projections provided to each county by the Washington State Office of Financial Management. Counties are required to allocate growth to cities within their jurisdiction.

The Pierce County Growth Management Planning Council is responsible for establishing net new population (counted as new households) and employment in cities within King County. To provide for some flexibility, they have established target ranges for cities as a planning guide. As discussed in Chapter 2, the target population for planning purposes in the year 2020 is 96,000 total residents.

3.4 Summary of Countywide Policies for Land Use

Pierce County has no specific countywide policies specifically addressed as land use per use. These countywide policies are addressed to ten policy areas. These were reviewed for policies relating to land use. A number of policies were identified that have implications for land use in the City of Lakewood. These are identified and summarized below.

Housing: County-Wide Policy #2 on Housing identifies a number of alternative strategies for meeting projected housing demand. Among those strategies is the need to identify vacant parcels with appropriate zoning which can be used for infill. This has been consistently done by the city with their parcel survey database.

Economic Development: County-Wide Policy #1 on Economic Development calls for measures to be taken to ensure consistency between economic development policies and adopted comprehensive plans. Among other measures, this policy identifies a need for the Land Use Element to designate areas for Commerce and Industry, and to provide, with appropriate zoning, sufficient land to accommodate projected development within a market-based system. Policy #2 identifies a need for economic diversity and a “Jobs/Housing” balance. Policy #5 identifies a need for land planning to produce fiscally sound results by produce and Land Use Element which allows for an appropriate mix of uses, which reduce sprawl and transportation demand, thus maximizing the efficiencies of providing public

facilities and services. Lastly, County-Wide Policy #6 identifies a need and strategies to strengthen existing businesses, through, among other things, promoting infill development and redevelopment, strategies highly appropriate for Lakewood's situation.

Education: County-Wide Policy #3 on Education calls for coordination between municipalities and school systems using the Land Use Element, among others, to make adequate provision of lands for schools. In general, Lakewood school sites exist city wide; the challenge will be to make sure facilities are adequate as the population grows.

Historic, Archeological, and Cultural Preservation: County-Wide Policy #1 on Historic Preservation requires that municipalities identify the presence of significant historic, archeological, and cultural sites within their boundaries, and that any special designations of significance must be reflected in the land use element of the comprehensive plan. Protective measures are encouraged but not mandated.

Natural Resources, Open Space, and Environmentally Sensitive Lands: Although the GMA does not require county-wide policies for these areas, Pierce County willingly provided them in its Countywide Policies. While they do not specifically address land use, achievement of the goals expressed would be impossible without adequate land use linkages and controls. Countywide Policy #1 on Open Space identifies the various governmental entities that must coordinate to provide these protective measures, and includes municipalities such as Lakewood. Subsequent policies refine the ways in which the coordination and protective measures should work, and define the resources for which protection is to be provided. These include environmentally sensitive resources present in Lakewood such as wetlands, aquifer recharge areas, fish spawning areas, and others. The use of designating open space networks to provide this protection is encouraged.

Facility Siting: Countywide Policy #5 on Facility Siting requires that all public facility siting be consistent with adopted municipal comprehensive plans, including the future land use map.

Urban Growth Areas: The GMA requires the designation of urban growth areas within the county. This urban growth area shall be of sufficient size that it will accommodate projected urban growth over a 20-year period. The county and municipalities must work together to manage this growth within the designated UGA to produce a fiscally sound growth pattern for all government bodies.

As a mechanism for managing this growth, the “principles of understanding between Pierce County and the municipalities in Pierce County,” as outlined in the Countywide Policies, identify a number of categories of centers, within which specific policies are adopted directing the type and nature of growth. These include metropolitan centers, urban centers, town centers, and manufacturing centers. These centers are priority locations for accommodating growth, each of a different type and size. Lakewood has two centers, an urban center, with the Lakewood Mall at its heart, and a manufacturing center, focused on the Lakewood Industrial Park.

Policy numbers 12 through 35 in the Principles of Understanding identify a series of criteria and treatments for urban centers. Among others, they are to be characterized by clearly defined geographic boundaries, high capacity transit and sufficient land intensity to support it, pedestrian-oriented land uses and amenities, and sufficient public open spaces and recreational opportunities. Specific design treatments are encouraged, including streetscape amenities, defined setbacks and building massing, and a rich mixture of land uses, including higher residential densities. Urban centers must plan for and meet the following criteria:

- a minimum of 25 employees per gross acre of non-residential lands;
- a minimum of 10 households per gross acre;
- a minimum of 15,000 employees; and
- shall not exceed a maximum of 1 1/2 square miles in size.

Policy numbers 35 through 42 in the Principles of Understanding identify a series of criteria and treatment for manufacturing centers. Among other characteristics, planning for manufacturing centers is to encourage clearly defined geographic boundaries, direct access to regional transportation systems, and provision to prohibit housing. Development of offices and retail uses is to be discouraged beyond that needed to serve employees, while land assemblage to provide efficient-

sized parcels for manufacturing is to be encouraged. Design and provision of efficient modern transportation system is a high priority.

3.5 Planning Implications

Based on the above findings, a number of implications for future planning can be articulated. These are as follows:

- Although Lakewood is a new city, it is extensively developed. There is little greenfield lands available for future development, with only 43 acres of designated agricultural lands and no forest resource lands in the city. According to the Lakewood parcel survey, there are 1,200 acres of vacant land in the city. However, a substantial portion of that is restricted due to public ownership or natural constraints such as wetlands and steep slopes, and the remaining vacant land is widely scattered. Future development will occur as infill development of vacant parcels, or redevelopment of existing parcels to greater intensity. Land assembly to amass critical parcel size or configuration may need to occur for redevelopment to happen, particularly for commercial uses.
- The amount of land designated as Open Space/Recreation appears to be well below accepted standards to support the amount of residential development currently found in Lakewood, even without projecting future needs. This disparity in recreation resources appears to be of particular concern in areas with substantial multi-family residential development. There is no network of open space to connect neighborhoods and recreation resources, or provide refuge for wildlife and plants. A major thrust of city planning efforts for Lakewood should be to identify and implement strategies to protect and link existing open space, as well as increase the amount land protected as open space through acquisition or other strategies.
- While Lakewood has abundant natural assets, such as the many lakes, Chambers Creek, the Flett wetlands, and other open space, most of these assets are inaccessible to most citizens. Either there is no access or access is limited and not known to be available. Future planning efforts should increase

available access to public lands and waters and to ensure proper functioning of existing assets.

- A number of older residential neighborhoods in some parts of the city have become isolated by surrounding commercial development and traffic arterials. Many of them have high rates of rental occupancy. The viability of these neighborhoods to remain in their current state should be tested, on a case-by-case basis, in light of known future development such as the RTA station development and anticipated land use changes. In particular, development of the Lakewood Urban Center, as foreseen by the PSRC, will bring changes that may make some of these older low density neighborhoods unviable.

The image of graceful lakes set in the forest is central to the identity of Lakewood. In reality, this image is most applicable to the West Lakewood Planning Area, where the majority of remaining forest cover is found. This area is also critical for protection of the aquifer upon which much of the community's water supply rests. Development of adequate land use controls to minimize rates of change in this area will protect both forest and aquifer resources.

CHAPTER 4: URBAN DESIGN AND COMMUNITY CHARACTER

4.1 Introduction

During the course of the visioning process, the citizens of Lakewood indicated a strong concern for the urban design quality of the city and a desire to create a city with a “heart” — a dynamic and unique city center. They expressed the need for an urban center that is linked to its diverse neighborhoods through pedestrian-friendly connections, well-designed public spaces, improved streetscapes, and an overall improved image. They envisioned a compact, thriving urban core that did not lose its small town charm and is reached along “corridors of beauty” and defined as blending of lakes and woods.

This portion of the Background Report identifies and documents urban design elements that can contribute to realizing Lakewood’s vision of urban design. A review of the existing urban design and community character of the urban center and the surrounding neighborhoods will provide the basis for recommendations to the comprehensive planning process for an improved urban design quality for the city. The discussion of urban design elements supporting Lakewood’s Urban Center begins with a review of the countywide planning policies adopted by Pierce County for urban centers.

4.2 Existing Urban Design and Community Character

The analysis of the existing urban design and community character conditions of the City of Lakewood focuses on the following key areas:

- **Urban Morphology:** The physical pattern of streets, parcels of land, and natural features that give form to a city.
- **Gateways:** The entryways and major access points to a city.
- **Districts/Neighborhoods:** Distinct and recognizable areas or subdivisions of a city that the community identify themselves and give it order.
- **Nodes of Activity:** Key points or locations of human activity. Edges: The physical elements that define the boundaries of a city.
- **Landmarks/Views:** Reference points that assist in orientation and identity.
- **Paths:** The preferred routes or channels along which people move.

- **Linkages:** Physical connections between districts or nodes of activity.

By understanding the condition of these urban design elements, as shown in Figure 4-1, recommendations can be incorporated into the Comprehensive Plan to strengthen or enhance the urban design quality of the city.

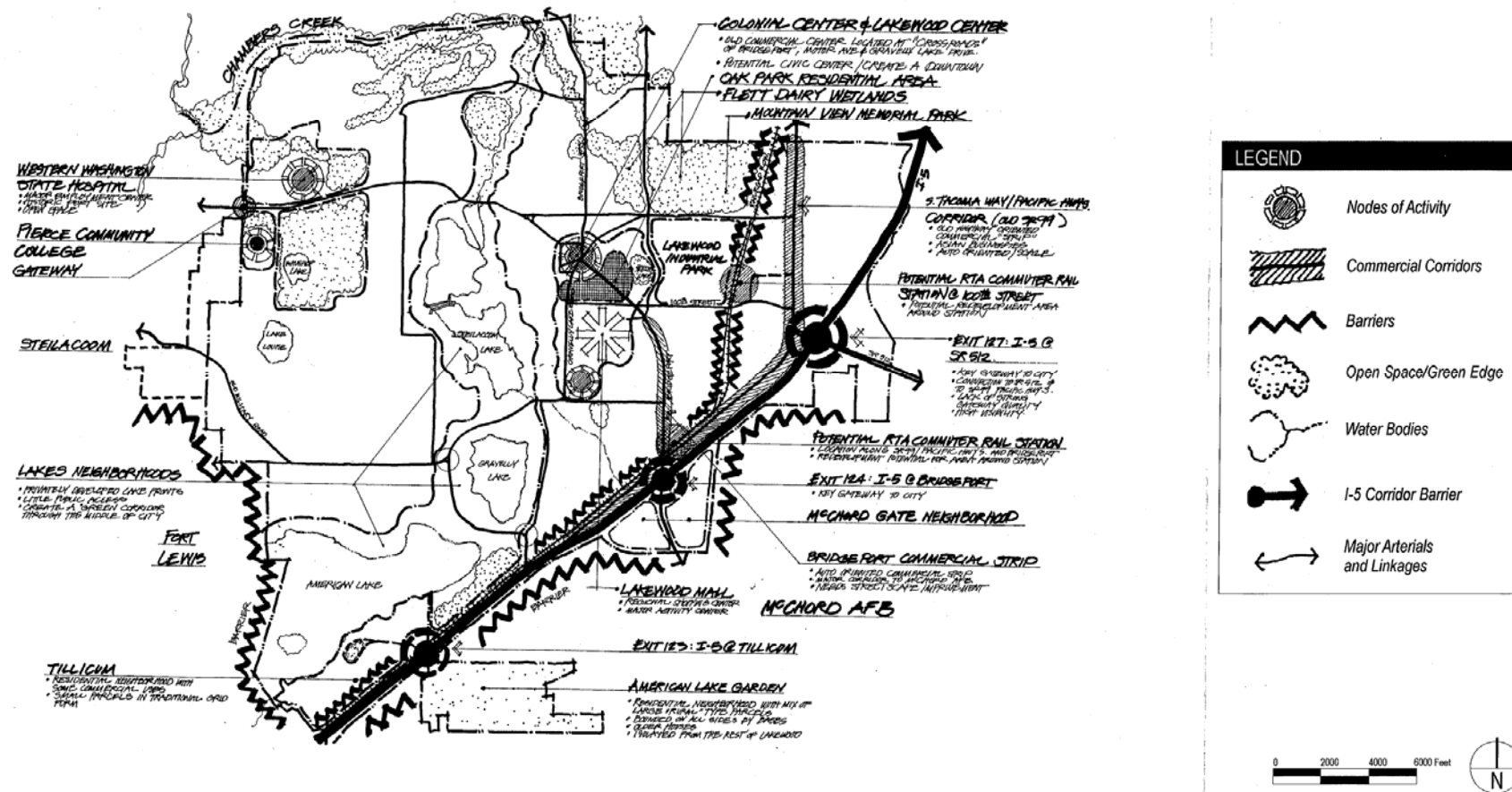
4.2.1 Urban Morphology

This is the pattern of streets and blocks that create the physical patterns of the city. The size and configuration of streets and parcels in Lakewood reflects the different periods of development and the legacy of past land use patterns and uses. The physical patterns of development are also influenced by topography, natural features such as streams, and property ownership.

Currently, Lakewood exhibits many of the land use patterns typical of cities that developed very rapidly after the Second World War through the 1950s and 1960s with the increased dependence on the automobile. The urban morphology consists of a mixed pattern of older grid street networks and land parcels developed earlier in the area's history as it developed from a rural agricultural area and crossroads for the movement between military bases such as old Fort Steilacoom. Major roads that define much of the urban morphology of Lakewood today are the result of the necessity for access between key areas north and south of present-day Lakewood. Steilacoom Boulevard, Military Road, and Bridgeport Way are major arterials that define the city and its urban form.

The street and block patterns of Lakewood also reflect the parcelization or division of land for agricultural uses. Many blocks are very large with few streets between them. These large parcels were often single ownership farms that did not have streets running through them. Examples of this pattern can be seen around the Lakewood Center, Lakewood Mall, Clover Park, and Lakewood Industrial Park.

Figure 4.1
Urban Design Analysis



Source: Dennis Tate Associates

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The physical pattern of development is also the result of natural features such as topography, streams, and the lakes that divide the city into two distinct areas east and west of the lakes. Chambers Creek defines the northern boundary of the city and street patterns reflect the meandering path and topographic changes along the creek. Wetlands such as those around the old Flett Dairy also limited the development of roads and housing, as well as commercial and industrial sites.

Older areas of commercial and residential development are located around or near Lakewood Center, the Mall, and Clover Park. Topography is reasonably flat making it easy to develop. The streets reflect an era of traditional pre-war pattern of regular gridded streets and uniform blocks. The Oak Park, Lake City, Tillicum, and Lakeview residential neighborhoods are examples of these older traditional development patterns. However, in the case of Lakewood many of the older residential neighborhoods developed before the war were not developed with the infrastructure typical of older incorporated cities such as Tacoma and Seattle. The development requirements of the county did not require the development of sidewalks, curbs, or gutters.

Newer development patterns that reflect the “modern” theory of town planning encouraged a break with the traditional grid and the use of curvilinear street patterns, cul-de-sac street ends to provide more privacy, and developing a “garden community” that related to the natural topography and features. Examples of this urban form can be seen in the Oakbrook, Clover Park, Interlaken, and Lakes neighborhoods

4.2.2 Gateways

Gateways are the major access and entrances to a city and can contribute to the public’s mental image of the city. They usually occur along major “Preferred Paths” at key intersections of major roads such as I-5 and 100th Street. Gateways provide people with clues to way finding and orientation within a city. Gateways can be strengthened to make them more memorable and identifiable.

There are six major gateways to Lakewood. These are:

- **1-5 at 100th Street and the intersection with SR 512:** This is a significant gateway due to the intersection of Interstate 5, the most important north/south

corridor, with SR 512, the major eastward connection and to 100th Street, a major westward connection through Lakewood.

- **1-5 at Bridgeport Way:** Bridgeport Way is a major north/south connection through Lakewood and the main gateway to McChord Air Force Base to the east.
- **1-5 at Gravelly Lake Drive (Exit 124):** This is another gateway from I-5 and provides access to neighborhoods west of the lakes district.
- **1-5 at Tillicum (Exit 123):** This interchange provides the only access to the neighborhood of Tillicum and the south shore of American Lake. Although Tillicum is somewhat isolated from the rest of the City of Lakewood, this 1-5 interchange provides the connection.
- **Bridgeport at Steilacoom Boulevard:** This is a gateway from the north from Tacoma and University Place.



Photo 4-1 Gateway: I-5 at 100th St./SR-512-This is a major freeway access point to Lakewood.

- **Steilacoom Boulevard at Far West Drive:** This gateway includes the campuses of Western State Hospital (Old Fort Steilacoom) and Pierce Community College and Fort Steilacoom Park. This gateway runs along Steilacoom Boulevard, a State Historical Road, and links Lakewood with the Town of Steilacoom, the oldest incorporated city in the state.

Other important places in terms of City image along transportation routes are as follows:

- **South Tacoma Way/Pacific Highway South (Old Highway 99):** This corridor was the major north/south connection for Lakewood prior to I-5. This corridor provides access to the eastern portion of Lakewood and is dominated by auto-oriented commercial uses.
- **The Crossroads of Bridgeport Way, Gravelly Lake Drive, and Motor Avenue:** This is the gateway to the commercial heart of the city. The intersection of these streets at unusual angles makes this intersection more memorable.

4.2.3 Districts and Neighborhoods

Districts are the medium to large sections of a city that people physically and mentally enter into and that are recognizable as having some common identifying character, such as the “Lakes District.” Often they are identified as neighborhoods and can exhibit similar development patterns, types of land uses, and building types and eras. People tend to structure their ideas and knowledge of a city by districts. These districts can be strengthened through land use planning to reinforce uniqueness and image. Neighborhoods are smaller units within districts that people identify strongly with. Neighborhood boundaries can be defined by natural features such as lakes, streams, hills, and man-made elements such as major streets, arterials, freeways, bridges, or railroad tracks. These districts and neighborhoods are all contained within the Planning Areas for Lakewood and often across census tracts. The neighborhoods and districts are most often defined by major arterials or natural features.

Some of the identifiable districts in Lakewood are described below. These districts do not always relate to the planning areas using census tracts as in other chapters of this report.

4.2.3.1 The Urban Center

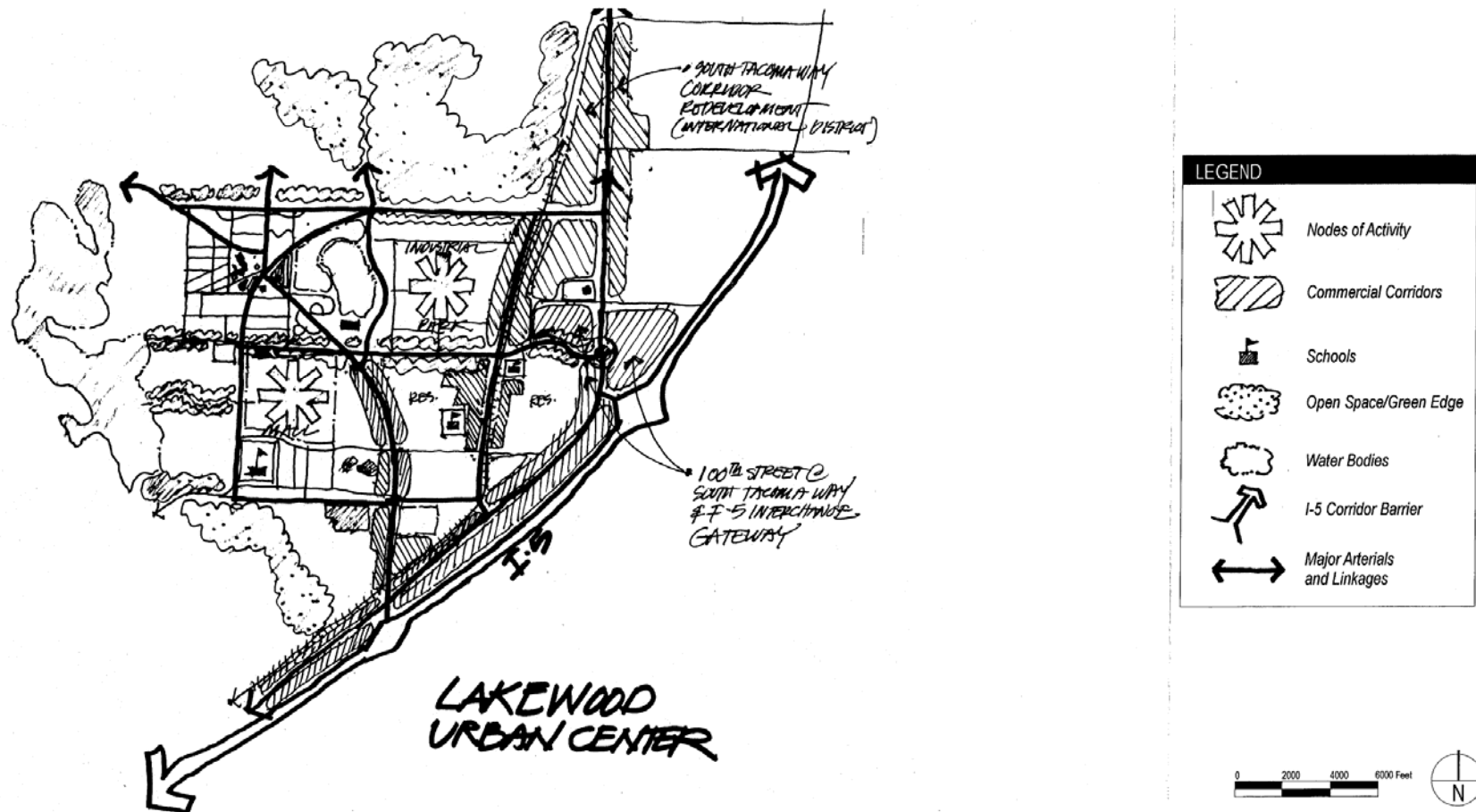
This is the area centered around the Lakewood Shopping Mall, the Lakewood Center, and the Clover Park, Oak Park, and Lakeview neighborhoods (see Figure 4-2). It is bounded by Steilacoom Boulevard and 100th Street on the north, the

railroad tracks to the east, 1-5, the Pacific Highway corridors and 112th Street to the south and Lake Steilacoom to the west. Bridgeport Way and Gravelly Lake Drive run through the center of this district and it is the principal commercial and employment center for the city. This district is predominately auto-oriented with the Lakewood Mall regional shopping center at its core. The Urban Center is identified as the urban core in the planning areas and includes census tracts 718.02, 718.04 and 719.02. As an Urban Center it is expected to meet the basic standards set forth in the Pierce County Countywide Planning Policies for Urban Centers.

4.2.3.2 Industrial and Manufacturing District

This district is bounded by Steilacoom Boulevard on the north, the railroad tracks on the east, 100th Street along the south, and the Seeley Lake and the Crawford Marsh wetlands to the west. This district is approximately 375 acres in area and contains a mix of light manufacturing, warehousing, distribution, and shipping and office functions. The district also contains the Clover Park Technical College, fire station, and a former airstrip runway. The old Tacoma Raceway once occupied portions of this area and auto racing was done on a banked wooden track. The Lakewood Industrial Park is the largest of the current users in this district. The campus of the industrial park has been landscaped along its perimeter and has well designed signage and access streets. The area is highly visible as approached along 100th Street or Steilacoom Boulevard or along Lakeview Avenue due to the scale of the tall warehouses and industrial sheds. This district is included in the Northeast Planning Area and includes Census Tracts 718.04 and 717.02.

Figure 4.2
Lakewood Urban Center



Source: Dennis Tate Associates

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4.2.3.3 South Tacoma Way/Pacific Highway South Corridor

This is a linear district that runs along the old Highway 99. This district is not very wide, perhaps one to two blocks deep, but runs along the entire eastern and southeastern edges of the city limits. Highway 99 is the remnant of the early highways along the west coast that linked California to Washington State. The railroad right-of-way parallels portions of the old highway along the western side as does 1-5 along the eastern edge. Consequently, there are few cross streets that intersect South Tacoma Way and Pacific Highway South. This often results in long narrow parcels of land along its length and affects access. The old highway developed with auto-oriented uses such as motels and diners in its early days to service the traveling public. Access to attractions along the highway was unlimited, with multiple driveways and parking areas fronting onto the highway. Today this results in a lack of sidewalks and pedestrian amenities. The character of this linear district is that of a mix of small auto-oriented retail and customer services businesses occupying older single story structures and newer businesses office and retail functions in newer buildings. This area crosses through a number of planning areas including the Urban Center, Industrial and Manufacturing District, Planning Area 2, the Northwest Area, and Area 6, the South Central Area.

4.2.3.4 The Lakes District

The Lakes District is oriented around the three major lakes in Lakewood (the American Lake, Gravelly Lake and Steilacoom Lake), which are located within the central portion of the city and run north/south. Together with Chambers Creek, these lakes form a “ribbon of green” that divides the city into two parts. They are the single most important natural feature within the city and a major amenity for homes located along their shores. The residential neighborhoods that line the shorelines of these lakes are generally large stately homes with large narrow lots and some lake frontage that retain much of the mature trees. There are only a few locations on the lakes where general public access is permitted or where views of the lakes can be seen. One location on Steilacoom Lake is at Clinton Park and along Interlaken Drive and the bridge crossing the lake which affords views up and down the lake. The overall impression of the area around the lakes is one of lower density development with significant green space and quiet neighborhoods. According to

long-time residents of Lakewood, the lakes were visible from higher elevations of the city prior to more recent development. The Lakes neighborhood includes all or portions of five planning areas: Planning Area 1, the Urban Core; Area 4, the Northwest Area; Area 5, the West Area; Area 6, the South Central Area; and Area 7, the South West Area.

4.2.3.5 Old Fort Steilacoom

This district is comprised of the campuses of Western Washington State Hospital, Pierce Community College, and the Fort Steilacoom Park. This district is divided in half by Steilacoom Boulevard, a State Historical Road, and is bounded by residential neighborhoods. Waughop Lake is located within the Fort Steilacoom Park and is an open space amenity. The character of this district is defined by the historic fort structures such as the officers' homes, the larger brick and stone structures of the State Hospital, and the campus structures of the college. The institutions are major employers of the city and their campuses define the western border of the city. The Old Fort Steilacoom district corresponds to Planning Areas 4 and 5, the Northwest and West Areas of Lakewood.



Photo 4-2 Old Fort Steilacoom and the Western Washington State Hospital Campus create a distinctive District within the City.

4.2.3.6 Tillicum and American Lake Gardens

These two neighborhoods combine to form a somewhat isolated district in the southern portion of the city. Due to its location along American Lake and between 1-5 and the Tacoma Country Club and the lack of roads, Tillicum is separated from the rest of the city and has historically developed as a separate community. American Lake Gardens is located east of 1-5 and is surrounded by McChord Air Force Base. Access is from 1-5 at the Tillicum Exit 123. Tillicum has a small commercial district within the neighborhood located along Union Avenue, a library, and elementary school. Tillicum developed early on as a small community with a grid street pattern and small lots, some for summer cabins along the lake which have become year-round residences. The small lots and homes on them give this area a distinct character not found in other parts of the city. American Lake Gardens still has a rural quality with small farms and larger lots and home sites. The Tillicum and American Lake Gardens neighborhoods are situated in Planning Area 7, the South West Area.

4.2.4 Nodes of Activity

Nodes are key points or locations within the city that attract human activity such as employment, shopping, civic functions, and public open spaces such as parks. They are the focus of intense activity to which people will travel to and from. They are another element which assists people in organizing themselves in the city; due to human activity, they are usually memorable places in the minds of residents. Lakewood has a number of these “nodes of activity,” as summarized below.

4.2.4.1 Lakewood Mall

Lakewood Mall is the major commercial and shopping node of the city. The mall is typical of many regional shopping centers of the era. Originally called Villa Plaza Shopping Center, the mall has expanded with a centralized indoor shopping mall organized along a central pedestrian spine with shops along its length and anchor stores at its major entrances. Older shops are located along the north, west, and south sides of the mall separated from the mall by surface parking lots. Recent site and building improvements have provided some pedestrian amenities and architectural design elements; however, the area is still predominantly auto-

oriented. Also its location is somewhat “buried” by the lack of street frontages and surrounding order buildings which block views of the mall.

4.2.4.2 Lakewood Colonial Center

The oldest commercial center in Lakewood, the original shopping center was developed in 1937 at the crossroads of Gravelly Lake Drive and Bridgeport Way. It was designed in a colonial architectural style which established a trend for some future commercial buildings in the city. Its shops and movie theater provided a community center and focal point during the early years of Lakewood’s development and are remembered fondly by long-time residents. It occupies a very visible location due to the crossroads, and newer commercial development has located around the Colonial Center to form another significant commercial core.

4.2.4.3 Lakewood Industrial Park

This major employment node has light manufacturing, warehousing, and distribution centers. This node of activity is located in the eastern portion of the city along 100th Street and is part of the gateway area to the city. Opportunities for increased employment and access to future commuter rail and transit could help to shape this activity node.



Photo 4-3 Lakewood Colonial Center is the oldest retail center in Lakewood

4.2.4.3 Lakewood Industrial Park

This major employment node has light manufacturing, warehousing, and distribution centers. This node of activity is located in the eastern portion of the city along 100th Street and is part of the gateway area to the city. Opportunities for increased employment and access to future commuter rail and transit could help to shape this activity node.

4.2.4.4 Western Washington State Hospital

The State Hospital is a major employment and institutional node, combined with the historic setting of Fort Steilacoom and open space. This node provides an employment “anchor” and gateway element to the western portion of the city with highly visible architectural and historical qualities that lend to a memorable image.

4.2.4.5 Pierce Community College

This major employment and educational institution node provides cultural facilities to the city at large. The campus provides architectural scale, with an open space setting that blends with surrounding residential neighborhoods. The college and Western Washington State Hospital combine to form institutional nodes that anchor the western portion of the city. The college has a master plan for future expansion and opportunities for additional facilities that can benefit the Lakewood community.

4.2.4.6 Clover Park High School and Park

The high school and nearby park provide a node of activity near the center city and urban core. The high school provides facilities to the community beyond educational functions. It is a source of community pride and a landmark. The park is an important open space and recreational amenity for the central city and urban core areas with some higher density residential areas adjacent to it. Their locations near the crossroads of Gravelly Lake Drive and 112th Street also function as a gateway to the urban core.

4.2.4.7 St. Clare Hospital and South Bridgeport Way

The hospital is another major employment node and medical facility for the city. Its location near the 1-5 interchange at Bridgeport Way and possible commuter rail and transit station could provide opportunities for redevelopment of this gateway area to the city. This area is also a major gateway to McChord Air Force Base, a major employer of civilian workers who travel through this area on the way to work. The commercial corridor along Bridgeport Way around the hospital and interchange would benefit from improved pedestrian and transit connections and streetscaping elements such as street trees, lighting, sidewalks, and signage. Opportunities exist for redevelopment of the area along Pacific Highway South at the Bridgeport Way and 1-5 interchange near the hospital.

4.2.5 Edges

Edges are generally linear physical elements that create boundaries, borders, barriers, or limits to the city. They are boundaries between two areas or districts. Edges include things like shorelines, railroad tracks, freeways, major open spaces, or natural features that define an area and contribute to its image. Edges may be barriers or “seams” that separate or join together two areas or districts. Strengthening the edge conditions, that is improving the image or lessening the adverse effects of barriers, can improve the imageability of a city. Lakewood has some distinct edges that contribute to its image, as described below.

4.2.5.1 The 1-5 Freeway Corridor

This defines the southeasterly boundary of the city. The freeway creates a barrier and limits east-west vehicular movement where it interrupts the street grid. This edge includes portions of the Pacific Highway South and South Tacoma Way corridors and the railroad right-of-way. The freeway and highway corridors have influenced the character of commercial development along the length and contribute to the poor visual and environmental quality of the area along its length. Noise and vehicular traffic and the auto-oriented commercial uses and surface parking areas, along with a lack of reinvestment and maintenance of properties, result in visual blight and poor image. Efforts such as new landscaping standards, improved vehicular access, sidewalks, and streetscaping will improve these corridors and the edge quality as redevelopment occurs.

4.2.5.2 The Railroad Right-of-Way

The Burlington Northern-Santa Fe Railroad tracks and right-of-way which run along the eastern and southeastern edges of Lakewood also interrupts the street grid and movement through the city. It has influenced land use development patterns along its length, and is a barrier to travel and limits crossing points which require signals. With the introduction of commuter rail service along the right-of-way, there is an opportunity to improve the visual and functional quality and safety of this edge. The commuter rail station, along with improved transit service, will enhance the edge condition at key locations such as gateways to the city.

4.2.5.3 The Lakes

The lakes create an edge that divides the city into two halves. The lakes also interrupt the street grid and limit east-west movement. While the lakes do provide a natural barrier, they also provide a natural open space corridor which contributes to the high quality of the surrounding residential neighborhoods. The lakes edge will tend to contain commercial and higher density residential development to the eastern portion of the city and continue to provide a natural edge and quality visual image to the city.

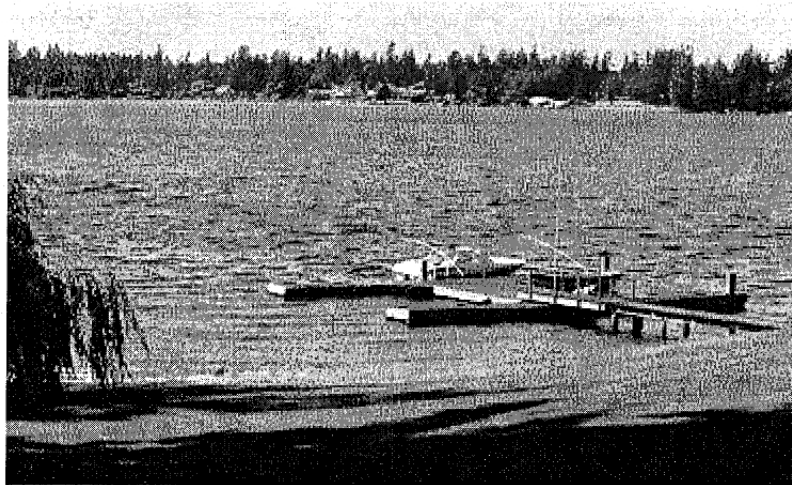


Photo 4-4 The lakes divide Lakewood into two halves and create a distinctive residential district.

4.2.5.4 Chambers Creek and Flett Dairy Wetlands

This is a natural green edge that defines the northern boundary of Lakewood. Chambers Creek and its surrounding wooded slopes limit development and the street grid and create a natural ribbon of open space, habitat, and buffer to the community of University Place to the north. Residential neighborhoods along the creek are laid out to respond to topographic conditions and the creek basin. Flett Creek, which converges with Chambers Creek near Bridgeport Way and 75th Street, connects to the old Flett Dairy property and the wetlands on it to continue this ribbon of green open space along the northern edge of the city, defining the boundary to the southern city limits of Tacoma.

4.2.5.5 American Lake and Fort Lewis

American Lake and the Fort Lewis Army Base reservation define a southern edge to the city and limit expansion in that direction. Generally the area is perceived as a natural setting with lower density residential neighborhoods surrounding the lake and the boundaries of the base clearly defined. The American Lake Medical Center and Veteran's Hospital are located in the area which is a node of activity just outside the city. The boundaries of Fort Lewis are wooded, and army facilities are generally contained farther south, contributing to the natural open space edge condition.

4.2.5.6 Landmarks/Views

Landmarks are reference points within or external to the city, and are usually a physical object, a building, topographic feature such as Mt. Rainier, a store or group of stores, domes, towers etc. They assist in orientation and travel and in creating an identity of a city. Key landmarks in Lakewood include:

- **Mt. Rainier:** Views of the mountain exist from the eastern portion of the city and from places within the city such as buildings and vistas along major streets.
- **Colonial Towers:** The steeples on the theater at the Colonial Lakewood Center and on the nearby church are well-known landmarks to long-time residents.
- **Lakewood Mall:** This is a major shopping center and destination point.
- **Western Washington State Hospital and Fort Steilacoom:** The buildings and campus grounds are landmarks and reference points.

- **Fort Steilacoom Park:** This park is both a major open space amenity and a landmark.
- **Old Flett Dairy Wetlands:** This major open space area is highly visible from historic Steilacoom Boulevard.
- **Chief Leishi Hanging Tree:** This historic landmark is located just off Steilacoom Boulevard near Chambers Creek and the Fish Rearing Pond.
- **Harry Todd Park and Old Mansion:** In Tillicum Park this old mansion on American Lake is a long-time favorite recreational area. The mansion is privately owned and has rustic Tudor architectural elements.

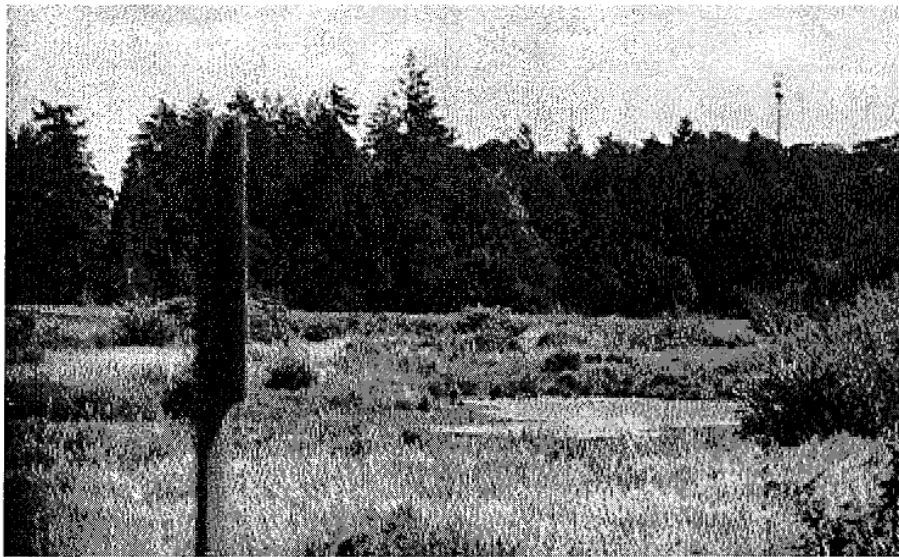


Photo 4-5 Flett Dairy wetlands creates a green open space edge to the city.

4.2.6

4.2.7 Paths

Paths are the “channels” along which people move. They may be streets, walkways, transit lines, railroad lines, and freeways. Strong paths are usually those that are recognized by the public as the preferred routes to places. Major arterials or transportation lines can define key paths and usually help define districts. They can also be strengthened through good land use and transportation planning and through improved streetscaping elements such as landscaping, street trees, sidewalks, street furniture, and signage to be more identifiable. Key paths in Lakewood include:

- **100th Street** between South Tacoma Way and Gravelly Lake Drive;
- **Bridgeport Way** between 1-5, Pacific Highway South, and Steilacoom Boulevard;
- **Gravelly Lake Drive** between 1-5 and Steilacoom Boulevard;
- **Steilacoom Boulevard** between South Tacoma Way and Far West Drive;
- **Far West Drive** between Steilacoom Boulevard and Old Military Road;
- **Pacific Highway South/South Tacoma Way** between Ponders Corner and the Tacoma city limits;

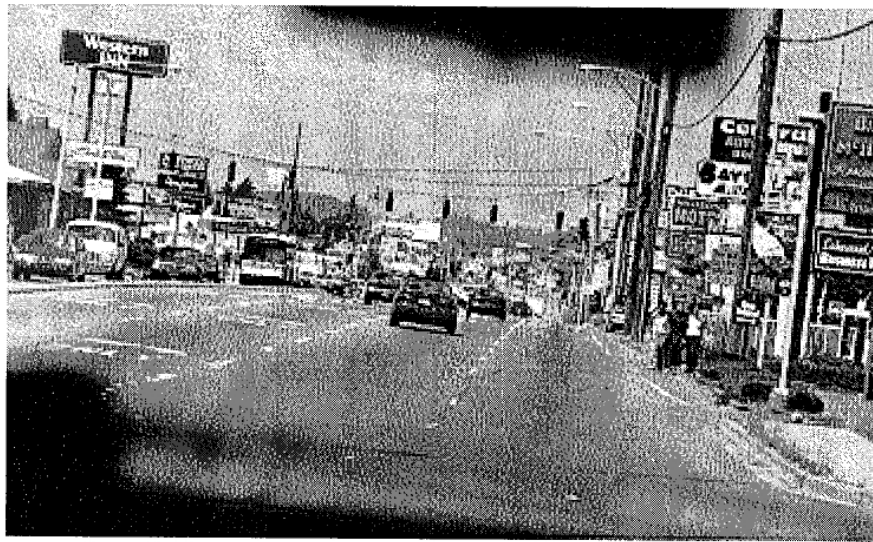


Photo 4-6 South Tacoma Way (Old Highway 99) is a major path through the City.

- **Old Military Road/Washington Street** between Gravelly Lake Drive and Town of Steilacoom; and
- **Interlaken Drive** between Washington Street/Mt. Tacoma Drive and Motor Avenue.

4.2.8 Linkages

Linkages are physical connections between two or more areas, districts, or nodes of activity. Usually along major paths, they can be improved pedestrian linkages such as sidewalks, streets, trails, or transit connections. Linkages can also relate to land use connections between different areas in terms of developing appropriate land uses that are compatible. Land use patterns can create linkages between older

and newer areas of the city. Key physical linkages in Lakewood are described below.

4.2.8.1 100th Street Corridor

The 100th Street corridor offers opportunities for improved gateway image, pedestrian and transit access, and redevelopment near potential commuter, rail station and around South Tacoma Way and 1-5 areas. This area could build on existing streetscape improvements along the north side of 100th Street adjacent to Lakewood Industrial Park. The key intersections are located at South Tacoma Way, Bridgeport Way, and Gravelly Lake Drive.

4.2.8.2 Bridgeport Way Corridor

Redevelopment opportunities exist along the Bridgeport Way Corridor between 1-5 and Lakewood Center. There is a need for improved pedestrian access, sidewalks, streetscaping, and mixed land uses. If the proposed commuter rail station is located on Bridgeport Way at 1-5, this development could assist in redevelopment opportunities of the Bridgeport Way Corridor. Key intersections along this corridor include Gravelly Lake Drive at Lakewood Center, 100th Street, 108th Street, 112th Street, and Pacific Highway South.

4.2.8.3 Gravelly Lake Drive

This street links together several distinct districts including the industrial park, the Lakewood Colonial Center, the Lakewood Mall, the Clover Park High School, the Lakes District, and Pacific High South. The portion of Gravelly Lake Drive that runs through the Lakewood Urban Center between 112th Street and Bridgeport Way is an important north/south linkage due to the interruption of the street grid by the Mall, the lakes, and the railroad right-of-way. Recent commercial development and the new Park Lodge School at 100th Street have improved the pedestrian quality of the street with sidewalks, landscaping, and crosswalks. This is the closest thing to a “Main Street” that Lakewood has. Currently portions of Gravelly Lake Drive are still without continuous sidewalks, and commercial buildings are set back from the street which discourages pedestrian shopping. The street is also wide, with four lanes of traffic.

4.3 Overall Policies for Urban Centers

The Pierce County Comprehensive Plan adopted countywide planning policies for all urban centers within the county to provide direction for future growth and to provide consistent standards that all urban centers must follow to meet the requirements of the GMA. Lakewood is designated an Urban Center in the County Comprehensive Plan and must meet the basic standards for development and future growth. As part of the countywide planning policies, policies for urban centers were established that have urban design and community character implications for the City of Lakewood. The Overall Policies for Urban Centers are organized by the following areas:



Photo 4-7 The crossroads at Gravelly Lake Drive and Bridgeport Way creates an unusual street pattern.

- Vision
- Design Features of Urban Centers
- Transportation, Parking, and Circulation
- Urban Centers

The following Overall Policies for Urban Centers will influence the urban design and community character of Lakewood.

4.3.1 Vision

Policy 12. Centers shall be locally determined and designated by the county and each municipality based upon the following:

- 12.1 Consistency with specific criteria for centers adopted in the countywide planning policies;
- 12.2 The center's location in the county and its potential for fostering a logical and desirable countywide system of centers;
- 12.5 If the county or any municipality in the county designates a center, they must also adopt the center's designation and provisions in their comprehensive plans and development regulations to ensure that growth targeted to centers is achieved and urban services will be provided;
- 12.6 Centers shall be characterized by all of the following:
 - 12.6.1 clearly defined geographic boundaries;
 - 12.6.2 intensity/density of land uses sufficient to support high capacity transit;
 - 12.6.3 pedestrian-oriented land uses and amenities; and
 - 12.6.4 urban design standards which reflect the local community.

These overall urban design policies for urban centers should be supported by future land uses and urban design standards for Lakewood. An understanding of Lakewood's clearly defined boundaries, its opportunities for transit and pedestrian oriented land uses, and the identification of specific local and community-based urban design standards that support these vision policies are discussed in the following sections on urban morphology, gateways, districts, nodes of activity, edges, landmarks, paths, and linkages. From an understanding of the existing conditions that define the urban form of Lakewood, the Comprehensive Plan can adopt policies that support the countywide policies and provide a basis for defining community-based urban design standards that reflect the values of Lakewood.

4.3.2 Design Features of Urban Centers

Urban design elements are further defined by the following countywide policies on Urban Centers:

Policy 14. The county and each jurisdiction that designates a center within its comprehensive plan shall encourage density and development to achieve targeted growth.

14.1 Any of the following may be used:

- 14.1.1 encourage higher residential density within centers;
- 14.1.2 avoiding creation of large blocks of single-use zones;
- 14.1.3 allowing for greater intensity of use within centers;
- 14.1.4 increase building heights, greater floor/area ratios within centers;
- 14.1.5 minimize setbacks within centers;
- 14.1.6 allow buildings to locate close to streets to enhance pedestrian accessibility; and
- 14.1.7 encourage placement of parking to rear of structures.

Within the Urban Center Planning Area of Lakewood there are opportunities to achieve these types of design features required by the countywide policies. Potential strategies could include strategic infill development of higher density development or the redevelopment of key areas around existing commercial and employment nodes or the use of catalyst capital facilities projects such as a City Hall, community center, commuter rail station, or major public park to encourage higher density residential development or the redevelopment of areas as high intensity employment centers. These types of strategies and amenities are suggested in the following policies:

Policy 15. To provide balance between higher intensity of use within centers, public and private open space shall be provided.

Policy 16. Streetscapes amenities (landscaping, furniture, etc.) shall be provided within centers to create a pedestrian friendly environment.

Policy 17. Any of the following regulatory mechanisms shall be used within Centers:

- 17.1 Either use zoning mechanisms which allow residential and commercial uses to intermix or limit the size and extent of single use districts.
- 17.2 Adopt development standards to encourage pedestrian-scaled development such as:

- 17.2.1 buildings close to street and sidewalks;
- 17.2.2 interconnections between buildings and sidewalks;
- 17.2.3 pedestrian links between residential and non-residential areas; and
- 17.2.4 street trees/furniture; minimize separations between uses.

4.3.3 Transportation, Parking, and Circulation

The following transportation, parking, and circulation policies also have urban design implications for Lakewood Urban Center:

Policy 18. To encourage transit use within centers, jurisdictions shall establish mechanisms to limit the use of single occupancy vehicles.

Policy 19. Centers should receive a high priority for the location of high capacity stations and transit/or transit centers.

Policy 20. Locate higher densities/intensities of use close to transit stops within centers.

- 20.1 Create a core area to support transit use.
- 20.2 Allow/encourage all types of transit facilities (transit centers, bus pullouts, etc.) within centers.
- 20.3 Establish incentives for developers to provide transit supportive amenities.

Lakewood currently has a transit center located at Lakewood mall and an express bus service park and ride lot located at intersection of I-5 and SR 512. Lakewood is also designated to get an RTA commuter rail station within its urban center boundaries. These types of transit systems can help to support the development of transit supportive urban centers and amenities that encourage pedestrian friendly urban design.

4.3.4 Urban Centers

The Countywide Planning Policies also include more specific urban design related policies for urban centers. These include the following:

Policy 28. Urban centers are locations that include a dense mix of business, commercial, residential, and cultural activity within a compact area. Urban centers are targeted for employment and residential growth, excellent transportation

service, including fast, convenient high capacity transit service, as well as investment in major public amenities.

Policy 29. Urban centers will plan for and meet the following criteria:

- 29.1 A minimum of 25 employees per gross acre of non-residential lands;
- 29.2 A minimum of 10 households per gross acre;
- 29.3 A minimum of 15,000 employees; and
- 29.4 Not to exceed a maximum of 1-1/2 square miles in size.

4.4 Planning Implications

The analysis of the existing urban design and community character conditions within Lakewood and a review of the Pierce County countywide planning policies for urban centers indicate a number of key planning implications for the Comprehensive Plan. These urban design planning implications will focus on creating opportunities for meeting the requirements of urban centers as defined by these policies and on areas within the city that best meet the standards of urban centers. The following are the key planning implications that will be addressed in the development of alternative land use plans:

- Reinforcing clear, well-defined boundaries and edges of the Lakewood Urban Center through open space and sensitive area set asides, landscaping standards, densities of development, and redevelopment of well-designed business and residential districts;
- Identifying opportunities for areas of increased intensity of use and density of development within the urban center and the urban core. These intensified areas should be supported by transit, transportation, and pedestrian improvements;
- Strengthening the character and identity of existing residential neighborhoods through streetscaping, residential design guidelines, linkages to open space networks and parks, and location of capital facilities such as community centers;
- Improving the pedestrian qualities along key paths and linkages through the city. These paths help people orient themselves within the city and increase the recognizable identity of a city;

- Defining the character of a core “downtown” area of Lakewood to create a “heart” to the city. Currently, Lakewood lacks a center that is a rich mix of activities and functions. Should Lakewood have a major “downtown” center or a mix of smaller neighborhood-based village centers? Should the focus of the urban core move toward 1-5 and the future commuter rail station and transit center and should Lakewood provide the necessary intensity of permitted development to create a more diverse center that retail can provide?
- Developing strategies for using major capital facilities such as a new City Hall/civic center and planned transportation facilities such as RTA commuter rail station as a catalyst for redevelopment and improved gateways to the city. Will future ridership be enough to make an urban center or will it need additional incentives to create it?
- How can ethnic neighborhoods such as the International District along South Tacoma Way be integrated into the community and retain its uniqueness and diversity?

The areas of the city that will provide the most opportunities for significant change and growth of residential and commercial development will be the urban center or core of Lakewood between 1-5 and the lakes and corresponding to Planning Areas 1 and 2. A community needs to have a center where it celebrates civic life. These are people places with commonly shared and recognizable qualities important to a community. Citizens are seeking places in which they gather around fundamental needs such as shopping, recreation, and housing, but have quality life experiences above the essentials as well. Well-planned and designed urban environments can contribute to a community’s collective memory and strengthen the bounds of a community. The urban design quality of a community will be the reflection of creative as well as practical planning. Policies developed in the Comprehensive Plan should support zoning and design guidelines that follow and contribute to the overall quality of an urban center.

CHAPTER 5: ECONOMIC DEVELOPMENT ELEMENT

This chapter covers several topics:

- An analysis of the existing economic conditions within the community.
- The implications of this analysis for the Comprehensive Plan and economic development strategy for Lakewood.
- An examination of the development potential from which land use planning and other alternatives were derived.
- Existing and approved county and regional plans and policies that focus on economic development.
- The existing role and mission statement of the City of Lakewood's Economic Development Advisory Board.

The text of the existing conditions analysis contains tables and graphs of data and information that were derived from much more detailed tables and graphs. These more detailed tables and graphs are contained in Appendix 5.A.1. This appendix also contains a detailed report on the strategic role local jurisdictions such as Lakewood have in influencing economic development in their communities. That report covers the following topics:

- Community Economic Development Concepts:
 - * the local economic development process
 - * public and private roles
 - * locational decisions of businesses
 - * economic development potential
- Relationships between Comprehensive Planning and Economic Development
- Strategies for Economic Development of Washington Communities
 - * roles available
 - * specific activities
 - * guidelines for effective programs
 - * alternative economic development strategies

These materials were used in the deliberations of the Economic Development Advisory Board for formulating the Economic Development Strategy and Economic Development Element of the Comprehensive Plan.

The economic character of Lakewood has been shaped by many factors. This area was close to one of the first white settlements in Western Washington less than two centuries ago. Three sets of complex decisions over a long period have brought this area to the current economic position:

- The residential choice decisions of thousands and thousands of households;
- The business location decisions of thousands of businesses; and
- Political decisions made on behalf of the nation's defense by the federal government, state government decisions about mental health care and prisons, and the land use planning and public facilities decisions of Pierce County.

The number, kinds, and character of households that have chosen to live in this area have resulted in the demographic composition of the current and to a great extent the future residents. The number, kinds of business, their activities and employees are the basis of the area's economic character and potential.

Besides the personal welfare of the residents and businesses, the economic viability of the community, its facilities and services are significantly influenced by these economic, demographic, and real estate characteristics, conditions, and trends. The demand for public facilities and services and the strength of a community's tax base to provide these community facilities and services is a function of the economic, demographic, and real estate activity in the city. The following sections describe and analyze these factors.

5.1 Introduction

The City of Lakewood is a component of a metroplex of five counties, the four counties of the Central Puget Sound Region and Thurston County. This area is the primary population and economic component of a concentration of population and economic activity that stretches from Vancouver, BC to mid-Oregon. Lakewood is the fifth largest city, based on 1997 state population estimates, in this metroplex. Only Seattle, Tacoma, Bellevue, Everett, and Federal Way are currently larger.

What is different from these other large cities is that Lakewood has not been perceived or functioned as an employment center. The military installations (Fort Lewis, Madigan, and McChord) provide a significantly large employment base, albeit not driven by market factors.

This section views the City of Lakewood as an economic center of business and employment, not just a place of residences. This task examines the data that reflect the non-residential aspects of Lakewood driven or responding to regional, national, and international market pressures. Businesses locate in a community because that location is beneficial to the business by reducing costs, raising revenues, or reducing risk (improving certainty). Other parts of the Economic Development Element discuss factors that affect business location decisions and how communities may interact or influence these factors. The data in this section reflect the results of the business decisions and market factors that determine the current role, conditions, and trends of Lakewood's economy. While this section (and the Economic Development Strategy) considers and recognizes the very important economic role and impact of the military installations, they are viewed as factors that are separate from the market economy and not something the local community has control over.

5.2 Current Economic Role

Lakewood's self image as a suburban bedroom community is only partially supported by the demographic, economic, and real estate analysis reported in the Economic Development Element. The reliance of the local economic base on employment in local/state government (29%), retail (26%), and services (21%) is consistent with communities at the edge of urban areas, although suburban areas

typically do not have large amounts of state government employment. Demographically, the Lakewood community has more in common with older urban neighborhoods of metropolitan areas in the Pacific Northwest. With a population of 63,000 persons (estimated in April 1997), Lakewood is among the ten largest cities in Washington State. Being a new city with its growth spread over a long period, much of the residential, commercial, and industrial real estate base is more mature than typical of suburban areas in Western Washington that have been the product of rapid growth in this past quarter century. Lakewood's growth has been uneven and has occurred over some time.

Economically, Lakewood has many of the characteristics of a "bedroom" community, in that it has roughly 2.5 persons per job, not counting military and civilian employees at the adjacent military installations. The range of quality and price of housing in Lakewood has been attractive for households employed in the employment centers of King, Pierce, and Thurston counties. Only 12% of Lakewood's employment base is of the type associated with business and industrial parks and areas that typically contain businesses that are attracted to a community for reasons other than its own population and resident-serving businesses.

The military installations are very important because of the number and kind of persons they bring to Lakewood (as well as Pierce and Thurston counties), giving the community some of the feeling of a company town. The military and state institutions (Western State and McNeil Island) are driven by political not market factors and decisions made in the state and nation's capitols, therefore less influenced by typical market factors. These facilities have significant influence over the demographic and economic character of local households. The area where this influence is felt but has not translated into a strength is retail trade. As a community and relative to its size, Lakewood has been able to capture, retain, and attract a fairly small proportion of retail spending. This comes even though Lakewood has significant amounts of retail space, including the recently renovated Lakewood Mall. Lakewood has also not participated in regional real estate markets to a great extent, with the exception of the Lakewood Industrial Park and the Lakewood/512 Business Park. There are few office buildings or parks of the size or quality that would attract regional tenants. Most offices are located in retail space or in scattered two-story buildings.

Lakewood has many locational advantages and is well-positioned to participate in the economic growth anticipated in the region.

5.3 Economic Location

The economic location of the Lakewood community has attributes that have influenced its development and will continue to affect the path of future development. There are several locational factors that have to be considered when contemplating the community's future, including:

- distance to the center of the Central Puget Sound Metroplex-40 miles to the intersection of I-90 and I-5 in downtown Seattle.
- to 10 miles from the traditional main economic and employment center of Pierce County (i.e., CBD and Port of Tacoma).
- location at the mid-point of the concentration of population and economic activity that dominates the northwest quadrant of the US—Lakewood is situated roughly equidistant between Vancouver, BC and Eugene, OR.
- location within 4 to 5 exits on the primary West Coast freeway that connects Canada, California, and Mexico.
- location at the intersection of I-5 and SR-512, which affords a more or less direct route to I-90 (the northern instate freeway that connects east-west traffic between the northern tier of the nation's states).
- proximity, but not adjacency, to the Port of Tacoma, transcontinental railroads, and the Pacific Northwest's national and international airline hub at Sea-Tac.
- proximity to areas of Southeastern Pierce County, Thurston County, and DuPont (WA) at Northwest Landing; these areas contain significant areas with vacant land targeted for substantial residential (population growth), commercial, and industrial development (employment growth).
- location close to employment concentrations that are not typically influenced by short-term business cycles (state government in Olympia, state's National

Guard, Western State Hospital, McNeil Island, McChord AFB, Fort Lewis, and Madigan Hospital).

These locational advantages are set against the general locational attribute that the Pacific Northwest, and in particular the Central Puget Sound Metroplex, is forecast to add 1,700,000 more people and 630,000 more jobs by 2020. While it would be naive to assume that the Lakewood community will automatically capture a significant share of regional growth that is possible.

5.4 Economic Development Policy Background

5.4.1 Introduction

The City of Lakewood's Economic Development Policies will not operate in a vacuum. Besides the dimensions of local, regional, national, and international market forces, there are state as well as county economic development policies. In addition, the Tacoma-Pierce County Economic Development Board and Port of Tacoma have policies and plans. To some extent, the City of Lakewood is bound by such policies, except they are typically so general that each specific community has to interpret and shape their own to deal with their own issues.

State and regional economic development policies that have been (or will be) adopted that provide a basis for Lakewood's Economic Development Element are summarized below.

5.4.2 Washington State Growth Management Act (1990-1991)

There are two ways to consider the GMA legislation and a local community's economic development. A narrow view would only search the text of the state laws for statements, intent, and programs that show a direct relationship to economic development. The second way is to interpret the planning, infrastructure, and capital financing sections of the GMA as a major restructuring of property rights in Washington State. As usual, the reality is somewhere in between.

Recent economic development activities in Washington State have been driven by several concerns:

- Boeing layoffs in the early 1990s

- economic slow-down in the US and Washington State during 1990-1995
- the need to moderate perceived impacts of increased regulation on private development actions
- concern by communities with how they will attain and finance their visions of future growth

Economic development in the case of growth management planning provides a balance to land use and environmental regulation. It realistically considers the need to stimulate economic activity to provide the community's strength to achieve their vision. In addition, the GMA requires consistency and concurrency so that plans and policies have a better chance of being implemented. The public sector can shape and influence the direction of economic development, but ultimately the decisions of private firms are what generate community growth.

Economic development is listed prominently among the goals of the 1990 Act that set its intent:

(5.) Economic Development. Encourage economic development through-out 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.

Cities and counties in Washington are allowed to adopt Economic Development Elements, but are not mandated to do so. There is a direct intent in several sections of the GMA that economic or employment activities be balanced with other goals and objectives. The GMA also states that state resources be used to ensure that growth is spread around the state.

Implicitly, economic development and economic concepts are themes that run through the GMA legislation. For example, impact fees and concurrency requirements are essentially applications of well-established pricing principles for financing public infrastructure--the main principle being that those who benefit

should pay according to use. Where the GMA legislation has generated the most concern is when it reinforces planning principles over market-driven actions. The legal basis for planning is well established in U.S. and state law. What the GMA does is provide a more consistent and explicit basis for local jurisdictions to enforce what they probably could--and should--have done voluntarily. Now they are required to plan and zone in ways that are consistent and that explicitly recognize capital facility capacities plus protection of sensitive environments.

5.4.3 VISION 2020 and Economic Development

The PSRC has adopted region-wide goals and objectives to guide multi-jurisdictional transportation and land use policies. Economic development is implicit in many of their goals and objectives. One of their five-part strategies for encouraging growth directly relates to economic development.

“Maintaining a Strong Regional Economy and Accommodate Growth”

- Accept responsibility to plan for the moderate growth forecast for the region by 2020.
- Promote a distribution of new employment growth centers, such as Tacoma, Everett, and Bremerton, to relieve growth pressures on King County.
- Provide enough urban land to allow private enterprise to effectively create the urban structures in which residents will live and work.
- Recognize the mobility needs of business and industry and provide for these needs within the intent of VISION 2020.

The PSRC is currently reviewing VISION 2020 as well as preparing a regional economic development strategy with its constituent bodies in four counties.

5.4.4 Pierce County Comprehensive Plan Economic Development Objectives (November 1994)

Economic development figures prominently in Pierce County's Comprehensive Planning. The following are the stated objectives:

- Strengthen existing business and industry and assist new business to locate in the county adding to the diversity of economic opportunity and employment.
- Pursue an active and aggressive recruitment program to induce a variety of commercial and industrial enterprises to settle in the county.
- Encourage the growth of readily available large planned employment center development sites, properly zoned and serviced with infrastructure.
- Develop programs that create healthy central business districts (CBD) and neighborhood commercial districts throughout the county.
- Through tiering and the Capital Facilities Plan, ensure that adequate infrastructure is provided to accommodate economic growth.
- Actively participate in the development of a properly educated and trained work force.
- Encourage programs that develop and promote our cultural resources.
- Achieve and maintain a high environmental quality of life to maintain and develop a robust, thriving economy and keep Pierce County a preferred place to live, work, and play.
- Pierce County should develop regulations which are consistent, enforceable, fair, predictable, and timely.
- Coordinate economic development efforts so that a clear and consistent economic policy is followed.

5.4.5 Pierce County Strategic Economic Development Action Plan (May 1997)

Pierce County has a goal of creating a "jobs-based economy." To achieve this goal, the County Executive and County Council convened a Citizens' Advisory

Committee on Economic Development. That committee, which was composed of 50 members from throughout the county, developed recommendations in the areas of infrastructure provision, regulatory processes, workforce training, and business attraction, retention, and growth.

The Citizens' Advisory Committee recognizes that partnerships are key as Pierce County moves into the 21st century. The county must create strategic alliances with the cities and towns within its borders; with neighboring counties; with its schools, colleges, and universities; with the military; and with local businesses if it is to succeed in its mission of creating a jobs-based economy.

5.4.5.1 Infrastructure

Goal: Pierce County and its cities and towns must provide adequate highways, roads, sewers, and other public infrastructure to provide for growth, particularly in planned employment centers. The processes for identifying infrastructure needs, planning for new public investments, and building it must be predictable and must be accomplished in partnership with jurisdictions around the county and throughout the region.

5.4.5.2 Regulatory Processes

Goal: Pierce County must provide regulatory and permitting processes that are fair, easy to understand, and simple to follow. Its regulations must provide adequate protection for Pierce County's environment but must balance environmental stewardship with an understanding of the needs of business.

5.4.5.3 Workforce Training

Goal: A trained and competent workforce is essential for success as Pierce County moves toward a jobs-based economy. Pierce County must work collaboratively with its schools, colleges, and universities and with private employers and other jurisdictions to ensure that its residents are being prepared for good jobs through high-quality, targeted training.

5.4.5.4 Attracting, Retaining, and Growing Businesses

Goal: To create a jobs-based economy, Pierce County must be seen as a desirable place to do business. It must support and nurture new enterprises, help existing businesses expand, modernize, or market, and attract new businesses to the county. The county must be a place where streamlined permitting and a flexible business climate are balanced against quality of life and a strong ethic of care for the environment. Pierce County welcomes and encourages opportunities that will create good jobs for its residents.

5.4.6 City of Lakewood's Economic Development Advisory Board

The City of Lakewood is unique in this state since it has established an Economic Development Advisory Board. This group is a standing committee of the city government. In July 1996, this Board adopted the following Draft Mission Statement and Goals.

“The Economic Development Advisory Board Mission Statement is to develop jobs, increase the revenue base, and diversity and expand Lakewood's economy in a manner consistent with the community's long-range vision.”

- Coordinate managed economic growth that is diversified and enhances the quality of life by balancing the concern for the environment with the need for infrastructure.
- Implement programs that provide businesses with financial, technical assistance, and training to ensure their success.
- Identify, develop, and maintain existing and planned employment centers and business districts with adequate infrastructure and business services to concentrate resources, and target growth.
- Communicate a positive business climate through a pro-active community partnership that supports expansion of existing businesses and seeks appropriate new economic development opportunities.
- Develop public policies that promote both economic growth and the well-being of the community.

- Maintain an educational consortium to assist with economic development.
- Develop and maintain flexible vocational education programs that respond to employer needs.
- Support the continued growth and development of K-12 and Pierce County higher education.
- Encourage community diversity training in the workforce.

5.5 Planning Implications

5.5.1 Opportunities and Challenges for Economic Development

Lakewood's past patterns of development; its economic location; and county, regional, state, and national/international trends in economic activity and real estate development converge to provide a complex of opportunities and challenges that, on balance, are positive with respect to economic development.

5.5.1.1 Opportunities

- Reputation for areas of high quality residential areas.
- Small amount, but viable, concentration of high income households.
- Location within a part of the five-county metroplex that is surrounded by recent economic successes that may be leveraged by the community including:
 - * Intel/Northwest Landing
 - * Port of Tacoma
 - * rapid suburban residential development in areas near Puyallup
 - * industrial development in Fife/Port of Tacoma area
 - * proximity to natural recreation and tourism areas
 - * viability of military installations in an era of base closures
 - * state policy of growth management which favors existing urban areas where possible.
- Diverse cultural and ethnic population base.

- Local control over the pace, amount and character of local real estate development.
- Designation as RTA commuter-rail station.
- Significant assembled holdings of land with development or redevelopment potential.
- Attraction of experienced military personnel to the community.

5.5.1.2 Challenges

The challenges facing the City of Lakewood are not atypical for older established mature communities.

- The diversity of the residences and significant numbers of households with lower to moderate incomes and older homes.
- A stock of older commercial buildings that were developed to respond to previous retail, industrial, transportation, and commercial technologies.
- Major retail areas that are not located at exits to the freeway system are a reflection of the age of these areas (Lakewood Mall and Colonial Center area). This is typical of older retail centers around the nation where the trends are more renovations and restructuring of malls and shopping centers than new malls and shopping centers being built.
- Demographic character of households driven by presence of older, affordable housing as well as need for dependent population groups to be near military, penal, and medical institutions as well as out-patients and retirees.
- New cities have to face the challenge of governing themselves and establishing traditions and process for the whole community to work together rather than in loosely connected groups as was the pattern prior to incorporation.
- New cities assume the responsibilities for programs, facilities, and services that were heretofore financed through county-wide tax base rather than often narrower local tax base.

- The legacy of past planning in unincorporated Pierce County was to allow sprawl and scatter; the new city will have to make some difficult decisions if it seeks to concentrate development rather than continue the diffuse patterns of the past.
- Position closer to the edge of the metroplex than the center, distances to the Ports of Tacoma and Seattle and airports, not being located on main line of transcontinental railroads.
- Large segments of local economic activity not susceptible to influence by local government processes (state and federal facilities and activities).
- Little to no regional participation in office, industrial, and business park development, so there are few areas within Lakewood that would currently be attractive to headquarters or branches of major corporations and industries that are growing in other parts of the Western Washington region.
- Pattern of retail development that is not consistent with other suburban communities that contain regional malls.

Challenges as well as opportunities are just that; they are not immutable or insurmountable, but rest on concerted, planned community-wide actions involving public-private partnerships.

Considering the foregoing palette of challenges, opportunities, locational, demographic, economic and real estate trends, conditions and attributes, a number of implications emerge for the comprehensive planning process and economic development strategy. These include:

- The current significant and diverse residential base of the community will predominate unless significant and concerted action is taken to increase and diversify economic activity (i.e., increases in land devoted to commercial, office and industrial space).
- Future population growth is projected to exceed employment growth; to become an economic, employment and/or urban center, the employment base

(and non-residential tax base) would have to gain relative to residential/population.

- Areas within Lakewood will have to be changed to the levels of service, infrastructure, and amenities that are consistent with the office, business park, industrial, and commercial areas of Lakewood's competitors in the region to attract more employment and tax base.
- Lakewood has a limited land base that is precluded from major expansion via annexation by military installations, natural barriers, and other municipal jurisdictions. Lakewood also has 10 to 15% of its land base in vacant categories. Without significant changes in patterns of development, the forecast increases in residents (29% to 52%) and 40% to 50% for employment are unlikely.
- redeveloping portions of mature urban areas such as Lakewood are difficult due to the following:
 - * process of assembling small parcels to attain large enough sites to accommodate modern real estate technologies and patterns;
 - * current owners of zoned property often have inflated ideas about land values compared to vacant previously undeveloped land; and
 - * redevelopment can increase development costs by adding demolition, environmental clean-up, land assembly costs, and development time.
- Lakewood has some latitude to pursue planning and development strategies that focus on different features:
 - * serving local population and businesses with retail and services businesses;
 - * pursuing dispersal development patterns within the city versus concentrating and combining economic assets and community facilities;
 - * emphasis on pursuing an urban high-density employment mixed-use center, with either horizontal or vertical combinations of uses; and

- * emphasis on participation in regional, national and international real estate markets or only response to local population and business objectives.
- Given the ambiguous economic well-being of local households can adequate tax base, public services and facilities be developed to serve the community at acceptable service levels.
- Economic development strong enough to assist community transformation requires concentrating relatively scarce community resources for capital improvements into commercial and industrial areas rather than spreading them throughout residential areas.
- Can the short-term needs of existing community businesses be addressed while at the same time pursuing a vision that requires attracting regional, national and international businesses?
- Can acceptable forms of more dense real estate development for residential and commercial/industrial purposes be pursued consistent with current and affordable infrastructure investment?

The Comprehensive Plan and the city's economic development strategy can be used to focus community activities, energy, and resources to pursue whatever the vision and preferred alternative future that will be determined in the next phases of the planning process.

CHAPTER 6: HOUSING

6.1 Existing Conditions

This report represents the first opportunity to look at the history of housing development in Lakewood. Three factors—the military installations, the lakefront property, and the proximity to Tacoma—have played dominant roles in establishing the character and conditions currently found in Lakewood.

The market demand for affordable housing for soldiers stationed at McChord Air Force Base and Fort Lewis has had a major impact on Lakewood, and is a major factor in understanding the presence of a large number of apartments in the city. Many of the retired homeowners now living in the community were once stationed at one of the two installations. The opportunity to build higher valued homes in a desirable setting on the shores of the city's lakes has provided Lakewood with its share of higher income families, and some of its oldest, most established neighborhoods. The city's proximity to Tacoma has positioned it as a primary location for post World War II tract housing.

Lakewood is characterized by wide variations in income and housing values. The first section of this chapter deals primarily with averages, which tend to mask these differences. The contrasts within the city are more evident in the later sections of this chapter, which describe housing conditions in the city by planning area.

6.1.1 Population, Household, and Income Changes since 1980

Population Changes by Age Groups. The city's population underwent a significant aging in the decade of the 1980s. While the total population increased by about 4,000, the number under age 24 decreased by about 1,000. As shown in Table.6-1, the population below age 19 went from 31% to 28% of the total population. A more dramatic shift occurred in the 20 to 24 year old age group, which fell from 16% to 11%. The decrease in employment on the two military installations during this period may account for the reduction of population of this age group.

The population over age 25 increased from 53% to 61% of the population. The largest percentage increase occurred in the over 65 population which rose from 6% to 11% of the population. It appears that the population is aging in place, and that Lakewood is serving increasingly as a retirement community.

Table 6-1 Lakewood's Population by Age Categories

	1980 (1)	Percent of Total	1990 (2)	Percent of Total
0-19	16,680	31%	16,453	28%
20-24	8,529	16%	6,204	11%
25-34	8,775	16%	10,655	18%
35-54	11,660	21%	13,248	23%
55-64	5,301	10%	5,610	10%
65+	3,488	6%	6,242	11%
Total	54,433	100%	58,412	100%

(1) US, Census for the Lakes Census Designated Place¹ 1980

(2) US Census for the Lakewood Census Designated Place, 1990

6.1.1.1 Lakewood household Age

Table 6-2 illustrates several unique characteristics found in the city's population mix. This table compares the age of the head of the households in Lakewood, University Place, and for all of Pierce County. As expected, because of the influence of the military installations, the percent of households in the 15 to 24 year old category in Lakewood is considerably higher, 13% vs. 8% and 7%, respectively. What appears to be unique about Lakewood is the lower percentage of middle-age households. Of Lakewood's heads of households, 55% are between 25 and 54 years old. This proportion is significantly lower than is found in University Place and Pierce County, where the figures are 63% and 62%. The most atypical age cohort is 35 to 44, which has 18% of the city's households compared to 24% and 23% in the two other jurisdictions. The proximity to the military installations helps explain this unique feature. The largest population group living in military housing on each of the two installations is between 25 and 34 years old.¹

The fact that fewer middle aged households live in Lakewood is significant, as this population cohort provides an important foundation to a community. Households

¹ 31% of the population living at Ft. Lewis is between 25 and 34 and 26% of this same age group were living at McChord Air Force base in 1990. Source: US Census

between 25 and 54 provide the economic spending base for a community, as these are years of family formation and high personal income. This age group provides the underpinnings for civic leadership in schools and service organizations.

Table 6-2 Age of residents in Lakewood, University Place, and Pierce County, 1990

Age of Head of Household	Lakewood		University Place		Pierce County	
	Number of Households	Percent	Number of Households	Percent	Number of Households	Percent
15 to 24	2,972	13%	907	8%	15,462	7%
25 to 34	5,341	23%	2,476	22%	51,421	24%
35 to 44	4,099	18%	2,682	24%	49,603	23%
45 to 54	3,157	14%	1,932	17%	32,857	15%
55 to 64	3,268	14%	1,423	13%	26,112	12%
65+	3,917	17%	1,674	15%	39,179	18%
Total	22,754	100%	11,094	100%	214,634	100%

Source: US Census, 1990

6.1.1.2 Household Turnover Rates

Sixty-three percent of the city's households moved into their housing unit in the four-year period from 1986 to 1990. This percent, as shown below in Table 6-3, is higher than the county's total of 57%. This high turnover rate occurs primarily in rental units which made up over 52% of the occupied housing units in 1990. The opposite trend is found among homeowners, who tend to be older. Twenty-five percent of households moved into their homes between 1960 to 1979. A similar statistic for Pierce County is considerably lower, which is 17%. Ten percent of city households moved into their homes between 1960 and 1969, compared to only 5% for the same period in the county. These figures represent the homeowners who provide stability to the community.

Table 6-3 Year Householder Moved into Unit, Lakewood and Pierce County¹

	Lakewood		Pierce County	
	Number	Percent	Number	Percent
1986 to March 1990	14400	63%	122834	57%
1980 to 1984	1883	8%	26218	9%
1970 to 1979	3364	15%	35920	12%
1960 to 1969	2226	10%	16396	5%
1959 or earlier	881	4%	13284	4%
Total	22754	100%	214652	100%

¹ US, Census for the Lakes Census Designated Place

6.1.1.3 Household Income Levels

Per capita income and median household income increased in Lakewood during the 1980s by 66% and 69%, respectively. As shown in Table 6-4, these increases fell short of the changes for the same measures in Pierce County as a whole. For the county, the per capita income increased by 81% and the median income went up 77%.

While average incomes increased, incomes for those at the bottom did not keep pace with the rest of the population. Persons with incomes below the poverty level increased by 30%. Table 6-4 shows that the percent of persons living below poverty increased from 12.3% to 16%. This increase is much greater than that occurred countywide, where the percent of persons living in poverty increased by 8%.

Table 6-4 Various Measures of income in Lakewood and Pierce County 1979, 1989

	1979	1989	Change 1979 to 1989
	(1)	(2)	
Lakewood			
Per capita income	\$ 8,137	\$ 13,538	66%
Median Household Income	\$ 15,505	\$ 26,228	69%
Percent of Persons Below Poverty Level	12.3%	16.0%	30%
Pierce County			
Per capita income	\$ 7,409	\$ 13,439	81%
Median Household Income	\$ 17,221	\$ 30,412	77%
Percent of Persons Below Poverty Level	10.6%	11.4%	8%

(1) US, Census for the Lakes Census Designated Place, 1980

(2) US Census for the Lakewood Census Designated Place, 1990

6.1.2 Lakewood's Changing Housing Stock

6.1.2.1 Increase of Multi-family Units

From 1980 to 1997 the number of multifamily units in Lakewood increased from 8,874 units to 11,889 units, or a 34% increase. In the same time period, single-family units increased by 556 units or 4%. There is now a total of 26,534 housing units of all types in the city. Current estimates indicate that rental housing provides the majority of housing units in the city.

Table 6-5 Housing Units in Structure for Lakewood, 1980, 1990, 1997

	1980		1990		1997	
	Number	Percent	Number	Percent	Number	Percent
	(1)		(2)		(3)	
Single family (4)	12,563	56%	12,964	54%	13,119	49%
2 to 4 units	1,777	8%	2,363	10%	2,641	10%
5 or greater units	7,075	31%	7,361	30%	9,248	35%
Mobile home or other	1,169	5%	1,542	6%	1,526	6%
Total Housing units	22,584		24,230		26,534	

(1) US, Census for the Lakes Census Designated Place, 1980

(2) US Census for the Lakewood Census Designated Place, 1990

(3) Washington State Office of Financial Management, 1997

(4) Includes single-family attached

6.1.2.2 Housing Age

Only 5% of the city's existing housing stock was built before 1939. As shown in Table 6-6, the city has grown steadily², with more than 4,300 units built in every decade since 1950. The fastest growing decades were the 1960s and 1970s when 5,668 and 6,339 units respectively were built. The building pace of the 1990s has apparently slowed, and probably will not match the pace of any post-WWII decade.

Table 6-6 Age of Housing Stock

Decade Built	Number Built	Percent
1990 to 1997	2,304	9%
1980 to March 1990	4,382	17%
1970 to 1980	6,339	24%
1960 to 1970	5,668	21%
1950 to 1959	4,522	17%
1940 to 1949	2,056	8%
Before 1939	1,263	5%

US Census for the Lakewood Census Designated 1990

Washington State Office of Financial Management 1997

6.1.2.3 Rental Housing in Lakewood

The majority of occupied housing units in Lakewood (52%) are now rentals. By way of comparison, rentals make up 40% of all occupied housing units³ in Pierce County. Two trends are at work that combine to put rental housing into the majority of the city's occupied housing. First, apartment construction has accelerated. While Lakewood has never been an exclusively single-family home ownership

² Table 6-5 and Table 6-6 differ on the number of units built in the 1980s due to the boundary difference between the 1980 Lake CDP and the 1999 Lakewood CDP.

³ Source: US Census 1990

community, as there were some multi-family units built in the 1960s, multi-family construction picked up momentum in the 1980s, as illustrated by Table 6-7. Seventy-five percent of all housing units built in the 1980s are renter-occupied.

The other trend affecting rental housing is the conversion of single-family units from owner-occupied to rentals. In 1990, Lakewood had 9,653 owner-occupied single-family housing units, although the city had a total of 13,119 single-family units. Therefore, an estimated 3,466 of the single-family units, or 25%, were renter-occupied.⁴

Table 6-7 Year Structure Built by Tenure

Year Built	Percent Owner-Occupied	Percent Renter- Occupied
1980 to 1990	25%	75%
1970 to 1980	39%	61%
1960 to 1970	56%	44%
1950 to 1959	67%	33%
1940 to 1949	50%	50%
Before 1939	51%	49%
Total	48%	52%

Source: US Census for the Lakewood Census Designated Place 1990

6.1.2.4 Household Age and Home Ownership

Table 6-8 below relates the age of household and tenure in Lakewood. It shows that in nearly every age category there are fewer homeowners than found countywide. For example, in the 25 to 34 age group, only 18% of the city's population are homeowners. This is less than half the 41% county-wide. The gap in the 35 to 44 age cohort is also considerable at 46% to 64%. It is not until the prime earning years and retirement ages of 55 to 74 that Lakewood's homeownership exceeds or meets the countywide percentages. One explanation for the high rate of renters vs. owners may be that military families choose to rent houses for several years rather than purchase, due to their high mobility.

⁴ Source: US Census 1990

Table 6-8 Tenure by Age of Householder, Lakewood and Pierce County, 1990

Age of Head of Household	Lakewood Homeowners	Lakewood Renters	Pierce County Homeowners	Pierce County Renters
15 to 24	4%	96%	11%	89%
25 to 34	18%	82%	41%	59%
35 to 44	46%	54%	64%	36%
45 to 54	66%	34%	75%	25%
55 to 64	80%	20%	81%	19%
65 to 74	82%	18%	80%	20%
75 +	77%	23%	68%	32%

Source: U. S. Census 1990

6.1.3 Other Housing Issues, Changes and Conditions

6.1.3.1 Race and Rental Rates

A review of the tenure by race as displayed in Table 6-9, shows that the percent of white householders who are owners (53%) is higher than the city average (47.5%). Conversely, the majority of renters are minorities. Among the city's Asian population, only 44% are homeowners. The percent of homeowners drops even more among Blacks and American Indians, where only 22% are homeowners.

Table 6-9 Tenure by Race of Householder

	Total Households	Percent Homeowners	Percent Renters
White	17,823	53%	47%
Black	2,704	22%	78%
American Indian, Eskimo or Aleut	264	22%	78%
Asian or Pacific Islander	1,598	44%	56%

Source: US Census

6.1.3.2 Impact of Military Installations on Housing

The impacts of military installations on Lakewood's population, housing and economy are varied and strong. The numbers of active military and their dependents living off base are a significant part of the housing market. Their low incomes, youth, and special housing needs skew the market in Lakewood compared to other communities in Puget Sound.

In 1990, population on the two military installations was nearly half that of the Lakewood Census Designated Place (CDP). At that time Pierce County held nearly 45% of the state's military population (see Table 6-10). Virtually all of the Pierce County military are in Fort Lewis and McChord. Since 1990, the military

population declined in Pierce County, so that by 1996, the county contained only 36% of the state's military.

While the number of individuals living on the two installations has fluctuated over the last 20 years, the number of households has remained relatively constant. As shown in Table 6-10 the total employment level and population on the installations reached its high level of 62,502 and 44,211, respectively, in 1970. Both population and employment have decreased by 40% since 1970. The number of households remained at about the same level because of the shift in household size from 5.62 in 1970 to 3.83 in 1990. This 32% reduction far exceeded the Pierce County downsize of households of 15% for the same period. The 32% drop in military household size can be explained either by changes in military housing programs or changes in military family composition over this time period.

Table 6-10 Population, Households, and Employment at Fort Lewis and McChord 1970 to 1990

	1970	1980	1990
Total Population	44,211	29,507	26,762
Household Size	5.62	3.88	3.83
Total Employment	62,502	40,353	37,041
Total Households	4,408	4,265	4,438
Percent Single-family	46%	46%	73%

Source: Puget Sound Regional Council, August 1995

6.1.3.3 Military Personnel Information by Planning Area

In 1990, 2,926 armed forces personnel lived in the Lakewood CDP (rather than on installation property). Table 6-11 shows their distribution within the city. The Urban Core Planning Area has the largest number, nearly 1,000, with the Southwest and South Planning Areas next with about 500 each. The Northwest Planning Area had the smallest number (152).

Nearly 10,000 of Lakewood's 1990 population were armed forces veterans. Of these, the largest number--twice as many as in any other planning area--lived in the West Planning Area.

6.1.4 Housing Conditions Survey

Interns trained by the housing consultants conducted a visual assessment of housing conditions within the City of Lakewood in the summer of 1997. Table 6-12 below identifies what percentage of each planning area was surveyed.

Table 6-11 Civilian and Military Employment & Veteran Status

Planning Area	Veteran Status Civilian Veterans ≥16 yr. old	Civilian Veterans ≥65 yr. old	% of Area
Urban Core	1,404	186	13.4%
Northwest	1,723	372	17.7%
North Central	607	92	5.9%
Northwest	1,316	313	13.8%
West	2,782	855	30.7%
South Central	1,021	317	11.3%
Southwest	716	128	7.1%
Totals	9,568	2,263	100%

Source: 1990 Census of Population and Housing

Table 6-12: % of Planning Area Covered by Housing Conditions Survey

Planning Area	% Percent Covered by Survey
1	80
2	84
3	83
4	2
5	24
6	86
7	100

The survey was concentrated in areas which are likely candidates for future neighborhood revitalization programs because of lack of sewers, neighborhood and environmental conditions, and likely poor housing quality or maintenance based on an initial assessment of housing throughout the city. Concentration of poor housing conditions is one significant element in determining locations for neighborhood preservation programs. The city will eventually need to complete the condition study for the whole city, since condition information provides a baseline for monitoring changes in neighborhoods.

The methodology used to collect the information involves rating each structure on a simple four scale system, where 1 indicates “needs no repair,” and 4 indicates “severely deteriorated.” The consultants trained the interns in the field, conducted cross checks, and accompanied the interns on portions of the survey. The data

collected were input into the city's data system. It will be integrated into the city's geographic information system (GIS) for future analysis comparing conditions with such factors as age of structure, type of structure, and tenure.

6.1.4.1 Single Family

As shown in Table 6-13 below, nearly 90% of the city's single-family housing stock is in good or fair condition. Over half the units received a rating of "good," meaning the house is in good condition and well maintained, needing at most partial painting. Slightly more than one third of all units are in fair condition. With this rating, painting, maintenance and moderate repairs to a major element of the house (roof, walls, foundation) or a few minor elements are all that would be needed to put it into good condition. Just under 10 % of the single-family housing needs substantial repair and just over 1% is in poor condition and may need replacement.

Table 6-13 Housing Condition by Planning Area, City of Lakewood 1997

Planning Area	Good Number/%	Fair Number/%	Substantial Repair Number/%	Poor Number/%
1-Single Family	444 / 45%	576 / 44%	168 / 10%	12 / 1%
1--Multi Family	15 / 24%	45 / 71%	3 / 5%	0 / 0%
2-Single Family	271 / 38%	265 / 54%	35 / 8%	6 / 0%
2--Multi Family	11 / 34%	21 / 66%	0 / 0%	0 / 0%
3-Single Family	267 / 80%	79 / 18%	108 / 2%	4 / 0%
3-Multi Family	5 / 39%	7 / 54%	1 / 8%	0 / 0%
4-Single Family	55 / 95%	3 / 5%		
4-Multi-Family	12 / 57%	8 / 38%	1 / 5%	0 / 0%
5-Single Family	776 / 63%	395 / 28%	132 / 8%	13 / 1%
5-Multi Family	7 / 50%	5 / 38%	2 / 14%	0 / 0%
6-Single Family	228 / 51%	284 / 29%	166 / 18%	14 / 2%
6-Multi Family	14 / 26%	37 / 67%	4 / 7%	0 / 0%
7-Single Family	128 / 31%	190 / 46%	78 / 19%	16 / 4%
7-Multi Family	11 / 31%	20 / 56%	4 / 11%	1 / 3%
TOTALS				
Single Family	2,114 / 46%	1,789 / 39%	687 / 15%	65 / 1%
Multi Family	75 / 32%	143 / 61%	15 / 6%	1 / <1%

Source: Housing Condition Study, City of Lakewood, 1997

Table 6-11 also shows housing conditions of single-family and multi-family housing in each of the city's planning areas. At this time, multi-family data is presented by developments rather than number of units. The distribution of

condition varies between areas, and also between single-family and multi-family developments within an area. For example, Planning Area 3 has the largest proportion (75%) of single-family houses in good condition. However, only 38% of its multi-family housing is in good condition, lower than Planning Area 5. Planning Area 5 has half of its multi-family and nearly 60% of its single-family housing in good condition. While only 24% of the area was surveyed, the results represent the largest number of units surveyed in any planning area.

Planning Areas 6 and 7 include higher-than-average numbers of single-family units needing substantial repair or in poor condition. Units in these conditions comprise about one quarter of the housing in these areas.

6.1.4.2 Mobile Homes

The housing condition study included all 39 mobile home parks found in the City of Lakewood. They were rated on a park-by-park basis using a four scale rating system:

- Parks which had good maintenance, landscaping, and public areas. The homes appear in overall good condition.
- Parks where landscaping and public areas could use some maintenance and where some homes need repair or replacement.
- Parks where landscaping and public areas are in fair or poor condition, and a large percentage of homes need repair or replacement.
- Parks that do not have any landscaping, and common areas need significant repair and maintenance. Most homes need replacement.

Mobile home parks are concentrated in Planning Areas 2 and 7 (refer to Figure 3-3). Together, these areas account for more than three quarters of the mobile home parks in the city. Planning Areas 4 and 5 do not contain any mobile home parks. As shown in Table 6-14, mobile home parks are in poorer condition overall in Lakewood than single-family or multi-family housing.

Particularly in Planning Area 7, two parks are substandard with respect to the condition of the mobile homes as well as environmental conditions. Planning Area

2 has the highest ratings of mobile home parks, with nearly 80% in good or fair condition.

Table 6-14 Condition of Mobile Home Parks, City of Lakewood

Planning Area	Condition			
	Good	Fair	Substantial Repair	Poor
1	0	1	1	0
2	3	8	2	1
3	0	0	0	1
6	0	3	3	0
7	0	8	6	2
Totals	3	20	12	4

Source: Lakewood Housing Condition Study, 1997

6.1.5 Publicly Assisted Housing

The Pierce County Housing Authority (PCHA) administers certificates and vouchers, and manages a scattered site public housing program and several below market rate multi-family developments within the City of Lakewood.

6.1.5.1 Certificates and Vouchers

Section 8 certificates and vouchers provide federal US Department of Housing and Urban Development (HUD) subsidies to low income families to help pay for rent of apartments in the private market to limit costs to 30% of the family's income for housing. Of the 2,218 vouchers and certificates issued by the PCHA, approximately 10% are located within the City of Lakewood.

6.1.5.2 Scattered Site Low Income Housing

PCHA purchased 167 single-family houses around the county with HUD funds and rents them to very low income families. The tenants' rent is 30% of their income with a minimum monthly rent of \$25. While it is unusual for a housing authority to operate only scattered site housing, PCHA does not operate traditional housing developments. One of these units is within the City of Lakewood.

6.1.5.3 Enterprise Fund Rental Apartments

PCHA has acquired 2,099 units located in 20 apartment complexes in Pierce County. A total of 407 units in seven of these apartments are located in Lakewood. This represents 19.4% of the units and more than one third of the complexes. Enterprise apartments are funded largely through bond issues; no federal funding

is involved. Most of the tenants--85% to 95%--have low to very low incomes. Approximately 10% of the Enterprise tenants receive Section 8 certificates or vouchers. PCHA manages these properties. All the complexes were surveyed in the housing condition study and were found to be in good or fair condition. A brief description of individual Enterprise apartments within the City of Lakewood is summarized in Table 6-15.

Table 6-15 PCHA Owned Units

<u>Brookridge</u> 7320 146th St. SW Built: 1976, Purchased 1991 Condition: Good	69 units Family, 1 and 2 br. units Rents: \$405 - \$435
<u>Eagles' Lair</u> 12710 56th Ave. Ct. SW. Built: 1985 Condition: Good	54 units Family, 1 and 2 br units. Rents: \$345 - \$455 Laundry room
<u>Evergreen Court</u> 12809 Lakewood Dr. SW Built: 1954 Condition: Good	40 units Family complex, 1 and 2 br. units Rents: \$305 - \$340 Laundry Room
<u>Lakewood Village</u> 9100 Lakewood Dr. SW Built: 1995(turnkey) Condition: Fair	136 units Family: 30-1 76- 2 30- 3 br units Rents: \$480 - \$580 - \$700 Fireplaces, washers, dryers, each unit has exterior entry, patio or deck
<u>Lonepine</u> 5218 Chicago Ave. SW. Built: 1970 Condition: Fair	28 units Family, 1 and 2 br units Rents: \$300 - 310; \$350 - 360 Laundry room
<u>Oak Leaf</u> 4111 110th St. SW Built: 1967, purchased 1982 Condition: Good	26 units All 1 br units Rents: \$335 - \$355 Storage and laundry room
<u>Montgrove Manor</u> 4001 109th St. SW Built: 1969 Condition: Fair	16 units Family, all 2 br units Rents: \$330
<u>Village Square</u> 10810 Lakeview Ave. SW Built: 1978, purchased 1992 Condition: Fair	38 units Family, 1 and 2 br. units Rents: \$380 - \$425

PCHA's Enterprise units rent below current market, but they experience the high vacancies found throughout Lakewood. Vacancies vary by development. Lakewood Village is among the more successful and stable developments. On average, the Enterprise properties turn over completely on an annual basis.

Assisted housing makes up approximately 8% of the city's rental housing stock. This amount is not out of scale with the proportion of assisted households in other cities of comparable size.

While this assisted stock provides assurance of an ongoing supply of affordable housing, it does not supply enough housing to meet the overall need for affordable housing in Lakewood based on household income.

6.1.5.4 Housing units without Sewer Services

The 1990 census identified 22,472 residential units in Lakewood. Of these units 92% are on public sewer, and 8% or 1,721 units rely on on-site septic sewers. Two communities, Tillicum and American Lake Gardens, are not served by public sewer. It is unusual to find communities with the densities found in Tillicum and American Lake Gardens using septic tanks.

6.2 Trends and Projections

6.2.1 Projections to 2020

The PSRC projects a steady growth for Lakewood over the next 13 years. By 2020 this agency, which is responsible for developing growth projections, expects that the city will have over 76,000 residents. They expect population increases of 11% and 10% over the first two decades of the next century.

As shown in Table 6-16 most of the growth is expected to occur in multifamily housing.

Table 6-16 Lakewood Population and Household Projections, 1990 to 2020¹

	Percentage Change per decade		
	1990 to 2000	2000 to 2010	2010 to 2020
Population	13%	11%	10%
Total Households	15%	16%	19%
Single-family houses	10%	12%	3%
Multifamily	22%	21%	17%

(1) Estimates based on five FAZ areas

Source: 1995 Forecast, Puget Sound Regional Council

For the decade of the 1990s the PSRC projects a population increase of 13%, with 10% increase in single-family housing and a 22% increase in multi-family units. The actual pace of growth in housing units was about 10% over the first seven years of the decade. This rate is about the same as the projections. The major difference between the projections and what actually has occurred is in the mix in units built.

Multi-family units have increased from 9,724 units to 11,890, a growth rate of 22%. At the same time only 155 single-family units have been built (a 1% increase).

6.2.2 Owner-Occupied Single-family Housing

6.2.2.1 Median house price

Since 1995, Lakewood's median price for a single-family house has increased from \$130,000 to about \$135,000, a 4% increase. As shown in Table 6-17 this is based on sales of 238 units in 1995 and 131 for the period from January through August of 1997. This compares to the countywide increase of \$7,000 or about 6%⁵.

Table 6-17 Median Home Sale Price and Number of Sales in Lakewood, 1995-1997

				Change
	1995	1996	1997	1995 to 1997
Number of Sales	238	221	131	-
Median Sale Price	\$ 130,000	\$139,950	\$134,950	\$4,950

Source: Pierce County Market Real Estate News, 1992 to present

6.2.2.2 House sales price by categories

House values vary in Lakewood by large amounts. For example, in 1996, 11 houses sold for less than \$75,000 and three houses sold for over \$400,000. Because of the large differences, it is necessary to look in more depth at home sales to gain a more complete understanding of the home sales market.

Table 6-18 breaks down the sales in 1995 and 1997 by sales price increments. It shows a significant shift in the value of houses from the lowest categories to the middle categories over this two-year period. In 1995, 25% of the homes were sold for less than \$100,000. Two years later, the sales for this amount accounted for only 17% of the total. In 1995, sales were more evenly spaced between \$75,000 and \$150,000, with sales making up 17%, 20% and 23% of the \$25,000 increments. By 1997, the three increments between \$100,000 and \$175,000 had 23%, 26% and 17% of the sales. Therefore, fewer lower priced houses were being purchased and most of the sales were in the middle brackets.

⁵ Multiple Listing Service

While houses in the lower price ranges were selling for more, there was very little change in the \$175,000 to \$199,999 category. This category made up 6% of the sales in 1995 and 5% in 1997. This suggests that the prices of more expensive houses are not increasing. To determine if this is occurring, it is necessary to look at sales on a geographic basis.

Table 6-18 Home Sales in Lakewood, 1995-1997 by Sale Categories

	Number of Sales	Percent of Sales	Percent of Sales	% Change
	1995-1997	1995	1997	1995 to 1997
< \$75,000	40	8%	5%	-3%
\$75,000 to \$99,999	86	17%	12%	-5%
\$100,000 to 124,999	123	20%	23%	3%
\$125,000 to 149,999	138	23%	26%	3%
\$150,000 to \$174,999	92	11%	17%	6%
\$175,000 to 199,999	39	6%	5%	0%
\$200,000 to \$299,000	48	8%	9%	1%
>\$300,000	31	7%	3%	-4%

Source: Pierce County Market Real Estate New, 1992 to present

6.2.2.3 Home Sale Prices by Areas

The Pierce County Multiple Listing service provides sales for general areas of Lakewood; five areas had a sufficient number of sales to show patterns. The median sale price for the five areas is shown in Table 6-19. This table shows that house prices are increasing on an uneven basis in the city. In the two most eastern sections of the city, prices in the two-year period increased 35% and 11%, respectively. The prices in these two areas started at lower values (\$92,500 and \$108,975) and even with the increases are still lower or at a par with the three other areas. Thus the major price movements were in the lower priced areas and for the lower-priced houses.

Home prices in the central area, or the residential areas around Gravelly Lake and Steilacoom Lake, increased by a 9% from a median value of \$137,042 to \$149,000.

There were minor price decreases in two of the five areas. In the Northwest Planning Area, prices fell by 2%. This area, with a median price of \$154,000, is still the highest in the city. Competition from newer houses being built in the area and in the nearby communities of Steilacoom, DuPont, and Puyallup has kept the prices of existing homes from increasing.

Many of the new houses are selling for \$10,000 to \$15,000 more than comparable existing houses, and buyers are opting for the new houses.⁶

House prices also fell in the most western area of the city. There the median sale price fell about \$4,700 from \$124,710 to \$120,000.

Table 6-19 Home Sales in Lakewood, 1995-1997

Section of Lakewood	1995		1997		Change 1995 to 1997	
	Number	Median	Number	Median	\$	Percent
Northeast	38	\$ 92,500	25	\$ 124,500	\$ 32,000	35%
Central: east	22	\$108,975	16	\$ 120,750	\$ 11,775	11%
Central: "Lakes"	44	\$137,042	19	\$ 149,000	\$ 11,958	9%
Northwest	64	\$156,750	34	\$ 154,000	\$ (2,750)	-2%
West	70	\$124,710	37	\$ 120,000	\$ (4,710)	-4%

Source: Pierce County Market Real Estate News, 1992 to present

6.2.2.4 Owner Costs as a Percent of Income

Nearly all (84%) of homeowners in Lakewood pay less than 30% of income for monthly house payments. Another 6%, as shown in Table 6-20 pay between 30% and 35%. A remaining 971 households pay more than 35% of their income for housing cost. When a household pays over 30% of their income for rent, the payments are above an affordability standard.

Table 6-20 Monthly Owner Costs as a Percent of Household Income

	Number	Percent
Less than 20 Percent	5,642	61%
20 to 24 Percent	1,303	14%
25 to 29 Percent	723	8%
30 to 34 Percent	517	6%
35 Percent or more	971	10%

US Census for the Lakewood Census Designated Place, 1990

6.2.3 Rental-Occupied Housing

6.2.3.1 The Composition of the Rental Housing Market

Over half of the city's apartment units are in large building projects. These larger projects do not have all the units in the same buildings but are under owned by one company and under one management firm. As shown on Table 6-21, below there are eight projects which contain more than 200 units and which make up 26% of

⁶ Interview with Century 21 Realtor

the city's apartments. On the other end of the spectrum 19% of the apartment units are in smaller 5 to 24 projects.

Table 6-21 Apartment units by the size of the apartment

	Number of Projects	Number of Units	Percent of Total Units
5 to 24	141	1931	19%
25 to 49	41	1459	14%
50 to 99	23	1595	16%
100 to 199	18	2561	25%
200 to 299	5	1257	12%
300+	3	1464	14%

Source: City of Lakewood

Apartments have historically been an integral part of the city's housing stock. As shown in Table 6-22 over 2,000 apartment units were built in every decade between 1960 and 1990. Over 38% of the units were built before 1970 and over 65% were built before 1980. The city's rental stock is not only old but it was not well built to begin with. The Pierce County Assessor's Office rates all building in terms of quality of construction. Buildings are rated on a five point scale from "excellent" to "low cost." Three-fourth of the city's apartments were judged to be of average quality, and one third of the apartments built before 1970 were considered as "low cost" building. On a more positive note, five buildings built since 1990 were judged to be of "good" construction quality.

Table 6-22 Apartment units in Lakewood by Year Built

	Number	Percent
1990 to date	1,114	11%
1980 to 1989	2,469	24%
1970 to 1979	2,728	27%
1960 to 1969	3,090	30%
1950 to 1959	342	3%
Before 1950	476	5%

Source: City of Lakewood, 1997

6.2.3.2 Rental Rates

The average apartment rental rates, except for minor adjustments, have remained unchanged in Lakewood since the spring of 1993 at around \$485.⁷ Table 6-23 summarizes rental rates for the two-year period from the spring of 1995 to the spring of 1997. During that period average rents in Lakewood fluctuated around this \$485 level. During the same period, rents in neighboring University Place increased by 2% and rents countywide went up 11%.

The stagnant rental rates make it easier for families to afford to rent an apartment; therefore, this is helpful from an affordability perspective. However, the circumstances which have forced the market to keep rents constant are unhealthy for the city in the long run. These circumstances include the large number of older rental units which were not built well to begin with. Many of these units need upgrades, and they all require continued maintenance. The constant rents and high vacancy rates, described below, provide little or no incentive for owners to upgrade or even maintain their units. On the contrary, these conditions often lead to deferred maintenance and deterioration.

Table 6-23 Average Monthly Rents in Lakewood, University Place and Pierce County, 1995 to 1997

	Spring	Fall	Spring	Fall	Spring	Annual % Change
	1995	1995	1996	1996	1997	96 to '97
Lakewood	474	466	484	500	484	0%
University Place	502	495	497	514	508	2%
Pierce County	462	454	458	472	508	11%

Source: Tacoma Real Estate Trends, Spring 1997

A key measure of housing affordability is the percentage of income that households pay for their rent. The general guideline is that housing expenses should not exceed 30% of a household's income. In Lakewood, as shown in Table 6-24 below, 8% of households pay between 30 and 34% of their income for rent and 33% pay more than 35%. The percent of Lakewood households paying more than 30% of their income for rent is comparable to what is found in Tacoma. Lower percentages of households in University Place and Pierce County pay more than 35% of their income for rent -- 24% and 30% respectively.

⁷ Tacoma Real Estate Trends, Spring 1995

Table 6-24 Monthly Rental Costs as a Percent of Household Income for various jurisdictions

	Lakewood	Tacoma	University Place	Pierce County
Less than 20 Percent	30%	27%	36%	30%
20 to 24 Percent	13%	14%	16%	14%
25 to 29 Percent	13%	13%	13%	12%
30 to 34 Percent	8%	8%	8%	8%
35 Percent or more	33%	35%	24%	30%

Source: US Census, for the Lakewood Census Designated Place, 1990

6.2.3.3 Rental Vacancies Rates

Table 6-25 compares the apartment vacancy rates in Lakewood with adjoining University Place and the entire county. Over the past five years Lakewood's vacancy rate have been consistently high, reaching a maximum of 13.6% in 1996. This high rate can be explained in large part by new units which had just hit the marketplace. However, be discussed, the age and bedroom mix of the city's apartments hold the explanation for the consistent long-term high vacancy rates.

Table 6-25 Multifamily Vacancy Rates by Area (in Percent)¹

	1997	1996	1995	1994	1993
Lakewood	9.1	13.6	8.8	8.6	5.5
University Place/Fircrest	6.2	6.5	6.7	6.9	3.3
Pierce County	7.1	7.7	7	6.3	5.3

(1) For April of each year

Source: Tacoma Real Estate Trends

The city's high vacancy rates are in part a result of the age of the housing units. Over the last thirty years apartments have gotten larger, and the percentage mix of one and two bedroom units in apartments has changed significantly. In the 1970s the average apartment project contained 44% one bedroom units. By the 1990s only 30% of the units were one bedroom and the rest were two and sometimes three bedroom units.⁸ In changing the bedroom mix, the apartment developers have responded to market changes. Market demand for existing one bedroom units is limited, Lakewood has a large inventory of these units, many of them built in the 1970s. Single people are choosing to live with another person, and insisting on two bedroom units with two baths.

⁸ Dupre + Scott Apartment Advisors, Inc. June 1996, Vol 19 No. 3

The high vacancy rates are shown in Table 6-26, which breaks out vacancy rate by the number of bedrooms in each apartment project over 20 units in the city. The high vacancy rates are found in the one bedroom units (9.1%) and two bedroom with one bath units (10.7%). Vacancy rates for these units are at least 40% higher than for other unit types.

Table 6-26 Multiple Family vacancy Rates by Number of Bedrooms (in Percent) April 1997

	Studio	One bed	Two bed One Bath	Two bed Two Bath	Three bed Two Bath
Lakewood	1.2	9.1	10.7	5.8	5.7
University Place/Fircrest	7.5	5.2	6.7	6.8	6.4
Pierce County	4.9	6.6	7.7	7.9	5.3

Source: Tacoma Real Estate Trends

6.2.3.4 Rent as a Percentage of Income

A key measure of housing affordability is the percentage of income that households pay for their rent. The assumption is that housing expenses should not exceed 30% of a household's rent. In Lakewood, 8% of households pay between 30 and 34% of their income for rent, while 33% pay more than 35% (see Table 6-27). This latter number is considered to be very high by typical planning standards.

Table 6-27 Monthly Rental Costs as a Percent of Household Income

	Number	Percent
Less than 20 Percent	3,526	30%
20 to 24 Percent	1,519	13%
25 to 29 Percent	1,508	13%
30 to 34 Percent	949	8%
35 Percent or more	3,985	33%

(1) US Census for the Lakewood Census

6.3 Countywide Planning Policy

The county, and each municipality in the county, shall determine the extent of the need (i.e., the demand) for housing for all economic segments of the population that are projected for the community over the planning period.

- The projection shall be made in dwelling units, by type, provided, that the projection may be arranged and that the types of dwelling units may be in broad categories, such as single-family detached, single-family attached, duplex, triplex, fourplex, apartments and special housing types;

- The projection shall be reflective of census or other reliable data indicating the economic segments of the population for whom housing needs to be provided, and shall incorporate the jurisdiction's fair share of the county's housing needs;
- The projections shall be reflective of the countywide fair share housing allocation as shall be established pursuant to federal or state law and supplemented by provisions established in intergovernmental agreements between county jurisdictions.

The county and each municipality in the county shall meet their projected demand for housing by one or more or all of the following:

- Preservation of the existing housing stock through repair and maintenance, rehabilitation, and redevelopment;
- Identification of vacant, infill parcels appropriately zoned for residential development with assurances that neighborhood compatibility and fit will be maintained through appropriate and flexible zoning and related techniques, such as:
 - sliding-scale buffering and screening requirements based on adjacent use considerations
 - performance standards
 - height and bulk limitations
 - provision of open space
 - front, side and rear yard requirements
 - protection of natural resources and environmentally-sensitive lands
- Identification of other vacant lands suitable for residential development and permitting sufficient land through zoning to meet one or more or all of the following types and densities, of housing:
 - multi-family housing
 - mixed use development cluster development
 - planned unit development
 - non-traditional housing

- In determining the suitability of the location and identification of sites for affordable housing, the jurisdictions shall consider the availability and proximity of transit facilities, governmental facilities and services and other commercial services necessary to complement the housing.

The county, and each municipality in the county, shall assess their success in meeting the housing demands and shall monitor the achievement of the housing policies not less than once every five years.

The county, and each municipality in the county, shall maximize available local, state, and federal funding opportunities and private resources in the development of affordable housing.

The county, and each municipality in the county, shall explore and identify opportunities for non-profit developers to build affordable housing.

The county, and each municipality in the county, should explore and identify opportunities to reutilize and redevelop existing parcels where rehabilitation of the building is not cost-effective, provided the same is consistent with the county-wide policy on historic, archaeological and cultural preservation.

New fully contained communities shall comply with the requirements set forth in the Growth Management Act and shall contain a mix in the range of dwelling units to provide their “fair share” of the county-wide housing need for all segments of the population that are projected for the county over the planning period.

6.4 Planning Implications

- Study intact old neighborhoods in Lakewood for vulnerability to change - land use regulations and other neighborhood preservation techniques should be considered for those strong neighborhoods at risk.
- Intervention in the form of a public/private financial incentive program is needed - this can help break a cycle of deterioration in older Lakewood apartment buildings. Apartments built in the 1970s have a number of problems which will contribute to neighborhood degradation. Many of these apartments were not built well initially; they have few amenities and they have too many one bedroom units. With a limited demand for one bedroom units, there is now

a very high vacancy rate in these buildings. The high vacancy rate does not allow for rent increases and reduces owners' likelihood of repairing and remodeling buildings.

Turnover is high and owners do not generate sufficient income to maintain the buildings. These factors make many of Lakewood's apartment developments undesirable.

One such rental rehabilitation program provides apartment owners with low interest loans, which owners match with their own capital. This and other programs should be considered to break the cycle of disinvestment occurring in these buildings.

- Intervention could also apply to single-family houses - Lakewood includes several modest single-family developments built shortly after World War II. One is located between the Lakewood Mall and Bridgeport Way, which includes a large number of rental units. There is a federal program titled HOPE VI which helps tenants purchase their homes. Lakewood might evaluate this program and other first-time home buyer programs to determine their applicability to the city.

Hampering efforts to upgrade existing apartments is the fact that low incomes in the city force many tenants to pay excessive proportions of their income for rent. More than 40% of renters pay more than 30% of their income for rent and one-third of renters pay more than 35% for rent, as shown in Table 6-24. Thirty percent is considered the maximum a household can afford for rent without sacrificing other essential services.

- Preserve and upgrade the community of Tillicum - This small community, which is only accessible off I-5, is an "island" separate from the rest of Lakewood. It is composed primarily of single-family houses and a strip of commercial uses along Union Avenue. The conditions survey indicated a mix of housing conditions ranging very good to very poor. Therefore, there are home owners who are committed to maintain their property and make this a viable neighborhood. There is no community sewer service to the entire area.

A carefully crafted program which demonstrates to the community that this is a viable neighborhood could stimulate additional private investment, which will gradually upgrade the entire community. City efforts such as code enforcement and general clean-up could begin immediately to demonstrate the city's involvement. Other programs which separate the commercial uses from residential and improve the parks, sidewalks, and streets would have a similar effect on encouraging private improvements.

- Two areas, American Lake Gardens and McChord Gate, present unique challenges to the city. These areas have severe housing deterioration and high vacancy rates. They have become the least desirable, last resort, locations to live. Some developments need improvements to the social as well as physical environment. The city needs to carefully monitor conditions in these areas and make sure that publicly owned property such as parks and rights-of-way are well maintained. Good street maintenance and community policing will help deter further deterioration.

Programs such as an apartment manager's network and a city program of certifying apartments have helped to stabilize multi-family neighborhoods in other cities, such as Tukwila. This is a model which Lakewood might analyze to determine whether elements are suitable for American Lake Gardens and McChord Gate.

- Finally, projections for population at Fort Lewis and McChord Air Force Base have implications for the planning for the rest of the city. Information on these forecasts, and coordination with the military to accommodate any changes, is needed to evaluate the planning implications and develop appropriate policies.

CHAPTER 7: TRANSPORTATION

7.1 Existing Conditions

This section describes the existing transportation system conditions in the study area. This includes a description of the roadway characteristics, functional classification, traffic volumes, level of service, accidents, transit service, and pedestrian and bicycle facilities.

7.1.1 Existing Roadway Characteristics

The City of Lakewood's arterial street classifications are shown in Figure 7-1. These roadway classifications identify roads according to their uses and serve as the basis for planning roadway improvements. The following definitions serve as a general guide for classifying streets.

Principal arterials are intercommunity roadways that provide access to principal centers of activity. These roadways serve as corridors between principal suburban centers, larger communities, and between major trip generators inside and outside the plan area. The principal transportation corridors within the City of Lakewood are Principal Arterials. These roadways typically carry between 5,000 and 30,000 vehicles per day.

Minor arterials are intracommunity roadways connecting community centers with principal arterials. They provide service to medium-size trip generators, such as less intensive commercial development, high schools and some junior high/grade schools, warehousing areas, active parks and ballfields, and other land uses with similar trip generation potential. In general, minor arterials serve trips of moderate length, and carry approximately 2,500 to 15,000 vehicles per day.

Collector arterials connect residential neighborhoods with smaller community centers and facilities as well as access to the minor and principal arterial system. They typically carry between 1,000 to 4,000 vehicles per day.

Local access roads include all non-arterial public city roads and private roads used for providing direct access to individual residential or commercial properties.

The transportation plan primarily focuses on the arterial street system within the City of Lakewood since local access streets typically do not have capacity deficiencies. As shown in Figure 7-1, principal arterials in the City of Lakewood include South Tacoma Way, Pacific Highway SW, Steilacoom Boulevard, Bridgeport Way, Gravelly Lake Road, Custer Road, 100th Street SW, Lakewood Drive, Washington Boulevard, Military Road, 108th Street SW, and 112th Street SW.

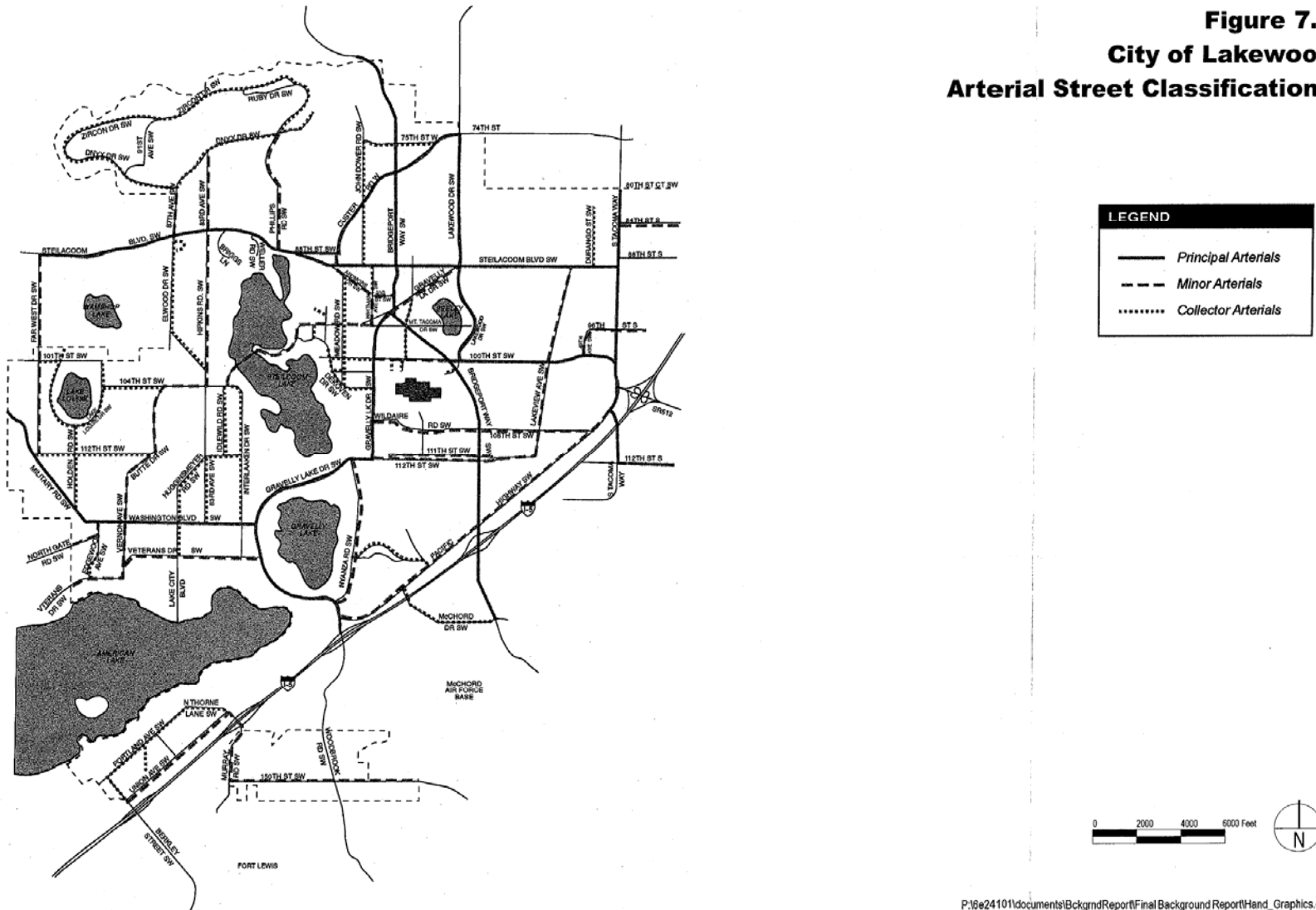
The characteristics of the arterial roadways in the study area are shown in Figure 7-2. The majority of other roadways within the city limits are two-lane roadways with a speed limit of 25 mph.

Existing intersection traffic control devices are also shown on Figure 7-2. As shown, the major arterial street intersections are signalized.

7.1.2 Existing Traffic Volumes

Year 1995 daily and pm peak hour traffic volumes were obtained from the City of Lakewood and Pierce County Public Works Department for all principal and minor arterials within the City of Lakewood. The daily traffic volumes are shown in Figure 7-3. As shown, the highest daily traffic volumes are generally experienced along principal arterials, which have volumes ranging from approximately 13,000 to 30,000 trips per day. In the City of Lakewood, traffic volumes are the highest in the vicinity of interchanges with SR-5, with the highest daily volume occurring on South Tacoma Way north of the SR-512/SR-5 interchange (about 43,800 vehicles per day). Traffic volumes are generally lower in the southern and western areas of the city, where many residential neighborhoods currently exist.

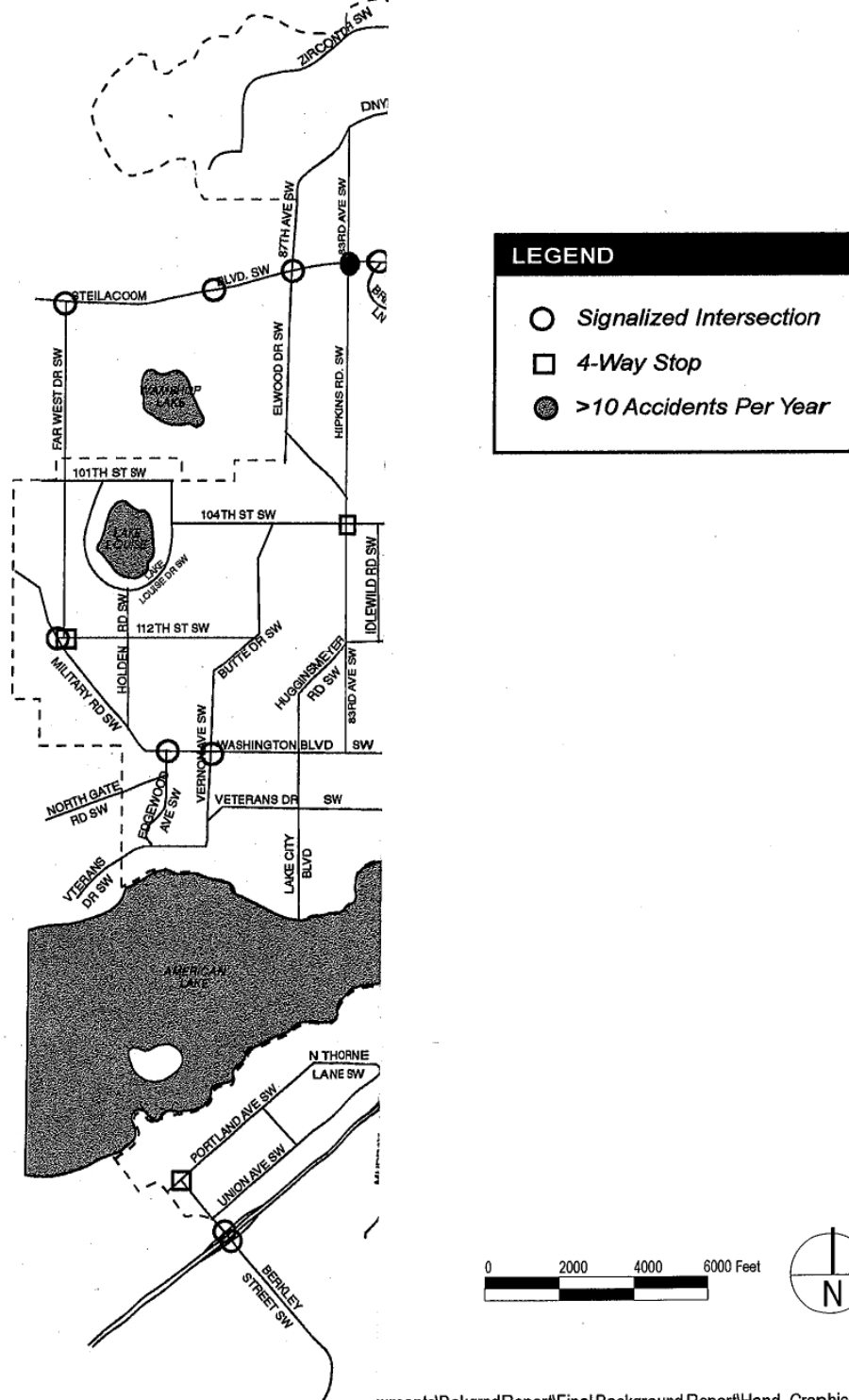
Figure 7.1
City of Lakewood
Arterial Street Classifications



Source: Parametrix

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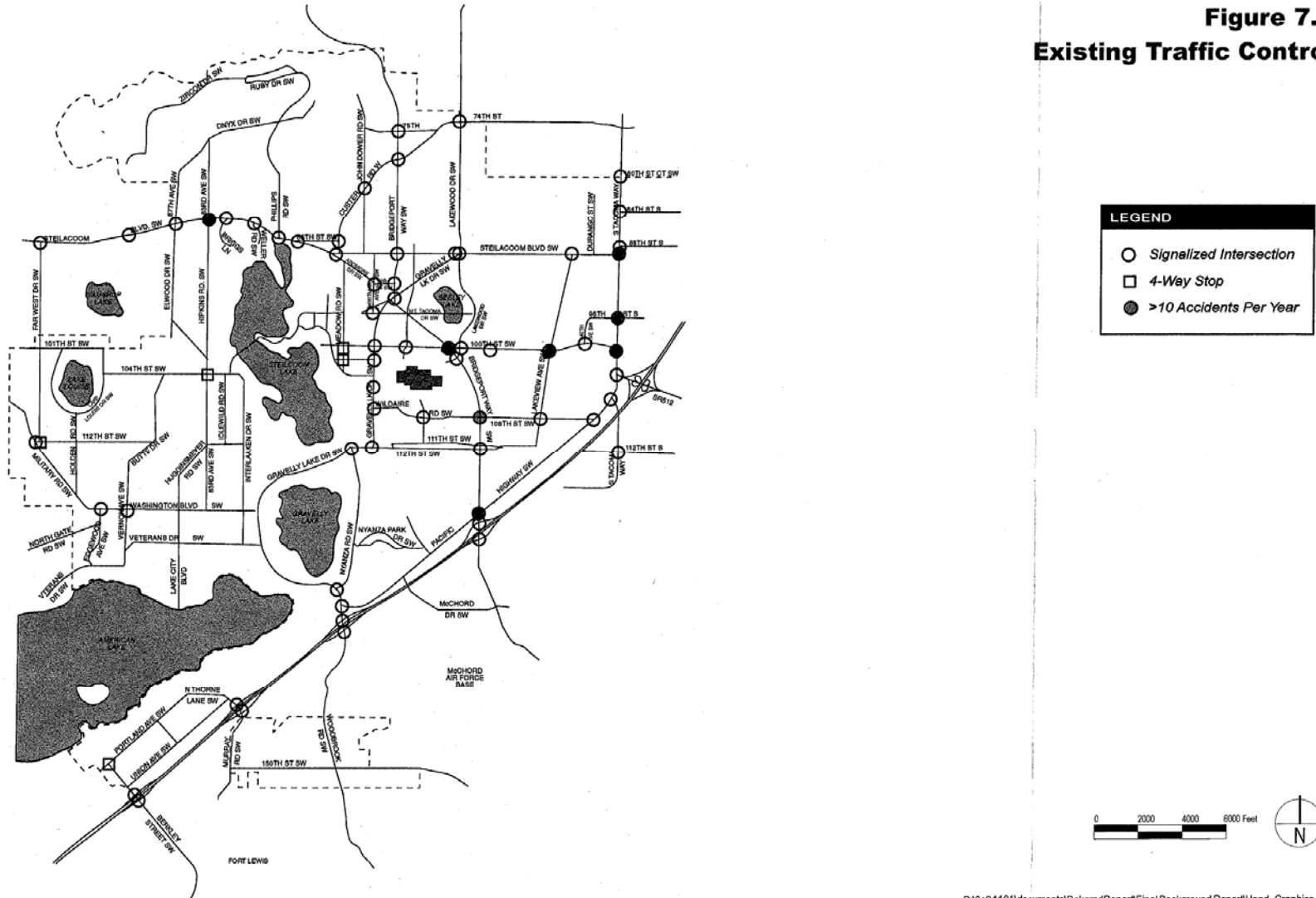
Figure 7.2
Existing Traffic Control



Source: Parametrix

uments\BckgrndReport\Final Background Report\Hand_Graphics.cdr

Figure 7.2
Existing Traffic Control



Source: Parametrix

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Figure 7.3
Existing Daily Traffic Volumes

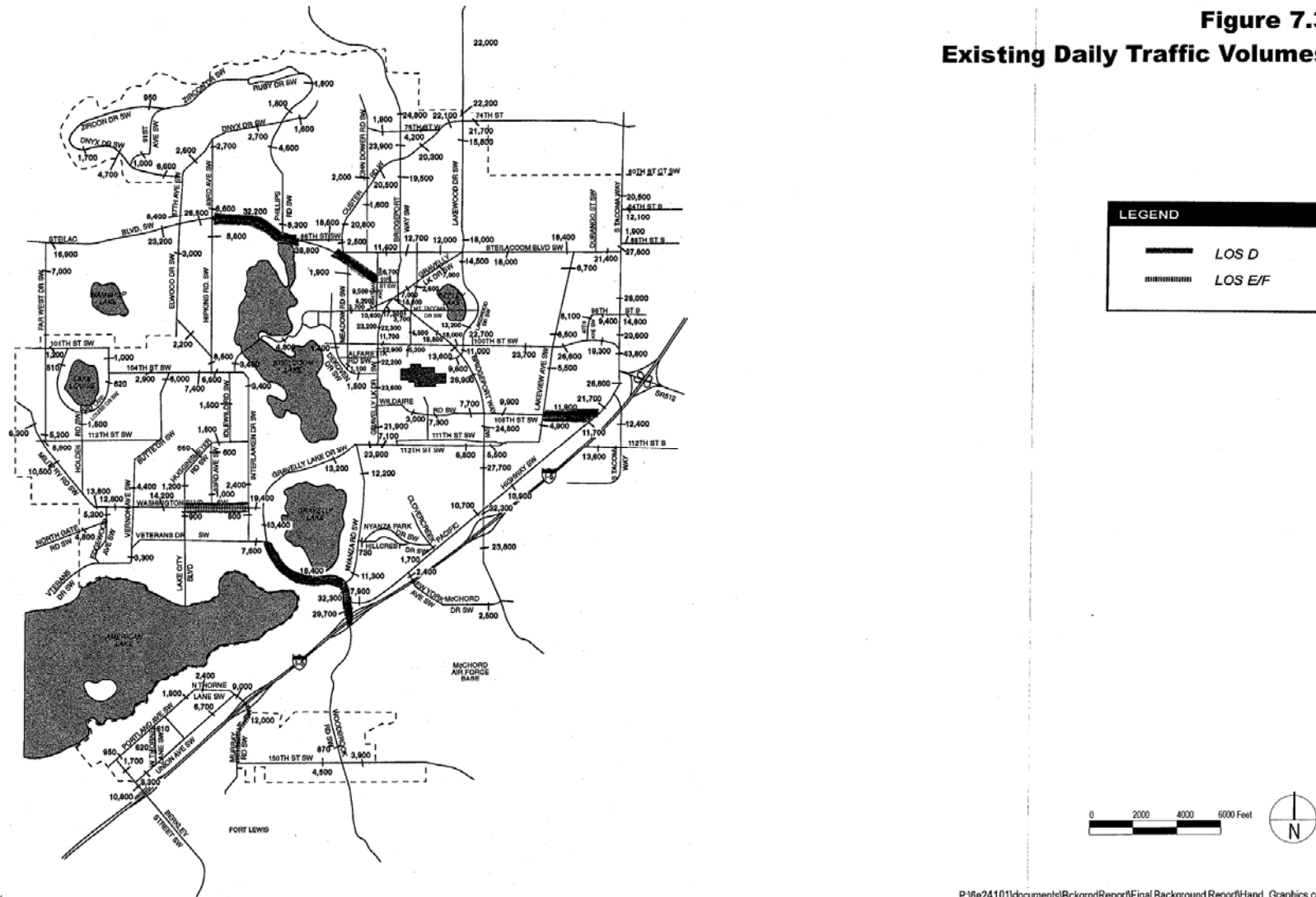
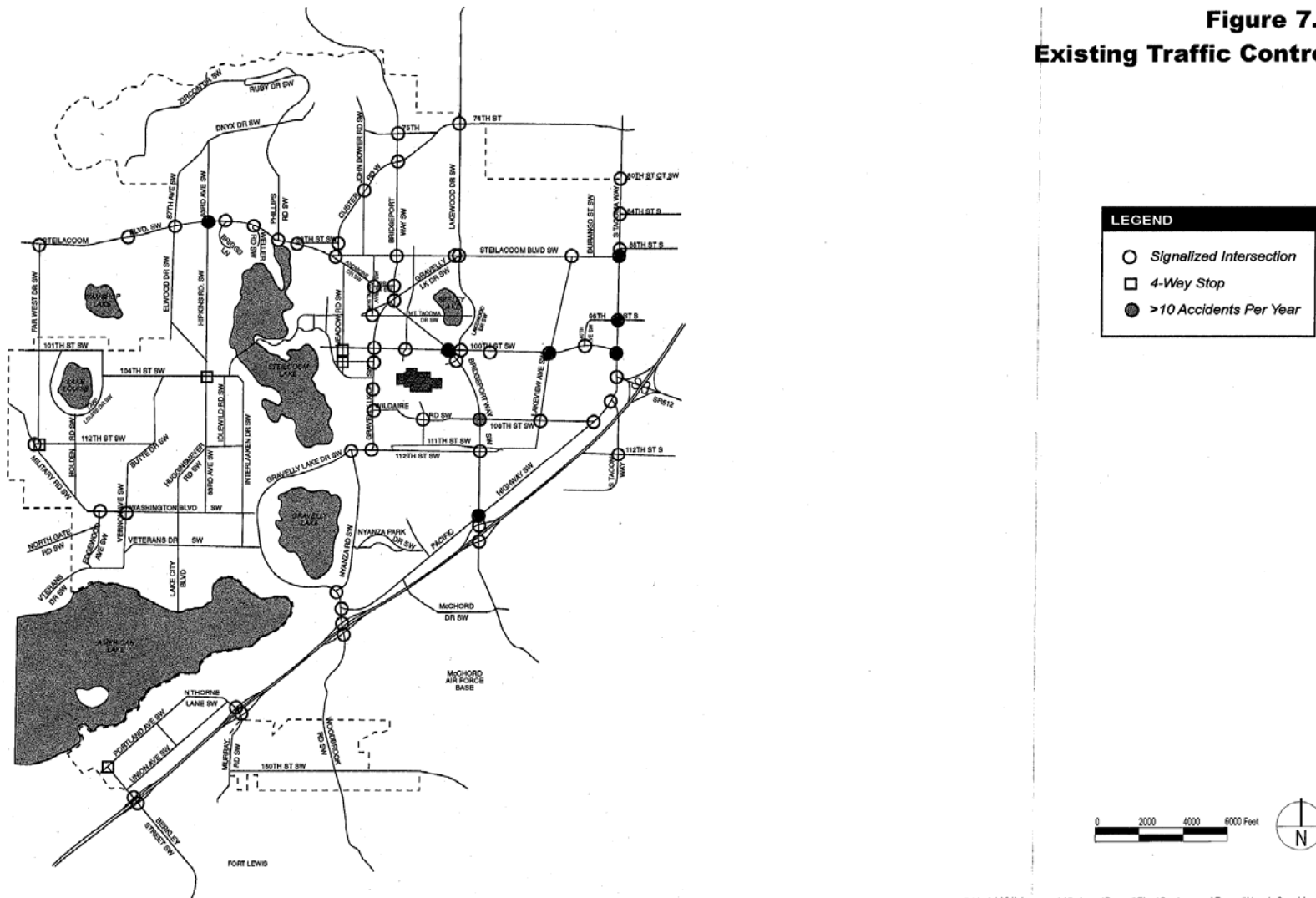


Figure 7.2
Existing Traffic Control



Source: Parametrix

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Figure 7.3
Existing Daily Traffic Volumes

