

Goal 7: Areas Subject To Natural Disasters & Hazards

❑ Section 1, Flood Hazards

Tualatin River



The City shall protect life and property from flood hazards.

Goal 7 Areas Subject To Natural Disasters And Hazards

Section 1, Flood Hazards

BACKGROUND

Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards

"To protect life and property from natural disasters and hazards"

Statewide Planning Goal 7 requires development subject to damage or loss of life not to be planned or located in known areas of natural disasters and hazards without appropriate safeguards. Plans are to be based on an inventory of known areas of natural disaster and hazards, including flooding, erosion, landslides, earthquakes, weak foundation soils or other hazards which may be unique to local or regional areas.

Because of Lake Oswego's topography, flooding* does not represent as significant a hazard as it does for other communities in the Willamette Valley. However, waters from a 100 year flood* would inundate lands adjacent to major water bodies in the area, which include the Willamette and Tualatin Rivers; Oswego Lake, its bays and canals and Springbrook Creek. A flood of this magnitude would also pose hazards to properties immediately abutting smaller streams such as Lost Dog Creek and the southern tributary to Tryon Creek.

Within these areas, flooding is a significant natural hazard. Its effects range from inconvenience to the potential for loss of life and property. Development and other activities within the floodplain, such as filling and vegetation removal, can make flooding worse by decreasing the area available for storage and conveyance of floodwaters. When this occurs, floodwaters are displaced onto lands previously not subject to flooding and the velocity of floodwaters is often increased. Also, buildings and bridges within the floodplain can function as dams during flooding and cause greater upstream inundation. The removal of vegetation along river and stream banks and in the floodplain also reduces the floodplain's storage capacity and increases soil erosion.

The annual flood season in the Willamette Valley extends from October to April. The greatest potential for flooding occurs during December and January when water-laden soils and streams can no longer convey runoff from heavy winter rains.

A 100 year flood, which is also called the "base flood,"* has a one percent chance of occurring in any one year. The floodplain* is divided into the floodway* and the floodway fringe* (Figure 6). The floodway is defined as the channel and adjacent land areas which are the minimum needed for the passage of floodwaters so that upstream flood elevations are not increased. Floodplain management regulations require preservation of an adequate floodway area to discharge the waters of a 100 year flood without

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cumulatively increasing the water surface elevation by more than one foot. The floodway fringe is the area bordering, but outside, the floodway. The floodway fringe is subject to flooding but does not contribute appreciably to the passage of flood flows.

The Federal Emergency Management Agency (FEMA) provides Lake Oswego with mapped floodplain information which identifies flood plain elevations and areas subject to flooding. The most recent FEMA floodplain study was completed in 1987.

Lake Oswego participates in the National Flood Insurance Program which is administered by FEMA. Floodplain insurance studies are used by FEMA to assess risks of developing in the floodplain and to establish flood insurance rates. Other federal, state and local sources are used to estimate the floodplain's location if an area subject to flooding has not been mapped by FEMA. The Flood Insurance Program enables property owners to obtain federally subsidized flood insurance. The program also makes an area eligible for disaster relief if extensive area-wide flooding ever occurs. Participation in the program by local jurisdictions requires the adoption of land use controls meeting FEMA standards. In response, the City adopted Development Standard 17, "Floodplains" in 1988. The Floodplains Standard applies to all development within flood hazard areas.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the 1993 update of this element of the Comprehensive Plan.

- The Federal Emergency Management Agency (FEMA) updated floodplain information for lands within the City of Lake Oswego Urban Services Boundary in 1987.
- The City adopted "The 1987 Flood Insurance Study for the City of Lake Oswego, Oregon," and; Development Standard 17, "Floodplains" in 1988.

GOALS POLICIES AND RECOMMENDED ACTION MEASURES

<p>GOAL</p>

<p>The City shall protect life and property from flood hazards.</p>

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POLICES

1. Continue to participate in the National Flood Insurance Program* and comply with all Federal Emergency Management Agency (FEMA)* standards.
2. Limit new development in the FEMA-regulated floodway, including filling and removal of earth, to the following uses provided there is no increase in base-year flood levels.*
 - a. Public and private open space and recreational uses;
 - b. Water-dependent structures* such as docks, piers, bridges, and floating marinas; and,
 - c. Public facilities including unpaved roads and private access ways.
3. Review development proposals, including public facilities, filling and grading, within areas subject to flooding to ensure:
 - a. Conformance with FEMA and other regulatory agencies;
 - b. Reasonable protection of public facilities;
 - c. The flow, velocity and elevation of flood waters are not changed so as to endanger other property;
 - d. Natural systems such as fish and wildlife habitat, vegetation, wetlands and stream corridors are protected; and,
 - e. Other problems associated with flooding such as ponding, poor drainage, high water tables and unstable soils are addressed.
4. Protect, restore and maintain the natural systems of floodplains including riparian vegetation, wooded areas, wetlands and fish and wildlife habitat.
5. Allow development density within the flood fringe to be transferred to higher portions of the development site.
6. Designate floodplains as Protection Open Space*.
7. Prohibit the storage of hazardous substances* within the floodplain.
8. Ensure that filling in the flood fringe is conducted in accordance with City and applicable state and federal regulations, and is the minimum necessary for development to conform with FEMA standards.
9. Protect, restore and maintain watercourses* within the floodplain.

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10. Require new or replacement water and sanitary sewer systems within the floodplain, constructed to prevent infiltration of floodwaters and discharge of untreated waste water during flooding.

RECOMMENDED ACTION MEASURES

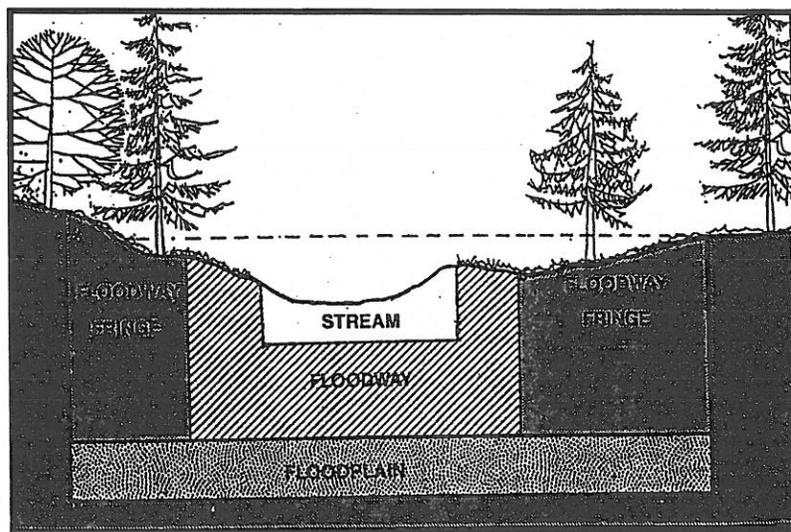
- i. Maintain current floodplain information for the Lake Oswego Urban Services Boundary and make it easily available to the public.
- ii. Coordinate with the Army Corps of Engineers, Federal Emergency Management Agency and other responsible state, regional and local agencies regarding:
 - a. Periodic review and update of floodplain information;
 - b. Review of major development which could have flood impacts across jurisdictional boundaries; and,
 - c. Emergency operations planning necessary to protect life and property during a major flood.
- iii. Encourage acquisition within the flood plain, of property and easements, as designated by the Lake Oswego Surface Water Management Plan, for conveyance and storage of floodwaters and for natural open space and passive recreation uses.
- iv. Encourage Clackamas County not to approve on-site sewage treatment systems within the unincorporated Urban Services Boundary which would be impaired during flooding and which could contaminate floodwaters.
- v. Utilize other federal, state and local sources to estimate the floodplain's location if an area suspected to be subject to flooding has not been mapped by FEMA. If these sources are not available, the required information shall be provided by the developer.
- vi. Encourage uses within the floodplain which do not require protection by dams, dikes or levees such as parks, open space areas, wetlands, and storm water detention facilities.
- vii. Establish development regulations and standards to protect and restore watercourses within the floodplain which require:
 - a. Buffers between development and water courses;
 - b. Maintenance and restoration of natural vegetation;
 - c. Erosion control and protection of water quality, and;

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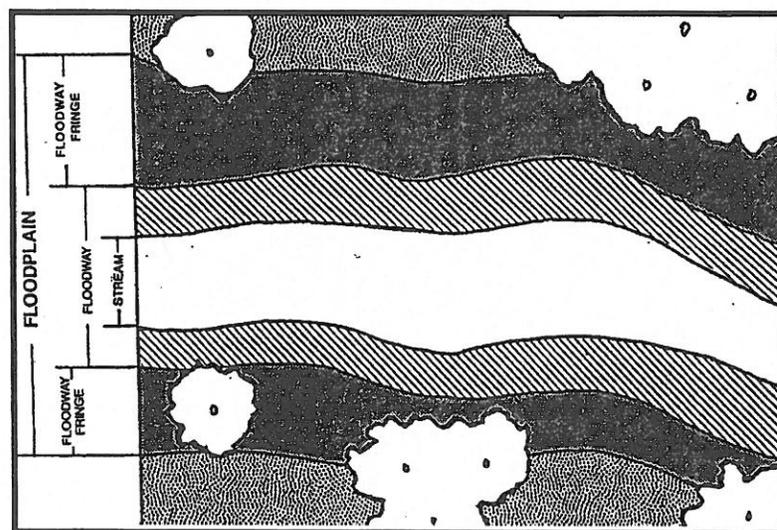
□ Section 1, Flood Hazards

- d. Implementation of other measures necessary to maintain the water carrying capacity of watercourses and preserve their natural functions.

Figure 6



Floodplain Cross Section



Floodplain Overhead View

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Section 1, Flood Hazards

- Notes -

Goal 7: Areas Subject to Natural Disasters & Hazards

❑ Section 2, Earthquake Hazards

Lake Oswego Community Emergency Response Team (CERT) participates in disaster training.



The City shall protect life and property from earthquake hazards.

Goal 7 Areas Subject To Natural Disasters And Hazards

Section 2, Earthquake Hazards

BACKGROUND

Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards

"To protect life and property from natural disasters and hazards."

Statewide Planning Goal 7 prohibits planning or locating developments subject to damage or loss of life in known areas of natural disasters and hazards without appropriate safeguards. Plans are to be based on an inventory of known areas of natural disaster and hazards, including flooding, erosion, landslides, earthquakes, weak foundation soils or other hazards which may be unique to local or regional areas.

Until just a few years ago, Oregon was unaware of the seriousness of the earthquake threat in the state. Recent scientific studies and search for evidence of past seismic activity have proven that the state may be more vulnerable than previously suspected. In addition, Oregon experienced an earthquake of 5.6 on the Richter scale in March, 1993. The area within Lake Oswego's Urban Service Boundary has experienced seismic activity in historic times, making it a seismically active area.

In 1991 the Oregon Seismic Safety Policy Advisory Commission researched actions to address earthquake risk in Oregon. This Commission concluded that additional research and assessments of seismic hazards are needed to develop informed policy decisions for land use planning, structural codes and emergency response to earthquakes. Current seismic hazard assessment data was deemed to be inadequate to guide preparation for earthquake events. Recently, seismic risk maps for Oregon's Structural Code have been upgraded from seismic zone 2B to zone 3, which requires an increased level of design for structures built in western Oregon. This is in recognition of recent geologic evidence which is causing an increased emphasis to be placed on building flexibility.

The scientific understanding of earthquake hazards in Oregon, although incomplete, continues to advance. In 1994, the State of Oregon Department of Geology and Mineral Industries (DOGAMI) collected data to construct a Relative Earthquake Hazard Map of the Lake Oswego Quadrangle. This map will be based on a detailed mapping of the area's geology and specialized geophysical and geotechnical measurements and will categorize areas into one of four relative hazard categories from greatest hazard to least hazard. It will not provide information with regard to the probability of damage occurring. Rather, it will show that when an area is shaken by an earthquake, the damage is more likely to occur or be more severe in the higher hazard areas. This type of relative hazard determination will be useful in developing hazard mitigation policies such as in emergency response plans, directing efforts for

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strengthening or replacing older and weaker buildings in areas of greatest hazard effects or determining the location of future urban expansion or intensified development. Metro is also developing model code language for the region to assist cities in regulating earthquake hazards.

In 1993, the City completed an interim "Earthquake Plan" as part of its Emergency Operations Plan and Annexes document. The Earthquake Plan provides the basic framework to guide City departments in their efforts to mitigate, prepare for, respond to and recover from a major earthquake. This Plan will enable the City leadership to influence the ease and timeliness with which daily life resumes in the aftermath of a disaster.

The City's previous Comprehensive Plan contained no policies regarding earthquake hazards.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan:

- The Oregon Structural Code was updated in 1993, upgrading the level of structural design to that required by Zone 3, for western Oregon.
- The Oregon Seismic Safety Policy Advisory Commission concluded in its 1992 report that additional research and assessments of seismic hazards are needed to develop informed policy decisions for land use planning in response to earthquake hazards.
- In 1993 The City of Lake Oswego completed its "earthquake annex" to add to its Emergency Operation Plan. This plan outlines the City's disaster response and recovery plan for earthquake events.
- DOGAMI mapped faults and areas of seismic activity in Oregon in 1993.

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GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The city shall protect life and property from earthquake hazards.

POLICIES

1. Cooperate with the DOGAMI in the delineation of areas of relatively greater hazard due to potential damage from earthquakes.
2. Enact regulations governing the location of structures and land uses, as new seismic information becomes available.
3. Coordinate adequate earthquake emergency response with the Federal Emergency Management Agency, Clackamas County Emergency Operations and other appropriate government agencies.
4. Require compliance with the current edition of the Oregon Structural Specialty Code regarding building design for earthquake resistance.
5. Provide education and public awareness of earthquake risks and public safety.

RECOMMENDED ACTION MEASURES

- i. Review and modify the City's Emergency Operations Plan as necessary to achieve a reduction in loss of life, personal injury and property damage in the event of an earthquake.
- ii. Integrate earthquake safety planning into all City operations.
- iii. Maintain and provide current earthquake information and Oregon Structural Specialty Code seismic requirements to developers and other interested citizens.

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Section 2, Earthquake Hazards

- iv. Assess potential seismic influences, damage potential and possible corrective actions to City sewer and water systems, bridges and other City facilities
- v. Use DOGAMI's inventory of relative earthquake hazards in the Lake Oswego area to determine areas that will likely experience the greatest effects from any earthquake. This information can be used in refining the Emergency Operations Plan and determining relative damage potential of various locations.
- vi. Supply information brochures on earthquake preparedness, to residents, schools and civic groups and make brochures available at the Library.

Goal 7: Areas Subject To Natural Disasters & Hazards

- Section 3, Landslides, Erosion and Unstable Soils



The City shall protect life and property, from hazards associated with landslides, soil erosion and unstable soils.

Goal 7 Areas Subject To Natural Disasters And Hazards

Section 3, Landslides, Erosion and Unstable Soils

BACKGROUND

Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards

"To protect life and property from natural disasters and hazards."

Statewide Planning Goal 7 prohibits planning or locating developments subject to damage or loss of life in known areas of natural disasters and hazards without appropriate safeguards. Plans are to be based on an inventory of known areas of natural disaster and hazards, including flooding, erosion*, landslides, earthquakes, weak foundations soils or other hazards which may be unique to local or regional areas.

Landslides and soil erosion hazards exist within the Lake Oswego Urban Service Boundary because of the presence of hilly terrain, steep ridges and ravines underlain by unstable geology and overlain by soils which have low carrying capacity for structures. The slope and soil of a hillside are generally balanced with the amount of precipitation, vegetative cover and the underlying geology. However, hillsides are constantly in motion, due to gravity and the effects of weathering and erosion. Any time the load on a susceptible hillside is increased or the stabilizing vegetation altered, erosion or landslide can occur. These disturbances can also increase surface water runoff and affect water quality through erosion and siltation.

Developments in these hazard areas can frequently result in private and public costs, either for repairs to structures, roads or other facilities or for protective measures to prevent future damage. Development in areas of landslides is also more expensive than development in flatter, more stable terrain. Sewer and water lines and roads may also require special engineering in these sensitive areas.

Landslide and soil erosion hazards can be reduced or eliminated by regulating development to ensure slopes prone to severe landslides are not destabilized. Especially important is regulating development in areas where landslides have actually occurred and where severe landslide hazards exist. When development is allowed on slopes, it must be carefully engineered and sensitively placed. Retaining existing vegetation, employing on-site erosion prevention methods during construction and replacing vegetation can moderate landslide and erosion problems.

LOC 16.005, Hillside Protection and LOC 15.005, Erosion Control Standards, regulate development on steep slopes and all development in relation to potential for erosion problems. In addition, the City's land use regulations provide protection for stream corridors, vegetation, and Distinctive Natural Areas often associated with hillsides, ravines and ridge lines. Known potential severe landslide areas are described and mapped in the Engineering Geology Chapter of the Lake Oswego Physical Resources Inventory (LOPRI), March, 1976, on file at City Hall.

Goal 7 Areas Subject To Natural Disasters And Hazards

□ Section 3, Landslides, Erosion and Unstable Soils

Soils with low strength have been identified by LOPRI - Engineering Geology Section and Soil Conservation Service Soils Survey, Lake Oswego, as Weak Foundation Soils having low strength. Soils which hold a moderate to severe soil weakness warning have also been identified.

The result of placing structures on unstable soils is overall settlement, differential settlement, or soil creep out from under foundations, which results in damage to structures not designed to accommodate the movement or seasonal shrink and swell. Weak soils on slopes can move down slope (soil creep).

Weak foundation soils constitute a hazard only where the weakness is unknown or when foundation design is not addressed to the condition. Engineering solutions are possible to accommodate the development problems associated with unstable soils. In addition, these lands can be left in open space, or structures clustered on stronger soils to prevent possible expense and property loss associated with these hazards. Development Standard 13.005, Weak Foundation Soils, regulates development on unstable soils, requires a soils report describing the nature of the soils and the adequacy of the soils to support intended structures and requires corrective measures, if necessary.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan.

- LOC 15.005, Erosion Control, was adopted in 1993 to minimize the amount of sediment and other pollutants reaching the surface water management system.
- LOC 16.005, Hillside Protection Standard was adopted in 1992 and revised in 1993 to prevent hazards associated with building on steep slopes.
- LOC 13.005, Weak Foundation Soils was adopted in 1986, to identify in more detail and to minimize hazards associated with development in areas with unstable soils.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall protect life and property, from hazards associated with landslides, soil erosion and unstable soils.

Goal 7 Areas Subject To Natural Disasters And Hazards

Section 3, Landslides, Erosion and Unstable Soils

POLICIES

1. Identify areas within the Lake Oswego Urban Services Boundary with a potential for soil erosion hazard, landslide hazard and unstable soils, including the degree of potential hazard.
2. Regulate density and intensity of land use in areas with the potential for unstable soils, known or potential landslide hazards and soil erosion hazard areas, in accord with the degree of hazard.
3. Enact and maintain regulations and standards which require:
 - a. Appropriate engineering and site development measures to prevent damage from hazards associated with erosion, landslides and unstable soils;
 - b. Protection and restoration of natural and topographic features such as ridge lines and vegetation to preserve slope and soil stability;
 - c. Open space preservation of slopes which cannot be developed because of severe landslide and erosion hazard;
 - d. Protection of natural resources associated with steep slopes such as stream corridors, trees and other vegetation and wildlife habitat; and,
 - e. Erosion control measures.
4. Control erosion at its source through minimizing the disturbance of existing vegetation.
5. Require property owners to include erosion and drainage control measures in site planning, during and after development, to prevent increases in surface water runoff, erosion and siltation.
6. Require that land identified with a potential for high erosion hazard will be maintained in open space, unless appropriate evidence demonstrates that engineering can effectively overcome soil and slope limitations.
7. Allow development density proposed on steep slopes and on lands with unstable soils to be transferred to stable portions of the site when these areas are preserved as open space.
8. Allow innovative site and building design, including the clustering of buildings, to avoid development in hazard areas and encourage steep slopes to be used for open space uses.
9. Ensure that public facilities and services are planned to be located in non-hazard areas, where possible. When hazard areas are unavoidable, ensure that public facilities and services are designed to withstand movement of soil and rock.
10. Require the review of any development proposal by the appropriate local, state and federal agencies.

Goal 7 Areas Subject To Natural Disasters And Hazards

Section 3, Landslides, Erosion and Unstable Soils

RECOMMENDED ACTION MEASURES

- i. Minimize ground disturbance during construction by retaining natural vegetation and topographic features such as natural drainage swales, rock outcroppings and ridge lines, to the greatest extent possible, and by using measures to minimize runoff during development and after construction.
- ii. Require expected surface water runoff for all development to be controlled on site, where practical, in order to protect property, stream channels and stream corridors from present and future runoff and sedimentation.
- iii. Promote slope and soil stability and use of the natural drainage system in areas of landslide potential, by retaining areas of existing vegetation to the greatest extent possible.
- iv. Maintain a current inventory of landslide and unstable soil hazards.
- v. Reduce soil erosion problems by inspecting construction site controls, responding to complaints and providing enforcement.
- vi. Reduce intensity of development from that permitted by the zoning code or previous development approval, if necessary, to eliminate or reduce an erosion, landslide or unstable soil hazard.
- vii. Create a public awareness program to educate developers and the general public regarding the importance of erosion control, the City's erosion control program, and ways in which they can promote erosion control.

Goal 8: Parks & Recreation



The City shall plan, acquire, develop and maintain a system of park, open space and recreation facilities, both active and passive, that is attractive, safe, functional, available to all segments of the population and serves diverse current and long range community needs.

Goal 8 Parks And Recreation

Goal 8: Parks and Recreation

BACKGROUND

Statewide Planning Goal 8: Recreational Needs

“To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.”

Statewide Planning Goal 8 instructs communities to plan for meeting recreational needs in coordination with private enterprise, in appropriate proportions and of a quality and in a quantity consistent with the availability of resources to meet the requirements. Cities are to coordinate with state, federal and regional agencies' plans.

The basis of the Lake Oswego Parks and Recreation system is the provision of diverse recreation opportunities and experiences for all residents of the City. City parks and recreation services provide essential active, passive, social and cultural opportunities for a broad spectrum of residents. As Lake Oswego's population grows and land becomes more densely developed, careful planning for parks, open space and recreational services becomes increasingly critical in maintaining adequate opportunities.

Over the years residents have supported high quality parks and recreation programs through an ongoing serial levy. Since the original Comprehensive Plan was adopted in 1978, the City's inventory of park land and facilities has grown from 241 acres to 320 acres in 1993. In addition, the City operates the Adult Community Center which provides for many of the needs of Lake Oswego's older adult community. The City also operates an 18 hole par 3 golf course. Lake Oswego's recreation program offerings include extensive team sports, educational and cultural activities. Lake Oswego residents also passed a \$12 million bond measure in 1990 for park acquisition and pathway development. These investments in the City's park and recreation system represent a rich legacy of varied park lands and recreation programs which are tied to the community's image and character. Protecting this investment through park renovation and maintenance is important to Lake Oswegans.

A 1990 survey of Lake Oswegans indicated that residents' top ranked activities include watching television or videos, reading, walking, exercise/aerobics, gardening, jogging or running, attending sports events, driving for pleasure, swimming and nature walks. This survey also indicated that the recreation facilities or activities residents felt were most needed in Lake Oswego include bike and pedestrian pathways, a pool facility, sports/playing fields, a regulation golf course, river/lake development and access points, tennis courts, multi-use recreation facilities and interpretive natural areas. Suggestions for improving Lake Oswego's park and recreation services included developing a pathway system, constructing a swim facility, improving publicity and promotion of parks and recreation programs and services and improvement of safety, cleanliness and recreation access to recreation facilities. Over 80% of survey respondents rated the City's recreation programs offered as "excellent" or "good".

Goal 8 Parks And Recreation

Goal 8: Parks and Recreation

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan.

- Creating a policy context to describe the City's commitment to recreational programs.
- Acknowledging pathways for their recreational value, as linkages to parks and to improve accessibility.
- Ensuring that purchased or donated park lands are usable and satisfy park and recreation needs.
- Coordinating with private and school recreation providers to provide optimum usage of facilities.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall plan, acquire, develop and maintain a system of park, open space and recreation facilities, both active and passive, that is attractive, safe, functional, available to all segments of the population and serves diverse current and long range community needs.

POLICIES

1. Plan for park and recreation facilities which:
 - a. Provide for active and passive recreational opportunities;
 - b. Educate and entertain the public through interpretive and recreational programs;
 - c. Promote enjoyment of the cultural arts; and,
 - d. Enhance the environmental quality of the City.
2. Identify and acquire lands which satisfy current and/or long-range community recreation needs in terms of size and usability for planned activities and facilities.

Goal 8 Parks And Recreation

Goal 8: Parks and Recreation

3. Coordinate park planning, acquisition and development with affected neighborhoods and with other community projects and programs.
4. Distribute park and recreation opportunities by type throughout the City as land availability allows.
5. Ensure a long-range balance is maintained between land acquisition and facility development efforts to:
 - a. Avoid the irrevocable loss of land suitable for park and recreation uses;
 - b. Minimize future land acquisition costs; and,
 - c. Provide for the activity needs and preferences of the community.
6. Require developers to pay their equitable share of future park acquisition and development costs.
7. Plan and develop a system of pathways which can connect open space and park facilities with neighborhoods.
8. Develop parks that:
 - a. Are compatible with adjacent land uses, by using setbacks and effective buffering and screening to minimize impacts of intensive uses such as traffic, parking, bright lights and noise;
 - b. Do not generate traffic which exceeds the design capacity of adjacent streets at off peak hours and, where feasible, do not utilize local residential streets to accommodate traffic generated by intensive uses; and,
 - c. Are, where possible, accessible by a variety of transportation modes including transit, bicycling and walking.
9. Maintain parks and facilities in a manner which will prolong the life of capital assets, reduce operational costs, assure safe and accessible use, improve park design and conserve resources.
10. Provide accessibility to all park users, according to applicable state and federal laws.
11. Develop major neighborhood park and play field facilities in conjunction with schools, wherever possible.
12. Preserve and enhance distinctive natural areas which are located on park lands.

Goal 8 Parks And Recreation

Goal 8: Parks and Recreation

13. Integrate open space, pathways and view corridors, with park land and facilities.
14. Inform and involve the citizens of Lake Oswego in the development and operation of the Parks and Recreation system and in evaluating the effectiveness of parks and recreation activities.
15. Enhance the quality of life in the community by providing recreation programs that are creative, productive and responsive to the needs of the public, including those who have special needs such as the elderly, disabled and disadvantaged.
16. Give City residents priority in pricing and scheduling City sponsored activities.
17. Coordinate with state, federal, regional and other local jurisdictions and with local “friends” groups in the planning and implementation of parks and recreation policies and programs.
18. Coordinate and cooperate with school districts and other organizations to meet park and recreation needs of the City and the region and to assure optimum efficient use of all parks and recreation facilities and resources.
19. Ensure the opportunity for Lake Oswego residents to have access to parks and recreation facilities and programs regardless of income.

RECOMMENDED ACTION MEASURES

- i. Secure adequate financial support to develop and implement the Parks Acquisition Program in accordance with defined priorities.
- ii. Utilize the Capital Improvements Plan and the Parks and Recreation Master Plan to develop land acquisition and facility development priorities.
- iii. Encourage the development of other recreational facilities which are consistent with community recreation objectives and needs.
- iv. Encourage multi-use of public and other recreation facilities.
- v. Provide interpretive programs for natural areas to increase the community’s appreciation and understanding of natural areas.

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Goal 8: Parks and Recreation

- vi. Emphasize park development and maintenance practices which utilize low maintenance and drought-tolerant plant materials which enhance the aesthetic quality and wildlife habitat value of parks, natural areas and open spaces.
- vii. Maintain a parks and recreation advisory body to advise City Council of parks acquisition and development, park design and facilities, recreation programs and priorities and citizen involvement for parks and recreation planning and implementation.
- viii. Seek citizen input in park and recreation planning through surveys, meetings or other appropriate methods.
- ix. Offer a variety of recreation programs and activities which are economically and physically accessible to Lake Oswego residents including those with special needs.
- x. Give scheduling priority to City-sponsored recreation programs and activities which use City facilities.
- xi. Coordinate and cooperate with other jurisdictions and public and private agencies to acquire and develop parks and provide recreation programs.
- xii. Schedule recreation programs at convenient times for maximum participation by residents.

Goal 8 Parks And Recreation

Goal 8: Parks and Recreation

-Notes-

Goal 9: Economic Development

Kruse Woods Office Building



The City shall provide for economic development opportunities which enhance the prosperity and livability of the community.

Goal 9 Economic Development

Goal 9: Economic Development

BACKGROUND

Statewide Planning Goal 9: Economic Development

“To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare and prosperity of Oregon’s citizens.”

Statewide Planning Goal 9 requires that comprehensive plans address the economic health and vitality of the state and provide opportunities in the local community for economic activity. To meet the requirements of Goal 9, cities and counties must analyze economic patterns, including strengths and weaknesses, based upon state and national trends. Policies for economic development opportunities must be addressed in the plan. Further, cities and counties must provide for an adequate supply of sites for industrial and commercial development, and that land must be appropriately located and zoned for the intended uses.

Statewide Planning Goal 9 recommends that communities take into account the availability of public facilities and services needed for future commercial and industrial development as well as the carrying capacity of air, land and water resources. The Goal also places a priority on the vitality of existing businesses as a means of strengthening the local economy.

Lake Oswego’s economy is an integral part of the economy of the Portland Metropolitan Area. The City’s economy, like that of the region, is influenced by state, national and increasingly, global economic factors.

Many of the state and national trends, as well as other economic factors affecting Lake Oswego, were documented in 1988 as part of the City’s compliance with State Periodic Review* requirements. This information is contained in a study entitled, “An Analysis of Commercial and Industrial Land Use and Employment in Lake Oswego, Oregon,” August 1988. This analysis was updated in 1994 as part of the City’s review and update of the Comprehensive Plan.

Lake Oswego’s economic vitality is influenced by many factors, including:

- Livability of the City, especially the quality of the City’s residential areas and the availability of housing.
- The type, quality and cost of city and other public services.
- The quality of Lake Oswego’s schools and the educational level of its residents.
- The presence of businesses to serve the needs of local area residents and other business, and to provide jobs for those residing in the community.

Goal 9 Economic Development

□ Goal 9: Economic Development

Population Growth and Characteristics

The U.S. Census Bureau listed Lake Oswego's 1990 population at 30,576. This represented an increase of 33.7% over the 1980 Census figure of 22,686. By 1993, the population had reached 32,555. Metro projects that by 2010 the City's population will be about 45,374. Much of this growth will take place through annexation within the City's unincorporated Urban Services Boundary.

Lake Oswego is distinguished in the State of Oregon and Clackamas County by the level of education and income of its residents. Lake Oswego's educational levels are considerably above both Oregon and Clackamas County: As of the 1990 Census, over half (50.9%) of the City's population 18 years of age and older, had a college degree, as compared with 18.8% and 21.6% for Oregon and Clackamas County, respectively.

A high educational attainment level is one reason Lake Oswego's median household income exceeds Oregon's and Clackamas County's. The City's 1989 median household income, from the 1990 U.S. Census, was \$51,499. This compares with \$27,250 for the State of Oregon and \$35,419 for Clackamas County.

There are also some differences in how Lake Oswego residents are employed versus others in the Metro region and the state. According to the 1990 Census, Lake Oswego had a higher percentage of residents employed within professional and managerial occupations compared to the state and Clackamas County. The City had significantly lower proportions of residents employed in manufacturing and retail trade, and significantly higher proportions of residents employed in finance, insurance and real estate.

Business and Employment Characteristics

In the ten year period from 1984 to 1994, Lake Oswego had a 115% increase in the total number of businesses licensed by the City, with an 87% increase of persons employed in those businesses. This indicates that business development and jobs have both grown faster than population for almost the same ten year period.

Businesses in Lake Oswego tend to be small and have gotten somewhat smaller over the past ten years. In 1984 the average business, excluding home occupations, had 4.29 employees. This decreased to 3.78 by 1994. These changes are most likely due to two phenomena which have become widespread in the United States during the past decade - downsizing and technological change. Perhaps, partly as a result of these factors, the number of home occupations rose from 270 in 1984 to 633 in 1994, a 134% increase. Home occupations now represent about 10% of all those employed in city-licensed businesses.

Goal 9 Economic Development

□ Goal 9: Economic Development

The 1990 census indicated that more than half, 16,631 persons, of Lake Oswego's total population of 32,555 were employed. Like most suburban communities, considerable commuting takes place to and from Lake Oswego for employment purposes. However, Lake Oswego has a considerable local employment base. The census and data derived from City business licenses indicates that approximately 7,400 people are employed within the City.

Industrial growth in the Lake Oswego area has been far exceeded by commercial and office development. Comparatively, it is a smaller part of Lake Oswego's overall job base.

Commercial Land Uses

In 1994 there were about 540 acres of commercial and industrial land within Lake Oswego's Urban Services Boundary. Most of this land has been developed. There are approximately 40 acres of vacant commercial land within the unincorporated portion of the City's Urban Services Boundary, mostly within the Kruse Way/Centerpointe Business District. Within the City limits, there are an additional 27 acres of vacant commercial and seven acres of vacant industrial land. All of the above vacant sites are small parcels ranging in size from .25 to 5.0 acres. In addition, it is estimated that there are about 40 acres of underutilized* commercial land within the City that offer opportunities for more intense development.

The characteristics of Lake Oswego's six commercial business and two light industrial districts are summarized as follows:

1. Kruse Way/Centerpointe Business District

With the exception of the recession of 1980-83, Lake Oswego and proximate areas of western Clackamas County experienced significant economic development in the form of new office and retail space during the 1980s and early 1990s. The Kruse Way/Centerpointe area east of Highway 217 and I-5 (Figure 7), became a premier location for new corporate office buildings and supportive uses such as hotels, restaurants and other services. This area not only provides the opportunity for Lake Oswego residents to work closer to home but also serves as a major employment center in the southwestern Portland Metropolitan Area.

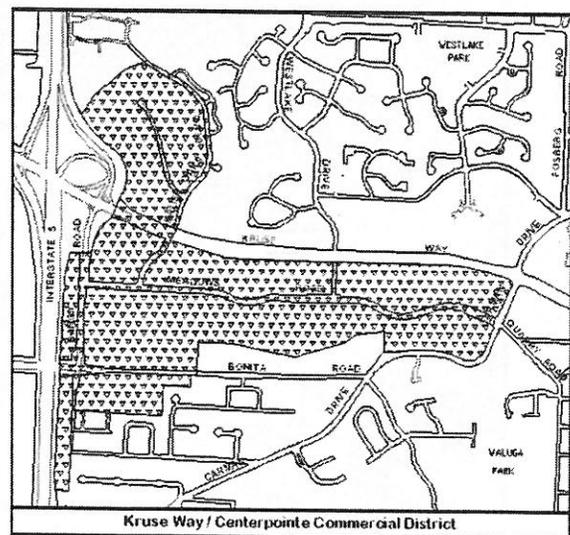


Figure 7

Goal 9 Economic Development

□ Goal 9: Economic Development

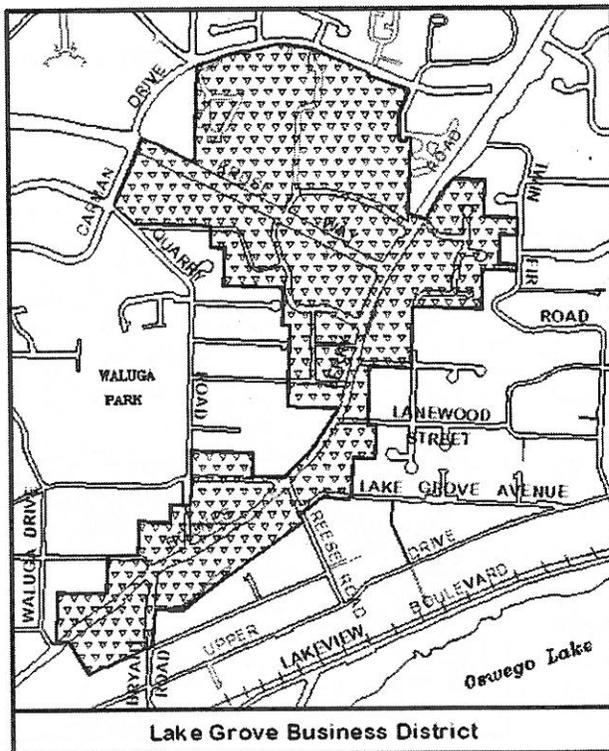
The 1990 census estimates that there are more than 4,000 jobs located in the Kruse Way/Centerpointe area. Two to three million square feet of development potential remains in this business district.

Land use designations for the Kruse Way/Centerpointe Business District fall within three categories: Highway Commercial*, Office Campus* and Campus Research and Development.*

Much of the Kruse Way portion of this area is in the unincorporated portion of Lake Oswego's Urban Services Boundary. Pursuant to the 1988 "Settlement and Annexation Agreement"* among major property owners, Unified Sewerage Agency and the City, the area was developed as part of Clackamas County. The Agreement requires annexation of Kruse Way properties to Lake Oswego upon building occupancy.

2. Lake Grove and Downtown Business Districts

Within Lake Oswego there are ample opportunities for residents to shop for both durable* and non-durable goods* within the Lake Grove (Figure 8), and Downtown General Commercial* (Figure 9), Business Districts.



Lake Oswego's other General Commercial area is the Lake Grove Business District located in the western portion of the City along Boones Ferry Road, south of Kruse Way. The original Lake Grove area was the center of a rural community, and has since grown and expanded both north and south along Boones Ferry Road. Businesses in this area are primarily of a community or neighborhood scale. Some limited office development has also occurred. In addition, the Lake Grove Grade School and a post office are located within, or in close proximity to the Lake Grove Business District.

Figure 8

Goal 9 Economic Development

□ Goal 9: Economic Development

The Downtown business district was once the focal point of the community. Today, the district is the location of City Hall, main post office, main fire station and other municipal services. In the past, it also served as the community's center for commercial shopping, banking and entertainment. State Highway 43, a major north/south connection between Interstate 205, West Linn, Lake Oswego and Portland serves the area and also provides a major connection to several of Lake Oswego's major streets. The Lake Oswego Redevelopment Agency (LORA) and the Lake Oswego Urban Renewal District were formed in the late 1980s to develop ways to revitalize the Downtown business district. This allowed tax increment financing to be used as a tool to fund redevelopment* efforts to alleviate conditions of blight and underutilization of valuable urban land. The East End Redevelopment District encompasses about 150 acres, consisting of Lake Oswego's traditional downtown commercial core, commercial areas fronting Oregon Highway 43 and a large mixed use office and multi-family development along the Willamette River.

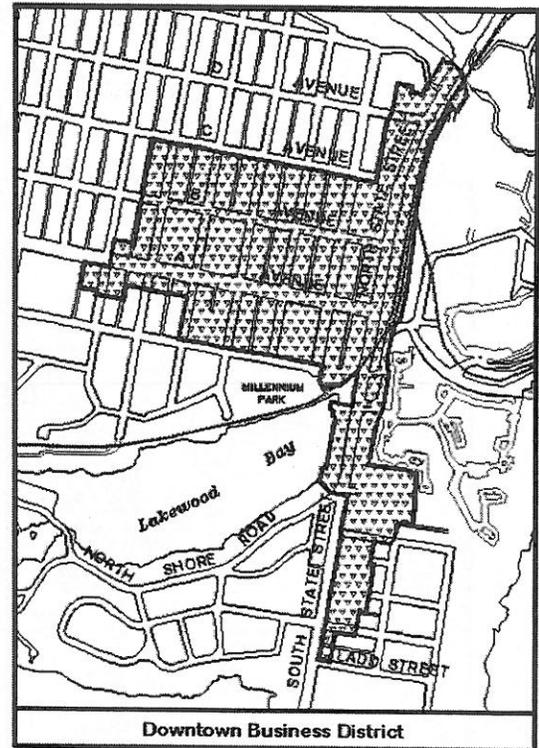


Figure 9

3. Jean Road Commercial District

The Jean Road Business District consists of approximately 4.45 acres of General Commercial land located on the south side of the intersection of Boones Ferry Road and Jean Road (Figure 10). Special conditions have been imposed on the site to ensure that development creates an aesthetically pleasing entry into Lake Oswego.

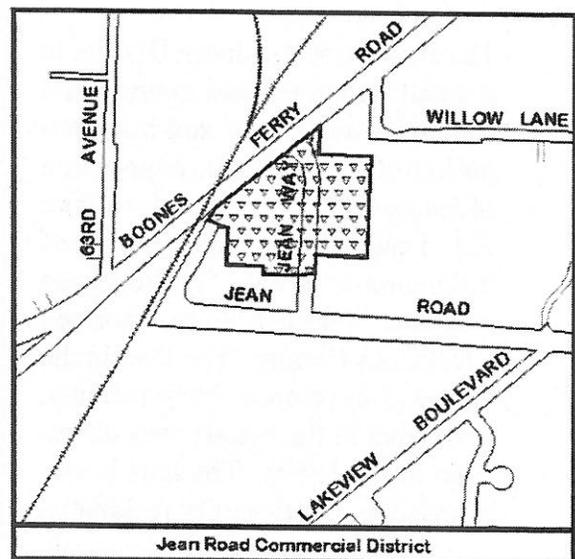


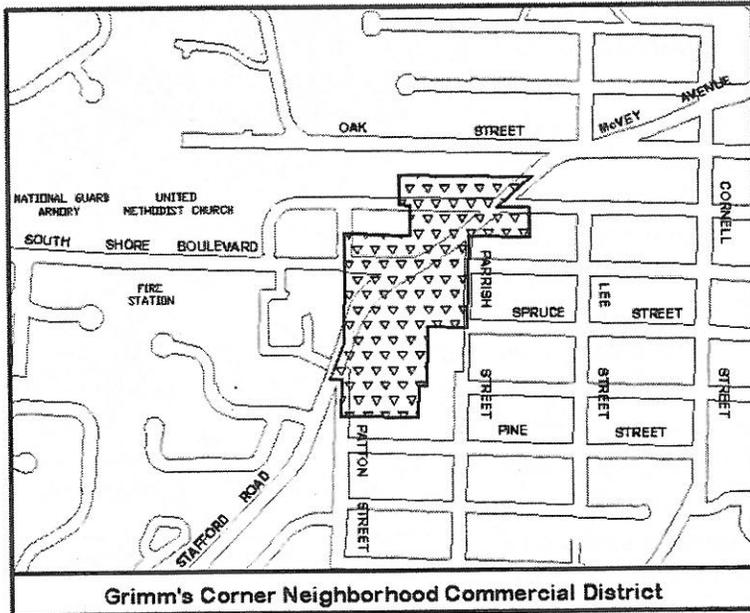
Figure 10

Goal 9 Economic Development

□ Goal 9: Economic Development

4. Grimm's Corner, Rosewood, Mountain Park Districts

Grimm's Corner is a neighborhood commercial district located at the intersection of McVey Street and South Shore Boulevard (Figure 11). A variety of neighborhood commercial uses have developed over the years, including a grocery store, take-out restaurants, a nursery and garden supply business and a bowling alley. Grimm's Corner is surrounded by residential uses, however a National Guard Armory and fire station are located nearby.



Unless resolved, traffic problems associated with the intersection and alignment of South Shore Boulevard and McVey pose significant development problems for this commercial district.

Figure 11

5. Rosewood

The Rosewood Business District is a small neighborhood commercial center located in the southwestern portion of the City, at the intersection of Jean and Pilkington Roads (Figure 12). That portion on the west side of Pilkington is in the City limits; the east side is still in unincorporated Clackamas County. The land in the City was developed fairly recently, while that in the county was developed in the 1950s. The area is surrounded by multi-family residential on the north and east; single family on the south, and by commercial and industrial uses on the west.

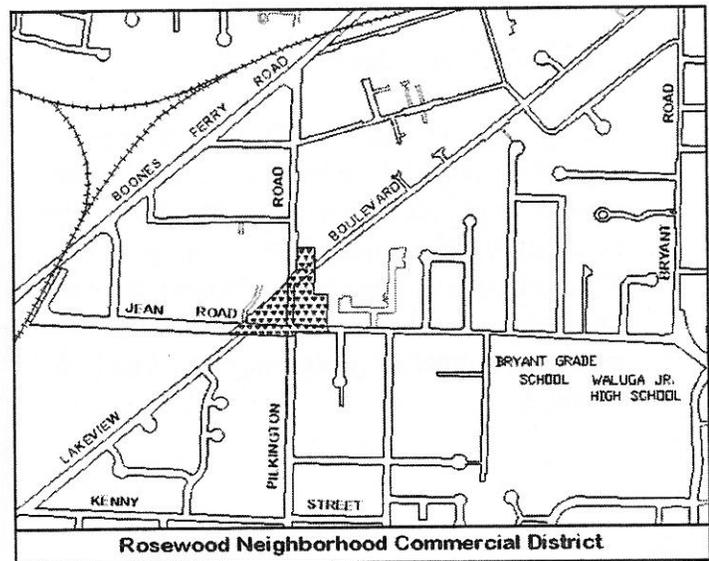


Figure 12

Goal 9 Economic Development

□ Goal 9: Economic Development

6. Mountain Park Districts

Several neighborhood commercial centers were planned as part of the Mountain Park Planned Unit Development to provide for a range of retail, personal services, restaurant and cultural activities (Figure 13). Limited office development also provides for professional business and financial services, institutional and other uses. The scope of commercial development in Mountain Park has been considerably scaled back from what was originally envisioned when the project was approved. A considerable portion of what was intended as commercial land has been developed for residential uses.

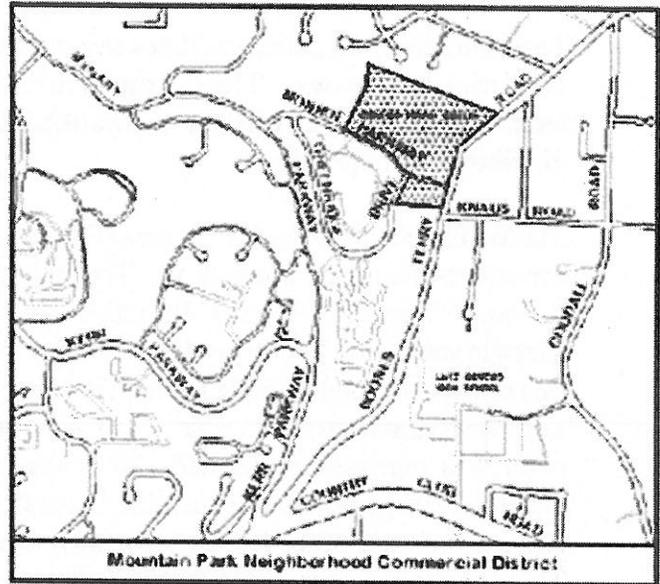


Figure 13

The most significant commercial site in the Mountain Park area is the Oswego Town Square site. This development is located at the intersection of Monroe Parkway and Boones Ferry. The site is completely developed and offers convenience shopping along with some specialized retail stores which have a community wide draw. Other small neighborhood commercial sites in Mountain Park are located at the intersections of Kerr Parkway and Hidalgo Street and Jefferson Parkway and Mt. Jefferson Terrace. Also there are two small sites which accommodate office commercial uses at the intersections of Jefferson Parkway and Kingsgate and Carman Drive and Touchstone.

7. Industrial Land Uses

Lake Oswego has no heavy industry. The Lake Grove industrial park is at the southern end of Boones Ferry Road and east of I-5 (Figure 14).

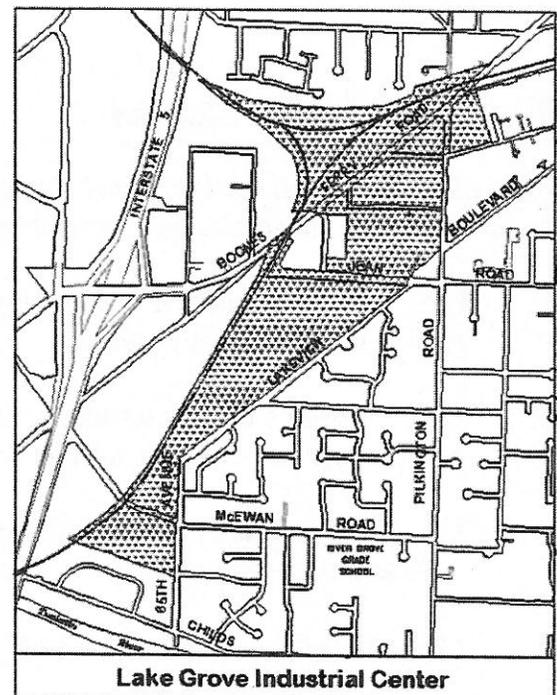


Figure 14

Goal 9 Economic Development

□ Goal 9: Economic Development

The industrial park accommodates several light industrial businesses. These firms consist of technical/professional offices, warehousing and distribution and printing.

The Willamette River industrial area (Figure 15), accommodates uses such as the Tryon Creek Sewage Treatment Plant, a Portland General Electric substation, wood products storage area, tree service, and automobile repair. This area diminished considerably in size when a cement plant was removed in the late 1980s to make way for Oswego Pointe, a large mixed use office-commercial and high density housing project. This industrial area is generally located between the Willamette River, Highway 43, the northern City limits and Oswego Pointe.

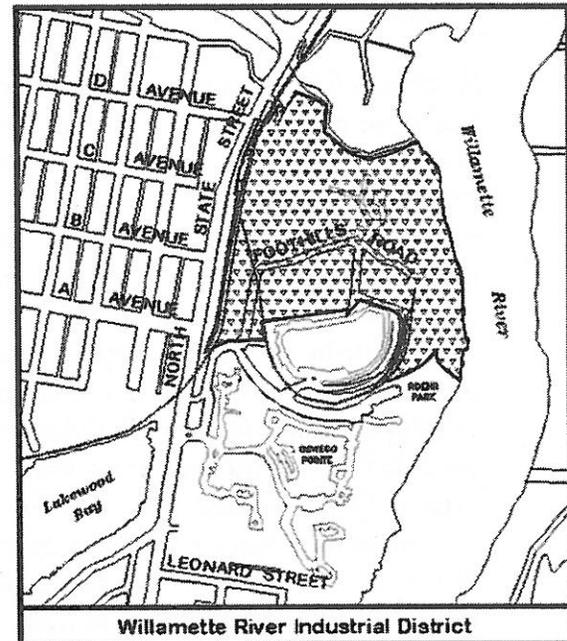


Figure 15

Summary of Major Issues

Following are some of the issues and changed circumstances and conditions that were considered in the update of this element of the Comprehensive Plan.

- Lake Oswego's business and employment growth has occurred more rapidly than population growth in the past ten years.
- Lake Oswego's businesses have become smaller in terms of numbers of employees. Home occupations are becoming a larger source of business growth.
- Lake Oswego residents are highly educated and for that reason are a source of managerial and professional employment in the community and region.
- Most of the City's commercial and industrial lands have been developed.
- Opportunities exist for redevelopment of commercial and industrial lands.
- Commercial and office employment have grown much faster than manufacturing employment.

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- Quality of life in Lake Oswego contributes significantly to the City's economic health and vitality.
- Significant redevelopment has occurred in the Downtown business district through the East End Redevelopment District.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall provide for economic development opportunities which enhance the prosperity and livability of the community.

POLICIES

1. Designate adequate commercial and industrial land to:
 - a. Supply goods and services to the population within Lake Oswego's Urban Services Boundary;*
 - b. Provide close-to-home employment opportunities; and,
 - c. Maintain and improve the health of the local economy.
2. Applications for a Zoning Map/Comprehensive Plan Map amendment to change the designation of an area from residential to commercial or industrial shall be governed by the following procedures and criteria: [PA 5-97/ZC 4-97-1259; 5/5/98]
 - a. No application shall be accepted during the neighborhood planning process for the affected neighborhood or neighborhoods or for two years after the date of the City Council's approval of a Neighborhood Association's application to begin the planning process, whichever is less.
 - i. For the purposes of this policy, "affected neighborhood" means the recognized Neighborhood Association or Community Planning organization in which the property proposed to be rezoned is located. If the subject property is located in two or more neighborhoods, all neighborhoods in which a portion of the subject property is located shall be considered affected neighborhoods. If the subject

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property is located in one neighborhood but the rezone is requested to expand an existing commercial or industrial use located in another neighborhood, both neighborhoods shall be considered affected neighborhoods.

- ii. For the purposes of this policy, “neighborhood planning process” means the period of time from the City Council’s decision to approve a Neighborhood Association’s application to begin the planning process until the Neighborhood Plan is adopted and in effect. If there is more than one affected neighborhood, and both neighborhoods are in the neighborhood planning process, the two-year deadline period shall run from the latest application approval date.
- b. In order to obtain approval, the applicant shall demonstrate compliance with the polices and standards of an adopted Neighborhood Plan of an affected neighborhood. If more than one neighborhood plan is applicable and the policies conflict, the conflicting policies shall be balanced as provided in the Introduction to the Comprehensive Plan.
 - c. In addition to compliance with any applicable neighborhood planning policies as provided in subsection (b) , the applicant shall demonstrate compliance with all Comprehensive Plan Goals and Policies applicable to industrial and/or commercial plan/zone map amendments. Such applicable Goals and Policies include, but are not limited to, the following:
 - i. Location in relation to arterial or collector streets; consistency with adjacent land use patterns or ability to buffer, screen and blend dissimilar land uses. [Goal 2, Land Use Planning, Section 1, Land Use Policies and Regulations, Policy 14];
 - ii. Capacity of public facilities and services. [Goal 2, Land Use Planning, Section 1, Land Use Policies and Regulations, Policy 14];
 - iii. Encourage land use patterns which reduce dependency on the automobile but which are also compatible with existing neighborhoods. [Goal 6, Air, Water and Land Resources Quality, Section 1, Air Resources Quality];
 - iv. Separate noise sensitive and noise-producing land uses; minimize noise impacts on surrounding properties and protect and maintain the quiet character of those areas of the community unaffected by major noise sources, and locate, design and buffer noise producing land uses to protect noise sensitive land uses. [Goal 6, Air, Water and Land Resources Quality, Section 4, Sound Quality, Policies 1, 4, and 5];

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- v. Regulate the type and intensity of land uses within areas subject to natural disasters and hazards. [Goal 7, Areas Subject to Natural Disasters and Hazards, Section 1, Flooding; Section 2, Earthquake Hazards; and Section 3, Landslides, Erosion and Unstable Soils, Policy 2];
- vi. Prevent expansion of “strip commercial development”* [Goal 9, Economic Development, Policy 8];
- vii. Ensure neighborhood commercial * areas are conveniently located and minimize the need for automobile travel. [Goal 9, Economic Development, Policy 9(a.)];
- viii. Designate the Downtown and Lake Grove Commercial Districts as the primary centers of general commercial activity in Lake Oswego. [Goal 9, Economic Development, Policy 10];
- ix. Limit commercial development in the Lake Grove Business District to that which is intended to accommodate neighborhood and community needs* for goods and services. [Goal 9, Economic Development, Policy 16];
- x. Regional draw* businesses other than those providing specialized services and unique goods* shall not be located in the Downtown and Lake Grove Business Districts. [Goal 9, Economic Development, Policy 17];
- xi. Limit commercial development in the Grimm’s Corner and Rosewood Business Districts to that which is intended to accommodate the frequently recurring needs* of the surrounding neighborhoods. [Goal 9, Economic Development, Policy 18];
- xii. Limit development within the commercial districts associated with the Mountain Park Planned Unit Development to that which serves the frequently recurring needs of Mountain Park residents, except; in those locations where site conditions, such as parcel size and direct access to the major street system, allow businesses to provide for community needs and to offer specialized goods and unique services. [Goal 9, Economic Development, Policy 19];
- xiii. Allow commercial and residential uses within the Centerpointe and Kruse Way Business District at densities, which support mass transit and which, take advantage of the regional transportation system. These activities may include:

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- a. Employee intensive businesses such as major regional office complexes, high density housing, and associated services and retail commercial uses, and;
- b. Commercial activities, which meet the needs of the traveling public and other highway, oriented retail uses which require access to a large market area. [Goal 9, Economic Development, Policy 20];
- xiv. Do not allow regional, or larger, shopping centers* within the Centerpointe and Kruse Way Business District. [Goal 9, Economic Development, Policy 21].
- xv. The full range of public facilities and services shall be available to serve development allowed by a Plan/Zone Map amendment. [Goal 2, Land Use Planning, Section 1, Land Use Policies and Regulations, Policy 1];
- xvi. Proposed Plan/Zone Map amendments shall be evaluated to determine their effect on the overall land supply and compliance with the Metro Housing Rule (OAR 660-07-000). [Goal 2, Land Use Planning, Policy 14(d)];
- xvii. Demonstration of public need for the change and that the proposed amendment will best meet identified public need versus other available alternatives. [Goal 2, Land Use Planning, Policy 14(f)];
- xviii. A proposed increase in land use intensity shall be accompanied by a detailed traffic analysis which finds that existing streets and intersections both on and off-site will accommodate the projected traffic increases, or; necessary improvements can be constructed which are in conformance with the Comprehensive Plan Transportation Map. [Goal 12: Transportation , Sub-Goal 4: Land Use and Transportation Relationships, Policy 4];
- xix. Commercial and industrial parking shall not intrude into adjacent residential neighborhoods. [Goal 10: Transportation , Sub-Goal 4: Land Use and Transportation Relationships, Policy 4];
- xx. The applicant shall demonstrate that development allowed by the proposed Plan/Zone map amendment will: be compatible with surrounding residential neighborhoods; preserve natural resources; protect water quality; provide for protection from natural hazards; and provide for efficient transportation and land use relationships including the accommodation of alternative transportation

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modes or that these criteria can be accomplished pursuant to the criteria contained in the Zoning and Development Code;

- xxi. The applicant shall demonstrate consistency with Metro's Urban Growth Functional Plan and compliance with the Oregon Transportation Planning Rule (Chapter 660, Division 12).

3. Require new commercial and industrial development to:
 - a. Provide the full range of required public facilities and services and pay commensurate system development charges;
 - b. Mitigate adverse impacts such as noise, traffic and visual aesthetics, on adjacent land uses through methods such as buffering, screening, parking controls, height, bulk and scale limits;
 - c. Comply with design and aesthetic standards to ensure compatibility with surrounding land uses and Lake Oswego's overall community character;
 - d. Participate in the development of a street system which provides efficient connection to higher order streets and to other activity centers;
 - e. Develop transit opportunities appropriate to the scale and character of the project;
 - f. Provide for a safe and convenient pedestrian and bicycle circulation system to and within the development;
 - g. Provide adequate, but not excessive parking for customers and employees; and,
 - h. Preserve natural resources and provide required open space.
4. Require unified site plans* for all new industrial and commercial development which show:
 - a. Projects at full development including identification of all phases;
 - b. The locational, design and transportation relationships of proposed development with the rest of the business district and with surrounding land uses;
 - c. Measures necessary to mitigate adverse impacts on the transportation system and on adjacent land uses; and,
 - d. Design compatibility with surrounding land uses in regard to elements such as scale, bulk, materials, colors and landscaping.
5. Allow home occupations* subject to regulations that ensure compatibility with the surrounding residential neighbors.
6. Support redevelopment of existing vacant and underutilized industrial and commercial lands rather than designating additional lands for these purposes.

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7. Ensure access to commercial and industrial development is taken from the major collector or arterial street system except when public safety requires access to be provided from other streets.
8. Prevent further expansion of “strip commercial development”* and encourage redevelopment of existing strip commercial areas to become more attractive and oriented toward pedestrians and transit.
9. Ensure neighborhood commercial* areas are:
 - a. Conveniently located and minimize the need for automobile travel;
 - b. Developed at a scale and in character with the area to be served; and,
 - c. Consistent with applicable and adopted Neighborhood Plans.
10. Designate the Downtown and Lake Grove Commercial Districts as the primary centers of general commercial* activity in Lake Oswego.
11. Require new commercial development, where possible, to develop joint street access, parking facilities, and pedestrian connections with other businesses to reduce land area requirements, traffic congestion, parking and safety problems.
12. Place new utilities, and where possible existing utilities, within commercial and industrial districts, underground.
13. Direct commercial and through traffic, other than that generated from adjacent neighborhoods, away from local residential streets.
14. Ensure all industrial and commercial uses comply with local, state and federal environmental standards.
15. Require all commercial and manufacturing operations, except those approved as a temporary use, including warehousing and storage, to be conducted either within enclosed buildings or screened from public view.
16. Limit commercial development in the Lake Grove Business District to that which is intended to accommodate neighborhood and community needs* for goods and services.
17. Allow mixed use development within the Downtown and the Lake Grove Business Districts to provide opportunities for commercial, entertainment, professional, cultural, public, and residential activities. Regional draw* business other than those providing specialized services and unique goods,* shall not be located in these districts.

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18. Limit commercial development in the Grimm's Corner and Rosewood Business Districts to that which is intended to accommodate the frequently recurring needs* of the surrounding neighborhoods.
19. Limit development within the commercial districts associated with the Mountain Park Planned Unit Development to that which serves the frequently recurring needs of Mountain Park residents, except; in those locations where site conditions, such as parcel size and direct access to the major street system, allow businesses to provide for community needs and to offer specialized goods and unique services.
20. Allow commercial and residential uses within the Centerpointe and Kruse Way Business District at densities which support mass transit and which take advantage of the regional transportation system. These activities may include:
 - a. Employee-intensive businesses such as major regional office complexes, high density housing, and associated services and retail commercial uses; and,
 - b. Commercial activities which meet the needs of the traveling public and other highway oriented retail uses which require access to a large market area.
21. Do not allow regional or larger, shopping centers* within the Centerpointe and Kruse Way Business District.
22. Ensure that urban design and beautification projects in the Downtown Business District do not force through traffic to utilize local streets.

RECOMMENDED ACTION MEASURES

- i. Work with Tri-Met to increase the level and quality of transit service to Lake Oswego's commercial and industrial districts.
- ii. Recognize that education is vital to the social and economic well-being of the citizens of Lake Oswego and the region.
- iii. Encourage other uses, in addition to traditional industrial activities within Lake Oswego's industrial districts as a means to increase employment opportunities within the City.
- iv. Work with the Lake Oswego Chamber of Commerce and other local business groups to promote discussion concerning land use and other regulations which could affect area businesses.

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- v. Coordinate with state and regional economic development agencies and groups to identify developments and trends which could affect Lake Oswego such as:
 - a. Major public facility projects that have interjurisdictional consequences;
 - b. Metro, state and federal programs, regulations, and plans; and,
 - c. Investment and locational decisions by major employers.
- vi. Recognize and promote community events as having potential for positive economic impacts and as important for community identity.
- vii. Encourage a mix of commercial, residential, entertainment, cultural and public land uses within the City's general commercial districts to enhance the vitality of these areas.
- viii. Ensure that parking standards for commercial and industrial land uses do not conflict with regional objectives of reducing automobile use and promoting transportation alternatives.
- ix. Develop and periodically update specific land use and transportation plans and implementing design and development standards for each of Lake Oswego's business and industrial districts.
- x. Work with owners and tenants of existing industrial and commercial areas and adjacent neighborhoods to develop specific area plans for these districts to address:
 - a. Existing and future public facility and services needs and transportation requirements;
 - c. Design quality and appearance of industrial uses;
 - d. Mitigation of impacts on surrounding uses; and,
 - e. Protection of natural resources.
- xi. Encourage public uses of the Willamette River as part of Downtown business district redevelopment efforts.
- xii. Work with Tri-Met, Metro and other responsible agencies to develop a rail and bus service between Portland and Lake Oswego.
- xiii. Define the City's role in regulating parking facilities in Lake Oswego's commercial business districts.
- xiv. Encourage agreements among property owners, the City, and adjacent neighborhoods as a means to control business district parking encroachment into adjacent residential areas.

Goal 10: Housing



The City shall:

- a. ***Provide the opportunity for a variety of housing types in locations and environments to provide an adequate supply of safe, sanitary, energy efficient housing at price and rent levels appropriate to the varied financial capabilities of present and future City residents;***
- b. ***Protect the character of existing neighborhoods, and;***
- c. ***Provide for needed housing while protecting environmentally sensitive areas, using land and public facilities as efficiently as possible, and facilitating greater use of alternative transportation modes.***

Goal 10 Housing

Goal 10: Housing

BACKGROUND

Statewide Planning Goal 10: Housing

“To provide for the housing needs of citizens of the State.”

In the Portland metropolitan area, the role of local governments in providing housing opportunities is governed by the requirements of Statewide Planning Goal 10 and the “Metropolitan Housing Rule” (OAR-660-7-000-060). This rule sets a requirement for Lake Oswego and other Portland metropolitan communities to provide for the opportunity for a minimum of 10 dwelling units per acre on vacant, buildable land and the opportunity for 50%/50% mix of single family and multifamily or attached housing. These requirements became effective in 1981 and the City has met them since Plan acknowledgment in 1984. When the Comprehensive Plan was acknowledged in 1984 the City provided the opportunity for 10.2 dwelling units per acre on vacant, buildable land*. By 1992, the opportunity for 10.5 units per acre had been achieved. In the future, Metro Regional Framework Plans and Functional Plans may require Lake Oswego and other communities to provide for greater housing densities in appropriate areas, such as the Downtown Business District and along major transit corridors, as a means to minimize pressure to expand the Portland Metropolitan Area Urban Growth Boundary.

Of the 5,444 housing units constructed in Lake Oswego between 1980 and 1992, 57% were single family and 43% were multifamily or attached, representing movement toward the overall goal of a 50%/50% opportunity for single family and multifamily units. When a jurisdiction can meet its density and mix goals, the Housing Rule indicates that it has also satisfied the price range and rent level criteria for needed housing as set forth in Oregon Law.

During the formation of the original Comprehensive Plan, a citizen task force and the neighborhood associations studied residential and housing issues. Residential density designations were based on consideration of physical conditions of available land, capacity of public facilities, availability or potential for transit service, density of existing development, parcel sizes, estimated market demand, projected needs and provision of a mix of housing types and costs. Since most of the City, (approximately 80%) is and will continue to be residential in use, housing, neighborhood quality, traffic, public facilities, land use compatibility, etc., will also continue to be important issues in the City.

In the development of the original plan, many policies were included instructing the City to develop implementation measures to carry out Plan policies. Many of those directives had been accomplished by the time this Comprehensive Plan update had been initiated, such as review criteria for development proposals and appropriate development standards. Also, state law passed in 1991 (ORS 197.195) required all comprehensive plan standards affecting certain types of land use decisions to be included in land use regulations.

Goal 10 Housing

□ Goal 10: Housing

The number of housing units in the city of Lake Oswego grew by 45%, from 9,048 to 13,123, between 1980 and 1990. Lake Oswego's Urban Service Boundary contained approximately 14,300 housing units in 1990 and, according to Metro estimates, will have approximately 20,653 units and a population of approximately 49,000 by 2010.

In a 1991 Community Attitude Survey, Lake Oswego residents gave top marks to Lake Oswego as a place to live. Eight out of every ten people rate Lake Oswego's "livability" as a 9 or better (on a scale of 1-10). The environment, natural beauty, setting, schools and a small town atmosphere, were all primary reasons why people enjoyed living in Lake Oswego.

In regard to housing quality, Lake Oswego is fortunate to have a supply of fairly new, well maintained housing. Over 60% of all housing units have been constructed since 1970. Less than one tenth of one percent (.1%) were lacking plumbing or kitchen facilities in 1990 (1990 Census). A 1981 study of housing structural conditions indicated that only .4% of units surveyed were of a substandard condition.

Lake Oswego has relatively high median income, housing value and rents when compared to the rest of Oregon. In 1990, median rent in Lake Oswego was \$573 per month compared to \$344 for Oregon. In Oregon, median owner occupied housing value was \$67,000 in 1990. Median value in Lake Oswego was more than double that, at \$142,600.

In 1992, Lake Oswego adopted Zoning Ordinance criteria for allowing manufactured homes on individual lots. This was in response to 1991 legislation (ORS 197.303-370) requiring jurisdictions to allow this type of housing under the same review process as a site-built dwelling. There are other means available in Lake Oswego to increase housing opportunities and choice, such as allowing secondary dwelling units in conjunction with a single family dwelling, or encouraging planned unit developments and clustering of units, waiving fees for low income projects, and maintaining zoning designations consistent with the Metropolitan Housing Rule.

The National Affordable Housing Act of 1990 requires localities to develop a five-year Comprehensive Housing Affordability Strategy (CHAS)* to be eligible for direct U.S. Housing and Urban Development (HUD)* housing assistance and Community Development Block Grants (CDBG). Clackamas County administers these programs for the Lake Oswego area and the rest of Clackamas County, and developed the countywide CHAS. One of the findings of the CHAS study is that 22% of Lake Oswego residents are low or very low income.

The CHAS addresses two main groups: 1) Those with very low income, and those who spend more than 30% of their income on housing (and earn less than 50% of median income) and 2) those groups with special housing needs such as the homeless, mentally or physically handicapped or elderly. The County's priorities for housing assistance over the next 5 years include very low income renter households, particularly families and single-person households. Strategies include use of funds to rehabilitate

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rental units, increase the supply of group homes for homeless, youth and victims of domestic violence, medical needs populations and the farm worker population, and for rehabilitating plumbing, electrical and heating systems in substandard housing units.

Summary of Major Issues

Following are some of the issues and changed circumstances and conditions that were considered in the update of this element of the Comprehensive Plan.

- Many of the directives in the Housing Element of the original Plan have been accomplished and are now contained in the Zoning Ordinance, Development Code and other standards.
- With adoption of the Clackamas County CHAS, there may be opportunities for Lake Oswego to acknowledge housing for special needs groups and to enter into agreements with the County to enlist their assistance in providing for affordable housing and in monitoring affordable housing arrangements.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall:

- a. Provide the opportunity for a variety of housing types in locations and environments to provide an adequate supply of safe, sanitary, energy efficient housing at price and rent levels appropriate to the varied financial capabilities of present and future city residents;
- b. Protect the character of existing neighborhoods; and,
- c. Provide for needed housing while protecting environmentally sensitive areas, using land and public facilities as efficiently as possible, and facilitating greater use of alternative transportation modes.

Goal 10 Housing

Goal 10: Housing

POLICIES

1. Maintain the following residential land use designations and locational criteria which support the above goal:

- a. Low Density Residential

Density Classification	Minimum Square Feet of Area per Unit
R-15	15,000 sq. ft.
R-10	10,000 sq. ft.
R-7.5	7,500 sq. ft.

Low Density is intended for areas:

- i. Which are currently developed at low density;
- ii. Where transportation routes are primarily limited to collectors and local streets;
- iii. Where public services are adequate but development constraints may exist; and,
- iv. Where sensitivity to the natural environment or the existence of natural hazards indicates a reduced density.

- b. Medium and High Density Residential [PA 1-96/ZC 1-96-1187; 12/17/96]

Density Classification	Minimum Square Feet of Area per Unit
R-6	6,000 Sq. ft.
R-5	5,000 Sq. ft.
R-3	3,375 Sq. ft.
R-2 and R-0	(FAR) Maximum

Medium and high density residential areas may be designated in areas:

- i. Which are currently developed at medium and high density;
- ii. Where there are public services and few development constraints; and,
- iii. Near arterials or major collector and transit service, and particularly for high density residential, areas in close proximity to commercial areas and/or employment concentrations.

Goal 10 Housing

Goal 10: Housing

2. Require design review to determine the actual number of units permitted on a development site through an inventory of site conditions which demonstrates how proposed development is compatible with the site, surrounding uses, other Plan policies and capacity of public facilities.
3. Assure that residential densities are appropriately related to site conditions, including slopes, potential hazards and natural features.
4. Require mitigation of adverse impacts such as noise, traffic and visual aesthetics, on differing, adjacent land uses through site and building design.
5. Require mitigation of adverse impacts such as traffic noise, degraded air quality and congestion, on all residential development along freeways, major and minor arterials and major collectors, through site and building design and other measures.
6. Assure that residential density is appropriately related to the capacity of public facilities, especially residential streets. Developments shall not generate traffic exceeding the capacity of adjacent streets or intersections. (Also see Transportation Chapter, Goal 1, Policy 1, Goal 4 and Figure 16.)
7. Provide for safe, comfortable, visually attractive streets in new developments.
8. Link housing density and location to reduce automobile travel by locating high density residential (R-0, R-2 and R-3) and mixed use developments within walking distance of bus lines or transit centers, and preferably clustered so as to avoid strip development. [PA 1-96/ZC 1-96-1187; 12/17/96]
9. Encourage energy efficient site and building design, and use of renewable building materials.
10. Provide for an interconnected street system to encourage pedestrian, bicycle and transit travel and to reduce vehicle miles traveled to local destinations thus reducing energy use, pollution and congestion.
11. Place higher density residential, employment and shopping opportunities and public facilities, such as transit and parks, within close proximity where feasible.
12. Assure an orderly transition from one residential density to another through design and development standards such as landscaping, buffering and screening.
13. Provide for the active involvement of neighborhood residents and property owners in decisions affecting their neighborhood.

Goal 10 Housing

Goal 10: Housing

14. Provide a wide range of housing types to meet the needs of various lifestyles and family types.
15. Provide low to moderate cost housing opportunities to meet Lake Oswego's fair share of local and regional housing needs including single family, multifamily, manufactured housing, special use housing and residential care facilities.
16. Assure equal access to housing for all.
17. Support public and private actions which increase housing choices and reduce housing construction costs.
18. Actively participate with Metro and Clackamas County in formulating and carrying out the Comprehensive Housing Affordability Strategy.
19. Allow special use housing for elderly, including frail elderly, persons with medical disabilities, disabled families and other special needs populations identified in the Clackamas County Comprehensive Housing Affordability Strategy, in all zones in proportion to the local share of regional need.
20. Maintain a cooperation agreement with Clackamas County authorizing provision of rent supplement assistance within the City and enter into agreements with the County Housing Authority* to control rents in assisted units, if opportunities arise.

RECOMMENDED ACTION MEASURES

- i. Encourage primary access to a collector or arterial street for R-0, R-3, and R-5 developments.
- ii. Require developers to be responsible for their proportionate share of costs of providing required public facilities and services including recreation facilities and park land.
- iii. Comprehensively evaluate all major developments to adequately analyze site design, solar access, building placement, significant features, factors relating to surrounding uses, pedestrian and traffic circulation, drainage and energy conservation, plus any special protections needed to mitigate any adverse impacts of increased density.

Goal 10 Housing

Goal 10: Housing

- iv. Encourage site and building design considerations for developments which are proposed adjacent to differing land uses which include use of building materials for noise reduction, visual screening through use of increased setbacks, building bulk and height modulation, building placement or landscaping and analysis of traffic patterns.
- v. Encourage site and building design considerations for residential developments proposed adjacent to major streets which include noise mitigation through the use of appropriate building materials, landscaping, sound deadening structures, appropriate setbacks or other measures to assure a quality living environment.
- vi. Design residential streets to accommodate residential speeds and volumes, to reduce noise levels, increase land use efficiency and reduce impervious surface.
- vii. Preserve natural features, avoid hazard areas and reduce development costs by allowing new development to:
 - a. Cluster units;
 - b. Utilize flexible lot sizes;
 - c. Construct a variety of housing types; and,
 - d. Transfer density to more suitable areas of a site.
- viii. Actively pursue an effective enforcement program to enforce the City's zoning, development, tree and sign standards as a means of maintaining and enhancing livability.
- ix. Monitor and regulate home occupation* activity to prevent adverse impacts on residential areas caused by incompatible activities or appearance problems.
- x. Utilize screening and buffering, setbacks, landscaping and modulation of building bulk between different residential densities within neighborhoods to reduce the potential for conflicts such as noise and visual encroachment.
- xi. Require increased setbacks for residential uses along Boones Ferry and Kruse Way and require trees and other vegetation which will provide a compatible living environment.
- xii. Promote the planting and maintenance of street trees and other landscaping in residential areas, and require walkways, where appropriate, to provide for pedestrian comfort and safety.
- xiii. Consider traffic management devices and other traffic management techniques for established residential areas which have experienced decreased safety and increased traffic volumes over the

Goal 10 Housing

□ Goal 10: Housing

years which exceed those recommended in the Transportation Element of the Comprehensive Plan.

- xiv. Allow secondary (accessory) dwelling units* to provide opportunities for affordable rental units, offset housing costs for the primary unit or act as transitional housing without changing the character and quality of single family areas.
- xv. Cooperate with the Clackamas County Housing Authority in locating sites suitable for special use housing. Provide density bonuses, where and when appropriate, to encourage special use housing.
- xvi. Establish an agreement with Clackamas County to allow the development of federally assisted low-to moderate cost housing units.
- xvii. Encourage Clackamas County to utilize federally funded Community Development Block Grants for provision of housing assistance and housing rehabilitation for which individual Lake Oswego residents could be eligible.
- xviii. Encourage elimination of barriers which limit housing choice for the handicapped.
- xix. Encourage innovative housing construction technologies which decrease development costs.
- xx. Encourage and assist the continuing maintenance of existing residential properties for safety, sanitation and structural integrity.
- xxi. Encourage neighborhood cleanup and maintenance of the exterior of dwellings and landscaping.
- xxii. Encourage home occupations and develop regulations requiring home occupations to be compatible with the character of residential neighborhoods.

Goal 11: Public Facilities & Services

- Section 1, Public Safety
Police and Fire Protection



The City shall ensure a high level of public safety through the provision of police and fire protection and emergency preparedness services.

Goal 11 Public Facilities and Services

Section 1, Public Safety Police and Fire Protection

BACKGROUND

Statewide Planning Goal 11: Public Facilities and Services

“To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.”

Police services within the Lake Oswego Urban Services Boundary are provided by the City of Lake Oswego Police Department, the Multnomah and Clackamas County Sheriffs’ Departments, Oregon State Police and neighboring and regional law enforcement agencies. Also, the Police Department has non-sworn personnel within its Community Services Division who provide support services and enforce the City’s municipal code.

In addition to the city limits, the City’s Police Department will cover areas within a limited distance outside the City in cases of emergency until county or state law enforcement arrives. City police will also provide back-up to other law enforcement agencies when requested. The County Sheriffs’ Departments and State Police will also answer calls inside the City limits. Their enforcement power is limited to matters of state law inside the City and they do not enforce City ordinances.

The Lake Oswego Police Department has several divisions which provide special law enforcement and public safety services. These include patrol, canine section, traffic enforcement, community traffic safety, detective, special investigations and community services units.

Lake Oswego operates the E-911* communications center (LOCOM). LOCOM provides emergency communications service to approximately 55,000 people within the general area of Lake Oswego, West Linn and Dunthorpe.

The Lake Oswego Fire Department provides fire protection for all areas within the City limits and contracts to provide services to three special service districts — Lake Grove, Riverdale-Dunthorpe and Alto Park fire districts. Other fire districts providing fire service within the City’s Urban Service Boundary include Tualatin Fire District and Rosemont Fire District.

Fire Department services include fire safety code inspection and enforcement, fire prevention and suppression, public education and information. Emergency medical and ambulance service is provided by both the City of Lake Oswego and a private company. The private service operates through a franchise agreement with the City.

Goal 11 Public Facilities and Services

Section 1, Public Safety Police and Fire Protection

In 1992, Lake Oswego adopted the City of Lake Oswego Emergency Operations Plan. The Fire Department has primary responsibility for administering the plan. It implements LOC 12.800 (Emergency Code) by providing the basic framework to guide City departments in their efforts to mitigate, prepare for, respond to, and recover from, any major emergency or disaster which may affect all or parts of the City. Six major emergency categories are addressed by the plan including hazardous materials accidents, mass casualties, wildfires, earthquakes, severe weather and structural fires.

Summary Of Major Issues

The following are some of the issues, changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan.

- Lake Oswego has primary responsibility for public safety services within the city limits. However, a high degree of cooperation and coordination occurs with other area agencies and jurisdictions.
- The City provides fire protection services to several fire districts within the Urban Services Boundary.
- Lake Oswego operates the E-911 (LOCOM) Emergency Communications Center which serves the Lake Oswego, West Linn and Dunthorpe areas.
- The City of Lake Oswego Emergency Operations Plan was adopted in 1992.
- Emergency medical and ambulance service is provided by the fire department and by a franchised provider.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall ensure a high level of public safety through the provision of police and fire protection and emergency preparedness services.

Goal 11 Public Facilities and Services

Section 1, Public Safety Police and Fire Protection

POLICIES

1. Ensure fire and police personnel can respond to public safety needs as quickly and efficiently as possible through:
 - a. Provision of personnel, facilities, equipment and communication resources; and,
 - b. Agreements with other agencies and jurisdictions to provide automatic and mutual aid* when needed.
2. Require adequate police and fire protection to be considered for all development. Particular attention shall be given to:
 - a. Fire hydrant locations and sufficient fire flows;
 - b. Street layout and site design features that ensure emergency vehicle access and building identification;
 - c. Building security; and,
 - d. Exterior lighting and landscape design.
3. Require all home occupations to comply with the Uniform Fire Code.
4. Ensure adequate police and fire protection can be provided to newly annexed areas.
5. Require new streets to be of high structural quality, sufficient width and adequately maintained to ensure emergency vehicle and service equipment access.
6. Maintain agreements with existing service districts for fire protection services outside the City provided:
 - a. Such actions are consistent with the City's Public Facility Plan and Comprehensive Plan goals and policies pertaining to public facilities and services and urbanization;
 - b. Adequate resources exist to provide these services; and,
 - c. These arrangements are in the City's financial interests.
7. Participate in automatic and mutual aid agreements among fire districts and departments provided such agreements ensure equal and reciprocal benefits and enhance the City's ability to provide fire protection throughout the City.
8. The Fire Department shall have the goal of reaching the location of fire alarms within the City within eight minutes or less.

Goal 11 Public Facilities and Services

Section 1, Public Safety Police and Fire Protection

9. The Police Department shall have the goal of reaching the location of emergency calls for protection of life and property within a maximum time of five minutes.
10. Lessen the possibility of wildfires and their potential for destruction through public education, development review, emergency planning and maintenance of fire-fighting resources.
11. Maintain a Lake Oswego Emergency Operations Plan and provide sufficient resources to respond to emergencies including mass casualty incidents* wildfires, earthquakes, severe weather, major structural fires and hazardous materials accidents.
12. Require all development to meet fire code requirements.

RECOMMENDED ACTION MEASURES

- i. Emphasize primary prevention techniques to prevent loss due to fire and crime such as:
 - a. Public education programs;
 - b. Neighborhood watch and block programs;
 - c. Voluntary alarm hook ups; and,
 - d. Enforcement of the building, fire and municipal codes.
- ii. Ensure that appropriate public safety services can be made available to new development through coordination between the Fire and Police Departments, developers and recognized neighborhood associations.
- iii. Provide public information and education regarding ways to protect life and property from disasters such as earthquakes, wildfires and hazardous material releases.
- iv. Recognize the special public safety needs of Lake Oswego's elderly, young and socially disadvantaged. Provide primary prevention services to these groups, such as:
 - a. Traffic safety and drug education;
 - b. Home fire and crime proofing information;
 - c. Support for Neighborhood Watch and block programs; and,
 - d. Personal safety education.

Goal 11 Public Facilities and Services

Section 1, Public Safety Police and Fire Protection

- v. Increase traffic safety through:
 - a. Review of planning and engineering proposals to ensure safe road design;
 - b. Active bicycle, pedestrian, speed and safety belt enforcement; and,
 - c. Maintenance of an active community traffic safety program.

- vi. Coordinate with other jurisdictions, public safety agencies and recognized neighborhood associations to ensure:
 - a. Compatibility of equipment and communications;
 - b. Emergency support can be provided when needed;
 - c. Sharing of resources to address multi-jurisdictional investigation and enforcement issues; and,
 - d. Effective implementation of the Lake Oswego Emergency Operations Plan.

- vii. Encourage water providers within the Urban Services Boundary to provide sufficient water storage and pressure to provide adequate fire flows.

Goal 11 Public Facilities and Services

Section 1, Public Safety Police and Fire Protection

- Notes -

Goal 11: Public Facilities & Services

☐ Section 2, Storm Water Management

Biofiltration Swale In Lake Grove



The City shall reduce storm water problems which cause flooding, erosion, and water quality problems.

Goal 11 Public Facilities and Services

□ Section 2, Storm Water Management

BACKGROUND

Statewide Planning Goal 11: Public Facilities and Services

“To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.”

Lake Oswego adopted a Public Facility Plan (PFP) in 1997 [PA 1-97] which identifies needed storm water management facilities per OAR 660, Division 11. The applicable parts of the PFP and its subsequent updates are incorporated by reference into the Comprehensive Plan.

Statewide Planning Goal 11 requires communities to develop plans and implementing measures to ensure that development is guided by appropriate types and levels of public facilities and services. In addition to the guiding goals and policies of Comprehensive Plans, jurisdictions are required to adopt public facility plans which identify key facilities needed to accommodate existing and future development.

Lake Oswego’s Urban Services Boundary includes three major drainage basins — Oswego Lake, Tualatin River and the Willamette River Basins. All surface water and piped water runoff in Lake Oswego eventually finds its way to the Willamette River, the Tualatin River or Oswego Lake. Each drainage basin is a complex system of topography, vegetation and hydrology. Water flows through these drainage basins via a network of interconnected creeks and streams and human made storm drainage systems.

Urban Development can have a detrimental effect on an area’s drainage characteristics by reducing the amount of pervious land and inhibiting the recharge characteristics of the soil and underlying geology. Problems related to inadequate storm drainage include flooding, erosion and siltation. Some areas of Lake Oswego have no storm drainage facilities and other parts of the community were developed with inadequately sized piped systems and open drainage ditches. Consequently, during periods of heavy rainfall, local flooding often occurs. Lack of resources for maintenance of existing facilities also contributes to storm drainage problems.

Lake Oswego’s storm drainage system is a significant part of the City’s overall public infrastructure. The system currently encompasses more than 150 miles of pipe and open channels, about 2,880 storm water inlets and catch basins and 170 miles of publicly owned streets. In late summer, 1992 the City adopted the Lake Oswego Surface Water Management Plan which serves as the storm drainage element of the Public Facilities Plan required pursuant to (OAR 660-11-010). The Surface Water Management Plan recommends major storm drainage capital improvements for the period 1993 - 2012. Its highest priority projects have been incorporated into the City’s Five Year Capital Improvement Plan.

Goal 11 Public Facilities and Services

Section 2, Storm Water Management

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the 1993 update of this element of the Comprehensive Plan.

- Storm water management is one of the key public facility plan categories required by the Land Conservation and Development Commission to be included in Lake Oswego's Public Facility Plan.
- Lake Oswego has completed the storm drainage element of its required Public Facilities Plan. This Plan illustrates that several projects are needed to address current and projected storm drainage needs.
- In some areas, urbanization has exacerbated storm drainage problems by overloading natural and human-made drainage systems.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall reduce storm water problems which cause flooding, erosion and water quality problems.

POLICIES

1. Minimize future storm drainage problems within and adjacent to the Urban Services Boundary (USB).
2. Implement measures to protect existing drainage systems and easements.
3. Prohibit the encroachment of structures and other permanent improvements over public storm drainage lines and within public storm drainage easements and drainage ways.
4. Discourage modification to existing open drainage ways and allow only modification when such action is in conformance with City standards.

Goal 11 Public Facilities and Services

Section 2, Storm Water Management

5. Require new storm drainage facilities to have the capacity to accommodate projected upstream flows within the respective drainage basin in addition to runoff generated by the development served by these facilities.
6. Require developers to construct required storm drainage facilities and to pay an appropriate system development charge (SDC).
7. Develop equitable funding mechanisms:
 - a. For storm drainage facilities maintenance;
 - b. To resolve the deficiencies of the existing system within developed areas, and provide adequate storm drainage services to developing areas; and,
 - c. To implement a capital improvement program (CIP) for the storm drainage system.
8. Utilize natural systems and non-structural methods to control storm water run-off at the source as a preference to structural systems to the extent allowed by site characteristics.
9. Require all storm drainage improvements on private property, and that required as a condition of new development to:
 - a. Accommodate storm drainage flows of development at full build-out; and,
 - b. Be compatible with the City's Storm Drainage Public Facility and Capital Improvement Plans and Surface Water Management Program.

RECOMMENDED ACTION MEASURES

- i. Encourage new development to integrate required storm drainage detention basins into overall site development plans and to incorporate vegetation into detention basin plans by either maintaining natural vegetation or through landscaping at a level appropriate for site conditions.
- ii. Limit impervious surface coverage where possible, and encourage the use of porous materials in lieu of concrete and asphalt.
- iii. Work with surrounding jurisdictions within the Urban Services Boundary (USB) to ensure:
 - a. The storm drainage requirements of new and future development are provided for;
 - b. Existing storm drainage easements, natural systems, and capital facilities are protected for future use;

Goal 11 Public Facilities and Services

Section 2, Storm Water Management

- c. Activities necessary to resolve existing drainage and flooding problems are coordinated with long range City plans; and,
 - d. Adverse downstream impacts of development and other activities are minimized.
- iv. Discourage the pumping of storm water, including the use of sump pumps as a solution for proper storm drainage.
 - v. Implement a program to eliminate the infiltration of storm water into the sanitary sewer system.
 - vi. Schedule needed storm drainage improvements for implementation as part of the City's overall Capital Improvement Program.
 - vii. Regularly maintain and clean the public storm water system to maximize the benefit of existing facilities.
 - viii. Encourage private property owners to regularly maintain private storm water systems to avoid localized flooding, minimize peak flows and damage to the public system.

Goal 11: Public Facilities & Services

Section 3, Water Treatment & Delivery



The City shall ensure a reliable and adequate supply of high quality water to meet the existing and future needs of Lake Oswego.

Goal 11 Public Facilities and Services

Section 3, Water Treatment and Delivery

BACKGROUND

Statewide Planning Goal 11: Public Facilities and Services

“To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.”

Lake Oswego adopted a Public Facility Plan (PFP) in 1997 [PA 1-97] which identifies needed water treatment and delivery facilities per OAR 660, Division 11. The applicable parts of the PFP and its subsequent updates are incorporated by reference into the Comprehensive Plan.

Lake Oswego's municipal water supply is obtained from the Clackamas River. The City's water intake and pump station are located on the North Bank of the Clackamas River in Gladstone. The City has two water right permits for Clackamas River water with priority dates of March 14, 1967 and July 5, 1975. The earlier, more senior permit, is for 50 cubic feet per second (cfs) or 32 million gallons per day (mgd). The 1975 permit is for nine cfs or 5.8 mgd. A third permit exists for 6 cfs (3.9 mgd) from the Willamette River with a priority date of July 5, 1975. The State of Oregon's minimum stream flow requirement* for the Clackamas River takes precedence over the 9 cfs permit but not the earlier 50 cfs permit. The Willamette River source would require construction of a new water intake facility.

Stream flow records indicate the likelihood of enough water being in the Clackamas River during a drought year for the City to divert its full 50 cfs water right. However, under these conditions the more junior 9 cfs right probably could not be used to augment the more senior water right. The City's ability to use water from the lower Clackamas River is limited to the 1967 and 1975 water rights. Additional water cannot be acquired from the lower Clackamas because the state will no longer issue water right permits on this portion of the river.

Water is pumped from the Clackamas River intake via a 27 inch diameter pipeline to the City's water treatment plant directly north of Mary S. Young State Park in West Linn. The treatment plant currently has the ability to deliver 16.1 million gallons per day (mgd) of finished water* to the City's distribution system.

Lake Oswego's finished water meets quality standards for the 83 possible contaminants* listed by the Federal Environmental Protection Agency. However, new federal and state rules are expected to be enacted by 1996 which will require improvements to the treatment facility to remove by-products of water disinfection, giardia cysts and related micro-organisms and to dispose of sludge resulting from the water treatment process.

Goal 11 Public Facilities and Services

□ Section 3, Water Treatment and Delivery

The water treatment plant is connected to the City's distribution system by a 24 inch diameter transmission line. The water distribution network consists of approximately 210 miles of transmission and distribution mains. Changes in topography and Oswego Lake, which divides the City into two parts, require ten distinct pressure zones (water service zones). Within these zones, there are thirteen storage reservoirs with a total storage capacity of 15.5 million gallons (mg). The water distribution system also includes nine pump stations.

Ongoing maintenance and improvement of the water distribution system is required to provide adequate fire protection and domestic water service. There is a need in the next five to seven years to replace several thousand feet of deteriorated and undersized waterlines, construct at least three new water storage reservoirs and build new pump stations. Over the long term, population growth will make it necessary to increase the capacity of the water intake, treatment, monitoring and transmission facilities.

Lake Oswego sells water to other users, with the Southeast Washington County Joint Water Agency being the largest customer (the Joint Water Agency was previously known as the Tigard Water District). Currently, the agency purchases about approximately 45 percent of the City's annual production of finished water. Lake Oswego consumes about 53 percent, with the remainder going to other users, such as the Lake Grove Water District. The Water Master Plan estimates that if the City continues to sell water to the Joint Water Agency, the system would have to serve 100,000 people by the year 2012; 54,000 in the Lake Oswego USB and 46,000 in the Joint Water Agency service area. This would require the capacities of the water intake, treatment and distribution systems to be increased to deliver a maximum day demand of 36.7 million gallons per day compared to a current capacity of 16.1 mgd. On the other hand, the Lake Oswego Water Master Plan estimates the maximum daily demand would be about 19.8 mgd if Lake Oswego did not serve the Joint Water Agency. In 1988, the Water Master Plan estimated Lake Oswego's water system served approximately 53,500 persons, of which 28,200 were in the City's water service area.

There are six water providers within Lake Oswego's Urban Services Boundary (USB). They include Rivergrove, Lake Grove, Skylands, Glenmorrie, Palatine and Southwood Park water purveyors. They acquire water from either the City of Portland, ground water wells, the City of Lake Oswego or from a combination of these sources. Lake Oswego's Comprehensive Plan and Urban Growth Management Agreement with Clackamas County designates the City as the ultimate provider of water service within the Urban Services Boundary. Because of this, the City and the other water providers need to work together to define the future roles each will play in providing water and how and when transfer of service will occur.

An adequate future supply of high quality and reasonably priced drinking water is a regional concern. The historic abundance, high quality and low cost of water in the region has resulted in the establishment of 65 entities in the Portland Metropolitan Region that supply and/or distribute water through separate systems. Today, the region is faced with increasing population growth, regulation of water use

Goal 11 Public Facilities and Services

□ Section 3, Water Treatment and Delivery

and higher costs to provide water. Despite the size of the region, only a handful of developed water sources supply the Portland metropolitan area. These include the Bull Run Watershed, the Clackamas and Trask Rivers and groundwater from alluvial sand and gravel and basalt aquifers. Because Lake Oswego derives its water from the Clackamas River, it is important that the City participate in regional planning efforts to project future demand and develop sound, innovative water management strategies to meet both current and long term needs of the region. To this end, Lake Oswego, and a number of other water providers, have joined resources to develop a Regional Water Supply Plan. It is anticipated the plan will be completed by 1997.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the 1993 update of the Comprehensive Plan.

- The Lake Oswego Water System Master Plan was completed in 1988.
- The capacities of the water intake, treatment plant and distribution systems are adequate to accommodate the current needs of Lake Oswego's service area. However, improvements to the water system are needed to address projected demand. The most substantial and expensive improvements are needed if Lake Oswego continues to sell water to meet the growing needs of the Southeast Washington County Joint Water Agency.
- Improvements are needed to the City's water transmission, storage and distribution systems to provide needed fire flows and adequate pressure in many parts of the community.
- Several water providers operate within the Urban Services Boundary. This situation requires Lake Oswego and the providers to work together to define future roles.
- An adequate future supply of high quality water and reasonably priced drinking water is an issue of regional concern for the Portland Metropolitan Area.

Goal 11 Public Facilities and Services

Section 3, Water Treatment and Delivery

GOALS, POLICIES, AND RECOMMENDED ACTION MEASURES

GOAL

The City shall ensure a reliable and adequate supply of high quality water to meet the existing and future needs of Lake Oswego.

POLICIES

1. Provide a sufficient supply of high quality water at adequate pressure to meet consumption and fire flow projections and emergency storage needs.
2. Ensure that Lake Oswego's water system is self supporting.
3. Ensure the quality of treated water meets or exceeds all state and federal standards.
4. Provide public fire hydrants with adequate flows and pressures necessary to afford fire protection to the City's residents, businesses and institutions.
5. Safeguard and enhance the Clackamas River watershed* as the City's primary water source, through coordinated efforts with other water users. The preservation of water quality shall be paramount.
6. Protect Lake Oswego's water rights on the Clackamas and Willamette Rivers.
7. Require developers to:
 - a. Provide water service to meet domestic needs and fire flow requirements to all new development;
 - b. Install all required public fire hydrants;
 - c. Pay a systems development charge and other costs associated with extending service; and,
 - d. Extend adequately sized water lines with sufficient pressure to the boundaries of the subject property where future extension of water service is anticipated or required.
8. Require unobstructed access to all public water lines and easements.

Goal 11 Public Facilities and Services

Section 3, Water Treatment and Delivery

9. Require all development in Lake Oswego to connect to the municipal water system unless the City and a water provider agree that adequate service can be provided more practically by the provider's facilities.
10. Ensure that water utility revenues are adequate to meet the operating and maintenance costs of the water system and to fund required capital projects.
11. Recognize that the City is the ultimate provider of water service within the Urban Services Boundary.
12. Require water providers and property owners outside the City to pay a systems development charge and a reimbursement fee prior to connecting to the City system.

RECOMMENDED ACTION MEASURES

- i. Water storage facilities shall be designed and constructed, where practical, to minimize scale, bulk, and visual impacts on adjacent uses through methods such as setbacks, landscape screening, below grade construction and use of appropriate colors and materials.
- ii. Work with other water providers within the Portland Metropolitan Area to ensure the Lake Oswego water service area and the region have an adequate future supply of high quality and reasonably priced drinking water.
- iii. Ensure the costs of extending water lines and construction of other, related improvements accrue to those who benefit through measures such as:
 - a. Connection fees based on the number of residential units or commercial or industrial equivalents;
 - b. Methods to pay for needed line over-sizing and looping; and,
 - c. Payment of a systems development charge.
- iv. Ensure water storage and distribution facilities are adequately maintained to ensure a reliable supply at adequate flows and pressure, protect water quality and minimize water loss.
- v. Reduce water consumption and water loss through effective conservation programs, the application of new technologies and ongoing maintenance and replacement of deteriorated lines.

Goal 11 Public Facilities and Services

Section 3, Water Treatment and Delivery

- vi. Prepare a water system public facility plan and capital improvement program to prioritize extension and replacement of water lines, expansion of intake, treatment and storage capacity and other needed improvements.
- vii. Develop agreements with other water providers which:
 - a. Define short and long term service provision roles for the City and other service providers;
 - b. Specify the terms and conditions of withdrawal of territory from other service providers and the transition of capital facility ownership and administration to the City;
 - c. Provide for coordination of plans and programs between the City and other service; and,
 - d. Ensure services are provided consistent with the City's adopted Public Facility Plan.
- viii. Where practical, require property owners to eliminate private ground water wells in Lake Oswego as drinking water sources and require all development served by private wells to connect to the City's water system.

Goal 11: Public Facilities & Services

Section 4, Wastewater Collection and Treatment

Tryon Creek Sewage Treatment Plant



Lake Oswego shall provide an adequate and efficient wastewater collection and treatment system within the Urban Services Boundary which:

- a. Meets the present and future needs of Lake Oswego residents and businesses, and;*
- b. Complies with federal, state and local clean water requirements, and;*
- c. Is self supporting.*

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

BACKGROUND

Statewide Planning Goal 11: Public Facilities and Services

"To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

Lake Oswego adopted a Public Facility Plan (PFP) in 1997 [PA 1-97] which identifies needed wastewater collection and treatment facilities per OAR 660, Division 11. The applicable parts of the PFP and its subsequent updates are incorporated by reference into the Comprehensive Plan.

Urban and rural development shall be guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to the needs and requirements of the urban, urbanizable and rural areas to be served. A provision for key facilities shall be included in each plan. Each jurisdiction shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500 persons.

"Timely, orderly and efficient arrangement" — refers to a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports the existing and proposed land uses.

"Urban Facilities and Services" refers to key facilities and to appropriate types and levels of at least the following: police protection, sanitary facilities, storm drainage facilities, planning, zoning and subdivision control, health services, recreation facilities and services, energy and communication services and community governmental services.

Lake Oswego abandoned its municipal waste water treatment plant in 1964 and connected the municipal sewer collection system to the City of Portland's Tryon Creek Treatment Plant. This was necessary to meet the requirements of the Federal Water Quality Act of 1965 which required a minimum of secondary treatment before effluent could be discharged into the Willamette River. The Act and associated federal and state funding for treatment plants significantly reduced pollution of the Willamette River and other Oregon waterways.

The Tryon Creek Treatment Plant operates under a waste discharge permit from the Oregon Department of Environmental Quality. Treated effluent is discharged into the Willamette River. Sludge is trucked to the City of Portland Columbia Boulevard Wastewater Treatment Plant for further processing and ultimate disposal.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

The Tryon Creek Treatment Plant underwent a major renovation in 1976 to increase treatment capacity and to provide more complete secondary treatment of wastewater pursuant to Oregon Department of Environmental Quality Requirements. The plant is now designed for an average dry weather flow (ADWF) of 8.3 million gallons per day (mgd). The ADWF in 1988 was 6.34 mgd which was about 76 percent of capacity. In wet weather situations the plant has the capacity to treat hourly peak flows of 35 mgd for short periods of time. Recorded peak flows to the facility ranged from 13.5 to 28.2 mgd in a six year period from 1982 to 1987. Because of population growth in the service area, treatment plant expansion is expected to be needed before 2000. It is estimated that plant capacity of about 14 mgd average dry weather flow will be needed by the year 2010.

The City has an intergovernmental agreement with the City of Portland to treat sewage at the Tryon Creek Plant. Currently, about 55% of total flow to the plant comes from the Lake Oswego sewer service area. Lake Oswego pays Portland a proportionate share for the cost and operation of the Tryon Creek Plant.

Lake Oswego also has an intergovernmental agreement with the Unified Sewerage Agency of Washington County (USA) to treat wastewater originating in the western portion of the City's Urban Service Boundary (USB) at USA's Durham treatment plant. Area served by USA includes portions of Mountain Park and Westlake. Portions of the unincorporated USB along I-5, Kruse Way and in the Lake Grove area are also served by USA.

By the year 2000, DEQ discharge requirements will likely become more stringent. Willamette River water quality may have a significant impact on the discharge requirements with which the Tryon Creek and Durham Treatment Plants must comply. If the Willamette River is determined to be "water quality limited," total maximum daily loads (TMDL) could be imposed by DEQ for limiting parameters such as ammonia, phosphorus or bio-chemical oxygen demand (BOD).

A multi-jurisdictional study was initiated in 1992 to evaluate long term efficiency and cost effectiveness of sewage treatment in the Kellogg, Oak Lodge, Tryon Creek and Tri-Cities (KOLTT) service areas. The Kellogg facility serves the City of Milwaukie, Clackamas Service District #1 and portions of Gladstone. The Oak Lodge Plant serves the unincorporated Oak Lodge Sanitary Sewer District and portions of Gladstone, and the Tri-Cities facility treats sewage from West Linn, Oregon City and Gladstone. Each treatment plant has different capacities, service demands, financing and governance structures. The study will be completed by 1995 and will address the following question: "Should the existing treatment plants be maintained and expanded or be replaced with a new facility configuration as a means to enhance cost effectiveness and service efficiency." If a new service configuration, such as consolidation of two or more treatment facilities is chosen, it is unlikely to be implemented before 2010.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

The Federal Clean Water Act required the creation of a Regional Wastewater Management Plan for the Portland area. This is a Metro responsibility which was first adopted by the Metro Council in 1980. The Plan is reviewed on an annual basis as part of Metro's continuing "208" Water Quality Program. The Clean Water Act requires that the Regional Plan accurately identify regional water quality management problems and their solutions, both short and long term. The Regional Plan must also delineate water quality management service areas for collection, transmission and treatment of wastewater. Lake Oswego has been designated under the Regional Plan as having responsibility for sewage treatment, transmission and collection system operation for the area contained within the City's Urban Services Boundary except for small areas sewered by USA. Local jurisdictions are required to coordinate their plans with Metro and the Regional Plan to qualify for federal funds for water quality programs.

Lake Oswego's sewer collection system consists of more than 170 miles of sanitary sewer line and provides service to more than 5,000 acres of residential, commercial and industrial properties within the City limits. Another approximately 1,200 acres within the City's Urban Services Boundary and the City of Rivergrove may ultimately be served by the City's sewer collection and transmission system. This would require an estimated 54 miles of collection system extensions. Almost all of the developed property outside the City, except for those served by USA and Dunthorpe-Riverdale Sanitary Sewer Districts, are on septic tanks. In most cases, these are small lots with inadequate replacement area. Septic tank failures have occurred and this has made it necessary for property owners to either connect to a public sewer system or construct expensive sand filter systems.

Infiltration and Inflow (I/I)* of storm and ground water poses a significant problem by burdening the collection system with excess water. Currently, the volume of I/I of storm water into the collection system during a major storm is between five and six times the sanitary flow volume. The City could reduce significant costs of constructing new major lines by reducing I/I which would prolong the life of sewer system and decrease operating expenses. Furthermore, infiltration and inflow must be reduced for continued conformance with regulatory requirements. Also, Lake Oswego's sewage treatment agreement with the City of Portland stipulates that the City shall work toward reducing I/I to maximize the design capacity of the Tryon Creek Treatment Plant.

One means of ensuring adequate treatment capacity for future domestic sewage is to minimize the strength of industrial wastes discharged to the sewer system. Lake Oswego has adopted an ordinance which requires pretreatment of all industrial wastes which could affect the operation of sanitary sewer system. This program is required by DEQ and Lake Oswego's intergovernmental agreement with Portland for sewage treatment.

Lake Oswego's varying topography often makes it very expensive, difficult and sometimes impossible to provide conventional gravity sewer service. The City Council in 1992 approved the use of Septic Tank Effluent Pumping (STEP) pressure sewer systems in certain situations. The STEP system can be an effective alternative to conventional gravity systems when properly maintained and installed. This

Goal 11 Public Facilities and Services

Section 4. Wastewater Collection and Treatment

system consists of a buried tank for settling and digesting wastewater solids, together with a pumped system to convey liquid to the gravity system. The construction of any pressure system requires approval by DEQ and supervision by the City engineer. Piecemeal installation is strongly discouraged, except for isolated and special case circumstances, such as on an interim basis until anticipated permanent facilities become available.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the 1993 update of this element of the Comprehensive Plan.

- The Tryon Creek Treatment Plan underwent major renovation in 1976 to meet DEQ discharge requirements and to increase capacity. Flows from Portland and Lake Oswego use about 76% of the plant's capacity.
- By the year 2000 discharge requirements may become more stringent requiring additional improvements to the Tryon Creek Treatment Plant.
- Economic and efficiency considerations may cause significant treatment plant reconfiguration in those areas served by the Kellogg, Oak Lodge, Tryon Creek and Tri-cities plants by the year 2000.
- Oregon law and administrative rules require sanitary sewage treatment and collection to be included as part of an overall public facility plan.
- Infiltration and inflow of storm and groundwater water poses a significant problem by exceeding the collection system capacity.
- Lake Oswego has adopted an ordinance requiring pretreatment of industrial wastes before discharge into the sanitary sewer system.
- Metro has been designated as responsible for the Section 208 Wastewater Management Plan.
- Lake Oswego has approved the use Septic Tank Effluent Pumping Systems (STEP) in certain situations when gravity sewers can not be provided.
- The 1968 Lake Oswego Sanitary Sewer Master Plan was updated in 1987.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

Lake Oswego shall provide an adequate and efficient wastewater collection and treatment system within the Urban Services Boundary which:

- a. Meets the present and future needs of Lake Oswego residents and businesses;
- b. Complies with federal, state and local clean water requirements; and,
- c. Is self supporting.

POLICIES

1. Require developers to:
 - a. Provide adequate sanitary sewers to all new development; and,
 - b. Pay an equitable portion of costs associated with extending service.
2. Require all new and existing development within the City to connect to the City's sanitary sewer system and pay a system development charge.
3. Prohibit the repair or replacement of septic tank systems within the City unless it is not feasible to connect to the City sewer system.
4. Control and reduce infiltration and inflow of storm and ground water to the sanitary sewer system.
5. Prioritize the extension of sanitary sewer service as follows:
 - a. Declared health hazard areas within the Urban Services Boundary;
 - b. Property within the City limits; and
 - c. Other incorporated cities under contractual arrangement where sufficient capacity exists to provide service.
6. Allow the use of Septic Tank Effluent Pumping (STEP) Systems in those areas and situations where conventional gravity sewer systems are not practical.

Goal 11 Public Facilities and Services

Section 4. Wastewater Collection and Treatment

7. Require pretreatment of wastes which could harm the wastewater treatment system or use excessive treatment capacity.
8. Prohibit the construction of structures which would prevent access to public sewer lines and easements.
9. Ensure that sewer utility revenues are adequate to meet the operating and maintenance costs of the sewer collection and treatment system and to fund required capital projects.
10. Operate wastewater treatment and collection facilities to meet or exceed federal, state and local standards.
11. Coordinate the City's water quality programs and expansion of the City's wastewater collection and treatment facilities and programs with:
 - a. The 208 Regional Wastewater Management Plan;
 - b. State, federal and regional programs and statutory requirements; and,
 - c. The plans of other area jurisdictions and service districts.

RECOMMENDED ACTION MEASURES

- i. Work with the City of Portland and the Unified Sewerage Agency of Washington County (USA) to ensure that the Tryon Creek and Durham Wastewater Treatment Plants maintain adequate capacity to ultimately serve lands within the Lake Oswego Urban Services Boundary.
- ii. Cooperate with Metro and other jurisdictions to identify efficient, economic and environmentally sound long term regional wastewater collection and treatment options.
- iii. Ensure the costs of extending sanitary sewers accrue to those who benefit through such measures as:
 - a. Connection fees based on the number of residential units or commercial or industrial equivalents;
 - b. Methods to pay for needed line over-sizing; and,
 - c. Payment of a systems development charge.
- iv. Maintain intergovernmental agreements with the City of Portland and USA to treat Lake Oswego's sanitary sewage at the Durham and Tryon Creek Treatment Plants which:

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

- a. Are financially equitable;
 - b. Ensure the availability of adequate capacity to handle flows from the City of Lake Oswego;
 - c. Ensure that treatment and discharge complies with all state and federal clean water rules; and,
 - d. Provide for close cooperation and coordination in matters which may affect the City of Lake Oswego.
- v. Encourage water conservation to reduce the amount of wastewater discharged into the City's sanitary sewer system.
 - vi. Maintain and improve the existing sanitary sewer collection and treatment system through preventive maintenance and ongoing evaluation.
 - vii. Encourage Clackamas County to advise property owners seeking new septic system or repair permits within the Urban Services Boundary that they may be required to connect to the City's system when they are annexed to the City even if there are no documented problems with the existing system.
 - viii. Encourage Clackamas County to stop issuing new septic tank permits where there has been a pattern of recorded system failures or documented aquifer pollution.
 - ix. Require new sanitary sewers to be constructed using methods and materials which prevent infiltration and inflow.
 - x. Request Clackamas County to inform the City of septic failures and requests for repair within the Urban Services Boundary.

Goal 11 Public Facilities and Services

□ Section 4. Wastewater Collection and Treatment

- Notes -

Goal 11: Public Facilities & Services

- Section 5, Administrative and Government Services, Energy, Communications, and Schools**

Lake Oswego City Hall



The City shall ensure the availability of administrative and general government services and shall coordinate with efforts of others to provide schools, energy and communication services.

Goal 11 Public Facilities and Services

Section 5, Administrative and Government Services, Energy, Communications, and Schools

BACKGROUND

Statewide Planning Goal 11: Public Facilities and Services

"To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

Other public facilities and services in addition to sewer, water, transportation and surface water management are important to the well being of Lake Oswego's citizens. The impacts of land use actions can be significant on these "other" facilities and services, which include administrative and general government services, energy and communications and schools.

Administrative and General Government Services

The City of Lake Oswego provides administrative and general government services essential for providing public facilities and services and for conducting the business of municipal government. These services are provided by 11 City departments and divisions including the City Manager's Office, and Departments of Finance, Fire, Human Resources, Library, Maintenance Services, Municipal Court, Planning and Development, Police, Public Works, and Parks and Recreation. While some of these departments are not directly involved in land use planning, their ability to provide services is affected by growth and development. Therefore, it is important that impacts on administration and general government be considered when evaluating land use actions.

Energy and Communication

Several utilities provide energy and communication services to residents and business owners within Lake Oswego's Urban Services Boundary (USB). Portland General Electric provides electricity and Northwest Natural Gas provides natural gas to homes and businesses. US West and General Telephone Company Northwest provide telephone services. TCI and Columbia Cable Television provide cable television and music and data links to a variety of information bases.

Energy and communication services are essential to the community. The City of Lake Oswego coordinates all development applications and public works projects with utilities to ensure service can be provided and to avoid conflicts with existing and future public facilities and services.

Goal 11 Public Facilities and Services

Section 5, Administrative and Government Services, Energy, Communications, and Schools

Schools

Public education within the Urban Services Boundary is provided by the Lake Oswego School District. The district operates nine elementary schools, two junior high and two senior high schools. In addition to the public schools, five other private schools are located within the USB. These are: Marylhurst College; Christie School, a non-profit residential school for children with special needs; Touchstone School, a primary grade school and preschool, Our Lady of the Lake Catholic School, and the West Side Christian School.

Public school enrollment has increased commensurate with development activity. In 1994 the District had a total enrollment of about 6,902 students compared to 5,579 students in 1984, an increase of about 24 percent. However, in the foreseeable future it is unlikely the district will experience the enrollment gains that occurred from the mid to 1980s to early 1990s. This is due primarily to the lack of buildable land within the Lake Oswego USB as compared to other cities within the Portland Metropolitan Area. School District growth projections range from a low of 6,897 to a high of 7,806 students by the year 2000. It is expected that growth in the number of students will be evenly distributed within the primary, junior high and high school levels.

The Lake Oswego School District estimates it has the capacity to accommodate 700 additional students at the elementary level, 350 students in existing junior high facilities and 500 students in existing high schools. The District does not own undeveloped lands large enough to build new school facilities.

The 1993 State Legislature adopted SB 908 which was codified as ORS 195.110 which requires cities, counties and schools districts in "high growth areas" to develop school facility plans. "High growth" is defined as any district which "has an enrollment of over 5,000 students and had an increase in student enrollment of six percent or more during the three most recent school years. The purpose of the legislation is to include schools as part of a city or county's land use planning responsibilities; provide standards to guide such efforts; and identify the respective roles and responsibilities of school district, cities and counties.

The Lake Oswego School District had a total enrollment growth rate in excess of 6 percent during the period 1991 through 1994. During this time the District grew from 6,516 to 6,902 students.

While the required facility plans are to be initiated by the City or County within which the district is located, the intent is for them to be cooperatively prepared. The resultant facility plan is to be adopted as an element of the jurisdiction's comprehensive plan and must meet all of the requirements of the state's land use laws.

Goal 11 Public Facilities and Services

□ Section 5, Administrative and Government Services, Energy, Communications, and Schools

Among other things, a school district which undertakes the facility planning effort must assess the capacity of its facilities to handle additional growth based upon “objective criteria” adopted by the school board prior to the assessment. A participating district must also assess improvements needed to bring existing schools up to the minimum standards and also evaluate alternatives to construction of new schools or remodeling.

The accessibility to education and its quality contributes to Lake Oswego’s quality of life. The City and the school district can cooperate in many ways, including coordination of land use actions and joint development of the required school facility plan to ensure continued quality of the school system.

Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan:

- Other public facilities and services, including administrative and general government services, energy and communication, and schools are important to the well being of Lake Oswego’s citizens and are often affected by land use decisions.
- Coordination of the provision and installation of energy and communication services is necessary for economy and efficiency and to avoid unnecessary disruption of service.
- Student enrollment in the Lake Oswego School District has grown about 24 percent from 1984 - 94 and approximately 10 percent during the period from 1991 - 94.
- State law requires “high growth” school districts and jurisdictions within which they are located to develop a school facilities plan as part of the Public Facilities Plan.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall ensure the availability of administrative and general government services and shall coordinate with efforts of others to provide schools, energy and communication services.

Goal 11 Public Facilities and Services

Section 5, Administrative and Government Services, Energy, Communications, and Schools

POLICIES

1. Ensure administrative and general government services are adequate to support the delivery of public facilities and services to the community.
2. Require energy and communication utilities to be provided to all development.
3. Require developers to establish, and ensure the preservation of easements necessary to provide energy and communication services.
4. Require new energy and communication utilities to be placed underground where practical.
5. Review all residential development proposals for potential impacts on the school system including the adequacy of existing schools and the need for new facilities.
6. Require safe and accessible transportation routes to schools.

RECOMMENDED ACTION MEASURES

- i. Provide adequate financial support for administrative and general government services.
- ii. Coordinate all public facility and capital improvement planning efforts and public works projects with area utilities to promote the orderly and efficient provision of services and to avoid conflicts and service disruptions.
- iii. Encourage local utilities to place existing utilities underground.
- iv. Coordinate the review of new development applications with local area utilities to ensure orderly and efficient provision of services.
- v. Encourage the Lake Oswego School District to develop a schools facility plan in coordination with the City's public facility plan.
- vi. Work with the school district to ensure safe access to schools through methods such as:
 - a. Pedestrian and bicycle paths and routes;
 - b. Traffic safety and management measures; and,
 - c. Traffic patrol and enforcement.

Goal 11 Public Facilities and Services

**Section 5, Administrative and Government Services,
Energy, Communications, and Schools**

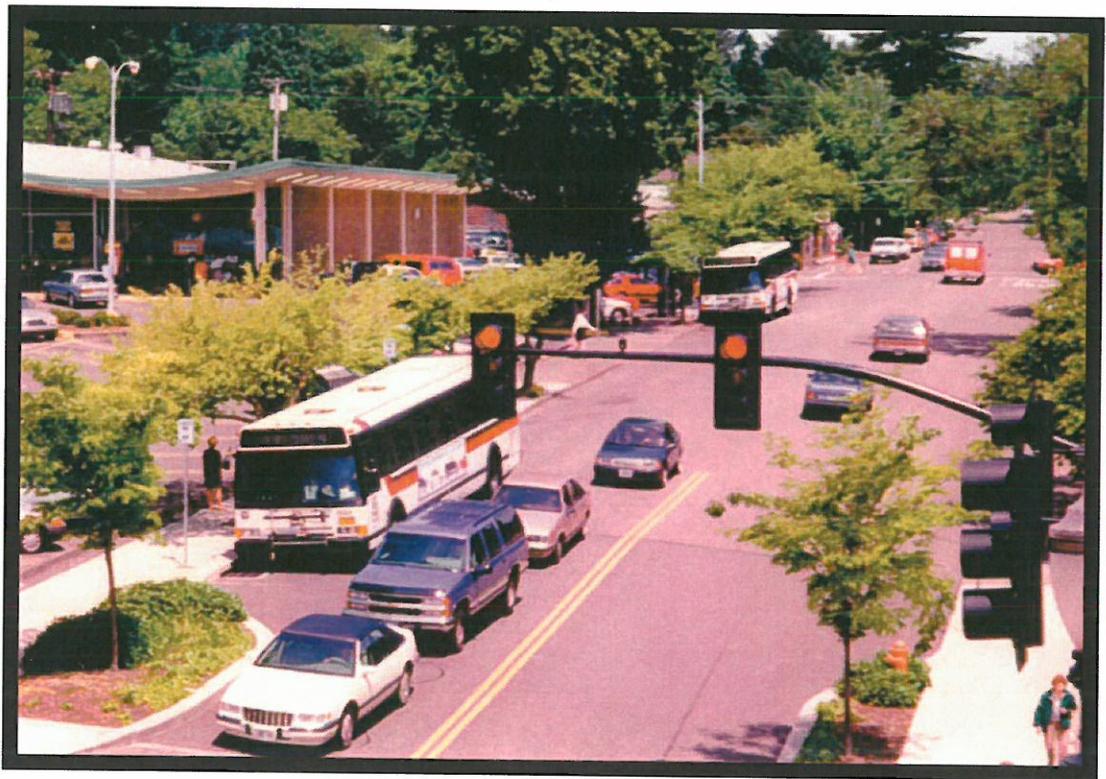
- vii. Coordinate the review of the Capital Improvement Program, Public Facility Plan, Comprehensive Plan amendments and relevant land use proposals with the school district.

Goal 11 Public Facilities and Services

**Section 5, Administrative and Government Services,
Energy, Communications, and Schools**

- Notes -

Goal 12: Transportation



The City shall develop a street system to address the mobility needs of residents for all modes of transportation.

Goal 12 Transportation

Goal 12: Transportation

BACKGROUND

Statewide Planning Goal 12: Transportation

“To provide and encourage a safe, convenient and economic transportation system.”

Statewide Planning Goal 12 requires cities and counties to develop a transportation plan which considers all modes of travel including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian which is based on an inventory of local, regional and state needs, considers the differences in social consequences that would result from using differing combinations of transportation modes and avoids principal reliance upon any one mode of transportation.

In 1990, the City Council appointed a 24-member, ad hoc Transportation Committee to review and update the Transportation Chapter of the Comprehensive Plan. In general, the changes proposed by this Committee were as a result of new legislation and changes in community preferences that had occurred since the Plan adoption in 1978.

In December 1992, the new Transportation Chapter was adopted. It includes policies reflecting the changes outlined in the Transportation Rule (TPR), (OAR 660-12, 1991) which is the major new legislation adopted since the Plan was acknowledged by Department of Land Conservation (DLCDC) in 1982. The policy basis for the rule is that if cities are to accommodate urban growth, residents will have to drive less so that roadway capacity, which is economically and environmentally costly, will not have to be increased. To accomplish this, communities are to provide opportunities for residents to use alternative transportation, including walking, bicycling and transit. This will be accomplished through reduced parking, better pedestrian and bicycle connections and through provisions of amenities for alternative transportation users.

The Transportation Committee was also charged with developing a Neighborhood Traffic Management Program to manage traffic to insure the safe and orderly movement of all modes of transportation and to preserve the quiet and privacy of residential neighborhoods. This program is in response to the public's desire to control automobile traffic volumes, speeds and to increase safety in neighborhoods. Another change made during the 1992 update include a policy requiring a truck circulation plan for Lake Oswego to reduce noise and pollution in residential areas.

Another element of the Transportation Chapter is a Streets Public Facilities Plan. The state administrative rules for public facilities planning (Goal 11) requires communities to provide a list of short, mid and long range projects that it foresees for all modes of transportation, estimated costs of these projects, approximate locations and possible funding sources. The City fulfills these requirements for the streets element of the Transportation Plan and will provide the Public Facilities element for other modes of

Goal 12 Transportation

□ Goal 12: Transportation

transportation as soon as the City's Transportation System Plan (TSP) is completed. The Goal 12 Rule requires each jurisdiction to complete a TSP for transportation facilities that are planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes and geographic areas.

During this update of the Plan, the Transportation Committee also recommended extensive changes to Functional Street Classifications. The Committee initially developed three overall objectives for the Plan. These included: 1) reduce the through traffic on neighborhood streets, 2) concentrate traffic on major streets and 3) maintain the character and livability of the community. The Committee refined the previous "Arterial" category to Major and Minor Arterials and the previous "Collector" category into Major and Neighborhood Collectors. Many streets which were collector streets were also reclassified as "local streets".

In 1997, the City adopted additional policies and projects to bring the City into greater compliance with the TPR. These changes provided more emphasis on a balanced transportation system by:

- Emphasizing pedestrian and bicycle connections and projects;
- More closely relating street function to the character of surrounding land uses;
- Emphasizing local street connectivity and traffic calming;
- Reducing required Level of Service on the Major street system from "D" to "E";
- Emphasizing transit as a viable alternative to the single-occupant vehicle in the City's highest density housing and employment areas.

Lake Oswego's challenge for transportation in the ensuing years will be similar to that of the rest of the Metropolitan region: to manage ever increasing automobile traffic with increasingly scarce financial resources and to maintain neighborhood livability in the face of increasing traffic.

Summary of Major Issues

The following are some of the issues, changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan.

- The Transportation Rule, adopted in 1991, requires cities and counties to develop a Transportation System Plan (TSP) which maintains vehicle miles traveled for 10 years following adoption of the TSP, a 10% reduction within 20 years of the TSP and a 20% reduction within 30 years. TSPs will also specify measurable objectives for increasing the modal share of non-auto trips, an increase in the average auto occupancy and a decrease in the number or length of automo-

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ble trips per capita due to demand management programs, rearranging of land uses or other means.

- A neighborhood traffic management program began in the City in 1993 with the purpose of reducing through-traffic in neighborhoods and increasing safety.
- The City's Transportation Public Facilities Plan calls for the following projects to be completed by 2017 to address capacity needs. State gas tax revenues are declining. The City's funds available for capacity improvements are also decreasing annually due to the decrease in vacant, developable land and hence the decrease in collected Systems Development Charges which could be used for capacity related improvements.

System	1-10 Yrs.	11-20 yrs.	Total
Roadway	61,042,000	11,675,000	75,717,000
Pedestrian	3,121,000	4,892,700	8,013,700
Bike	1,484,700	1,299,500	2,784,200
Transit	7,610,000	6,000,000	13,610,000
Total	73,257,700	23,687,200	97,124,900

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL 1: MAJOR STREETS SYSTEM

Lake Oswego shall develop a major street system consisting of major and minor arterials and major collectors, which will have minimal impact on the City's air quality, address the mobility needs of residents for all modes of travel and promote energy conservation (See Figures 16 & 17).

POLICIES

1. The arterial and major collector street network shall be designed and maintained to service level "E" during peak hours. The design of the roadway system shall also take into consideration:
 - a. Balancing roadway size and scale with the need to provide efficient and safe transportation for all modes of travel, including bike, pedestrian and transit,

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- b. Giving preference to transportation projects that increase the efficiency, safety, design capacity or level of service of a transportation facility, without increasing corridor width; and
 - c. Preserving community aesthetics by considering existing topography and vegetation.
 2. Direct access onto major streets shall be controlled and consolidated over time through the development review process and the implementation of major street projects. In particular, access to state highways shall be reviewed subject to the regulations of the Oregon Department of Transportation and the City of Lake Oswego. Where regulations conflict, the more restrictive requirements shall apply.
 3. The major streets system shall consist of freeways, major and minor arterials and major collectors as described in Figures 16 & 17. The maximum number of lanes for major streets within the Lake Oswego Urban Services Boundary shall be as follows:
 - a. Freeways — four to eight lanes.
 - b. Major arterials — three to five lanes.
 - c. Minor arterials — two to four lanes.
 - d. Major collectors — two lanes.
 4. Where residential neighborhoods are bisected by existing major streets, the impacts of traffic — noise, safety, aesthetics and air quality — shall be minimized by the following actions:
 - a. Where feasible, traffic generated by new development, shall be routed to other available major streets that are not within or adjacent to residential uses.
 - b. Ensure that traffic generated by new land uses does not exceed the design capacity of the street system, or adversely affect adjoining neighborhoods.
 - c. Provision of safe and efficient bicycle and pedestrian improvements to connect residential areas to other areas of the community.
 - d. Measures to physically re-orient residential areas away from major streets. This may include installation of major landscape elements such as landscaped buffers and tree plantings, and the development of neighborhood activity centers such as public open spaces, parks and community centers.
 - e. New commercial uses and neighborhood activity centers such as parks, schools and community centers shall provide direct, convenient access to and from adjacent residential areas to facilitate walking, bicycling and short auto trips. Measures shall be implemented to ensure that such routes do not attract or serve traffic from outside the neighborhood.

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Goal 12: Transportation

5. The City shall require the mitigation of negative impacts upon pedestrian and bicycle mobility, noise levels, safety, aesthetics and air quality when new residential development is located adjacent to major streets.
6. The City shall consider the movement of freight within the City when:
 - a. Conducting multi-modal transportation studies,
 - b. Developing truck routing plans, and;
 - c. Developing freight loading and parking strategies.
7. Streets designated as Regional Streets on the Regional Transportation Plan, shall be designed with consideration of the following when reconstruction or retrofitting occurs:
 - a. Promoting community livability by balancing all modes of transportation,
 - b. Relating the street to the function and character of surrounding land uses;
 - c. Controlling access to improve safety, function and appearance of streets and adjacent land uses.

RECOMMENDED ACTION MEASURES - MAJOR STREETS SYSTEM

- i. Develop access criteria for the major streets system which utilize the following principles:
 - a. Direct access to the major and minor arterial system is restricted except from existing platted lots, which may be allowed access when there is no feasible alternative. Feasible alternatives may include easements through adjacent properties to existing Residential or Neighborhood Collector Streets or shared access to the Major Street System.
 - b. Whenever possible, properties shall develop access to major and minor arterials from frontage roads or side streets as opposed to direct access to a major street. Major arterials may be allowed to intersect every 1,000 feet, and minor arterials every 600 feet, subject to an approved street plan.
 - c. Controlled access may be allowed, subject to review, from major traffic generators, (e.g., shopping centers). When conditions warrant, common access at property lines shall be required to reduce the number of access points onto state highways and other major streets.
 - d. Increased building setbacks shall be required when it is determined that frontage roads, and/or combined access points are required.
 - e. Direct access to major collectors is discouraged except when there is no practical access from local streets or neighborhood collectors.

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Goal 12: Transportation

- f. To reduce travel on major streets, encourage travel connections between adjacent developments.
 - g. Require consolidation and closure of driveways onto the major streets system over time if access spacing guidelines in Figure 16 are exceeded and when implementing major street capital projects.
- ii. The Metro publication “Creating Livable Streets” will be a resource for street design for those streets shown as “Regional” on the Regional Transportation Plan.
 - iii. Develop specific types of traffic calming measures to be applied to Major Collector Streets for the purposes of improving safety and aesthetics while maintaining mobility. Criteria for selection of streets on which to apply traffic calming measures should also be developed.

GOAL 2: INTER-GOVERNMENTAL COORDINATION

Lake Oswego’s transportation system shall be planned, developed and operated in a coordinated manner with other state, regional and local transportation providers.

POLICIES

- 1. Lake Oswego shall develop a Comprehensive Transportation System (TSP) in conjunction with Clackamas County and adjacent counties where appropriate, the State of Oregon, Tri-Met and Metro for the area within the City’s Urban Services Boundary. The Comprehensive Transportation System Plan shall:
 - a. Be consistent with land use designations identified within the Lake Oswego Comprehensive Plan.
 - b. Identify the location of arterial and collector streets, bicycle paths and pedestrian ways and public transit facilities.
 - c. Identify the major street construction projects required to accommodate anticipated development and to address public safety issues.
 - d. Propose funding mechanisms and related policies necessary to implement identified projects.
 - e. Describe public transportation services and identify service inadequacies.

Goal 12 Transportation

Goal 12: Transportation

2. The City shall coordinate transportation and land use planning efforts with federal, state and regional agencies, local jurisdictions and Tri-Met to make sure that:
 - a. The requirements of the various transportation modes are coordinated, and that conflicts between land use, operational characteristics and safety issues are minimized.
 - b. Effective notification and coordination occurs between affected agencies regarding the transportation impacts of proposed development within or adjacent to the Urban Service Boundary.
 - c. An effective citizen involvement program is implemented, including public notice and hearings if the development of transportation projects involves land use decisions or adversely impacts the existing transportation system or surrounding neighborhoods.
3. The City shall work with Metro, Tri-Met, ODOT and Clackamas County to develop interim benchmarks for measuring progress towards transportation goals and policies over the planning period.

RECOMMENDED ACTION MEASURES — INTER-GOVERNMENTAL COORDINATION

- i. Work with Metro, Tri-Met and other appropriate agencies to investigate the feasibility of passenger transport on the Willamette River.
- iii. Develop joint agreements with Clackamas, Multnomah and Washington counties that specify the methods whereby:
 - a. The City and counties can bring to the other's attention transportation conditions and circumstances which adversely impact other jurisdictions.
 - b. Discussion and/or negotiation can take place to resolve the adverse situation.

GOAL 3: NEIGHBORHOOD COLLECTORS AND LOCAL RESIDENTIAL STREETS

Lake Oswego shall develop a system of neighborhood collectors and local residential streets which preserves the quiet, privacy and safety of neighborhood living and which has adequate, but not excessive capacity, necessary to accommodate planned land uses. (See Figures 16 and 17).

Goal 12 Transportation

Goal 12: Transportation

POLICIES

1. The primary function of local residential streets and neighborhood collectors is to serve the circulation and access needs of residents adjacent to and abutting these streets. Neighborhood collectors will serve to channel local traffic to the major streets system. Through traffic (auto trips which have neither trip end within the neighborhood association boundary) on these streets shall be discouraged.
2. The City shall, in conjunction with the neighborhood association, plan for, develop and maintain a local residential street system at a service level and scale which:
 - a. Recognizes the need for safety for all modes of travel,
 - b. Recognizes the multi-use functions of neighborhood streets for walking, bicycling and social interaction, and which preserves the privacy, quiet and safety of neighborhood living,
 - c. Provides for safe access to abutting land; and,
 - d. Allows adequate and safe circulation from residential properties to the major streets system and neighborhood activity centers.
3. The City shall designate as local residential streets all streets not identified as major streets or neighborhood collectors in the Lake Oswego Comprehensive Transportation System Plan.
4. The City shall utilize flexible design criteria and construction standards for local residential street and neighborhood collector improvement projects. Design criteria shall be consistent with the adopted neighborhood plan. In particular these standards shall promote:
 - a. Street development which is compatible with the physical and social characteristics of each neighborhood to promote neighborhood identity and beauty.
 - b. The minimum scale of improvements necessary to provide adequate, but not excessive capacity, required to safely handle automobile traffic generated by planned land uses.
 - c. Solutions to storm water problems and surface water management issues.
 - d. The safety and utility of pedestrians, bicyclists, transit users and motorists.
5. The City shall ensure that new development which will use new and existing neighborhood collectors and local residential streets is compatible with these street's function and character. Development approval of new land uses shall ensure that:
 - a. The quiet residential quality of neighborhood streets is fostered and maintained.

Goal 12 Transportation

Goal 12: Transportation

- b. Street improvements required to serve new land uses are designed in accordance with the adopted neighborhood plan and to the minimum necessary scale.
6. The City and neighborhood associations shall jointly plan for the use of public rights-of-ways in residential neighborhoods. Uses within rights-of-way shall be supportive of the multi-use function of neighborhood streets and may include:
 - a. Pedestrian paths and bikeways.
 - b. Vehicular related uses as on-street parking, transit facilities and driveways.
 - c. Urban design, public utility, safety and beautification elements such as street trees, public seating, street lights, wheelchair ramps and sidewalk extensions.
7. Develop a truck circulation ordinance to reduce congestion, conflicts with residential neighborhoods and to decrease noise and air pollution.
8. Manage traffic on Neighborhood Collectors and Local Streets according to the policies established in this chapter. Traffic calming measures should be used where feasible to encourage non-local traffic to use streets with higher functional classifications and should not significantly divert traffic to other nearby streets of the same or lower classification.
9. Ensure that connectivity of local streets is achieved in order to:
 - a. reduce excessive trip lengths;
 - b. efficiently and safely accommodate emergency fire and medical vehicles;
 - c. promote the use of alternative modes of travel;
 - d. ensure even dispersal of local traffic; and
 - e. provide local street circulation patterns that provide connections to and from activity centers such as schools, commercial areas, parks and employment centers.

RECOMMENDED ACTION MEASURES — NEIGHBORHOOD COLLECTORS AND LOCAL RESIDENTIAL STREETS

- i. Promote low traffic volumes on residential streets. Traffic volumes less than 1,200 ADT are desirable.
- ii. Develop criteria for installation of traffic calming devices based on incremental changes in traffic volume and other factors, including traffic safety.

Goal 12 Transportation

Goal 12: Transportation

GOAL 4: LAND USE AND TRANSPORTATION RELATIONSHIPS

Amendments to land use designations, densities, and design standards within the Lake Oswego Comprehensive Plan shall be reviewed to ensure that traffic generation does not exceed the present design capacity and function of the planned transportation system.

POLICIES

1. The City shall use the following criteria when reviewing proposals for new street development or for improvements to the existing system:
 - a. The service level and scale of new street improvements are appropriate to the land use or area to be served.
 - b. Surface water management considerations are adequately addressed.
 - c. The character of surrounding residential neighborhoods as defined by the adopted neighborhood plan is preserved. When improvements are made to major streets that are adjacent to, or bisect, residential areas, measures shall be taken to mitigate noise, aesthetic and safety impacts and discourage cut-through traffic on adjacent residential streets.
 - d. The project's impacts upon the natural and human-made surroundings are clearly defined. This includes consideration of topography, hydrology, distinctive natural areas, vegetation, and surrounding land uses. The commitment to mitigate impacts shall occur in the project planning stages through the application of specific design techniques.
2. The costs of mitigation of the negative impacts (reduced safety and aesthetics, increased noise, reduced bicycle and pedestrian mobility), resulting from street improvements needed to serve a specific development, shall be paid for by the developer of the property. When street projects are needed to improve the capacity, operation and safety of the street system as a whole, the mitigation of negative impacts shall be paid for by the City and/or appropriate funding agencies.
3. The City shall provide for an ongoing transportation planning program to:
 - a. Monitor changes in the area's transportation network, and ensure that traffic counts and other transportation planning information are kept current and usable for planning purposes.

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- b. Develop and maintain a transportation facility planning effort, which identifies and prioritizes projects for implementation.
 - c. Develop and implement measures to change travel behavior to improve performance of existing transportation facilities and reduce the need for additional road capacity.
 - d. Periodically review the City's land use ordinances to encourage development that reduces dependence on single-occupancy private automobiles, while encouraging the use of mass transit, bicycles and pedestrian movement.
4. The City shall require that a proposed increase in land use intensity be accompanied by a detailed traffic analysis, using current information, which finds that existing streets and intersections both on and off site will accommodate the projected traffic increases, or; necessary improvements can be constructed which are in conformance with the Comprehensive Plan Transportation Map. Mitigation of negative impacts (noise, aesthetics, safety, bicycle and pedestrian mobility) shall be paid for by the developer of the property.
5. A change in the functional classification of any road or street in the Urban Services Boundary or the development of any new arterial or collector, shall require an amendment to the Lake Oswego Comprehensive Transportation System Plan.
6. The City shall require dedication of right-of-way for transportation facilities as a condition of development approval where:
 - a. The abutting transportation facilities do not include sufficient right-of-way to comply with the Comprehensive Plan Transportation Policies, standards and street classification or with transportation facility design standards adopted by the City Council; and
 - b. The proposed development will result in increased use of or greater impact on the abutting transportation facilities.
7. Allow property owners to realize tax benefits when right-of-way, not required as a condition of development approval, is dedicated for roadways, pedestrian and bicycle paths.
8. Lake Oswego shall develop and maintain an up-to-date transportation system development charge which shall prevent existing residents from subsidizing the cost of any new development. Transportation SDC's shall be applied directly to projects which implement the Lake Oswego Transportation System Plan.
9. The City shall, for all development projects, evaluate the adequacy of all transportation modes, to, from, and within the development site.

The City shall ensure that:

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Goal 12: Transportation

- a. The design and location of driveways provides for safe and efficient property access and does not interfere with the safe flow of traffic or degrade the design capacity and adjacent streets; and
 - b. Alternative transportation modes have been provided for, such as public transit, bicycling and walking.
10. The City shall require new development, through building and site design measures, to address the needs of the disabled and those who utilize alternative transportation modes such as van and car-pools, bicycles, public transit and walking.
11. The City's transportation planning efforts shall consider and promote energy conservation and enhancement of air quality.
12. The City shall oppose construction of a new Willamette River Bridge that allows automobile traffic within the Lake Oswego Urban Services Boundary because of negative impacts on:
 - a. Regional jobs-housing balance by providing a direct automobile commute option to the Washington County job market;
 - b. The capacity and safety of the City's road system including, State Street, "A" Avenue, Country Club Road, Boones Ferry Road and Kruse Way;
 - c. The destination status of the Lake Oswego Town Center and its future development potential by providing for regional travel through the community;
 - d. Air quality and the Willamette River and its Greenway, and;
 - e. The general character and livability of the City due to visual blight, increased noise, air pollution, decreased traffic safety and the potential for traffic dispersion onto local residential streets.
13. The City shall, in conjunction with the neighborhoods, promote the safe and convenient use of walking and bicycling as viable transportation alternatives by:
 - a. Developing and implementing a local bicycle and pedestrian circulation plan as part of the Comprehensive Transportation System Plan.
 - b. Working with the neighborhood associations to ensure that pedestrian and bicycle ways are compatible with neighborhood character.
 - c. Developing a system of off-street recreational pathways which also provide alternative routes to major activity centers.
 - d. Coordinating with other jurisdictions to promote the development of regional and inter-city pathways.
 - e. Providing for an ongoing City-wide sidewalk and pathway construction and maintenance program.

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14. Require building and parking placement for new development to be supportive of pedestrian, bicycle and transit users. Facilities supportive to these transportation modes shall also be required (e.g., bike racks, bus shelters, benches, etc.)

RECOMMENDED ACTION MEASURES - LAND USE AND TRANSPORTATION RELATIONSHIPS

- i. Develop and maintain a pavement management program to protect and enhance the City's investment in its street system.
- ii. Develop a Lake Oswego Transportation Capital Improvement Plan which prioritizes projects for implementation that address the City's short range (five year) transportation needs.
- iii. Streets in industrial and commercial areas shall be developed according to standards which accommodate the special transportation needs of these uses.
- iv. Review street standards and special street setback standards to see if they are appropriate to implement the policies of this chapter.
- v. Conduct a planning and design process for the Town Center and Main Street portion of Boones Ferry Road, to be completed prior to the construction of any transportation projects affecting roadway width, median treatments, bicycle facilities, etc.

GOAL 5: TRANSPORTATION DEMAND MANAGEMENT

Lake Oswego shall develop strategies and implement programs that reduce the number of automobiles traveling in Lake Oswego, especially during peak morning and evening traffic hours.

POLICIES

1. Work with ODOT, Metro, Tri-Met and Clackamas County to develop travel demand management programs to maintain the total number of vehicle miles traveled per-capita in the City at current levels to the year 2005 and to reduce current vehicle miles traveled by 10% by the year 2015.

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2. Support the Department of Environmental Quality (DEQ) Employee Commute Options (ECO) goals for trip reductions.
3. Increase the attractiveness of alternative transportation through mixed use development in areas consistent with the Region 2040 Plan.
4. The City establishes the following alternative transportation targets* for trips into, out of and within Lake Oswego's land use design type areas which it will strive to achieve by 2040. The City will analyze its progress toward these targets every five years.

ALTERNATIVE TRANSPORTATION TARGETS BY DESIGN TYPE

Land Use Design Type Areas (See Figures 26-29 of the Comprehensive Plan	Current Estimate of Alternative Transportation Share	Alternative Transportation Targets
Lake Oswego Town Center	35%	55%
Lake Grove Town Center	31%	31%
Lake Oswego Main Streets	35%	44%
Boones Ferry Main Street	31%	44%
Kruse Way Employment Center	29%	45%
Corridors:		
• State Street	35%	44%
• A Avenue	35%	
• Boones Ferry	28%	
• Kruse Way	29%	
Inner Neighborhoods (all other areas)	35%	45%

5. The City shall identify and support actions that will implement the adopted alternative transportation targets.

RECOMMENDED ACTION MEASURES – TRANSPORTATION DEMAND MANAGEMENT

- i. Educate and inform employers regarding Tri-Met's demand management programs such as transit subsidies, carpool matching, vanpool subsidy programs, bikes on transit, emergency ride home and development assistance for employer based transportation plans for Employee Commute Option compliance. Promotional information will be included in business license renewal packets for businesses with 25 or more employees.
- ii. Encourage the installation of bike racks, preferred parking spaces for car-poolers, and building placement for new development that encourages pedestrian, bicycle and transit use.

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- iii. Annually inform Tri-Met of all businesses in the City with 50 or more employees, so that Tri-Met can contact them regarding demand management programs and services.
- iv. Educate and inform neighborhoods about Tri-Met's transportation demand management programs such as carpool matching, bikes on transit and accessing transit trip planning information.
- v. The City shall require businesses within the City's highest density employment areas, such as the Kruse Way Corridor, to develop Transportation Management Associations (TMAs). The City shall support these TMAs.
- vi. Provide encourage incentive programs which allow commercial, institutional and industrial developments to substitute parking requirements if pedestrian and bicycle amenities, transit facilities, and ride-share programs are developed and maintained.
- vii. Encourage volunteers to assist in the planning and construction of pedestrian and bicycle pathways.

GOAL 6: WALKING

The City shall provide a continuous citywide network of safe and convenient walkways that promotes walking as a mode of travel for short trips.

POLICIES

- 1. Integrate pedestrian access needs into planning, design, construction and maintenance of all transportation projects.
- 2. Improve access to and use of the public transportation system through pedestrian improvements and changes in land use patterns.
- 3. Connect local walkways to activity centers such as schools, employment areas, parks, commercial areas, and transit centers and corridors.
- 4. The City shall make the pedestrian environment safe, convenient, attractive and accessible for all users through:

Goal 12 Transportation

Goal 12: Transportation

- a. Planning and developing a network of continuous sidewalks, pathways, and crossing improvements that are accessible per the requirements of the Americans with Disabilities Act (ADA),
 - b. Providing adequate and safe street crossing opportunities for pedestrians, and
 - c. Improving street amenities (e.g., landscaping, pedestrian-scale street lighting, benches and shelters) for pedestrians, particularly near transit centers, town centers, main streets, employment centers, and transit corridors serving the primary transit network.
5. Involve citizens in the pedestrian facility planning process as well as in facility design.
 6. The City shall ensure that planned bike and pedestrian paths are not obstructed as the result of new land development.
 7. The City shall require developers to provide pathway connections from new development projects to the existing bicycle and pedestrian system.
 8. The City shall work to preserve existing railroad rights-of-ways and other easements to maintain opportunities for future mass transit, bike and pedestrian paths.

RECOMMENDED ACTION MEASURES – WALKING

- i. Improve pedestrian amenities (e.g., landscaping, pedestrian street lighting, benches and shelters) in town centers, main streets, employment centers and transit corridors.
- ii. Develop criteria for prioritizing projects on the Pedestrian Facilities Plan, based on priorities including service to activity centers, potential for high pedestrian usage, eliminating gaps in the existing system, improving pedestrian safety and providing geographic equity in pathway provision. Criteria may be revised in conjunction with the five-year Capital Improvement Plan process for consistency with community goals.
- iii. Design pedestrian facilities to be compatible with neighborhood character and to minimize environmental impacts, consistent with public safety and user needs.
- iv. Participate with the Lake Oswego School District and other public agencies to provide bicycle and pedestrian safety instruction.
- v. Coordinate bike and pathway planning and development with ODOT, Metro, Clackamas, Multnomah and Washington Counties and other local jurisdictions.

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GOAL 7: BICYCLING

The City shall provide a network of safe and convenient bikeways integrated with other transportation modes to increase modal share of bicycle transportation for all trip purposes.

POLICIES

1. Integrate bicycle access needs into planning, design, construction and maintenance of all transportation projects.
2. Connect local bicycle facilities for bicyclists to ride to local and regional destinations, activity centers, connections to other transportation modes and the regional bicycle network.
3. Maintain existing and future bicycle facilities to encourage use.
4. Require, as appropriate, and encourage the placement of bicycle lockers and bicycle racks at major destinations and activity centers. Encourage covered bicycle parking whenever possible.
5. The City shall work to preserve existing railroad rights-of-ways and other easements to maintain opportunities for future mass transit, bike and pedestrian paths.

RECOMMENDED ACTION MEASURES – BICYCLING

- i. Pursue regional funding sources for bicycle routes identified on the Regional Transportation Plan within Lake Oswego's Urban Service Boundary,
- ii. Keep bikeways free of debris and in good repair,
- iii. Promote bicycle safety and encourage bicyclists and motorists to share the road through educational programs,
- iv. In general, plan bicycle routes along Arterials and Major Collectors and design bicycle facilities that take into consideration:
 - a. neighborhood character;

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- b. safety for other modes of travel;
 - c. the need for on-street parking;
 - d. topographic conditions;
 - e. street speed and volume;
 - f. ability to gain additional right-of-way due to placement of existing buildings or existence of sensitive lands; and
 - g. using alternative parallel routes within one-quarter mile of an Arterial or Major Collector where these constraints exist, as long as the parallel bike way provides an equally convenient route to local destinations.
- v. Ensure that secure bicycle storage facilities such as bicycle racks and other park and lock accommodations are provided at major destination points including recreation areas and commercial and employment centers.
- vi. Ensure that bicycle safety laws are implemented and enforced.
- vii. Work with surrounding jurisdictions and ODOT to develop direct bicycle commuting routes between Lake Oswego and other communities.
- viii. Implement a bicycle license fee, with proceeds contributing to funding bicycle facilities.

GOAL 8: TRANSIT SYSTEM

The City shall encourage transit ridership by working with Metro, Tri-Met, and ODOT to develop a transit system which is fast, comfortable, accessible and economical through development of land use patterns, development design standards and street and pedestrian/bikeway improvements which support transit.

POLICIES

1. Transit shall be a viable alternative to the single-occupant automobile in the City's highest density employment and housing areas. The City shall develop, in conjunction with Tri-Met, a network of transit routes to connect these areas with Main Streets, Town Centers, Employment Centers, downtown Portland and major transit and transfer stations.

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Areas not directly served by transit shall be served with park and ride lots, which shall be located to provide convenient auto access to regional trunk route service.

2. Develop transit centers in Town Centers and Employment Centers where there is a need for transfer points between bus lines and local shuttle services or transit trunk routes. Transit centers will be conveniently located for all modes of transportation, in particular pedestrian, bike and transit.
3. The City will work with Tri-Met to ensure that the needs of the community's transportation disadvantaged are met by making transportation services more accessible.
4. The City will work with Tri-Met to determine appropriate locations and design of bus turnout lanes to enhance transit usage and public safety and to promote the smooth flow of traffic.
5. The City shall work with Tri-Met to ensure that the potential for transit to meet transportation needs is addressed in compliance with the Transportation Planning Rule.
6. The City shall work to preserve existing railroad rights-of-ways and other easements to maintain opportunities for future mass transit, bike and pedestrian paths.

RECOMMENDED ACTION MEASURES – TRANSIT

- i. The City shall work to preserve existing railroad rights-of-ways and other easements to maintain opportunities for future mass transit and bike and pedestrian paths.
- ii. The City shall pursue capital/operating assistance from Tri-Met and/or other public or private transit providers as needed to provide adequate transit service.
- iii. Work with Tri-Met to identify additional opportunities for park and ride facilities and shelters in Lake Oswego.
- iv. Support efforts to develop greater inter-city public transit options.
- v. Preserve the Willamette Shore Rail line for high capacity transportation opportunities or opportunities to share the right-of-way, if feasible, with high capacity transit and other modes of travel, such as pedestrian and bicycle.
- vi. Coordinate with Metro, Tri-Met, Multnomah County, Clackamas County, the City of Portland and other regional partners in the planning and design of high capacity transit on the Willamette Shore Rail line to ensure:

Goal 12 Transportation

Goal 12: Transportation

- a. Adequate access to the regional transportation system;
- b. Adequate termini facilities; and
- c. Adequate access to the line for all modes of travel.

GOAL 9: COMMERCIAL RAIL AND WATER TRANSPORT

Lake Oswego shall work with commercial rail and water transportation providers and associated regulatory agencies to ensure their activities are safe and compatible with the City's transportation system.

POLICIES

1. Lake Oswego shall ensure that the development of marine oriented land uses and transportation facilities along the Willamette River are coordinated with the appropriate governmental agencies and those businesses who currently use the river for transport.
2. The City shall coordinate future transportation planning and roadway improvements with rail service providers and the Public Utilities Commission to ensure the installation of efficient and safe crossings.
3. The City shall, through the Public Utilities Commission, ensure that rail traffic does not impede the smooth and safe flow of bicycle, pedestrian and vehicular traffic.

GOAL 10: CITIZEN INVOLVEMENT

Lake Oswego shall ensure that opportunities are provided for citizen involvement in decisions affecting the City's transportation system.

POLICIES

1. Public involvement opportunities shall be provided for all major transportation projects.

Goal 12 Transportation

Goal 12: Transportation

GOAL 11: PARKING

Adequate on-site parking and loading facilities shall be provided for all land uses.

POLICIES

1. The City shall develop and maintain parking regulations that require off-street employee and customer parking and loading facilities be provided on-site and commensurate with the size and relative needs of each new development, balanced with the need to reduce auto trips, encourage alternative transportation and retain the natural drainage system.
2. When commercial, industrial or institutional uses are changed or intensified, customer and employee parking shall be adjusted commensurately.
3. Commercial and industrial parking shall not intrude into adjacent residential neighborhoods. The impacts on adjacent residential areas of new commercial and industrial parking facilities or increases in the size of existing lots shall be reduced through buffering and screening.
4. The City, through the neighborhood associations, shall develop residential area parking guidelines to maintain the safety, character and utility of residential streets.
5. Require off-street parking in commercial, industrial, and high density residential areas to be at the sides or rear of buildings where practical, with buildings oriented to the street in a manner which is convenient to pedestrians, bicyclists and transit riders.

RECOMMENDED ACTION MEASURES - PARKING

- i. Monitor and evaluate the number and sizes of parking spaces required for various types of land uses and amend development regulations.
- ii. Provide redevelopment opportunities for parking lots when they are no longer needed for automobile parking.
- iii. Where possible, provide for the minimum of impervious area by utilizing durable and dust-free alternatives to traditional asphalt and concrete paving when developing new streets and parking lots. Utilize the natural drainage system where practical.

Goal 12 Transportation

Goal 12: Transportation

- iv Where appropriate and practical, mitigate the visual and aesthetic impacts of parking by encouraging:
 - a. Buildings and parking to be oriented to the street in a manner that is convenient to pedestrians and transit users; and,
 - b. Landscaping, buffering and screening.

- v. Through the Neighborhood Traffic Management Program, address on-street parking problems within residential neighborhoods that are caused by adjacent commercial and institutional land uses.

Goal 12: Transportation

FIGURE 16
FUNCTIONAL CLASSIFICATION SYSTEM
General Characteristics (1)

Classification	Primary Function	Examples	Speed Limit	Parking	Direct Land Access Guidelines	Min. Access Spacing Guidelines	Traffic Volume	# of Lanes
Freeways	Intended to provide for trips between Clackamas, Washington, Multnomah Counties and other parts of the region; and between major urban areas within the Metro region.	I-5 I-205	55	Prohibited	None. Access to freeway is limited to interchanges.	2-3 miles	30,000+	4-8*
Major Arterials	Connects cities in the Metro area. They are intended to serve as the primary routes for major areas of urban activity and to access the freeway system.	Kruse Way Boones Fry. Rd. (South of Country Club) Country Club "A" Avenue Hwy. 43	25-45	Generally Prohibited***	Direct access to the major and minor arterial system is restricted except from existing platted lots, which may be allowed access when there is no feasible alternative. Major arterials may be allowed to intersect every 1,000 feet and minor arterials every 600 feet, subject to an approved street plan.	1,000 ft.	20,000+	3-5*
Minor Arterials	Inter-urban connectors between different parts of the city. Intended to serve as the primary route for travel within and between community sub-areas and to augment access to major arterial and freeway systems.	Terwilliger Kerr Pkwy. Boones Fry. Rd. (North of Country Club)	30-45	Generally Prohibited	Controlled access may be allowed, subject to review, from major traffic generators, e.g., shopping centers.	600 ft.	7,500 - 25,000	2-4*
Major Collectors	Serves multi-neighborhood areas. Intended to channel traffic from local streets and/or minor collectors to the arterial street system. A major collector can also provide access to abutting properties.	South Shore Iron Min. (between Lakeview and Chandler) Bryant Rd. Westlake	25-40	Limited	Direct access to major collectors is discouraged except when there is no practical access from local streets or neighborhood collectors. Requests for access is subject to review and approval.	100 ft.	1,500 - 10,000	2**
Neighborhood Collectors	Provides access to abutting properties and serves the local access needs of neighborhoods by channeling traffic to the major collector and arterial street system. A neighborhood collector is not intended to serve through traffic.	Wembley Pk. Rd. Overlook Greentree	25-30	Permitted	Access to each lot permitted.	50 ft.	1,000 - 3,000	2**
Local Streets/ Residential	Provides direct access to neighborhood land uses. A local street is not intended to serve through traffic.	North Shore "D" and "E" Atwater Glen Eagles Laurel Glenhaven	25	Permitted	Access to each lot permitted.	None	1,200 or less	2

*Includes turn refuge lanes or acceleration lanes.

** Turn refuge lanes may be allowed subject to review and approval.

*** On street parking may be appropriate in pedestrian oriented commercial areas.

(1) NOTE: These are general characteristics of each street classification. Actual classification is based on a review of the function and characteristics of all aspects of a roadway.

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□ Goal 12: Transportation

FIGURE 17
STREET CLASSIFICATIONS

Freeways (30,000+ volume, 4-8* lanes):

I-5
I-217

Major Arterials (20,000+ volume, 3-5* lanes):

Kruse Way
Boones Ferry Road (I-5 to Country Club)
Country Club Road
"A" Avenue
State Street

Minor Arterials (7,500-25,000 volume, 2-4* lanes):

Kerr Parkway
Boones Ferry Road (North of Country Club)
Terwilliger Blvd.
McVey (South Shore to State Street)
Rosemont Rd.
Stafford Road

Major Collector (1,500-10,000 volume, 2** lanes):

Bangy Road (Bonita to Kruse Way)
Bonita Road
Botticelli/Fosberg
Bryant Road
Carman Drive (I-5 to Fosberg)
Chandler Road (between Iron Mtn. And 10th)
Childs Road
Fosberg Road (between Melrose and Carman and between Melrose and Jefferson Parkway)
Iron Mtn. Blvd. (between Chandler & Upper Drive/Lakeview Blvd.)
Jean Road and Jean Way
Jefferson Pkwy./Lesser Road
Lakeview Blvd. (between South Shore & Bryant)
McNary Parkway
Meadows Road
Melrose Street
Monroe Parkway
Pilkington Road
South Shore Blvd.

Major Collector (1,500-10,000 volume, 2** lanes)
[continued]:

Westlake/Fosberg/Lesser
"B", between State and 5th
65th Street, McEwan Road (between 65th and I-5)
5th between A and B Avenues

Neighborhood Collector (1,000-3,000 volume, 2 lanes):***

Boca Ratan
Bergis Road
Cardinal/Wren/Cedar
Carman Drive (between Fosberg & Touchstone)
Cornell Avenue
Crestline Drive (between Greenbluff & Skylands)
Glenmorrie Drive (between Greenbluff and Hwy 43)
Goodall Road (Country Club to 19th Avenue)
Greenbluff Drive
Greentree Road
Hallinan St./Cherry Lane
Iron Mtn. Blvd. (between Country Club and Chandler)
Knaus Road
Lake Forest Blvd.
Lake Grove Avenue
Lakeview (between South Shore & Iron Mtn., and between Bryant & 65th)
Laurel (between Hallinan and Cornell)
Oakridge (between Boones Ferry & Quarry)
Overlook Drive
Parkview Drive
Quarry Road
Reese Road
Royce Way
Skylands (between Crestline & Upper Cherry Lane)
Timberline Drive
Treetop Lane/Fernwood Drive
Twin Fir Road
Upper Drive (from Bryant Road to Iron Mtn. Blvd.)
Waluga/Firwood
Washington Court (between Lake Forest Blvd. and Boones Ferry Road)
Wembley Park Road
Westview Drive (between Tamaway Drive and South Shore)

*Includes turn refuge lanes or acceleration lanes.

**Turn refuge lanes may be allowed subject to review and approval.

***On-street parking may be appropriate in pedestrian oriented commercial areas.

CITY OF LAKE OSWEGO TRANSPORTATION SYSTEM PLAN

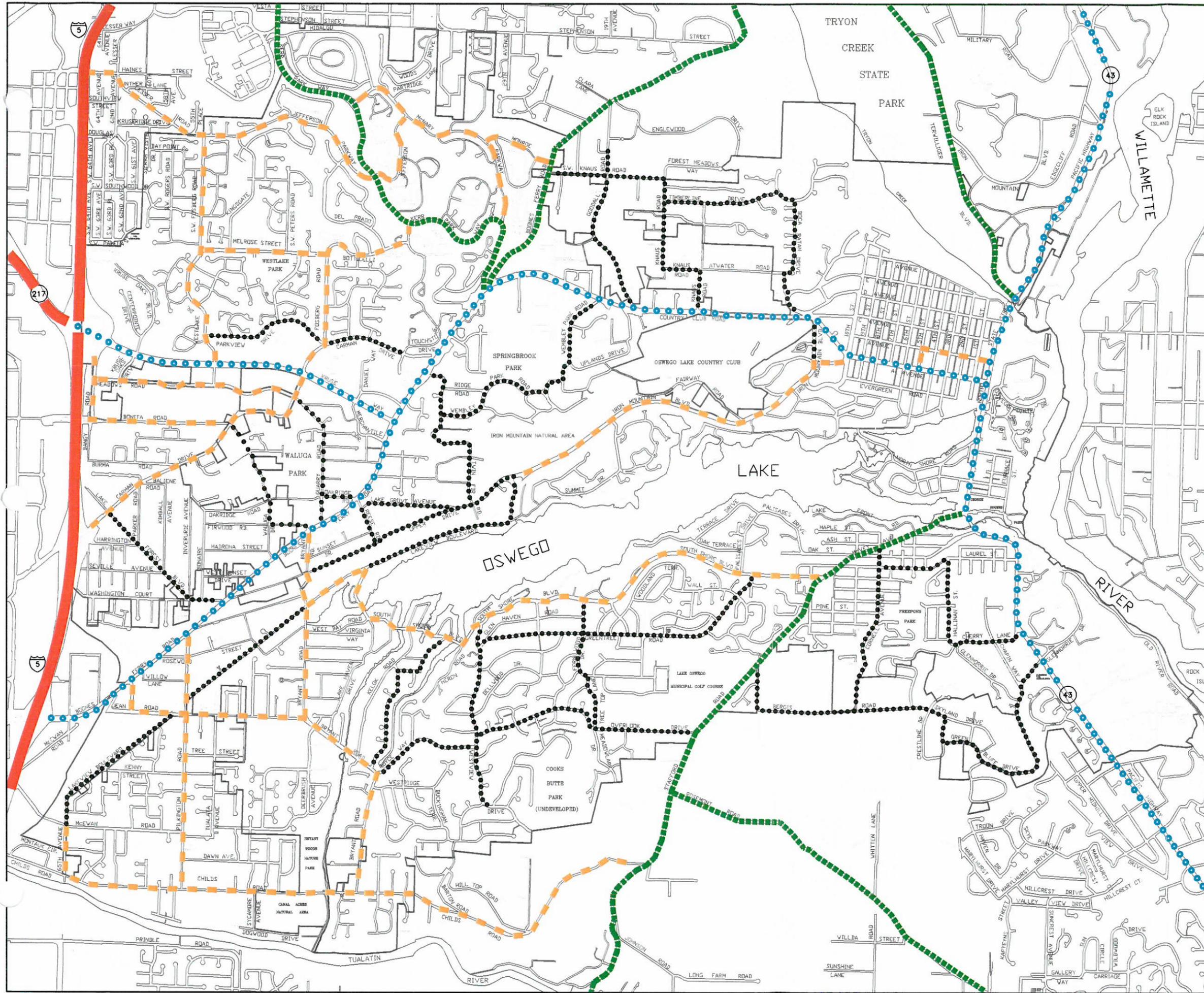


-  **FREEWAY**
-  **MAJOR ARTERIAL**
-  **MINOR ARTERIAL**
-  **MAJOR COLLECTOR**
-  **NEIGHBORHOOD COLLECTOR**

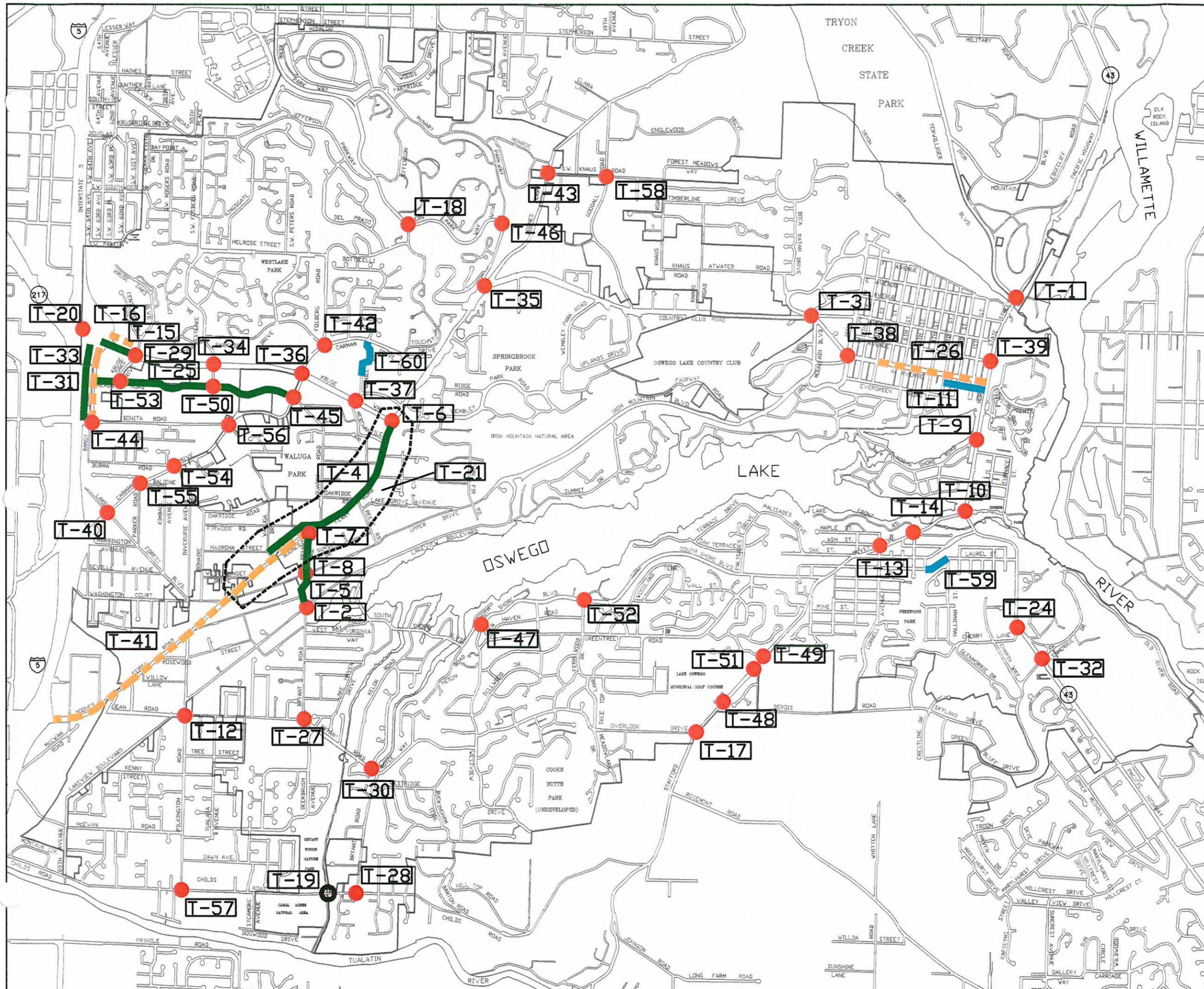


(NOT TO SCALE)

FUNCTIONAL STREET CLASSIFICATIONS



CITY OF LAKE OSWEGO TRANSPORTATION SYSTEM PLAN



- INTERSECTION IMPROVEMENT
- ROADWAY IMPROVEMENT (ADDITIONAL LANES)
- ROADWAY IMPROVEMENT (RECONSTRUCTION TO CITY STANDARDS OR FOR BEAUTIFICATION PROJECT)
- - - SIGNAL INTERCONNECT
- STUDY AREA
- RECONSTRUCTION OF BRIDGE



(NOT TO SCALE)

ROADWAY IMPROVEMENTS PLAN

CITY OF LAKE OSWEGO TRANSPORTATION SYSTEM PLAN



- EXISTING SIDEWALK
 - EXISTING SHOULDER PATHWAY
 - EXISTING MULTI-USE FACILITY
 - ADDED SIDEWALK*
 - ADDED SHOULDER PATHWAY*
 - ADDED MULTI-USE FACILITY
 - ▲ ACTIVITY CENTER
- * SPECIFIC SIDE OF ROAD FOR TREATMENT TO BE IDENTIFIED THROUGH FURTHER ENGINEERING ANALYSIS AND PUBLIC INVOLVEMENT



(NOT TO SCALE)

PEDESTRIAN FACILITIES PLAN

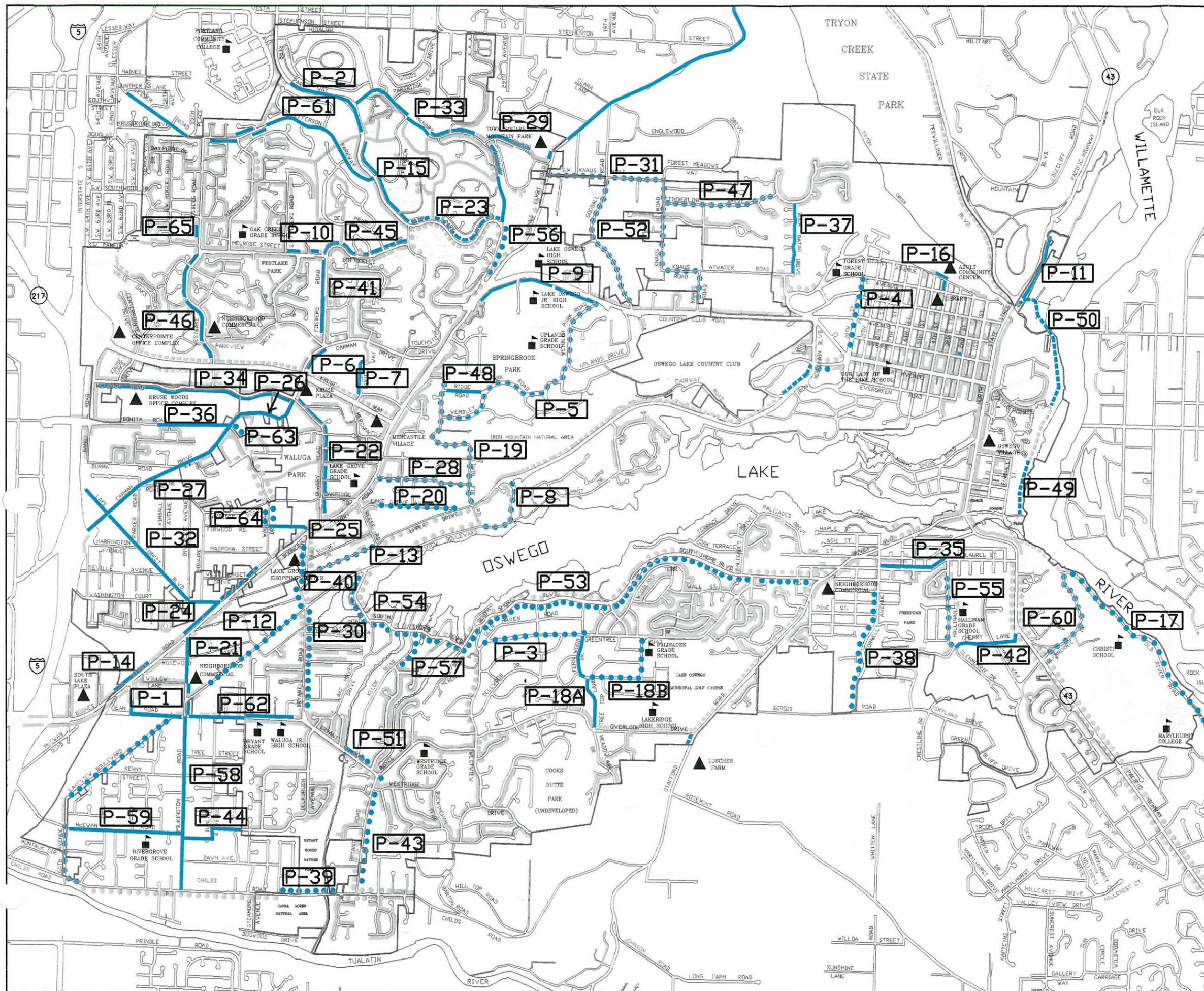


FIGURE 20B DECEMBER, 1998

CITY OF LAKE OSWEGO TRANSPORTATION SYSTEM PLAN



- EXISTING BIKE LANES
 - EXISTING MULTI-USE PATHWAY
 - ADDED BIKE LANES
 - ADDED MULTI-USE PATHWAY
 - SHARED ROADWAY
 - SHARED ROADWAY - LOCAL
 - ACTIVITY CENTER
 - STUDY AREA
- (ROUTES OUTSIDE LAKE OSWEGO
BASED ON RTP OR COUNTY PROPOSALS)



(NOT TO SCALE)

BICYCLE FACILITIES PLAN

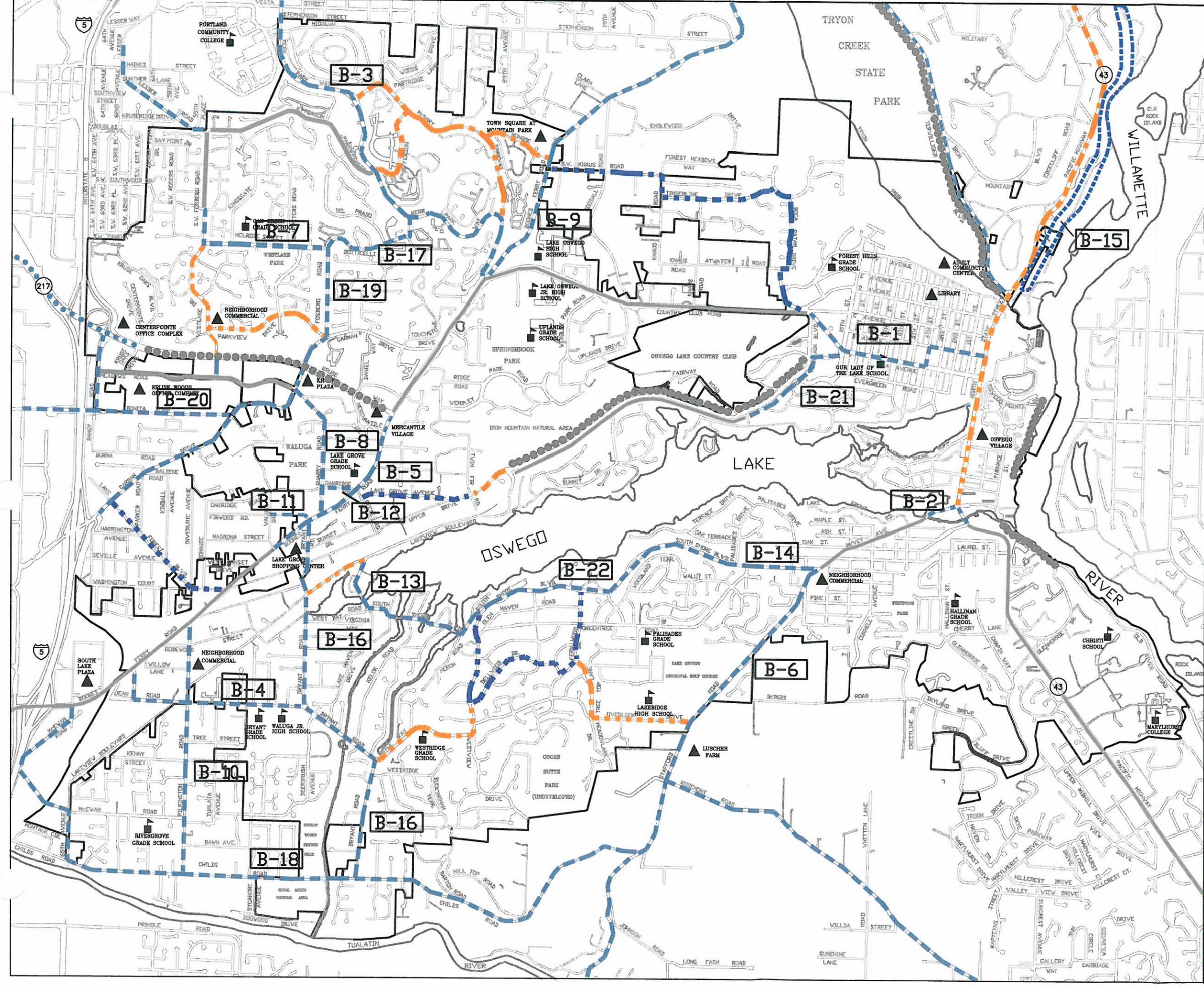
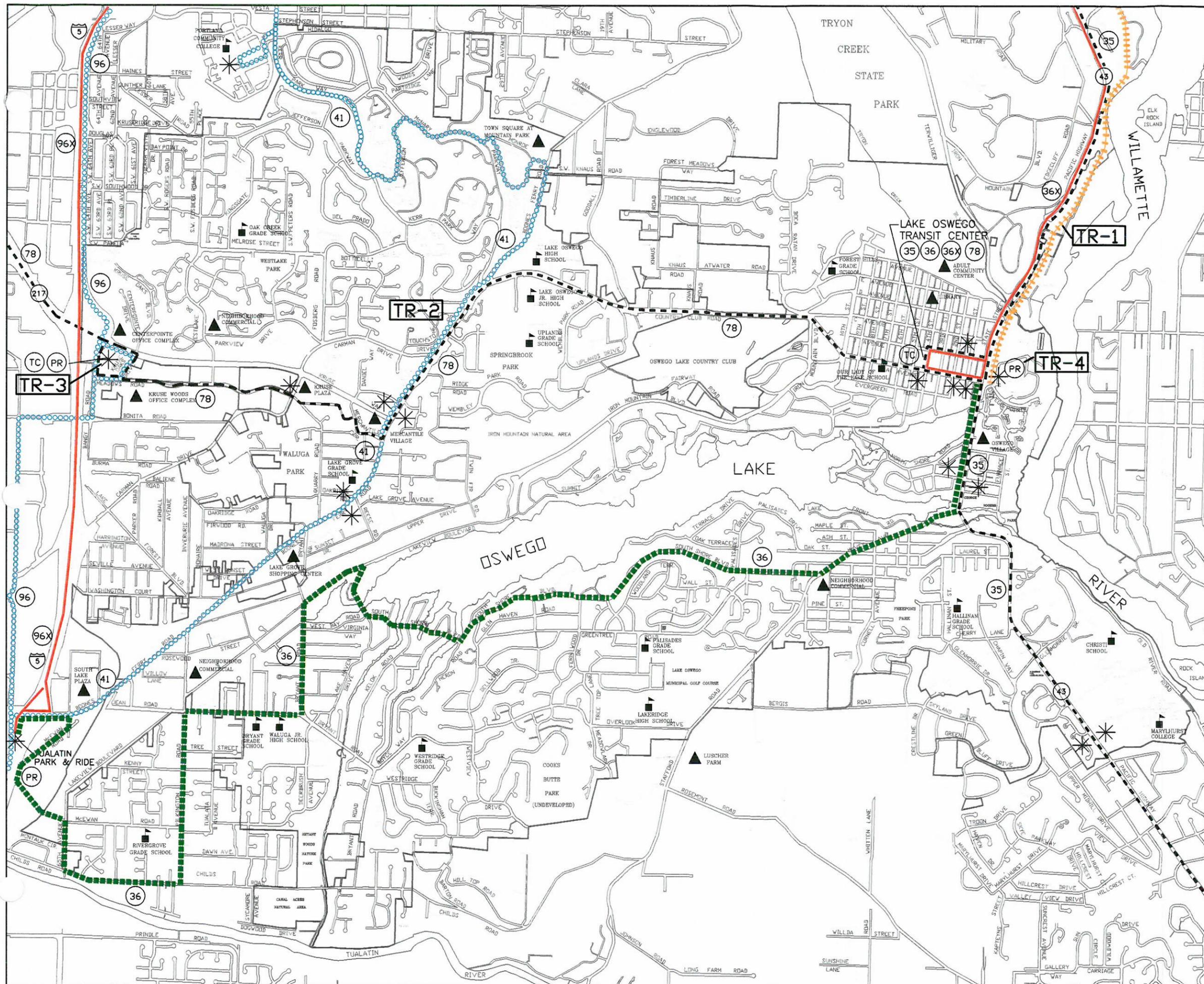


FIGURE 20C FEBRUARY, 2000

CITY OF LAKE OSWEGO TRANSPORTATION SYSTEM PLAN



- REGIONAL RAPID BUS, HIGH FREQUENCY (LIMITED STOPS)
- FREQUENT BUS NETWORK (HIGH FREQUENCY, FREQUENT STOPS)
- PRIMARY BUS NETWORK (15 MINUTE HEADWAYS)
- SECONDARY BUS (30 MINUTE HEADWAYS)
- RIGHT-OF-WAY PRESERVATION (FUTURE HIGH CAPACITY TRANSIT)
- TRANSIT CENTER
- PARK AND RIDE
- BUS ROUTE
- ACTIVITY CENTER
- MAJOR TRANSIT STOPS



(NOT TO SCALE)

TRANSIT NETWORK AND FACILITIES PLAN

Goal 12 Transportation

Goal 12: Transportation

Please See Figure 18

Goal 12 Transportation

□ Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 1-10 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Streets and Roadways				
T-1	State Street/Terwilliger Blvd.	NB left turn lane, realign Terwilliger approach, traffic signal	\$550,000	S,SDC
T-2 ²	Bryant Road/Lakeview Boulevard	Installation of a traffic signal, minor intersection improvements and acquire necessary rights-of-way	\$325,000 ³ (Does not include right-of-way cost)	SDC
T-3	Country Club Road/C Ave /Iron Mtn. Blvd.	Intersection improvements	\$450,000	SDC
T-4	Boones Ferry Road-Kruse Way to Madrona Street	Widen to 5 lanes** including bike lanes and adequate sidewalks	\$2,657,000	SDC
T-5 ²	Bryant Road, Lakeview Boulevard to Boones Ferry Road	Add bike lanes and sidewalks on both sides, reconstruction of the at-grade railroad crossing, add a north/southbound left turn lane at Lakeview, and acquire necessary rights-of-way (Reference projects P-40 and B-16)	\$1,326,000 ³ (Does not include right-of-way cost)	SDC, NLFS
T-6	Boones Ferry Road/Kruse Way (98-99 Budget)	Second NB left turn lane	\$295,000	SDC, C
T-7	Boones Ferry Road/Bryant Rd.	Add split signal timing, replace loops	\$25,000	SDC
T-8 ²	Bryant Road/Upper Drive	Installation of a traffic signal, minor intersection improvements and acquire necessary rights-of-way	\$385,000 ³ (Does not include right-of-way cost)	SDC
T-9	State Street (Hwy. 43)/North Shore Road	Intersection improvements	\$100,000	SDC,S
T-10	State Street (Hwy. 43)/McVey Avenue	NB/SD left turn lanes, upgrade traffic signal. Widen bridge.	\$1,300,000	SDC,S
T-11	A Avenue - State Street to 3rd Avenue	Road reconstruction, streetscape improvements	\$3,100,000	LORA, SDC
T-12	Jean Road/Pilkington	Left turn lanes; traffic signal	\$200,000	SDC
T-13	McVey Avenue/Cornell Street	Left turn lane on McVey, traffic signal	\$250,000	SDC
T-14	McVey Avenue/Erickson St. (98-99 Budget)	Left turn lane on McVey	\$150,000	SDC
T-15	Kruse Way - Kruse Oaks Blvd. to Bangy Rd. (98-99 Budget)	Signal interconnect	\$25,000	SDC,C
T-16	Kruse Way - Bangy Rd. to Kruse Oaks Blvd.	Widen roadway to 6 lanes as part of I-5/ 217 interchange improvements	\$1,000,000	SDC,S
T-17	Stafford Road/Overlook Dr.	Left turn lanes, traffic signal	\$280,000	SDC
T-18	Kerr Parkway/Touchstone Dr.	Northbound left turn lane, traffic signal	\$550,000	SDC
T-19	Childs Road Bridge (98-99 Budget)	Reconstruct/widen bridge with pedestrian/bike facilities	\$315,000	C, S
			\$35,000	SDC
T-20	Intersection of I-5, 217 and Kruse Way	Reconstruction of interchange to provide for free flowing north and south bound movements and direct connection of of Kruse Way to Hwy. 217, two phases	\$48,000,000	S
T-21	Boones Ferry and Sunset Drive	Intersection improvements to accommodate four way turning movements and development of a commercial street to accommodate development of the West Lake Grove Design District ¹		
T-22	Boones Ferry Road Planning and Design		\$100,000	
T-23	Traffic Calming Feasibility Study	(not mapped)	\$40,000	
	Subtotal		\$61,458,000	
T-24	Traffic Calming - Locations to be determined	(not mapped)	\$200,000	S,SDC,NLFS
	Subtotal		\$61,658,000	

¹Staff estimates cost for this project at \$700,000. Ordinance 2188 did not specify associated costs or potential funding source.

²These projects resulted from the Boones Ferry Road Corridor Plan, a refinement study completed in 2001 which identified a preferred plan for the Boones Ferry Road corridor.

³Estimated cost in 2001\$

Goal 12 Transportation

□ Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 1-10 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Pedestrian Facilities				
P-1	Jean Road, between Jean Way and Pilkington	Sidewalk, one side	\$60,000	SDC, NLFS
P-2	Kerr Pkwy, between PCC/One Jefferson Pkwy.	Sidewalk, south side	\$74,000	SDC, C (Mult./ Clack), NLFS
P-3	Greentree Road, Fernwood to Westview	Shoulder pathway	\$25,000	SDC, NLFS
P-4	10th Street, between A/E	Pathway, one side	\$44,000	SDC, NLFS
P-5	Wembley Park Road (98-99 Budget; Used Parks & Rec Funds)	6' pathway	\$225,000	SDC, NLFS
P-6	Carman, between Kruse and Fosberg	Sidewalk, east side	\$40,000	SDC, NLFS
P-7	Daniel Way	Sidewalk (Included in Street Improvement Project T-55)		SDC, NLFS
P-8	Lakeview between Twin Fir/Iron Mtn.	Pathway	\$166,000	SDC, NLFS
P-9	Country Club, Boones Fy.-Wembley P.	Sidewalk, south side	\$75,000	SDC, NLFS
P-10	Melrose, between Peters and Fosberg	Sidewalk, north side	\$21,000	SDC, NLFS
P-11	Hwy. 43, between Public Storage and Briarwood	Sidewalk, east side from Tryon Creek to Briarwood	\$19,000	SDC, NLFS
P-12	Lakeview Blvd. between Bryant & 65th	Pathway, one side	\$268,000	SDC, NLFS
P-13	Upper Drive between Reese/Bryant	6' pathway	\$130,000	SDC, NLFS
P-14	Boones Ferry between 17755 and 17355	Sidewalk, north side	\$60,000	SDC, NLFS
P-15	Kerr Pkwy, between One Jefferson Pkwy. and Touchstone	Sidewalk, north side	\$49,000	SDC, NLFS
P-16	4th between E/F; G Ave, Between 4th and ACC	Sidewalk on west side 4th, north side G	\$6,000	SDC, NLFS
P-17	Old River Rd.	Pathway, one side	\$400,000	SDC, NLFS
P-18 a)	Treetop/Fernwood, between Greentree/Overlook	Sidewalk	\$56,000	SDC, NLFS
P-18 b)	Greentree Ave. between Greentree Rd. and Fernwood Dr. and Fernwood Dr. between Mapleleaf and Greentree Ave.	Pathway, one side	\$64,000	SDC, NLFS
P-19	Twin Fir	Pathway, one side	\$370,000	SDC, NLFS
P-20	Lake Grove Avenue	Pathway, one side	\$63,000	SDC, NLFS
P-21	Pilkington, between Boones Ferry and Willow Lane	Sidewalk on one side	\$66,000	SDC, NLFS
P-22	Quarry Road - Carman Road to Boones Ferry Road	Bike lanes, sidewalk on east side	\$585,000	SDC, NLFS
P-23	Kerr Road, north side, between Touchstone and McNary	Multi-use path, north side	\$255,000	SDC, NLFS
Subtotal			\$3,121,000	

Goal 12 Transportation

□ Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 1-10 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Bicycle Facilities				
*B-1	Country Club/A/4th/B between State and Iron Mtn.	Bike lanes	\$1,500	SDC, NLFS
*B-2	McVey, between Oswego Creek and State Street	Bike lanes	\$500	SDC, NLFS
B-3	Kerr Parkway, between Stephenson and Boones Ferry	Bike lanes	\$600,000	SDC, NLFS
B-4	Jean Road/Jean Way, between Boones Ferry and Bryant	Bike lanes (B.F. to Pilkington portion completed)	\$64,000	SDC, NLFS
B-5	Boones Ferry, between Kruse Way and Madrona	Bike lanes (Cost included in Project T-4)		SDC, NLFS
B-6	Stafford Road, Overlook to South Shore	Bike lanes	\$140,000	SDC, NLFS
*B-7	Melrose, between Fosberg and Westlake	Bike lanes	\$700	SDC, NLFS
B-8	Quarry Rd.	Bike lanes (Cost included in project P-23)		SDC, NLFS
B-9	Boones Ferry, between Country Club and Mtn Park Town Center	Bike lanes	\$60,000	SDC, NLFS
B-10	Pilkington, between Boones Fy. and Childs	Bike lanes	\$280,000	SDC, NLFS
B-11	Firwood between Waluga/Boones Ferry	Bike lanes	\$62,000	SDC, NLFS
B-12	Oakridge Road, between Quarry and Boones Ferry	Bike lanes	\$26,000	SDC, NLFS
B-13	South Shore, between Westview and Lakeview	Shared Roadway	\$75,000	SDC, NLFS
B-14	South Shore between Greentree and McVey	Shared Roadway	\$25,000	SDC, NLFS
B-15	Willamette Shore Bike Corridor Feasibility Study	Study to determine cost/feasibility of using Willamette Shore right-of-way as a bicycle corridor	\$135,000	Metro
			\$7,500	Portland
			\$7,500	SDC
	Subtotal		\$1,484,700	
*Incidental, striping only				

Goal 12 Transportation

Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 1-10 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Transit				
TR-1	Willamette Shores Trolley	Track/trestle rehabilitation	\$600,000	J
TR-2	#41 Boones Ferry Route (Barbur Transit Center-Tualatin)	15 min. service - days, 30 min. service - eves	\$1,250,000 (Capital) \$5,760,000 (Operating - 10 years)	F,S,SDC, NLFS Tri-Met
	Subtotal		\$7,610,000	
	11-20 Year Total, All Projects		\$23,867,200	
	1-10 Year Total, All Projects		\$73,873,700	
	Total, All Project		\$97,740,900	

**Improvements pending Boones Ferry Planning and Design project

Note: Projects in City and County jurisdiction will proceed with financial participation by both parties
Roadway and transit facilities costs reflect construction, right-of-way costs with construction costs at a 40-50% contingency

Funding Sources:	
C	Clackamas County
CP	City of Portland
F	Federal Funds - ISTEA
J	Jefferson Rail Consortium
LID	Local Improvement District
LORA	Lake Oswego Redevelopment Agency
NLFS	New Local Funding Source (GO bonds, local gas tax, etc.)
S	State of Oregon (State Highway Fund, Special Public works Fund, State vehicle registration fees, gas tax, revenue sharing)
SDC	System Development Charge
TM	Tri-Met

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Goal 12 Transportation

□ Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 11-20 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Streets and Roadways				
T-25	State Street/Cherry Lane	Left turn lane, improve approach to Hwy 43	\$820,000	SDC, S
T-26	Meadows Road-Bangy Road to Carman Drive	Widen to 4 lanes	\$1,500,000	SDC, C, S
T-27	"A" Avenue - State Street to 8th Street	Signal interconnect	\$150,000	F,S,SDC,
T-28	Jean Road/Bryant Road	Left turn lanes, traffic signal	\$200,000	SDC
T-29	Childs Road/Bryant Road	Left turn lanes, traffic signal	\$200,000	SDC
T-30	Kruse Way/Kruse Oaks Drive (98-99 Budget)	NB approach lane on Kruse Oaks, add bus pull-out	\$150,000	SDC, C, S
T-31	Bryant Road/Cardinal Avenue	Upgrade approach to Bryant	\$60,000	SDC
T-32	Meadows Road/Bangy Road	Addition of a NB through lane on Bangy Road, SD left turn lane on Bangy Road	\$325,000	SDC,C, S
T-33	State Street (Hwy 43)/Glenmorrie Drive	Left turn lane	\$100,000	SDC,C, S
T-34	Bangy Road - Kruse Way to Bonita Road	Widen to 4 lanes, pavement overlay, bike lanes	\$1,000,000	SDC
T-35	Kruse Way/Westlake Drive/Kruse Woods	Right turn lane on westbound Kruse Way	\$140,000	SDC, C
T-36	Boones Ferry Road/ Country Club/Kerr Parkway	Develop right turn lane on Kerr Pkwy approach	\$110,000	SDC
T-37	Carman Drive/Kruse Way	Add left turn lanes on Carman, right turn lanes on Kruse. Signal modification	\$375,000	F,S,SDC
T-38	Kruse Way/Mercantile Drive/Daniel Way	WB and EB right turn lane	\$116,000	SDC,C
T-39	Country Club Road/ A Avenue/10th Street	Traffic signal	\$200,000	SDC
T-40	State Street (Hwy 43)/"B" Avenue	SB right turn lane	\$350,000	SDC,S
T-41	Carman Drive/Lake Forest Blvd.	WB left turn lane	\$150,000	SDC, C
T-42	Boones Ferry Road - 65th to Bryant Road	Signal interconnect	\$210,000	SDC
T-43	Carman Drive/Parkview Drive/Fosberg	Traffic signal, channelization	\$250,000	SDC
T-44	Knaus Road/Boones Ferry Road	Left turn lanes, channelize	\$275,000	SDC
T-45	Bangy Road/Bonita Road	Traffic signal,signal interconnect, second SB left turn lane on Bangy	\$325,000	SDC,C

Goal 12 Transportation

Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 11-20 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Streets and Roadways				
T-46	Carman Drive/Meadows Road/Quarry Road	Traffic signal; additional left turn lanes NB, SB and WB; additional through right turn lane	\$1,065,000	SDC, C
T-47	Kerr Parkway/ McNary Parkway (lower intersection)	Left turn lanes, traffic signal	\$364,000	SDC
T-48	South Shore Blvd./Westview Drive	Left turn lane, retaining wall	\$100,000	SDC
T-49	Stafford Road/Golf Course Road	NB left turn lane on Stafford	\$100,000	SDC
T-50	Stafford Road/Sunnyhill Drive	NB left turn lane on Stafford	\$100,000	SDC
T-51	Meadows Road/Kruse Oaks Drive	Traffic signal, additional SB right turn lane, WB right turn lane on Meadows Road	\$320,000	SDC,C
T-52	Stafford Road/Bergis Road	Left turn lane on SB Stafford Road	\$200,000	SDC
T-53	South Shore Blvd./Fernwood Street	Left turn lane	\$50,000	SDC
T-54	Meadows Road/Kruse Woods Drive	Traffic signal, SB left turn lane on Kruse Woods Drive	\$260,000	SDC,C
T-55	Carman Drive/Burma Road	Realign Burma Road approach, add left turn lanes	\$200,000	SDC
T-56	Parker/Carman	Add turn lanes	\$150,000	SDC, C
T-57	Carman Drive/Bonita Road	Left turn lanes, traffic signal	\$400,000	SDC, C
T-58	Childs Road/Pilkington Road	Left turn lanes	\$200,000	SDC, C
T-59	Knaus Road/Goodall Road	Channelization improvement	\$60,000	SDC, C
T-60	Laurel Street, Dyer Street to Hallinan Street	Construct embankment, widen roadway to City Standards	\$600,000	SDC
T-61	Traffic Calming - Daniel Way	Widen roadway north of Safeco Insurance to City Standards	\$300,000	NLFS
	Subtotal		\$11,475,000	
T-62	Traffic Calming - Locations to be determined	Speed bumps, curb extensions, traffic circles, etc. (not mapped)	\$200,000	S,SDC,NLFS
	Subtotal		\$11,675,000	

Goal 12 Transportation

Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 11-20 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Pedestrian Facilities				
P-24	Washington Court - Lake Forest to Boones Ferry Road	Add sidewalk on one side between Lake Forest and Boones Ferry Road	\$14,000	SDC, NLFS
P-25	Firwood between Waluga/Boones Ferry	Sidewalk, one side	\$31,000	SDC, NLFS
P-26	Carman Drive - Waluga Drive to Quarry Road	Pathway one side	\$140,000	F,S,SDC, NLFS
P-27	Carman Drive, between Waluga and I-5	Sidewalks and bike lanes on both sides	\$290,000	SDC, NLFS, C
P-28	Lanewood/Douglas Circle, Twin Fir to Boones Ferry	Pathway, one side	\$200,000	SDC, NLFS
P-29	Monroe Parkway	Sidewalk, north side	\$26,000	SDC, NLFS
P-30	Bryant Road, between Lakeview Blvd. and Jean Road	Pathway, east side	\$120,000	SDC, NLFS
P-31	Knaus Road	Pathway, one side	\$480,000	SDC, NLFS
P-32	Lake Forest Blvd., Washington Court to Carman	Sidewalk, one side	\$33,000	SDC, NLFS
P-33	McNary Parkway between Jefferson Parkway and Churchill Downs	Sidewalk, south side	\$38,000	SDC, NLFS
P-34	Meadows Road	Sidewalk on south side	\$89,000	SDC, NLFS
P-35	Laurel Street, Hallinan to Cornell	Sidewalk on one side	\$45,000	SDC, NLFS
P-36	Bonita, between Carman and existing sidewalk	Sidewalks	\$32,600	SDC, NLFS
P-37	Boca Ratan	Sidewalk on one side	\$40,000	SDC, NLFS
P-38	Cornell, Laurel to Bergis	Sidewalk, one side	\$200,000	SDC, NLFS
P-39	Childs Rd, between Indian Springs and Bryant	Pathway on north side	\$200,000	NLFS
P-40 ²	Bryant between Lakeview/Boones Ferry Road	Sidewalks on both sides	See T-5	SDC, NLFS
P-41	Fosberg Rd, between Carman and Melrose	Sidewalk on west side	\$35,000	SDC, NLFS
P-42	Cherry Lane	Sidewalk on one side, between State and Hallinan	\$55,300	SDC, NLFS
P-43	Bryant, between Westridge and Childs	Pathway, east side	\$72,000	SDC, NLFS
P-44	Redleaf, Tualata, Centerwood (connects Centerwood sidewalk to Pilkington/Rivergrove school)	Sidewalk, one side	\$40,000	SDC, NLFS
P-45	Botticelli	Sidewalk on north side	\$95,000	SDC, NLFS
P-46	Westlake Drive	Pathway on west side	\$125,000	SDC, NLFS
P-47	Timberline	Pathway, one side	\$130,000	SDC, NLFS
P-48	Fir Ridge Road (between Wembly and Twin Fir)	Sidewalk, one side	\$8,800	SDC, NLFS
P-49	Willamette River Greenway George Rogers Park to Oswego Pointe	Multi-use pathway	\$110,000	SDC, NLFS

Goal 12 Transportation

□ Goal 12: Transportation

Figure 19

Public Facilities Plan: Transportation Improvement Program 11-20 Years				
Map #	Location	Description	Estimated Cost (1997\$)*	Potential Funding Source
Pedestrian Facilities				
P-50	Willamette River Greenway, between Roehrer Park and Tryon Creek, connecting to Terwilliger multi-use path	Multi-use pathway	\$300,000	SDC, NLFS
P-51	Bryant Rd, between Cardinal/Sara Hill Rd.	Sidewalk/pathway	\$20,500	SDC, NLFS
P-52	Goodall Road, between Knaus and Country Club	Pathway, one side	\$246,000	SDC, NLFS
P-53	South Shore Blvd. (except Westview to Blue Heron)	Pathway on south side	\$600,000	SDC, NLFS
P-54	South Shore Blvd., Westview to Blue Heron	Pathway on south side	\$50,000	SDC, NLFS
P-55	Hallinan Street	Pathway, one side	\$69,000	SDC, NLFS
P-56	Kerr Parkway, Boones Ferry to McNary	Pathway, east side	\$60,000	SDC, NLFS
P-57	Kelok, Cardinal to South Shore	Pathway, one side	\$50,000	SDC, NLFS
P-58	Pilkington, between Jean Rd. and Childs	Sidewalk, one side	\$300,000	SDC, NLFS C
P-59	McEwan Between 65th and Pilkington	Sidewalk, one side	\$52,500	SDC, NLFS
P-60	Glenmorrie Dr.	Pathway, one side	\$100,000	SDC, NLFS
P-61	Jefferson Parkway between Kingsgate and Kerr	Sidewalk, one side	\$105,000	SDC, NLFS
P-62	Jean Rd. between Pilkington and Bryant	Sidewalk, one side	\$70,000	SDC, NLFS
P-63	Waluga Dr. between Parkhill and Carman	Pathway, east side	\$40,000	SDC, NLFS
P-64	Waluga Dr. between Oakridge and Firwood	Pathway, both sides	\$80,000	SDC, NLFS
P-65	Fosberg Rd. between Southwood Park and Melrose	Sidewalk, west side	\$15,000	SDC, NLFS
	Subtotal		\$4,807,700	

Goal 12 Transportation

□ Goal 12: Transportation

Figure 19