SNOHOMISH COUNTY COUNCIL
SNOHOMISH COUNTY, WASHINGTON

AMENDED ORDINANCE NO. 01-073
ADOPTING THE LAKE STEVENS URBAN GROWTH AREA PLAN AS A NEW UGA PLAN, AMENDING THE SNOHOMISH COUNTY GROWTH MANAGEMENT ACT COMPREHENSIVE PLAN AND AMENDED ORDINANCE 94-125

WHEREAS, The Snohomish County Council adopted Ordinance No. 93-004 containing the countywide planning policies, established a countywide framework from which the county and city comprehensive plans are to be developed, including policies that address the implementation of the GMA's UGA requirements, joint county and city planning within urban growth areas, and the promotion of contiguous and orderly development and provisions of urban services to such development; and

WHEREAS, the Snohomish County Council adopted the Snohomish County Growth Management Act Comprehensive Plan (GMACP) on June 28, 1995, including a Transportation Element; and

WHEREAS, the County Council adopted Amended Ordinance No. 94-117 on June 28, 1995 establishing a final UGA for the City of Lake Stevens; and

WHEREAS, Amended Ordinance No. 94-117 recognized the need for detailed examination of land uses within the UGA and for possible adjustments to the UGA boundary after completion of the UGA subarea plan, urban centers and utility system plans; and

WHEREAS, the County conducted a joint planning process from 1996-2001 with the City of Lake Stevens pursuant to an interlocal planning agreement to develop a UGA plan and implementing zoning for the Lake Stevens Urban Growth Area; and

WHEREAS, the County staff, assisted by the Lake Stevens Growth Management Coordinating Committee, prepared three plan alternatives for the Lake Stevens UGA and provided public review of the development of the UGA plan by sponsoring three public workshops on May 7, 1996, June 25, 1996, and May 29, 1997; and

WHEREAS, based on public input during facilitated meetings in the spring of 1998, County staff formulated three additional plan alternatives in the fall of 1998; and

WHEREAS, the Snohomish County Planning Commission held public hearings on November 16 and 18, 1998, December 1, 1998, and January 26, 1999, to review all six comprehensive plan alternatives and associated GPP, UGA boundary changes, code amendments and implementing zoning; and

WHEREAS, the County Executive presented a preferred alternative for the Lake Stevens UGA Plan to the Snohomish County Council on July 12, 1999; and

WHEREAS, the Council directed the County Executive to prepare a final Lake Stevens UGA Plan based on the preferred alternative on September 15, 1999; and

WHEREAS, the Planning Commission held workshops and public hearings on November 6 and 8, 2000, to hear public testimony on the Lake Stevens UGA Plan associated changes to the Lake Stevens Urban Growth Boundary, General Policy Plan (GPP) and Future Land Use (FLU) Map, and Snohomish County Code; and

WHEREAS, text and map amendments to the General Policy Plan (GPP), Future Land Use Map (FLUM), and Transportation Element are necessary to ensure consistency between the Lake Stevens UGA Plan and the GMACP; and

WHEREAS, text amendments to the GPP component of the GMACP are proposed to enable UGA plans to more specifically address physical constraints and neighborhood characteristics unique to each urban growth area; and

WHEREAS, GPP text amendments and FLU map amendments contained in the ordinance are proposed to facilitate coordination and consistency between the UGA plans, other GMACP components such as the Shoreline Master Program and Capital Facilities Plan, and associated city plans; and

WHEREAS, the Snohomish County Council held a public hearing(s) on October 17, October 31 and November 7, 2001 to consider the Planning Commission recommendation and hear public testimony on the Lake Stevens UGA Plan, amendments to the GMACP, implementing rezones and development regulations.

NOW, THEREFORE, BE IT ORDAINED:

Section 1. The County Council bases its findings and conclusions on the entire record of testimony and exhibits, including all written and oral testimony before the Planning Commission and the County Council. The Snohomish County Council makes the following findings of fact and conclusions with respect to adoption of the Lake Stevens UGA Plan:

A. The County Council adopts and incorporates the foregoing recitals as if fully set forth herein.

B. The County Council adopts the findings and conclusions in Section 1 of Amended Ordinance No. 01-074 which modifies the urban growth area for the City of Lake Stevens and incorporates the same herein by reference.

VISION

C. The following is the County Council's vision of the Lake Stevens UGA, based on extensive public input:

Lake Stevens is a full-service urban community surrounding a thousand-acre lake with abundant greenery and mountain vistas in all directions. It has a family-oriented civic life built around strong neighborhoods, quality schools, and a first-class system of parks and

public spaces. Shopping, family-wage jobs, and higher density housing are concentrated at three or four centers, each with its own design-sensitive character. A variety of lower-density detached housing opportunities fill in the spaces between the centers, separated by natural green corridors. Urban standard roads with curbs, gutters, and sidewalks and a system of trails link the neighborhoods and centers.

D. The following guiding principles support the development of the Lake Stevens UGA Plan:

- Strengthen and protect the character of established neighborhoods.
- Encourage the protection and enhancement of natural features, critical areas, parks and open space.
- Focus employment, shopping, and higher density housing in well-designed centers.
- Encourage changes that promote liveability, pedestrian orientation and high-quality design.

- Ensure that facilities and services are planned or will be available to serve the expected growth.

POPULATION, EMPLOYMENT AND LAND USE

E. The Lake Stevens UGA target population for the year 2012, as established by the Snohomish County Tomorrow Steering Committee and the County Council and contained in Appendix B of the Countywide Planning Policies, is 26,090. This target includes the city target of 8,771 and the surrounding unincorporated UGA target of 17,319.

F. Between 1990 and 1997, the Lake Stevens Urban Growth Area grew at a rate of approximately 6.2%, a rate significantly higher than was projected in 1992. By 1997, the urban growth area had a population of approximately 21,000, and had achieved more than half of its 20-year projected population.

G. Due to the higher than expected growth, the Lake Stevens UGA plan proposes a revised population target for the year 2012 of 30,882, which includes the city target of 8,771 and the surrounding unincorporated UGA target of 22,111.

H. County-wide Planning Policy UG-2 establishes a population target reconciliation process which recognizes the need for review and adjustment of population targets based on the outcome of Phase II urban growth area plans.

I. The UGA target population of 30,882 will be reconciled with the Countywide Planning Policy target upon Plan adoption consistent with Countywide Planning Policy UG-2.

J. The UGA plan designates 4,947 acres of residential land within the UGA in sufficient densities to accommodate the target population. The plan incorporates the GPP's minimum net density of 4-6 units per acre for new residential development in appropriate areas.

K. The UGA plan provides a full range of residential densities by designating 1,555 acres of Urban Low Density Residential (4 DU/Acre), 2,268 acres of Urban Low Density Residential (6 DU/Acre), 913 acres of Urban Medium Density Residential (6-12 DU/Acre), and 211 acres of Urban High Density Residential (12-24 DU/Acre).

L. The Lake Stevens UGA employment growth target, adopted by Snohomish County Tomorrow, is 3,594 additional jobs between 1992 and 2012, which includes a city target of 1,521 and the unincorporated UGA target of 2,073.

M. The Lake Stevens UGA Plan designates 175 acres of Urban Industrial, and 194 acres of Urban Commercial, providing sufficient amounts of commercial and industrial land to meet 2012 employment targets and ensuring that there is adequate commercial and industrial land to serve the target population.

N. The UGA Plan designates new high density residential and commercial designations within, or adjacent to, existing urban centers and within one new center. The UGA Plan identifies and designates the following activity and neighborhood commercial centers:

1. Activity center. Frontier Village, 391 acres.
2. Community Commercial Center. Tom Thumb, located at the intersection of 20th Street SE and S. Lake Stevens Road, 30 acres; and a new center at Cavalero Hill, 25 acres.
3. Neighborhood Commercial centers. Lundeen Parkway, 10 acres; and the intersection of State Route 204 and 10th Street SE, 1 acre.

O. The UGA Plan designates 20.7 acres of new Urban Industrial/Business Park adjacent to existing Urban Industrial/Business Park, south of Soper Hill Road and west of Highway 9.

P. The designation of additional industrial and commercial land is supported by employment forecasts adopted by SCT, the County and the City of Lake Stevens.

CAPITAL FACILITIES PROVISION

Q. One of the key planning principles used in development of the Lake Stevens UGA Plan is that the Plan will ensure that facilities and services are planned or will be available to serve the expected growth.

R. The GMA requires that urban growth be located first in areas already characterized by urban growth that have adequate existing public facility and service capacities to serve development, second in areas already characterized by urban growth that will be served adequately by a combination of both existing public facilities and services and any additional needed public facilities and services that are provided by either public or private sources, and third in the remaining portions of the UGA. To implement this provision of the GMA, the Lake Stevens UGA Plan identifies a regulatory tool called the development phasing overlay to assure that development is supported by adequate public facilities.

S. A development phasing overlay may be applied only to those areas where public facilities necessary to support development are not currently funded by public or private revenue sources, as identified in the capital facilities element of the Lake Stevens UGA Plan. The development phasing overlay is applied as an overlay to a zoning classification within the UGA, and requires that urban development of the overlay area be delayed until a commitment is in place to fund and construct public facilities necessary to support development.

T. The Lake Stevens UGA Plan identifies a list of public facilities necessary to support development within the UGA and identifies areas eligible for application of the development phasing overlay within the capital facilities chapter. It also specifies which public facilities necessary to support development are experiencing a funding shortfall within the particular area. The timing of growth in the UGA plan will be phased primarily by the provision of water, sewer, surface water, and transportation facilities. The implementing rezone ordinance for the Lake Stevens UGA Plan, Amended Ordinance No. 01-075 will apply the development phasing overlay to the areas that are experiencing a funding shortfall for transportation and surface water public facilities.

U. The Lake Stevens UGA Plan contains more specific inventory and analyses of facilities necessary for development and a financing program for the improvements. It also establishes minimum levels of service for land transportation facilities, surface water facilities and park land within the Lake Stevens UGA. The amendments to the Capital Facilities Element of the GPP ensure that the Lake Stevens UGA Plan is consistent with the GPP and GMACP.

CRITICAL AREAS IDENTIFICATION AND PROTECTION

V. The GMA requires the County to designate and protect critical areas pursuant to RCW 36.70A.060 and .170.

W. The UGA Plan identifies and protects critical areas and distinctive features by limiting density in areas constrained by critical areas that are large in scope, with a high rank order value, and are complex in structure and function.

X. A portion of the Sunnyside area, located generally east of 83rd Avenue NE as extended south of the "Black Rock" subdivision, and east of SR 204 and Vernon Road, has been excluded from the UGA due to limited infrastructure and environmental constraints.

Y. Approximately 1,555 acres will be designated for limited residential densities of four (4) dwelling units per acre or less due to proximity to wetlands, streams, development-limiting slopes or shoreline management areas.

Z. The amendments to the GPP text will enable UGA plans to define density and implementing zoning ranges narrower than the broad ranges currently specified within the Urban Low, Medium and High Density Residential designations defined in the GPP component of the GMACP.

AA. The amendments to GPP policy LU 2.A.1, and the addition of a new policy LU 2.A. 10, will allow UGA densities below four (4) dwelling units per net acre within or near critical areas that are large in scope, with a high rank order value, and are complex in structure and function.

BB. The proposed GPP text amendments will further implement GPP Objective LU 2.A, which encourages the concentration of development in appropriate locations.

CC. The amendments of LU Policy 2.A.1 and the addition of a new policy, LU Policy 2.A.10, will enable UGA plans to more specifically address physical constraints and neighborhood characteristics unique to each urban growth area.

DD. The following Future Land Use Map (FLUM) amendments are proposed to designate areas removed from the Lake Stevens UGA to rural and natural resource designations:

1. The re-designation of 350 acres in the Sunnyside area from Urban Low Density Residential to Rural Residential is supported by the Rural Residential designation criteria and GPP policy 6.A.1.

2. The re-designation of 47 acres at the wastewater treatment plant from Urban Low Density Residential to Riverway Commercial Agriculture is supported by the Agricultural designation criteria and the existing designation of the adjacent properties. An analysis of the suitability of the land for agricultural purposes is contained in the Snohomish County 1993 Interim Agricultural Conservation Plan.

EE. Amendments to the GPP that allow densities lower than 4 DU/Acre in the UGA are consistent with GMA goal 10 because they protect critical areas inside UGAs that are large in scope, with a high rank order value, and are complex in structure and function. These areas would not be able to achieve urban densities without significant degradation to critical areas; however, these areas should remain inside the UGA to maintain logical UGA boundaries and extension of services.

HOUSING

FF. The Lake Stevens UGA Plan contains measures to minimize housing production costs by providing for sufficient land zoned for a variety of residential densities.

GG. It is the intent of the UGA plan to comply with all existing state and federal fair housing regulations, including the provision of adequate opportunities for the development of safe, sanitary, and affordable housing that is suitable to special needs population groups, regardless of age, familial status, income, or disability.

HH. The Lake Stevens UGA Plan provides adequate land designated for higher densities to ensure that a greater range of housing types and choices will be available for special needs populations in the future.

TRANSPORTATION

II. The Lake Stevens UGA Plan provides guidance for the design, construction, and operation of UGA transportation facilities and services through the year 2012.

JJ. The emphasis of the transportation element is on upgrading roads to urban design standards and improving existing operations.

KK. The transportation element contains policies and projects necessary to effectively serve the planned land use within the UGA.

LL. Amendment to the Transportation Element is necessary to maintain consistency between the Lake Stevens UGA Plan and the Transportation Element.

MM. The Transportation Element for the Lake Stevens UGA Plan further implements GPP Goal TR 7, Objective TR 7.A and Policy TR 7.A.7.

NN. The County and the City should work collaboratively pursuant to the direction in the Lake Stevens UGA Plan to provide for reciprocal mitigation for traffic impacts of land development occurring within the UGA; to identify, prioritize, and program transportation improvements within the UGA; to ensure compatibility between County and City road standards within the UGA; to establish compatible methods of measuring concurrency; to encourage transportation financing through road improvement districts and local improvement districts; to plan and implement additional public transportation services and facilities within the UGA; and to ensure planned walkway and bikeway improvements as part of arterial roadway design and construction.

SURFACE WATER MANAGEMENT

OO. The Lake Stevens UGA Plan identifies a different and higher level of service for surface water capital facilities than that required county-wide. Unique physical features drive the need for a higher level of service. In addition, the identification of additional level of service criteria will be more effective in offsetting the cumulative impacts of future development and is consistent with the county-wide capital facilities plan.

PP. The surface water chapter of the Lake Stevens UGA Plan documents the inventory and contains detailed analysis of constructed and natural drainage systems of the drainage basins that drain the Lake Stevens UGA.

QQ. The surface water chapter evaluates a variety of drainage, water quality, and fish habitat issues related to the future growth within the UGA and provides solutions— some regulatory and some capital.

PARKS

RR. The Lake Stevens UGA Plan discusses the need for urban neighborhood parks to serve new growth. The recent acquisition of a 26-acre site in the southwest portion of the UGA meets the definition of a community park equivalent, and will provide an excellent site in the for a future community park in the area where park land is needed most.

SS. The LOS methodology for parks facilities is consistent with the 1993 Countywide Parks and Recreation Plan. Should the LOS methodology change with the adoption of the updated Comprehensive Parks Plan (scheduled for consideration later this year), this chapter will need to be amended to reflect the new methodology.

TT. The parks chapter of the Lake Stevens UGA Plan provides a detailed parks, recreation and open space element to the UGA Plan that is coordinated with UGA-level land use, transportation, environmental and capital facilities planning to help create viable urban neighborhoods and enhance the overall UGA community structure.

GOALS OF THE GMA

UU. In developing the Lake Stevens UGA Plan, the County has used the planning goals of RCW 36.70A.020 as a guide. The County has balanced the goals with the intent of creating a plan that maintains and enhances the high quality of life in the Lake Stevens Urban Growth Area, and makes the UGA a livable urban community in the years to come.

VV. Goal (1). The County has encouraged development in the areas of the UGA that have adequate public facilities and services by a system of land use designations that center density and development in areas most capable of accommodating growth, and phasing development in those areas of the UGA where adequate public facilities and services are not yet available. Amendments to the GPP that enable establishment of UGA-specific minimum levels of service and identification of services necessary for development in the Lake Stevens further GMA goals 1 and 12 because they will ensure that capital facilities are provided at a level more closely reflecting local standards and vision.

WW. Goal (2). The County has reduced the inappropriate conversion of undeveloped land into sprawling, low-intensity development by creating urban centers and providing a variety of residential densities within the UGA.

XX. Goal (3). The County has completed a UGA-level transportation element that provides for coordination and consistency with city and state-level transportation plans.

YY. Goal(4) The County has encouraged affordable housing by providing sufficient zoned land to accommodate projected growth and keep housing production costs down. The County has also provided a variety of densities to allow accommodation of special needs populations.

ZZ. Goal (5). The County has encouraged economic development by providing an adequate supply of commercial, industrial, and other employment land within the UGA.

AAA. Goal (6). The County has protected the property rights of landowners through adoption of the Lake Stevens UGA Plan.

BBB. Goal (7). The County's permitting process, including the new development phasing overlay ordinance, allows for timely and fair processing of development permits.

CCC. Goal (8). The Lake Stevens UGA Plan protects the viability of natural resource-based industries by encouraging growth in the UGA.

DDD. Goal (9). The Lake Stevens UGA Plan encourages the retention of open space and the development of recreational opportunities and parks. The Plan identifies need and level of service for parks facilities in the UGA. In addition, the Plan conserves fish and wildlife habitat by providing extensive drainage analysis of the UGA, a list of projects necessary for habitat restoration, lower densities in targeted areas to protect large and complex scope critical areas, and reduction of the UGA to exclude sensitive areas in the Sunnyside basin.

EEE. Goal (10). The Lake Stevens UGA Plan protects the environment and enhances the UGA's high quality of life through its designation and protection of critical areas, and designation of land use appropriate to the environmental sensitivity of the area.

FFF. Goal (11). The County has extensively involved the public in the planning process for development of the Lake Stevens UGA Plan and has worked closely with the City of Lake Stevens to coordinate planning.

GGG. Goal (12). The County has ensured that public facilities necessary to support development are adequate to serve development through the capital facilities element of the plan and the development phasing overlay ordinance.

HHH. Goal (13). The County has considered the important goal of historic preservation in developing the Lake Stevens UGA Plan.

CONSISTENCY AND ENVIRONMENTAL REVIEW

III. The proposed GPP policy and general text amendments and FLUM amendments will facilitate coordination and consistency between the UGA plans and other GMACP components such as the Shoreline Master Program, the Transportation Element, the Capital Facilities Plan and associated city plans, as well as with the GMA.

JJJ. The Lake Stevens UGA Plan is consistent with all elements of the Snohomish County GMACP, specifically with the GPP policies intended to ensure that growth is directed into existing urban centers and urbanized areas for more efficient provision of urban services, and is compatible with its surroundings.

KKK. The GPP Future Land Use Map (FLUM) will be amended to show a generic designation for the entire Lake Stevens UGA and the legend will reference the Lake Stevens UGA Plan.

LLL. The County has conducted environmental review of the Lake Stevens UGA Plan according to the provisions of the State Environmental Policy Act, Chapter 43.21C RCW and Title 23 SCC, the Snohomish County Environmental Policy Ordinance, through environmental review of the Lake Stevens UGA Plan and issuance of two draft Supplemental EISs to the GMACP final EIS in March and October of 1998, a final Supplemental EIS on April 28, 2000, and two addenda dated October 27, 2000 and January 19, 2001.

MMM. The adoption of the UGA plan is consistent with the requirements of the Growth Management Act, Chapter 36.70A RCW. Adoption of the Lake Stevens UGA Plan as part of the GMACP is permitted by RCW 36.70A.130(2), which allows amendment of a GMA comprehensive plan more frequently than once per year if the amendment is the initial adoption of a subarea plan.

NNN. Amendments that enable further aggregation of urban residential designations, and that clarify the relationship of the GPP to pre-GMA plans are consistent with the GMA's requirements that the County's GMA plans be internally consistent as well as consistent with other plans and development regulations.

OOO. The GPP and Transportation Element amendments are necessary to maintain consistency of the County's planning documents with the policies and directions set forth in the Lake Stevens UGA plan.

PPP. The UGA plan is consistent with the Vision 2020 regional growth and transportation plan, the multi-county policies adopted by the Puget Sound Regional Council for King, Kitsap, Pierce and Snohomish Counties adopted in March 1993 and updated in 1995.

QQQ. The UGA plan is consistent with the countywide planning policies for Snohomish County.

PUBLIC PARTICIPATION

RRR. Prior to both the Planning Commission and County Council public hearings, citizens, interest groups, public agencies, and the media were notified by means of published legal notices, press releases, and mailed notices to all property owners within the unincorporated UGA.

SSS. The County conducted several facilitated public meetings in the spring of 1998 to provide public input into the formation of new Plan alternatives.

TTT. The Planning Commission held public hearings on the six alternatives, proposed changes to the UGA boundary, implementing rezones and amendments to the GMACP on November 16 and 18, 1998, December 1, 1998, and January 26, 1999. The Planning Commission received, reviewed and considered oral and written testimony from citizens, interest groups and public and private agencies.

UUU. The Planning Commission held public hearings on the Executive Recommended Lake Stevens UGA plan, capital facilities chapter, implementing rezones and amendments to the GMACP and development regulations on November 6 and 8, 2000. The Planning Commission received, reviewed and considered oral and written testimony from citizens, interest groups and public and private agencies.

VVV. The County Council held public hearings on October 17, October 31 and November 7, 2001 to consider the Planning Commission and Executive Recommended versions of the Lake Stevens UGA Plan, the UGA boundary change, amendments to the GMACP, amendments to Title 18 SCC, implementing rezones and associated plan and development regulation amendments. The County Council received, reviewed and considered oral and written testimony from citizens, interest groups and public and private agencies.

WWW. The Planning Commission and the County Council have fully considered public input from citizens and the City of Lake Stevens in making recommendations and decisions on the UGA. There has been early and continuous public participation in the development of the Lake Stevens UGA Plan. The County has met and exceeded the state and local requirements for public participation and inter-jurisdictional coordination with relationship to this set of actions.

SITE SPECIFIC FINDINGS

XXX. Mary Hawkins Property. The subject area lies north of Davies Rd and east of Vernon Rd as is shown on the attached map. The amendment would retain the existing plan designation of Urban Commercial. This amendment is consistent with the goals of the Lake Stevens UGA plan to create an urban center at Frontier Village and to provide opportunities to accommodate future employment growth. This amendment does not affect population and employment targets. Nor does it affect capital facilities planning. Therefore, for tax parcels 005180-011-01, 005180-011-02, 005180-012-01, 005180-012-00, 005180-013-00, 005180-014-00, 290513-001-049 and that portion of 290513-001-016 as described as follows: along the northern boundary extending approximately 600 feet east from the northwest corner of the tax parcel 290513-001-016 then south approximately 150 feet to the intersection with the northwest corner of tax parcel 290513-001-049, the existing Urban Commercial designation on the Future Land Use map is retained. The amendment is also consistent with Exhibits 118 and 139 contained in the record.

YYY. Nancy George Property. The property is located on the west side of 96th Avenue NE, south of N. Davies Road. The amendment would change the plan designation from Urban Commercial to Urban Medium Density Residential (6-12 du/ac). This amendment is consistent with Lake Stevens UGA plan as well as properties with similar designation to the north, south and east. This amendment does not affect population and employment targets. Nor does it affect capital facilities planning. Therefore the western portion of tax parcel 00714200004601 is designated Urban Medium Density Residential (6-12 du/ac) on the Future Land Use map. The amendment is also consistent with Exhibit 37 contained in the record, which is the transmittal memo from staff to the County Council.

ZZZ. Minney Sewer District Annexation. The property is located on the east side of Vernon Road and is comprised of tax parcel 290514004010. In July 2001 the County Council took action an approved the property's annexation to the Lake Stevens Sewer District. Based on this action the proposed UGA boundary is modified to include the aforementioned tax parcels. In order to create a logical urban growth boundary tax parcels 290514004011, 290514004022, 290514004023 and 290514004026 are also included within the Urban Growth Area. The above tax parcels are designated Urban Low Density Residential (4 du/ac) on the Future Land Map. This amendment does not affect population and employment targets. Nor does it affect capital facilities planning.

AAAA. Chad Bitnes Property. The subject property lies near the intersection of Lundeen Parkway and 99th Ave NE. The property owner requests that tax parcel 00385701101401 be designated Urban Commercial and zoned Neighborhood Business (NB). The amendment is consistent with the UGA plan as the plan encourages development of a small neighborhood center in this area. This amendment does not affect population and employment targets. Nor does it affect capital facilities planning. The County Council recommends that the property owners' request to have the proposal placed on the next available Docket.

Section 2. Based on the foregoing findings and conclusions, the County Council hereby adopts the Lake Stevens UGA Plan, which is attached hereto as Exhibit A and incorporated by this reference, and the Lake Stevens UGA Future Land Use Map, attached hereto as Exhibit B as part of the Snohomish County GMA Comprehensive Plan (GMACP).

Section 3. The Lake Stevens UGA Plan and land use map (Exhibits A and B) supersede and replace the map and textual portions of the Snohomish/Lake Stevens Area Comprehensive Plan, last amended by Ordinance No. 98-035, adopted on July 22, 1998, which apply to the unincorporated area within the City of Lake Stevens UGA, as contemplated by the GPP at IN-14.

Section 4. Based on the foregoing findings and conclusions, the Snohomish County Growth Management Act Comprehensive Plan – General Policy Plan (GPP), adopted as Exhibit A of Amended Ordinance No. 94-125 on June 28, 1995, and last amended by Amended Ordinance No. 00-091 on December 20, 2000, is amended as indicated in the GPP text amendments in Exhibit C, which is attached hereto and incorporated by reference into this ordinance as if set forth in full.

Section 5. Based on the foregoing findings and conclusions, the Growth Management Act Comprehensive Plan Future Land Use Map, adopted as Map 4 of Exhibit A in Section 4 of Amended Ordinance 94-125 and last amended by Ordinance No. 00-047 on July 23, 2001, is amended as indicated in Exhibit B, which is attached hereto and incorporated by reference into this ordinance as if set forth in full.

Section 6. Based on the foregoing findings and conclusions, the Snohomish County Growth Management Act Comprehensive Plan- Transportation Element adopted as Exhibit C in Section 4 of Amended Ordinance 94-125 and last amended by Ordinance No. 01-040 on June 27, 2001, is amended as indicated in Exhibit D, which is attached hereto and incorporated by reference into this ordinance as if set out in full.

Section 7. Severability. If any section, sentence, clause or phrase of this ordinance shall be held to be invalid or unconstitutional by the Growth Management Hearings Board (Board), or a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this ordinance. Provided, however, that if any section, sentence, clause or phrase of this ordinance is held to be invalid by the Board or court of competent jurisdiction, then the section, sentence, clause or phrase in effect prior to the effective date of this ordinance shall be in full force and effect for that individual section, sentence, clause or phrase as if this ordinance had never been adopted.

PASSED this 7th day of November, 2001.

SNOHOMISH COUNTY COUNCIL
Snohomish County, Washington

ATTEST:

Sheila McAllister
Clerk of the Council / asst.

Chair

(✓) APPROVED
( ) EMERGENCY
( ) VETOED

Date: 11/27/01

Robert J. Drewel
County Executive

ATTEST:

Approved as the form only:

Barbara Dykes
Deputy Prosecuting Attorney

EXHIBIT A

Plan adoption and GPP amendment
LAKE STEVENS UGA

UGA Land Use Plan text

Snohomish County
GMA Comprehensive Plan

LAKE STEVENS UGA PLAN

For the Unincorporated Urban Growth Area

December 7, 2001

A COMPONENT OF THE SNOHOMISH COUNTY GMA COMPREHENSIVE PLAN

3000 ROCKEFELLER AVENUE, EVERETT, WA 98201-4046

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Executive Summary

The Lake Stevens Urban Growth Area (UGA) Plan provides the detail and guidance required for future planning decisions within the Lake Stevens UGA. The Plan provides additional certainty to residents, developers and the community at large regarding the density, character and location of future land use. It will guide future annexation of the unincorporated UGA to the City of Lake Stevens. The Plan will also guide the investment of public and private resources for capital improvements and services.

The Plan is based on a target population of 30,882, including 8,771 in the City of Lake Stevens and 22,111 in the unincorporated UGA, expected by the year 2012. Approximately 350 acres in the Sunnyside area, primarily those north and east of SR 204 and west of NE 83rd, have been removed from the UGA. These areas include critical wetlands and steep slopes where the extension of urban services to support urban densities is not feasible.

Land Use

The location and distribution of future land use within the UGA is shown on the Lake Stevens Future Land Use (FLU) Map and described in the Land Use chapter. The future land use pattern is based on the centers concept in which future commercial, industrial and high intensity growth is focused in dispersed centers.

The commercial and industrial land needed to support the 3,594 jobs expected by the year 2012 is primarily focused within and adjacent to existing centers and nodes. Existing commercial and industrial centers at the Agilent Technologies (formerly Hewlett-Packard) site, Frontier Village Activity Center, the Tom Thumb Neighborhood Center and the Lake Stevens City Community Commercial Center are retained or enlarged.
The additional 2,646 households expected by the year 2012 will be located in areas designated for Urban Low Density (4 or 6 units per acre), Medium Density (6-12 units per acre) or High Density (12-24 units per acre) development. New medium and high density residential is located primarily in existing or future centers like Frontier Village, Tom Thumb and Cavalero Hill or located along major transportation corridors. Low density residential is located outside of centers and transportation corridors, and in areas with natural limitations. The plan limits the implementing zones in some low-density areas to protect neighborhood character and natural features.

Transportation

The emphasis of the transportation element is on upgrading roads to urban design standards and improving existing operations. Proposed projects and associated costs specific to the proposed land use plan are contained in tables within the element. The types of projects proposed include:

- Improving local roads and streets to two-lane urban collector status,
- Improving operations on existing arterials by adding lane capacity,
- Redesigning key intersections and adding signalization,
- Constructing new two-lane and three lane urban arterials,

- Improving operations and capacity of key state intersections and arterials, and
- Three travel lanes on SR-2 in each direction between I-5 and SR-204

Specific components of the Lake Stevens Future Circulation Plan, which will ensure that the road network does not fall below Level of Service (LOS) "E", include:

- Increases in the safety and capacity of routes around the lake;
- Improvements and road upgrades for key connections to State Routes 204, 9, 92 and Highway 2;
- Intersection improvements at the intersection of SR 204 and SR 9;
- Widening of SR-9 and SR 204; and
- New roads, safety and capacity increases, and upgrades to urban two lane roads within the road network connecting 20th St SE and Frontier Village/SR204 to serve increases in residential densities and commercial activities proposed in the land use plan.

Non-motorized traffic is proposed to be accommodated in bikeways and sidewalks included in proposed road projects. Connections between residential areas and commercial areas in the Frontier Village and Cavalero Hill neighborhood centers, and with County-wide facilities such as the Centennial trail, are proposed.

Improvements and new projects are proposed to be funded through both traditional and non-traditional mechanisms. With traditional methods, such as County and state road funds and developer impact fees, a funding shortfall has been identified. Non-traditional methods of financing which may be used to overcome the shortfall include: joint funding with the City of Lake Stevens, transportation bonding, road improvement districts (RIDs), public/private partnerships and a voter approved Local Option Fuel Tax (LOFT).

Parks

This chapter contains an inventory of existing Urban Community, Urban Neighborhood and Urban open space park lands, an analysis of current levels of service and estimates of projected needs to serve the estimated future growth.

The existing level of service (ELOS), which is also the recommended future LOS, for the unincorporated Lake Stevens UGA is 3.59 acres of urban neighborhood or community scale park land per 1,000 people. In order to maintain the existing level of service, 18.43 acres of neighborhood/community park land will need to be acquired by the year 2012.

The chapter outlines implementation strategies for joint City/County Park planning for the UGA, and financing methods. Methods that may be used to finance needed acquisitions include: impact fees, general obligation bonds, grants and special revenue funds. The existing SEPA based impact fee ordinance is used to fund the acquisition of regional parks, and will need to be amended before it can be used as a funding mechanism for neighborhood or community parks in the Lake Stevens UGA.

Surface Water Management

The Lake Stevens UGA Plan area consists of several major and minor drainage basins all flowing into one of three water bodies: Lake Stevens, Ebey Slough or the Little Pilchuck River. The surface water management chapter contains an inventory and analysis of all major basins within the Urban Growth Area for the following problems:

- Road and private property flooding,
- Water quality degradation,
- Blockage of fish passages along streams,
- Degradation of fish and wildlife habitat, and
- Stream channel erosion.

The chapter provides lists of proposed projects needed to prevent future flooding and habitat degradation problems in several key basins. Projects are categorized as public, private (developer or WSDOT), or local spot improvement (DRI) projects. The project lists are based on meeting two recommended minimum levels of service for surface water problems:

- For flooding problems, projects needed to prevent the flooding expected to occur at least once in 25 years under the existing and proposed future land use, and
- For habitat problems, projects needed to ensure that habitat standards found in the Natural Environment section of the *General Policy Plan* (GPP) are met.

Financing strategies and cost estimates for the proposed projects, as well as for completion of Master Drainage Plans for the remaining 25 basins within the Lake Stevens UGA Plan, are included in the chapter.

Development Phasing Overlay

A new regulatory phasing mechanism, developed for use throughout the county, may be applied to the Cavalero Hill area and other areas within the UGA. Development of the new neighborhood scale center will be precluded until: 1) completion of a master plan which specifies the uses and development standards for a neighborhood-scale center, 2) adequate capital facilities required to support the center have been identified and 3) financing to support those facilities is planned or in place. Other areas within the UGA which lack adequate facilities and services have been identified. Development within these areas may also be subject to the provisions of the Development Phasing Overlay (DPO). The DPO defers development until a financial strategy is developed pay for infrastructure deemed necessary to lift the DPO.

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Chapter 1

Introduction

A. Purpose and Background of the Lake Stevens UGA Plan

The *Lake Stevens Urban Growth Area (UGA) Plan* guides future planning decisions within the unincorporated portion of the Lake Stevens UGA. The Plan provides certainty to residents, property owners, developers and the community at large regarding the density, character and location of future land use. Development activities in the UGA should be consistent with this plan prior to annexation of the unincorporated UGA to the City of Lake Stevens or incorporation of a new city. The Plan also will guide the investment of public and private resources for capital improvements and services.

The *Lake Stevens UGA Plan* was developed through consultation with the City of Lake Stevens and the community. In 1993, the City and County entered into an interlocal agreementwhich called for a Growth Management Coordinating Committee (GMCC) to oversee the establishment of a final UGA boundary and preparation of a UGA plan for the unincorporated area. The interlocal agreement outlines several purposes for the plan, including: 1) requirement for citizen involvement in the planning process, 2) determination of UGA boundaries, and 3) guidance for interjurisdictional planning for subarea plans. The "Comprehensive Plan Framework" section of this chapter, below, further discusses the planning framework used by Snohomish County in the development of UGA plans.

The development of the Lake Stevens UGA plan and its public process were integrated with the environmental review under the requirements of State Environmental Policy Act (SEPA). The GMCC met many times between July 1993 and January 1996 and generated three plan alternatives. These were presented and refined at twelve public meetings and workshops between May 1996 and November 1997. The first draft of the Lake Stevens UGA Plan Concepts includes Alternatives 1, 2 and 3 which were the subject of environmental review and analysis in a draft Supplemental Environmental Impact Statement (SEIS). These documents were issued in March 1998. (Additional detail about the citizen involvement process for the late 1997 workshops and summaries of citizen input can be found in Appendix 1-A.)

The County and City held a series of community meetings to gain public comment on the three alternative plan concepts and draft SEIS, and to attempt to gain consensus on a preferred alternative. The County developed three additional alternatives (4, 5 and 6) to address concerns of the City of Lake Stevens and the public regarding population growth rates and employment estimates, parks and open space, and transportation concurrency issues. Volume 2 of the Draft Lake Stevens UGA Plan Alternatives and SEIS were issued in October 1998.

From October 1998 to August 1999, the Snohomish County Planning Commission and Snohomish County Council considered and deliberated on the recommended alternatives during several hearings. In September 1999, the County Executive recommended an alternative that incorporated elements of several of the alternatives, and was based upon key assumptions regarding population, UGA size, and capital facilities financing. After reviewing this

recommendation, the County Council directed that the Lake Stevens UGA plan and Final SEIS be developed based on these key assumptions. This plan reflects the Council's directive.

B. Comprehensive Plan Framework

requirements and the framework for comprehensive planning in Washington State. It specifies when a jurisdiction is required to meet the requirements of the Act, including adoption of a comprehensive plan, and establishes the minimum content of a Comprehensive Plan. GMA requires "early and continuous public participation," consistency between elements, intergovernmental coordination, and establishment of Urban Growth Areas (UGAs). UGAs must include areas characterized by urban growth and be sized to include areas and densities sufficient to accommodate the urban growth forecast for the 20-year planning period. One of GMA's goals is to avoid sprawl in accommodating growth while utilizing transportation and utility facilities efficiently.

Prior to passage of GMA in 1990, Puget Sound counties participated in a collaborative effort to develop a vision for regional growth. Vision 2020 calls for regional development centralized in several urban employment and population centers, with a coordinated transportation system connecting them.

At the County level, this vision was incorporated into the Snohomish County Tomorrow process. Cities, towns, tribes and the County worked together to develop the regional and GMA goals specific to Snohomish County. The Countywide Planning Policies provide the foundation for all comprehensive plans developed by the County and its cities.

The Snohomish County Growth Management Act Comprehensive Plan (GMACP) was adopted in June 1995. Major components of the GMACP include the *General Policy Plan* (GPP), the *Transportation Element*, the *Comprehensive Park and Recreation Plan*, the *Shoreline Management Master Program* and the *Capital Facilities Plan/Year 2000 Update*. The GPP contains goals and policies applicable to all unincorporated land. UGA boundaries consistent with the requirements of the GMA are designated in consultation with the affected towns and cities. They are depicted on the Future Land Use Plan map of the GPP. The GPP sets overall goals that call for the County to accept its share of population growth, and create a compact land-use pattern by directing growth toward urban centers.

The GPP is the first phase of Snohomish County's two-phase program for GMA comprehensive planning. The GPP establishes a framework of goals and policies to guide the development of more detailed plans within the unincorporated portions of UGAs. The second phase consists of the development of subarea or UGA plans such as the Lake Stevens UGA Plan. Subarea plans provide details on types and locations of land uses planned for neighborhood areas and urban centers, provide opportunities for a variety of residential densities, coordinate infrastructure improvements with

planned uses and centers, and identify and preserve natural features, open space and critical areas. This document refines land use details for the Lake Stevens planning area, thereby implementing the phased approach to planning that is envisioned in the GPP.

C. Lake Stevens UGA Plan Components

The plan includes an existing demographic profile, future growth forecasts, and projected needs for population, housing, and employment. It includes chapters covering Land Use, Housing, Transportation, Surface Water Management, Parks, Capital Facilities, Utilities and Implementation. These chapters address the types and locations of proposed land use, housing, parks and open space, transportation, surface water management, utilities and public services, and strategies for plan implementation. Future land use and zoning maps accompany the text.

D. Vision Statement

A vision statement is a broad description of the ideal and unique image that a community strives to achieve in the future. The community develops its vision statement at public meetings and workshops and provides officials with an understanding of community values and planning concerns.

The following vision statement for the Lake Stevens UGA Plan was drafted as a result of the series of community meetings in 1996 and 1997. Community members from both the City and the unincorporated UGA attended the meetings.

> *Lake Stevens is a full-service urban community surrounding a thousand-acre lake with abundant greenery and mountain vistas in all directions. It has a family-oriented civic life built around strong neighborhoods, quality schools, and a first-class system of parks and public spaces. Shopping, family-wage jobs and higher density housing are concentrated at three or four centers, each with its own design-sensitive character. A variety of lower-density detached housing opportunities fill in the spaces between the centers, separated by natural green corridors. Urban standard roads with curbs, gutters and sidewalks and a system of trails link the neighborhoods and centers.*

The following guiding principles, based on the vision statement and citizen feedback (please see Appendix 1-A), were used in the development of the Lake Stevens UGA Plan:

- Strengthen and protect the character of established neighborhoods.
- Encourage the protection and enhancement of natural features, critical areas, parks and open space.
- Focus employment, shopping, and higher density housing in well-designed centers.

- Encourage changes that promote livability, pedestrian orientation and high-quality design.
- Ensure that facilities and services are planned or will be available to serve the expected growth.

E. Planning Area Characteristics

The Lake Stevens UGA is an approximately 10.5 square mile area centered around 1,040 acre (1.6 square mile) Lake Stevens. Of this area, the City itself encompasses nearly two square miles on the northeast shore of the lake - the remaining 8.5 square miles of the UGA is within unincorporated Snohomish County. The two most significant features affecting land use patterns within the UGA are Lake Stevens and State Route (SR) 9, which runs along the western portion of the UGA. Figure 1-1 shows the Urban Growth Area's location within Snohomish County. Proposed boundaries of the UGA include SR 92 and Soper Hill Road on the north; 24th Street SE and 28th Street SE on the south; Machias Road and 123rd Avenue SE on the east; and 83rd Avenue NE as extended south of the "Black Rock Hills" subdivision, SR 204, and Vernon Road on the west.

Retail and industrial uses are focused in a few areas. The most intensive commercial area, Frontier Village, is characterized by a range of development intensities, building ages and styles. There are two other retail centers: the City of Lake Stevens' downtown and the Tom Thumb corner, the latter located at the intersection of 20th Street SE and South Lake Stevens Road. The downtown core is characterized by retail and office uses. The largest industrial area – the Agilent Technologies (formerly Hewlett-Packard) campus - is located at the intersection of Soper Hill Road and SR 9. Smaller clusters are found in the northeast and east portions of the City of Lake Stevens. There are a few single site commercial or industrial uses scattered within the UGA.

F. Technical Reports

The Lake Stevens UGA Plan is unique compared with other UGA plans because the level of information available about the UGA is quite detailed. Production of this plan involved extensive population, housing, land use, transportation, and surface water drainage analyses. In addition, the Lake Stevens Urban Growth Area Supplemental Environmental Impact Statement (SEIS) analyzes the environmental impacts associated with different land use alternatives, including the preferred alternative. Technical data can be found in each applicable chapter, the appendices, the SEIS, and the document titled, "Lake Stevens UGA Technical Reports".

Snohomish County GMA Comprehensive Plan

UGA SUB-AREA SERIES

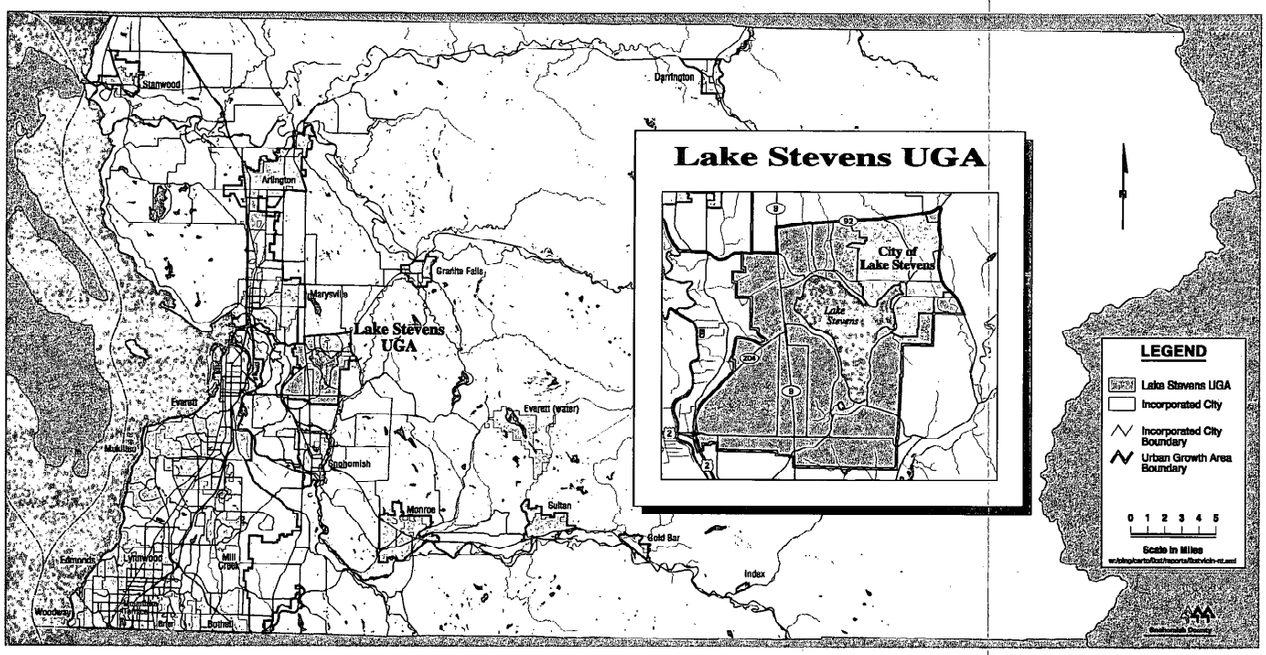


FIG. 1-1

Chapter 2

Demographic Profile, Population and Employment Forecast

A. Introduction

This chapter provides an overview of population growth and existing demographic trends for the Lake Stevens Urban Growth Area. Under the Growth Management Act (GMA), city and county comprehensive plans are required to include areas and densities sufficient to accommodate the population growth that is projected to occur within the ensuing 20-year period. In general, population forecasts for the 20-year planning horizon are issued for each county by the State of Washington Office of Financial Management (OFM), and then are allocated to cities, towns and unincorporated areas by the County in consultation with the affected jurisdictions.

Snohomish County is planning for an OFM forecast of 220,000 additional residents countywide between the years 1992 and 2012. Snohomish County allocated this figure to cities, towns, tribes and unincorporated areas through a joint reconciliation process with all cities and tribes. Snohomish County Tomorrow (SCT), a collaborative organization comprised of the county and cities, oversaw this process. Adjustments to population and employment targets are made annually by SCT concurrent with the release of the *Growth Monitoring Report.* To ensure consistency between this plan and the County's comprehensive plan, this plan is based on the population growth expected in the 13 years (1999-2012) remaining in the 20-year planning period.

Demographic trends in this chapter focus on changes between the 1980 census and the 1990 census, and include age distribution, household size and employment data. This chapter also describes the projected employment growth and the associated commercial and industrial land use needs.

B. Population Growth and General Characteristics

In 1992, an estimated 14,284 persons lived within the UGA, including about 4,240 residing within the City of Lake Stevens and 10,044 residing throughout the unincorporated UGA lands to the south and west of the city. In 1992, the Lake Stevens UGA population was projected in the General Policy Plan to increase at a slower annual rate than it did in the 1980s, but continue to grow at a faster pace than Snohomish County as a whole. The UGA was anticipated to grow to a total of 26,090 persons by 2012, including 8,771 within the current city boundaries and 17,319 within the current unincorporated UGA.

Between 1990 and 1997, the Lake Stevens Urban Growth Area grew at a rate of approximately 6.2%, a significantly higher rate than was projected in 1992. By 1997, the urban growth area had a population of approximately 21,000, and had achieved more than half of its 20-year projected population. Due to this higher than expected growth, the population forecast for the UGA was revised to 30,882. The number of residential housing permits issued since 1983 became the basis for calculating revised 2012 population targets. This plan is based on a 13-year UGA growth forecast of 7,882 additional persons, and an annual average population

growth rate of 2.3% per year between 1999 and 2012[1]. The majority of growth is due to migration from outside of Lake Stevens, similar to the County as a whole.

Table 2-1 illustrates the revised population forecast. Countywide Planning Policy UG-2.b establishes a population target reconciliation process which recognizes the potential need for review and adjustment of population targets based on the outcome of Phase II urban growth area plans. CPP Policy UG 2.b assumes that a revised forecast will be reconciled with the countywide forecasts through SCT after a plan is adopted.

Table 2-1. Projected Population Growth, 1999-2012

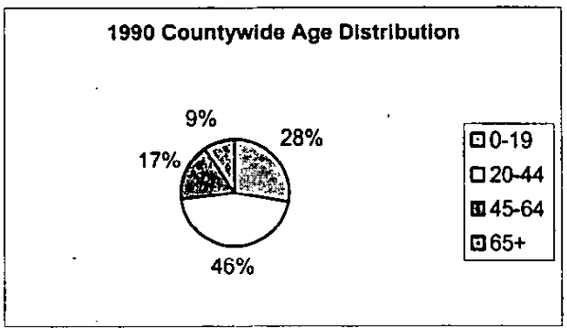
	Total Population				Difference	Annual Average Growth Rate	
	1992	1997	1999	2012	1999-2012	1980-1990	1999-2012
Lake Stevens UGA	14,284	20,826	23,060	30,882	7,822	3.9%	2.3%
City	4,240	5,252	6,062	8,771	2,709		2.9%
Unincorporated	10,044	15,574	16,998	22,111	5,113		2.0%
Snohomish Co	494,300	551,200	583,300	714,244	130,944	3.2%	1.6%

Source: Figures for 1999-2012 from "Snohomish County Tomorrow 1999 Growth Monitoring Report," 1999, adjusted to reflect a reduced UGA size. City population is shown for city boundaries as of 2/28/93. Figures for 1992 from Snohomish County Tomorrow/Snohomish County Council, "Reconciled 20-Year Population Growth Targets," in Snohomish Countywide Planning Policies, Appendix B, December 1995. Figures for 1980-1990 calculated from Bureau of Census, STF3, Table 1; 1980: STF3, P1, 1990.

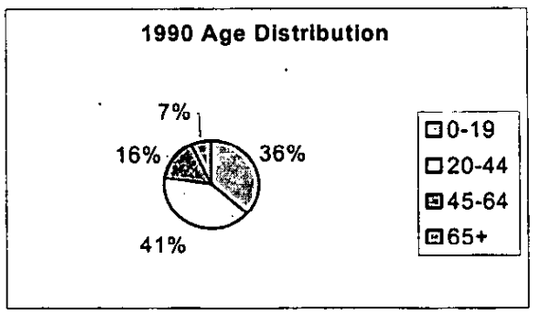
There is no significant variation between the size of age groups in Lake Stevens census tracts and in the County as a whole. Based on the 1990 census, the Lake Stevens census tracts have a slightly higher proportion of the population in the 0-19 age group. In the next twenty years it is expected that the proportion of the population over the age of 45 will increase substantially due to the aging of those within the 20-44 age group (the largest segment of the population). Facilities, housing and services to serve this segment of the population will be needed.

Figure 2-1, 2-2. Age Distribution, County and Lake Stevens 1990
(Source: 1990 Census, STF3, Table 1.)

Snohomish County



Lake Stevens Census Tracts



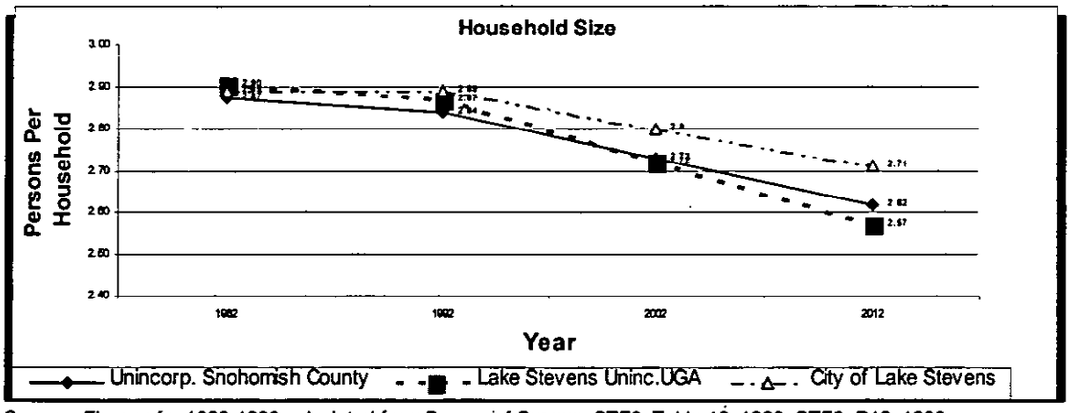
[1] The figures for 1999 reflect a reduced Urban Growth Boundary.

C. Household Characteristics

In 1990, more than 65% of all households in both Snohomish County and the Lake Stevens census tracts were comprised of two to four persons, 12% were 4+ person households, and 16% were single person households. Two to four person households are expected to remain the most prevalent household size in the future, with average household sizes at the lower end of the range.

In general, household size has been decreasing in Snohomish County and the Lake Stevens census tracts. Future household size within the Lake Stevens UGA is expected to continue to decline to 2.57 persons per household, and is projected to be slightly less than the countywide average. Figure 2-3 illustrates historic and projected household size in the Lake Stevens UGA. The average household size within the City of Lake Stevens has historically been higher than in the unincorporated UGA and the County in general.

Figure 2-3 HISTORICAL AND PROJECTED HOUSEHOLD SIZE



Source: Figures for 1980-1990 calculated from Bureau of Census, STF3, Table 18; 1980; STF3, P19, 1990.

Based on the household size forecast specified in Figure 2-3, and the population growth projections in Table 2-1, it is expected that the number of households within the Lake Stevens UGA will increase by nearly 50% over the next 12 years, and will have doubled between 1992 and 2012. As shown in Table 2-2 below, the number of households in the currently unincorporated areas of the UGA will grow by approximately 2,646, or 44 percent.

The demographic trends which significantly contribute to the decline in household size and the increase in the number of households are expected to continue, resulting in a greater range of household sizes than in the past. This plan provides adequate land for the variety of housing types and sizes needed to ensure that there are housing choices for all households.

TABLE 2-2 PROJECTED HOUSEHOLD GROWTH, LAKE STEVENS UGA

				1999-2012 Growth	
	1992	1999	2012	New Households	% Change
Lake Stevens UGA					
City	1,585	N/A	2,066	N/A	N/A
Unincorporated UGA	3,494	5,961	8,607	2,646	44%
Total	5,079	N/A	10,673	N/A	N/A

Source: Figures from City of Lake Stevens Comprehensive Plan, June 19, 1994, p.2.27, Tables 2.4 & 2.5 and Snohomish County Tomorrow/Snohomish County Council, "Reconciled 20-Year Population Growth Targets," in Snohomish County Planning Policies, Appendix B, December 1995. 1999 Figures from the Snohomish County Planning and Development Services 1999 Growth Monitoring Report, and OFM.

According to employment estimates prepared by the Puget Sound Regional Council (PSRC), in 1990 there were approximately 2,858 jobs located within the Lake Stevens UGA. Nearlyone in three of those jobs in 1990 were in the typically higher paying manufacturing sector, at about the same proportion as the county as a whole.

PSRC also forecast countywide employment growth for the period from 1992 to 2012. In a process similar to the population allocation process, employment was allocated to Urban Growth Areas through the Snohomish County Tomorrow (SCT) joint reconciliation process. The employment target for the Lake Stevens UGA was adopted as Appendix B, an amendment to the Countywide Planning Policies for Snohomish County on December 20, 1995.

Snohomish County Tomorrow and the PSRC allocated 3,594 additional jobs (excluding resource and construction based employment) in five categories to the Lake Stevens UGA Forty-two percent, or 1,521 jobs, were allocated to the City of Lake Stevens and 58%, 2,073 jobs, were allocated to the unincorporated portions of the UGA. Table 2-3 illustrates the employment forecast for 1992-2012.

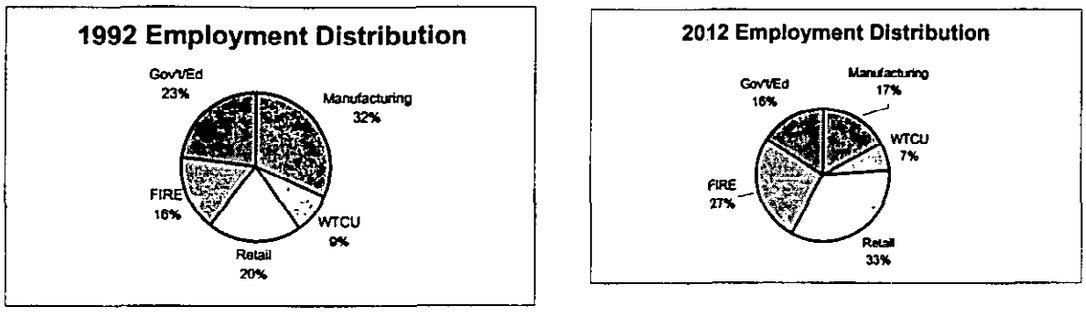
Table: 2-3 Lake Stevens UGA Employment, 1992-2012

Category	1992	1997	2012
Manufacturing	904	765	1094
WTCU[1]	248	64	444
Retail	580	976	2181
FIRES[2]	469	729	1710
Gov't/Ed	657	942	1023
Total	2858	3476	6452

[1] Wholesale, Transportation, Communication and Utilities
[2] Finance, Insurance, Real Estate and Services

Between 1997 and 2012, increases in employment of all sectors of the local economy are projected. The largest gains are projected to be in the Retail and FIRES (Finance, Insurance, Real Estate, and Services) categories of the local economy. By the year 2012, these sectors will replace the Manufacturing and Gov't/Ed sectors as the largest sources of employment. In 1997, retail was already in the lead.

Figure 2-4, 2-5. Lake Stevens UGA Employment Distribution, 1992-2012



This projection reflects the transition from a manufacturing based economy to a service based economy that is occurring at the local, state and national levels. Growth in Manufacturing and Governmental/education employment is dependent on regional and national factors and trends, and is not generally dependent on the local population. Retail and FIRES sectors provide services to the local population. As population increases in an area, the demand for these services also increases.

E. Future Land Use Needs for Employment

The General Policy Plan (GPP) Policy LU 1.A.2 requires urban growth areas to contain a sufficient amount of land for employment growth. An additional 41 acres of vacant industrial land and 85 acres of vacant commercial land will be needed between 1999 and 2012 within the UGA[2]. The Plan designates 154 acres of vacant land for industrial uses, 124 acres of vacant land for commercial uses in existing commercial centers. The designated land more than adequately meets the land use targets for the projected employment growth. Reference Chapter 3 for related information and the descriptions of the distribution and location of industrial and commercial land.

[2] The employment land need in the Lake Stevens UGA was calculated using the ELCA (Employment Land Use Capacity Analysis) model. ELCA calculates the quantity of gross vacant commercial and industrial land required to meet the forecasted employment growth for each employment category.

Chapter 3

Land Use

A. Introduction

This chapter provides the land use element for the Lake Stevens UGA Plan. It provides land use definitions and descriptions of specific geographic locations of land uses to achieve the community's vision. It defines where residential, commercial and industrial land uses should be located. It establishes policies consistent with community vision and countywide goals to guide growth and development throughout the unincorporated part of the UGA.

This chapter strives to achieve the vision and make the goals a reality. The proposed land use for this UGA is shown on Figure 3-1. The proposed zoning is shown on Figure 3-2. The discussion starts with a description of the planning area followed by an overview of the land use plan.

B. Plan Elements

A major purpose of this plan is to enhance the community's vision and retain the important characteristics of the area while accommodating the forecasted population and employment growth. By the year 2012, an estimated 16,588 people and 3,594 jobs will be added in this UGA (since 1992).

To accommodate that growth, land needs to be earmarked to provide a place both for people to live and for new businesses. The plan breaks down the different types of uses expected and then "budgets" how much land should be designated for these uses. For instance, the plan uses three different housing categories -- Urban Low Density (4-6 dwelling units per acre or DU/Ac), Urban Medium Density (6-12 DU/Ac) and Urban High Density (12-24 DU/Ac). According to Planning Division estimates, by the year 2012, 290 vacant acres of Urban Low Density, 216 vacant acres of Urban Medium Density and 134 vacant acres of Urban High Density will be needed to provide housing and land sufficient to accommodate population. Chapter 4 provides a detailed discussion of residential land needs.

The plan describes two land use designations for employment growth: Urban Commercial and Urban Industrial. According to estimates, by the year 2012, 85 additional acres of commercial land will be needed to accommodate retail and office growth. Forty-one additional acres of industrial land also would be needed.

1. Natural Features and Land Uses Shaping the Plan

a. Critical Areas

In addition to the adoption of comprehensive plans, the Growth Management Act requires jurisdictions to adopt regulations to protect critical areas. The Lake Stevens UGA Plan recognizes the Critical Areas Regulations (CAR) (SCC 32.10) adopted by Snohomish County for protecting critical areas in unincorporated areas. The City of Lake Stevens has also adopted regulations to protect critical areas within incorporated areas. CAR establishes standards such as buffers and setbacks for protection of critical areas.

This section gives an overview of critical areas in the Lake Stevens UGA. The location of critical areas has been considered in determining the appropriate level of density and intensity of new uses. Many of these critical areas within the UGA trace their origin to the Pleistocene glacial terrace that rises from the floodplain of the Snohomish River and continues eastward toward the Pilchuck River Valley. The UGA contains geologic hazards, steep slopes, wetlands, wildlife and habitat, stream corridors, fish habitat, and floodplains.

The following discussion includes a definition of the critical area, its geographic location within the UGA, and impacts or benefits to land use. This section is not a substitute for parcel specific delineation of critical areas as required by CAR.

b. Geologic Hazards

A combination of soils and sloping land areas in the UGA creates several kinds of geologic hazards. Specific geologic hazards, such as landslide, erosion and seismic hazards, impose serious limitations on land development. Within the Lake Stevens area, many soil layers rest above a layer of clay. On hillsides, as water percolates down through the soil, the layer of clay creates an impervious barrier for the water. As the soil becomes saturated with water, the possibility of a landslide is created. These could occur quite suddenly, as land deposits descend downslope to the toe of the slope or hill. If either the top or toe of the slope is developed with roads, houses, or buildings, damage can be extensive and costly. Additionally, high slide areas can inflate the cost of future road projects. To avoid these situations, it is imperative that development be limited near geologic hazards.

Table 3-1, below, lists notable locations and types of geologic hazards. Development should be limited in order to preserve the health, safety and welfare of area residents.

Table 3-1. Notable Geologic Hazards in the Lake Stevens UGA

Area	Type of Hazard
West of Stitch Lake	Landslide
South of Chapel Road, west of Davies Road	Landslide
Along Catherine Creek	Seismic
East of Callow Road, south toward the lake	Landslide
Weiser and Hulbert Creeks	Landslide

c. Wetlands

Wetlands are important in reducing erosion, alleviating or moderating flooding, providing water filtration and providing wildlife habitat. Wetlands provide storm water storage that keeps water from destroying the landscape. They also reduce flooding by detaining surface water deposited during high precipitation periods and releasing water slowly into the natural drainage system. They provide filtration of ground and surface water, lessening the potential for pollution to Lake Stevens as well as providing habitat for wildlife, plants and fish. In addition, wetlands provide passive recreation opportunities.

Snohomish County and City regulations protect wetlands. CAR establishes setbacks from development to protect four different categories of wetlands. The distance of the setback depends on the category of wetland. Notable areas include:

- Northeast and southeast of the downtown commercial center.
- North of Stitch Lake, north of Lundeen Parkway between Lake Drive and Callow Road.
- Along Weiser and Hulbert Creeks.

d. Wildlife

The greater Lake Stevens area supports several species of fish, birds, amphibians, reptiles, and insects. America's national symbol, the bald eagle, has a couple of nest sites within the UGA. The Federal Endangered Species Act (ESA) classifies Chinook Salmon, Bull Trout and Bald Eagles as a "threatened" species. Other sensitive species known to exist in the UGA include: Western Pond Turtle, Common Loon, Great Blue Heron, Kokanee beaver.

Recent steps taken to preserve wildlife and their critical habitat include the purchase of Eagle Heights Park, located off Lundeen Parkway, the site of a bald eagle nest.

Snohomish County and the City regulate development near wildlife habitat areas through the *CAR* and *Environmentally Sensitive Area Regulations*. Regulations require a habitat management plan for development near habitat areas containing federally listed species under CAR.

e. Fish Habitat

On May 22, 1999, Puget Sound Chinook Salmon were listed as a threatened species under the Endangered Species Act (ESA). On December 1, 1999, Bull Trout were also listed as a threatened species. As a result, the County initiated a range of actions geared at protecting these resources. Those actions included adoption of administrative rules for how the CAR would be administered to protect these resources to the greatest extent possible. The goal of these actions is to protect existing habitat and to restore damaged or missing habitat. In order to avoid damage to the habitat of these critical resources, all development on lands having a primary association with these species must submit a Habitat Management Plan. That plan must maintain appropriate setbacks from streams and show how the habitat will be protected. The Lake Stevens UGA has many areas designated as Areas of Primary Association for Chinook Salmon or Bull Trout. Designation of land uses takes these areas into account. Development in these areas will need to meet the policies, regulations and administrative rules designed to protect the threatened species.

f. Stream Corridors

CAR establishes buffers and setbacks along five types of stream corridors. The setback distance is dependent on the stream type and the presence of endangered or threatened species in a stream. The County's regulations and administrative rules determine buffer size, in that case. Development is also required to meet any rules promulgated by Federal agencies under the ESA.

Within the UGA, large stream corridors include Weiser, Hulbert and Catherine Creeks. Smaller stream corridors include: Lundeen Creek, Stevens Creek, Little Pilchuck, Mill Creek, Kokanee Creek, Burri Creek, Centennial Creek, and Mosher Creek. All stream corridors play an integral role in providing fish and wildlife habitat, recreation and drainage.

g. Floodplains and Urban Flooding

Floodplains are significant natural features that must be considered in any new development. Title 27 of the Snohomish County Code regulates development in floodplains. Similar regulations exist within the City of Lake Stevens. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) identify only one regulated 100-year floodplain[1] within the UGA, Catherine Creek, and its floodplain. However, major flooding has occurred elsewhere in the UGA at least partially as a result of urbanization. Development in floodplains must be carefully sited and built to protect the health, safety and welfare of the public.

In recent years, the UGA has experienced a high amount of localized urban flooding. Much of poor on-site detention resulted in severe flooding of the northern portion of downtown in 1997. Within the Sunnyside area, increased impervious surfaces, loss of vegetation and limited on-site detention at the top of the hill are impacting downslope residents. Chapter 6 discusses surface water issues, including steps being taken to curtail these problems.

h. Existing Pattern of Land Uses

This planning process included an assessment of the characteristics of the area and the historical factors affecting its development. Two significant physical features of the UGA affecting the historical pattern of development are Lake Stevens and Highway 9.

Lake Stevens is at the center of the planning area and the core of this UGA. As the City plan indicates, the lake "provides a social, recreational, and aesthetic..."raison d'être"[2] for the City's existence, as well as providing a major, regional habitat for indigenous fauna and flora." The Lake is also a regional recreational resource, attracting people from beyond the immediate Lake Stevens area.

Existing land use was also assessed. Single family housing comprises the majority of development within the UGA. Only five percent of residential development is multiple family. Multiple family residential complexes are located south and east of Frontier Village and around the City Center. Large complexes are also located north of Lundeen Park and at 5th Place and 99th Avenue SE. There are three key commercial areas: Frontier Village, the Tom Thumb center and the City of Lake Stevens downtown. There is only one large industrial area, the Agilent Technologies campus (formerly Hewlett Packard), although there is a cluster of smaller industrial uses along Old Hartford Road.

2. *Residential Land Use Designations: Low, Medium and High*

a. Urban Low Density Residential -- ULDR

The GPP generally describes areas that are appropriate for ULDR designation as those where primarily detached housing can locate on larger lots. Residential development in ULDR areas can occur at densities of 4-6 DU/Ac. According to the GPP, ULDR is a necessary component of an efficient land use pattern by contributing to efficient land utilization and broadening the

[1] The 100-year floodplain is defined as land adjoining a river, stream, watercourse, ocean, bay or lake having a one percent chance of being inundated in any given year with flood waters resulting from the overflow of inland or tidal waters and/or the unusual and rapid accumulation of surface runoff from any source.

[2] City of Lake Stevens Comprehensive Plan, Volume I, June, 1994, Description of the Planning Area, pg. 2.11

variety of housing types within neighborhoods. ULDR development, as mitigated, should not reduce existing levels of service or increase impact on roads by more than one level. It should also develop concurrently with other necessary urban services. In this UGA plan, ULDR development may locate throughout the UGA as long as it is carefully sited, well designed and sensitively integrated into existing communities. It can also locate where infrastructure is in place or planned. In this UGA many areas are suitable for ULDR designation.

Generally, this plan designates ULDR for areas in the Lake Stevens plan that meet one or more of the following criteria:

1. They have few environmental hazards and sensitive areas which cannot be mitigated through careful site design and mitigation;
2. Parcels are already cleared of forest and are underdeveloped, or;
3. They are currently or planned to be served by an adequate road system.

The ULDR designation is further broken down into two limited designations: Urban Low Density Residential-4 (4 Dwelling Units/Acre, or DU/Ac) and Urban Low Density Residential-6 (6 DU/Ac). All single family residential areas are designated for one of these two categories. Some parts of the UGA are not suited for residential development above four dwelling units per acre. Land is constrained in these locations due to critical areas, shoreline management designations and narrow road rights-of-way. This plan establishes these separate designations to offer more certainty as to where densities of 4 and 6 DU/Ac will occur. Zoning in each designation is limited permanently to densities matching the land use designation (R-9,600 for ULDR-4 and R-7,200 for ULDR-6). Listed below is a detailed summary of each designation, including location criteria, implementing zoning and a summary of each area designated ULDR-4 and ULDR-6.

1) *Urban Low Density Residential-4 (ULDR-4)*

The Urban Low Density Residential (4 DU/Ac) designation provides for increased protection of critical areas, shoreline management areas and roads with limited expansion and safety concerns.

Generally, areas are designated ULDR-4 because they meet one or more of the following criteria: 1) they have a significant amount of known and mapped critical areas, 2) they are located near or within shoreline management areas, or 3) they are located along roads which have limited expansion potential because of critical areas or topographical limitations. In their current state, they present concerns for pedestrian safety.

Zoning for areas designated ULDR-4 on the Land Use Map is R-9,600, with a limited number of properties zoned R-20,000. In addition, Planned Residential Developments would not be allowed in these areas, as shown in Policy 1, below:

> ***Policy 1:*** In order to ensure provision of adequate capital facilities and services, Planned Residential Developments (PRD) shall not be allowed in areas designated ULDR-4. Criteria for designating areas ULDR-4 with no PRDs include:
>
> 1a. Areas with significant environmental constraints.
> 1b. Areas that have limited potential for expanding necessary capital facilities because of physical constraints to expansion (such as adjacent to water bodies, wetlands or steep slopes).

Areas in the plan with ULDR-4 designation are:

- Sunnyside Hill
- Lake 205 and southeast of the City
- Stitch Lake
- Lundeen and Stevens Creek drainage basins
- East Lake Stevens Road
- Davies Road
- Vernon Road (east of SR 9)

Implementing zoning is hereby limited permanently to R-9600 and in some areas, where noted, R-20,000 zone. The R-20,000 zone should be applied only to those areas that cannot meet the density of 4 DU/Ac due to environmental constraints.

Please see the subsections below for a more detailed discussion:

a) *Sunnyside Hill*

The Sunnyside Hill area is located at the west edge of the UGA. It generally includes all of the area that drains west towards Ebey Slough. (Much of the Sunnyside area is outside of the UGA, thus protecting critical areas and minimizing additional downstream drainage impacts.) The area within the UGA provides for logical extension of services and reflects logical boundaries for the UGA. (For example, SR-204 is a boundary for much of the western edge of the UGA because of its visibility and serves as a barrier to efficient extension of some services.) Development in these areas is constrained by geologic hazards, localized flooding and surface water problems, inadequate sewer service, deteriorated road conditions and poor traffic circulation.

The ULDR-4 designation and R-9600 zoning strategy helps achieve the most efficient and practical utilization of land and infrastructure in this part of the UGA. At the same time, it protects the critical areas that provide drainage, recreation and open space. In these places, flexible development techniques, such as lot size averaging, is appropriate. (Exceptions to the ULDR-4 designation are areas northwest and southwest of Frontier Village, which are designated ULDR-6 and discussed below).

b) *Lake 205 and southeast of the City*

The plan designates the areas around Lake 205 (between 108th Avenue SE and 112th Drive SE extended approximately) and southeast of the City as ULDR-4. R-20,000 zoning, which is lower density than 4 DU/Ac, is proposed for the area currently zoned R-20,000 and SA-1 and adjacent to the Lake because it is surrounded by Category I wetlands that have been relatively unaffected by urbanization. Also, Centennial Creek feeds the lake from the west, harbors salmon as well as Bull Trout, and is rich in wildlife. While this lake and wetland may potentially be affected by ESA listings, this area is in the UGA to provide for logical extension of services and to provide a regular UGA boundary. This approach is consistent with GPP goals NE 1, 4, and Policy 4.A.1, which call for protection of the natural environment, balanced with planning for growth.

The area southeast of the City (bounded by the UGA boundary on the east and south and the Lake Stevens City limits on the west and north) is designated Rural in the Shoreline Management Master Program. This Master Program designation reflects the level of existing development and the previous UGA plan's designation of Residential Estate, 1-2 DU/Ac.

The designation and zoning for both of these areas is supported by a preliminary study recommending a more restrictive shoreline designation for the Lake 205 area, and the presence of critical areas[1]. In addition, lower densities in these two areas will not have an impact on the ability to accommodate population growth. Lastly, in the Woodway decision the Hearings Board held that counties may zone land within a UGA for less than urban densities.[2]

Two policies, below, will ensure that development is consistent with the above conditions.

> ***Policy 2:*** Because of flooding, wetland conditions, and the presence of threatened species, the Lake 205 and southeast of City areas are zoned R-20,000. Individual sites that meet the following conditions and can demonstrate that they are capable of achieving urban densities may be approved for R-9,600 zoning if:
>
> 2a. The applicant can demonstrate that adequate urban services, including sewer, water, roads and power, can be supplied to the site.
>
> 2b. The applicant can demonstrate that critical areas and threatened species will be protected and will not rule out feasible placement of dwelling units and services on the site.
>
> 2c. The proposed zoning is consistent with densities allowed in any applicable Shoreline Management Master Program designation.

Development of the area southeast of the City at current plan or zoned densities would be inconsistent with the *Shoreline Management Master Program* designation of Rural. Therefore, the following policy is proposed for adoption as part of the GPP:

> ***Policy 3:*** Where *Shoreline Management Master Program* designations require lower densities than current zoning in the Lake Stevens UGA, development approval shall not be granted at zoned densities until the Master Program designation and the zoning are revised to be consistent with each other.

c) *Stitch Lake*

The area around Stitch Lake has physical limitations including seismic hazards, wetlands and potential landslide hazards that must be considered as development is proposed. This area surrounds Stitch Lake and extends north on either side of Lake Stevens to the section line, approximately, as well as south to 16th Street, approximately. Therefore, the plan designates this area as ULDR-4 with R-9600 zoning.

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[1] See Snohomish County Planning Department, *Lake Designation Project, Shoreline Environment Designation Recommendations*, July 1994. Also, see the Lake Stevens UGA Draft and Final Supplemental Environmental Impact Statements.

[2] "The Board affirms and restates its holding in Litowitz: When critical areas are large in scope, with a high rank order value and are complex in structure and function, a city may use its future land use map designations to afford a higher level of critical areas protection than is available through its regulations to protect critical areas. In these exceptional circumstances, the resulting residential density will be deemed an appropriate urban density.

d) *Lundeen & Stevens Creeks*

In the area generally west of Callow Road and east of Soper Hill Road there are localized drainage and flooding problems. The presence of Lundeen and Stevens Creeks contributes to wetlands and high landslide hazards along Lundeen Parkway and moderate landslide hazards along Callow Road. This area collects and drains runoff into Lake Stevens. It is, historically, an area of special concern. In addition, both creeks are home to Bull Trout. Therefore, the plan designates this area as ULDR-4 with R-9600 zoning.

e) East Lake Stevens Road

East Lake Stevens Road is classified as a collector and serves the area between the City of Lake Stevens and the Tom Thumb area. Past development trends have created a road with little or no shoulder, making pedestrian movement difficult. In addition, with limited opportunities for rights-of-way-acquisition, upgrades to urban standards could prove costly. For these reasons a lower density residential pattern is preferred. The area extends northward along East Lake Stevens Road from 4th Street SE to the City of Lake Stevens. Therefore, the plan designates this area as ULDR-4 with R-9600 zoning.

f) Davies Road

Davies Road presents a similar situation to East Lake Stevens Road, although there has been less development along the road. The portion of the road discussed here is located along the west side of Lake Stevens, east and running south of the Frontier Village area. The road is also classified as a collector and, like East Lake Stevens, has a narrow right-of-way. The area extends north along Davies Road from 4th Street SE to the intersection with Springbrook Road. Therefore, the plan designates this area as ULDR-4 with R-9600 zoning.

g) *Vernon Road/Springbrook (East of SR 9)*

The Vernon Road (east of SR 9) and Springbrook Road area is located along the west side of Lake Stevens running north and east of the Frontier Village area. The roads in this area have similar circumstances to Davies and E. Lake Stevens Roads. In addition, critical areas limit development. Therefore, the plan designates this area as ULDR-4 with R-9600 zoning. The exception to ULDR-4 designation is an area designated Urban Commercial with Planned Community Business zoning and UMDR (6-12 DU/Ac) with LDMR zoning along Vernon Road.

2) *Urban Low Density Residential-6 (ULDR-6)*

Areas designated ULDR (6 DU/Ac) play a role in achieving an efficient land use pattern of single family residential housing: ULDR-6 contributes to efficient land utilization and broadens the variety of housing types within neighborhoods. In this plan, ULDR (6 DU/Ac) development may locate in several areas as long as it is carefully sited, well designed and sensitively integrated into existing communities. It can also locate where infrastructure is in place or planned.

Areas designated ULDR (6 DU/Ac) on the Land Use Map are zoned R-7200. Implementing zoning is hereby restricted to the R-7200 zone.

Areas in the plan with the ULDR (6 DU/Ac) designation are:

- Frontier Village

- Cedar Road
- Purple Pennant
- SE UGA
- Cavalero Hill

Please see the subsections below for detailed analysis.

a) Frontier Village

Two areas in the vicinity of Frontier Village are designated ULDR (6 DU/Ac). One is northwest along Frontier Circle. This area is mostly built out or is in the permitting process with single family and some duplexes proposed. The second area is southeast of Frontier Village, to the west of Davies Road extending southward to 4th Street SE. Most of the development in this area is on lot sizes of one to two acres. Infrastructure exists or is planned in both areas. These two areas are also near the Frontier Village Activity Center. There are critical areas in both locations, but not to the extent to warrant a lower density.

b) Cedar Road

This area in the vicinity of Cedar Road runs south from Lakeview Drive to past 28th Street NE. Scattered single family development on one-half to one-acre lots marks the area, with some smaller lot sizes. While there are some critical areas that must be protected, this area has existing or planned infrastructure improvements necessary to accommodate higher single family densities.

c) Purple Pennant

The Purple Pennant area is a large area running along the eastern UGA boundary from the Lake Stevens City limits to Machias Cut-off. This area is relatively undeveloped with lot sizes ranging from ½ acre to 20 acres. While limited infrastructure exists currently and pump stations are necessary to provide sewer, there are relatively few critical areas.

d) SE UGA

SE UGA covers an area to the east of Tom Thumb along 20th Street SE. Single family development on one-half acre lots and vacant lots of one-half to ten acres characterize this area. Infrastructure is planned for the area, although there are currently some needs. Site design measures can protect the few critical areas.

e) *Cavalero Hill*

The Cavalero Hill neighborhood is located between SR 204 and the UGA's southern boundary (west of SR-9). This area is characterized by a range of lot sizes, from PRD 9,600 plats to 20-acre parcels. Most of the area is without critical areas. (There are some scattered wetlands and the western portion of the neighborhood has steep slopes with consequent slope instability and surface water drainage problems.) While there is water and sewer in parts of the area, most has yet to be supplied by urban levels of services. The area is planned for 6 DU/Ac because urban services will be extended here and because of the generally low level of critical areas. The area is being placed in a Development Phasing Overlay to defer development at full urban densities until services are extended.

b. Urban Medium Density Residential -- UMDR

The GPP describes, in policies 2.A.2, 2.A.3 and 2.A.4, the types of areas that are appropriate for UMDR designation and how these areas should relate to other areas. With this designation, residential development can occur at densities of 6-12 DU/Ac because necessary infrastructure and services are available. It should be located, where possible, within walking distance of transit stations, medical facilities, urban centers, parks and recreational amenities.

UMDR is a necessary part of a land use pattern within a UGA. It is designed to provide higher densities and mixed density housing around and within centers and along major transportation corridors. It encourages infill and intensification of areas. It provides areas where a combination of detached homes on small lots, townhouses, duplexes, triplexes and apartments in low density, multi-family developments can be located. It also broadens the variety of housing types within both traditional single family and multi-family neighborhoods.

The GPP envisions development of Urban Centers, compact and centralized employment, shopping and/or activity areas linked to each other by high capacity public or regular bus transit. Achieved densities of 8 to 10 dwellings per acre are a key component of urban centers. UMDR is integral to enhancing Frontier Village as an Urban Activity Center in this UGA. See additional discussion toward the end of this chapter.

Generally, areas designated UMDR are so designated because they are currently designated UMDR in the GPP.

UMDR areas include R-7,200, LDMR and T zones. Throughout the UGA, R-7,200 zoning is the implementing zoning for lands with approved plats of 6 DU/Ac density. Vacant land with mixed parcel sizes, is zoned Townhouse (9 DU/Ac). Land adjacent to a Center and generally in vacant, large lots is zoned for Low Density Multiple Residential (12 DU/Ac) zoning.

c. Urban High Density Residential -- UHDR

The GPP calls for UHDR designated land to have necessary services and be located near transit, transportation corridors, parks/recreational amenities and commercial centers. Residential development can occur at densities of 12 to 24 DU/Ac. UHDR land is a key

component of a balanced plan. It helps to achieve fundamental GMA, *Countywide Planning Policies* and GPP goals to provide sufficient land for all housing needs and a variety of housing types. It works towards achieving GPP visions for connected, identifiable neighborhoods in UGAs. And, as with UMDR, the UHDR densities are a key component of the Urban Centers envisioned in the GPP, achieving a mix of housing opportunities around and within centers. This designation is also an integral part of plans to enhance Frontier Village as an Activity Center. Several factors are considered when locating UHDR land. These include location in and near centers and along transportation corridors, access to transit routes, and proximity to transit stations, medical facilities, urban centers, and recreational amenities. Proximity to major roads and transit systems provide residents better access to the transportation system. Transit systems can provide better service to higher density residential areas because a greater concentration of riders is within easy walking distance of stops.

Zoning for UHDR areas is typically Low Density Multiple Residential (LDMR -- 12 DU/Ac) and Multiple Residential (MR -- 12-24 DU/Ac). MR is applied to large parcels that are vacant or

have potential for redevelopment and are near a center. LDMR is applied to smaller parcels and blocks of parcels not adjacent to a center.

3. Commercial Land Use Designation

The "centers concept" was first introduced in *Vision 2020*, and later affirmed in the *Countywide Planning Policies* (CPP) and the GPP. The GPP discusses Activity Centers, Community Commercial Centers, and Neighborhood Commercial Centers and directs the County to funnel urban densities towards centers. The Lake Stevens UGA plan takes the next step in the planning process by detailing locations and policies for these centers. In this plan, all commercial areas are part of a center.

An adequate supply of Urban Commercial land is needed to ensure there are enough office and retail services available for the adopted 20-year forecast population. The commercial areas would also be the source of some of the jobs projected for the UGA by the year 2012. A total of 319 acres are designated commercial in the incorporated and unincorporated UGA.

This commercial land is divided among three centers. The first, Frontier Village, is an Activity Center. The Tom Thumb area is a Community Commercial Center. A third center in the UGA is downtown in the City of Lake Stevens. These areas were designated commercial because there are existing retail and service uses there as well as existing commercial zoning.

An overarching goal of the Lake Stevens UGA plan is to ensure that quality neighborhoods are developed. Strong neighborhoods need focal points or nodes. The Cavalero Hill area lacks focal points the traditional define neighborhoods. With addition of future schools and parks (focal points), a small-scale neighborhood commercial center(s) serving the immediate neighborhoods provides an opportunity to create quality neighborhoods.

In considering zoning, one goal is to intensify the retail/employment uses. A second goal is to meet the community's objectives for enhancing the design and siting of new uses. For these reasons, Planned Community Business (PCB) zoning is applied to most of the commercially-designated areas. The intent of the PCB zone is to discourage piecemeal and "strip" development by requiring unified planning and development of a site through performance criteria. Neighborhood Business (NB) zoning is applied to two small areas. One area is at 10th Street and SR 204. The other is on Lundeen Parkway.

4. Urban Industrial (UI) (With Business Park Zoning) Land Use Designation

The GPP describes, in general terms, the types of areas that are appropriate for Urban Industrial designation and how these areas should relate to other areas. Business park development in UI areas should occur as expansion, revitalization, redevelopment and intensification of existing areas. New UI areas should be designated only when there is direct access to existing and proposed transportation facilities and where there are adequately planned or existing roads, utilities and services.

The location of these areas should also reflect the community's vision. Encouraging office park or "clean" indoor industry reflects the community's goals to create a better jobs/housing balance through encouraging businesses that provide high paying, "family-wage" type jobs and create a better tax base for the community.

Generally, areas zoned Business Park in this alternative are designated Industrial currently under the GPP and/or have BP zoning. All areas designated "Urban Industrial" in the plan are zoned "Business Park."

An adequate supply of Business Park zoning is needed to assure there are enough acres available for the needed jobs in 2012. As a result, a total of 322 acres are designated Business Park in the incorporated and unincorporated UGA.

Two areas are designated Business Park in the unincorporated UGA. One area, Agilent Technologies, owns a large site and is operating on a portion of it. The other area has been designated Industrial in previous plans and is adjacent to land in the City that is currently being used as industrial.

5. Public Use Land Use Designation

The GPP describes, in general terms, the types of areas that are appropriate for designation as public use. Those areas are owned by the public and used for public facilities. This designation shows existing or planned public facilities and applies to developed public uses and/or facilities including parks, schools and fire stations. Public services have important environmental, health, safety, and aesthetic considerations that are associated with their location and provision. Properties designated Public Use retain their existing, underlying zoning.

Designation of public facilities is determined on a case by case basis depending on the specific need for that facility and its size. Consequently, only existing public uses and land already purchased for use as a public facility are designated Public Use in the plan. As new sites are committed to public use, this plan should be revised. Public Use sites within the UGA include:

- Lundeen, Wyatt, Eagle Heights and Sunset Parks.
- Highline, Sunnycrest, Hillcrest, Skyline, and Glenwood Elementary Schools.
- Prove Alternative School.
- Lake Stevens School District High and Middle Schools.
- Lake Stevens Fire District No. 8 Fire Station.
- Land owned by the Lake Stevens School district for schools.

In addition to these specific facilities, utilities are located throughout the UGA. These utilities, such as power transmission facilities and phone facilities, are also public uses although they are not designated as such on the plan map. These uses are usually designated similar to surrounding land uses. Zoning is consistent with the land use category. The uses are permitted typically with a special permit in that underlying zone. In that way, public facilities can be located in the neighborhoods that they serve and placed there when they are needed.

C. Areas of Interest

1. Frontier Village

Frontier Village (at the intersection of SR 9 and SR 204) serves as the sub-regional retail center for the UGA and surrounding rural areas. It is designated an Activity Center in the GPP. When viewed in conjunction with the Agilent Technologies site, one-half mile to the north, Frontier Village serves as the retail and employment hub for the UGA and surrounding area.

The function of an Activity Center, according to the GPP, is to provide for "a mix of employment, general and specialized commercial uses serving both the local community and visitors. It should include high density residential uses, and civic and public buildings."

Retail uses dominate this commercial area. In 1995, the GPP designated approximately 126 acres of urban commercial on this site. Later additions to the GPP in November 1996 increased the total acres to 156. The December 1998 land use inventory estimated 520,000 square feet of developed retail and office uses. In addition, the inventory estimated another 116,000 square feet in warehouse uses mostly in the form of mini storage. This center is a dynamic one; rapidly living up to expectations that it will serve as the center of the UGA.

One goal of the plan is to intensify the retail/employment uses. A second goal is to meet the community's objectives for enhancing the design and siting of new uses. For these reasons, Planned Community Business (PCB) zoning is proposed for the commercial portions of the Center. The zoning will change from the existing Community Business (CB) to PCB. Both the CB and PCB zones permit office and retail uses. The intent of the PCB zone, however, is to discourage piecemeal and "strip" development by requiring unified planning and development of a site through performance criteria.

This plan envisions a build out of most of the remaining 58 vacant acres and a more intensive redevelopment of existing areas. Office use is likely to expand as the function of the Frontier Village area changes from local community service to a more regional function. This plan allows intensification and redevelopment at Frontier Village to serve the area's needs.

There are 392 acres in this Activity Center. The land uses include: UMDR, 150 acres; UHDR, 69 acres; UC, 157 acres; and Public Use,15 acres.

2. Tom Thumb

The Tom Thumb Center is at a crossroads location that initially developed with a grange hall and a church. Subsequently, a small food store, daycare, restaurant and offices have been added.

The function of a Community Commercial Center under the GPP is to contribute to land use patterns that create identifiable neighborhoods. A Center should have the following characteristics:

- 20-25 acres in size,
- Serve several neighborhoods within an approximately two mile radius,
- Provide for public open space,
- Accommodate mixed-use commercial and multi-family residential, and
- Be served by public transportation that provides connections between neighborhoods, as well as to major urban centers.

The Tom Thumb Center serves several neighborhoods and accommodates mixed-use commercial and multi-family residential. It has a mix of uses and serves the surrounding neighborhood. It is on an arterial capable of supporting transit service. Of the 30 commercial acres, 10 acres are vacant and available for additional mixed use development. The center is bounded on the east by wetlands and a small creek corridor.

Generally, the area is designated for UHDR and Urban Commercial because: 1) it is an existing neighborhood center, 2) there is Community Business zoning on the northeast corner and Neighborhood Business zoning on the northwest corner, 3) it is at the intersection of two neighborhood collector streets, and 4) water is currently available.

Zoning for this area is Planned Community Business and Multiple Residential. As with Frontier Village, discussed below, PCB will help meet the community's objectives for avoiding piecemeal, "strip" development while enhancing the design and siting of new uses. MR zoning is applied to large parcels that are vacant or have potential for redevelopment.

Currently, this center does not have sewer service. The area north of 20th StreetSE is in the planned sewer service area, but the area south of the street is not. Full development of the Center at planned densities will not be feasible without sewer service. The County and the Sewer District should coordinate the planning for sewers for this area as one of the first implementing steps of the plan.

There are 130 acres in this Community Commercial Center. The land uses include 12 acres of ULDR, 24 acres of UMDR, 43 acres of UHDR, 30 acres of Urban Commercial and 12 acres of Public Use.

3. Cavalero Hill

Most of the neighborhood has relatively flat to gently sloping topography with fewer critical areas than in many other parts of the UGA. No areas are currently designated for neighborhood shopping facilities. Therefore, a neighborhood center, which serves the immediate area, is appropriate for the Cavalero Hill area. To facilitate a small neighborhood scale center the plan calls for the County to prepare for future implementation a new neighborhood centers designation. Policy 4: Articulates this direction.

> ***Policy 4:*** The County should prepare for future consideration a neighbor centers designation for use in the Lake Stevens UGA. This new designation shall have the objective of providing an area of retail, residential and employment uses (serving the residences in the immediate neighborhood). The new designation shall emphasize a focus on neighborhood services rather than regional growth, a pedestrian orientation, service by local transit and encompass three to fives acres in size.

Table: 3-2 Future Land Use

Unincorporated UGA

	BUILT[3]	UNBUILT	TOTAL
Urban Low Density Residential (4 du/ac)	833	734	1,567
Urban Low Density Residential (6 du/ac)	1,275	983	2,258
Urban Medium Density Residential (6-12 du/ac)	674	239	913
Urban High Density Residential (12-24 du/ac)	95	112	207
Urban Commercial	137	62	199
Urban Industrial	96	78	174
Public Use	106	22	128
TOTAL	*3,216*	*2,230*	*5,446*

D. Summary

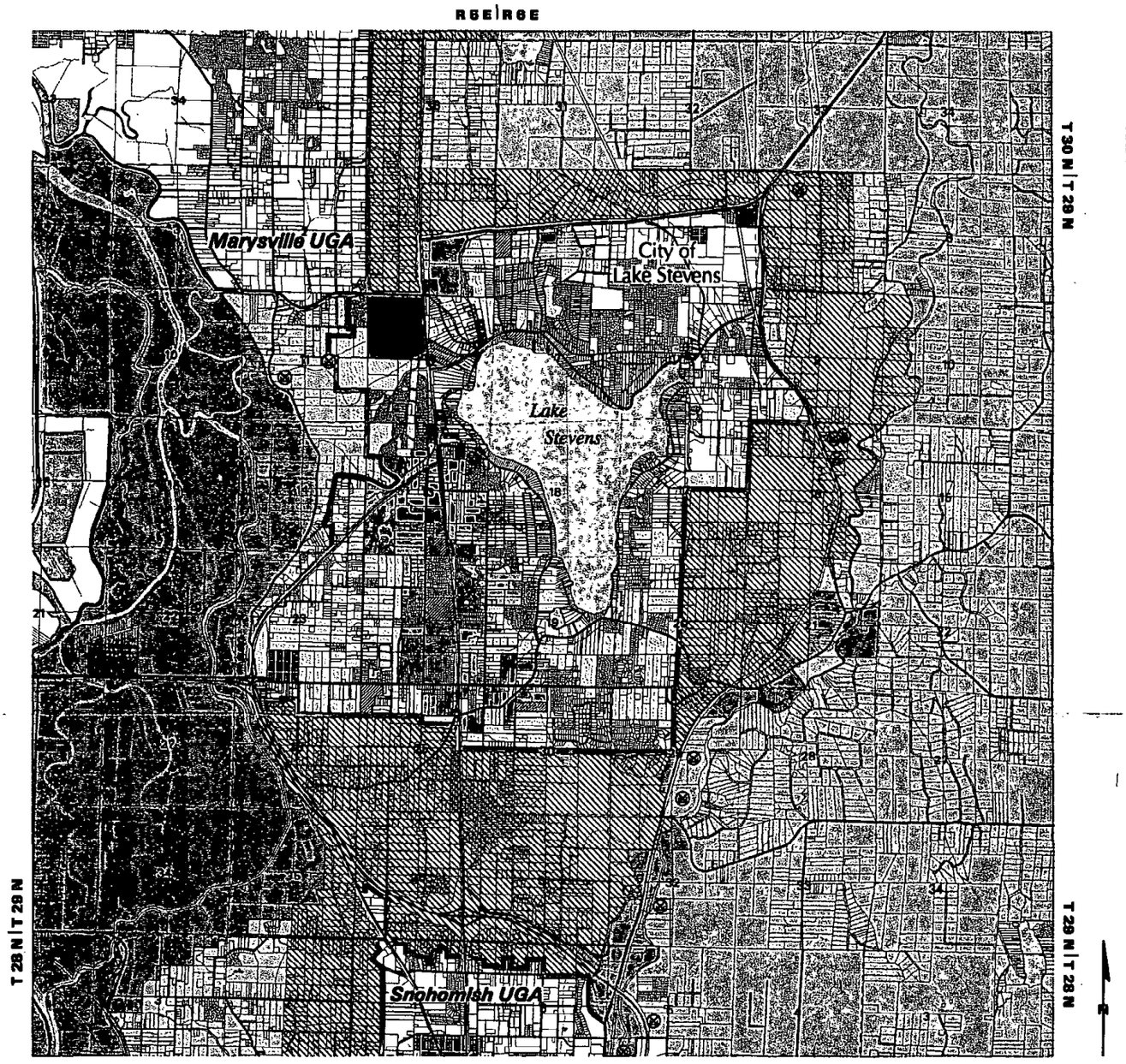
This chapter defines land uses that are appropriate for this community and proposes locations for those land uses. The intent of this plan is threefold: to enhance the community's vision, retain the key physical features of the UGA and accommodate the forecasted population and employment growth. Critical areas help determine the appropriate level of density and intensity of new uses.

Table 3-2, above, identifies the key land use designations and the amount of acres, built and unbuilt, in each. Through the six key land use designations of Urban Low, Medium and High Density Residential, Urban Commercial, Urban Industrial and Public Use, land has been designated to provide a place for people to live and for new businesses through the year 2012.[4] It did that by breaking down the different types of uses expected and then "budgeting" how much land should be set aside for that use.

Chapter 9, Implementation, discusses the specific regulations and other implementation measures by which these designations become law.

[3] "Built" lands were those identified as developed in an inventory of existing land uses conducted in December 1998 by the Planning Division. Such lands were designated "built" regardless of whether they were developed consistently with the proposed plan designation.

[4] Table 3-2 shows the total acres in each land use designation.



Snohomish County GMA Comprehensive Plan
Future Land Use for the Lake Stevens UGA Area

LEGEND

ADOPTED DEC. 7, 2001

- Riverway Commercial Farmland
- Rural Residential-5 (1 DU/5 Acres)
- Rural Residential (1 DU/5 Acres Basic)
- Urban Low Density Residential (4 DU/Acre)
- Urban Low Density Residential (6 DU/Acre)
- Urban Low Density Residential (4-8 DU/Acre)
- Urban Medium Density Residential (8 - 12 DU/Acre)
- Urban High Density Residential (12 to 24 DU/Acre)
- Rural Industrial
- Urban Industrial
- Urban Commercial
- Public Use
- Incorporated Cities, Towns, Tribal Lands, & Rights-of-Way
- Rural Urban Transition Area
- Urban Growth Area Boundary
- Incorporated City Boundary
- Mineral Lands

0 2000 4000 6000

Scale in Feet

.../lkst/reports/flu_1201_17.aml

Produced by Snohomish County Department of Planning and Development Services, dkt, September 30, 1999. Revised 12-7-2001.

For official City designations and boundaries, refer to the City of Stevens Comprehensive Plan.

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. Property lines are for illustrative purposes only and depict only generalized parcelization. This map is based on the best available information as of the date shown on the map.

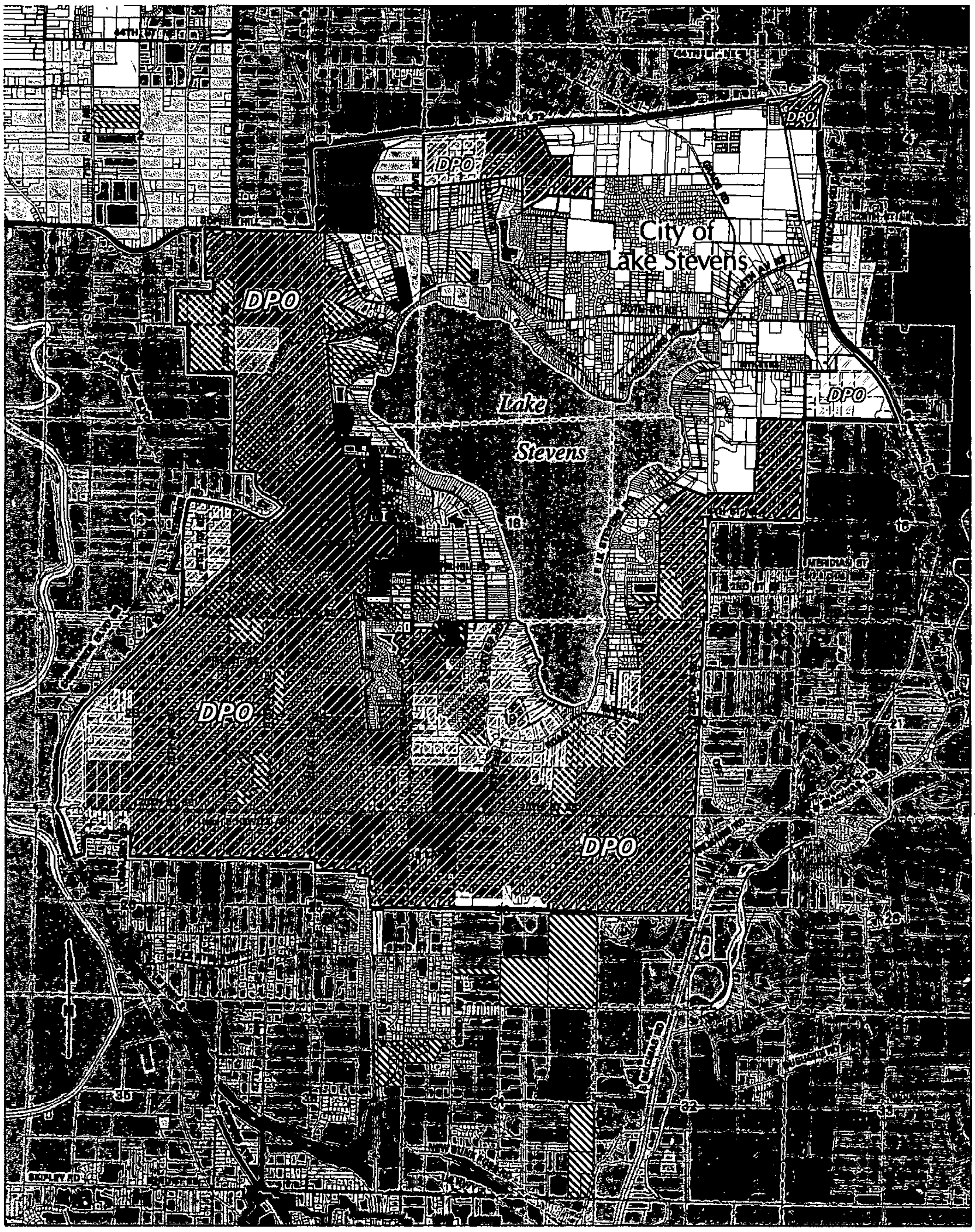
Snohomish County

FIG. 3-1

R6E | R6E

T 29 N | T 30 N

T 30 N | T 29 N



T 28 N | T 29 N

T 29 N | T 28 N

Snohomish County GMA Comprehensive Plan Implementing Zoning for the Lake Stevens UGA with Development Phasing Overlay

LEGEND

ADOPTED DEC. 7, 2001

IMPLEMENTING ZONING FOR LAKE STEVENS URBAN GROWTH AREA

- (F&R) Forestry and Recreation
- (A-10) Agriculture - 10 Acre
- (R-5) Rural - 5 Acre
- (RC) Rural Conservation
- (SA-1) Suburban Agriculture - 1 Acre
- (R-20,000) Residential 20,000 sq.ft.
- (R-9,600) Residential 9,600 sq.ft.
- (R-8,400) Residential 8,400 sq.ft.
- (R-7,200) Residential 7,200 sq.ft
- (T) Townhouse
- (LDMR) Low Density Multiple Residential
- (MR) Multiple Residential
- (NB) Neighborhood Business
- (PCB) Planned Community Business
- (CB) Community Business
- (RB) Rural Business
- (GC) General Commercial
- (BP) Business Park
- (RI) Rural Industrial
- (MC) Mineral Conservation
- (PRD) Planned Residential Development (overlay)
- Incorporated City Area
- Urban Growth Area Boundary

IMPLEMENTING ZONING WITH DEVELOPMENT PHASING OVERLAY

- (R-20,000-DPO) Residential 20,000 sq.ft.
- (R-9,600-DPO) Residential 9,600 sq.ft.
- (R-8,400-DPO) Residential 8,400 sq.ft.
- (R-7,200-DPO) Residential 7,200 sq.ft
- (T-DPO) Townhouse
- (LDMR-DPO) Low Density Multiple Residential
- (MR-DPO) Multiple Residential
- (NB-DPO) Neighborhood Business
- (PCB-DPO) Planned Community Business
- (BP-DPO) Business Park
- (PRD-DPO) Planned Residential Development (overlay)
- Development Phasing Overlay Boundary

0 1000 2000 3000

Scale in Feet

.../lust/adopted/lsdzn_dpo_1201_17.aml

This map is not the official zoning map. No representation or warranty is made concerning the accuracy, currency, completeness or quality of data depicted on this map. Any user of this map assumes all responsibility for the use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map. It is a generalized representation of county-wide zoning as of August 1997. This map is updated periodically each year. The official county zoning maps are on file at the Public Service Counter at the Snohomish County Department of Planning and Development Services, fifth floor, County Administration Building, Everett, Washington. Zoning amendments periodically occur. We recommend that you verify the information contained on this map prior to initiating any development activity.

Zoning designations on this map are based on future land use designations shown on Lake Stevens Future Land Use map dated December 7, 2001.

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. Property lines are for illustrative purposes only and depict only generalized parcelization. This map is based on the best available information as of the date shown on the map

Produced by Snohomish County Department of Planning and Development Services, Cartography Section, dkt, Feb. 4, 2000. Revised 12-7-2001.

Snohomish County

FIG. 3-2

Chapter 4

Housing

A. Introduction

The Snohomish County *General Policy Plan* (GPP) and the *City of Lake Stevens Comprehensive Plan* each contain a Housing Element intended to satisfy *Countywide Planning Policies* and Growth Management Act goals and requirements regarding housing. The GPP Housing element contains a series of goals, objectives and polices which provide the framework for further planning throughout the County and within the unincorporated Lake Stevens Urban Growth Area. Specific objectives affecting future land use planning within the unincorporated Lake Stevens Urban Growth Area are Objective HO 1.D ("Maintain an adequate supply of appropriately zoned developable land") and Objective HO 1.B ("Ensure that a broad range of housing types is available in urban and rural areas").

The *Snohomish County 1994 Housing Needs Assessment* contains the County's inventory and analysis of existing and projected housing needs required by the GMA. It includes an assessment of the County's portion of the fair share housing allocation designed to ensure that sufficient moderate, low income and special needs housing is available throughout the County. The fair share allocation methodology and targets were adopted by the Snohomish County Tomorrow Steering Committee (SCT), through a process similar to the joint reconciliation process used to allocate the population and employment forecasts.

According to the *Snohomish County Fair Share Housing Methodology and Guidelines (1994)*, the fair share housing target for the unincorporated Lake Stevens Housing Planning Area is a total of 1,178 additional low to moderate income households between the years 1990 and 2012. The Residential Land Use Analysis (RLUNA) model is used to determine the acreage in different land use designations needed to accommodate the fair share allocation for each UGA. The RLUNA results contained in this plan have been updated to reflect development occurring between 1990 and 1998, and represent land needs for the 1999-2012 planning horizon.

This housing element describes the characteristics of the Lake Stevens housing stock and trends which affect the provision of affordable housing to all economic segments of the population. It also contains a description of the type and amount of land needed to ensure that there is affordable housing available for all segments of the population expected in the 13 years remaining in the 20-year comprehensive planning horizon mandated by the GMA.

B. Housing Supply

In 1999, there were an estimated 6,208 housing units within the unincorporated portion of the Lake Stevens UGA, and 2,129 units within the City of Lake Stevens. The housing stock in the Lake Stevens Census tracts is relatively new and in good condition. In 1990, there were no occupied units that lacked heating, kitchen facilities or complete plumbing. Approximately 32% of all housing units were less than 10 years old, 52% were less than 20 years old, and 83% were less than 40 years old[1].

[1] Based on US Bureau of the Census, 1990 Census, STF 3A and the Snohomish County 1999 Growth Monitoring Report.

Between 1990 and 1999, the number of housing units in the unincorporated portions of the UGA increased by 65%. Over the last 15 years, the average number of dwelling units permitted within the entire UGA has averaged approximately 303 per year. Based on this average, an additional 3,939 units are estimated to be constructed between 1999 and 2012 in the entire UGA. If these trends continue, the number of housing units estimated will be sufficient to accommodate the household growth expected between 1999-2012.

In 1999, 76% of all housing units within the unincorporated Lake Stevens UGA were single family, detached units, 15% were multi-family structures with two or more units, and 10% were mobile homes. Nearly half of all multi-family structures are duplexes and the remainder are structures of three or more units. As the Lake Stevens UGA becomes more urban, it is likely that multi-family and attached housing will constitute a greater share of the total housing stock as a result of state and local policies calling for a "broad range of housing types,"[2] and as household sizes and types become more diverse. This plan provides adequate land for the variety of housing types and sizes needed to ensure that there are housing choices for all households.

Mobile homes and trailers gained a larger share of the housing stock between 1980 and 1999 in both the Lake Stevens census tracts and the County as a whole. In 1999, mobile homes and trailers comprised 10% of all housing units in the unincorporated UGA and 16% of all new units added in the UGA during the decade. Mobile homes represent a form of affordable housing that is becoming increasingly difficult to locate because of neighborhood opposition. The plan includes provisions to implement the GPP policy supporting the "development and preservation of mobile and manufactured home parks."[3]

C. Housing Affordability

In 1997, the median household income in the Lake Stevens census tracts was $54,400, slightly higher than the countywide median of $51,600. In the same year the median house price in the unincorporated UGA was $149,900, slightly less than the countywide median of $155,000. The difference between what is affordable for each income group and the median house price is an indicator of home ownership opportunities and housing affordability within the UGA. In 1997, a house at the median price was affordable to nearly 54% of households in the Lake Stevens census tracts.[4]

Table 4-1. Lake Stevens Housing Affordability

Percent of Median Income (Income levels)	Max. Household Income	Max. Affordable House[5]	Affordability gap
+95% (Middle & Upper)	65,400+	$189,755+	$0
55-95% (Low & Moderate)	51,775	$150,223	$0-64,510
31-55% (Very Low)	29,430	$ 85,390	$64,510+
0-30% (Extremely low)	16,350	$ 47,439	$102,461+
Based on Puget Sound Regional Council Preliminary Estimates for household income by census tract, 1997.			

[2] Snohomish County General Policy Plan, Summer 1995. Objective HO1.B. See also, RCW 36.70A.020(4).
[3] Snohomish County General Policy Plan, Summer 1995. Policy HO1.B.3
[4] Based on Puget Sound Regional Council 1997 Preliminary estimates for census tracts 526.01 and 526.02
[5] Based on maximum monthly housing expense of 28% and 7.6% avg. annual interest rate

Another measure of the affordability of a community's housing stock is the proportion of households paying more than 30% of their total household income for housing. According to this standard, households with a housing cost burden that exceeds 30% of their income have budget constraints for buying other necessities, such as food, health care, or clothing. According to the 1990 Census, 22% of the households in the unincorporated areas of the Lake Stevens census tracts exceeded the 30% standard for affordable housing. This was less than the 26% of households within the County as a whole, and less than the 27% of households within the City of Lake Stevens.

The most critical housing affordability problem appears to be the proportion of city renters paying too much for housing. According to the census, nearly 50% of city renters had an excessive housing cost burden. This compares to slightly more than 30% of renters countywide and 25% of renters in the unincorporated areas of the Lake Stevens census tracts. In order to address the housing affordability problems, the UGA plan includes measures to minimize housing production costs by providing for sufficient adequately zoned land.

D. Special Needs Populations

There are a number of sub-populations in Snohomish County that have special supportive housing needs as a result of their impairments, disabilities, or unique social circumstances. Known as "special needs populations," these members of the community that require special assistance or supportive care to subsist or achieve independent living include the frail elderly, developmentally disabled, chronically mentally ill, physically disabled, the homeless, persons participating in substance abuse programs, persons with AIDS, and youth at risk.

The size of the Lake Stevens special needs populations has never been systematically measured. Bureau of Census surveys and population estimates based on standardized incidence rates[6] provide only a general idea as to the quantity of special needs housing that should be planned for. Only approximately 1 in 10 persons in the identified special population groups were able to find supportive housing within the Lake Stevens community in 1990.

Fair and equal housing opportunities for special needs population groups are required under the provisions of federal and state fair housing laws, as well as Countywide Planning Policy HO-1 and Snohomish County *General Policy Plan* Goal HO-1. It is the explicit intent of the UGA plan to comply with all existing fair housing regulations, including the provision of adequate opportunities for the development of safe, sanitary, and affordable housing, that is suitable to special needs population groups, regardless of age, familial status, income, or disability. This plan provides adequate land designated for higher densities to ensure that a greater range of housing types and choices will be available for special needs populations in the future.

E. Future Needs, Unincorporated Areas Only

Estimates of the amount of medium and high density residential land needed to ensure that GPP housing goals and fair share housing targets are met are determined through the use of the "RLUNA" model[7] which was developed through Snohomish County Tomorrow (SCT).

[6] Such as chronically mentally ill persons in need of supervised living/100,000 population.

[7] Residential Land Use Needs Analysis (RLUNA), uses existing information on countywide household income groupings, housing preferences, and purchasing power, together with existing and future population projections, to produce an estimated need for medium and high density residential land in a particular area.

The Residential Land Use Needs Analysis (RLUNA) conducted for the Lake Stevens unincorporated UGA provided an estimate of 134 acres of high density, 216 acres of medium density and 290 acres of low density residentially designated land needed to accommodate the 2,646 additional households. This includes the fair share allocation for the Lake Stevens unincorporated UGA expected between 1999 and 2012. As shown in Table 4-2, the total gross land area required to accommodate projected household growth is 640 acres.

TABLE 4-2 RESIDENTIAL LAND REQUIREMENTS, Unincorporated Only

	Gross Acres Required 1999 to 2012		
Residential Designation	Total Acres Required (RLUNA)	Vacant Acres December 1998	Surplus/(Deficit)
Urban Residential Low Density	290	1,717	1,427
Urban Residential Medium Density	216	239	23
Urban Residential High Density	134	112	(22)
Total Residential Designation	640	2,068	1,428

This plan allocates sufficient acreage to accommodate the projected need for low and medium density housing. There will be a deficit of approximately 22 acres of vacant land designated for high-density residential use. However, it is expected that existing areas designated for high residential density and developed with low residential densities will redevelop at high densities. Therefore, the plan designates sufficient vacant and redevelopable land to accommodate the projected need for high-density residential uses. In addition, the Planned Community Business zone allows multiple family residential developments and may accommodate some of the projected need. Reference Chapter 3 for a description of the proposed location and distribution of land uses.

Chapter 5

Transportation Element

A. Introduction

This transportation element of the Lake Stevens UGA Plan is prepared in accordance with the 1990 Growth Management Act (GMA: Title 36.70A RCW) and is supplemental to the transportation element of Snohomish County's GMA Comprehensive Plan.[1] Contained within the element are supplemental transportation policies and projects necessary to effectively serve planned land use within the Lake Stevens UGA. Importantly, this element provides guidance for the design, construction and operation of UGA transportation facilities and services through the year 2012.

1. Purpose and Background

The purpose of the transportation element, for the Lake Stevens UGA, is to present a plan for transportation facilities and services needed to support the land use pattern through the year 2012. The transportation element for the Lake Stevens UGA provides more detail than the GMA comprehensive plan with specific policies and projects tailored for the local situation and challenges. This UGA Plan is prepared to be consistent with the 1990 GMA, and to be compatible with the County's transportation element and the City of Lake Stevens' Comprehensive Plan.[2]

a. Growth Management Act (GMA) Transportation Requirements

The 1990 Growth Management Act (GMA) provides a substantial amount of legal and policy guidance to Snohomish County and the City of Lake Stevens regarding preparation of UGA plan transportation elements. The GMA requires a transportation element to be consistent with the land use element of the comprehensive plan (RCW 36.70A.070 (6)). A transportation element must specifically present:

- Land use assumptions used in estimating travel;
- An inventory of transportation facilities and services;
- Level of service standards and actions necessary to allow transportation facilities and services to meet the standards;
- Identification of transportation system needs to meet current and future travel demand;
- A multi-year finance strategy that balances needs against available funding;
- Intergovernmental coordination and impact assessment; and
- Strategies for reducing travel demand.

[1] Snohomish County GMA Plan: General Policy Plan, 1996 and Transportation Element, 1995, Snohomish County Planning and Development Services, Everett, WA.

[2] City of Lake Stevens Comprehensive Plan, 1994, City of Lake Stevens Planning Department, Lake Stevens, WA.

The Washington Administrative Code (WAC 365-195-325) provides procedural guidance on two important requirements of the GMA. These are:

- Consistency of the County's comprehensive plan between its elements and other local comprehensive plans; and
- Concurrency of land development and the transportation improvements needed to serve the land development.

Consistency between the land use and transportation elements of the UGA plan is of particular importance. Planned land use must be reflected in the travel forecasts that are prepared to evaluate the impacts of development. The transportation improvements and implementation measures within the transportation element must adequately support planned land use at adopted level of service standards. In addition, consistency between the County's overall transportation element, the City of Lake Stevens comprehensive plan, and the Washington State's highway plan needs to be ensured through intergovernmental coordination.

b. County Transportation Element of the GMA Comprehensive Plan

The County's transportation element of the GMA Comprehensive Plan provides guidance for developing a countywide transportation system that will adequately serve planned land use through the year 2012. The transportation element recommends specific arterial roadway projects for the unincorporated County in order to meet roadway capacity needs. However, it also recommends various implementation strategies to guide the County in its participation in regional transportation. Implementation strategies provide guidance on such issues as:

- Land use-transportation concurrency,
- Level of service,
- Transit compatibility of land use,
- High-occupancy vehicle (HOV) lanes,
- Access management,
- Transportation demand management (TDM),
- Regional high-capacity transit,
- Nonmotorized transportation,
- Air quality conformance, and
- Freight and goods mobility.

The County's transportation element estimates expenditures and revenues associated with implementing the plan. It also recommends a financial strategy that would ensure needed transportation improvements are funded. It should be noted that the transportation element is to be supplemented by specific UGA-level plans that provide more detailed policy direction and project recommendations. This transportation element for the Lake Stevens UGA Plan is just such a supplemental document. It is intended to be consistent with the countywide transportation element, while also qualifying and refining its recommendations.

c. City of Lake Stevens Comprehensive Plan - Transportation

The City of Lake Stevens' transportation element is part of its comprehensive plan. Similar to the County's, the City's transportation element provides guidance for developing transportation

facilities and services that adequately serve planned land use. The City's transportation element recommends street improvements, pedestrian-bikeway improvements, and level of service standards. It also contains goals and policies, which provide specific guidance as to how the City should implement the various recommendations. The City's adopted comprehensive plan anticipates that cooperative UGA planning with the County will lead to a joint comprehensive plan that would address the City's and County's aspirations within the Lake Stevens UGA.

2. Transportation Facilities and Services Inventory

A comprehensive inventory of all transportation facilities and services provides a sound basis for effective planning. The Growth Management Act (GMA) requires the County to perform "an inventory of air, water and land transportation facilities and services, including transit alignments, to define existing capital facilities and travel levels as a basis for future planning" (RCW 36.70A.070 (6)(b)(i).

The County has prepared a catalog that provides an inventory of transportation facilities and services, as part of the Transportation Element of the County's Comprehensive Plan, to satisfy this GMA requirement.[3] The County's inventory includes the Lake Stevens UGA and contains information and maps regarding:

- Highways, streets and roads;
- Interchanges and bridges;
- Traffic control and railroad crossings;
- Bikeways and walkways;
- Transit routes, facilities and services; and
- Railroads, ports and airports.

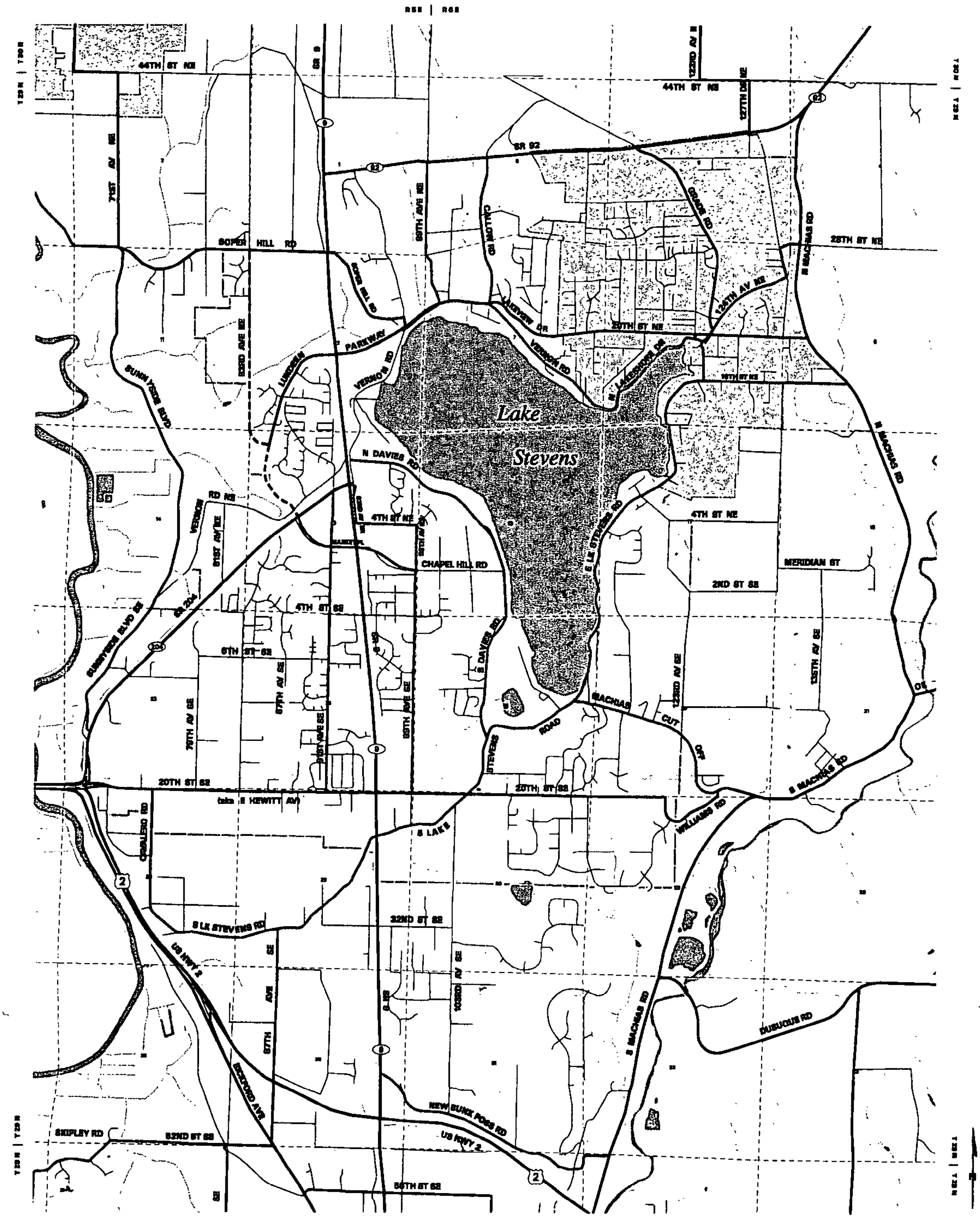
The information and maps described above are maintained by, and available,from the County as a set of maps, electronic data files and hard copy information.

Figure 5-1 illustrates the current circulation plan developed, as part of this County's comprehensive plan to serve the planned land use. This circulation plan identifies by classification the arterials needed to maintain County/City and state level of service standards as well as allowing safe and convenient travel for the public. Later in this plan, a future Circulation Plan is presented for the Lake Stevens UGA.

3. Major Transportation Issues Confronting the Lake Stevens UGA

The following section describes ten evolving challenges to the planning process for the Lake Stevens Urban Growth Area. The technical and policy analysis presented within this UGA Plan is intended to address these challenges and offer solutions. If a continuing planning process is established that can effectively deal with these ten transportation-related challenges, then a transportation system can be realized that will adequately serve the land use plan and the needs of the overall community within and around the UGA.

[3] Inventory of Transportation Facilities and Services, 1992, Snohomish County Planning and Development Services, Everett, WA.



Lake Stevens UGA
Existing Arterial Circulation Plan

LEGEND **ADOPTED DEC. 2000**

Arterial Designations (Urban/Rural)

- Freeway/Freeway
- Principal Arterial/Principal Arterial
- Minor Arterial/Major Collector
- Collector/Minor Collector

Recommened New Arterials (Urban/Rural)

- Principal Arterial/Principal Arterial
- Minor Arterial/Principal Collector
- Collector/Minor Collector

Local Roads

- Local Streets

Planning Area and Boundaries

- Incorporated City Boundary
- Urban Growth Area Boundary
- Incorporated City Area
- Urban Growth Area

0 1000 2000 3000

Scale in Feet

w:/plng/carto/lkst/transportation/lkst_fig5-1_1201.aml

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Produced by Snohomish County Department of Planning and Development Services, Cartography Section, rdm/dkt, 2-12-98. Revised 12-7-2001.

Snohomish County

FIG. 5-1

a. Transportation and Land Use Concurrency

Planning for the Lake Stevens UGA will need to ensure that transportation facilities and services are improved concurrently with the planned land development that necessitates the improvements. The 1990 Growth Management Act (RCW 37.70A.070) requires Snohomish County and the City of Lake Stevens:

- To adopt level of service standards for all arterials and transit routes to serve as a gauge for judging system performance;
- To identify specific actions and requirements for bringing into compliance any facilities or services that are below the established level of service standard; and
- To ensure that improvements or strategies are in place at the time of development or a financial commitment is in place to complete the improvements or strategies within six years.

Snohomish County, in response to these statutory requirements, has established a technical and administrative process for monitoring transportation system performance and programming improvements in order that facilities and services are provided concurrently with land development. Managing transportation and land use concurrency means a three-way balancing of land development, transportation level of service and capital financing. Planning for the Lake Stevens UGA will also need to perform this "balancing act." Level of service standards adopted within the County's comprehensive plan will be the basis for making decisions regarding the County's programming of transportation improvements needed to support planned land use. Where planned land development could cause a deterioration of level of service below adopted standards, the County needs to demonstrate that improvements or strategies would be in place at the time of development, or a financial commitment is in place to complete the improvements or strategies within six years. If an improvement cannot be funded for completion within the six-year time frame, then planned land uses will be reassessed to ensure level of service standards will be met.

The funding picture for transportation improvements is particularly unclear for both the City and the County. The scarcity of funding and financing for transportation improvements may be a limiting factor on the type and intensities of land use that can be planned for and accommodated within the Lake Stevens UGA. For example, 20th Street SE and Lundeen Park Way may present level of service/concurrency problems within the next five to six years. This may slow the pace of development of the UGA if the projects can not be completed within the required six-year time frame.

b. Access and Connections to Southwest Urban Growth Area

Southwest Snohomish County contains the largest proportion of employment and commercial development within the overall county. For the Lake Stevens UGA, immediate access and connections to the Southwest UGA and its economic opportunity is provided mainly by SR-2 (Trestle) crossing the Snohomish River flood plain. The Lowell-Snohomish River Road to the south, and Soper Hill Road/Sunnyside Boulevard to the north and through Marysville provides secondary connections. SR-2 capacity will continue to be limited to two lanes in each direction for the foreseeable future. Expansion of the Lowell-Snohomish River Road and/or Sunnyside Boulevard, beyond one lane in each direction, is highly unlikely and impractical at this time

because of the cost to overcome physical constraints. Flooding in 1997 has washed out a section of the Lowell-Snohomish River Road, but it is scheduled to reopen during 2001.

The capacity limitations of these roadways should be an important consideration in terms of land use planning and capital improvement planning for the Lake Stevens UGA. Excessive traffic congestion on the approaches to SR-2 and on SR-2 itself could have significant adverse impacts on commuting and on the exchange of goods and services between the Lake Stevens UGA and the Southwest UGA.

c. Frontier Village and SR-9/SR-204 Interchange

The intersection of SR-9 and SR-204 presents a formidable transportation and urban design challenge. Access to and circulation around Frontier Village is stunted and could become worse if additional commercial and residential development occurs without careful planning of local and arterial roadway circulation. Traffic volumes converging on the intersection of SR-9 and SR-204 are nearing its practical and operational capacity. Because of the importance of SR-9 and SR-204 to regional and local mobility, traffic volumes will continue to increase. A major design solution will be needed to provide additional capacity and maintain an acceptable level of service at and around the intersection. A grade-separated interchange has been viewed for some time as a potential solution; however, its physical and aesthetic impacts on adjacent land use could be considerable. Practical solutions to the traffic snarl at SR-9/SR-204 will need to be part of efforts at planning for the commercial district around Frontier Village. Related to this problem, the County has constructed and opened Meridian Street from 91st Street SE to SR-204 and will open the section from 99th Street SE to SR-9 during 2000.

d. Local Traffic Circulation and Lake Stevens

Lake Stevens is a large water body (1,020 acres) that presents a major challenge to providing efficient traffic circulation within the UGA and access to lands throughout the UGA. As more land develops within the UGA, we can expect more areawide travel to and from locations within the UGA. The barrier Lake Stevens presents will require careful circulation planning in order to provide more capacity and continuity to move east-west and north-south. Otherwise, existing roadways on the Lake's perimeter could be overtaxed by increases in traffic associated with areawide growth and development.

e. Future Arterials and Traffic Diversion to Local Roads

The arterial network is not well developed within the overall Lake Stevens UGA, with a number of collector arterials not being consistent with current County design standards. The local road network is fragmented and lacks continuity, particularly within the western areas of the UGA. Many local access roads are long, narrow lanes with open-ditch drainage serving large lot residential areas. This pattern of fragmented arterial and local access roads is typical of low-density urbanizing areas, where most road improvements lag behind land development.

As urban development increases within the Lake Stevens UGA, it will generate new vehicle trips and alter current trip making patterns. These changes will necessitate re-classing and upgrading some existing local roads to arterials, or even constructing new arterials in some specific situations. Providing adequate arterial capacity to handle traffic generated by planned land use is an important aspect of growth management planning. Careful planning for our

capacity needs keeps the arterial network operating efficiently and also helps prevent unintended diversion of traffic onto local roads serving residential neighborhoods.

f. Sunnyside Boulevard and Local Circulation

Sunnyside Boulevard from Soper Hill Road to SR-204 is currently classified as a collector arterial connecting the Marysville and Lake Stevens UGAs. Sunnyside Boulevard is having structural problems because of earth movement down the slope along which it traverses. In addition, the local road network serving the northwest UGA is undeveloped and will not likely connect down a steep slope to Sunnyside Boulevard. A permanent structural fix and additional lane capacity for Sunnyside Boulevard would be expensive and may have limited potential for success. The use of Sunnyside Boulevard by areawide traffic may need to be discouraged in order to preserve its structural integrity and value as a local access roadway.

Arterial and local road circulation will need to be carefully coordinated and developed for the far northwest portion of the UGA if it is to develop to urban uses and densities. Connections to the east look the most promising from preliminary studies, but this will depend on planned land uses.

g. Public Transit Services

The Lake Stevens UGA receives a level of public transit service that is consistent with low-density development patterns and the resulting low ridership. If public transit is to be more effective in serving development within the Lake Stevens UGA, land development and arterial roadways will need to be more compatible and supportive of transit. Urban design features that support public transit include higher residential densities, pedestrian access and circulation, circulation for transit vehicles, and provision of sites for bus stops and/or shelters. Community Transit is currently exploring the potential to locate a park-and-ride near Frontier Village.

h. Safety and Inadequate Roadways

The majority of roadways within the Lake Stevens UGA are not built to the County's current urban road design standards. Generally, this does not present a safety or traffic congestion problem because these roads are carrying only low volumes of traffic (i.e., 400 or less vehicles during the peak hour of travel). The design of most of the roads is adequate to handle the traditionally low volumes of traffic. Additional and more intensive development within and around the UGA could bring about inadequate road conditions. That is, as the volume of traffic imposed on a roadway increases, it may exceed its ability to effectively or safely move traffic. Urban infrastructure standards developed by the Snohomish County Tomorrow (SCT) organization will help guide improvement of City and County arterials so they will meet consistent design standards.

During implementation of the UGA plan and transportation element, particular attention will need to be paid to arterials and local roadways that are not designed to County or City design standards. To ensure the public's safety and welfare, design-related improvements would have to be programmed and completed to eliminate potential inadequate road conditions.

i. Walkways and Bikeways

The Lake Stevens UGA has an exceptional transportation and recreational resource in the form of the Centennial Trail on its northeastern border. Unfortunately, the availability of walkways and trails serving the rest of the UGA is limited. Bikeways and walkways can enhance mobility and safety within the UGA and provide better access to public transit services. Importantly, they need to be implemented along with the arterial and local road network so that they are an integral part of transportation or road improvement projects.

j. Transportation-related Air and Noise Pollution

As local and areawide traffic increases in and around the Lake Stevens UGA, we can expect higher incidences of air and noise pollution. Carbon monoxide levels exceeding federal standards are a possibility near busy intersections such as SR-204 with SR-9 and SR-9 and 20th Street SE. Reactive hydrocarbons, which contribute to higher ozone levels within the region, could be generated in higher amounts as we move towards the year 2012.

The increases in the amount of traffic and the change in traffic composition (i.e., more trucks and commercial vehicles) also will likely contribute to longer exposures to higher decibel levels of unwanted noise. Roadways will be impacted as well as neighborhoods. Policies for mitigation of air and noise pollution will necessarily be an important result of the overall UGA planning process.

Mitigation for air and noise pollution involves reducing reliance on automobiles for travel by shifting to ridesharing, public transportation and other less polluting modes of travel. It also involves lessening vehicular traffic delay, designing and operating transportation facilities and vehicles to reduce noise and emissions, and introducing more transit supportive and compatible land uses to the UGA.

4. Relationship of Planned Land Use, Transportation and Finance

The concurrency provisions of the GMA define a three-way balancing of land development, transportation level of service and transportation finance. The GMA requires:

- Level of service standards for all arterials and transit routes to serve as a gauge to judge system performance;
- Specific actions and requirements for bringing into compliance any facilities or services that are below an established level of service standard; and
- That improvements or strategies are in place at the time of development, or a financial commitment is in place to complete the improvements or strategies within six years (RCW 37.70A.070 (6)).

This balanced relationship between land use, transportation and finance is of particular importance to the policies, recommendations and projects presented within this UGA-level transportation element. Essentially, this plan attempts to identify and recommend transportation services and facilities that will adequately serve planned land use and are affordable given expected revenues.

Title 26B SCC: *Developer Contributions for Road Purposes as a Condition of Land Use Approvals* is the portion of the county code which addresses the impact of land development on County, City and state roadways. It details the procedures and obligations that must be met in order to approve land development while ensuring that county roads operate safely and consistent with adopted level of service standards. Importantly, Title 26B SCC requires that transportation improvements on county roads are made concurrent with land development, and implements arterial and transit level of service standards consistent with the County's comprehensive plan.

Level of service for roadways is rated on a scale of "A" through "F", much like an academic rating system. The letter grades represent a qualitative measure which describes operational conditions within a traffic stream and take into account such factors as traffic volume, speed, delay, comfort and convenience. Proposed land developments causing violation of adopted LOS standards are required to mitigate their impacts to eliminate the violation. This could mean making improvements to roads, reducing trips, or deferring development until improvements are made to mitigate LOS problems.

The adopted level of service standard for the unincorporated Lake Stevens UGA is LOS "E" for the system peak hour. However, LOS "E" for two hours is acceptable if the development is transit compatible, as described by the countywide transportation element. The City of Lake Stevens has adopted LOS "C" for residential areas of the City and LOS "D" for the central business district.

The specific actions recommended within Section C of this chapter, if fully implemented, will allow the state, County and City of Lake Stevens to make transportation improvements that could maintain adopted level of service standards. This, in turn, would allow planned land uses to develop without encumbrance and without resorting to delay or phasing. However, the realization of all the proposed improvements inherently depends on the jurisdictions receiving the revenues necessary to make the improvements. Besides traditional revenues from taxes, fees and borrowing, additional revenues will be needed in the form of a voter approved local fuel tax, significant private-sector voluntary contributions and possibly bonding.

B. Supplemental Transportation Policies

The *General Policy Plan* of Snohomish County's Comprehensive Plan contains a detailed set of goals, objectives and policies that provide guidance for improving County transportation facilities and services. This substantial policy guidance is fully applicable to the Lake Stevens UGA and does not have to be reiterated here. However, there are transportation-related issues associated with the Lake Stevens UGA for which additional guidance is warranted. The supplemental transportation policies that follow are specifically applicable to the Lake Stevens UGA and provide guidance to Snohomish County and the City of Lake Stevens as to how to improve UGA transportation facilities and services. These supplemental policies would be implemented through a number of measures which include: revisions to County titles, interlocal agreements, public works policies and procedures, engineering and design standards and land development standards and practices.

Policy 4. Circulation and Private Roads within the Lake Stevens UGA

4a. Circulation roadways and driveway access shall be designed and/or aligned in such a way as to avoid impacting environmentally sensitive or critical areas.
4b. Permanent cul-de-sac and private roads shall be approved only where road connectivity within and between adjacent neighborhoods has been established or planned.
4c. Access to a single roadway by multiple lots shall be limited, as determined necessary to protect public safety and minimize traffic conflicts and delay.
4d. A private road shall be permitted only where it would not obstruct, become part of, or undermine the safety of any existing or planned public roadway.
4e. Private roads shall not be permitted where a public road is required to meet public road access and circulation standards.

Policy 5. County and City Interlocal Agreements

5a. The County and the City of Lake Stevens shall establish a reciprocal mitigation agreement to deal with the traffic impacts of land development occurring within the UGA.
5b. The County and the City of Lake Stevens shall establish an agreement regarding annexations that will address sharing of improvement and debt costs for transportation facilities, evaluating traffic impacts of land use changes and the maintenance costs of future transportation services and facilities.
5c. The County and the City of Lake Stevens shall form joint development and plan review teams for projects having interjurisdictional traffic impacts within the UGA.

Policy 6. Administration of Transportation Improvements

6a. The County and City of Lake Stevens shall identify, prioritize and program transportation improvements within the UGA, using consistent methods and practices.
6b. The County and City of Lake Stevens shall collaborate to ensure compatibility between County and City road standards within the UGA.

Policy 7. Transportation and Land Use Concurrency

7a. The County and City of Lake Stevens shall establish compatible methods for evaluating level of service and the concurrency of transportation improvements with land development.
7b. The County and City of Lake Stevens shall designate land uses within the UGA consistent with the County's, City's and WSDOT's ability to fund needed transportation improvements and maintain transportation concurrency with planned land use.

Policy 8. Transportation Finance

8a. The County and City of Lake Stevens shall encourage the use of road improvement districts (RID) and local improvement districts (LID) to finance transportation improvements not fundable from traditional revenue sources.
8b. The County shall consider bonding as a method for financing transportation improvements, and as a mutually agreed upon basis for transferring debt for the improvements to the City of Lake Stevens; particularly within unincorporated parts of the UGA that are likely to be annexed to the City within six years.
8c. The County and City of Lake Stevens shall consider jointly funding road and street improvements of mutual benefit.

Policy 9. Public Transportation

9a. The County and City of Lake Stevens shall work with Community Transit to plan and implement additional transit services and facilities within the Lake Stevens UGA.
9b. The County and City of Lake Stevens shall promote transit compatible design features on new or upgraded arterial roadways (i.e., bus pullouts, bus shelters, and walkways).
9c. Transit-related and pedestrian related improvements within the Lake Stevens UGA shall be included in the master plans of designated urban centers.

Policy 10. Nonmotorized Transportation

10a. The County and City of Lake Stevens shall work cooperatively to ensure planned walkway and bikeway improvements are included as part of arterial roadway design and construction.
10b. The County and City of Lake Stevens shall promote walkway and bikeway connections to the Centennial Trail.
10c. Bikeway-related improvements within the Lake Stevens UGA shall be included in the master plans of designated urban centers.
10d. Priority shall be given to constructing arterial walkways to urban standards within "green areas" where land development can occur without delay or phasing.
10e. Priority shall be given to constructing arterial walkways to urban standards where they serve schools and parks, and promote overall pedestrian safety.

C. Recommended Roadway and Other Transportation Improvement Projects

Recommended roadway projects are based on year 2006 and year 2012 travel forecasts prepared for the Lake Stevens UGA land use plan. The UGA Plan has, as the basis for calculating housing unit needs, a year 2012 total population target of 30,882 people. Additionally, there is an employment target involving a total of 6,452 employees that will need to be accommodated within the UGA by the year 2012. The land use forecasts performed, based on both targets, reflect growth as increases in residential units and non-residential land development (i.e., more commercial and business park square footage). Travel forecasts are developed from the land use forecasts, and are in turn used to perform arterial and intersection level of service analysis. This is to ascertain how well roadway improvements would serve planned land uses.

This transportation element recommends projects within the jurisdiction of the Washington State Department of Transportation (WSDOT), Snohomish County and the City of Lake Stevens. The

travel forecasts and impact analysis used to prepare this transportation element are only applicable to the level of land development discussed above. Increases in assumed population and employment levels will warrant additional analysis of land use and transportation impacts. Additionally, project and mitigation proposals will likely be needed to resolve the impacts of more intensive land use development over and above that analyzed herein.

The array of roadway projects recommended for the Lake Stevens UGA Plan, for the 2000-2012 timeframe, are described in terms of their type of improvement, location, programming category and total project cost. The approach used to categorize the projects within this transportation element involves examining:

1) existing and future roadway level of service (LOS),
2) potential for inadequate roadway conditions (IRC),
3) projects currently programmed and/or funded, and
4) the interdependence of multiple projects.

Timely implementation of this transportation element will serve to maintain adopted level of service standards, and ensure roadway improvements remain concurrent with the land development they serve. The recommendations for project implementation fall within three programming categories that entail:

- Projects Recommended for Current Programming – this category represents projects that should be processed for inclusion within the most current Transportation Improvement Program (TIP). These projects would be expected to provide solutions to existing or evolving level of service and safety problems. Necessary feasibility and special studies should be pursued to aid the county's programming process.

- Projects Intended to Resolve Future Level of Service and Inadequate Road Conditions – this category of projects represents improvements to specific roadways aimed at maintaining level of service standards and avoiding inadequate road conditions during the 2000 – 2012 timeframe of this UGA Plan, and

- Other Enhancement Projects Intended to Better Serve the UGA Plan – this last category of projects is aimed at enhancing the transportation system's ability to adequately and safely serve the adopted land use plan, and pursue community development goals detailed within the General Policy Plan. These projects are not necessarily needed to resolve level of pattern or greater rate than anticipated. These projects may be programmed over the 2000-2012 timeframe as funding becomes available and where there is a demonstrated need.

In summary, the first two categories of projects are intended to maintain level of service and safety standards on County arterials and highways throughout the 2000-2012 timeframe of the UGA Plan. The third category of projects would be intended as a way to enhance the County's system of arterials to better serve the community, but may or may not be needed to maintain level of service and safety standards during 2000-2012.

Figure 5-2 illustrates the arterial circulation network needed to adequately serve the adopted land use plan for the Lake Stevens UGA regardless of timeframe. The highways, roadways and

streets are classified as principal, minor and collector arterials. Some of the important local roadways and streets are also identified. The proposed circulation network and classification of roadways and streets is based on the travel forecasts and LOS analyses previously discussed.[4] Importantly, Figure 5-2 presents the ideal network after project improvements to roadways and streets have been funded and implemented.

Bikeway and walkway capital projects are presented in order to complete County improvements to the transportation system for the Lake Stevens UGA. The potential for improvement of public transportation services and facilities is discussed. Implementation of such improvements will depend on Community Transit's service planning process. These improvements are recommended because they provide more travel options to residents of the UGA and enhance the primary roadway and transit modes.

1. Recommended Highway, Roadway and Street Improvements

Table 5-1 presents the recommended roadway projects needed to adequately serve the adopted land use plan, through the year 2012. Also presented are candidate highway and roadway projects to enhance the overall roadway network. The land use plan represents an intensification of land use within specific communities of the Lake Stevens UGA. Residential development densities are somewhat increased around the Frontier Village and the Tom Thumb vicinities of the UGA. Also, there is an introduction of some commercial and higher density residential uses to the Cavalero Hill vicinity north of 20th Street SE.

The emphasis of this transportation element, in terms of transportation projects, is on upgrading roads to design standards and improving existing operations. However, it would be necessary to commit to widening specific existing roads and constructing some new roads. Types of projects presented include:

- Improving local roads and streets to two-lane urban collector standards,
- Improving operations on existing arterials by adding lane capacity,
- Redesigning key intersections and adding signalization,
- Constructing new two-lane and three-lane urban arterials,
- Improving operations and capacity of key state intersections and arterials, and
- Providing three travel lanes on SR-2 in each direction between I-5 and SR-204.

[4] Technical Memorandum: Year 2006 and Year 2012 Travel Forecasts and Level of Service, 2000, Rao and Associates Incorporated, Seattle WA.

Road and street projects are illustrated by Figure 5-3 and referenced to the descriptions within Table 5-1 by a specific letter/number code. The mapping symbols used for Figure 5-3allow the reader to determine project-programming categories and to distinguish County and non-County projects. Lastly, dashed lines identify new roadways, while solid lines identify existing roadways that are to be improved.

Several new road projects are proposed in the Frontier Village vicinity to serve increasing commercial and residential development. New road projects are illustrated for the Cavalero Hill vicinity as a way of envisioning the future roadway network needed to serve this subarea of the UGA as it becomes more urban in character. State facility improvements proposed under this transportation element are substantially more than WSDOT currently shows within its TIP and state transportation plan. Additional improvements at key state route intersections, including SR-204/SR-9, SR-9/20th Street SE, SR-9/SR-92 and SR-204/Lundeen Park Way, are proposed to handle traffic under this UGA Plan. The City of Lake Stevens street projects are consistent with the City's comprehensive plan and a desire to implement a comprehensive street network for the existing and future city. The project map numbers shown by Table 5-1 and by Figure 5-3 refer to the following general descriptions of project categories.

- Arterial Design and Safety Standards (AS) – project improvements that allow a County arterial to meet the geometric and structural design standards defined within the most current version of the Engineering, Design and Development Standards (EDDS) Handbook. The primary intent of these improvements is to enhance traffic flow and make the subject arterial safe for automobiles, pedestrians and nonmotorized transportation.

- Arterial Capacity Enhancement (AC) – project improvements that enhance effective capacity and traffic flow on a County arterial by significantly widening lanes, adding shoulders, adding walkways, improving positive guidance and implementing traffic control revisions. The primary intent of these improvements is to enhance existing capacity in order to safely and efficiently handle existing and future traffic on the subject arterial.

- Arterial Capacity and Operations (AC/O) – project improvements that enhance effective capacity and traffic operations on a County arterial by adding through- and/or turn-lanes, adding shoulders and walkways, introducing channelization and implementing traffic control and signalization. The primary intent of these improvements is to increase arterial lane capacity, enhance traffic safety and efficient traffic operations at key intersections, and have a positive effect on areawide traffic circulation and level of service.

- New Arterial Alignments (NR) – project improvements that entail construction of an arterial roadway or the extension of an existing roadway across a new alignment. The primary intent of these improvements is to increase arterial lane capacity, relieve congestion on existing arterials, serve developing areas of the County and have a positive effect on areawide traffic circulation and level of service.

- Washington State Highways (WS) – project improvements that enhance effective capacity and traffic operations of state highways by adding through- and turn-lanes, adding shoulders and introducing channelization and implementing traffic control and signalization. The primary intent of these improvements is to increase highway lane capacity, enhance traffic safety and efficient traffic operations at key intersections, mitigate existing and forecast level

of service deficiencies, and have a positive effect on areawide traffic circulation and level of service.

- Lake Stevens Arterial Design Standards (LS) - project improvements that enhance effective capacity and traffic flow on City streets by significantly widening lanes, adding shoulders, adding walkways, improving positive guidance and implementing traffic control revisions. The primary intent of these improvements is to enhance existing street capacity in order to safely and efficiently handle existing and future traffic on City streets.

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT
Arterial Improvements for Snohomish County

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Program Projects	LOS and IRC	Other Projects
	Arterial Design and Safety Standards						
AS-1	Chapel Hill Road Davies Rd. to 99th Ave. SE	CL	0.48	Urban 2 -Lane			$2,512.2
AS-2	Vernon Road						
	(a) Lundeen Pk Way to Davies Rd.	CL	0.69	Urban 2-Lane			$2,389.2
	(b) Davies Rd. to SR-9	CL	0.16	Urban 3-Lane		$554.0	
AS-3	4th St. NE 92nd to 99th St. NE	CL	0.34	Urban 2-Lane (partial)		$1,472.7	
AS-4	4th St. SE SR-9 to 99th Ave. SE	CL	0.30	Urban 2-Lane (I/S closed on west end)			$1,162.8
AS-5	91st Ave. SE 20th St. SE to Market St.	CL	1.26	Urban 2-Lane		$3,810.6	
AS-6	92nd Ave. NE SR-204 to 4th St. NE	CL	0.22	Urban 2-Lane		$675.9	
AS-7	Lake View Dr./ 20th St. SE Lundeen Pk Wy to Lk Stev. C/L	MA	0.47	Urban 2-Lane		$2,811.6	
AS-8	S/E Lake Stevens Rd. Machias Cutoff to Lk Stev. C/L	CL	1.47	Urban 2-Lane			$7,712.8
AS-9	103rd Ave. SE S. Lk Stvns Rd. to 32nd St. SE	CL	0.68	Urban 2-Lane			$2,650.3
AS-10	10th St. SE SR-204 to 79th Ave.	CL	0.38	Urban 2-Lane			$1,867.3

Note: PA = Principal Arterial (urban) CL = Collector (urban) MA = Minor Arterial (urban)
MaC = Major Collector (rural) MiC = Minor Collector (rural)

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for Snohomish County (continued)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Program Projects	LOS and IRC	Other Projects
	Arterial Design and Safety Standards (continued)						
AS-11	4th St. SE 81st to 83rd Ave. SE	CL	0.12	Urban 2-Lane			$583.7
AS-12	Soper Hill Road SR-9 to Lundeen Park Way	CL	0.65	Urban 2-Lane			$2,174.1
AS-13	Callow Road SR-92 to Lake View Drive	CL	0.81	Urban 2-Lane			$3,752.9
AS-14	Machias Cut-off E. Lk. Stev. Rd to 123rd Ave. NE	CL	0.74	Urban 2-Lane			$2,521.7
AS-15	Cavalero Road 20th Street SE to UGA Line	CL	0.37	Urban 2-Lane			$932.4
AS-16	Lake Drive Soper Hill Road to SR-92	CL	0.88	Urban 2-Lane			$2,933.1
	Arterial Capacity Enhancement						
AC-1	99th Ave. NE/SE 4th St. NE to 20th St. SE	CL	1.49	Urban 2-Lane		$4,598.7	
AC-2	S. Lake Stevens Rd. SR-9 to Machias Cutoff	CL	1.68	Urban 2-Lane			$7,668.1
AC-3	S/N Davies Rd. S. Lk Stevens Rd. to Vernon Rd.	CL	2.12	Urban 2-Lane			$10,331.6
AC-4	79th Ave. SE 20th St. to 8th St. SE	CL	0.76	Urban 2-Lane			$3,386.5

Note: PA = Principal Arterial (urban) CL = Collector (urban) MA = Minor Arterial (urban)
MaC = Major Collector (rural) MiC = Minor Collector (rural)

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for Snohomish County (continued)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Program Projects	LOS and IRC	Other Projects
	Arterial Capacity Enhancement (continued)						
AC-5	99th Ave. SE 20th Ave. SE to S. Lk Stvns Rd	CL	0.18	Urban 2-Lane			$810.7
AC-6	Vernon Road SR-9 to Lundeen Park Way	CL	0.50	Urban 2-Lane			$2,932.1
AC-7	83rd Ave. SE 20th St. SE to 4th St. SE	CL	1.00	Urban 2-Lane			$3,524.1
AC-8	131st Ave. NE 16th St. NE to 2nd St. SE	MA	1.16	Urban 2-Lane			$4,584.3
AC-9	2nd St. SE 123rd Ave. SE to 131st Ave. SE	MA	0.51	Urban 2-Lane			$1,763.1
AC-10	Nyden Farms Rd 2nd St. SE to 4th St. NE	CL	0.46	Urban 2-Lane			$1,385.9
AC-11	Purple Pennant Rd. E. Lake Stevens Rd. to Nyden Farms Rd.	CL	0.20	Urban 2-Lane			$756.4
AC-12	4th St. NE Nyden Farms Rd. to 131st Ave. NE	CL	0.64	Urban 2-Lane			$2,313.2
AC-13	123rd Ave. SE 2nd St. SE to Machias Cutoff	MA	0.80	Urban 2-Lane			$3,182.6
AC-14	8th St. SE 79th Ave. SE to 91st Ave. SE	CL	0.73	Urban 2-Lane			$2,674.8

Note: PA = Principal Arterial (urban) CL = Collector (urban) MA = Minor Arterial (urban)
MaC = Major Collector (rural) MiC = Minor Collector (rural)

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for Snohomish County (continued)

Snohomish County (continued)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Program Projects	LOS and IRC	Other Projects
	Arterial Capacity Enhancement (continued)						
AC-15	32nd St. SE 103rd Ave. SE to 91st Ave SE	CL	0.73	Urban 2-Lane			$1,313.0
AC-16	Vernon Rd./81st Ave. NE/SE Lundeen Park Way to SR-204	CL	0.95	Urban 2-Lane			$4,678.2
AC-17	99th Avenue NE SR-92 to Lundeen Park Way	CL	0.80	Urban 2-Lane			$3,985.2
	Arterial Capacity and Operations						
AC/O-1	20th St. SE SR-9 to S. Lk. Stevens Rd.	MA	0.51	Urban 5-Lane	$5,431.4		
AC/O-2	20th St. SE S. Lk. Stev. Rd. to Williams Rd.	MA	1.13	Urban 3 -Lane			$5,232.0
AC/O-3	20th St. SE Cavalero Rd. to SR-9	MA	1.25	Urban 5-Lane	$5,418.0 (partial)	$5,119.8	
AC/O-4	20th St. SE SR-2 Ramps to Cavalero Rd.	MA	0.38	Urban 4-Lane (Ops.)		$1,119.7	
AC/O-5	Lundeen Pkwy SR-9 to 99th Ave. NE	MA	0.65	Urban 4-Lane (Ops.)		$3,650.2	
AC/O-6	91st Ave NE/SE Market Place to SR-204	CL	0.31	Urban 3-Lane (partial)		$1,001.9	

Note: PA = Principal Arterial (urban) CL = Collector (urban) MA = Minor Arterial (urban)
MaC = Major Collector (rural) MiC = Minor Collector (rural)

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for Snohomish County (continued)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Program Projects	LOS and IRC	Other Projects
	New Arterial Alignments						
NR-1	87th Ave. SE 4th St. SE to Market St. Ext.	CL	0.47	Urban 2-Lane			$1,594.0
NR-2	83rd Avenue NE Lundeen Park Way to Soper Hill Road	CL	1.15	Urban 2-Lane			$8,385.0
NR-3	Lundeen Park Way Extension SR-9 to SR-204	MA	1.11	Urban 2/3-Lane	$5,580.0		
NR-5	79th Ave. SE Extension 20th St. to 24th St. SE Ext.	CL	0.25	Urban 2-Lane			$1,977.5
NR-6	79th Ave. SE 8th St. SE to SR-204	CL	0.55	Urban 2-Lane			$4,664.7
NR-7	4th St. SE Extension 83rd to 91st Ave. SE	CL	0.48	Urban 2-Lane			$3,219.1
NR-8	24th St. SE Ext. 79th Ave. SE to SR-9	CL	1.02	Urban 2-Lane			$6,494.5
NR-9	83rd Ave. SE Ext. 20th to 24th St. SE	CL	0.25	Urban 2-Lane			$1,957.6
NR-10	91st Ave. SE Ext. 20th to 32nd St. SE	CL	0.64	Urban 2-Lane			$4,083.6

Note: PA = Principal Arterial (urban) CL = Collector (urban) MA = Minor Arterial (urban)
MaC = Major Collector (rural) MiC = Minor Collector (rural)

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for Snohomish County (continued)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Program Projects	LOS and IRC	Other Projects
	New Arterial Alignments (continued)						
NR-11	12th St. SE 79th to 83rd Ave. SE	CL	0.25	Urban 2-Lane			$1,777.3
NR-12	Cavalero Rd. 10th to 20th St. SE	CL	0.63	Urban 2-Lane			$4,536.6
NR-13	87th Ave. SE 20th St. SE to 8th St. SE	CL	0.76	Urban 2-lane (powerline conflict @ 20th)			$5,402.4
	Total		**36.52**	**Total County Cost =**	**$16,429.4**	**$24,815.1**	**$135,806.6**
				Cumulative Cost =	**$16,429.4**	**$41,244.5**	**$177,051.1**

Note: PA = Principal Arterial (urban) CL = Collector (urban) MA = Minor Arterial (urban)
MaC = Major Collector (rural) MiC = Minor Collector (rural)

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Highway Improvements for
WA State Department of Transportation

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Funding for TIP	Highway LOS	Other Projects
	WA State Facilities						
WS-1	State Route 2 I-5 to SR-204	PA	2.05	Eastbound Urban 2-Lane (Underway)	$50,000.0		
WS-2	State Route 2 At SR-204	PA	0.00	Interchange	see above		
WS-3	State Route 2 At I-5	PA	0.00	Interchange (Underway)	see above		
WS-4	Various Intersections See Appendix 5-A	PA	0.00	Special Mitigation (not mapped or in TIP)		$1,724.0	$803.0
WS-5	SR-204 At SR-9	PA	0.00	Operations Enhancement		$545.0	
WS-6	SR-204 SR-2 to SR-9	PA	2.33	Urban 4-Lane		$8,200.0	
WS-7	SR-9 32nd St. SE to SR-92	PA	3.14	Urban 4-Lane		$13,687.2	
WS-10	SR-2 EB/WB Trestle Cavalero Hill to I-5 I/Cs	PA	0.00	6-Lane Freeway		$80,000.0	
	Total		**7.52**	**State Cost = $**	**$50,000.0**	**$104,156.2**	**$803.0**

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for City of Lake Stevens

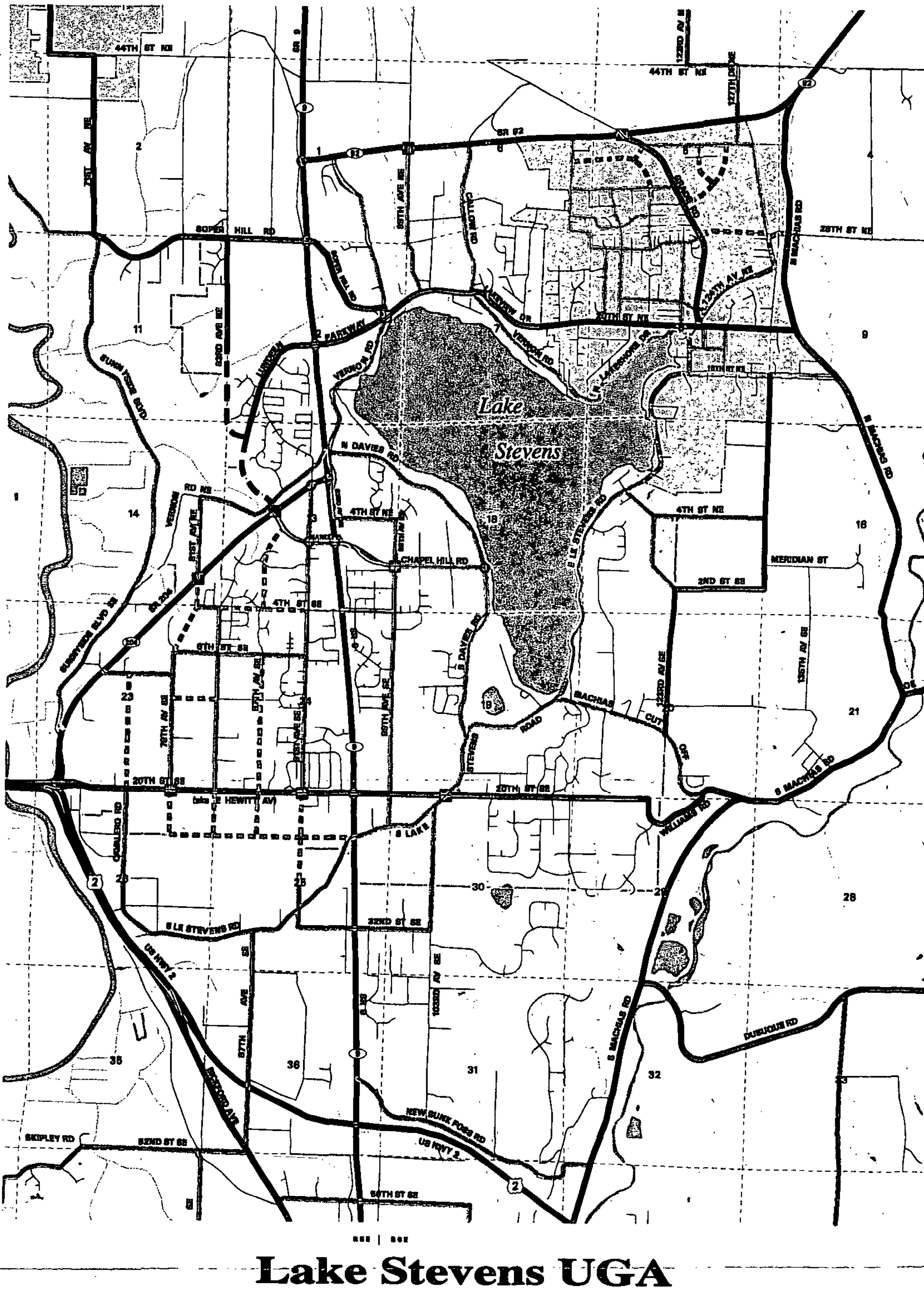
Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Funding for TIP	Street LOS	Other Projects
	Lake Stevens Arterial Design Standards						
LS-1	16th St. NE 127th Ave. to 131st Ave. NE	CL	0.25	Urban 2-Lane	$55.0		
LS-2	East Lakeshore Dr. Main St. to 12th St. NE	CL	0.32	Urban 2-Lane	$27.0		
LS-3	Grade Road 20th St. to 22nd St. NE	CL	0.06	Urban 2-Lane	$335.0		
LS-4	20th St. NE 116th Ave. NE to West C/L	CL	0.35	Urban 2-Lane	$1,480.0		
LS-5	East Lakeshore Dr. 12th St. NE. to South C/L	CL	0.69	Urban 2-Lane		$600.0	
LS-6	Grade Road 22nd St. NE to North C/l	CL	1.21	Urban 2-Lane		$3,015.0	
LS-7	Hartford Dr. Grade Rd. to Old Hartford Rd.	CL	0.61	Urban 2-Lane		$1,980.0	
LS-8	16th St. NE Main St. to East C/L	CL	0.66	Urban 2-Lane		$1,465.0	
LS-9	Main St. 16th to 80' N. of 18th St. NE	CL	0.15	Urban 2-Lane		$825.0	
LS-10	20th St. NE Main St. to East C/L	CL	0.62	Urban 2-Lane		$3,795.0	
LS-12	20th St. NE Hartford Dr. to 116th Ave. NE	CL	0.50	Urban 2-Lane		$675.0	

Table 5-1

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements for City of Lake Stevens (continued)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Project Costs ($000)		
					Funding for TIP	Street LOS	Other Projects
	Lake Stevens Arterial Design Standards (continued)						
LS-13	North Lakeshore Dr. West C/L to Main St.	CL	1.01	Urban 2-Lane		$1,045.0	
	Total		**6.43**	**City Cost = $**	**$1,897.0**	**$13,400.0**	**0**



Lake Stevens UGA
Arterial Circulation Plan

LEGEND

ADOPTED DEC. 7, 2001

Arterial Designations (Urban/Rural)

- Freeway/Freeway
- Principal Arterial/Principal Arterial
- Minor Arterial/Major Collector
- Collector/Minor Collector

Recommened New Arterials (Urban/Rural)

- Principal Arterial/Principal Arterial
- Minor Arterial/Principal Collector
- Collector/Minor Collector

Local Roads

- Local Streets
- Existing Signal
- Likely Future Signal

Planning Area and Boundaries

- Incorporated City Boundary
- Urban Growth Area Boundary
- Incorporated City Area
- Urban Growth Area

0 1000 2000 3000

Scale in Feet

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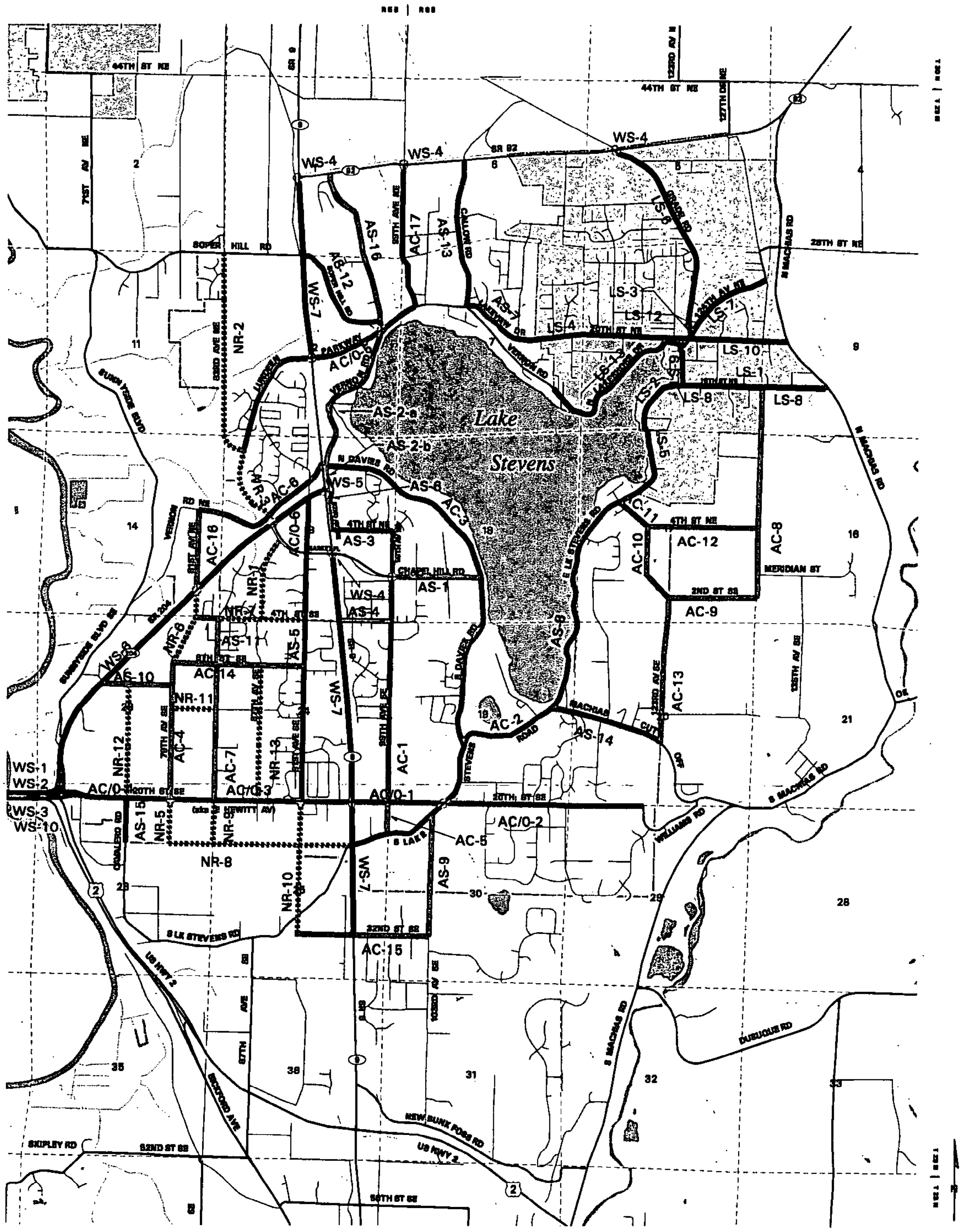
Snohomish County

FIG. 5-2



Lake Stevens UGA
Recommended Road and Street Improvements

LEGEND **ADOPTED DEC. 7, 2001**

Improvements to Existing Facilities
- County Road with Improvement
- Non-County Road with Improvement

Recommended New Roads
- New County Road in Plan
- New Non-County Road in Plan

Local Roads
- Local Streets
- Arterial Circulation Plan
- Intersection Improvements
- AS-1 County Improvement Identification Number
- WS-1 Non-county Improvement Identification Number

Planning Area and Boundaries
- Incorporated City Boundary
- Urban Growth Area Boundary
- Incorporated City Area
- Urban Growth Area

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Scale in Feet

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Snohomish County

FIG. 5-3

Table 5-2 presents a summary of the highway, roadway and street projects recommended within this transportation element for the 2000–2012 planning horizon of this UGA Plan. Summary data on the projects is shown by improvement type along with the project-programming assumptions and mileage.

Table 5-2

Summary of Projects and Mileage

Improvement Type and Programming Category	TRANSPORTATION ELEMENT No. of Projects	Miles
Proposed Program Projects (2000-2005)		
Arterial Design and Safety Standards (AS)	-	-
Arterial Capacity Enhancement (AC)	-	-
Arterial Capacity and Operations (AC/O)	2	1.76
New Arterials (NR)	1	1.11
State Highways (WS)	3	2.05
City Streets (LS)	4	0.98
Subtotal	**10**	**5.90**
LOS and IRC Projects (2000-2012)		
Arterial Design and Safety Standards (AS)	5	2.45
Arterial Capacity Enhancement (AC)	1	1.49
Arterial Capacity and Operations (AC/O)	4	2.59
New Arterials (NR)	-	-
State Highways (WS)	5	5.47
City Streets (LS)	8	5.45
Subtotal	**23**	**17.45**
Enhancements Projects (2000-2012)		
Arterial Design and Safety Standards (AS)	12	7.57
Arterial Capacity Enhancement (AC)	16	13.22
Arterial Capacity and Operations (AC/O)	1	1.13
New Arterials (NR)	11	6.45
State Highways (WS)	1	-
City Streets (LS)	-	-
Subtotal	**41**	**28.37**
Total (2000-2012)		
Arterial Design and Safety Standards (AS)	17	10.02
Arterial Capacity Enhancement (AC)	17	14.71
Arterial Capacity and Operations (AC/O)	7	5.48
New Arterials (NR)	12	7.56
State Highways (WS)	9	7.52
City Streets (LS)	12	6.43
TOTAL	**74**	**51.72**

2. Transit and Nonmotorized Transportation Improvements

a. Existing Transit Service

Existing transit services are provided to the City of Lake Stevens and the corresponding Urban Growth Area (UGA) by Community Transit (CT). One transit route currently provides service within the UGA, with an additional two routes traveling just outside the UGA on SR-2. Besides transit service, a minor bus station exists on Market Place, between 91st Avenue NE and SR-9. A single park-and-ride lot is operating within the UGA, at the Ebenezer Lutheran Church on 22nd Street NE in the City limits. A map of the existing transit facilities in the Lake Stevens UGA is provided in Figure 5-4. A brief description of each of the transit routes is provided below:

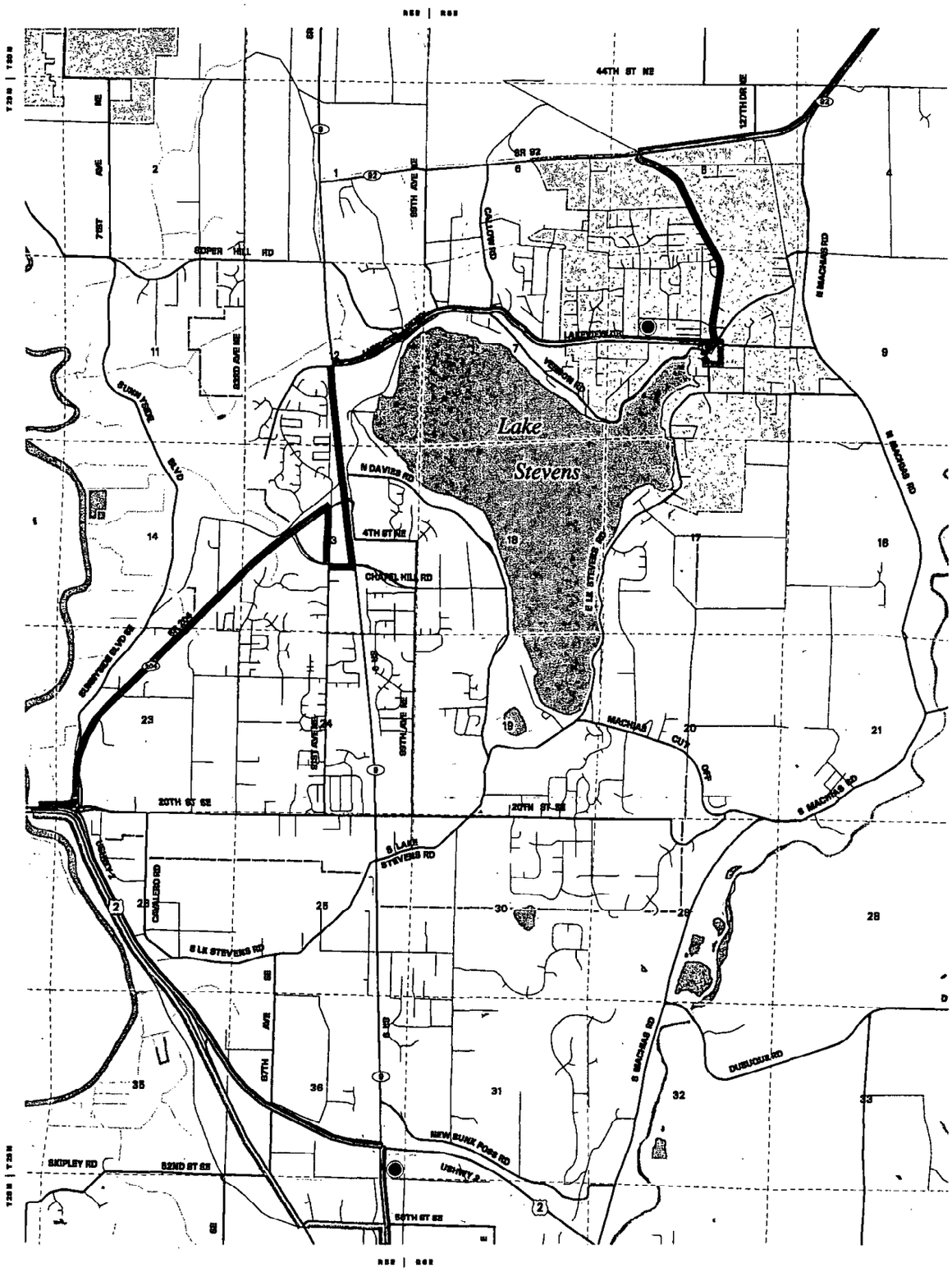
- Route 280: This route provides service from Granite Falls to Everett, through both downtown Lake Stevens and the Frontier Village area. Weekday service is provided hourly between 6 a.m. and 9 p.m.

- Route 720: Known as the Everett to Gold Bar bus, this route provides service for communities along SR-2 to downtown Everett, including Gold Bar, Startup, Sultan, Monroe, and Snohomish. For residents of the Lake Stevens UGA, the route would have to be boarded south of SR-2, at the Snohomish park-and-ride or Bickford Avenue. The route provides hourly service during weekday peak times, with a few extra trips from Everett in the p.m. peak hours.

- Route 727: This route is described as Gold Bar to Boeing, and similar to Route 720, in that Lake Stevens UGA residents would need to travel south of SR-2 to board the route. Service is limited to a.m. peak hour morning trips westbound to Boeing, and afternoon peak hour trips eastbound to Gold Bar and the communities located along SR-2.

b. Future Transit Service

Future changes to transit service in the County are studied and identified primarily by Community Transit (CT), which maintains a transit demand plan for this purpose. CT has not identified any specific improvements or expansions to transit service for the Lake Stevens UGA. However, CT is investigating locations for a transit center, located within the SR-9/SR-204 corridor, possibly in conjunction with a park-and-ride. In addition, CT may identify additional local bus circulator routes as part of its ongoing planning process. Under this UGA use plan, increased residential density is being proposed along the SR-9 corridor, between 20th Street SE and Frontier Village. The additional residents would increase the feasibility of additional transit service between Lake Stevens and the employment centers served by CT. As the build-out of the land use plans occurs, CT could likely continue to review and analyze possible transit service expansion. Under the County and City land use plans, there is higher potential for increased transit service due to the additional commercial and industrial land uses proposed in the Cavalero Hill and South Lake neighborhoods. High-density residential land use present within the UGA could have the potential to increase transit usage.



Lake Stevens UGA
Existing Transit Services

LEGEND **DEC. 7, 2001**

CT Bus Routes

- Route 280 Everett-Granite Falls
- Route 720 Everett- Gold Bar
- Route 727 Boeing-Gold Bar

Other Transit Facilities

- Park and Ride Lots

Local Roads

- Local Streets
- Arterial Plan

Planning Area and Boundaries

- Incorporated City Boundary
- Urban Growth Area Boundary
- Incorporated City Area
- Urban Growth Area

Scale in Feet

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Snohomish County

FIG. 5-4

c. Nonmotorized Transportation

As recognized in Snohomish County's General Policy Plan (GPP), alternatives to the single-occupancy vehicle need to be included in planning for future transportation systems. Specifically, goal TR 3 of the GPP directs Snohomish County to, "improve nonmotorized transportation facilities and services." In addition, the national legislation guiding modern transportation planning contains language recommending that planning agencies adopt new approaches to moving people, including measures involving bicycle or pedestrian facilities.

The Transportation Element responded to the nonmotorized planning concerns by recommending an implementation measure in which to plan for and construct bikeway projects. Specifically, the County will,

> "Participate with the Washington State Department of Transportation (WSDOT) and cities within Snohomish County to plan and develop a countywide system of paths, bikeways, walkways and routes for nonmotorized transportation." *County Transportation Element, 1995. pp. 54-56.*

A recommended list of bikeway improvement projects, totaling 57 projects and 133 miles, was included within the countywide transportation element. The goal was to outline a series of retrofittings and upgrades that would establish a core system to complement the existing and planned Class I facilities in the County, the Interurban Trail and Centennial Trail.

d. Existing Bicycle Facilities

Bicycle facilities can take several forms, either as part of a roadway or separated from motorized traffic. Conventional classes of bikeways are numbered Class I through Class III, and are defined as follows in the countywide transportation element:

- Off-road Separated Multi-Use Paths (Class I) - are physically separated from motorized vehicular traffic by an open space or barrier. These paths generally serve multiple users including pedestrians, bicyclists and equestrians. Class I paths include the Centennial Trail, currently extending from Snohomish to Lake Stevens.

- Bicycle Lanes and/or Walkways (Class II) - are distinguished from the off-road paths in that they are not separated from motorized traffic. Bicycle lanes are designated for exclusive use by bicyclists and are delineated from traffic lanes by a painted stripe. Bicycle lanes can be present with or without walkways. Walkways can be traditional raised sidewalks or extensions of the paved roadway surface and its shoulders with raised diagonal polyester markings or a painted line serving as delineation.

- Bicycle or Walkway Routes (Class III) - are roadways which have been designated as a suggested route for bicyclists due to striped, paved roadway shoulders. Bicycle routes are not delineated with signs or symbols except for a line delineating the shoulder. Class III facilities are typically found on roadways with shoulders of at least 4 feet wide or at least widened curb lanes. Roadway shoulders are generally suitable for a mix of pedestrian and bicycle use where the volume of pedestrians and bicyclists is low.

Within the Lake Stevens UGA, currently there is a limited number of roadways which are functioning as Class I-III bikeways, as listed in Table 5-3. The only section of Class I (off-road) bikeway is the Centennial Trail, which currently runs parallel to South and North Machias Road on the eastern edge of the Lake Stevens UGA. Overall, the trail currently extends north from Snohomish to 16th Street NE in Lake Stevens. Existing bicycle lanes are designated on 20th Street NE in the City of Lake Stevens, on 91st Avenue NE and on Market Place near Frontier Village. Non-state roadways which have paved, striped shoulders of adequate width to function as Class III roadways include North Davies Road, Lundeen Park Way, 20th Street SE, Vernon Road, and Cavalero Road. State routes which have paved striped shoulders include SR-92, SR-9, and SR-204 in the Lake Stevens UGA. State routes are limited in their attractiveness to bicyclists, however, due to high traffic volumes and high operating speeds of the vehicles which use them.

e. Future Bicycle Facilities

Given the projected increase in residents, and the number of roadways which would have to be reconstructed to fit urban design standards, an opportunity exists to develop a nonmotorized network of bicycle lanes and pedestrian walkways in the Lake Stevens UGA. The presence of the Centennial Trail provides an anchor facility, allowing the development of connector routes from the trail to points within the UGA. A complimentary system of bicycle routes would include bikeways from all three classifications to serve the varying experience level and travel purposes of cyclists traveling in the Lake Stevens UGA.

Table 5-3
EXISTING BICYCLE FACILITIES
Lake Stevens Urban Growth Area

FACILITY	FROM	TO	TYPE	DESIGN NOTES
Centennial Trail	86th Street SE (Snohomish)	16th Street NE (Lake Stevens)	Class I	Paved trail
20th Street NE	123rd Avenue NE	116th Avenue NE	Class II	South side of road only
20th Street SE	US-2 Ramps	South Lake Stevens Road	Class III	Both sides of road
Cavalero Road	20th Street SE	South Lake Stevens Road	Class III	Both sides of road
Lundeen Park Way	99th Avenue NE	SR-9	Class III	Both sides of road
SR-9	US-2	North of SR-92	Class III	Both sides of road
SR-92	SR-9	Northwest of Lake Stevens	Class III	Both sides of road
North Davies Road	Vernon Road	South Lake Stevens Road	Class III	West side of road only
20th Street SE	South Lake Stevens Road	113th Avenue SE	Class III	South side pedestrian walkway
Vernon Road	Lundeen Park Way	North Davies Road	Class III	East side pedestrian walkway
Market Place(1)	SR-204	99th Avenue NE/SE	Class II	Both sides of road
91st Avenue NE	Market Place	South of SR-204	Class II	Both sides of road

Note: bicycle facility types are defined as follows:
Class I bikeways are dedicated paths used exclusively by nonmotorized travelers.
Class II bikeways are striped, designated bikeway lanes on roadways
Class III bikeways are striped, paved shoulders which can be utilized by nonmotorized travelers.

(1) Market Place currently open from SR-204 to SR-9; remaining section to open in 2000.

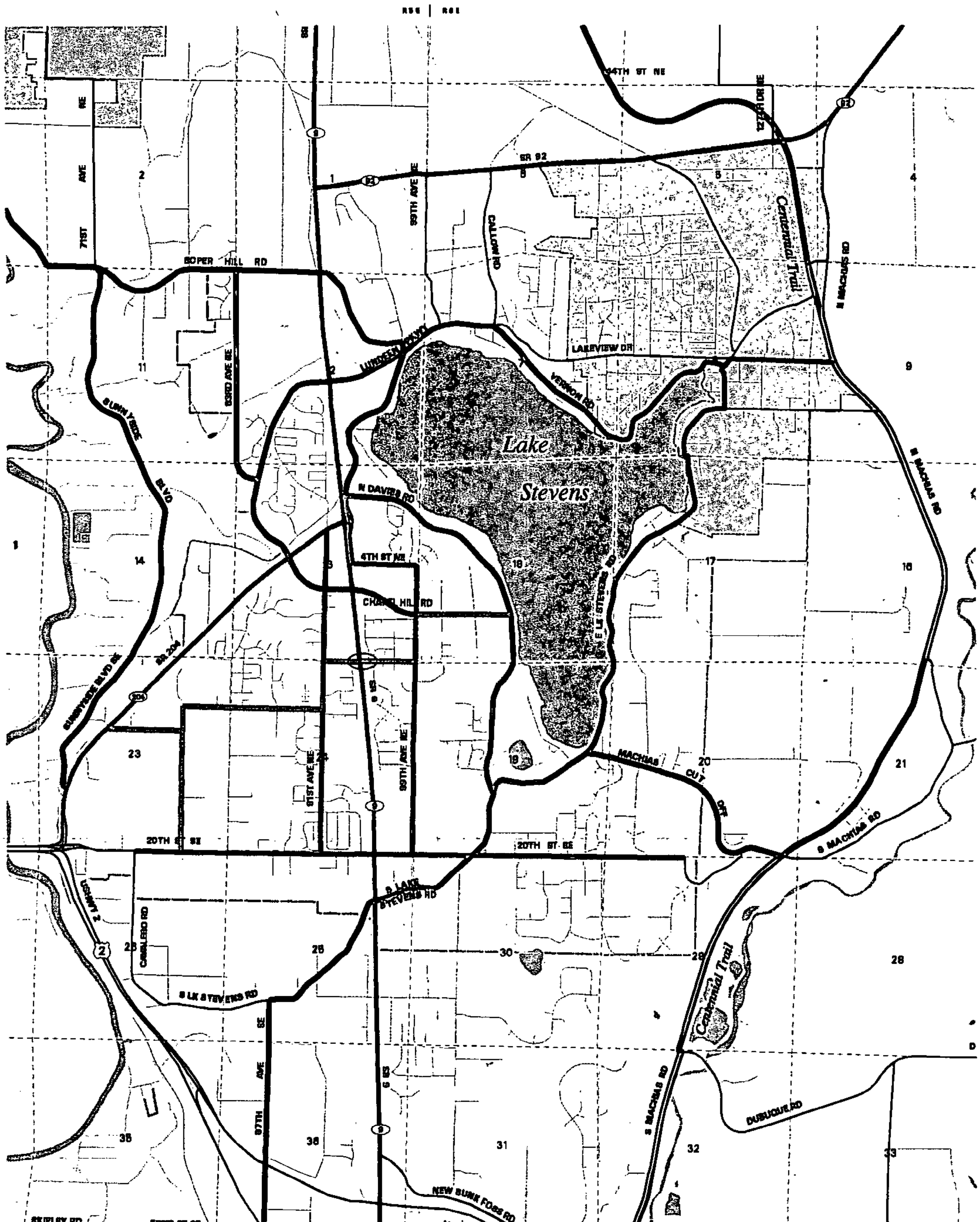
Factors which should be taken into account in selecting additional bikeway routes and alignments include the following:

- Attractiveness - This includes scenery, water access, historical attractions, and varied terrain; it can vary significantly from rider to rider. For the Lake Stevens area, roadways circling the lake were considered top choices in this category.
- Grade - The presence of hills and slopes affects route choice and safety, with the cyclist varying speed and weaving depending on whether he or she is descending or ascending a grade. Significant grade constraints exist on Williams Road, 20th Street SE from SR-2 to Cavalero Road, and 20th Street NE from Callow Road to roughly Cedar Road.
- Services - Opportunities for cyclists to access bathrooms, water, food, telephones, and service stations should be present. In the Lake Stevens UGA, this would be best accomplished by routing bikeways through the neighborhood centers identified in the land use plans, such as Tom Thumb, Frontier Village, and downtown Lake Stevens.
- Security - Ample bicycle storage racks and/or lockers should be located strategically. Well-lighted areas would increase safety by increasing bicyclists' visibility to motorists.
- Directness - Bicycle routes should connect key destinations with a minimum of circuitry. Similar to the routing strategy for services, roadways were selected that facilitate travel between the centers in the Lake Stevens UGA.
- Continuity and Simplicity - Routes should connect points completely, avoiding
- Right of Way - The routes selected should minimize stopping at lights, signals, or locations where the rider must dismount the bike.

In Figure 5-5, a recommended future bikeway network is displayed for the Lake Stevens UGA. The recommended network includes both a "core group" of bicycle lane projects which are identified within the County transportation element, as well as some additional facilities which could be constructed along with roadway projects, in support of the future land use plans. The projects have been categorized as follows:

- Recommended bicycle lanes which are included in both roadway improvement projects by 2012 and the County nonmotorized plans.
- Recommended additional bicycle lanes identified in County nonmotorized plans.
- Additional bicycle lanes included in roadway improvement projects to improve local nonmotorized circulation.
- State routes with wide striped shoulders which would function as Class III facilities.

The only Class I facility shown in Figure 5-6 is the Centennial Trail, which is currently being expanded beyond the current terminus at 16th Street NE within Lake Stevens, northwards to Arlington along an abandoned Burlington Northern Railroad line. Future extension plans call for the completion of an additional 16 miles of the Centennial Trail, reaching the SkagitCounty line through downtown Arlington. Southwards, expansion is also planned from Snohomish through Monroe, towards the King County line.



Lake Stevens UGA
Recommended Bikeway Facilities

LEGEND | **ADOPTED DEC. 7, 2001**

Bikeways in County Nonmotorized Plan

- Existing Bicycle Lanes
- Proposed Bicycle Lanes (Class II Bikeways) Included in Recommended Road and Street Improvements
- Additional Proposed Bicycle Lanes (Class II Bikeways)
- Separated Multi-use Path (Class I Bikeway)

Additional Bikeway Projects

- Proposed Bicycle Lanes (Class II Bikeways) Included in Recommended Road and Street Improvements
- Proposed Bicycle Lanes (Class II Bikeways) Included in City of Lake Stevens Transportation Improvements
- Usable Paved Road Shoulders (Class III Bikeways) on State Routes

Local Roads

- Local Streets
- Arterial Plan
- Proposed Overpass

Planning Area and Boundaries

- Incorporated City Boundary
- Urban Growth Area Boundary
- Incorporated City Area
- Urban Growth Area

0 1000 2000 3000

Scale in Feet

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Produced by Snohomish County Department of Planning and Development Services, Cartography Section, rdm/dkt, Revised 12-7-2001.

Snohomish County

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FIG. 5-5

As noted above, some of the future recommended bikeway projects are on roadways where no recommended improvement project has been identified as part of this study. This list of additional "core" projects totals roughly 7.3 miles in length, with an estimated additional cost of $4.6 million to construct, beyond the total costs of the roadway improvement projects identified previously in this report. These projects are key components of the total bikeway system. The bikeways would provide east-west routes to and from the Lake Stevens UGA and offer alternatives to high traffic routes such as SR-9 and 20th Street SE. Proposed bikeways avoid roadways which are negatively impacted by slopes, such as 20th Street SE east of the SR-2 access, and Williams Road.

f. Existing Pedestrian Facilities

The number of pedestrian facilities currently available to residents and travelers within the Lake Stevens UGA are limited. With most of the area developed under rural conditions, roadway design standards, which include sidewalks, curb and gutter treatments, and pedestrian walkways, were not applicable before the UGA boundary was established. What has resulted is a discontinuous system of sidewalks and shoulder treatments, leaving a large amount of County arterials below the current urban standards.

As identified previously in the bicycle facilities discussion, only a few pedestrian walkway routes exist within the Lake Stevens UGA. Other sections of sidewalks and walkways do occur, mainly in segments as a result of developer construction (i.e., Lundeen Park Way and East Lake Stevens Drive); however, their usefulness is limited due to "gaps" in pedestrian facilities, including sections of the roadway where no sidewalks or road shoulders exist. Other minor treatments are scattered throughout the UGA. Pedestrians also use the paved, striped shoulders along roadways, such as is found on 20th Street SE and the state routes.

g. Future Pedestrian Facilities

In developing the recommended roadway improvement projects and associated costs, it was assumed that all current and future County arterials would be built to urban standards, requiring sidewalks on both sides, with curb and gutter treatments to provide a grade-separation of the pedestrian on the sidewalk from the vehicle on the arterial. Therefore, all projects listed in Table 5-1 and displayed in Figure 5-3, include the construction of sidewalks along the entire length of the project.

One project which merits specific mention is a proposed pedestrian overpass of SR-9, between 4th Street SE and 20th Street SE. The project would serve to connect two neighborhoods with specific services, since Lake Stevens and lakeside parks lie to the east of SR-9, while schools are located on the west side. With the land use plan proposed in this UGA planning process, identifying land along SR-9 as developing at medium-density residential or higher, the feasibility of the pedestrian overpass is increased; should SR-9 eventually be widened to a 4 lane facility, as identified in the roadway improvements lists, such a crossing serves to connect neighborhoods while providing a safer passage across the principal north-south arterial in the Lake Stevens UGA.

Closure of the 4th Street SE and SR-9 intersection to vehicular traffic, on the west side of SR-9, is expected during the 2000 – 2005 timeframe and would increase the need for a pedestrian overpass to connect two large neighborhoods served by area public schools. It is unlikely the

resulting "T" intersection would be signalized. As a result, no signalized crossings of SR-9 would exist between Market Street and 20th Street SE (about 1.25 miles). Although the costs of a pedestrian overpass, estimated at between $1 million and $2 million, are not included in the County road projects costs, this project is an important part of the overall nonmotorized plan.

D. Transportation Expenditures and Revenues

1. Expenditures Forecast

Snohomish County's expenditures on transportation support a fairly broad range of services and facilities that benefit the Lake Stevens UGA. The City of Lake Stevens and the Washington State Department of Transportation (WSDOT) also make substantial UGA-related expenditures on transportation. Future expenditures on transportation-related projects within the Lake Stevens UGA will depend on the availability of funding and also on the timing and intensity of land development there. Table 5-4 presents Snohomish County's transportation expenditure forecasts for the Lake Stevens UGA.[5] These forecasts are in 2000 dollars and represent a level of expenditure necessary to adequately serve proposed land development and maintain the County's level of service standards. Please see Appendix 5-B for details on specific project costs.

The transportation costs presented within Table 5-4 represent funding programmed within the 2000-2005 Transportation Improvement Program (TIP), funding that would likely be applied to resolve level of service problems and inadequate roadway conditions during 2000-2012, and these costs are also presented by major cost categories (construction, engineering and right-of-way). Please note the total costs for specific project recommendations were presented previously by Table 5-1.

The expenditure or cost values presented within this transportation element for the Lake Stevens UGA are planning-level cost estimates for proposed projects and mitigation measures under this UGA Plan. The cost estimates are in 2000 dollars and are derived from Snohomish County's cost estimating model. The County's cost estimating model is based on several attributes of the project under consideration. These attributes are:

- The roadway's functional classification,
- Terrain,
- Number of intersections,
- Number of major and minor traffic signals,
- Additional pavement width required,
- Additional right-of-way required,
- The amount of existing curb, gutter and sidewalk,
- Wetlands that need to be replaced (1.5 to 1.0 replacement ratio),
- Bridges,
- Engineering,
- Water drainage and detention, and
- Type of land use on either side of the roadway (i.e., value of land).

[5] Technical Memorandum: Cost Analysis and Prioritization, 2000, Rao and Associates Incorporated, Seattle WA.

All cost estimates for County road and City street projects are made under the assumption that roadways or streets would be brought to County urban arterial standards, including curb, gutter and sidewalks. In some cases, additional right-of-way width is included for bicycle lanes as part of the roadway and street design. Snohomish County could be expected to expend at least $41,000,000 by the year 2012 to serve the Lake Stevens UGA and avoid level of service and inadequate road conditions. It should be recognized that Snohomish County would be challenged to fund and construct all the needed improvements within the 2000-2012 timeframe of this UGA Plan. Enhancements to further support development of the UGA willdepend on the availability of additional public funds and significant private funding contributions.

Table 5-4

Snohomish County
Transportation Projects Cost Summary *
(2000 dollars)

Cost Category	Programming (2000-2005)	Planned to Resolve LOS/IRC (2000-2012)	Enhancements to Support UGA (not time specific)	Total
Construction	$10,312,800	$10,223,120	$42,733,600	$63,269,520
Engineering	2,099,600	4,059,000	16,947,460	23,106,060
Rights-of-Way	4,017,000	10,532,980	76,125,540	90,675,520
Total	**$16,429,400**	**$24,815,100**	**$135,806,600**	**$177,051,100**

** See Appendix 5-B for project details.*

Snohomish County is not the only jurisdiction that will need to make a substantial investment in transportation-related improvements. Table 5-5 presents forecasted expenditures, in 2000 dollars, needed within the UGA by the City of Lake Stevens and the WSDOT.

Table 5-5

City of Lake Stevens and WSDOT
Transportation Cost Summary
(2000 dollars)

Jurisdiction	For Programming in TIP	Planned to Resolve LOS Problems	Enhancements to Support UGA	Total
City of Lake Stevens	$ 1,897,000	$ 13,400,000	$ 0	$ 15,297,000
WSDOT	$ 50,000,000	$ 104,156,200	$ 803,000	$ 154,959,200
Total	**$ 51,897,000**	**$ 117,556,200**	**$ 803,000**	**$ 170, 256,200**

The City of Lake Stevens could be expected to expend upwards of $15.3 million to provide the 2012 arterial network presented for the City. WSDOT would need to make an expenditure of approximately $155 million to provide the major state highway improvements required to move regional traffic and adequately serve the Lake Stevens UGA and its planned land use.

2. Revenue Forecasts

Snohomish County has a number of traditional sources of revenue from which it funds transportation improvement projects. Table 5-6 presents a summary of revenues potentially available for use by Snohomish County in the Lake Stevens UGA. The funding amounts are presented by broad categories of revenue in year 2000 dollars.[6]

a. TIP Local Funds

The County's Transportation Improvement Program (TIP) is a document prepared by the public works department and adopted annually by the County Council. It presents the programming of funds for various transportation project improvements over the ensuing 6 years. The County's adopted 2000-2005 TIP was used as a starting place for estimating future revenues. Local TIP funds are generated by such sources as property taxes, private forest harvest tax, forest yield in excise taxes, fuel taxes, vehicle license fees, and other miscellaneous funds. The County has discretion regarding how it spends these revenues because they are not limited to specific projects or category of improvement. Table 5-6, line "TIP Local Funds," identifies the amount of local funds (tax revenues, state shared revenues, etc.) that is programmed in the 2000-2005 TIP for projects in the Lake Stevens UGA.

b. Additional Project Funds

New growth in the Lake Stevens UGA may generate more local money than may be currently programmed in the TIP. Such potential funds for the 2000 through 2005 time period are identified under line item "Additional Project Funds" in Table 5-6. This value is derived by estimating the total amount of local funds for road purposes that would be generated by the existing tax base and new growth. This estimate is then modified, deducting an amount representing the share of those local funds that would be needed to maintain and operate the current road system. Additional local money will also be generated for the 2006-2012 time period. A separate calculation of these funds is identified on Table 5-6 as "Forecasted Base Funds".

c. Forecasted Base Funds

The dollar amounts shown for "Forecasted Base Funds" in Table 5-6 represent the potential contribution of the road fund to capital projects within the Lake Stevens UGA. This level of revenue provides a baseline of fiscal capacity that could be viewed as a target to achieve with voter approved measures enacted at future dates. This Plan therefore applies the reasonable assumption that the voters will continue to support funding future transportation measures consistent with current tax levels, factoring in inflation and historical tax limits.

d. Outside Grant Funds

In addition to local funds available for capital purposes, the County also receives awide variety of grant funds. The line item "Outside Grant Funds" on Table 5-6 under the heading 2000-2005 identifies the amount of outside grant funds that are currently programmed for that timeframe.

[6] Technical Memorandum: Revenue Forecasts, 2000, Rao and Associates Incorporated, Seattle WA.

An estimate of grant funds available for the 2006-2012 timeframe was also made by extrapolating the amount of grant funds anticipated to be received during 2000-2005 into the remainder of the planning period. These funds are listed under the line item "Outside Grant Funds" under the heading 2006-2012 on Table 5-6.

e. Impact Fees

"Impact Fees" are funds that are collected under Title 26B SCC as contributions by developers to mitigate the impact of development. The higher the levels of development, the more of these GMA fees are contributed. The line item "Impact Fees" for the 2000-2005 timeframe includes both the impact fees that are anticipated to be generated during the 2000-2005 timeframe and the amount of money already collected from development in that area.

f. Right-of-Way Dedication

The County expects to receive dedication of right-of-way for some specific projects. In some cases this could be as much as 60 feet; however, in most cases it would be much less. Since cost estimates for projects in Table 5-4 include complete right-of-way costs, an adjustment to the revenue forecast is needed to reflect the monetary value that the dedications will contribute. Table 5-6 presents a summary of the monetary value of potential right-of-way dedications up to 60 feet for individual projects. See Appendix 5-B for specific project dollar amounts.

Table 5-6

Snohomish County
Transportation Revenues Summaries
(2000 dollars)

Revenue Source	Potentially Available 2000-2005	Potentially Available 2006-2012	Total
TIP Local Funds	$4,778,970	$0	$4,778,970
Additional Project Funds	5,281,126	0	5,281,126
Forecasted Base Funds	0	16,736,791	16,736,791
Outside Grant Funds	9,884,243	9,474,349	19,358,592
Impact Fees	5,486,404	3,283,728	8,770,132
Other Developer Contributions	1,680,638	0	1,680,638
R/W Dedication *	0	571,760	571,760
Total	**$27,111,381**	**$30,066,628**	**$57,178,009**

** Represents the estimated monetary value of potential right-of-way dedications up to 60 feet for specific projects.*

Table 5-7 presents transportation revenues expected to be received by the City of Lake Stevens and WSDOT during the 2000-2005 and 2006-2012 time frames. WSDOT is not indicating a commitment of funds to specific projects within the Lake Stevens UGA. Funding for WSDOT projects identified herein will depend on action by the Legislature, particularly long-term improvements to the SR-2 Trestle.

Table 5-7

City of Lake Stevens and WSDOT
Transportation Revenues Summary
(2000 dollars)

Jurisdiction	UGA Plan Improvements
2000 thru 2005	
City of Lake Stevens	$ 3,763,100
WSDOT	Uncommitted
Subtotal	$ 3,763,100
2006 thru 2012	
City of Lake Stevens	$ 4,611,200
WSDOT	Uncommitted
Subtotal	$ 4,611,200
Total Revenues	**$ 8,374,300**

E. County Financial Strategy and Project Programming

Most public expenditure for transportation within the UGA will likely be related to preservation and maintenance, improving some existing arterials to design standards, and finishing the major arterial projects to which the County is already committed. Complete funding for the County's commitments to arterial capacity and design-related improvements, documented within the County's comprehensive plan, have not yet been fully realized. New revenues will need to be authorized in order to fund new transportation projects directly related to more intensive development within the Lake Stevens UGA. Authorization may come in the form of the Legislature enacting a statewide fuel tax, City/County use of local improvement districts/road improvement districts, and/or a voter approved local option fuel tax.

The 1990 Growth Management Act provides guidance to the County regarding how to balance expenditures and revenues for transportation to adequately serve planned land use. The GMA requires:

- An analysis of funding capability to judge needs against probable funding resources (RCW 36.70A (6)(c)(i));

- A multi-year financing plan based on the needs identified in the comprehensive plan, the appropriate parts of which serve as the basis for the six-year .... road .... program required by .... RCW 36.81.121 for counties .... (RCW 36.70A (6)(c)(ii)); and
- If probable funding falls short of meeting identified needs, a discussion of how additional funding will be raised, or how land use assumptions will be reassessed to ensure level of service standards will be met (RCW 36.70A (6)(c)(iii)).

These requirements of the GMA are the fundamental basis for the ensuing financial strategy contained in the next section of this transportation element.

1. Financial Strategy Statement and Intent

The financial strategy pursued by Snohomish County, in order to meet the requirements of the GMA, needs to recognize the limitations of traditional revenues and seek supplemental revenues to fund transportation improvements that benefit the Lake Stevens UGA. Table 5-8 presents a comparison of the previously mentioned transportation improvement costs versus traditional transportation-related revenues.

The revenue estimates are based on an analysis of the revenue capacity that can be generated by the tax and revenue base of the unincorporated area of the Lake Stevens UGA. The intent is to assess whether the needed improvements can be "afforded" by the revenue capacity of the area. These forecasted revenues are a part of revenue generated and managed on a countywide basis in order to develop and maintain a countywide transportation network. The process for using and programming these revenues is described later in this chapter under "Description of County Project Programming." The actual allocation of fiscal resources to this area may be more or less than forecasted in this plan depending on how the area develops and the resulting infrastructure needs relative to project priorities in other areas of the County.

The total county transportation improvement costs in this plan exceed $177.0 million. The forecast of public revenues identifies a revenue capacity to fund only $57.1 million of these projects within the planning period. For the County, funds generated during the 2000 through 2012 timeframe of this UGA Plan could be programmed within the annually adopted TIP to meet current commitments and to complete projects that resolve level of service problems and inadequate road conditions. In addition, approximately $15.9 million may be available to pursue some enhancement projects; this depending on voter approval of additional revenues. These enhancement projects could make a number of roads consistent with County road standards and thereby improve the quality of transportation for pedestrian, bicycle and motor vehicle users. The list of enhancement projects is substantial and offers benefits to both existing land uses and future land development. A number of these projects could become an actual need if portions of the UGA undergo fuller development sooner than anticipated by this plan. Private-sector funding would be critical to ensuring that needed transportation improvements were made along with land development.

The WSDOT is in a somewhat different situation than the County. Because WSDOT is unable to identify committed revenues for state projects, the Lake Stevens' UGA Transportation Element presents the lack of revenues as a funding shortfall that the State Legislature will need to address.

The *Countywide Capital Facilities Plan* adopted in support of the General Policy Plan (GPP), sets forth an approach when the public revenue capacity of the area cannot fund the full inventory of potentially needed projects within the planning period. That approach includes the following considerations:

- Reduce the standard of service, which will reduce the cost; or
- Increase revenues to pay for the proposed standard of service...; or
- Reduce the average cost of the capital facility (i.e., alternative technology or alternative ownership and financing) thus reducing the total cost, and possibly the quality; or
- Reduce the demand by restricting population...; or
- Reduce the demand by reducing consumption...; or
- Any combination of [the options listed above].

An important part of the overall strategy for financing transportation facilities, to support the land use plan, is defined below.

First, the strategy sets an appropriate, level of service for transportation systems to support the planned uses. The full inventory of projects involves a wide range of level of service considerations. Out of the range of level of service options, the Transportation Element of the Snohomish County Comprehensive Plan established a specific minimum level of service (labeled "Level of Service Tolerability Standards") against which to measure the adequacy of transportation services to support development (Transportation Element, page 34). This standard is generally LOS E for the a.m. and p.m. peak hours. The Transportation Element as implemented by Title 26B applies an additional level of service standard in its use of a measure of "Inadequate Road Way" conditions to require the removal of safety hazards which might be impacted or caused by new development.

Second the financial strategy identifies additional public resources, that with voter approval, could be used to increase revenues to pursue enhancement projects. Two very appropriate measures include voter approved bond issues and the local option gas tax. In addition, voter options could include increasing the impact fee applied to new development proposals.

Third, potential demand for street improvements can be reduced by reducing the intensity of allowable land development in some areas where existing land use patterns and constraints may limit the suitability for higher intensity uses. One of the constraints in this area is the expense and, in some cases, physical infeasiblity of making the street improvements that would be necessary to adequately serve high intensity uses. In these areas future development will be largely infill consistent with existing land use patterns and the existing roadway system. Generally, the existing road system should be able to support this planned pattern of uses at a tolerable level of service.

Finally, the strategy can adjust the land use element through development phasing in order to control the timing of development and to match the adequacy of public facilities to support the development. This phasing also changes the way that developer installed improvements are provided as a way of furnishing additional revenue to finance appropriate facilities prior to development. The development phasing strategy can be successful as long as the transportation needs in areas not covered by phasing are adequately provided at the time of

development. Increased intensity of development in these areas could adversely impact the provision of these facilities.

Phasing not only controls the demand for road improvements by slowing new development but also potentially adds revenue by better coordinating required developer contributions to the system. Under phasing, now largely undeveloped areas will be subject to phasing restrictions. These areas are now served by a rural system of roads that are inadequate and inappropriate to support higher intensity urban uses and densities.

While County Engineering Design and Development Standards (EDDS) do require new development to provide an appropriate road standard, these requirements generally apply only to the frontage improvements on the property. Without phasing, such frontage improvements are usually made parcel-by-parcel and this case-by-case approach limits the effectiveness of these standards to achieve the level of adequate infrastructure envisioned. The plan provides better use of these required improvements by applying the Development Phasing Overlay (DPO) that restricts further development until adequate streets are provided. This requirement encourages adjacent developers to work together to find financing for the street, that includes the required frontage improvements. Road improvement districts, latecomer programs and developer agreements are some of the ways this improved coordination and funding can be achieved. The relatively high densities that the plan allows (up to 8 and 9 units per acre with the PRD ordinance) in these areas should provide adequate financial capacity and incentive to provide these facilities. Ultimately, the DPO should ensure that these developing areas would have a high level of street services to support a quality urban environment.

As noted in Chapter 8 the area with sufficient County revenues to fund transportation improvements is referred to as the "green area." The formation of the green area is the result of an evaluation and prioritization of transportation projects within the UGA. This prioritization is taken from the key principles established by the County Council in Motion 99-356 for capital facilities planning in the Lake Stevens UGA, which are outlined in Chapter 8. One of the key principles requires that public investments should be made first where the fullest range of urban infrastructure already exists. With respect to transportation, the plan has identified a geographic area that has adequate public funding for transportation funding, based on the amount of money currently projected as available. Figure 8A-1 (contained in Appendix 8-A) illustrates the green area for transportation where there are revenues sufficient to fund the highest priority transportation projects, based on the key principle identified above. A list of the prioritized transportation projects that result in formation of the green area is shown in Table 5-9.

Figure 8A-1 identifies the area without sufficient public funding for transportation infrastructure. This area is referred to as the "Red area." The strategy of the plan is to place a development phasing overlay on the area, through a rezone process, until financing is available. As noted above and in Chapter 8 development within the red area is restricted until there is a commitment for public and/or private financing of necessary transportation facilities.

While the prioritization of projects is first to areas where the fullest range of urban infrastructure already exists, the financial strategy does provide for opportunities to fund system-wide improvements within the red area. The partial funding provides seed money that can be leveraged with non-county sources to fund necessary system wide improvements that benefit the entire UGA.

The overall intent of this financial strategy is to ensure that adequate funding is available for the transportation improvements needed to serve planned land use, while at the same time maintaining County level of service standards and the public's safety. Where land development causes a deterioration of level of service below adopted standards, the County needs to demonstrate that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years.

Table 5-8

Summary of Project Costs Versus Traditional Revenues
(2000 dollars)

	Programming Category			
Project Costs by Jurisdiction	**Program 2000-2005**	**LOS/IRC 2000-2012**	**Enhancements 2000-2012**	**Total**
Snohomish County	$ 16,429,400	$ 24,815,100	$ 135,806,600	$ 177,051,100
City of Lake Stevens	1,897,000	13,400,000	0.00	$ 15,297,000
WSDOT	50,000,000	104,156,200	$ 803,000	$ 154,959,200
Total	**$ 68,326,400**	**$ 142,371,300**	**$ 136,609,600**	**$ 347,307,300**

Revenues by Jurisdiction	**2000-2005**	**2000-2012**	**2000-2012**	**Total**
Snohomish County	$ 16,429,400	$ 24,815,100	$ 15,933,500	$ 57,178,009
City of Lake Stevens	3,763,100	4,611,200	0.00	8,374,300
WSDOT *	Uncommitted	Uncommitted	Uncommitted	Uncommitted
Total	**$ 20,192,500**	**$ 29,426,300**	**$ 15,933,509**	**$ 65,552,309**

Cost to Revenue Comparison	**2000-2005**	**2000-2012**	**2000-2012**	**Total**
Snohomish County	$0.00	$0.00	$(119,873,091)	$(119,873,091)
City of Lake Stevens	1,866,100	(8,788,800)	0.00	(6,922,700)
WSDOT *	$ (50,000,000)	$(104,156,200)	$ (803,000)	$(154,959,200)
Needed Additional Revenue	**$(48,133,900)**	**$(112,945,000)**	**$(120,676,091)**	**$(281,754,991)**

** WSDOT not able to effectively forecast revenues for timeframes indicated.*

2. Additional Components of the Financial Strategy

Snohomish County's financial strategy for funding needed transportation improvements within the Lake Stevens UGA will be to pursue revenue measures beyond those traditionally available. There are five nontraditional measures that have potential to provide additional revenues for transportation improvements.

a. Joint Funding with the City of Lake Stevens

The County, under this measure, would collaborate with the City of Lake Stevens to achieve joint funding where a project substantially benefits the City, and the area served is likely to be annexed within the next six years. The City's funding contribution would serve to ensure equitable sharing of the financial burden. Importantly, this measure would also allow the City to fund specific design features on a roadway soon to be within its jurisdiction.

b. Private-Sector Partnerships

This measure would allow private-sector entities (corporations, developers and individuals) to participate in funding transportation improvements that allow economic benefit to the private-sector partners, while at the same time allowing the County and/or the City of Lake Stevens to share the costs of transportation with the private partners. The candidate transportation improvements for private-sector partnerships would likely be capital projects or operations-related programs that are not fully funded from governmental revenue sources.

c. Road Improvement Districts

Road improvement districts (RIDs) are special assessment districts that can be formed by the County and/or landowners. The purpose for forming an RID would be to generate funding for transportation improvements that would benefit the landowners within the district. Funding for RIDs usually includes the issuing of bonds to finance road improvements thatserve and benefit specified properties. The bonds are paid off by assessments against the benefited properties over a period of time, usually ten years. The County would promote or require the formation of RIDs as a method to finance transportation improvements for portions of the Lake Stevens UGA that would be subject to more intensive land development. This measure is particularly relevant to the Cavalero Hill and Frontier Village communities where transportation infrastructure would need major upgrades to handle traffic from intensified land uses. Land owners financially benefiting from development of their lands would be directly contributing to the transportation improvement projects needed to support the planned land uses. The County Council could opt to hire the County Hearing Examiner to process RID appeals. Joint RIDs and local improvement districts (LID) with the City of Lake Stevens are also possible.

d. Transportation Bonding

The County could issue bonds in order to generate funds for transportation improvements. In a nutshell, bonds are certificates of debt that promise payment of original investment and interest. Bonding for transportation improvements within the Lake Stevens UGA, by the County and City, could involve two approaches:

- The County/City could use revenues from developer impact fees and/or a local option fuel tax to issue revenue bonds for major transportation improvements during the 2000 through 2012 time frame, while extending the debt service out to the year 2020 (i.e., debt service 2000 -- 2020); and/or
- The County/City could also opt to issue general obligation (GO) bonds to accomplish the same purpose as described above for revenue bonding; however, there wouldn't necessarily be reliance on the approval of a local option fuel tax or formation of road improvement districts. GO bonds can be retired or paid off in several ways. Each has advantages and disadvantages and may require voter approval.

This measure would have the advantage of making more funding available to the County and City for transportation improvements, but has the burden of retiring debt as a disadvantage. Bonding, however, has one significant advantage for Snohomish County, particularly in parts of the County likely to be annexed to the City of Lake Stevens in the near-term. Part or all of the debt, incurred through bonding to fund transportation improvements in an unincorporated area, may transfer to the City with an area's annexation. The City of Lake Stevens, under this measure, acquires the revenue, as well as the costs, associated with a newly incorporated part of the City.

e. Local Option Fuel Tax (LOFT)

This measure would have the County propose a local option fuel tax of up to 2.3 cents per gallon of fuel to countywide voters to finance recommended transportation improvements for the entire County, including the Lake Stevens UGA. Concurrence from all the cities within Snohomish County would be needed, as well as a vigorous public information and involvement effort.

Table 5-9 presents an estimate of the potential transportation revenues for the Lake Stevens UGA under the County's financial strategy, in order to:

1) Maintain required level of service and safety standards, and in addition; and
2) Provide transportation enhancement projects to support development of the UGA Plan and its designated land uses.

The transportation-related revenue needed for the Lake Stevens UGA could be significant, depending on the degree the County wants to improve the transportation system in support of the UGA Plan. In addition, revenue needs will also depend on the degree to which the County wants to develop the UGA within the 2000–2012 timeframe of the UGA Plan. Table 5-9 reveals that meeting current commitments, resolving forecasted level of service problems, and avoiding inadequate road conditions may only require reliance on traditional revenue sources for the 2000-2012 timeframe of this UGA Plan. Implementing the UGA Plan, to be consistent with all the goals and policies of the County's comprehensive plan including enhancing the transportation system to better serve the UGA, may require additional revenue from nontraditional sources. The actual amount of additional revenue will be dependent on how the UGA ultimately develops and how this development is phased-in over time.

Table 5-9

Estimate of Additional County Revenues Needed From Financial Strategy to Fund Improvements

	Programmed	Required	Enhanced	Total
	$0	$0	$119,873,091	$119,873,091

3. Description of County Project Programming

This transportation element is based on an analysis of transportation deficiencies and future needs within the Lake Stevens UGA. Consistent with the Growth Management Act (Title 36.70A RCW), it recommends short-range and long-range transportation projects to resolve deficiencies and meet identified future needs. Importantly, it provides a financial strategy and plan to guide the County in financing project improvements.

Snohomish County will use the Lake Stevens UGA Plan Transportation Element as an important input to its countywide project programming and funding process. This process, administered by the department of public works, involves:

- Identifying transportation needs and prioritizing categories of improvement projects within a transportation needs report (TNR);
- Acquiring or identifying funding for priority projects with the County Council adopting these within a six-year transportation improvement program (TIP); and
- Selecting construction projects for implementation each year within a County Council adopted annual construction program (ACP).

a. Transportation Needs Report (TNR)

The TNR is a technical document prepared by the Department of Public Works that provides detailed information on countywide transportation needs towards the year 2012. The TNR includes an arterial inventory, illustration of transportation service areas, a prioritized list of countywide projects needed to meet existing and future demand, the cost basis for the improvement projects, and the technical basis for impact mitigation fees. The TNR provides a flexible basis for regularly updating the County's transportation needs and improvement descriptions initially defined within the Lake Stevens UGA Plan and the countywide comprehensive plan. It documents the information and process used to set funding priorities for various categories of projects the County will pursue towards the year 2012.

The TNR document and priority setting process has the potential to be adapted to the entire UGA and include City and County projects. Categories of improvement projects within the TNR that undergo priority evaluation include:

- Major road improvements to maintain concurrency with planned land use,
- Major road safety improvements,
- Major new alignment improvements,
- Minor spot safety and operations improvements,
- Minor intersection signal improvements,
- Minor guardrail improvements,
- Pedestrian facilities,
- Bicycle/nonmotorized facilities,
- Pavement preservation,
- Transportation demand management, and
- Rehabilitation or replacement of bridges.

Projects recommended by the Lake Stevens UGA Plan will be included within the TNR, in the appropriate categories, and would undergo priority evaluation with all other County projects. Individual projects are evaluated against other countywide projects only within the appropriate category. Criteria for evaluating projects and setting priorities vary by category, but generally include consideration of traffic impacts, operations and safety, growth management objectives, and County standards. The results of the priority evaluation exercise are lists of projects by category, with each category list grouped by low, medium and high priority. Typically, the transportation projects listed as high priority are advanced for inclusion within the County's most current transportation improvement program (TIP) and funding commitments are pursued to implement the project.

b. Transportation Improvement Program (TIP)

The TIP is a schedule of transportation projects, operations and maintenance improvements matched to expected revenues that the County anticipates pursuing over the subsequent six years. It is a requirement of state law (Title 36.81.121 RCW) that is updated at least annually by the public works department and adopted by the County Council. The TIP satisfies internal programming needs, as well as meeting federal and state requirements for regional coordination. The TIP is prepared consistent with the GMA required transportation element and TNR. Projects from these documents eventually are programmed within the TIP as they rise in priority and relevant funding becomes available.

Importantly, the TIP serves as the multi-year funding program required under GMA that is part of the basis for administering transportation/land use concurrency requirements. It can be used to determine if transportation improvements, needed to serve planned land use, are being anticipated and programmed along with the land development they serve. That is, are the transportation improvements needed to maintain level of service standards on County roads actually programmed and slated for funding over the next six years? The annual element of the TIP provides part of the basis for an adopted Annual Construction Plan.

c. Annual Construction Program (ACP)

The ACP presents descriptions and funding levels for improvement projects the County public works department intends to construct during the calendar year. This document is also required by state law and is adopted by the County Council. Transportation and non-transportation capital improvement projects are included with the ACP. It, in tandem with the County road budget, authorizes expenditures on projects and is balanced with the annual County budget.

The County's financial strategy for the Lake Stevens UGA and countywide project programming efforts should promote effective implementation of County transportation projects recommended for the Lake Stevens UGA. This process could be adapted, in cooperation with the City of Lake Stevens and WSDOT, to apply to all three jurisdictions and all transportation projects throughout the UGA. The policy and project recommendations of this transportation element of the Lake Stevens UGA is a first step towards multi-jurisdiction programming and implementation of transportation improvements.

Table 5-10

LAKE STEVENS UGA TRANSPORTATION ELEMENT

Arterial Improvements That Form the Green Area

Map No.	Location and Limits	Project Costs ($000)
AS-1	Chapel Hill Road Davies Rd. to 99th Ave. SE	$2,512.2
AS-2	Vernon Road (a) Lundeen Pk Way to Davies Rd. (b) Davies Rd. to SR-9	 $2,389.2 $554.0
AS-3	4th St. NE 92nd to 99th St. NE	$1,472.7
AS-4	4th St. SE SR-9 to 99th Ave. SE	$1,162.8
AS-5	91st Ave. SE 20th St. SE to Market St.	$3,810.6
AS-6	92nd Ave. NE SR-204 to 4th St. NE	$675.9
AS-7	Lake View Dr./ 20th St. SE Lundeen Pk Wy to Lk Stev. C/L	$2,811.6
AS-8	S/E Lake Stevens Rd. Machias Cutoff to Lk Stev. C/L	$7,712.8
AS-12	Soper Hill Road SR-9 to Lundeen Park Way	$2,174.1
AS-16	Lake Drive Soper Hill Road to SR-92	$2,933.1
AC-3	S/N Davies Rd. S. Lk Stevens Rd. to Vernon Rd.	$10,331.6
AC-6	Vernon Road SR-9 to Lundeen Park Way	$2,932.1
AC-11	Purple Pennant Rd. E. Lake Stevens Rd. to Nyden Farms Rd.	$756.4
AC-13	123rd Ave. SE 2nd St. SE to Machias Cutoff	$3,182.6
AC-14	8th St. SE 79th Ave. SE to 91st Ave. SE	$2,674.8
AC-17	99th Avenue NE SR-92 to Lundeen Park Way	$3,985.2
AC/O-5	Lundeen Pkwy SR-9 to 99th Ave. NE	$3,650.2
AC/O-6	91st Ave NE/SE Market Place to SR-204	$1,001.9
NR-1	87th Ave. SE 4th St. SE to Market St. Ext.	$1,594.0
NR-2	83rd Avenue NE Lundeen Park Way to Soper Hill Road	$8,385.0
NR-7	4th St. SE Extension 83rd to 91st Ave. SE	$3,219.1
	Total Project Costs=	**69,921.9**

Chapter 6

Surface Water Management

A. INTRODUCTION

Surface water management is an increasingly important element of a comprehensive plan. Snohomish County's Growth Management Act (GMA) comprehensive plan contains several components that specifically address surface water management issues. One of these components is the General Policy Plan (GPP), which contains goals, objectives and policies that address such surface water issues as the protection of aquatic ecosystems and the reduction of flood hazards. Implementation strategies in the GPP include regulatory and capital facilities solutions for urban and rural areas. Another component of the County's GMA comprehensive plan is the 1999-2004 and 2000-2005 Capital Plans, which identify long-term capital investment needs for surface water system improvements. While these components address countywide issues, the County's GMA comprehensive plan anticipates that detailed surface water management analysis and policy direction for individual urban growth areas will be developed.

One of the goals of the Lake Stevens UGA plan is to provide a more detailed surface water management plan with specific facility and regulatory recommendations that are tailored to this UGA. The development of specific recommendations requires detailed analyses of the existing surface water facilities in order to determine the impacts of the proposed land use plan to flooding, fish passage, stream and wetland habitat, and water quality.

The detailed surface water management plan for the Lake Stevens UGA has been prepared in phases following several different studies. The first study[1] was a preliminary analysis of drainage and habitat issues throughout the entire UGA. Following that study, detailed drainage analyses were conducted for those drainage basins along the west side of the UGA known as the Sunnyside Basins[2,3], which drain into Ebey Slough. The County then conducted detailed drainage and aquatic habitat analyses for the remaining drainage basins in the Lake Stevens UGA. The specific details and results of these additional analyses will be documented in a Master Drainage Plan report that is being prepared concurrently with this UGA Plan. Excerpts from the report are included in Appendix 6-A. The Master Drainage Plan report is an evolving document that will be updated over time as implications of the County's NPDES permit reissuance and ESA requirements become known. Finally, a water quality study[4] was recently completed for Lake Stevens and its tributary drainage area, and pertinent recommendations from the water quality study have been integrated into this plan.

[1] *Lake Stevens Area Master Drainage Plan*, November 1997, RW Beck, Seattle, WA.
[2] *Sunnyside Stormwater Infrastructure Plan, Existing Conditions and Preliminary Problems Report*, January 1998, Woodward Clyde, Seattle, WA.
[3] *Sunnyside Ravines Stormwater Master Plan*, January 2000, Woodward Clyde, Seattle, WA.
[4] *Lake Stevens/Catherine Creek Watershed Management Plan*, June 1999, Gray & Osborne, Inc., Seattle, WA.

B. INVENTORY AND FIELD RECONNAISSANCE OF EXISTING FACILITIES

The Lake Stevens UGA consists of numerous independent drainage basins that drain into one of three local receiving water bodies: Ebey Slough, Lake Stevens, and the Pilchuck River (see Figure 6-1). Existing surface water facilities within the Lake Stevens UGA consist of numerous streams, wetlands, lakes, and constructed drainage systems. Figure 6-1 indicates the locations of the major streams, wetlands, and lakes within the UGA.

The inventory of existing surface water facilities within the UGA was conducted in two phases.

The first phase of the inventory, completed in 1997, was limited to those surface water features located within the Sunnyside basins, all of which drain to Ebey Slough. The surface water features that were surveyed generally included existing drainage ditches, culverts, storm drains, and stream channels. In addition to the field survey, field reconnaissance was conducted along the major stream channels in order to document the condition of these channels as well as the associated fish and wetland habitat.

The second phase of the inventory, completed in 2001, included the collection of survey information for the remainder of the existing drainage facilities within the unincorporated portion of the UGA. In addition to measuring the features of existing drainage ditches, culverts, and storm drains, this phase of the inventory also surveyed cross sections of the existing stream channels. The channel cross section measurements were generally limited to the more accessible reaches of the streams near existing road crossings.

In addition to the field survey, the second phase of the inventory included field reconnaissance of most of the major streams and wetlands within the UGA in order to document existing habitat and stream channel conditions. Along many of the major stream channels, field measurements and observations focused on parameters such as stream slope, canopy, channel size, substrate conditions, large woody debris (LWD), pools, and fish presence. For the Sunnyside streams, the additional field reconnaissance focused on the stability of the stream channels and the adjacent ravine corridors.

Additional information regarding the inventory of existing surface water facilities within the Lake Stevens UGA, including some of the collected field data, is included in Appendix 6-A.

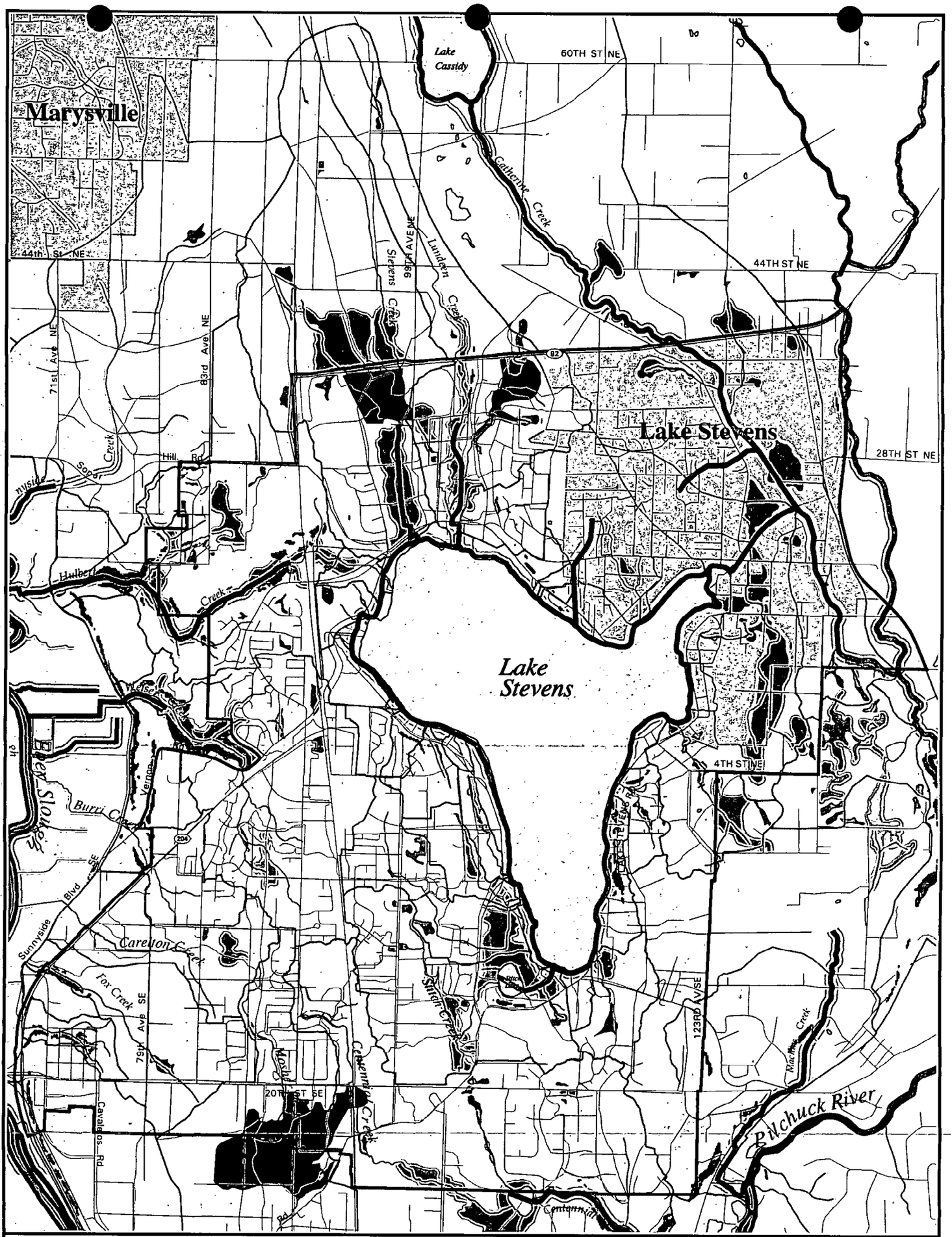

Figure 6-1

Lake Stevens UGA - Existing Surface Water Systems

Legend

- *Chinook Distribution*
- *Bull Trout Distribution*
- *UGA Boundary*
- *Basin Boundaries*
- *Streams*
- *Wetlands*
- *Newly Mapped Wetlands*
- *Sensitive Area Buffer*
- *Slopes Greater Than 33 percent*

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Buffers as per Snohomish County CAR Section 32.10.6.20 and Snohomish County Salmonid Habitat Management Plan Administrative Rule 32.10.310 and 32.10.320 SCC. DNR Stream Types classify streams in Washington in relation to forest practices. See "Water Typing Criteria," WAC 222-16-030; and "Washington Forest Practices Rules and Regulations." Buffers on other streams are undefined.

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Snohomish County disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. No representation or warranty is made concerning the accuracy, currency, completeness or quality of data depicted on this map. Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.

Bull Trout and Chinook distribution depicted on this map represent areas of existing use by any life stage. It should also be noted that the distribution areas depicted on this map may not be complete or accurate in all cases due to incomplete data, the changing nature of fish distribution and use, or error in collecting or documenting the information.

For further information on distribution, see the Master Drainage Preliminary Plan for Lake Stevens, January 31, 2000.

State Plane Zone 5501, NAD 83, Units Feet, 20 Foot Contours
Sources: County 1:24000 hydrography and waterbodies; SWM 1:24000 basins County 1:24,000 roads, DNR 1:24,000 DEM contours.
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C. Surface Water Standard of Service

In order to determine which problems to address and then to design the proposed improvements, minimum standards of service were established for different surface water categories. The main surface water categories are flooding, stream and wetland habitat, fish passage, and water quality. Using these categories, two potential options were considered to define the surface water standards of service.

The first option would rely only on the requirements currently established for new development in Title 24 of the Snohomish County Code. The advantage of this option is that no surface water capital improvements would be required within the UGA. However, the disadvantage of this option is that current problems in the UGA would not be corrected and many of these problems would gradually become worse due to the cumulative impacts of development. In addition, new surface water problems would likely begin to develop due to the increased volumes of stormwater that would be produced by new development. For example, the erosion problems in the steep Sunnyside ravines and the flooding and habitat problems in the Lundeen and Stevens Creek basins would continue to grow worse. More specific details of the predicted surface water problems in the UGA are provided in the following section as well as in Appendix 6-A.

Another option was then developed to define the surface water standards of service that would be more effective in offsetting the cumulative impacts of future development. Table 6-1 summarizes the minimum standards of service that were defined for each of the four different surface water categories. These standards of service are based on hydrologic, geologic and habitat conditions in the Lake Stevens UGA that warrant a higher level of service than currently exists.

Table 6-1
Minimum Standard of Service for Surface Water Projects

Category	Minimum Standard of Service
Flooding/Drainage	• Flooding should not occur more frequently than once every 25 years
Stream & Wetland Habitat	• Important stream and wetland habitat areas should not be degraded • Important stream and wetland habitat areas that have been degraded should be restored
Fish Passage	• WDFW criteria[5] for fish passage through culverts should be satisfied (maximum velocities and minimum depths during the 2-year storm event)
Water Quality	• Existing biofiltration swales that are not functioning as originally designed should be repaired • Existing detention ponds with no water quality facilities should be modified to provide stormwater treatment • New development must install water quality facilities per requirements of Title 24

[5] *Fish Passage Design at Road Culverts*, March 1999, WDFW.

For the flooding and drainage category, those flooding problems that were predicted to occur at least once in every 25 years under existing or future land use conditions were required to be addressed. The proposed improvements were then designed to prevent flooding during the 25-year storm event, which is consistent with the County's current Title 24 standards for new development. Section 24.30.010(3a) of Title 24 requires that all conveyance systems be designed to accommodate the peak discharge from the 25-year, 24-hour design storm. This primarily refers to the flooding of roadways, driveways, and structures.

For the stream and wetland habitat category, two standards were used to define the standard of service. The first standard is that important stream and wetland habitat areas should not be degraded by future development within the UGA. The second standard requires that those important habitat areas that have already been degraded by previous development should be restored. Both standards are consistent with the objectives and policies contained in the Natural Environment section of the County's GPP. Specifically, GPP Policy NE 4.F.1 states that "the county shall seek to restore or rehabilitate streams, wetlands, drainage corridors, and associated riparian areas for hydrologic, aesthetic, wildlife, and fisheries benefits."

For the fish passage category, the focus of this standard is to address fish passage problems at existing culverts. The current maximum velocity criteria required by the Washington Department of Fish and Wildlife[5] (WDFW) were used to identify those culverts with fish passage problems as well as to design the proposed improvements. The WDFW standards contain maximum velocity and minimum depth criteria for culverts during the 2-year storm event. The criteria vary depending on the type of fish species and the length of the culvert.

For the water quality criteria, three standards were used to define the standard of service. First, existing biofiltration swales that are not functioning properly should be repaired so that they improve the quality of stormwater runoff as they were originally designed to do. Second, existing detention ponds that were designed without any water quality facilities, under previous versions of the Snohomish County Code, should be modified to provide some treatment of stormwater runoff. Finally, new developments are required to install water quality facilities to provide treatment of runoff per Title 24 of the Snohomish County Code.

Of the two potential methods that could be used to define the surface water standard of service, the second option was considered to be the most appropriate in offsetting the long-term impacts of development. This option, summarized in Table 6-1, was therefore used to analyze surface water problems and to identify potential projects in the Lake Stevens UGA.

D. SURFACE WATER PROBLEMS AND PROPOSED PROJECTS

Surface water problems were defined within the UGA based on hydrologic and hydraulic analyses, field observations, and drainage complaints recorded by the County. Typical problems that were evaluated included flooding of roads and private property, blockages to fish passage along streams, degradation of stream and wetland habitat, stream channel erosion, and water quality degradation.

The hydrologic and hydraulic analyses were conducted for both existing land use conditions as well as for future land use conditions based on the recommended land use in this Plan. Based on the surface water problems that were identified in the Lake Stevens UGA for existing and future conditions, capital improvement projects were developed. Additional details regarding the analyses used to identify problems and to develop solutions are included in Appendix 6A.

[5] *Fish Passage Design at Road Culverts*, March 1999, WDFW.

The following summary of surface water problems and proposed projects in individual drainage basins is grouped according to the three major receiving water bodies: Ebey Slough, Lake Stevens, and Pilchuck River. Table 6-2 contains a brief description of each recommended capital improvement project, the problems that are addressed by each project, and the total estimated cost to construct each project. The location of each of these projects is shown in Figures 6-2 through 6-7.

The evaluation of proposed solutions included several alternatives, some of which involved capital improvements and some of which involved new regulations. These alternatives included increasing conveyance capacities, increasing the size of private detention facilities, reducing impervious surfaces, installing regional detention facilities, and installing bypass pipelines. The proposed projects and regulations listed in this chapter represent the recommended solutions for each problem among those alternatives that were analyzed.

1. Ebey Slough/Sunnyside Basins

All of the basins located along the western side of the Lake Stevens UGA discharge into Ebey Slough (see Figure 6-1). Of these, the basins that are located north of 20th Street SE all cross Sunnyside Boulevard before discharging into Ebey Slough and are generally referred to as the Sunnyside basins. The basins that are located to the south of 20th Street SE generally cross SR 2 before discharging into Ebey Slough.

The Ebey Slough basins consist of several major streams that typically originate on the Lake Stevens plateau and travel through large ravines that have been carved by the streams over time into the steep hillsides to the east of Ebey Slough floodplain. In between these major streams are several smaller streams that originate on the steep hillside area and also flow to the west toward the slough.

These streams typically cross the floodplain within constructed channels. Since a dike is used to separate Ebey Slough from its floodplain, stream flows must discharge through culverts across the dike that are controlled by tide gates. Due to tide cycles in Ebey Slough, the streams can only discharge into Ebey Slough when the tides are sufficiently low.

While a preliminary list of projects was originally developed for a planning level study[3] of the Sunnyside basins, additional analyses have been conducted in order to update that list of projects. The following individual summaries document some of the specific problems and proposed projects for major basins that discharge into Ebey Slough.

a. Hulbert Creek Basin

Over time, Hulbert Creek has carved a large ravine along the entire length of the main stream channel from its mouth near SR 9 to the Ebey Slough floodplain near Sunnyside Boulevard. With the exception of these two roadway crossings and one utility power line crossing, the stream/ravine corridor is very wide and generally well preserved. The slope of the stream channel is generally moderate between SR 9 and Sunnyside Boulevard, ranging from roughly 0.5 percent to 3 percent. County staff observed numerous juvenile coho and juvenile and adult cutthroat from Sunnyside Boulevard to the area of beaver dams roughly 6000 feet upstream, where deeper pools and turbidity made them much more difficult to view. Upstream of SR9 is a large well-vegetated and relatively undisturbed 10-acre headwater wetland without a clearly defined stream channel.

Table 6-2
Surface Water Projects Recommended for Construction Prior to Further Development

Project ID[1]	*Problem Description*	*Description of Improvement*	Total Estimated Cost
Hulbert Creek			
HUL 1	Uncontrolled runoff from SR 9 has caused erosion down the face of the steep ravines	Install 12-in drainage pipes down Hulbert Creek ravine to prevent further erosion from SR 9 stormwater at 3 locations	$153,000
HUL 2	Creek flows directly over an existing power line access road	Install culvert across existing power line access road to improve fish passage and protection	$52,000
HUL 3	Active erosion of the stream channel transports sediment downstream	Install stream grade control structures in this reach of the creek	$212,000
HUL 4	Roadway flooding problem due to culvert at 83rd Ave NE	Replace existing 12-in diameter culvert with a 24-in diameter culvert	$23,000
Weiser Creek			
WEI 1	Roadway flooding problem due to culvert at 1st St SE	Replace existing 24-in diameter culvert with a 30-in diameter culvert	$21,000
WEI 2	Localized flooding at detention pond and erosion of ravine hillside downstream outflow pipe from pond	Replace failing 10-inch diameter outflow pipe from a detention pond with a 12-in diameter pipe and extend pipe further down the ravine	$71,000
Burri Creek			
BUR 1	Roadway flooding problem due to drainage/culvert system at 82nd Ave SE	Replace existing 12-in drainage/culvert system with an 18" drainage/culvert system	$28,000
BUR 2	Roadway flooding problem due to culvert at 83rd Ave SE	Replace existing 12-in diameter culvert with an 18-in diameter culvert.	$19,000
Carleton Creek			
CAR 1	Roadway flooding problem due to culvert at 83rd Ave SE	Replace existing 12-in diameter culvert with an 18-in diameter culvert	$19,000
Fox Creek			
FOX 1	Roadway and driveway flooding along 20th St SE due to undersized drainage system	Replace existing 18-in diameter culvert and 15-in drainage pipe with a 24-in diameter culvert and drainage pipe	$62,000
FOX 2	Channel erosion and lack of habitat features (pools, LWD) between Sunnyside Blvd & SR 204	Install stream grade control structures in this reach	$84,000
FOX 3	Roadway and driveway flooding along 79th Ave SE due to undersized drainage system	Replace 7 existing 12-in diameter culverts with 18-inch to 24-inch culverts and widen 600 ft of drainage ditch	$105,000
FOX 4	Private driveway to the west of 79th Ave begins to flood at the 2-year frequency for future flows	Replace existing culvert with a 30-inch concrete culvert	$17,000

Table 6-2
Surface Water Projects Recommended for Construction Prior to Further Development

Project ID[1]	*Problem Description*	*Description of Improvement*	Total Estimated Cost
FOX 5	Uncontrolled runoff from SR 204 has caused erosion down the face of the ravine	Install 12-in drainage pipe down Fox Creek ravine to prevent further erosion	$50,000
Mosher Creek			
MOS 1	Undersized system causes waterline access road south of 20th St SE to flood in a current 2-year storm event.	Remove the existing culvert and create a meandering channel by installing LWD and planting native vegetation.	$25,000
MOS 2	Habitat along Mosher Creek lacks LWD from 87th Ave SE to SR 2	Install LWD in Centennial Creek downstream of 87th Avenue SE	$73,000
MOS 3	Undersized system causes private driveway to flood in a current 2-year storm event and high velocities create a partial fish blockage.	Replace existing 18" Concrete Bridge with 14 LF of 49" x 33" arch CMP counter sunk.	$21,000
MOS 4	Undersized system causes 91st Avenue to flood in a future 10-year storm event and high velocities create a partial fish blockage.	Replace existing 24" HDPE Pipe with 40 LF of 49" x 33" arch CMP counter sunk.	$26,000
MOS 5	Undersized system causes private driveway to flood in a current 25-year storm event and high velocities create a partial fish blockage.	Replace existing twin 15" CP with 20 LF of 71" x 47" arch CMP counter sunk.	$26,000
MOS 6	High velocities through culvert at South Lake Stevens Rd cause a partial fish blockage.	Replace existing 24" CP with 40 LF of 71" x 47" arch CMP counter sunk.	$31,000
MOS 7	Undersized system causes the private farm culvert to flood in a current 2-year storm event.	Replace existing 24" CMP with 20 LF of 71" x 47" arch CMP counter sunk.	$25,000
MOS 8	High velocities through culvert at 36th Street SE (AKA Tom Marks Road) cause a partial fish blockage.	Replace existing 36" CP with 40 LF of 77" x 52" arch CMP counter sunk.	$46,000
MOS 9	Habitat along Mosher Creek from South Lake Stevens Road to 87th Avenue SE lacks LWD and native vegetation.	Install LWD along the channel and plant native vegetation.	$277,000
MOS 10	High velocities through culvert at SR 2 cause a partial fish blockage.	Install 8 weirs in the 10-foot diameter culvert to reduce the velocities and improve fish passage.	$189,000
Ebey Slough Floodplain			
EFL 1	Flooding of farmland adjacent to stream channels across floodplain	Install 2 pump stations, locations have not yet been determined	$430,000
Lundeen Creek			
LUN 1	Habitat along the lower main branch of Lundeen Creek lacks LWD	Install LWD in main branch from confluence with the East branch to Lake Stevens	$29,000
LUN 2	Culvert at Lundeen Pkwy for a tributary of Lundeen Creek causes flooding at a 5-yr frequency	Replace existing 18-inch culvert with a 36-inch diameter concrete culvert	$36,000

Table 6-2
Surface Water Projects Recommended for Construction Prior to Further Development

Project ID[1]	*Problem Description*	*Description of Improvement*	Total Estimated Cost
LUN 3	Culvert at private driveway off of Lundeen Pkwy causes flooding at a 2-yr frequency	Replace existing 15-inch culvert with a 36-inch diameter concrete culvert	$21,000
LUN 4	Culvert for East Fork of Lundeen at Callow Road causes flooding at the 25-yr frequency & high velocities cause a partial fish blockage	Replace existing 15-inch culvert with a 72-inch CMP culvert and install weirs and baffles to improve fish passage conditions	$57,000
LUN 5	High velocities through East Fork culvert at Oak Road cause a partial fish blockage	Replace the existing 24-inch culvert with a 72-inch CMP culvert buried 20%	$55,000
LUN 6	High velocities through the main branch culvert at SR 92 cause a partial fish blockage	Install system of weirs downstream of existing SR 92 culvert	$26,000
LUN 7	Culvert at private driveway off of 99th Ave for West Fork of Lundeen causes flooding of a private driveway and yard	Replace existing 16-inch culvert with an 18-inch diameter culvert	$33,000
LUN 8	Three driveway culverts along 101st Ave NE cause flooding at the 25-year frequency	Replace the existing 10-inch and 12-inch culverts with 12-inch and 15-inch culverts	$19,000
LUN 9	Poor habitat and flooding problems along 101st Ave where main channel had been rerouted at some point in the past	Relocate main channel back to the historical location between the West Fork and the East Fork, create meanders, install LWD, plant vegetation	$338,000
LUN 10	Habitat along middle main branch of Lundeen Creek lacks LWD	Install LWD on the main branch downstream of SR 92	$38,000
LUN 11	High velocities and encroachment have caused poor habitat in the downstream reach of the east branch of Lundeen Creek	Create meanders, install LWD, plant vegetation on the east branch, upstream of confluence with the main channel	$86,000
LUN 12	Undersized channel and a series of 6 culverts along East Fork of Lundeen Creek cause driveways to flood and high velocities to cause partial fish blockages	East Fork: widen channel, create meanders, install LWD, plant vegetation, and replace 6 existing driveway culverts with 42"x29" arch CMP culverts buried 20%	$174,000
LUN 13	Multiple driveway culverts for West Fork of Lundeen Creek along 101st Ave cause flooding and partial fish blockages; also poor habitat	Relocate West Fork and connect it to the main channel further upstream, create meanders, install LWD, and plant vegetation	$115,000
LUN 14	Habitat along East Fork of Lundeen between Callow Road and Oak Road lacks LWD	Install LWD in East branch upstream of Callow Road.	$27,000
Stevens Creek			
STE 1	Culvert at 31st Place causes flooding during 25-yr storm and high velocities cause a partial fish blockage	Replace existing 30-inch diameter CMP with a 77"x52" arch CMP buried 20%	$33,000

Table 6-2
Surface Water Projects Recommended for Construction Prior to Further Development

Project ID[1]	*Problem Description*	*Description of Improvement*	Total Estimated Cost
STE 2	High velocities through culvert at Vernon Rd cause partial fish blockage	Install a log weir downstream of existing box culvert	$16,000
STE 3	Poor habitat conditions in the narrow, rock wall channel for the main branch that outfalls into Lake Stevens	Create pools, increase roughness, create cover along this channel reach	$23,000
STE 4	Main branch of Stevens Creek upstream of 31st Pl. NE lacks native vegetation	Plant native vegetation, remove invasive vegetation in Stevens Creek upstream of 31st Place NE	$26,000
STE 5	Flooding along Lake Drive near 24th Place NE due to inadequate storm drain system	Replace the existing 12-inch storm drain with 18-inch storm drain pipe	$42,000
STE 6	Habitat along Stevens Creek lacks LWD	Install LWD in Stevens Creek downstream of SR92	$118,000
STE 7	High velocities through the culvert at SR 92 cause a partial fish blockage	Replace existing 36-inch culvert with a 144-inch diameter CMP buried 20%	$398,000
West Drainage 2			
WD2-1	Flooding predicted along Springbrook Rd and private driveway due to inadequate drainage system	Replace existing storm drain with 18-inch storm drain, replace driveway culvert and widen drainage ditch	$98,000
West Drainage 3			
WD3-1	Catch basin at the intersection of 96th Ave NE and 97th Dr NE floods during the 10-year event. Catch basins downstream begin to flood in the 25-year and 50-year storms	Replace 720 LF of 12-in CMP with 15-in concrete pipe, replace 610 LF of 15-in CMP with 18-in concrete pipe, and replace 7 catch basins	$252,000
Lockhart Creek			
LOC 1	Lockhart Creek currently floods over the private driveway during a 10-year storm.	Replace existing 12-in CMP with 32 LF of 42-in concrete pipe counter sunk.	$26,000
LOC 2	Lockhart Creek currently floods over the private driveway during a 5-year storm.	Replace existing 12-in CMP with 35 LF of 49" x 33" arch CMP counter sunk.	$23,000
LOC 3	Flooding over West Davies Loop Road during a current 5-year storm and high velocities through the culverts cause partial fish blockage. Poor habitat conditions upstream due to velocities in the 24" piped system.	Plug the existing 12-inch drainage system and install 42 LF of 48" x 24" Concrete Box Culvert under W. Davies Road and install three log weirs downstream. Remove 188 LF of 24-in pipe upstream, excavate the channel and create meanders, install LWD, plant native vegetation.	$150,000
Giti Creek			
GIT 1	Catch basin on 8th Place SE floods during the current 50-year and future 25-yr storm due to backsloped pipe.	Replace pipe and catch basin downstream so that the pipe is sloped in the right direction	$27,000

Table 6-2
Surface Water Projects Recommended for Construction Prior to Further Development

Project ID[1]	*Problem Description*	*Description of Improvement*	Total Estimated Cost
GIT 2	Undersized system causes overbank flooding on private property in the current 2-year storm and the catch basin overtops in the current 5-year storm	Bypass backyard at high flows. Connect existing catch basin into existing system that runs under the catch basin.	$22,000
Stitch Creek			
STI 1	High velocities through the concrete box cross culvert under South Davies Road and a perched outfall cause a complete fish blockage.	Install 18 aluminized baffles in the box culvert to reduce the velocities and improve fish passage. Construct three large log weirs at the culvert outfall and 10 standard log weirs continuing downstream.	$107,000
Centennial Creek			
CEN 1	Habitat along Centennial Creek lacks LWD from Lake 205 to Private Farm Culvert (1)	Install LWD in Centennial Creek downstream of Lake 205	$119,000
CEN 2	Undersized system causes 91st Ave SE to flood on a current 5 year storm event.	Replace existing 12" CMP system with 52 LF of 18 " CP and 72 LF of 24 " CP, replace one Type 1 catch basin with a Type 2 48"catch basin.	$35,000
CEN 3	Two culverts under SR9 and a private utility access culvert cause flooding and partial fish blockages; also poor habitat	Relocate Centennial Creek from the upstream end of the SR9 culvert and connect it to the main channel just below the waterline access culvert. The channel will be meander under the SR9 bridge with LWD installed and vegetation planted both upstream and downstream of the bridge.	$100,000
CEN 4	High velocities through culvert at South Lake Stevens Rd cause partial fish blockage	Replace existing 30" CMP with 60 LF of 49" x 33" CMP Arch counter sunk and install three log weirs downstream.	$63,000
CEN 5	Centennial Creek currently floods over 103rd Ave SE in a 5-year storm.	Replace culvert and raise the elevation of a section of the road (to be completed by the design group)	$1,405,000
CEN 6	High velocities through private farm culvert (1) cause partial fish blockage	Replace existing 60" Iron Pipe with 20 LF of 84" CMP counter sunk.	$30,000
CEN 7	High velocities through private farm culvert (2) cause partial fish blockage	Replace existing 72" CP with 30 LF of 83" x 57" CMP Arch counter sunk	$36,000
CEN 8	Habitat along Lower Centennial Creek from the private farm culvert (1) to Old Machias Road lacks LWD and native vegetation.	Install LWD along the channel and plant native vegetation.	$361,000

Machias Creek			
MAC 1	Undersized system that causes 123rd Avenue SE to flood on a current 25 year storm event.	Replace existing 12" CP with 42 LF of 18 " CP.	$19,000
Summary			
		Total Cost =	**$6,668,000**

1. Project number refers to Figure 6-3

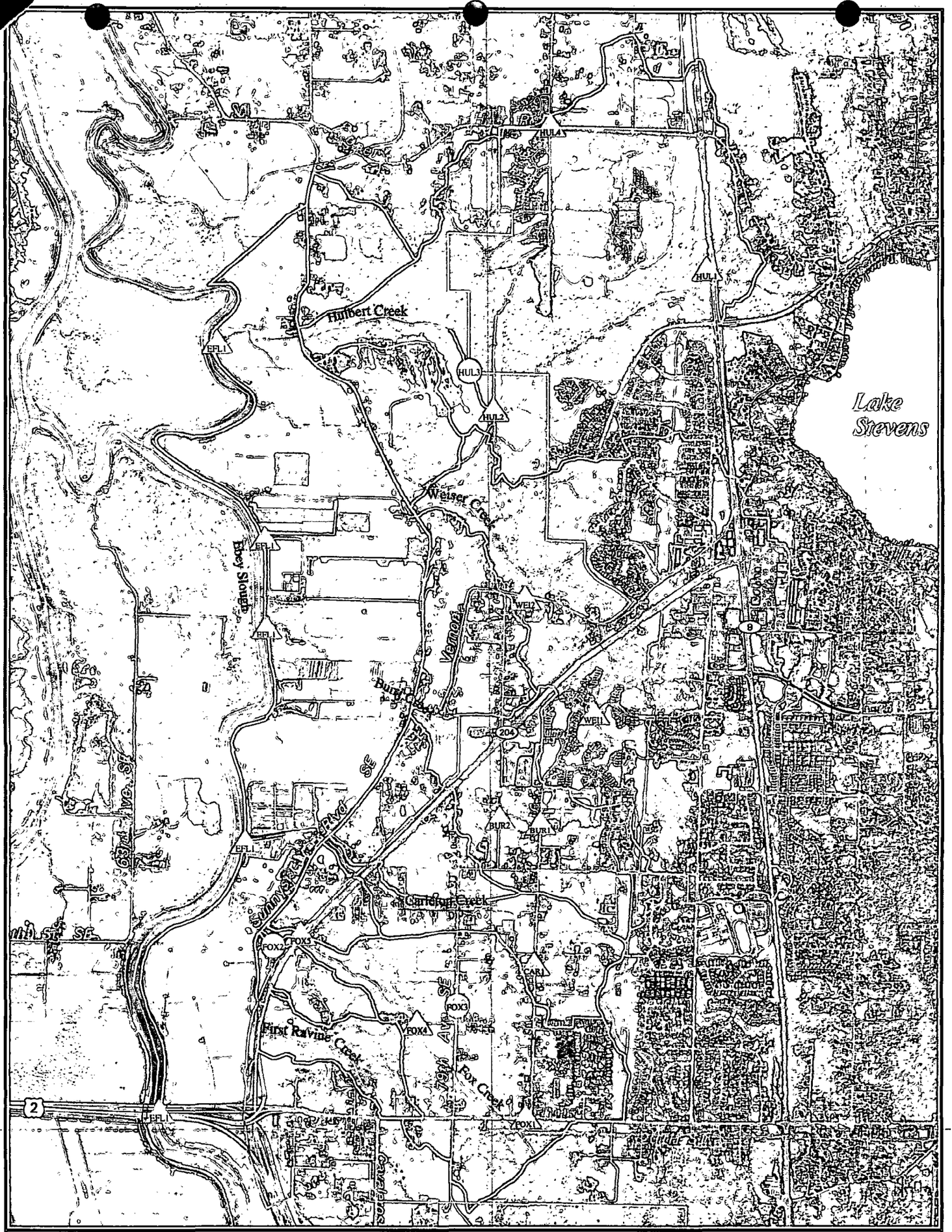

Figure 6-2

Projects for Sunnyside Basins

Legend

- *Flooding Projects*
- *Stream Channel Habitat/Flooding Projects*
- *Ditch and Culvert Flooding Projects*
- *Potential Locations for Pump Station Projects (2 to be selected)*
- *Sunnyside Basins*
- *UGA Boundary*
- *Drainage District 8*
- *Streams*

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State Plane Zone 5601, NAD 83, Units Feet, 20 Foot Contours
Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
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December 7, 2001

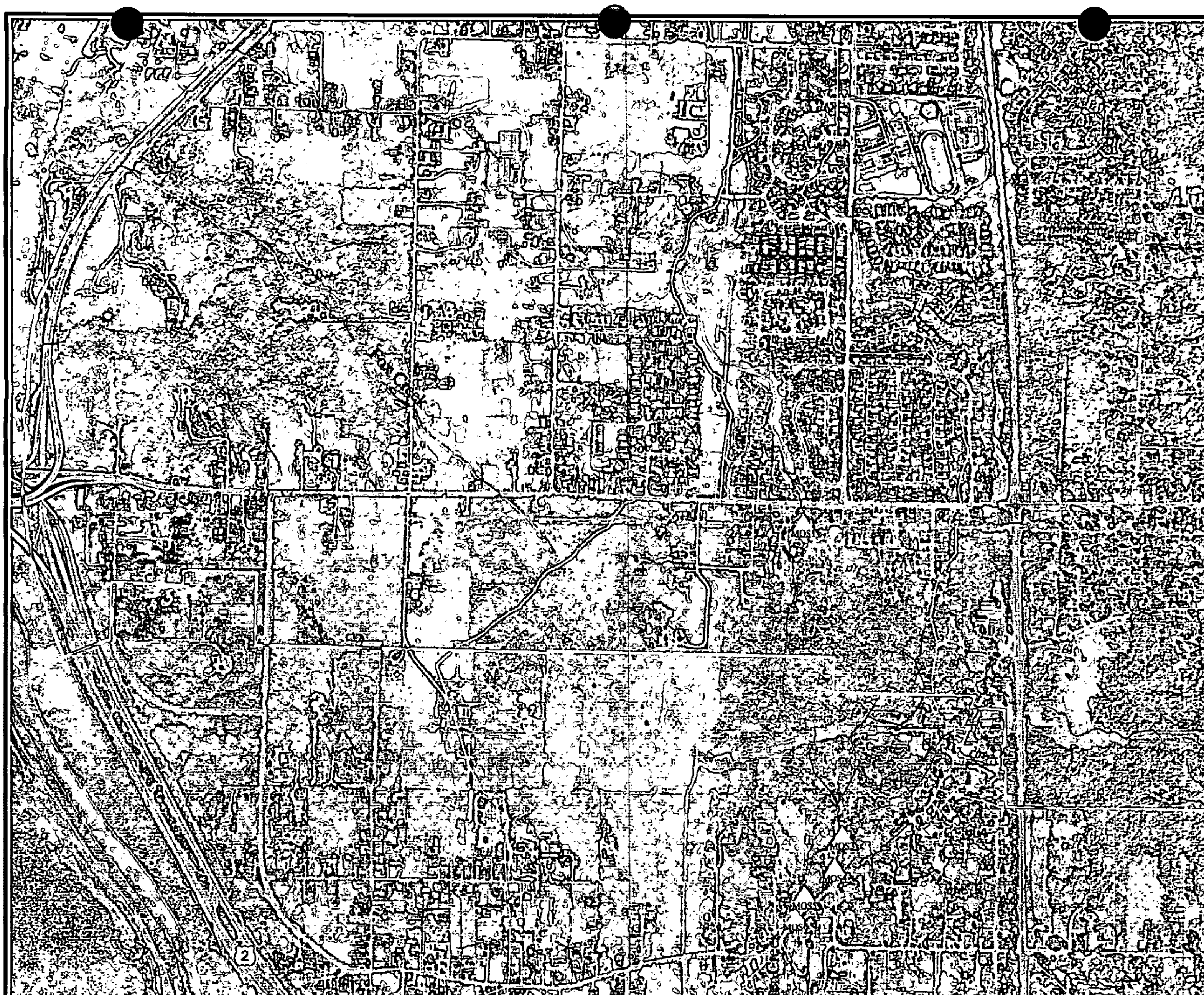
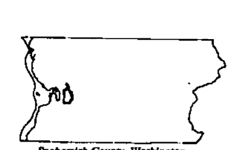


Figure 6-3

Projects
Mosher Creek



Legend

- △ *Flooding Projects*
- △ *Habitat Projects*
- △ *Habitat/Flooding Projects*
- *Stream Channel Habitat Projects*
- *Stream Channel Habitat/Flooding Projects*
- *UGA Boundary*
- *Watershed*
- *Existing Streams*

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Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
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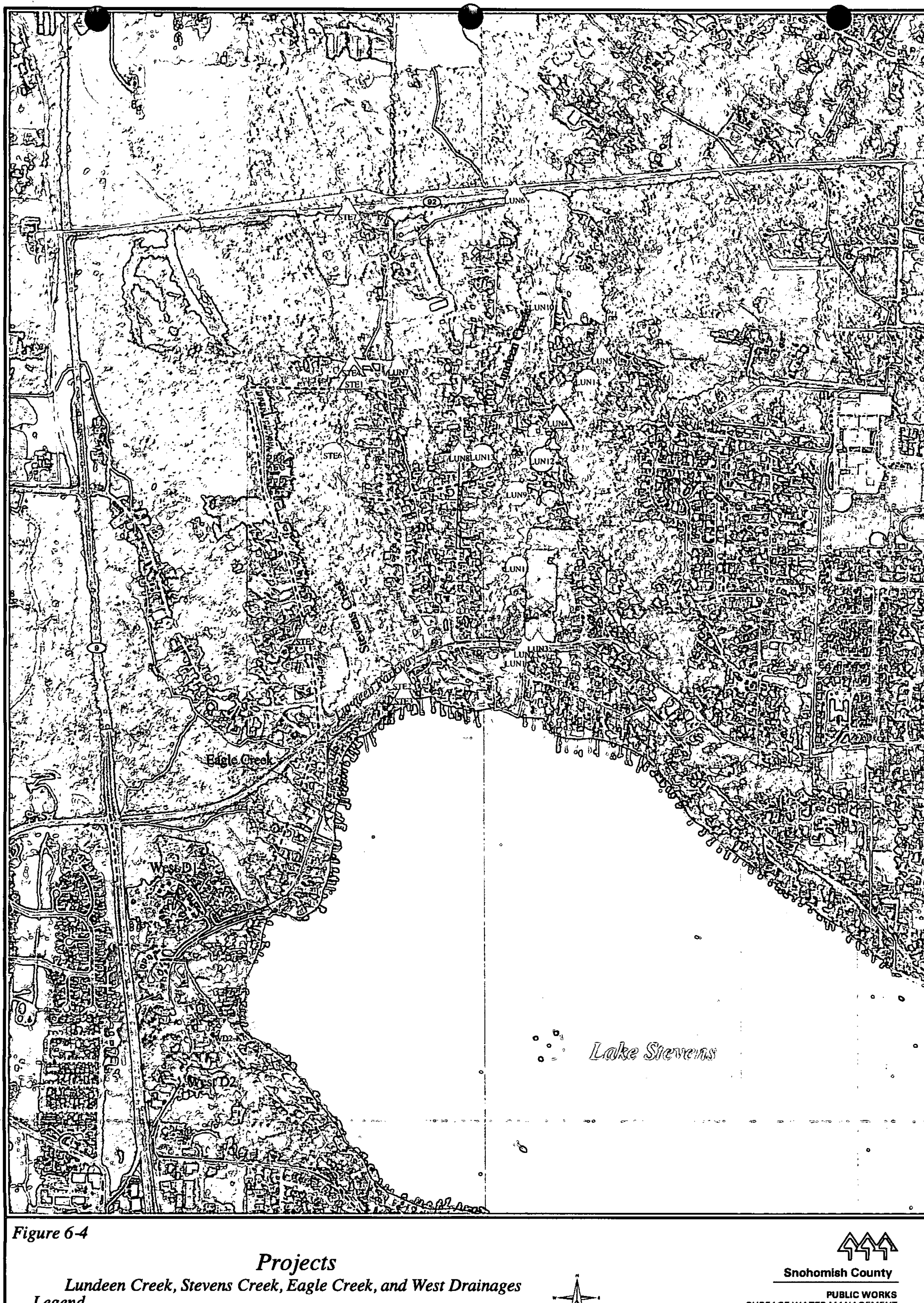


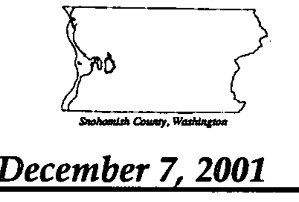
Figure 6-4

Projects

Lundeen Creek, Stevens Creek, Eagle Creek, and West Drainages

Legend

- *Flooding Projects*
- *Habitat Projects*
- *Habitat/Flooding Projects*
- *Stream Channel Habitat Projects*
- *Stream Channel Habitat/Flooding Projects*
- *UGA Boundary*
- *City Boundary*
- *Watersheds*
- *Existing Streams*
- *Drainage District 8*



Snohomish County

PUBLIC WORKS
SURFACE WATER MANAGEMENT
(425) 388-3464

State Plane Zone 5601, NAD 83,
Units Feet, 20 Foot Contours
Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
%.gis%/pw/swm/proj/mdp/lkstvns/amls/UGAplan/proprjlswd2.aml

December 7, 2001

Figure 6-5

Projects

Lockhart Creek, Stitch Creek, Giti Creek, and West Drainages

Legend

- *Flooding Projects*
- *Habitat Projects*
- *Habitat/Flooding Projects*
- *Stream Channel Habitat Projects*
- *Stream Channel Habitat/Flooding Projects*
- *Watershed*
- *UGA Boundary*
- *Drainage District 8*
- *Existing Streams*

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Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
%.gis%lpwfswm\proj\mdp\lkstvns\aml\UCAplan\prj_west.aml

Figure 6-6

Projects

Cedar Cove Creek, Eastside Creek, and Machias Creek Tributary

Legend

- *Flooding Projects*
- *Habitat Projects*
- *Habitat/Flooding Projects*
- *Stream Channel Habitat Projects*
- *Stream Channel Habitat/Flooding Projects*
- *Watershed*
- *UGA Boundary*
- *City Boundary*
- *Drainage District 8*
- *Existing Streams*

Feet

Snohomish County, Washington

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Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
%:gis%pw\swm\proj\mdp\lkszvns\amls\UCAplan\prj_east.aml

Figure 6-7

Projects
Centennial Creek

Legend

- *Flooding Projects*
- *Habitat Projects*
- *Habitat/Flooding Projects*
- *Stream Channel Habitat Projects*
- *Stream Channel Habitat/Flooding Projects*
- *Watershed*
- *UGA Boundary*
- *Drainage District 8*
- *Existing Streams*

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December 7, 2001

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Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
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Based on field observations, two active erosion problems were observed that are contributing to the deposition of sediment along various reaches of the creek. One of these erosion problems, in which the stream channel is actively growing wider and deeper, is located in a reach of the creek downstream of the power line crossing. Due to soil conditions and a lack of woody debris or other natural grade control structures, this reach will continue to erode and transport sediment to downstream reaches of the creek, particularly as the magnitude and volume of flows increase as the basin develops. The proposed solution (project HUL 3) to this problem is to install a series of grade control structures, including LWD and instream weirs, in this reach of the creek (see Table 6-2 and Figure 6-2).

The other active erosion problem in this basin is located at the SR 9 crossing of Hulbert Creek. Stormwater runoff from the highway is directed into roadside ditches that flow uncontrolled down the steep ravine hillsides. In several cases, this has caused actively eroding gullies that transport sediment to the stream which flows uncontrolled down the steep ravine hillside. This is likely to be most significant source of fine sediments that were observed in the stream beds and suspended in the beaver ponds which extend for approximately 2000 feet downstream of the highway. The proposed solution (project HUL 1) to this problem would involve the installation of drainage pipelines to convey the highway runoff down the steep ravine slopes and the installation of energy dissipators to slow down the runoff before it enters the stream channel (see Table 6-2 and Figure 6-2).

The only observed fish passage problem along the creek was located where the power line access road crosses the stream. With no culvert or stream channel across the dirt road, the stream flows directly across a low point in the road without any protection to fish, particularly from the apparently extensive off-road vehicle use. This creates very shallow flows that are difficult to navigate. At the downstream side of the road, the flows drop into the incised stream channel. The proposed solution (project HUL 2) to this problem is to install a culvert across the road to provide adequate and protected fish passage (see Table 6-2 and Figure 6-2).

Finally, based on the hydrologic and hydraulic analyses, only one flooding problem in the basin was identified. This problem was addressed by a proposed culvert replacement project (HUL 4) at 83rd Avenue NE to prevent the roadway from flooding (see Table 6-2 and Figure 6-2).

b. Weiser Creek Basin

Like Hulbert Creek, Weiser Creek and its tributary channels have carved large ravines over time upstream of Sunnyside Boulevard. The lower reach of the stream extends roughly 4,000 feet upstream of Sunnyside Boulevard to State Route 204 (SR 204), while the upper reach of the main stream channel extends roughly another 3,500 feet upstream to its headwaters. Within the lower reach, a concrete instream dam roughly 10 feet high acts as a barrier to fish passage and is nearly completely filled with sediment (see Appendix 6-A). Although County staff observed juvenile cutthroat and coho in the lower reaches of the creek upstream of Sunnyside Boulevard, there were significantly fewer observations than in the Hulbert Creek. In the upper reaches upstream of SR 204, the stream receives stormwater runoff from the Frontier Village area and experiences mostly non-perennial flow.

Throughout nearly the entire ravine downstream of SR 204, the creek flows through laminated glacial silt and landslide deposits (See Appendix 6-A). Based on field observations, the largest landslides appear to be caused by the instability of the ravine walls and not related to downcutting by the creek. At least some of the smaller landslides, though, may be caused by streambank erosion that cuts into the toe of the ravine slope (See Appendix 6-A). The lack of severe channel incision is likely attributed to the high sediment load from the landslides, which appears to fill up the creek's sediment transport capacity (See Appendix 6-A). Another stabilizing factor is the grade control provided by the landslides, which leave behind large, stable LWD jams. Although LWD is abundant and the stream corridor is well vegetated with a large buffer and adequate canopy, the entire length of the stream carries such a large load of sediment that that instream pools are filled. This limits the amount of available rearing habitat.

Increased flows in the creek, caused by future development, could result in more rapid downcutting of the channel between Sunnyside Boulevard and SR 204. This could, in turn, further reduce the stability of the ravine walls and increase the sediment loading in the creek from landslides as well as channel enlargement. While channel improvements may temporarily provide improved stability and valuable habitat features, such as pools, these improvements would not prevent the larger landslides and would likely be obliterated by the high sediment loads in this reach. Therefore, the recommended solution involves the prevention of future flow increases in Weiser Creek through a new stormwater regulation (see Policy 20). This proposed regulation would require more stringent criteria for the design of stormwater detention facilities installed by future developments. The design criteria would require not only that future peak flows match existing peak flows, as with current Title 24 standards, but also that future flow durations (i.e., the percentage of time in which certain flows occur) match current flow durations. The intent of this regulation would be to prevent the acceleration or aggravation of erosion problems caused by changes in stormwater flow patterns in the creek.

Another proposed regulation that would help to prevent the further aggravation of slope instability problems along the ravine walls would require that developments install pipelines to convey stormwater from the top of the ravine walls down to the creek channel. This would help to prevent erosion problems down the face of the steep ravine walls caused by discharging stormwater runoff at a single point at the top of the ravine.

In addition to these regulatory recommendations, two capital improvement projects are recommended within the Weiser Creek basin (see Table 6-2 and Figure 6-2). One of these projects (WEI 1) would involve the replacement of an existing culvert at 1st Street SE in order to provide sufficient conveyance capacity to alleviate a predicted roadway flooding problem. The other project (WEI 2) would involve extending an existing drainage pipe down the face of a steep ravine wall in order to prevent further erosion problems.

c. Burri Creek Basin

Although Burri Creek is much shorter than Weiser Creek, it demonstrates similar characteristics in the reach between Sunnyside Boulevard and SR 204. This reach, roughly 900 feet in length, has likewise carved a large ravine with steep ravine walls that have experienced instability problems and recent landslides (See Appendix 6-A). Unlike Weiser Creek, though, the recent landslides do not appear to have slid all the way down into the creek, so there are very low levels of LWD in the stream channel. Nevertheless, sediment from these landslides has been washed into the stream channel destroying pool habitat. Two instream sediment ponds immediately upstream of Sunnyside Boulevard are nearly full of sediment. During the field reconnaissance, County staff observed only several juvenile cutthroat.

Like Weiser Creek, increased flows in Burri Creek, caused by future development, could result in more rapid downcutting of the channel between Sunnyside Boulevard and SR 204. This could, in

turn, further reduce the stability of the ravine walls and increase the sediment loading in the creek from landslides as well as channel enlargement. While channel improvements may temporarily provide improved stability and valuable habitat features, such as LWD and pools, these improvements would not prevent the ravine landslides and would likely be impacted or obliterated by the high sediment loads in this reach. As a result, the same proposed regulations for Weiser Creek (Policy 17 and 20) are likewise recommended for Burri Creek in order to prevent future flow increases from accelerating or aggravating the ongoing erosion and sedimentation problems in this reach.

In addition to these regulatory recommendations, two capital improvement projects are recommended within the Burri Creek basin at 82nd Avenue SE and 83rd Avenue SE (see Table 6-2 and Figure 6-2). Both projects (BUR 1 and BUR 2) would involve the replacement of an existing culvert in order to provide sufficient conveyance capacity to alleviate the predicted roadway flooding problems.

d. Carleton Creek Basin

In between Sunnyside Boulevard and SR 204, this reach of Carleton Creek is even shorter than Burri Creek with a smaller ravine and no evidence of recent landslide problems. Upstream of SR 204, past development has destroyed the natural stream channel.

The only problem that was identified for the Carleton Creek basin was a roadway flooding problem caused by an undersized culvert at 83rd Avenue SE. To alleviate this problem, a capital improvement project (CAR 1) is recommended to replace this culvert (see Table 6-2 and Figure 6-2).

e. Fox Creek Basin

Fox Creek originates in small wetlands near 20th Street SE and 79th Avenue SE and drops down steeply in a channel that ranges in slope between roughly 3 to 8 percent. As with the other Sunnyside streams, the channel has carved a large ravine from this point all the way down to Sunnyside Boulevard. In between SR 204 and Sunnyside Boulevard, the channel is less steep and the slope averages roughly 2.5 percent. In the steep reaches upstream of SR 204, the channel is incised and the scars of shallow landslides from the ravine walls are evident (See Appendix 6-A). The long, steep culvert that crosses SR 204 currently acts as a barrier to fish passage.

As with Weiser Creek and Burri Creek, the long-term success of instream channel improvements upstream of SR 204 is questionable. Increased flows from future development could result in more rapid downcutting of the channel, which could further reduce the stability of the ravine walls and increase the sediment loading in the creek from both landslides and channel enlargement. While channel improvements may temporarily provide improved stability and valuable habitat features, such as LWD and pools, these improvements would not prevent the ravine landslides and would likely be impacted or obliterated by the high sediment loads in this reach. As a result, the same proposed regulations for Weiser Creek and Burri Creek (Policy 17 and 20) are likewise recommended for Fox Creek in order to prevent future flow increases from accelerating or aggravating the ongoing erosion and sedimentation problems in this reach.
In between SR 204 and Sunnyside Boulevard, the stream channel has experienced some active incision, but the ravine walls are more stable than in the upstream reaches of the creek and are less likely to impact instream channel improvements. While vegetation cover is good, there is a lack of instream pools and LWD. In order to improve channel stability and habitat conditions in this reach, a series of grade control structures and LWD are recommended (project FOX 2, see Table 6-2 and Figure 6-2).

Another active erosion problem in this basin is located at the SR 204 crossing of Fox Creek. Stormwater runoff from the highway is directed through roadside ditches, one of which flows uncontrolled down the steep ravine hillside and has caused an actively eroding gully. The proposed solution (project FOX 5) to this problem would involve the installation of a drainage pipeline to convey the highway runoff from the top of the ravine down to the stream channel. In addition, an energy flow dissipator would be needed to slow down the runoff before it enters the stream (see Table 6-2 and Figure 6-2).

Fox Creek is the drainage basin most heavily impacted by a future urban center, as its headwaters are fully contained within the area proposed for a center. The EIA is increased by 9.5%. This would likely result in higher flows, which may have an impact on streambed/bank stability. However, the streambed is highly incised and historically unstable, aquatic habitat is not present in the unstable portions, and another downstream project (FOX 2, see Table 6-2) addresses these issues, so no additional projects are recommended to stabilize the streambed. The higher flows would most likely require the replacement of one additional culvert under 79th Ave SE, with an approximate cost of approximately $35,000.

As previously mentioned the primary fish passage problem identified for the Fox Creek basin is the culvert that crosses SR 204. High velocities and shallow depths through the long culvert create conditions that make the culvert essentially impassable for fish. However, even if fish could pass through this culvert, the combination of the steep upstream channel gradient and the lack of spawning substrate and stream structure due to erosion may all pose as a barrier to fish use and passage. Therefore, no improvements to the SR 9 culvert are recommended.

Several flooding problems were identified within the Fox Creek basin, including two roadway flooding problems and the flooding of a private driveway. Three capital improvement projects (FOX 1, 3, and 4) are recommended to increase the conveyance capacity of these drainage systems in order to prevent future flooding (see Table 6-2 and Figure 6-2).

f. Mosher Creek Basin

The headwaters of Mosher Creek originate in an area north of 20th Street SE to the east of the Carleton Creek and Fox Creek basins. The creek flows to the south across 20th Street SE and through a series of large wetlands where the channel becomes less defined. The stream continues to flow south through a low-density residential area where the stream has been culverted at a number of locations. Near 87th Avenue SE, the creek generally turns west, crosses 87th, and enters a steeper reach of stream with a large ravine all the way down to the SR 2 crossing.

A number of flooding, fish passage, and stream habitat problems were identified in the Mosher Creek basin. In some cases, a fish passage and flooding problem occurred at the same location for an existing culvert. Two such culverts are located at private driveway crossings of the creek and a third culvert in this category is located at 91st Avenue SE. In order to solve these problems, capital improvement projects (MOS 3, 4, 5) were developed to replace the existing culverts with new culverts that would provide greater conveyance capacity and improved fish passage conditions (see Table 6-2 and Figure 6-3).

Only one tributary subbasin of Mosher Creek is located within the area identified for a future center. The basin EIA increased by approximately 0.5%, which has only a slight impact on surface water runoff. The increased flows may require the upgrade of a local driveway culvert, but, with the minor increase in EIA, further detailed analysis is needed before upgrading the culvert. Therefore, no additional projects are recommended at this time.

In addition to these three culvert problems, two existing culverts along Mosher Creek were predicted to cause flooding problems but were not predicted to cause any fish passage restrictions. One of these culverts crosses an access road that is used to maintain a regional water pipeline. In this case, the recommended solution (project MOS 1) would involve removing both the culvert and a short section of the access road and restoring the natural stream channel. Maintenance vehicles would still be able to enter the access road from either direction, so this would not restrict their ability to access the entire water pipeline. In addition to removing a partial fish passage restriction, this project will improve stream habitat. The other culvert project (MOS 7) designed to solve a flooding problem would involve the replacement of a culvert at a private farm road.

Three other existing culverts in the basin were predicted to cause only partial fish passage restrictions without any flooding problems. In two of these cases, the recommended solution (projects MOS 6 and MOS 8) involved replacing the existing culverts (see Table 6-2 and Figure 6-3). In the other case, the proposed solution (project MOS 10) was to install a series of eight weirs inside the existing 10-foot diameter culvert that crosses SR 2.

Finally, habitat problems were identified within two reaches of Mosher Creek. Upstream of SR 2 to 87th Avenue SE, the stream channel was observed to be lacking in LWD. The proposed solution (project MOS 2) would involve the installation of LWD at strategic locations throughout this reach culverts (see Table 6-2 and Figure 6-3). In addition, the reach upstream of 87th Avenue SE to South Lake Stevens Road was found to be lacking in both LWD and shade. The recommended project (MOS 2) proposes to install LWD along the channel and to plant native vegetation adjacent to the channel along this reach (see Table 6-2 and Figure 6-3).

g. First Ravine

The headwaters of First Ravine are impacted by the development of a future urban center, with an increase of 10.5 % EIA. This will likely result in some additional instability of the stream-bed/bank, which has been historically unstable. No detailed hydraulic analysis was completed for this drainage basin, and it was determined that attempts to stabilize the streambed/banks would be fairly ineffective. No additional projects to provide further slope stability are recommended.

h. Cavaleros Drainages

There will be an increase of approximately 2.4% EIA, but it should have a negligible impact on drainage issues. No detailed analysis was completed for this drainage basin, and no additional projects are recommended.

i. Ebey Slough Floodplain

Although the Ebey Slough floodplain does not lie within the Lake Stevens UGA boundaries, the streams that cross the floodplain and discharge into the slough all originate within the UGA. Therefore, increased stream flows caused by new development in the UGA could potentially cause impacts in the Ebey Slough floodplain.
Residents of the floodplain have reported an increase in the frequency and duration of flooding on their properties that may be attributable to increased flows and/or increased sedimentation in the stream channels due to upstream development. At this time, it is unclear how much of the potential impacts to properties within the floodplain may be due to issues such as floodplain subsidence, ditch maintenance or ditch capacity.

The only recommended project within the floodplain is project S13 (see Table 6-2). While Figure 6-2 indicates five potential sites for the pump stations, Table 6-2 assumes that only two pump stations

would need to be constructed. Additional study will be needed to determine the preferred location and operation of these pump stations and whether the installation of pump stations is even feasible given current regulatory and permit constraints.

Finally, stream habitat improvement projects are needed for many of the Sunnyside streams downstream of Sunnyside Boulevard. However, these projects were not included in the list of projects for this UGA Plan since they are viewed as projects with more of a regional benefit that should be addressed through more regional planning efforts.

2. Lake Stevens Basins

The drainage basins that drain directly into Lake Stevens vary in size as well as in the primary type of conveyance system for stormwater runoff. Most of the larger basins convey stormwater to the lake via stream channels, some of which have associated wetlands and one of which (Stitch Creek) flows through a small lake. For the smaller drainage basins, some convey their stormwater to the lake through constructed drainage systems while others still have small streams. Only those basins that lie within the unincorporated portion of the UGA were evaluated.

a. Lundeen Creek Basin

The headwaters of Lundeen Creek are located north of the Lake Stevens UGA near Lake Cassidy. Because the portion of the basin to the north of the UGA boundary at SR 92 would not be impacted by the proposed land uses within the UGA, only the portion of the basin located within the UGA was evaluated for this Plan.

After the main stream channel crosses SR 92, Lundeen Creek generally travels in a southerly direction and discharges into the north end of Lake Stevens (see Figure 6-1). Several tributary stream channels connected to the main channel are also located within the UGA boundaries. Much of the riparian corridor along the main channel and some of the riparian corridors along the tributary channels are still intact and well-vegetated. However, both the main branch and the west branch were apparently relocated at some time in the past and are currently located along both sides of a section of 101st Avenue NE. As shown in Figure 6-1, the main branch of Lundeen Creek is considered by Snohomish County to contain Bull Trout habitat roughly two-thirds of the way up to SR 92. However, most of the recent fish sightings in the creek by County staff have consisted of large numbers of kokanee and a few coho all the way up to SR 92.

Flooding problems were predicted to occur at a number of locations along the major conveyance systems for both existing and future conditions. Some of the general areas include the main branch and the west branch of the creek along 101st Avenue NE, the east branch of the creek downstream of Callow Road, and the tributary drainage system along the north side of Lundeen Parkway.

Related to the flooding problems along 101st Avenue NE, both the main branch and the west branch of Lundeen Creek have no real vegetated riparian corridor to provide protection to the stream. In addition, the apparently constructed channels along each side of the road contain little pool habitat and no LWD, generally lack shade, and receive pollutants that wash off of the roadway directly into the stream. In order to solve these problems, two projects (LUN 9 and 1) are recommended to divert the main branch and the west branch into what is believed to be their historical channel locations. Vegetated stream buffers, LWD, and channel meanders would all be provided along the proposed channels. These projects would not only solve the flooding problems along 101st but would also significantly improve habitat conditions for these reaches of the creek.

Flooding problems in several other areas of the Lundeen Creek basin would be resolved by replacing the existing culverts to provide additional conveyance capacity. This includes projects LUN 2 and 3 along Lundeen Parkway, project LUN 7 at a private driveway off of 99th Avenue NE, and project LUN 8 along 101st Avenue NE.

For the flooding problems along the east branch of Lundeen Creek downstream of Callow Road, some of these culverts also act as fish passage restrictions. This stream reach has also been highly disturbed by adjacent development, which has disturbed and destroyed vegetated buffers, straightened the channel, and nearly eliminated natural habitat features such as LWD and pools. Project LUN 12 proposes to solve the flooding problems by replacing most of the existing culverts and widening the channel. This project also proposes to significantly improve habitat conditions by creating meanders, installing LWD, and planting native vegetation along the stream corridor.

In addition to those fish passage problems already mentioned, several other culverts in the basin act as partial restrictions to fish passage. Project LUN 5 proposes to solve one of these problems by replacing the existing culvert along the east branch of Lundeen Creek at Callow Road. Project LUN 6 proposes to solve another problem in the main branch at SR 92 by installing a series of weirs inside the existing culvert. Finally, project LUN 4 would replace the existing culvert for the east branch at Callow Road to solve both a fish passage problem and a flooding problem.

The remaining projects in the Lundeen Creek basin are proposed to address habitat problems that were observed along the stream channels. Projects LUN 10, 14, and 15 would add LWD to two reaches of the main branch and one reach of the east branch of Lundeen Creek that are currently lacking in LWD. Finally project LUN 11 would create meanders, install LWD, and plant native vegetation in the downstream reach of the east branch that currently has poor habitat conditions.

b. Stevens Creek Basin

The Stevens Creek basin lies immediately west of and shares many similarities with the Lundeen Creek basin. Within the UGA boundaries, Stevens Creek generally flows to the south from SR 92 to its outlet at the north end of Lake Stevens. Most of the vegetated riparian corridor within the UGA is still intact, with the major exception being the reach between Vernon Road and the lake, in which the stream currently flows through a concrete lined open channel.

Two flooding problems were identified for the portion of the Stevens Creek basin located within the UGA boundaries. One of these problems was associated with the existing stream culvert that crosses 31st Place NE. This culvert was predicted to cause roadway flooding for both existing and future land use conditions and may be related to the upstream overbank flooding that was observed by local residents during the large January 1997 storm event. This culvert was also determined to be a partial fish passage restriction. The recommended solution (project STE 1) involved the replacement of the existing culvert (see Table 6-2 and Figure 6-4).

The other flooding problem is predicted along Lake Drive due to the inadequate capacity of the existing storm drain system that is tributary to Stevens Creek. The recommended solution (project STE 5) would involve the replacement of a section of the drainage pipeline to provide additional conveyance capacity (see Table 6-2 and Figure 6-4).

Beside the culvert at 31st Place NE, two other culverts along Stevens Creek were determined to be partial fish passage barriers, which does not necessarily mean that these culverts are always impassable. In fact, kokanee and a small number of coho were observed by County staff up to SR 92 during the course of this study. The solution for the first culvert at Vernon Road (project STE 2) proposes to install a small weir at the downstream end of the culvert. The solution for the other

culvert at SR 92 (project STE 7) would involve replacing the existing culvert with a much larger culvert to improve fish passage conditions (see Table 6-2 and Figure 6-4), though other alternatives may also be feasible.

Finally, several habitat problems were identified along Stevens Creek within the Lake Stevens UGA. First, the entire reach of the creek between SR 92 and Lundeen Parkway was determined to be lacking in LWD, which would require the installation of LWD in the stream channel as proposed by project STE 6. Second, a short reach of the stream upstream of 31st Place NE was observed to be overgrown by invasive plant species, which would require replacement with native vegetation as proposed by project STE 3. Third, the rock-armored outlet channel to the lake provides almost no aquatic habitat value. Project STE 3 would improve habitat conditions by creating pools and installing plants along this reach to slow down flows and provide shade over the channel. The location of each of these projects is shown in Figure 6-4.

c. Eagle Creek Basin

The Eagle Creek basin is a small basin located immediately south of the Stevens Creek basin. The small creek discharges into the northeast corner of Lake Stevens.

No flooding, fish passage, or habitat problems were identified along the main channel of Eagle Creek. However, a section of Vernon Road to the south of Eagle Creek has no drainage system and experiences frequent flooding problems. Because this problem is addressed separately in section D.4 (Spot Drainage Projects Throughout the UGA) of this chapter, no capital improvement projects are listed for this basin in Table 6-2.

d. West Drainage 1 Basin

The West Drainage 1 basin lies immediately south of the Eagle Creek basin, both of which are similar in size. While most of the conveyance system consists of constructed drainage pipelines, a portion of the conveyance system consists of a natural open channel. Since no surface water problems were identified in this basin, no capital improvement projects are proposed.

e. West Drainage 2 Basin

The West Drainage 2 basin is another small basin that lies immediately south of the West Drainage 1 basin and discharges into the west side of Lake Stevens. The primary conveyance system for this basin is a constructed drainage system along Vernon Road and Springbrook Road.
The analysis of the existing drainage system along the southwest side of Springbrook Road indicated that it does not have adequate capacity and would result in flooding of the road as well as a private driveway. Since this was the only problem identified for this basin, the only recommended project (WD2-1) would involve upgrading the existing drainage system to provide adequate conveyance capacity (see Table 6-2 and Figure 6-4).

f. West Drainage 3 Basin

The West Drainage 3 basin, which is almost entirely developed, is yet another small drainage basin that discharges into the west side of Lake Stevens. The main conveyance system consists of a constructed drainage network that flows to the north along 96th Avenue NE and then to the east along North Davies Road before discharging into the lake. The inadequate capacity of this system was predicted to cause roadway flooding along 96th Avenue NE. While several solutions to this problem were evaluated, the recommended project (WD3-1) involves the replacement of roughly

1,300 lineal feet of the drainage pipe system to provide sufficient conveyance capacity (see Table 6-2 and Figure 6-5).

g. West Drainage 4 Basin

The West Drainage 4 basin is a small basin located immediately east of the West Drainage 3 basin. The primary conveyance system is a constructed drainage system that discharges into the west side of Lake Stevens through three separate outfalls. Because no flooding problems were predicted in this basin, no capital improvement projects are recommended.

h. West Drainage 5 Basin

The West Drainage 5 basin is located immediately east of the West Drainage 4 basin and also discharges into the west side of the lake. For the drainage basin known as the West Drainage 5 Basin, only one flooding problem was predicted along the major conveyance system for both existing and future land use conditions. However, this was considered to be a relatively minor problem because flooding would affect private landscaping that appears to be located within the historical ravine of the channel. As a result, no capital improvement projects are recommended for this drainage basin.

i. West Drainage 6 Basin

The West Drainage 6 basin lies immediately to the east of the West Drainage 5 basin. The primary conveyance system mostly consists of a constructed drainage system that discharges into the west side of the lake. No flooding problems were identified in this basin for either existing or future land use conditions. Although the outfall pipe into the lake currently acts as a barrier to fish passage, no improvements are recommended since the upstream channel has been is so highly disturbed and altered by adjacent development, that no aquatic habitat is left available. As a result, no capital improvements are recommended for this basin.

j. West Drainage 7 Basin

The West Drainage 7 basin contains an ephemeral stream that generally travels to the south toward North Davies Road. At the downstream end of the stream channel, flows are conveyed by several hundred feet of a drainage pipe system that crosses North Davies Road and discharges into the west side of Lake Stevens. This drainage pipe system experiences very infrequent levels of flooding that do not exceed the level of service standards for the Lake Stevens UGA. This downstream pipe network also currently acts as a barrier to fish passage. However, due to the ephemeral nature of the stream and the general lack of good habitat conditions, no capital improvements are recommended to address these problems.

k. Lockhart Creek Basin

Lockhart Creek lies immediately west of the West Drainage 7 basin and discharges into Lake Stevens directly south of the West Drainage 7 outfall. Although no fish were observed in the stream by County staff during the study period, local residents have historically observed kokanee up to roughly two hundred feet upstream of West Davies Loop Road. However, a culvert under West Davies Loop Road and along the upstream private property along private property upstream of West Davies Loop Road currently acts as a partial barrier to fish passage.

Several flooding problems were predicted along Lockhart Creek due to the inadequate capacity of existing culverts. Projects LOC 1 and LOC 2 are proposed to correct two of these problems by replacing two private driveway culverts in the upper reaches of the stream (see Figure 6-5).

The culvert that crosses West Davies Loop Road was determined to cause both flooding problems and partial restrictions to fish passage. Project LOC 3, therefore, would replace the existing culvert that crosses West Davies Loop Road. This project would also remove the upstream culvert that crosses the private property just upstream of West Davies Loop Road and that currently acts as a partial restriction to fish passage, as previously mentioned. Removing the upstream culvert would not only remove the fish passage restriction, but would also involve the creation of a stream channel with meanders, adequate levels of LWD, and stream buffers consisting of native vegetation, which would increase the available habitat in the stream.

l. Giti Creek Basin

The headwaters of Giti Creek originate near Chapel Hill Road. The stream channel generally travels south and west before it enters a drainage pipe network that crosses a residential development. Flows then discharge into a large wetland near the lake, just west of Stitch Road, where the stream channel becomes less well defined. It appears that this wetland is connected to Lockhart Creek and that most of the flows from Giti Creek actually discharge through the same open channel outlet to Lake Stevens used by Lockhart Creek.
Based on field observations, the lack of a well-defined channel and numerous other obstacles within the downstream wetland essentially prevents fish passage through the wetland. Upstream of the wetland, the drainage pipe network through the residential development acts as a complete barrier to fish passage. Because this problem would be extremely difficult and expensive to fix compared to the benefits received, and because the stream is small with intermittent flow, no projects are proposed to improve fish passage through the development.

Flooding problems in the basin were identified in two general locations. One of these locations is along the drainage pipe system that conveys flows through the residential development. Project GIT 1 proposes to alleviate this flooding problem by replacing a section of the existing drainage network. The other general flooding area is located on private property as a tributary drainage system crosses the property and also discharges into the large wetland near Lake Stevens. Project GIT 2 proposes to solve this flooding problem by constructing a short bypass pipeline that would divert flows into an adjacent drainage system that has adequate conveyance capacity.

m. Stitch Creek Basin

The Stitch Creek basin is the largest basin that drains into the south end of the lake, though it is not as large as the Stevens Creek or Lundeen Creek basins. The creek generally flows to the west into Stitch Lake and then continues west into Lake Stevens (see Figure 6-1).

Downstream of Stitch Lake, the gradient on the stream is too low to support spawning gravels. Existing stream substrate is silt and sand, and the stream is channelized, with no LWD or other stream structure. Observations of fish use in this watershed indicates that the main fish habitat value for this stream is cutthroat rearing in Stitch Lake. There appears to be some salmonid spawning habitat between Stitch Lake and South Davies Road.
The primary fish passage problem is the culvert that crosses South Davies Road. The existing concrete box culvert was installed at a gradient that causes high velocities through the culvert. In addition, erosion at the downstream side of the culvert has caused the culvert to become perched above the stream channel. Project STI 1 would solve this problem by constructing a series of weirs in the channel immediately downstream of the culvert as well as through the culvert.

Since no flooding problems were identified along the main stream channels for either existing or future land use conditions, no other capital improvement projects are proposed for this basin.

n. Eastside Creek Basin

The Eastside Creek basin is a small basin with a small stream channel that discharges into the east side of Lake Stevens (see figure 6-7). No flooding problems were identified along the stream channel for either existing or future land use conditions. Since no fish passage or significant habitat problems were identified either, no capital improvement projects are recommended for this basin.

o. Cedar Cove Creek Basin

The Cedar Cove Creek basin lies immediately north of the Eastside Creek basin. The stream channel generally flows to the north and discharges into the east side of Lake Stevens immediately south of the City of Lake Stevens.

As with Eastside Creek, no flooding, fish passage, or significant habitat problems were identified along the main stream channel. As a result, no capital improvement projects are recommended for this basin.

3. Pilchuck River Basins

The only two basins in the Lake Stevens UGA that drain directly to the Pilchuck River are the Centennial Creek and Machias Creek basins. Within the Machias Creek basin, only one major tributary steam lies within the UGA boundaries.

a. Machias Creek Tributary Basin

The Machias Creek tributary branch that is located within the Lake Stevens UGA originates near 20th Street SE, flows to the north until it crosses the Machias Cutoff, and then generally travels east beyond the UGA boundaries until it discharges into Machias Creek (see Figure 6-7). Although no fish were observed in this upstream tributary channel, it is unknown whether fish currently use this tributary or not. This tributary is not currently mapped by the County as bull trout or chinook habitat.

The only problem that was identified along this tributary was a flooding problem at 123rd Avenue SE. Project MAC 1 would alleviate this problem by replacing the existing culvert.

b. Centennial Creek Basin

The headwaters of the Centennial Creek basin are located in the south end of the Lake Stevens UGA between the Mosher Creek and Stitch Creek basins. Centennial Creek generally flows to the south across 20th Street SE and then to the east along the southern UGA boundary where it flows into a lake known as Lake 205, which is a twenty-five acre ponded wetland complex. A beaver pond controls the flow out of Lake 205, which then enters a steeper reach with 3 to 5 percent slopes down to the floodplain terraces of the Pilchuck River. At this point, stream gradients decrease abruptly to 1 to 3 percent and the stream turns to the south along the floodplain terrace and flows across several farm and suburban properties. The stream has been historically moved and straightened to accommodate agricultural activity. A small berm has been installed along the east side of the channel in order to contain high flows and direct them away from farm buildings and fields.

The entire downstream reach of Centennial Creek below Lake 205 is considered by the County to be bull trout habitat. Both coho and chum spawning activity was observed by County staff in Centennial Creek. Spawned-out coho carcasses were observed to within 100 meters downstream of the dam on Lake 205 and carcasses of spawned-out chum were observed near the mouth of the Creek, just upstream of the culvert under Old Machias Road.

Several flooding problems were identified along Centennial Creek for both existing and future land use conditions. One of these flooding problems is caused by a culvert that crosses a water pipeline access road located immediately downstream of SR 9. Both this culvert and the culvert that crosses SR 9 were also identified as partial fish passage restrictions. Because SR 9 becomes a short bridge at this location, the proposed solution (project CEN 3) to these problems would involve constructing a new stream channel under the bridge and using the existing culvert through SR 9 only as a high flow bypass culvert. The new stream channel would continue across the water pipeline access road and the existing culvert would be removed. Despite removing a section of the access road, the road can still be accessed from either direction. By adding LWD and native vegetation to the new channel, this project would also provide some aquatic habitat benefits.

Another flooding problem is located at the Centennial Creek culvert that crosses 103rd Avenue SE. Due to downstream beaver activity, the proposed project (CEN 5) recommends replacing the existing culvert as well as raising the elevation of a section of the existing roadway. Due to wetland constraints on each side of the road, a small bridge structure is proposed

A third flooding problem is related to the stream culvert that crosses 91st Avenue SE. Project CEN 2 proposes to replace the existing culvert in order to provide additional conveyance capacity.

Besides those culverts already mentioned, several other culverts along Centennial Creek were determined to be partial fish passage restrictions. Project CEN 4 recommends replacing the existing culvert across South Lake Stevens Road and projects CEN 6 and CEN 7 both recommend replacing existing culverts across the stream within the downstream farming area.

Finally, habitat problems were also identified along the stream channel for Lundeen Creek downstream of Lake 205. Within the steeper stream reach between the lake and the farming area, the channel generally lacks LWD. Project CEN 1, therefore, proposes to add LWD to the stream channel within this reach. Further downstream, the stream channel passes through the farming area where the channel appears to have been moved from its historical location. The existing channel almost entirely lacks vegetation to provide shade and a riparian buffer and contains no LWD and very little pool habitat. Project CEN 8 would install LWD and plant native vegetation along this entire reach in order to improve aquatic habitat conditions.

4. Spot Drainage Projects Throughout the UGA

In addition to the above basin analyses, the County also evaluated localized ("spot") drainage problems throughout the UGA as identified by private citizens, County staff or other entities. This included a review of all recent drainage complaints throughout the UGA.

All citizen drainage complaints recorded by the County between 1996 and January 2000 were reviewed for the unincorporated portion of the UGA, except for the Sunnyside basins, which had already been reviewed and included in the detailed analyses of those basins. Drainage Improvement District #8 (DID #8) also supplied information related to additional drainage problems located within the UGA. All of the collected drainage complaints were reviewed to determine which problems either the County or DID #8 had already addressed and which problems had not yet been addressed. From this review, it was determined that a total of five separate drainage problems

within the UGA had not yet been addressed. All of the problems that were identified can be categorized as local flooding problems. The location of each of these drainage complaints is indicated in Figure 6-8. A brief description of each problem and proposed project, as well as the estimated cost to design and construct these projects, is provided in Table 6-3.

5. Detention Pond and Biofiltration Swale Retrofit Projects

A review of the performance of existing detention facilities and biofiltration swales throughout the western half of the Lake Stevens UGA was also conducted. The purpose of the evaluation was to determine which of these facilities were not currently providing adequate water quality treatment for stormwater runoff.

Table 6-3
Projects Throughout Entire Lake Stevens UGA[1]

Project ID[2]	*Drainage Basin*	*Problem Description*	*Proposed Improvements*	Estimated Cost
Spot Improvement Projects				
ND1-1	NorthD1	Water seeps from hillside, and flows over the road. Continuous problem during winter months.	Install 173lf of french drains (may also need to rebuild 12" outlet to Lake Stevens if necessary).	$29,000
ND2-1	NorthD2	Undersized private drainage system. Private property flooding several times a year.	Replace existing culvert with 290' of 12" culvert.	$22,000
ND3-1	NorthD3	An 18" culvert under Vernon Road lacks sufficient capacity and causes property and home flooding several times a year.	Replace existing 8" culvert with 12" LCPE through private property for 201 feet.	$23,000
EAG 1	Eagle Creek	Lack of drainage system along Vernon Road causes ponding on road. Continuous problem during winter.	Install new drainage system along Vernon Road.	$34,000
MOS 11	Mosher Creek	Undersized roadway system. Water backs up in street and then floods through private property to an existing detention pond.	Install a bypass drainage system for high flows.	$18,000
			Spot Improvement Total =	**$126,000**
Retrofit Projects				
	Multiple Basins	Many existing detention ponds do not have any water quality facilities	Retrofit 8 detention ponds to include water quality features	$400,000
	Multiple Basins	Many existing biofiltration swales do not function as designed	Retrofit 33 biofiltration swales so that they function properly	$759,000
			Total =	**$1,285,000**

1. Spot improvement projects for entire UGA, with the exception of the Sunnyside basins (see Table 6-2)
2. Project number refers to Figures 6-6
3. Cost to conduct Master Drainage Plan studies does not include cost of capital facilities that may result from these studies

swales do not currently provide adequate water quality treatment and will, therefore, need to be retrofitted (see Figure 6-8). For the detention ponds, this will likely involve some type of modification or addition to the ponds in order to improve pollutant removal. This could include dividing the pond into cells to provide a forebay to settle out polluted sediments or possibly lowering the bottom of the pond to provide additional storage space for sediment removal. For the biofiltration swales, this will likely involve modifying the swales so that they will function as they were originally intended.

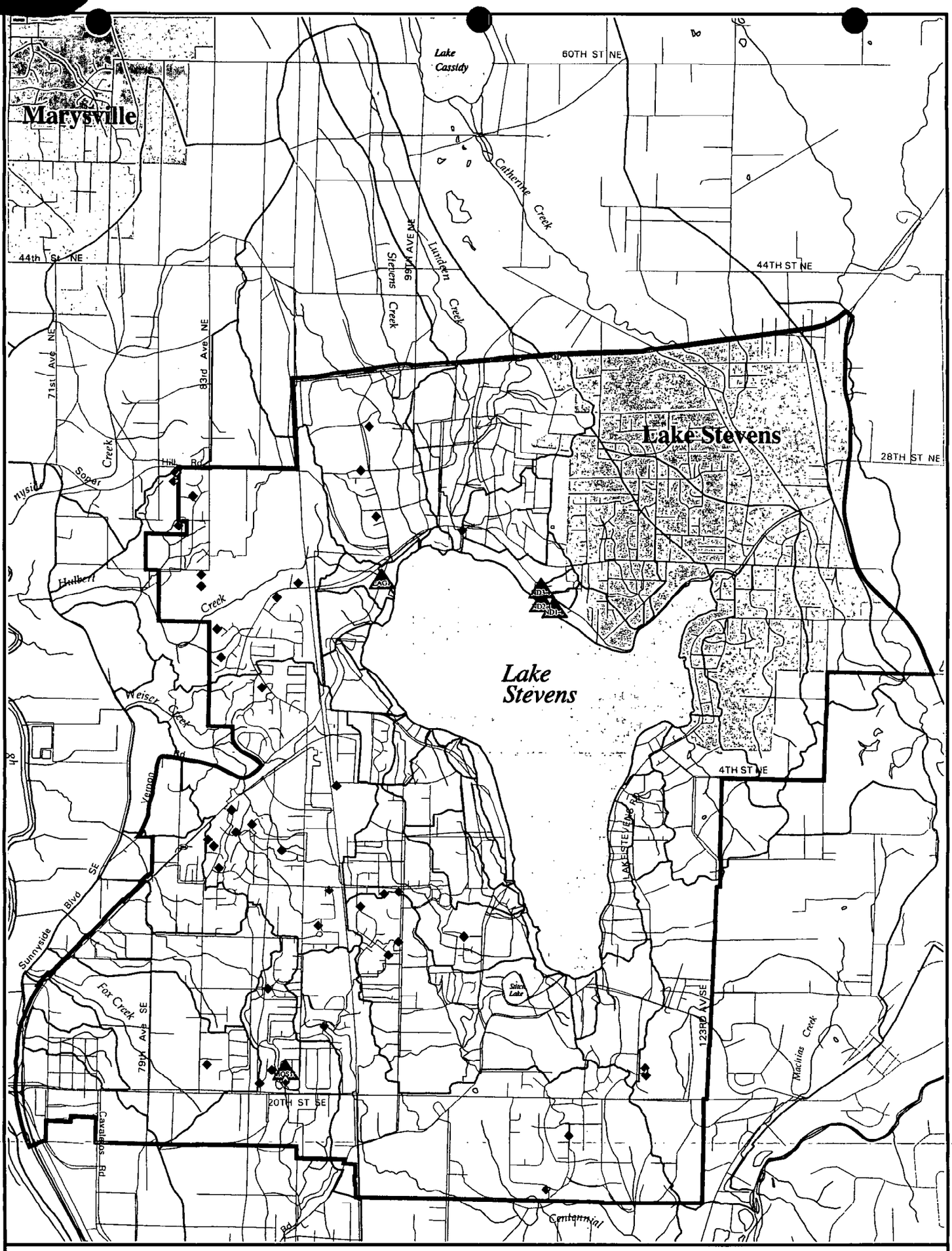


Figure 6-8

Spot Improvement and Retrofit Projects

Legend

- *Bio Swale Retrofit Projects*
- *Detention Retrofit Projects*
- *Spot Drainage Projects*
- *UGA Boundary*
- *Watershed*

Snohomish County, Washington

Snohomish County

PUBLIC WORKS
SURFACE WATER MANAGEMENT
(425) 388-3464

State Plane Zone 5601, NAD 83, Units Feet. 20 Foot Contours
Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.
%.gis%pwfswm/proj/mdp/lkstvns/aml/UCAplan/det_spot.aml

December 7, 2001

This could involve adding a level spreader to more evenly distribute the flow over the swale or filling and replanting the bottom of the swales. The cost to design and construct all of the identified retrofit projects within the western half of the UGA is listed in Table 6-3.

E. Supplemental Surface Water Policies

The GPP component of Snohomish County's Comprehensive Plan contains general policies that are designed to protect existing surface water facilities throughout the County. While those policies are applicable to the Lake Stevens UGA, the following supplemental policies are needed to address the surface water issues that are unique to this UGA. Along with each of these policies is a description of the actions that would be needed to implement the policies.

Policy 12: Important stream and wetland habitat areas should not be degraded and important stream and wetland habitat areas that have been degraded should be restored. Stream buffer averaging shall not be allowed for those streams in the Lake Stevens UGA that are more sensitive to disturbance, including Stevens Creek, Lundeen Creek, Stitch Creek, Hulbert Creek, Weiser Creek, Burri Creek, Mosher Creek, Centennial Creek, and Catherine Creek.

Implementation: This policy would require a modification to the County's Critical Areas Regulations.

Policy 13: All new drainage systems that discharge into stream channels with steep ravine walls shall install tightlines to convey the stormwater from the top of the ravine wall to the stream channel in order to prevent erosion.

Implementation: This policy would require a modification to the County's Critical Areas Regulations and/or to Title 24 of the Snohomish County Code.

Policy 14: The County shall consider the adoption of sensitive lake protection standards for the portion of the UGA that drains into Lake Stevens. These standards would be designed to reduce the amount of phosphorous that is carried by stormwater runoff from new development into the lake.

Implementation: This policy would require additional study by the County and, if recommended, would require a modification to the County's Critical Areas Regulations and/or to Title 24 of the Snohomish County Code.

Policy 15: The County should form an agreement with Drainage Improvement District #8 regarding the funding and implementation of projects located within the jurisdictional boundaries of the drainage district.

Implementation: This policy would be implemented by establishing an interlocal agreement between the County and Drainage Improvement District #8.

Policy 16: All new development within the Weiser Creek, Burri Creek, and Fox Creek basins must base the design of their detention facilities on the use of a flow duration[1] control standard. This means that duration of stormwater flows being

released from a site after it is developed must not exceed the existing duration of flows being released from a site for all flows in between 50% of the existing 2-year peak flow rate and existing 50-year flow rate.

Implementation: This Policy would require a modification to Title 24 of the Snohomish County Code.

1. Flow duration means the aggregate time that peak flows are at or above a particular flow rate of interest. For example, the total amount of time over the past forty years in which flows exceeded the 2-year peak flow rate.

F. FUNDING STRATEGIES

1. Primary Revenue Sources

There are three primary sources of capital for Surface Water Management (SWM) services in the Lake Stevens area:

- **Rates**: As a surface water management utility, SWM can charge rates to support its services. These rates, codified as Watershed Management Area (WMA) fees, support ongoing operations of SWM such as maintenance, monitoring, policy/regulatory compliance, planning, outreach and volunteerism; and to a limited extent, capital improvements. Many of the programmatic expenditures are mandated by federal Clean Water Act requirements under the National Pollutant Discharge Elimination System (NPDES) permit. Additional programmatic expenditures are anticipated in response to Endangered Species Act (ESA) compliance requirements and the renewal of the NPDES permit.

- **Real Estate Excise Tax (REET)**: REET is a tax on the real estate transactions in the entire county that can be used by the County for capital projects identified in the County's GMA Capital Facility Plan. SWM has five categories of projects that are generally eligible for REET funding. Projects identified in this plan would generally fit into one of the five REET funding categories.

- **Grants**: SWM has been successful in competing for various grant programs to fund surface water management capital projects. The current grants environment is particularly focused on habitat protection and enhancement projects.

In addition there are other existing and potential revenue sources that could or do supplement these basic revenues:

- **System Development Charges**: Many utilities charge a connection fee on new development to assist in financing new facilities that are needed to support the development. However, there is some question whether the current laws that authorize the County's surface water management program also authorize the use of these fees. While SWM could be authorized under alternative statutes that could allow these charges to be levied, this analysis has not evaluated that potential and, therefore, does not include this potential funding mechanism.

- **Taxes**: Surface water management programs are generally funded by utility rates in Washington State. However, some functions that SWM currently undertakes could be funded by tax revenue as well. Such alternative funding could be considered to fund county-wide programmatic activities that are now funded by SWM rates.

- **Road Fund Services**: The road fund divisions of the Public Works Department contribute to the provision of drainage facilities in the unincorporated area through the management and development of the road system. These improvements are made in two ways. First the road fund routinely budgets funds to maintain drainage courses that are part of and serve the road system. Secondly, major road projects, as shown in the transportation element of this plan, include measures to mitigate drainage impacts associated with the project. The effects of these activities are included in the net funding that will be needed to finance the improvements identified in the plan.

- **Other Jurisdictions**: This financial discussion only applies to projects listed on the County's inventory of need for the Lake Stevens UGA. Other jurisdictions, in particular, Drainage Improvement District #8 (DID #8) or the City of Lake Stevens (City) may contribute to or undertake some of the projects listed in the inventory of need. For example, several of the projects and recommendations of this plan originated in a plan prepared by DID #8[4]. The entire list of projects may be reduced through negotiations with DID #8 and the City as equitable cost sharing arrangements for present and future projects are discussed. As noted below other potential funding sources include tax revenue and system development charges.

2. Methodology and Assumptions

Some of the key assumptions and methodology that were used to conduct the analysis of potential funding strategies for surface water capital improvements are described in this section.

a. Use of Debt Financing for Capital Facilities

Irrespective of the source of revenue, capital facilities can be financed on a "pay as you go" basis or through debt financing with bonds. "Pay as you go" entails financing capital facilities within available revenues without issuing bonds. Under this approach revenues either must be available from revenues earned each year for the capital projects that need to be built each year, or money must be saved over a period of years to finance the facility. This results in the facility not being built until the necessary revenues are accumulated. This may be after the need is created by new growth.

Bond financing has the advantage of being able to build facilities sooner by borrowing money to be paid back with revenue earned later. This also spreads the cost of the facilities over a longer period of time (20 to 30 years for the term of the bonds compared to 12 or less years with pay as you go) and this results in lower overall rates. One of the major drawbacks with such debt financing is that there are interest charges that must be

[4] *Lake Stevens/Catherine Creek Watershed Management Plan*, June 1999, Gray & Osborne, Inc., Seattle, WA.

paid. However, these charges are partially offset by avoiding inflation costs of construction if the facilities must wait to be financed with future revenues.

b. Rates

Many of the operating aspects of SWM are now required as a condition of federal permits or anticipated as a part of pending federal rules. As a result, the existing rate structure of SWM provides an extremely limited capacity to fund capital projects after accounting for operational, or programmatic, expenses. (As used here, the words "operational" or "programmatic" refer to nonstructural activities such as monitoring, public education, technical assistance, planning, outreach, volunteerism, policy and regulatory compliance work.)

Analysis of the current rate structure demonstrates that, after accounting for current operations, no funds are available to support additional capital commitments. However, there are additional operating or programmatic costs that will need to be addressed in the future:

- There is little capacity in the current budget to absorb the additional costs of maintaining the improvements identified in the plan. The amount the rate would need to increase depends on the amount of facilities constructed.

- The FCS Group and Shaun Pigott, recently completed a study of service levels titled, *Lake Stevens Urban Growth Area: Storm & Surface Water Management Level of Service Analysis; Final Report (FCS Report)*. This study, which did not include additional capital costs, indicates that higher rates may be necessary to adequately sustain current service standards on an ongoing basis, including current maintenance levels funded by the County Road Fund. This additional rate would not cover pending new requirements. Further analysis of the recommendations of the FCS Report will occur during the completion of the Master Drainage Plan.

- Additional costs may be incurred in the near future to support expanded program activity in response to both Endangered Species Act compliance requirements and requirements of the NDPES permit. Costs associated with these needs are currently unknown and are under development as part of the countywide program addressing these requirements.

c. REET

The SWM capital projects in Lake Stevens can compete with other SWM projects in the County and other County capital projects for REET revenue. To estimate the amount of revenue that might be available from this source, the 1999 County REET revenue was normalized to account for variations in the real estate activity on the basis of new construction over the last decade. This normalized amount is approximately 75% of the 1999 actual amount. A proportionate share of this average was estimated for Lake Stevens by allocating half for SWM and then allocating this balance to Lake Stevens on the basis of assessed value. This base amount was then forecasted on the basis of the increase in assessed values forecasted for Lake Stevens under the plan. This methodology yields $3 to $3.2 million in 1999 dollars over the planning period.

d. Interjurisdictional Programming

The inventory of projects in this plan identifies needed facilities within the unincorporated areas of Lake Stevens. Three agencies share responsibility for these services within that area: Snohomish County, DID #8, and the City of Lake Stevens. DID #8 serves properties along the lakefront and some adjacent areas. The Snohomish County Surface Water Management program serves the rest of the area outside of the City limits. While some of the projects inventoried in this plan are located in District #8, they may benefit areas lying outside the district as well as areas within the district. Responsibility and sharing of costs between the County and the district will need to be addressed as part of the implementation of the plan. Nevertheless, the identified need for these improvements remains the same irrespective of how costs will be shared.

Similarly, the utility rate needed to finance these facilities will be the same regardless of who levies them. Coordination would be needed to ensure that the rate structures of the two entities would be equitable and consistent to finance these needs. Consequently, the rates to finance these facilities are calculated irrespective of this jurisdictional consideration, assuming that the same rate would apply to either the County or the district. However, the references to rates to support operating costs refer only to the County program and not the District or the City. According to FCS group study, DID #8 currently charges an "off-lake" single family residence approximately $80 per year or $6.66 per month, while Snohomish County currently charges $33.01 per year.

3. General Funding Options

Title 24 is the current standard of service for the County portion of the Urban Growth Area. Applying the standard of service recommended in Table 6-1, which calls for more than the Title 24 requirements, would result in identified project needs valued at roughly $16 million to support the development that could be permitted under this plan within much of the UGA. This total would likely increase should the Table 6-1 standard of service be applied to the entire UGA.

If SWM rates were the only funding mechanism used to support this standard of service, rates would likely be in excess of $200 per year per Equivalent Service Unit (ESU)[7], including increased maintenance costs to maintain the facilities but not including potential ESA or new NPDES requirements. This would be a higher rate than any other surface water utility in the region and would be considered too high to be affordable.

Several alternative funding strategies may be considered to support growth in the Lake Stevens UGA with facilities reflecting the recommended standard of service.

The Capital Facilities Requirements 1994-1999, adopted in support of the General Policy Plan (GPP), sets forth an approach when the public revenue capacity of the area cannot fund the full inventory of needed projects within the planning period. That approach includes the following possible strategies:

- Reduce the standard of service, which will reduce the cost; or
- Increase revenues to pay for the proposed standard of service; or

[7] Rates will be expressed in this analysis in terms of ESU; the annual rate that is charged to each single-family residence.

- Reduce the average cost of the capital facility (i.e., alternative technology or alternative ownership and financing) thus reducing the total cost, and possibly the quality; or
- Reduce the demand by restricting population; or
- Reduce the demand by reducing consumption; or
- Any combination of the options listed above.

These considerations can be applied to Lake Stevens SWM facilities.

The standard of service used to analyze needs provides urban storm water management services to an area transitioning from a rural environment to an intensive urban area. This standard of service would require a significant increase in rates for several reasons. First, existing facilities are minimal, requiring the construction of facilities tocatch up with past deficiencies. Second, the current rate is low relative to other utilities, requiring any increase in rates to be large in percentage terms. Third, the standard of service reflects incorporating habitat measures in addition to more traditional drainage services. Fourth, current low densities in much of the area are below the urban densities that may be needed to support urban utility services at lower rates.

Nevertheless, alternate standards of service, as described previously, could be selected in order to reduce the total cost of facilities. One option would be to rely solely on Title 24 standards to define the standard of service. For this option, no increases in revenue would be required. However, this option would not correct current problems in the UGA and many of these problems may become gradually worse due to the cumulative impacts of development.

b. Increasing Revenue

If the legal authority of the County's SWM program is modified to allow system development charges, additional revenue could be generated for capital purposes. A $1,000 system development charge per ESU could generate $2 to $3 million dollars from the development forecasted in the plan over the life of the plan.

c. Reducing Demand or Consumption

The land use plan outlines a strategy for development phasing to adjust the land use demand and match funding capacity of the development to the capital facilities that

focused into an initial "green" area (see chapter 8). The remaining areas of the UGA would be subject to restrictions on future development until adequate facilities, including SWM facilities, can be installed. Such financing could include both public and private sources of revenue. If rates were increased or other sources of funding as outlined here additional projects could be funded making more of the area appropriate for development. However, if such financing were not made available, developer contributions in the form of local improvement districts, late comer programs, and developer agreements could also be used to finance projects to remove portions of the DPO to allow development to proceed. With some increase in public revenue, a

combination of public and private financing may also be feasible to remove portions of the DPO on a case by case basis.

4. Specific Funding Strategies

Based on the funding options presented in the previous section, two specific funding strategies were developed for surface water capital improvements. These two options included utilizing current SWM revenues and increasing SWM revenues. Both options are based on the recommended standard of service for surface water.

a. Current SWM Revenues

If no rate increases are approved for capital purposes, future capital development would need to be financed primarily by REET revenues supplemented by grants, road fund contributions, participation from DID #8, etc. Based on current revenue, the total budget for surface water capital projects in the UGA over the 12-year study period would be approximately $3 million.

With only $3 million available for surface water CIP projects, a mechanism is needed to help prioritize these projects. As a result, the County developed a rating form that is designed to evaluate each of the surface water projects.

The surface water rating form assigns a score to each project based on the type and severity of the problem that it addresses. Of the maximum total of 100 points, up to 40 points are granted for projects that address flooding and drainage problems, up to 40 points for projects that address aquatic and wetland habitat problems, and up to 20 points for projects that address water quality problems. The form is designed so that projects that address more severe problems tend to receive higher overall scores than other projects. The projects with the highest scores would, therefore, represent the projects with the highest overall surface water priority for implementation.

The resulting evaluation scores for each of the surface water projects are listed in Table 6-4. Projects are grouped by basin and listed in order of priority within each basin.

In addition to using the evaluation form to decide which projects would be funded by the County, an attempt was made to turn as many of the drainage basins "green" for development as possible. Given this criteria, Table 6-4 indicates which projects are recommended to be financed with the available $3 million budget. Some of the projects listed in Table 6-4 would not be required under the Development Phasing Overlay (DPO) in order to turn a basin "green" for development since these projects address existing problems that would not necessarily become worse due to future development. This generally includes all of the water quality retrofit projects, a private property project, and several projects involving WSDOT facilities.
Figure 8-4 in the Capital Facilities chapter shows those basins that would be considered "green" for development if all of the required projects in these basins were financed. Of the total budget, approximately $2.3 million would be spent within "green" basins and the remaining $0.7 million would be spent in other portions of the UGA on existing problem areas. Of the $2.3 million that would be spent within the "green" basins, roughly $2.1 million would be spent on required projects and roughly $0.2 million would be spent on

projects that are not required to turn these basins "green" for development. It should be noted that this funding scenario did not specifically set aside any of the budget that would be needed for the maintenance of the proposed facilities. One potential option for financing the maintenance of these facilities would be to reduce the amount of projects constructed outside of the green area and use those funds for maintenance instead, although restrictions for REET fund usage may not permit maintenance activities to be funded.

While this funding scenario is unable to finance all of the highest priority surface water projects, it is able to fund a number of the highest priority projects along the north and west sides of the lake. It should be noted, though, that only a handful of projects would be constructed within the Sunnyside basins under this scenario.

Table 6-4
Prioritized Project List for Lake Stevens UGA

Project ID	Drainage Basin	Type of Project	Score	Cost - Required for DPO	12-Yr[8] Planning Period	12-Yr[9] Planning Period	6-Yr CIP	Cost - Not Required for DPO	Potential Funding Source
Hulbert Creek									
HUL 1	Hulbert Creek	Drainage	10*					$153,000	WS DOT
HUL 3	Hulbert Creek	Drainage	20	$212,000	X	X	X		
HUL 2	Hulbert Creek	Drainage	17	$52,000	X	X			
HUL 4	Hulbert Creek	Drainage	14	$23,000	X	X			
-------	Hulbert Creek	Water Quality - 10 Bioswales	13					$230,000	County
Weiser Creek									
-------	Weiser Creek	Water Quality - 9 Bioswales	13		X	X		$207,000	County
-------	Weiser Creek	Water Quality - 2 Detn Ponds	13		X	X		$100,000	County
WEI 1	Weiser Creek	Drainage	11	$21,000	X	X			
WEI 2	Weiser Creek	Drainage	10	$71,000	X	X			
Burri Creek									
BUR 2	Burri Creek	Drainage	11	$19,000	X				
BUR 1	Burri Creek	Drainage	11	$28,000	X				
Carleton Creek									
CAR 1	Carleton Creek	Drainage	11	$19,000	X				
Fox Creek									
FOX 4	Fox Creek	Drainage	22	$17,000	X				
FOX 5	Fox Creek	Drainage	10*					$50,000	WS DOT
FOX 2	Fox Creek	Habitat	20	$84,000	X				
FOX 3	Fox Creek	Drainage	18	$105,000	X				
FOX 1	Fox Creek	Drainage	14	$62,000	X				
-------	Fox Creek	Water Quality - 1 Detn Pond	13					$50,000	County
Mosher Creek									
MOS 7	Mosher Creek	Drainage	38	$25,000	X				
MOS 6	Mosher Creek	Fish Passage	16*	$31,000	X				
MOS 5	Mosher Creek	Drainage & Fish Passage	24*	$26,000	X				
MOS 4	Mosher Creek	Drainage & Fish Passage	28*	$26,000	X				
MOS 3	Mosher Creek	Drainage	36	$21,000	X				
MOS 1	Mosher Creek	Drainage & Habitat	31	$25,000	X				
MOS 11	Mosher Creek	Drainage	25	$18,000	X				
MOS 8	Mosher Creek	Fish Passage	16	$46,000	X				
MOS 10	Mosher Creek	Fish Passage	16	$189,000	X				
MOS 2	Mosher Creek	Habitat	15	$73,000	X				
MOS 9	Mosher Creek	Habitat	15	$277,000	X				
-------	Mosher Creek	Water Quality - 3 Bioswales	13					$69,000	County
-------	Mosher Creek	Water Quality - 1 Detn Pond	13					$50,000	County
Ebey Slough Floodplain									
EFL 1	Floodplain	Flooding	21	$215,000				$215,000	Developers/ District 6
Lundeen Creek									

[8] Based on increase in SWM revenues
[9] Based on current SWM revenues

Table 6-4
Prioritized Project List for Lake Stevens UGA

Project ID	Drainage Basin	Type of Project	Score	Cost - Required for DPO	12-Yr[8] Planning Period	12-Yr[9] Planning Period	6-Yr CIP	Cost - Not Required for DPO	Potential Funding Source
LUN 9	Lundeen Creek	Drainage & Habitat	49	$338,000	X	X	X		
LUN 13	Lundeen Creek	Drainage & Habitat	47	$115,000	X	X	X		
LUN 12	Lundeen Creek	Drainage & Habitat	46	$174,000	X	X	X		
LUN 4	Lundeen Creek	Drainage & Habitat	28	$57,000	X	X	X		
LUN 11	Lundeen Creek	Drainage & Habitat	28	$86,000	X	X	X		
* Projects that were moved up in priority due to their downstream location in the basin									
Lundeen Creek (continued)									
LUN 2	Lundeen Creek	Drainage	24	$36,000	X	X	X		
LUN 3	Lundeen Creek	Drainage	22	$21,000	X	X	X		
LUN 7	Lundeen Creek	Drainage	14	$33,000	X	X			
LUN 10	Lundeen Creek	Habitat	13	$38,000	X	X			
LUN 1	Lundeen Creek	Habitat	13	$29,000	X	X			
-------	Lundeen Creek	Water Quality - 1 Bioswale	13		X	X		$23,000	County
LUN 8	Lundeen Creek	Drainage	12	$19,000	X	X			
LUN 5	Lundeen Creek	Fish Passage	10	$55,000	X	X			
LUN 6	Lundeen Creek	Fish Passage	10					$26,000	WSDOT
LUN 14	Lundeen Creek	Habitat	9	$27,000	X	X			
Stevens Creek									
STE 1	Stevens Creek	Drainage	30	$33,000	X	X	X		
STE 2	Stevens Creek	Fish Passage	14	$16,000	X	X			
STE 4	Stevens Creek	Habitat	14	$26,000	X	X			
STE 6	Stevens Creek	Habitat	13	$118,000	X	X			
-------	Stevens Creek	Water Quality - 3 Bioswales	13		X	X		$69,000	County
STE 3	Stevens Creek	Habitat	11	$23,000	X	X			
STE 5	Stevens Creek	Drainage	9	$42,000	X	X			
STE 7	Stevens Creek	Fish Passage	5					$398,000	WSDOT
West Drainage 2									
WD2-1	West Drainage 2	Drainage	16	$98,000	X	X			
West Drainage 3									
WD3-1	West Drainage 3	Drainage	16	$252,000	X	X			
Eagle Creek									
EAG 1	Eagle Creek	Drainage	26	$34,000	X	X	X		
North Drainage 1									
ND1-1	North Drainage 1	Drainage	26	$29,000	X	X	X		
North Drainage 2									
ND2-1	North Drainage 2	Drainage	25					$22,000	Property Owner
North Drainage 3									
ND3-1	North Drainage 3	Drainage	25	$23,000	X	X	X		
Lockhart Creek									
LOC 3	Lockhart Creek	Drainage & Fish Passage	39	$150,000	X	X	X		
LOC 2	Lockhart Creek	Drainage	22	$23,000	X	X	X		
LOC 1	Lockhart Creek	Drainage	18	$26,000	X	X	X		
Giti Creek									
GIT 2	Giti Creek	Drainage	28	$22,000	X	X	X		
-------	Giti Creek	Water Quality - 3 Bioswales	13		X	X		$69,000	County
GIT 1	Giti Creek	Drainage	9	$27,000	X	X			
Stitch Creek									
STI 1	Stitch Creek	Fish Passage	18	$107,000	X	X	X		
-------	Stitch Creek	Water Quality - 3 Bioswales	13		X	X		$69,000	County

Table 6-4
Prioritized Project List for Lake Stevens UGA

Project ID	Drainage Basin	Type of Project	Score	Cost - Required for DPO	12-Yr[8] Planning Period	12-Yr[9] Planning Period	6-Yr CIP	Cost - Not Required for DPO	Potential Funding Source
Centennial Creek									
CEN 7	Centennial Creek	Fish Passage	14*	$36,000	X				
CEN 6	Centennial Creek	Fish Passage	14*	$30,000	X				
CEN 5	Centennial Creek	Drainage	24	$1,405,000	X				
CEN 4	Centennial Creek	Fish Passage	10*	$63,000	X				
CEN 3	Centennial Creek	Drainage & Fish Passage	20	$100,000	X				
* Projects that were moved up in priority due to their downstream location in the basin									
Centennial Creek (continued)									
CEN 2	Centennial Creek	Drainage	20	$35,000	X				
CEN 8	Centennial Creek	Habitat	13	$361,000					
CEN 1	Centennial Creek	Habitat	13	$119,000	X				
-------	Centennial Creek	Water Quality - 3 Detn Ponds	13					$150,000	County
Machias Creek									
-------	Machias Creek	Water Quality - 1 Bioswale	13					$23,000	County
-------	Machias Creek	Water Quality - 1 Detn Pond	13					$50,000	County
MAC 1	Machias Creek	Drainage	12	$19,000	X				
			Total =	**$5,930,000**				**$2,023,000**	

b. Increased SWM Revenues

If SWM rates generate additional revenue comparable to the revenue generated by REET, a larger initial "green" area is possible.

The proposed capital investment to create an initial "green" area can be supported with a rate increase of approximately $30 per year. When combined with the operational levels of service described above, rates could exceed $130 per year. While these rates are substantially higher than the current $30.77 rate, it is within the range of what other utilities in the region are currently charging, although on the high side of the range. It should be noted that these estimates do not include additional funding needs anticipated under the pending reissued NPDES Permit (implementing federal Clean Water Act requirements) and the imminent issuance of the ESA 4(d) rule for recovery of Puget Sound Chinook. These potential additional costs are not reflected in this analysis, but are expected to be captured in other documents currently being prepared by the County. These potential rate increases are summarized in Table 6-5.

These rate increases would not necessarily need to be implemented all at once and could be phased in over time. The rate required for maintaining the constructed facilities would not be required initially and could be imposed several years later, depending on the construction schedule. The capital facilities could be financed in four separate bond issues over the life of the plan. This would reduce the initial rate increase required to initiate the capital program to $7.58 per year. Similar rate increases would be required through the planning period to maintain the capital program. Similarly, any additional fees related to pending requirements or sustaining existing operations could be phased in gradually as well.

Increasing revenues in this manner would result in a budget of $6 million for surface water projects. With this budget, almost all of the proposed CIP projects could be funded and almost the entire Lake Stevens UGA could be turned "green" for development.

Table 6-5
Potential SWM Rate Increase

Rate Requirements	Rate Needs Without Rate Increase for Capital	Potential Rates with Capital Component
Operational Costs		
• Current Operations (Current Rate)	$30.77	$30.77
• ESA Response	Unknown	Unknown
• NPDES Additions	Unknown	Unknown
• Maintenance for Expanded Capital*	$14.00	$28.20
Capital**	--	$30.00
Total "Known"***	$44.77	$88.97

* Need may be adjusted as actual inventory costs are developed
**Rate in 1999 Dollars when all facilities are constructed
*** Initial Rate with Debt Financing.

G. 6-Year Capital Facilities Plan

The budget that would be available for surface water projects in the 6-year CIP depends somewhat on which of the two funding scenarios described in the previous section is adopted. The first scenario, which relies on current SWM revenues, would have a lower 6-year budget than the second scenario with higher SWM revenues. For the purposes of the 6-year CIP, it was conservatively assumed that only half of the 12-year budget for the first scenario would be available for the 6-year CIP. This means that approximately $1.5 million would be available to fund surface water projects in the 6-year CIP.

With a budget of approximately $1.5 million, the highest priority surface water projects from the 12-year capital facilities plan were selected for the 6-year CIP. The projects that were selected are indicated in Table 6-4. As previously mentioned, a few of these projects did not receive a particularly high score from the surface water rating form but were included in the 6-year CIP because they are located downstream of other projects that did receive a high score from the rating form.

It should also be noted that the Sunnyside projects that were selected for the 6-year CIP may only be partially funded by the County. Additional funds may need to be collected from developers before these projects could be constructed.

H. Recommended Strategy

Since surface water rates are experiencing an uncertain future in terms of what will be expected from both NPDES requirements and ESA, the strategy in this plan does not anticipate any additional rate increases for a capital program. Consequently, the initial area projects would be only supported by REET funds, and the "green" area on the SWM "red/green" map (Figure 8-5) reflects this funding scenario. The remainder of the area would be subject to the DPO system. Since this will require additional funds to maintain these facilities, a $10 per ESU per year rate increase should be considered in the near future. Other rate issues will be brought forward as the implications of ESA and NPDES requirements become clearer.

Chapter 7

Parks, Recreation and Open Space

A. Introduction

Parks, recreation and open space are important amenities that provide for a livable urban community. One of the goals of the Growth Management Act (GMA) is to "encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks." The recent population growth in the Lake Stevens Urban Growth Area (UGA) has increased the demand on existing local park and recreational facilities. At the same time, new urban development is consuming land in the UGA at such a rapid rate, it could impact the opportunities to set aside suitable land for future park and open space sites.

The *Snohomish County GMA Comprehensive Plan - Comprehensive Park and Recreation Plan*, adopted on December 28, 1994, establishes the foundation for the County's future park planning, acquisition, and development programs. The County's park plan provides a long-range framework and conceptual plan for both local and regional park development. The park plan goals and objectives are based upon a cooperative strategy involving the County, cities, and schools.

The County's GMA park plan, however, did not focus on local park planning needs in urban growth areas. Snohomish County is currently updating the 1994 plan. The draft plan addresses current needs throughout the County, including the provision of parks, recreation and open space in urban growth areas. The Lake Stevens UGA plan provides an additional opportunity to prepare a more detailed parks, recreation and open space plan element that can be coordinated with UGA-level land use, transportation, environmental and capital facilities planning to help create viable urban neighborhoods and to enhance the overall UGA community structure.

B. Planning Objectives and Process

The objectives of the Lake Stevens UGA park plan element are consistent with the process developed for the countywide park and recreation planning effort, but on a more detailed UGA plan level. The UGA park planning process analyzes the supply and the demand for public and private park and recreation facilities and services for the Lake Stevens UGA. The UGA park plan element provides a comprehensive, coordinated approach for the City of Lake Stevens and the County to develop future park and recreation facilities. Specific UGA park planning objectives are to:

1. Identify and evaluate the existing public and private park and recreational facility inventory for the Lake Stevens UGA.
2. Identify existing and future park and recreational facility demand and needs within the Lake Stevens UGA by identifying existing levels of service (ELOS). Recommend a level of service range to be attained for local park and recreation facilities by coordinated City and County actions throughout both the incorporated and unincorporated UGA.

3. Estimate the financial costs and capabilities needed to meet park and recreational needs, particularly the possible use of innovative financing tools or methods including growth impact fees authorized by the GMA.

4. Define strategies and actions necessary to realize the preferred future park and recreation facility needs.

C. Definitions of Park and Recreation Facilities

The parks within and adjacent to the Lake Stevens UGA have been grouped into three categories: Urban Community Parks, Urban Neighborhood Parks, and Urban Open Space. (These definitions have been developed for inclusion into the updated Parks Comprehensive Park and Recreation Plan which will apply countywide. They supplement existing definitions, which apply to regional parks.) The urban parks are defined as follows:

1. Urban Community Park

An *Urban Community Park* provides a setting for community activities and recreational opportunities for children and adults. An *Urban Community Park* must generally be large enough to accommodate popular recreational activities that require a significant amount of space, such as baseball, soccer, skateboarding, and other team sports. Play fields are dedicated to and scheduled for formal league play, but are also available for pickup games, team practice, and informal events such as group outings. In certain instances, an *Urban Community Park* may be smaller if it is used as a community gathering space, or provides waterfront access. It may also include natural areas, depending on topography and other conditions. Traditional park amenities such as picnic tables, benches, shelters, open play, playgrounds, trails, basketball and tennis courts are also typical in an *Urban Community Park.*

The following features usually characterize an *Urban Community Park*:
- Up to 40 acres in size.
- One significant attraction.
- Parking for 5 to 50 or more cars depending on the site use.
- 1 to 2 mile service area.

2. Urban Neighborhood Park

An *Urban Neighborhood Park* is generally small, pedestrian-oriented and situated to serve residents of an immediate area. Recreational activities should include both passive and active uses as well as multipurpose facilities to serve the needs of the adjacent neighborhood. Active uses at an *Urban Neighborhood Park* should include non-organized sports facilities such as basketball, tennis or play equipment. Passive uses include open play areas, nature trails and picnic areas. Age appropriate needs of the surrounding neighborhood, such as play equipment, should be emphasized at an *Urban Neighborhood Park.*

The following features usually characterize an *Urban Neighborhood Park:*
- Less than 5 acres in size.
- Amenities designed to serve the needs of the adjacent neighborhood.
- Parking for less than 10 cars.
- ¼ to ½ mile service area.

3. Urban Open Space Park

An *Urban Open Space Park* is primarily characterized by the presence of natural or conservation areas. An *Urban Open Space Park* provides opportunities for passive recreation. Passive recreation excludes baseball and soccer fields as well as motor sports. Passive recreational development includes boardwalks, nature trails, picnicking facilities, shelters, park benches, picnic tables, environmental, cultural or historic interpretive facilities, and parking. Natural areas include streams, wetlands, forestlands, or an area with a unique natural feature. An *Urban Open Space Park* may also be a greenbelt or view shed on which there is no public access.

The following features usually characterize an *Urban Open Space Park:*

- ¼ to 20 acres in size.
- One or more natural or conservation areas.
- Parking for 0 to 20 cars depending on the size and nature of the property.
- ¼ to 2 mile service area.

D. Inventory of Park and Recreation Facilities

All County and City-owned properties serving the Lake Stevens Urban Growth Area were inventoried, to quantify the amount of existing park acreage. The County and City owned properties are listed in Table 7-6.

1. Existing Urban Community Parks

There are 86.98 acres of community parks which serve the Lake Stevens UGA. The City provides maintenance for all of these park facilities, although the Kid's Oasis Playground and Catherine Creek Park are leased to the City by the Lake Stevens School District.

The unincorporated portion of the UGA includes two County owned and maintained community parks, Lundeen County Park and Sunset Beach, both of which provide shoreline access to Lake Stevens.

Lundeen Park contains 8 acres and is located on the north shore of the lake, west of the City's corporate limits. Lundeen provides a large beach access area for swimming and boat docking. Lundeen Park also offers trails and open play areas. Sunset Beach park is located on the east shore of Lake Stevens. It is less than one acre in size, provides beach access and a boat dock.

The County owns 52 acres of undeveloped park land east of Machias Road in two separate parcels (12 and 40 acres) that are located adjacent to and outside of the UGA boundary. The County Parks and Recreation Department has developed a master plan for the two sites that will include much needed athletic fields for soccer and other team sports. The two sites, although located outside of the UGA, are intended by the County to provide community park facilities that will primarily serve residents inside the Lake Stevens UGA.

2. Existing Urban Neighborhood Parks

There are ten neighborhood parks, which are located within and maintained by the City. They are primarily tot lots or play areas in subdivisions, which were dedicated to the City for public use. Tot lots also exist in selected subdivisions within the unincorporated UGA, but are owned

and maintained by homeowners associations for their own use. Because they are not available for public use, these have not been included in the inventory.

3. Urban Open Space Parks

There are five designated Urban Open Space Parks, totaling 16.79 acres, within the Lake Stevens UGA which are all owned and maintained by the City of Lake Stevens. Eagle Heights Park (15.64 acres), which protects existing bald eagle nests, is located in the unincorporated UGA. The four remaining open spaces provide trail access through subdivisions, and have been deeded to the City for public use.

4. Regional Parks

Regional parks contain features that attract residents from across municipal or county jurisdictional lines. The County-owned Centennial Trail Wyatt Park and the City boat launch are the only parks of regional significance that impact the UGA. The Centennial Trail is a multipurpose trail that provides walking, biking and horseback riding opportunities along the abandoned Burlington Northern Railroad track corridor from Snohomish to Arlington. The trail has a paved surface from Snohomish to Hartford and a crushed rock surface from Hartford to Edgecomb. The Centennial Trail enters the Lake Stevens UGA north of the intersection of 16th St. NE and Machias Road and follows the northeast edge of the UGA for approximately 1-1/2 miles. The trail exits the UGA as it crosses State Route 92.

Since the Centennial Trail functions as a regional linear park facility, as opposed to serving a neighborhood or community needs, the trail was not included in the Lake Stevens UGA park facilities demand analysis.

Wyatt Park is a 3-acre park located on the west shore of Lake Stevens. The park provides beach swimming, a boat launch, dock and picnic facilities and a motorized boat launch that is available to all County citizens. Because of the boat launch, it is a designated regional facility and was not included in the Lake Stevens UGA park facilities demand analysis.

The City boat launch is leased from the Washington Department of Fish & Wildlife, and is maintained by the City of Lake Stevens. Because of the boat launch, it is a designated regional facility and was not included in the Lake Stevens UGA park facilities demand analysis.

5. School District and Private Recreation Facilities

The Lake Stevens School District provides by far the largest percentage of athletic and recreation facilities within the UGA that are made available to the public, subject to the school district's primary usage. The five elementary schools, two middle schools and one high school provide a large inventory of athletic fields, playground equipment, running tracks and gymnasiums. The Lake Stevens High School also provides the only indoor swimming pool within the UGA.

Two properties in the UGA are owned and operated as semi-public recreation facilities. The Lake Stevens Community Hall is a one-acre community recreation/meeting complex located in the City. The Bonneville Field baseball park is a three-acre park leased by the Lake Stevens Junior Athletic Association. The ballpark, located at the southwest corner of the intersection of 16th Street NE and Machias Road, is also used as an informal trailhead for the Centennial Trail.

The UGA park demand analysis does not include private facilities or school district facilities, except in instances where the City or County have a long term agreement with theowner of the facility. Without a contractual agreement, these facilities cannot be relied upon for full service general public recreation opportunities.

In addition to City, County and School District recreation facilities with open space features, open space within the Lake Stevens UGA is also provided by subdivision common areas and electrical power transmission line corridors. The unincorporated UGA contains approximately 185 acres of subdivision common area tracts. These tracts are set aside primarily as greenbelts and to preserve critical areas such as steep slopes and wetlands.

E. Measuring Demand for Park and Recreation Facilities

The adequacy of supply of each type of park is based upon the amount and location of existing park acreage within the Urban Growth Area, which is expressed as a ratio of acres of park per 1,000 residents. This ratio is referred to as a level of service (LOS). The geographic distribution of existing park lands is another important factor to be addressed, to ensure that parks are equitably located throughout the urban growth area.

Snohomish County has aggregated the three different park types into an overall level of service, and expresses it as a range to guide capital facility planning efforts. This approach allows for each UGA to individually determine the precise mixture of park types (i.e., community, neighborhood, and open space) according to local citizen preference and vision. It is possible that two UGAs could share the same range, and yet have it distributed in completely different ways between park types.

The current levels of service (incorporating the three different park types in the Lake Stevens UGA) are shown in Table 7-1. The table illustrates the City+County combined LOS, as well as the County-only LOS.

TABLE: 7-1 EXISTING LEVEL OF SERVICE

Jurisdiction	1999 UGA Population	Existing Acres	Current LOS Ac/1000
County Only	16,998	60.95	3.59
City + County	23,060	105.56	4.57

1. Level of Service

This plan presents the recommended strategy for providing a level of service range for this urban growth area. It features a level of service for facilities provided within the UGA by the County.

This County-only level of service is lower than the combined City+County level of service and would be used by the County to guide capital facility planning for the unincorporated areas. This preferred strategy is used throughout this analysis for the purpose of calculating park needs because it can be implemented by the County, without additional action by other agencies, such as the City of Lake Stevens.

a. LOS Range Methodology

In determining a level of service to be used for capital planning purposes, Snohomish County proposes to use a level of service range that is developed using the following methodology:

2.76/1000	3.59/1000	4.42/1000
Low	Mid	High

1) *Low End:*
The low end of the range assumes the same County level of parks acres through the year 2012. The low LOS assumes that no additional park acreage will be acquired during that period of time. (For example, in 2000, at plan adoption, the LOS would be 3.59/1000 population. By 2012, with the addition of 5,113 people in the unincorporated area, the LOS would be 2.76/1000.)

2) *Mid Point:*
The Existing Level of Service (ELOS) is used as the mid point of the range.[1] Ideally, the County would strive to at least maintain this level through the 6-year capital facilities planning horizon, as well as the annual County budgeting process. If community preferences and available funding support an increase, the LOS target could be adjusted annually.

3) *High Point:*
The high end of the range would be determined by calculating the interval between the midpoint (ELOS) and the Low end of the range, and adding it back to the midpoint. This would allow for growth in the provision of parks and recreation services over the 12-year Phase II planning horizon.

TABLE: 7-2 PROPOSED LEVEL OF SERVICE RANGE

	1999 Population	2012 Population	*Proposed Range*[2]	Existing LOS (1999)
County	16,998	22,111	**2.76 – 4.42 acres/1000**	**3.59 Ac/1000**

F. Park Acreage Needs and Costs

As the Lake Stevens UGA continues to urbanize and land becomes less available, the costs to purchase park land will increase. Topographical and location requirements make athletic fields and neighborhood parks a particularly high cost category. Increasing urban development may also significantly increase the costs of preserving and constructing public access to the more sensitive and appealing environmental sites. The costs presented below represent an estimate of future land costs to be used in the calculation of growth-related capacity costs for park land acquisition.

[1] ELOS is determined by dividing the existing acres of park land by each 1000 of population.
[2] Use of LOS Ranges:
The range shall be used for the purpose of capital facility planning. The County's CFP will be developed for this UGA by setting a target LOS, which will have implications for the amount of local funds budgeted for this purpose. The yearly LOS target will also be used to develop a growth impact fee charged within this UGA under a GMA-based fee schedule.

If the County undergoes a recession, or experiences a loss of revenues for other reasons (i.e. I-695), the County may elect to set a lower target within the range. The range also would allow for park expansion, should additional revenues become available (i.e. new grant sources, a successful bond issue etc.)

TABLE: 7-3 PARK LAND ACQUISITION COST FACTORS

Park Type	Land Acquisition
Urban Open Space	$10,000 per acre
Community/Neighborhood	$60,000 per acre

1. Anticipated Growth-Related Capacity Costs

Acres needed, population growth and land prices have been used to calculate the growth-related capacity costs for the future population of the UGA. These are presented in Table 7-4.

TABLE: 7-4 GROWTH-RELATED LAND ACQUISITION NEEDS AND COSTS

LOS (acres/1000)	2012 UGA Population	Total Acres Needed	Existing Acres	Acres Needed	$/acre	Growth-Related Capacity Costs
3.59	22,111	79.38	60.95	18.43	$60,000	$1,105,800

G. Sources for Financing Existing and Future Park Demand

The Strategic Plan, which is part of the Snohomish County Comprehensive Park and Recreation Plan, acknowledges that Snohomish County does not currently have sufficient financial resources to provide park lands at the high end of the range. The plan recognizes that the County will serve as a primary planner and coordinator for regional facilities, as well as a principal provider of regional parks. Within individual UGAs, the County will play a major coordinating role and a supporting role in land acquisition, but the cities and school districts (and other agencies) will continue as the primary builders and operators of community and neighborhood parks and recreational facilities. The current County GMA Comprehensive Plan encourages local facility priorities to be set directly by the current or future users themselves. This can be done through formation of a parks and recreation service area, through the use of voter-approved bonds and levies, and/or establishment of appropriate levels of impact and user fees. Grant sources and special revenue funds can also be used to supplement the level of service.

1. Impact Fees

One source of funding that may be used to finance park land acquisition and development is a park impact fee. Such fees can be used to finance the demand caused by population growth.

Snohomish County Code Title 26A and the City of Lake Stevens Municipal Code Chapter 14.52 enable the use of park impact fees within the Lake Stevens UGA. At the present time, Snohomish County park impact fees can be applied only to residential development reviewed under the County's SEPA ordinance. Impact fees collected in the Lake Stevens Community area are presently $1019 per multifamily unit, and $762 per single family unit.

Snohomish County is developing legislation to adopt a GMA-based park impact fee ordinance consistent with state law. Growth impact fees would be used to finance park land acquisition, provided assessed fee amounts are close to the true or 100 percent impact. The current fee is

assessed for impacts on regional park facilities. Snohomish County Code 26A would require an amendment in order to collect fees for community and neighborhood parks within the urban growth area. ***This fee would be assessed in addition to the existing regional fee.***

The GMA-based park impact fee ordinance will also include a provision to allow for the collection of reciprocal mitigation fees between cities and counties. This would involve the calculation of a combined City+County level of service, which would be incorporated into each jurisdiction's respective capital facilities plans. These plans would, in turn, provide the basis for the fee. The City would collect an impact fee with both a community/local and regional component within municipal boundaries, and would return the regional portion of the fee to the County for its use in providing regional parks. The County would collect a community/local and regional fee within the unincorporated areas, and would return the community/local dollars to the City for their use in providing community/local parks throughout their ultimate municipal boundaries. This type of reciprocal program would be authorized by the County's GMA-based impact fee ordinance, and would be implemented through interlocal agreement with the City.

Table 7-5 illustrates the ability of impact fees to help offset future capital acquisition needs in the UGA:

Table: 7-5 POTENTIAL IMPACT FEE LEVELS*

Growth-Related Capacity Costs	Estimated Dwelling Units**	Estimated Fee per Dwelling Unit
$1,105,800	2,045	$540.00

*These figures do not reflect the actual methodology for determining impact mitigation fees under a GMA-based ordinance. The actual fee calculation would be subject to requirements outlined in the Growth Management Act.

**Additional Population/ divided by the average household size for single family residences. For the County the additional population (within the UGA) is 5,113 divided by divided by an average household size of 2.5 persons.

2. General Revenues

Unlimited general obligation bonds may be submitted to voters for park and recreation purposes. These bonds require approval by at least 60 percent of the resident voters during an election, which has a turnout of at least 40% of those who voted in the last state general election. The bond must be repaid from a special levy, which is not governed by the 6 percent statutory limitation on the property tax growth rate.

3. Park and Recreation Service Areas

A Park and Recreation Service Area (PRSA) is a quasi-municipal corporation and independent taxing authority. These can be established for the purpose of financing, acquiring, constructing, improving, maintaining, or operating any park or recreational facility. They have been used in other locations to provide a higher level of service than is generally provided through local municipal revenues. The PRSA boundary may include cities and unincorporated areas, and functions as a junior taxing district under RCW 36.68.525. It is established by a 50% vote within the proposed area.

4. Grants

Three types of state project grants may provide needed revenues for parks.

- IAC: The Washington State Interagency Committee for Outdoor Recreation (IAC) administers state matching fund grants through legislative authorized funding to the Washington Wildlife and Recreation Program (WWRP).
- ALEA: Washington State created a number of new programs in recent years for park and recreation development purposes using special state revenue programs. Programs include the Aquatic Lands Enhancement Act (ALEA) using revenues obtained by the Washington Department of Natural Resources.
- DOE: The Department of Ecology administers the Centennial Clean Water Program that can apply monies to park development that proposes to restore, construct or otherwise enhance fish producing streams, ponds and other water bodies.

5. Special Revenue Funds

Conservation Futures: By state law, counties can elect to levy up to $0.065 per $1,000 of assessed valuation of all County properties to acquire shoreline or other open space lands. The monies can be used to acquire, but not develop or maintain, open space conservation lands acquired using these funds.

Real Estate Excise Tax (REET): State law allows counties the option of imposing excise taxes on the sale of real estate. The tax may be imposed in $0.025 per $1,000 in sale value to be used to finance capital facility developments including the acquisition and development of park and recreational facilities.

H. Acquisition Financing Recommendations

In order to maintain park land at the mid point of the level of service range, this plan recommends the following actions:

1. Revise Title 26A of the Snohomish County Code to enable the collection of impact fees consistent with the Growth Management Act.

2. Pursue all reasonable grant funding opportunities for land acquisition to further leverage available funding.

In the event that the Lake Stevens residents want park land and facilities at the high end of the range or beyond, this plan recommends the following action:

3. Investigate the feasibility of establishing a Park and Recreation Service Area by establishing a committee comprised of City, County and citizen representatives.

I. Level of Service and Geographic Equity

Most parks are presently located within the northeast quadrant of the Lake Stevens UGA. Even though the 3.59 acres/1000 population is a relatively high overall LOS, as compared to the rest of the County, there are insufficient facilities in the southwest quadrant of the UGA to allow for equity across the UGA.

Two policies are proposed to address this geographic equity:

Policy 17: Prioritize the use of UGA-generated community/neighborhood park fees for acquisition in the southwest quadrant of the UGA.

Policy 18: Locate regional facilities in the southwest quadrant of the Lake Stevens UGA wherever appropriate and possible, in order to augment the lack of parks in this area.

J. Implementation Strategies

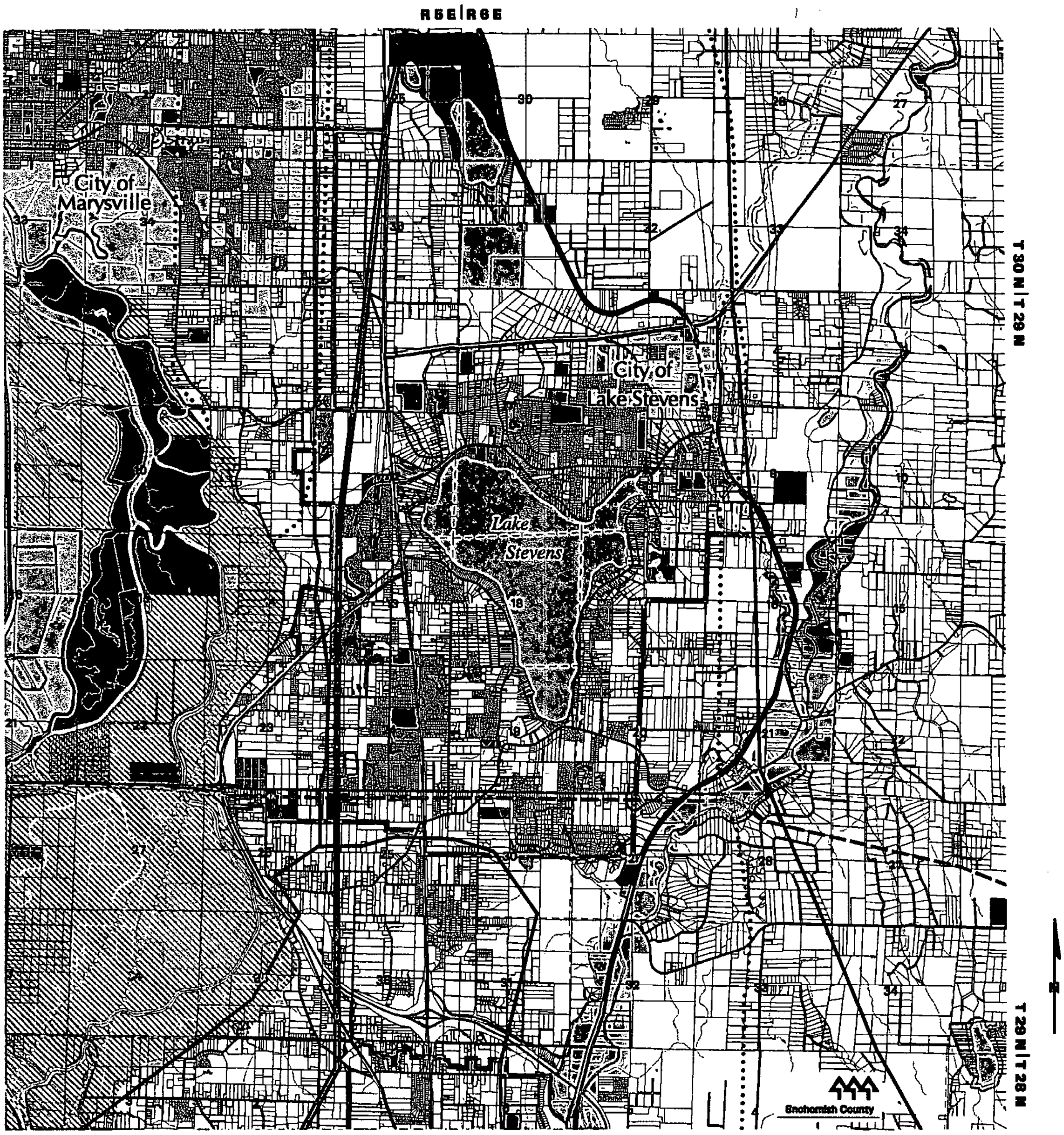
1. By interlocal agreement, the City and the County agree to adopt a level of service range for the categories of Urban Community Park, Urban Neighborhood Park, and Urban Open Space Park.
2. By interlocal agreement, the City and the County agree to jointly work toward creating a park facilities plan outlining possible site acquisitions or opportunities to be pursued by coordinated City and County action. The facilities plan will define site characteristics vital to realizing an effective, efficient UGA park system including the location of community parks in the four community areas within the UGA.
3. By interlocal agreement, the City and the County agree to work towards establishing a growth impact fee program for community and neighborhood parks within the UGA. The use of reciprocal impact mitigation fees will be investigated. The City and the County will determine the fee assessment rate to be imposed on new development, and determine how fee receipts are to be collected and dispersed to prioritized park projects in the UGA.
4. By interlocal agreement, the County will advise the City in developing a park funding proposal to the voters which could include a general obligation bond or the formation of a park recreation service area (PRSA) in order to fund park acquisition, development and maintenance.
5. By interlocal agreement, the City and the County will identify their respective roles in pursuing land banking, grants, donations, establishing a parks foundation and other programs and sources to fund the joint park facilities plan.
6. By interlocal agreement, the City and the County should outline a disposition strategy outlining the terms governing local site acquisitions, park developments and operations, particularly of properties located within the unincorporated UGA.

TABLE: 7-6 Inventory of City and County-Owned Parks[1]

Lake Stevens	City Park	Acres	County	County Park	Acres	TOTALS
Community			*Community*			
	Catherine Creek Park	19.08				
	Centennial Trail Park	5.43		Lake Stevens Community Park[2]	40.00	
	North Cove Park	0.79		Machias Pit[3]	12.70	
	Kid's Oasis	0.50		Lundeen Community Park	8.00	
	Gazebo	0.12		Sunset County Park	0.25	
	North Lake Swimming Beach	0.11				
	Sub Total	***26.03***		Sub Total	***60.95***	**86.98**
Neighborhood						
	Park on 131st Ave.	0.59				
	Park on 10th	0.23				
	Sport Court on 34th	0.23				
	Tot Lot on 10th	0.20				
	Park on 9th	0.12				
	Tot Lot on 125th	0.11				
	Tot Lot on 116th	0.11				
	Tot Lot on Bryce Dr.	0.10				
	Tot Lot on Mandolin Ct.	0.05				
	Tot Lot on 131St. Dr.	0.04				
	Sub Total	***1.78***		Sub Total	***0.00***	**1.78**
Open Space			*Open Space*			
	Eagle Heights Park	15.64				
	Trails in Reserve	0.43				
	Trails in Lake Stevens Woods	0.33				
	Trail on 25th	0.28				
	Trails on 34th	0.11				
	Sub Total	***16.79***		Sub Total		**16.79**
				TOTAL		***105.56***

1 For the purposes of this analysis, regional parks, school district properties, private facilities were not included. Regional parks serve a county-wide constituency, and do not typically address local park needs. School district properties and private facilities were not included because they are not consistently available for public use.
2 This park has been included in the inventory, because it will serve community needs throughout the urban growth area.
3 This park has been included in the inventory, because it will serve community needs throughout the urban growth area.

R5E|R6E



R5E|R6E

Open Space Corridors/Greenbelt Areas
Lake Stevens UGA and Vicinity

LEGEND **DEC. 7, 2001**

- Incorporated City Area
- Lakes, Rivers, and Major Water Areas (per DNR)
- City Community and Neighborhood/Mini Parks
- City Resource Parks
- County Community Park Lands
- Public School Site
- Other Public Facilities with Open Space Features
- WA State Department of Wildlife Lands
- Common Area
- Cemetery
- Privately Owned Facility
- Agricultural Lands (Snohomish County GMA Comprehensive Plan Ord. no. 94-125)
- Snohomish County Density Fringe Area
- Shoreline Master Program Rural Environment
- Shoreline Master Program Conservancy Environment
- Shoreline Master Program Suburban Environment
- Incorporated City Area
- Proposed Urban Growth Area Boundary
- Existing Snohomish County Trail Lands
- Proposed Snohomish County Trail Lands
- Electric Power Transmission Corridor (existing/proposed, 230 KV lines or higher)
- Buried Natural Gas Pipeline
- Everett City Water Pipeline

Produced by Snohomish County Department of Planning and Development Services, Cartography Section, fla/dkt, April 24, 1997. Revised 12-7-2001.

0 2000 4000 6000

Scale in Feet

w:/plng/carto/lkst/reports/lkstopen17-c2.aml

The accuracy and completeness of this map is dependent on data from many sources, some of which may be dated and/or incomplete. It is the intent of Snohomish County to regularly review and refine this data to produce continual improvements in the accuracy and completeness of this map.

Please refer to the General Policy Plan for explanation of open space designations. Detailed maps showing precise boundaries for urban growth areas, as well as, agricultural and forest land designations are available in the office of Snohomish County Planning and Development Services.

The GIS Division of The Department of Information Services, The Parks Department, and The Auditors Office also maintain additional data sets of the other related open space areas designated on this map.

The Washington State Department of Natural Resources has provided the hydrographic data set and the major public lands data set. The Flood Density Fringe Areas are derived from The National Flood Insurance Program as modified by Snohomish County Flood Hazard Ordinance - Title 27.

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. Property lines are for illustrative purposes only and depict only generalized parcelization. This map is based on the best available information as of the data shown on the map

Shoreline Master Program data is still in draft stage and is subject to change.

FIG. 7-1

Chapter 8

Capital Facilities and Utilities

A. Capital Facilities

1. Introduction

This chapter of the Lake Stevens UGA Plan addresses capital facilities and utilities. The Growth Management Act, RCW 36.70A.070(3), requires that the Capital Facilities Plan (CFP) contains an inventory of current facilities, a forecast of future needs, the proposed locations and capacities of expanded or new capital facilities, and a six-year financing plan. The purpose of these requirements is to ensure that capital facilities, such as water supply and roads, are coordinated with development and in place when development occurs, or shortly afterward. Future capital facility needs must be carefully analyzed to ensure there are sufficient revenues available to finance the capital needs. If adequate funding is not available, the GMA requires that jurisdictions "reassess the land use element."

This chapter looks first at the inventory, needs, location of facilities, and potential financing for non-County owned public facilities. It discusses other County public services as well as non-County owned public services and then focuses on utilities. The chapter concludes with a discussion of measures that can be taken to ensure that the future land uses identified in the Land Use Element will have adequate capital facilities available to them at the time of development. This chapter, along with Chapters 4, 5, 6, and 7, serves as the Lake Stevens UGA's Capital Facility Plan, focusing on the initial six year period from 2000-2005. This analysis is an important planning tool because it provides a comprehensive picture of the future capital facility needs, their costs, and financing options for the future planned land uses in the Lake Stevens UGA.

Each of the capital facility service providers has examined the land use plan and population projections for the Lake Stevens UGA Plan. The providers have updated their future capital facility needs lists to delete projects that have been completed, to reflect new facility needs, and to update cost estimates, as necessary.

The Lake Stevens UGA Plan CFP has been prepared in accordance with the County's *General Policy Plan* (GPP), which provides the policy framework for capital facilities planning. The County's GMA Comprehensive Plan, including the *Capital Facilities Plan/Year 2000 Update* and *Year 2001 Capital Improvement Program*, provides the underlying capital facilities needs analysis. The needs analysis in this UGA Plan supplements that overarching analysis.

2. Definition of Capital Facilities

The Growth Management Act distinguishes between "public facilities[1]" and "public services[2]." As a practical matter, it is difficult to distinguish between the two since facilities are a means to deliver services, and most services require some form of capital facilities. This plan classifies

[1] RCW 36.70A.030 (12)
[2] RCW 36.70A.030 (13)

electricity, gas, telecommunications, and cable TV as "utilities." Utilities are a special subclass of "public" facilities and services, distinguished and treated separately because they may be operated as private monopolies or franchises subject to public regulation as well as the pressures of the private marketplace.

Public facilities, as defined by the GMA (RCW 36.70A.030(12), include: "streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, parks and recreation facilities, and schools." For the Lake Stevens UGA Plan, the County considers transportation, stormwater management systems, parks, schools, sewer systems, water systems, and electric power systems to be "necessary for development." It also is noted that although water and sanitary sewer facilities are discussed in the Capital Facilities and Utilities chapter of this Plan, the County GPP categorizes them as utilities, and this categorization does not change with this Plan.

Public services are defined in the Growth Management Act (GMA) to include: "fire protection and suppression, law enforcement, public health, education, recreation, environmental protection, and other governmental services." (RCW 36.70A.030(12).) None of these public services is considered by the County as necessary services for development. For this Plan, only those public services that occur at the UGA level, as opposed to a regional level, are addressed. Providing public services in the Lake Stevens UGA are special districts, private purveyors, and the County. County-owned public services, consisting of law enforcement, solid waste, and other governmental services are discussed below.

3. Capital Facilities Background

The capital facilities discussed in this plan are categorized as follows:

PUBLIC FACILITIES/SERVICES NECESSARY TO SUPPORT DEVELOPMENT

- County
  - Transportation (streets)
  - Surface Water Management
  - Parks Non-County-Owned Public Facilities

- Non-County
  - Schools
  - Transit Routes[3]
  - Electric Power
  - Wastewater Collection and Treatment
  - Public Water Supply

PUBLIC FACILITIES/SERVICES NOT NECESSARY TO SUPPORT DEVELOPMENT

- County
  - Law Enforcement
  - Solid Waste
  - General Government

[3] See Chapter 6 Transportation

- Non-County
  - Fire Protection
  - Library

County-owned public facilities for transportation, surface water, and parks are discussed in Chapters 5, 6, and 7, respectively.

Providers of public facilities, public services, and utilities include Snohomish County, cities, special purpose districts, and private entities. Law enforcement, solid waste, and general government services are County-owned services. The non-County owned facility and service providers, or purveyors, provide schools, water, sewer, fire, library services, and all utilities. Most of the non-County owned purveyors have their own capital facilities plans or comprehensive plans. The relevant information in those plans has been summarized and incorporated into this CFP.

The difference in requirements between County and non-County owned facilities rests on the fact that the County does not control these facilities. The County does recognize, however, that basic facilities, such as transportation, stormwater management systems, schools, water, and sewer, regardless of which public agency provides them, are necessary to support development.

4. Key Findings

The following are key findings of the capital facilities plan for the Lake Stevens UGA (CFP/LSUGA):

- There is a gap between the capital facility needs and the public funding available for surface water and transportation.
- The Lake Stevens UGA meets the parks level of service range of 2.76 – 4.42 acres/1,000 population; the funding strategy for additional facilities is adequate.
- Sewer moratoria areas in the UGA can be lifted with new or expanded capital improvements paid for with private funding.

The CFP/LSUGA describes a number of options as a response to the revenue shortfall, including:

- Reducing the LOS.
- Increasing the revenues available to pay for the necessary facilities.
- Reducing the average cost of facilities.
- Reducing demand by timing development or redistributing growth to other areas.
- Reducing demand for services through conservation programs.

Snohomish County has evaluated such options in developing this plan. An important part of the evaluation process was the series of community meetings that the County held in the Spring of 1998, which culminated in the County Council's decision to study a new preferred UGA plan alternative.

B. Public Facilities/Services Classified as Necessary to Support Development

1. Introduction

The *Capital Facilities Plan/Year 2000 Update* (CFP/2000) identifies streets and roads, surface water management facilities, electric power, and public schools as facilities necessary to support development in rural or urban areas. Various county code provisions and GPP policies are recited in support of that determination (see table on page 25 of the CFP/2000). In addition, transit routes, public wastewater and public water supply are listed as necessary for urban development.

The Growth Management Hearings Board has determined that local jurisdictions have the authority to establish which capital facilities are considered necessary for development. Sanitary sewer and public water are also included on this list to reduce the potential for public health and environmental emergencies within urban areas. Parks and recreation facilities are being considered for this list within the context of the new Countywide Park Plan that has been reviewed by the Planning Commission, but not yet considered by the County Council.

In its decision in McVittie v. Snohomish County, CPSGMHB Case No. 99-3-0016c, Final Decision and Order at 25 (February 9, 2000), the Growth Management Hearings Board concluded "that the Capital Facilities Element must include locally established minimum standards, a baseline, for included public facilities, so that an objective measurement test of need and system performance is available." In the *Capital Facilities Plan/Year 2000 Update*, the County has identified minimum levels of service standards for the public facilities necessary to support development. The levels of service standards for public sewer and water systems, and for electric power, are established by the respective purveyors of these facilities within their system plans. Development permits are not issued in urban growth areas of the County without the demonstrated availability of these services.

2. County Facilities/Services

Transportation, stormwater, and parks facilities are discussed in separate chapters of the Lake Stevens UGA Plan (Chapters 5, 6, and 7, respectively).

3. Non-County Facilities/Services

There are two public utility purveyors in the Lake Stevens UGA, providing sewer, water and electric power systems. These non-County purveyors are the Lake Stevens Sewer District, and the Snohomish County Public Utility District No. 1 (PUD No. 1). The Lake Stevens School District provides the public schools that serve this UGA. The facilities are discussed below. It should be noted that the County is not using this information for the purposes of creating a financial plan. The county is not responsible for the financing plan of each district or purveyor. This information is based on the most recent capital facilities plan adopted by each district or purveyor.

a. Waste Water Collection and Treatment

Lake Stevens Sewer District is a special service district that provides sewer service to the unincorporated Lake Stevens UGA area. The City of Lake Stevens contracts with the District for sewer service within the city limits. The District study area for its sewer plan includes all land within the Lake Stevens UGA boundary and includes land to the north, west, and east located

outside the Lake Stevens UGA boundary within the study area. The total land area currently included in the District planning boundaries is 12.3 square miles.

In 1998, the Lake Stevens Sewer District adopted its comprehensive system plan entitled *Lake Stevens Sewer District Sanitary Sewer System Comprehensive Plan (1997-2017).* This plan addresses system components within both the City of Lake Stevens and the unincorporated UGA. In accordance with GMA requirements, the Sewer Plan contains an inventory, an analysis of existing and future needs, an estimate of project costs, and a schedule for completion of improvements. The Sewer Plan has not yet been approved by the County for consistency with the County's comprehensive plan, as authorized in Chapters 56 and 57 of the RCW. By mutual agreement, the County has postponed action on the Sewer Plan until after the Lake Stevens UGA Plan is adopted and the Sewer Plan has been updated. Therefore, the plan is referred to herein as a "draft plan," even though it has been formally adopted by the district commissioners. The District reviewed the preferred alternative Lake Stevens UGA Plan as part of its capital facilities planning process. The District identified for the County the projects that had been completed and those that had been delayed or carried forward to the planning period of 2000-2012. The following information reflects the draft plan, which will likely be updated and modified once the UGA plan has been approved by the County Council.

1) *Existing Facilities*

The District's inventory and analysis of existing facilities are contained in Chapters 3-5 of the Sewer Plan. The Sewer District's wastewater collection, treatment, and disposal system consists of a network of over 17 miles of trunk, collector and lateral gravity sewer lines, force mains, and manholes. There are 11 lift stations and a secondary level sewage treatment plant. The District sewage treatment plant is located along Ebey Slough west of Sunnyside Boulevard. The City of Lake Stevens' sewer system includes a network of trunk, collector and lateral gravity lines, forcemains, manholes and four lift stations. The layout of sewer system facilities is shown on Figure 8-2.

The system's treatment plant operates under the auspices of the National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit issued by the State of Washington Department of Ecology (DOE). The Lake Stevens Sewer District is in compliance with the NPDES permit. This permit establishes effluent limitation design criteria for the Lake Stevens Sewer District's system to prevent facility overloading. According to the permit, "when the actual flow or wasteload reaches 85 percent of any one of the design criteria...for three consecutive months, or when the projected increases would reach design capacity within five years,...the Permittee shall submit to the Department, a plan and a schedule for continuing to maintain capacity at the facility sufficient to achieve the effluent limitations and other conditions of this permit." (NPDES Permit No. WA-002089-3, page 10.) The Sewer District has submitted to the DOE an engineering report that proposes interim improvements to the sewage treatment plant to address short- term capacity issues.

Due to selected pump station and sewer line capacity issues within the UGA, the district has had to impose moratoria on new sewer connections in four areas. The moratorium in the North Lake Stevens area, including the City and land to the west, is anticipated to be lifted in 2002, depending on the funding (the likely funding source is a Utility Local Improvement District (ULID) in which the improvements are paid for by property owners within a designated area receiving the benefits of the improvements). Improvements to Lift Station No. 8, located east of Lake Stevens, have been completed and a partial lifting of the moratorium occurred in the spring of

2000. A partial lifting of the moratorium on Lift Station No. 2, located south of Lake Stevens, has also occurred. Finally, the Lift Station No. 11 moratorium area, located generally on 20th St. SE and 91st Ave. SE, is being studied. Improvements from a ULID may also be sufficient to lift the moratorium for this area.

2) *Future Needs*

Future needs for the sewer system are identified in Chapters 6 and 7 of the draft Sewer Plan. The District's future projects list was developed using a buildout population of 26,667 in 2007 and 34,591 in 2017, and using Lake Stevens UGA Plan Alternative Three. The County's 2012 population projection for the preferred alternative is 30,882, which is comparable to the midpoint of the District's projections for 2007 and 2017.

The District identified in its Plan improvements to meet the future growth demands for 2000-2005, as identified in Table 8-1. A major improvement planned is an interim treatment plant expansion and construction of the SW interceptor ($3.4 million). The District has completed the design phase for improvements to the existing sewage treatment plant and construction began in 2000 and is expected to be completed in 2001. In 2002, the District plans to construct the Lundeen Parkway/Vernon Road Bypass project that will replace the existing 18-inch sewer main with a 24-inch main, to accommodate additional growth in the City. Finally, the other major project planned for 2003-2005 is the Southwest Interceptor, which consists of three parts: a tightline sewer (a special type of gravity sewer); the first phase of the interceptor, running from the end of the tightline eastward to Hewitt Avenue and South Lake Stevens Road (this project would serve much of the Cavalero Hill area); and the second phase of the interceptor, running from 103rd Ave. SE, westward to just south of the intersection of South Lake Stevens Road and 20th St. SE. (This would serve much of the Tom Thumb area and land to the south and east.) A related improvement project planned for 2005 is the Lift Stations No. 11 and 1 gravity line to the southwest interceptor.

Other recent capital improvements identified include lift station improvements (Nos. 3, 4, 6, and 8) in 2000, lift station No. 5 force main replacement in 2001, 91st Ave. system upgrades in 2001, and an Infiltration and Inflow (I/I) monitoring and reduction program in 2000 and 2001. In 2003, a comprehensive sewer plan has been identified as a future need.

The District has also identified long range capital projects beyond 2005. The major project is the $22.4 million sewage treatment plant update (possible new plant), scheduled for 2008. Other projects include: a new lift station No. 12 ($0.66 million in 2006); lift station No. 5 upgrade ($1.2 million in 2008); new District office building ($0.8 million in 2008); and lift station No. 8 force main extension ($0.4 million in 2010). Of these projects, the planned funding would be from the District capital accounts, except for the force main extension, which would be donated.

3) *Costs/Revenue*

The costs and revenue sources for future capital projects are identified in Chapter 8 of the draft Sewer Plan. As noted previously, the Sewer District updated the project list for this Lake Stevens UGA Plan. Table 8-1 shows the costs for each capital improvement for 2000-2005. The total cost for future sewer system improvements for 2000-2005 is $14,215,000 (expressed in 1997 dollars). Additional projects planned beyond 2005-2012 are projected to cost approximately $25 million, which includes approximately $22.5 million to upgrade the sewage treatment plant in 2008.

Revenue sources for sanitary sewer facilities are broken into two categories: capital fund and donations. The District's capital fund sources are sewer rates, other revenue sources (e.g., hook up fees, investment interest, loans, bonds and grants) and District reserves. Donated funds are either improvements paid for by a developer or a Utility Local improvement District (ULID) whose costs are shared by those receiving the benefit of a specific improvement.
An additional revenue source for the financing of improvements to the existing treatment plant and construction of a new treatment plant is the proportional share of costs by the District, City of Lake Stevens, and Hewlett-Packard (now named Agilent Technologies). The respective proportions are based on purchased capacity at the existing plant. The City and the District will also share the cost of four of the planned improvements. These projects are: Lift station No. 5 force main replacement (2001); Lundeen Parkway/Vernon Road (2002); Lift station No. 5 upgrade (2008); and Lower Vernon Road upgrade gravity line (2015).

b. Public Water Supply

The Snohomish County Public Utility District (PUD) No. 1, a special purpose district, provides public water service to the Lake Stevens UGA, including the City of Lake Stevens. In 1996, the PUD adopted the *Snohomish County PUD No. 1 Comprehensive Water Plan* (WSP) and the State Department of Health approved it in 1996. Since that time, the PUD has studied in further detail the future water needs of the Lake Stevens UGA. To update the Water Plan, the PUD also provided the County with its 2000 Capital Improvements Plan (CIP) that identifies capital projects that affect the Lake Stevens UGA.

1) *Existing Facilities*

The PUD's Water Plan contains facilities inventory and analysis sections (Sections 2 and 4), as required under GMA. Water for the Lake Stevens system is obtained from four taps on the City of Everett's No. 3 Line, and a fifth tap on the JOA pipeline that was jointly constructed by Marysville, Tulalip Tribes and the PUD in 1992. There are three City of Everett underground water transmission lines that run through the southern portion of the Lake Stevens UGA (Figure 8-3) and supply Lake Stevens and much of Snohomish County with water. Within the City of Lake Stevens there are two wells that are used to provide emergency backup water supply for the Lake Stevens UGA during peak periods. The location of these wells is near the intersection of 131st Avenue NE and 20th Street NE.

The PUD's water storage facilities are comprised of two reservoir sites, Walker Hill (two 2.0 million gallon tanks) and Hillcrest (3.0 million gallons). The Walker Hill reservoir is located north of Lake Stevens, and the Hillcrest reservoir is located southwest of Lake Stevens. The water distribution system includes 8- to 12-inch lines and pressure reducing valves (PRV's). Figure 8-3 displays the distribution system, pump, and storage facilities. The system, at minimum water pressure of 40 pounds per square inch (psi), is designed to provide customer service during normal conditions, per State requirements.

2) *Future Needs*

The future water supply, transmission, and storage capacity needs were identified in Sections 3 and 7 of the Water Plan. These needs were based on the PUD's population projections of 27,723 in 2001 and 34,437 in 2015, which are fairly comparable to the Lake Stevens UGA projections. Since the adoption of the Water Plan, the PUD has completed additional analyses, including the review of the impact of the preferred Lake Stevens UGA Plan alternative on water system capacity. The growth-related water systems needs as identified by the PUD are described below, and shown in Table 8-2.

Table 8-1
CAPITAL FACILITIES PLAN[3]- WASTE WATER COLLECTION AND TREATMENT
2000-2005

		ESTIMATED PROJECT COSTS (in 1999 dollars)						
IMPROVEMENT	PROPOSED FUNDING SOURCE[4]	2000	2001	2002	2003	2004	2005	TOTAL COST[5]
Interim Treatment Plant Expansion	Capital	$2,000,000	$1,379,000					$3,379,000
Lift Station No. 3	Capital	$18,000						$18,000
Lift Station No. 4	Capital	$18,000						$18,000
Lift Station No. 6	Capital	$29,000						$29,000
Lift Station No. 8	Donated	$343,000						$343,000
Lift Station No. 5 Force Main Replacement	Capital		$705,000					$705,000
Lift Station No. 11 and Lift Station No. 1: Gravity Line to SW Interceptor	Capital						$465,000	$465,000
91st Ave. Upgrades	Capital		$470,000					$470,000
Lundeen Parkway/Vernon Rd.	Capital			$1,245,000				$1,245,000
SW Interceptor Tightline	Capital				$735,000			$735,000
SW Interceptor (Hewitt-SR 204)	Donated					$2,091,000		$2,091,000
SW Interceptor (Hewitt-103rd SE))	Donated						$4,582,000	$4,582,000
I/I Monitoring and Reduction Program	Capital	$25,000	$25,000					$50,000

[3] Source: Lake Stevens Sewer District, 2000
[4] Capital=Capital Fund, Donated=Donated by either Developer or ULID
[5] ENR Index = 6622 (Nov. 3, 1997); Includes Tax, 20% Contingency, and 25% Emergency and Administrative Costs.

Comprehensive Sewer Plan	Capital				$85,000			$85,000
Waste Water Collection and Treatment Total		*2,433,000*	*$2,579,000*	*$1,245,000*	*$820,000*	*$2,091,000*	*$5,047,000*	*$14,215,000*

Water supply for the Lake Stevens UGA will continue to be obtained from the City of Everett's regional water system in the future. The two wells within the City of Lake Stevens will also continue to provide emergency backup for the water supply. In order to ensure the availability of water from these wells, the PUD is preparing a plan under the Wellhead Protection Program to protect the wells from possible contamination.

A major pump station and transmission project planned for the year 2000 will have a positive impact on the water capacity for the Lake Stevens UGA. The new Machias Valley pump station, located southeast of Lake Stevens, and a 30' water transmission line, which will run alongthe east side of the lake and northeast of the City of Lake Stevens, has been designed to meet the increased water demands in the Granite Falls/Arlington area. The benefit to the Lake Stevens UGA is that the project will free up capacity of the HillcrestReservoir, ensuring the availability of water in the UGA.

Many other capital projects for the 2000-2005 planning period involve replacing transmission mains with larger pipes and extensions of transmission mains. Capacity will be added to the Glenwood pump station in 2004. In 2005, the East Hewitt pump station will be rebuilt and a discharge pipe will be increased from 12" to 16" inches. A 3.0 million gallon (mg) reservoir will be constructed at Hillcrest to supplement the 3.0 mg Hillcrest Reservoir, doubling the reservoir storage capacity, which is needed for the future projected growth.

3) *Costs/Revenues*

The Water District's plan includes a CIP (Section 7) and a Financial Program (Section 8) to address the GMA-required cost and revenue source information. The total costs of the six-year plan, including the Machias Valley pump station, is $9.9 million.

There are three revenue sources identified for the proposed capital projects. First, a General Facilities Charge (GFC), which is a system development fee that is collected from new customers when they obtain service such as sewer hook up charges (growth pays for additional capacity). New growth revenues will pay $7.6 million, or 76% of the total project costs. Second, the General Fund (GF) is collected from customers through water rates; $2.3 million, or 24% of the project costs, will be paid by revenues from water rates. Third, funds are collected from project beneficiaries, such as a specific neighborhood, when a Local Utility District (LUD) is created. For the projects included in this CFP, LUD funding is not used. The PUD also issues debt to begin some projects and it is retired with the previously mentioned revenue sources.

c. Electric Power

Snohomish County Public Utility District (PUD) No. 1 serves the entire Lake Stevens UGA. The PUD's *Electric System Long Range 20 Year Capital Plan Summary 1996-2016*, March 1995, displays three existing transmission lines in the Lake Stevens UGA and surrounding areas. Immediately west of Lake Stevens is an existing 115 KV line with existing distribution stations west and southwest of the lake. A new substation at Hartford was recently constructed. Further west runs the 230 KV Puget Sound Energy transmission lines. Substations of the Puget Sound Energy line do not appear within the Lake Stevens UGA boundaries. East of the lake a 230 KV Bonneville transmission line runs north/south.
Several large electric transmission lines pass through the UGA. The Lake Stevens UGA Open Space Corridors/Greenbelt Areas map (Figure 7-1) shows these rights-of-way. Although the rights-of-way are not distinguished from other transmission lines within the UGA, they generally

run north/south and east/west. There are rights-of-way for Puget Sound Energy, Bonneville Power Administration (BPA), and Seattle City Light transmission lines. The rights-of-way are 100 feet to 300 feet wide. Two lines parallel SR 9, one line runs through the western portion of the UGA. Another line runs east/west south of 20th Street SE, and the last line runs through the southeast corner of the UGA.

In the future, the PUD proposes an additional power line and one substation immediately west of the 230 KV Bonneville transmission line. South Lake Stevens is the location for the future substation. A proposed 230 KV line will run between the two substations, and a proposed 115 KV line will run west from the proposed South Lake Stevens substation, then south towards the City of Snohomish. According to the PUD, proposed increases in population will not significantly effect proposed electric system plans. However, the proposed industrial and commercial land uses could effect substation requirements.

d. Schools

The Lake Stevens School District provides educational services to most of the Lake Stevens UGA, although a small portion on the southeast corner lies within the Snohomish School District. The following discussion focuses on the Lake Stevens School District only, as there were no Snohomish School District facilities in that area in 2000. The School District serves an area of approximately 37 square miles within west central Snohomish County, including the City of Lake Stevens (Figure 8-1).

In September 2000, the Board of Directors for the Lake Stevens School District approved the *Lake Stevens School District Capital Facilities Plan for 1999-2005*. The School District's Capital Facilities Plan (CFP) was reviewed for consistency with Snohomish County's *General Policy Plan* (GPP) (population forecasts) and with Title 26C SCC (school impact fees) and was adopted by the County Council in December 2000.

1) *Existing Facilities*

The School District's CFP contains inventory and analysis of existing facilities sections (sections 4-6, Appendix B), consistent with GMA requirements. Below is a description of the School District's existing facilities, as of late 1999.

Within the UGA, the School District owns and operates eleven schools, including six elementary schools, two middle schools, one high school, one alternative high school, and a new "HomeLink" school (a resource center for home schools located at the Mt. Pilchuck Elementary School site), as shown in Figure 8-1. In addition to the school buildings, the District owns 18 portable classrooms, as well as administration offices, maintenance and transportation facilities. The District also owns three undeveloped school properties as potential, future school sites: a 15 acre site in the Lochsloy area; a possible elementary site located south of Hewitt Avenue; and a middle school site southeast of Highways 9 and 92. Another District-owned parcel is Hartford Field, located off Highway 92. Hartford Field is currently used as a ballfield and is not large enough for a school site.

Table 8-2
CAPITAL FACILITIES PLAN - WATER
2000-2005

IMPROVEMENT	ESTIMATED PROJECT COSTS						TOTAL COST	GFC COST[1]	GF COST[2]
	2000	2001	2002	2003	2004	2005	(All Amounts in $000)		
Machias Pump Station-6,600 gal/min.	$0.972						$0.972	$0.972	
Machias Hartford Road-30" Main	$0.698						$0.698	$0.698	
Machias through 135th Ave SE-12" Main Ext.	$0.514						$0.514	$0.514	
147th Ave-16" Main Ext.	$2.214						$2.214	$2.214	
SR Crossing at Lochsloy	$0.050						$0.050	$0.050	
SCADA (Supervisory Control & Data Acquisition System)	$0.303						$0.303	$0.303	
79th Avenue NE – 8" Main Ext.		$0.055					$0.055	$0.055	
Soper Hill Road – Increase Main Size		$0.398					$0.398	$0.119	$0.278
16th Street NE – 12" Main Ext.			$0.191				$0.191	$0.191	
20th Street NE – 8" Main Ext.			$0.013				$0.013	$0.013	
40th Street NE – Increase Main Size				$0.171			$0.171	$0.069	$0.103
71st Avenue NE – Increase Main Size				$0.328			$0.328	$0.098	$0.229
139th Avenue NE – 8" Main Ext.				$0.171			$0.171	$0.171	
44th Street NE – 12" Main Ext.				$0.410			$0.410	$0.410	
Glenwood Improvements-2000 gpm					$0.675		$0.675	$0.135	$0.540
20th Street SE – 91st to 99th, Increase Main Size					$0.245		$0.245	$0.074	$0.171
20th Street SE – Increase Main Size					$0.147		$0.147	$0.044	$0.103
99th Ave. SE-Increase Main Size					$0.372		$0.372	$0.149	$0.223
East Hewitt PS Discharge- Increase Main Size						$0.036	$0.036	$0.036	
East Hewitt Improvements						$0.675	$0.675	$0.135	$0.540
Hillcrest Phase 2 (500 Zone)						$1.013	$1.013	$1.013	
South Lake Stevens Rd. – Increase Main Size						$0.257	$0.257	$0.103	$0.154
WATER TOTAL	***$4.751***	***$0.453***	***$0.204***	***$1.080***	***$1.439***	***$1.981***	***$9.908***	***$7.566***	***$2.341***

[1]GFC – General Facilities Charge- System development fees for new customers obtaining service;
[2]GF – General Fund-Paid for by water rates;

The availability of vacant parcels for future school sites is important because of the growth and subsequent demand for schools to accommodate the school-aged population. The current student enrollment for October 1999 was 6,551, as shown in Table 8-3. Approximately half of the District's enrollment is in elementary schools, while the other half is split almost equally between middle and high schools.

Table: 8-3
OCTOBER 1999 STUDENT ENROLLMENT[6]

SCHOOLS	ENROLLMENT
Elementary	3,212
Middle	1,530
High	1,809
TOTAL	6,551

2) *Future Needs*

In accordance with the GMA, a forecast of future capital needs has been prepared by the Lake Stevens School District (section 6 of the District's CFP) and is included in its CFP. Future needs for the Lake Stevens School District are based on the District-adopted future enrollment projections prepared by the Office of Superintendent of Public Instruction (OSPI). These projections are prepared using a modified cohort survival method. More detail on the methodology used by the Lake Stevens School District to generate enrollment projections is contained in its Capital Facilities Plan.

According to the School District's CFP, it projects that 8,329 full-time equivalent (FTE) students will be enrolled in the Lake Stevens' schools by 2012. This enrollment projection was based on the District's projected population of 32,661 by 2012. The District's projection is slightly higher than the 30,882 projected population for the preferred alternative for the Lake Stevens UGA. In addition to traditional forecasting methods as described in its Plan, the District also keeps track of current development activity to help identify and refine future facility needs.

Table 8-4 identifies the capital needs to accommodate the projected growth in the UGA. Additional school facility capacity is needed for elementary, middle, and high school grade levels. The projects planned to add facility capacity in the District by 2005 include the following: a new elementary school (No. 7) in the southwest Lake Stevens UGA ($9.7 million); and a new middle school (No. 3) in the northwest Lake Stevens UGA ($17.5 million). Within the planning period, land will be acquired for the second high school at an undetermined location ($2.5 million) and the construction cost of the high school will be approximately $45 million.

The School District will undertake additional capital projects that do not add facility capacity. The major project planned for 2000 and 2001 is the North Lake Middle School modernization and addition project ($9.6 million). To provide interim instructional space during the remodeling and the construction of new schools, approximately 28 additional portable classrooms will be acquired ($1.75 million).

[6] Lake Stevens School District, actual enrollment (headcount) on October 1, 1999.

Beyond 2005, it is anticipated that High School No. 2 and Elementary No. 8 will be completed and operating by September 2008. The future location of High School No. 2 has not been determined. Elementary No. 8 is planned to be located in the northwest part of the Lake Stevens School District.

3) *Cost/Revenues*

The School District's plan includes a 6-year capital improvement program (section 7 of the District's Plan). As estimated by the District in 2000, the total cost of the 2000-2005 six year program is $88.25 million, of which $9.5 million would be from a school bond, $34.05 million would be the State match, $4.5 million is in unsecured local funding, including future bond issues and impact fee collections. The district also has approximately $1.25 million in previously collected impact fees to use for eligible CIP projects.

Revenue sources for new school facilities include bonds (both voter-approved and Board of Directors-approved bonds that do not require a vote of the public), mitigation fees collected on new developments, state matching grants, levies, and bonds. The unsecured local funding category includes revenue from mitigation fees and future school bonds. Because the bonds have not been authorized, and the mitigation fees have not been collected and/or earmarked for a particular capital project on the CFP list and the actual revenue source has not been determined, the projects are listed under the category of unsecured local funding source. It is anticipated that the three projects listed with the unsecured local revenue source (Elementary No. 7, Middle School No. 3, and High School No. 2) will use funds from mitigation fees and from bonds. A state match may also be a possible funding source.

C. Public Facilities/Services Not Classified as Necessary to Support Development

1. County Facilities/Services

County-owned public facilities/services that are not listed as necessary to support development are discussed in the following section. Law enforcement services in the unincorporated Lake Stevens UGA are provided by the Snohomish County Sheriff's Department. Private haulers provide solid waste removal collection services, and the County owns and operates the garbage and recycling collection sites. The County provides general government services in the unincorporated UGA.

a. Law Enforcement

Law enforcement in the unincorporated Lake Stevens UGA is provided by the Snohomish County Sheriff's Department. The City of Lake Stevens has its own police force.

Capital needs for the Sheriff's Department were described in the *2000 Regional Justice Center (RJC) study*, the *Snohomish County 1999-2004 Capital Plan Detail* and the *Year 2001 Capital Improvement Plan*. The capital needs that were identified are not ones at the UGA level, but are on a county-wide level. Major Tom Green of the Sheriff's Department reviewed the Executive Recommended Lake Stevens UGA Plan and provided information to the County in late 1999 on the capital needs at the UGA level.

The County does not consider law enforcement services as necessary to support development. These services are only being discussed in this Chapter to provide a comprehensive view of what law enforcement services are offered by the County, and the discussion is not intended to meet the requirements of RCW 36.70A.070(3).

1) *Existing Facilities*

The inventory of existing facilities in the Lake Stevens UGA was included in the 1994 *Capital Facility Requirements 1994-1999 (and to 2013)* report prepared by Henderson, Young & Company. Sheriff deputies stationed at the North Precinct, located at Smokey Point between Arlington and Marysville, serve the Lake Stevens UGA. This precinct station serves the area generally north of SR 2 and the OK Mill Road from Puget Sound to Skagit and Chelan Counties.

The Lake Stevens Urban Growth Area is located entirely in Patrol Area 13, which is an area bound by 44th Street NE on the north, the Pilchuck River on the east, Highway 2 on the south, and the Everett City limits on the west. Within Area 13, at least one deputy is on duty 24 hours a day, with the addition of a second deputy five days a week during the afternoon and evening hours. Patrol deputies are supported by other precinct deputies, available as demand warrants including 2 traffic cars; 3 Community Service Officers; 2 Detectives; and 1 Sergeant on-duty 24 hours a day.

With approximately 17,000 residents currently living in the unincorporated Lake Stevens UGA, and seven deputies providing services, the ratio is one deputy for every 2,429 residents.

Statistical information for the entire Patrol Area 13 or the urban growth area is unavailable. Some data does exist in one census tract that incorporates the main urban and commercial area within Area 13, Census Tract number 1900. In 1999, the average response time to emergencies within this area was 6.92 minutes. For lower priority calls, the average response time was 12.4 minutes. Within this reporting area, the Sheriff's Office responded to 7,804 incidents in 1999.

2) *Future Needs*

The future land use and the projected population increases anticipated with the preferred Lake Stevens UGA Plan alternative generally will result in an increased demand for sheriff protection services and longer response times if resources are not increased to keep pace with the demands. The County Sheriff's Department uses the Corona Staffing computer model to project the Department's future needs. The Corona Staffing model projects future needs on criteria including response time, percentage of time all call takers are busy, and percentage of free patrol time for each deputy.

It is projected that by 2012, an additional eight deputies will be needed to serve the unincorporated UGA, which is the equivalent of having one additional deputy on duty 24 hours a day, and two deputies on duty on an as-needed basis during busy times. Each deputy is assigned a vehicle, so by 2012, the UGA-specific capital needs are 8 vehicles.

Additional county-wide capital needs for law enforcement are identified in the Snohomish County *Year 2001 Capital Improvement Plan.*

Table 8-4
CAPITAL FACILITIES PLAN - SCHOOLS
2000-2005

IMPROVEMENT	ESTIMATED PROJECT COSTS (in $millions)						TOTAL COST	BOND	STATE MATCH	UNSECURED LOCAL[1]	IMPACT FEES ALREADY COLLECTED
Improvements Adding Student Capacity	2000	2001	2002	2003	2004	2005					
SITE ACQUISITION-Elementary School				$0.800			$0.800	$1.900			
NEW ELEMENTARY No. 7				$1.200	$8.000	$0.500	$9.700		$4.150	$5.550	
NEW MIDDLE SCHOOL No. 3			$0.500	$8.000	$8.000	$1.000	$17.500		$5.250	$12.250	
NO LAKE MIDDLE SCHOOL ADDITION	$0.250	$0.250					$0.500		$0.150	$0.350	
SITE ACQUISITION-High School	$2.500						$2.500	$2.500			
NEW HIGH SCHOOL No. 2			$2.000	$20.000	$20.000	$3.000	$45.000		$20.000	$25.000	
Capacity Projects Subtotal	*$2.750*	*$0.250*	*$2.500*	*$30.000*	*$36.000*	*$4.500*	*$76.000*	*$4.400*	*$29.550*	*$43.150*	
Improvements Not Adding Student Capacity											
PORTABLES –TOTAL (17 in 2000; 3 in 2002)	$0.800	$0.050	$0.150	$0.250	$0.250	$0.250	$1.750			$1.050	$0.750
PORTABLE RELOCATION		$0.100	$0.050				$0.150			$0.050	
HIGHLAND ELEMENTARY (completion)	$0.750						$0.750			$0.750	
NORTH LAKE MIDDLE SCHOOL MODERNIZATION		$0.500	$8.600	$0.500			$9.600	$5.100	$4.500		$.500
Non-Capacity Project Subtotal	*$1.550*	*$0.650*	*$8.800*	*$0.750*	*$0.250*	*$0.250*	*$12.250*	*$5.100*	*$4.500*	*$1.850*	*$1.250*
School District Total	***$4.300***	***$0.900***	***$11.300***	***$30.750***	***$36.250***	***$4.750***	***$88.250***	***$9.500***	***$34.050***	***$45.00***	***$1.25***

[1]Unsecured funding includes mitigation fees and bonds that have not been earmarked and/or authorized yet for the projects in this plan.

3) *Costs/Revenues*

In 2000, the cost of a new vehicle and equipment is $35,000, for a total cost of $280,000 for eight vehicles.

It should be noted that operating costs are a large portion of the Sheriff's Department budget. The average cost in 2000 for a new deputy in Snohomish County is $88,000 (salary and benefits, administration, and vehicle operating costs).

Funding for the Sheriff's Department includes County property tax revenue, real estate excise taxes (REET), grants, and bonds.

b. Solid Waste

Snohomish County owns and operates garbage and recycling disposal sites within the County. Solid Waste collection services are not required in unincorporated Snohomish County. Waste Management, Inc., a private hauler, provides optional garbage, recycling, and yard debris removal services for the unincorporated Lake Stevens UGA area.

In 1990 the County adopted the *Snohomish County Solid Waste Management Plan Update*. The Plan is currently being updated. The six-year capital facilities plan for solid waste is located in the County's *2000-2005 Capital Improvement Plan*, which is an update of the *Snohomish County: 1999-2004 Capital Plan Detail* document.

1) *Existing Facilities*

The inventory of existing facilities is contained in the County's Solid Waste Management Plan (parts III and IV) and in section 9 of the draft update of that Plan. Solid waste disposal is handled on a regional, rather than the UGA, level in Snohomish County. The solid waste disposal facilities in Snohomish County are three recycling and transfer stations and drop box sites. There are three recycling and transfer stations:

- North County Recycling and Transfer Station (NCRTS) – Arlington
- Everett Recycling and Transfer Station (ERTS) – Everett
- Southwest Recycling and Transfer Station (SWRTS) – Mountlake Terrace

Drop box sites are located in the following places: Granite Falls; Gold Bar; Lake Roesiger; Monroe; Oso; and Sultan.

The Everett Recycling and Transfer Station is the closest drop off site for garbage and recyclables in the UGA. There are two dome recycling centers serving the Lake Stevens UGA and surrounding rural area. One is located at the grange hall on South Lake Stevens Road. The other is located outside the Lake Stevens UGA at the Machias Fire Station.

All solid waste collected in the Lake Stevens UGA by Waste Management-Northwest from residential and commercial developments in the Lake Stevens UGA also goes to the Everett Transfer Station. Eventually, all the solid waste from the Transfer Station is hauled by rail and shipped to Klickitat County in eastern Washington.

2) *Future Needs*

As noted above, the future solid waste needs are regional in nature, and not specific to the Lake Stevens UGA. The future solid waste needs were forecast in the Management Plan (parts II and III, and in section 2 of the draft Update). Specific region-wide future capital projects, project costs, and funding sources were identified in the *Snohomish County 2000-2005 Capital Improvement Plan.*

In general, more equipment, processing capacity, and more self-haul, collection, and/or disposal options for hazardous waste (e.g., old paint, chemicals and pesticides) will be needed by 2012. Major county-wide solid waste facility needs projects most directly related to the Lake Stevens UGA include remodeling the Everett Recycling and Transfer Station, a new southwest recycling and transfer station, and repair and upgrade of current solid waste facilities.

Under the Executive Recommended Plan for the Lake Stevens UGA, Waste Management-Northwest, a private hauler, has forecasted the general need for additional trucks for hauling solid waste materials and additional staff. According to Ray Evans of Waste Management-Northwest, the international company has the financial resources and capability to serve the projected growth and development.

3) *Costs/Revenues*

The total projected costs and the timing of the countywide public solid waste capital improvements are identified in the *2001 Capital Improvement Program.* The private haulers have not developed specific capital cost estimates to expand service.

Funding for the countywide solid waste projects will come from the Solid Waste Fund, including user fees, grants, and bonds, and the Public Works Trust Fund grant. Funding of capital needs for the private haulers comes from revenue from rates charged to customers.

c. General Government

General government facilities that serve the entire county, including the Lake Stevens UGA, include Snohomish County-owned administration and law and justice facilities. There are no such county facilities in the Lake Stevens UGA.

A study of the County's capital facilities and a forecast of future needs is included in the *2000 Regional Justice Center (RJC) study.* A needs and utilization study for the proposed Regional Justice Center, which was completed in 2000, provides updated inventory and future needs forecasts for the county's law and justice facilities.

1) *Existing Facilities*

An inventory of County facilities was prepared as part of *2000 Regional Justice Center (RJC) study.* Additional updated information is contained in the *Capital Facilities Plan/Year 2000 Update* and the *2001 Capital Improvement Program.*

The seat of the Snohomish County government is in Everett. Many of the County's administrative buildings are located in downtown Everett. The County-owned facilities include the Administration Building, Administration Annex, Carnegie Building, Courthouse, and Mission Building. Leased facilities are located primarily in downtown Everett, although there are other facilities located throughout the County. The main jail facility and a minimum security incarceration facility are located in Everett, as is the Denney Juvenile Justice Center. A small work camp has been established at the Monroe Fairgrounds.

2) *Future Needs*

The most current information concerning levels of service and a forecast of future needs is contained in the *Capital Facilities Plan/Year 2000 Update.* Although additional general government facilities may be needed in the future, the needs are not analyzed for the UGA level, but rather on a county-wide/regional basis. A needs and utilization study for the proposed Regional Justice Center was completed in 2000. This study provides a comprehensive look at the needs of justice, corrections, and related administrative functions, and is reflected in the CFP.

Based on the existing studies, Snohomish County has identified in its *Capital Facilities Plan/Year 2000 Update* and its *2001 Capital Improvement Program,* the county-wide need for additional jail capacity and courtroom space. Additional office and operational space for other law and justice functions, such as the Sheriff's headquarters, the Prosecuting Attorney and the County Clerk, will also be needed.

3) *Costs/Revenues*

The estimated capital project costs for general government facilities are contained in the County's *2001 Capital Improvement Program.* Potential funding sources are also identified in that document, as well as in the *Capital Facilities Plan/Year 2000 Update.* These funding sources include property tax revenue, real estate excise tax (REET), revenue bonds, operating revenues, grants, local improvement districts, and mitigation fees. Specific revenue sources are cited for each project.

2. Non-County Facilities/Services

Special districts and private purveyors provide public services in the UGA. Snohomish County Fire Protection District # 8 provides fire protection services for the City of Lake Stevens and the unincorporated UGA. The branch library is part of the Sno-Isle Regional Library System. As with the non-County owned purveyors of public facilities, these non-County owned purveyors set their own levels of service standards.

a. Fire Protection

Snohomish County Fire Protection District No. 8 provides fire protection services for the Lake Stevens UGA, including the City of Lake Stevens, and portions of the surrounding rural area. The District is a special purpose district and a board of three publicly elected fire commissioners governs it. Figure 8-1 shows service area boundaries of the Fire District, which is 46 square miles.

The Fire District does not have a capital facilities plan in place at this time, but it hasa replacement schedule for capital items such as engines, aid cars, and equipment. The District reviewed the preferred alternative land use and population information and provided assistance in the update of this CFP.

1) *Existing Facilities*

In early 2000, the Fire District No. 8 provided the County the inventory of the Fire District's existing facilities. This inventory complies with GMA requirements. The District maintains three stations in the Lake Stevens area, with Headquarters based at Station 8-2, located on the west side of Lake Stevens at the intersection of 99th Avenue NE and Chapel Hill Road. City Station (Station 8-1) is located within the City limits near the intersection of 22nd Street NE and the Grade Road, and the Machias Station (Station 8-3) is located outside the Lake Stevens UGA near the intersection of S. Machias Road and Division Street (Figure 8-1).

The current staffing levels for the Fire District consist of 30 full-time firefighters, including one chief and three deputies, and 55 part-paid fire fighters. Average weekday staffing consists of 14 fire fighters, including administrative staff. Nighttime staffing averages 10 fire fighters. For both day and night coverage, two persons included in the above-mentioned staffing levels, also are certified paramedics/fire fighters.

Fire District No. 8 uses the following fire/medic/rescue apparatus:

- Headquarters/West Lake Stevens (Station 8-2): one Aid unit, one Medic unit, two Class A pumpers, one rescue boat, two command vehicles, and two staff vehicles;
- City Station (Station 8-1): one Aid unit, one Medic unit, one Class A pumper, one 3,000 gallon water tender, one rescue boat, one brush truck, one command vehicle, one utility pickup, and one staff vehicle;
- Machias Station (Station 8-3): one Aid unit, one Class A pumper, one rescue equipment trailer, and one staff vehicle.

In 1999 there were 3,131 calls, of which approximately 78% were for emergency medical services. The average response time in 1999 for both fire and EMS calls was approximately six minutes. The 1997 Fire Insurance Rating for the District was 5 on a scale of one (highest) and ten (lowest) by the Washington Survey and Rating Bureau.

2) *Future Needs*

As noted previously, the Fire District does not have a capital facilities plan in place. Fire Chief Welch and Assistant Fire Chief Job, however, have reviewed the preferred Lake Stevens UGA Plan alternative. The Chief has conveyed to the County in a letter from the District's Board of Commissioners that the District will be able to provide the existing standard of service to accommodate the projected growth in the Lake Stevens UGA. According to the Chief, given the existing geographical dispersion of the three stations (one in Lake Stevens, one just outside the Lake Stevens UGA, southeast of the City, and one west of the Lake in the Lake Stevens UGA), and given the current facilities and staffing levels available, additional equipment and/or other capital facilities will not be needed during the planning period to accommodate the projected growth. The staff,

however, is likely to be increasingly busy as growth occurs, and there will be a saturation point, depending on the actual land use and development patterns, at which time the District will need to assess both its staffing and capital needs to accommodate the growth while maintaining its goal of a 5-minute response time.

The District has in place capital replacement schedules for existing apparatus and equipment and it plans to continue to replace them according to the schedule. In 2000, the Fire District replaced an aide car, and in 2001, it will replace an engine. The cost of an aid car is approximately $95,000 and an engine can range in price from $250,000 to $500,000, depending on the type of apparatus.

3) *Costs/Revenues*

At this time future project costs have not been calculated since there are no growth-related capital needs for the planning period. It should be noted, however, that the Fire District will continue to set aside annually money in its capital budget for non growth-related replacement of apparatus and equipment. It also is setting aside in its budget funds for building improvements, such as a training or maintenance facility, which may be necessary in the future.

Revenues for the Fire District come from a set percentage from property taxes. The Fire District also has a permanent EMS levy of $0.50/$1,000 for funding which can include capital items for emergency services only (i.e., an aid car). The spending policy of the Fire District has been to use the "pay as you go" method of financing and it does not issue debt for capital expenditures. It is anticipated that the District will continue to follow that policy.

b. Library

The Lake Stevens Library is a branch of the Sno-Isle Regional Library System. The library system is a special service district that serves the whole UGA, including the City of Lake Stevens and the unincorporated areas. Plans for a new library are included in the *Recreating Main Street: Lake Stevens' Downtown Park and Civic Facilities Plan*. This Plan based its analysis on information contained in the *1996 Library Planning Study*. In November 1999, Jonalyn Woolf-Ivory of the Sno-Isle Library administration gave the County an update of the future capital needs, projectcosts, and financing of the Lake Stevens library, in light of the preferred Lake Stevens UGA Plan alternative.

1) *Existing Facilities*

The City of Lake Stevens' Main Street Plan described the existing library facilities. The branch library is located in a City-owned building at 1804 Main Street, in downtown Lake Stevens (Figure 8-1). The current Lake Stevens Library is 2,500 square feet in size and it contains over 25,000 total volumes/library materials. There are approximately 200 users per day in the library. The annual budget for the branch library is about $24,000 per year. Programs offered include preschool story times, toddler times, a summer reading and activities program, a children's reading club, and school visits.

2) *Future Needs*

The Library Study forecast the need for a 10,000-12,000 square foot library, based on a projected population of 27,000, which is slightly lower than the projected Lake Stevens UGA population. According to the Main Street Plan, the City planned to provide services and facilities for a city of 36,000. The Main Street Plan identified the need for a larger library of up to 15,000 square feet in order to accommodate a public meeting space. An update by Jonalyn Woolf-Ivory indicates that the Sno-Isle system is planning for a 10,000-15,000 square foot library to meet the projected growth in the Lake Stevens UGA and user demand. The library is likely to be located in North Cove Park in downtown Lake Stevens.

3) *Costs/Revenues*

According to the Main Street Plan, the project was originally scheduled for 1998. The project has been delayed, but the City and the Sno-Isle Library system anticipate funding and project construction in 2003.

The library property acquisition costs identified in the Main Street Plan range from $363,460 to $479,219 for the North Cove Park location. Construction costs are likely to range from $1.3 million to $1.95 million, according to the Sno-Isle administration. The higher end of the cost estimate ranges is included in the library projects summary in Table 8-5.

Funding for the library project is likely to be dependent on the formation of a Library Capital Facility Area. Those taxpayers in the Capital Facility Area would share the costs associated with the project. An election would have to be held to form such an area and to seek authorization for bonds to fund the library project.

Table: 8-5 CAPITAL FACILITIES 2000-2005 PLAN – LIBRARY

		ESTIMATED PROJECT COSTS						
IMPROVEMENT	**PROPOSED FUNDING SOURCE**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**TOTAL COST**
Land Acquisition	Library Facility Fund - Bond Issue				$479,219			$479,219
Library	Library Facility Fund - Bond Issue				$1,950,000			$1,950,000
Library Total					*$2,429,219*			*$2,429,219*

D. Utilities

1. Introduction

The GMA requires local comprehensive plans to include a utilities element which addresses electric, natural gas and telecommunication facilities. The utilities section below is primarily intended to ensure proper coordination of public land use planning and infrastructure planning with private system providers, consistent with GMA requirements. Electric utilities are mandated by state law to provide service to everyone in their service areas. Since electric power generation and distribution is a public sector responsibility in Snohomish County, and since electric system facilities are classified as "necessary to support development," they are addressed in the previous section. However, telecommunication and natural gas providers are market driven utilities, not required to make their products available to all potential customers. The discussion below reflects a different level of analysis than provided above for public and private capital facilities and services, focusing on the existing inventory and future needs of the utilities.

In general, local distribution systems for these utilities are located with other public infrastructure within street rights-of-way. Coordination of the construction of local distribution systems generally occurs at the permit level. The location of major facilities, transmission lines and distribution stations is a principal comprehensive planning issue. The location of existing and proposed major utility facilities within the Lake Stevens UGA are described below and shown on Figure 7-1.

The *General Policy Plan* element of the Snohomish County Growth Management Act Comprehensive Plan (GMACP) contains goals and policies regarding utilities which apply to the Lake Stevens UGA, and current development regulations address the siting of utility facilities. There are no unusual utility issues present within the Lake Stevens UGA that require additional policy direction.

2. Natural Gas

Puget Sound Energy (PSE) provides natural gas service to the UGA. Natural gas is delivered to the PSE distribution system via two natural gas high pressure lines, 30 inch and 26 inch, which run along the eastern boundary of the UGA. The Northwest Pipeline Company owns these lines and is the primary supplier of natural gas to PSE. Two gate stations deliver natural gas from the pipelines into the system. The Lake Stevens gate station, located within the city limits, receives natural gas from the pipeline and distributes the gas via intermediate pressure lines. The Machias gate station, located off Miller Street outside the UGA, also supplies natural gas to the Lake Stevens UGA from the pipeline.

At present, a proposed distribution pipeline will connect to the high pressure lines east of the UGA. The proposed distribution line will run from Hartford along Highway 92, south on Highway 9, and eventually across the Ebey Slough to Everett. A lateral line will provide natural gas to the City of Everett.

Puget Sound Energy states it can adequately serve the future population growth of the UGA and will supply natural gas to those areas demanding it. Customers initiate connections to the system. This includes installation service for new development and conversion from electricity or oil to natural gas. Long term plans call for upgrading the gate station on the eastern edge of the UGA.

3. Telecommunications

Primary service within the Lake Stevens UGA is provided by GTE Northwest (telephone) and AT&T (cable television). There are several wireless communication (mobile telephone) towers in the Lake Stevens and Snohomish area, owned by various providers, which provide additional telecommunication services to the UGA. Mike Jutte of GTE provided telecommunications information over the telephone on January 26, 2000. GTE does not have a written or mapped inventory of existing or proposed facilities which is available to the public.

GTE's Telecommunication services are distributed throughout the Lake Stevens UGA by means of main feed routes, central offices containing switching equipment and smaller distribution lines. There is one primary manned central office (CO) located on 20th Street SE, near Tom Thumb, and several smaller central offices. Smaller COs are located near the intersection of 42nd and Sunnyside Boulevard; on 83rd north of Agilent Technologies; and on 20th NE, in downtown Lake Stevens. Main feed routes containing fiber optic and copper cable are located in underground conduits within the following rights-of-way: 20th St. SE from the Highway 2 trestle to the top of Cavalero Hill, 99th Ave SE right-of-way north of 20th St. SE, and from 113th to Machias Road. A future CO is proposed in the vicinity of Frontier Village.

E. Implementation

Funds for those capital facilities and services provided by the County are determined and appropriated through the annual capital improvement plan adopted as a part of the Snohomish County budget process. Funding for non-County facilities and services is determined through individual budget processes completed by each agency. This Plan should be a resource to inform both county and non-County budget decisions.

Response to Funding Shortfall

As described above, there is a shortfall of revenue to pay for the transportation and surface water capital facilities necessary to support population and employment growth in the Lake Stevens UGA under this land use plan at adopted or acceptable levels of service. The GMA requires that jurisdictions "reassess the land use element" (RCW 36.70A.070(3)(e)) to respond to a revenue shortfall. The County's Capital Facilities Plan (CFP) describes options for responding, including reducing the LOS, increasing revenues and redistributing growth. (See A.4., "Key Findings," above.)

Snohomish County has discussed such options in developing *Capital Facilities* Plan/Year *2000 Update*, which applies countywide, not just in the Lake Stevens UGA. Since most of these options may affect areas of the County outside the Lake Stevens UGA, this Lake Stevens UGA Plan does not attempt to individually characterize their effectiveness herein. Please refer to the chapters discussing Transportation, Parks, and Surface Water for additional information on levels of service, available revenues, and costs of facilities information.

Development Phasing Overlay Strategy

As one response to the shortfall, the Lake Stevens UGA Plan includes development phasing policies and calls for development of implementing regulations to ensure that urban-level development is approved only when adequate capital facilities and services are provided or financed. This section outlines the basic mechanism for the Development Phasing Overlay (DPO) strategy. As an implementation measure for this Plan, a DPO ordinance and a zoning map with the DPO for the Lake Stevens UGA requires consideration and adoption by the County Council. Any requisite administrative procedures will need to be developed following adoption of the DPO.

1. Purposes and Objectives

The purpose of the DPO strategy is to:

- Match urban-level development with necessary capital facilities, so that those facilities are available to serve new growth.
- Allow new urban development in areas with adequate capital facilities. Provide a basis for directing public funding for new capital facilities to areas that already have the most infrastructure.
- Avoid premature and uncoordinated development that would require the extension of services across undeveloped areas. This is accomplished by precluding new urban-level development in areas without adequate capital facilities. New growth may subsequently be approved once financing of needed facilities is assured.
- Establish a mechanism to require and encourage new growth to pay for, or contribute to, the costs of needed capital facilities. This may be done by forming special funding districts to finance the capital facilities needed to support urban development.

2. Key Principles

This Plan has been prepared consistent with the County Executive's September 1999, Capital Facilities Planning Principles, as adopted by County Council Motion 99-356 on September 15, 1999. These Principles were written to guide the development of policies and ordinances to respond to a funding shortfall. Key Principles include:

- Costs of financing public facilities should be fairly shared among public and private interests.
- Public investments should be made first where the fullest range of urban infrastructure already exists.
- New growth should not be permitted where the full range of facilities is lacking. Failure to provide necessary facilities is not an acceptable justification for allowing new development.
- For areas without adequate capital facilities or adequate financing for such facilities, regulatory mechanisms should be developed to postpone urban growth.
- Property owners or developers can provide the necessary capital facilities so that development consistent with land use can proceed.

As noted above, the Lake Stevens UGA Plan has identified revenue shortfalls for provision of transportation and surface water capital facilities to accommodate growth under this land use plan at adopted or accepted levels of service. Since there is not sufficient public money to fund all needs, this plan recommends a phasing strategy to allow urban development to occur, but over time and with private funding of the needed facilities.

Utilizing these Principles, a DPO strategy is proposed to allow development to occur in areas where adequate financing exists, to restrict it where financing is uncertain, and to provide a predictable way to generate the additional revenue needed for the needed facilities. To implement this strategy, a DPO map, using roads and surface water capital facility needs was created. The DPO map is intended to regulate the County's acceptance of applications for new urban development within the UGA, as described below. It will be designed to be visually easy to understand and to implement by using an overlay on the zoning map.

3. The Red/Green Maps

As an initial step toward creating the DPO map, the Plan includes "Red/Green" maps for roads and for surface water capital facilities and a "Combined Green Area" map, which merges the two "Red/Green" to create the final DPO map.

The "Green" Area: The Green area is the portion of the Lake Stevens UGA where capital projects costs match the available financial capacity of the UGA. In other words, it is the area where the total expected revenues from the UGA over the lifetime of the Plan are equal to the capital needs identified within that area. Please refer to Chapter 5, Transportation, and Chapter 6, Surface Water, for lists of capital facilities that would be funded with the available revenue. On the Roads Red/Green map, the Green area is also the portion of the Lake Stevens UGA that has the fullest range of existing infrastructure and is in the closest relative proximity to the City of Lake Stevens.
To state it briefly, it's "business as usual" within the Green area. Public funding of capital facilities is provided in the Green area through the standard CIP process. As described below, urban level development is allowed to proceed through the normal permit review process.

The "Red" Area: Within the Red area portion of the DPO map, there are insufficient funds available to pay for necessary capital facilities. Within this area, the County's capital facilities planning information identifies: (a) the list of capital facilities needed within that DPO area, and (b) a list of public and private revenue sources for the construction of those facilities. Updates to those lists may be developed in the annual CIP process.

In the Red areas, urban development would be deferred until financing of the requisite capital facilities was assured. This may be achieved through the standard capital facilities planning process over time, or by private sources of funding such as the formation of road improvement districts or other mechanisms.

The Combined Green Area: map merges the Red/Green maps for roads and surface water, using a geographic information system (GIS), to create a Combined Green Area map (Figure 8-4). The Combined Green Areas map was then transferred to the zoning map (Figure 3-2) as an overlay. Adjustments were made to the zoning map to eliminate splits in parcels by the DPO overlay. This overlay is implemented as a "suffix" to zoning categories. For example a property zoned for 7,200 square foot lots and covered by the DPO overlay would be zoned "R-7,200-DPO.

4. The DPO Ordinance Governs Acceptance of Applications for Urban Development

Concurrent with this plan a DPO ordinance was developed. The ordinance basically works in the following way. Within an adopted DPO, the County will not accept an application for urban development (i.e., applications for residential development such as subdivisions and rezones, or any commercial/industrial use; single family buildings on existing lots would still be allowed) until the County removes the DPO.

All or portions of DPO area may be removed through updates to a UGA plan, or through a standard rezone process proposed by an individual or group. The minimum acreage for a proposal is 40 acres, although smaller areas may be considered if the proposed boundary is logical, extension of facilities can occur in logical way and is adjacent to an area that is not in a DPO-suffix. In general the process for lifting the DPO is as follows:

1. A determination is made as to the facilities required for removal. Administrative rules will guide the creation of a list of facilities. This list can be comprised of projects from the UGA, SEPA and a concurrency determination.

2. The Director of PDS (in consultation with DPW and Parks) makes a Finding of Adequacy.

The finding of adequacy includes the following criteria:

- The applicant has provided evidence that the necessary facilities will be provided or financed, or are shown in the county capital improvement program.
- Facilities must be committed for construction within 3 years for all developments. The Director of PDS may grant an additional extension of 3 years.
- All proposals must be 40 acres in size. Smaller areas may be considered if they are a logical grouping and adjacent to a "green" area.
- The project must be deemed concurrent.
- Alternative technical solutions may be considered.

3. The Finding of Adequacy is submitted to the Hearing Examiner. The Hearing Examiner is responsible for conducting a public hearing and making a decision to remove all or portions of the DPO from the County's Official Zoning map. The Hearing Examiner shall base any action taken regarding the DPO on the Director's finding of adequacy of capital facilities. The Hearing Examiner may impose conditions of approval on any development within the area proposed to be lifted, to ensure that necessary capital facilities are operational. These conditions may include, but are not limited to, limitations on the density and intensity of development and restrictions on the timing of occupancy and development. The conditions imposed would be pursuant to adopted policies and regulations. The Hearing Examiner's decision may be appealed to Council.

4. Upon approval the applicant may apply for subdivision or building permits. All other County codes and SEPA still apply.

The Director of PDS is authorized to develop administrative rules, policies, procedures, and criteria for the actual operation of the DPO ordinance. These administrative rules, policies, etc...are not regulatory, but they provide direction to the Director in the application of the ordinance requirements. The departmental procedures include criteria to be used to certify adequate capital facilities in the areas of surface water and transportation. Procedures for releasing the DPO and what the Director should consider during the application review are also included. The initial administrative rules, policies, and procedures will be issued within 120 days from the effective date of the ordinance, and will be available to the public.

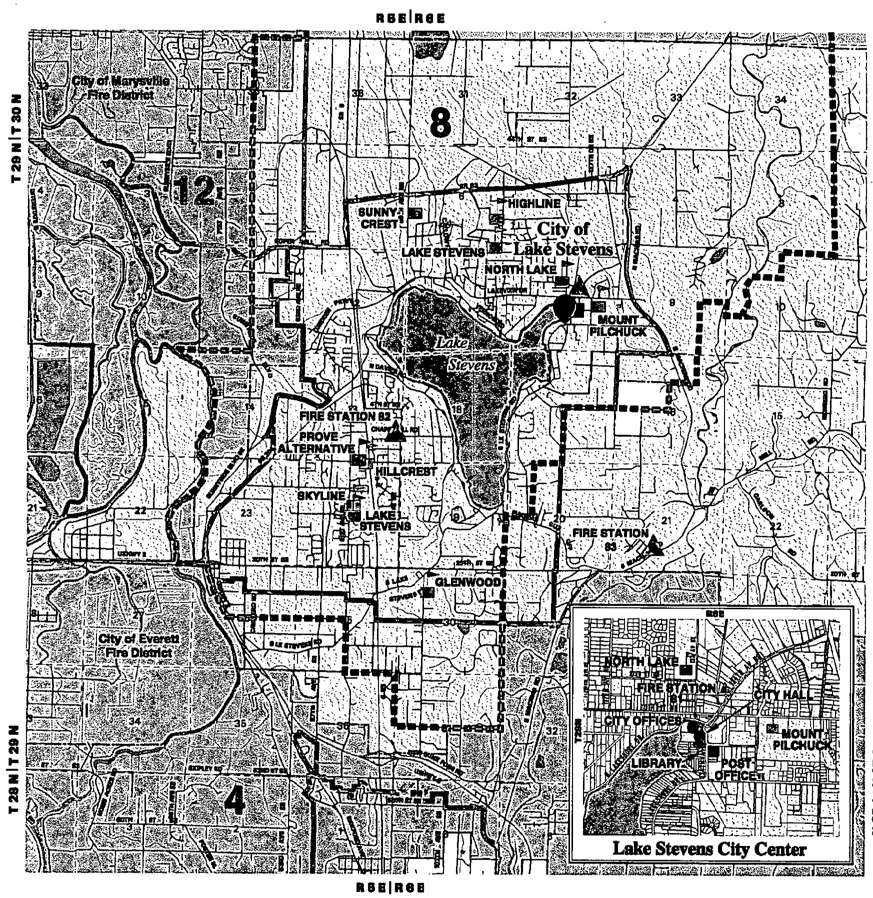
5. Monitoring

The DPO responds to the GMA and Growth Management Hearings Board directive to identify the need for and funding for capital facilities in the UGA. That capital facility planning process, completed as part of the UGA planning process, showed that some areas of the UGA may not have adequate urban facilities. That revelation triggered the need for the DPO in response. As the UGA develops, the County will monitor, through its Growth Monitoring Reports, the degree to which the UGA is meeting its population and economic growth targets, comparing that growth to the need for capital facilities. If this and other monitoring efforts reveal that areas not currently in a DPO will be served with inadequate urban facilities because of changes in circumstances, this will trigger consideration of application of the DPO to these areas.

F. Summary

The purpose of the above analysis, as well as the discussions in chapters 5, 6, and 7, is to provide, in this Plan, a comprehensive view of the needs and public ability to provide capital facilities commensurate with the land uses proposed by this plan. As the GMA intends, it serves to coordinate and make consistent the land use element and capital facilities plan.

The analysis of the existing and needed capital facilities and services show that the proposed land use will create a challenge for service providers. In response to that challenge, there are a variety of potential regulations, including reserving areas for development through use of the Development Phasing Overlay, to assure that adequate facilities will be available for that development. Combined with the zoning and implementation measures discussed in Chapter 3, above, the DPO will need to be implemented to ensure that the land uses envisioned in this document can become a reality.



Public Services and Facilities
Lake Stevens UGA and Vicinity

LEGEND — **DEC. 7, 2001**

- Snohomish County Fire District 4
- Snohomish County Fire District 8
- Snohomish County Fire District 12
- City of Everett Fire District
- City of Marysville Fire District
- Elementary School
- Middle School
- High School
- Special School
- 8 County Fire District Number
- Fire Station
- City of Lake Stevens Government Offices
- Lake Stevens Public Library
- U.S. Post Office
- Incorporated City Boundary
- Urban Growth Area Boundary
- Lake Stevens School District Boundary
- Snohomish County Fire District Boundary

0 2000 4000 6000
Scale in Feet

w:/plng/carto/lcst/reports/pubfac17-1201.aml

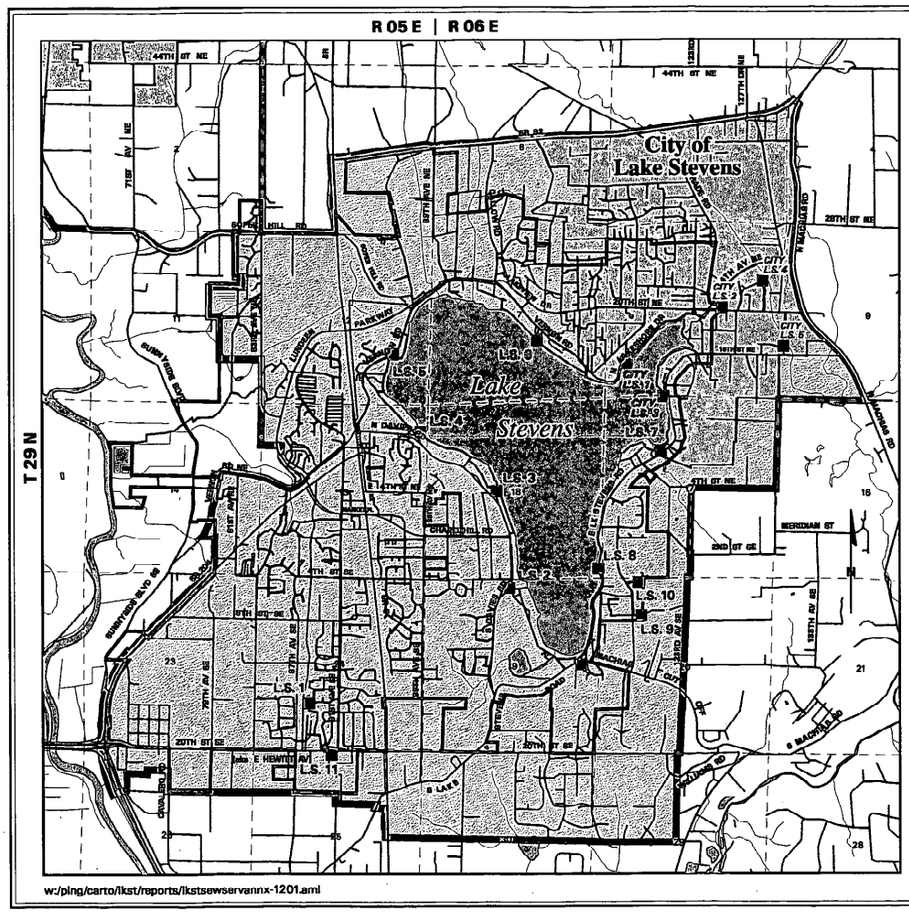
Snohomish County disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. No representation or warranty is made concerning the accuracy, currency, completeness or quality of data depicted on this map. Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. Property lines are for illustrative purposes only and depict only generalized parcelization. This map is based on the best available information as of the date shown on the map

Produced by Snohomish County Department of Planning and Development Services, Cartography Section, dkt, August 26, 1997. Revised 12-7-2001.

Snohomish County

FIG. 8-1



w:/ping/carto/lkst/reports/lkstsewservannx-1201.aml

Lake Stevens Sewer System

LEGEND **DEC. 7, 2001**

- Incorporated City
- Urban Growth Area
- Incorporated City Boundary
- Urban Growth Area Boundary
- Lake Stevens Sewer District Boundary
- Sewer Line
- Lift Station

0 2000 4000 6000

Scale in Feet

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. This map is based on the best available information as of the date shown on the map.

Sewer line and lift station data supplied by Gray & Osborne, Inc., Seattle, Washington, 1997. Lake Stevens Sewer District boundary supplied by Lake Stevens Sewer District, Dec. 1999. Boundary Review Board sewer annexations have been updated through Feb. 2000.

Produced by Snohomish County Department of Planning and Development Services, Cartography Section, dkt. Aug. 28, 1997. Revised 12-7-2001.

Snohomish County

FIG. 8-2

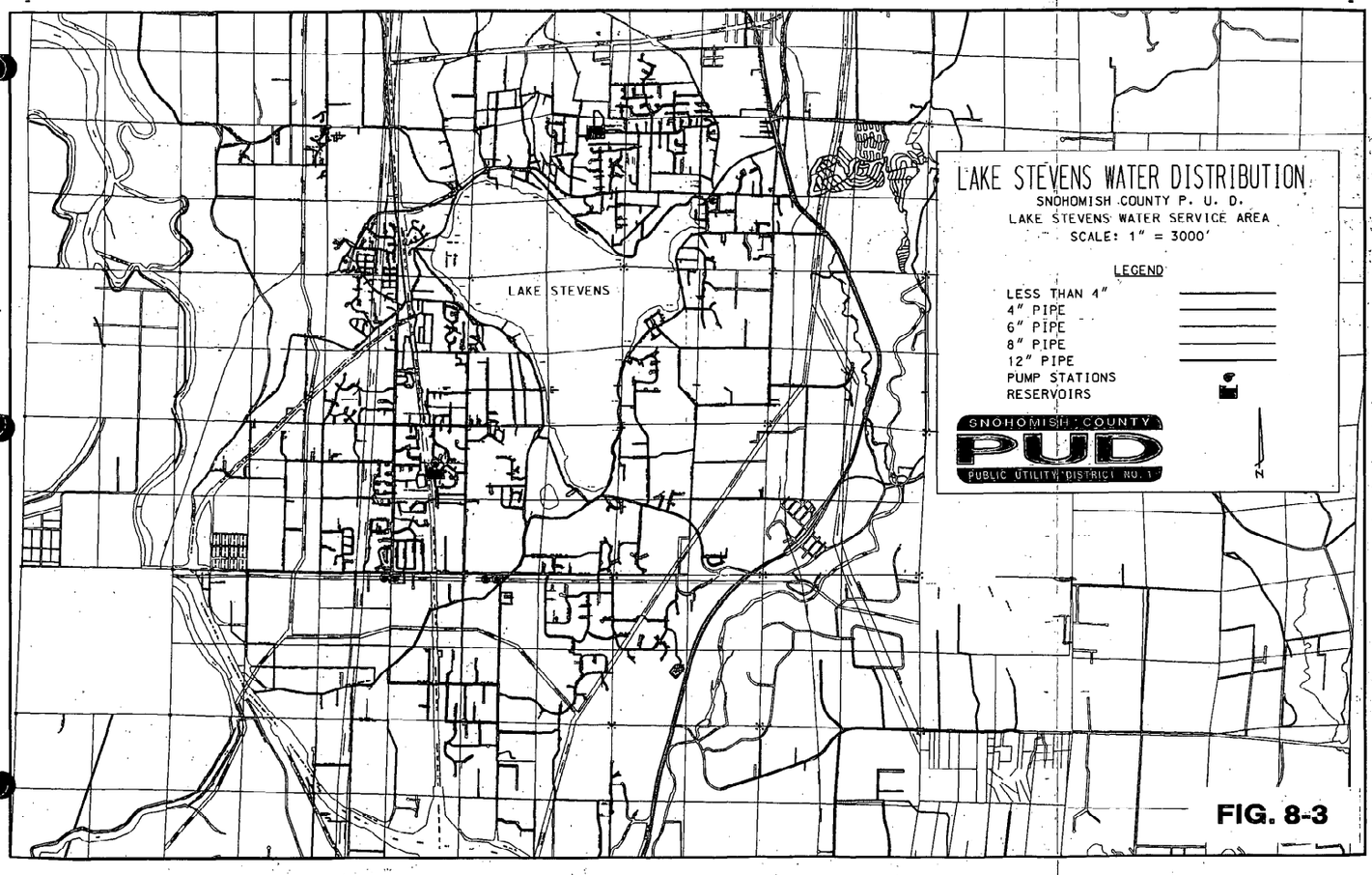
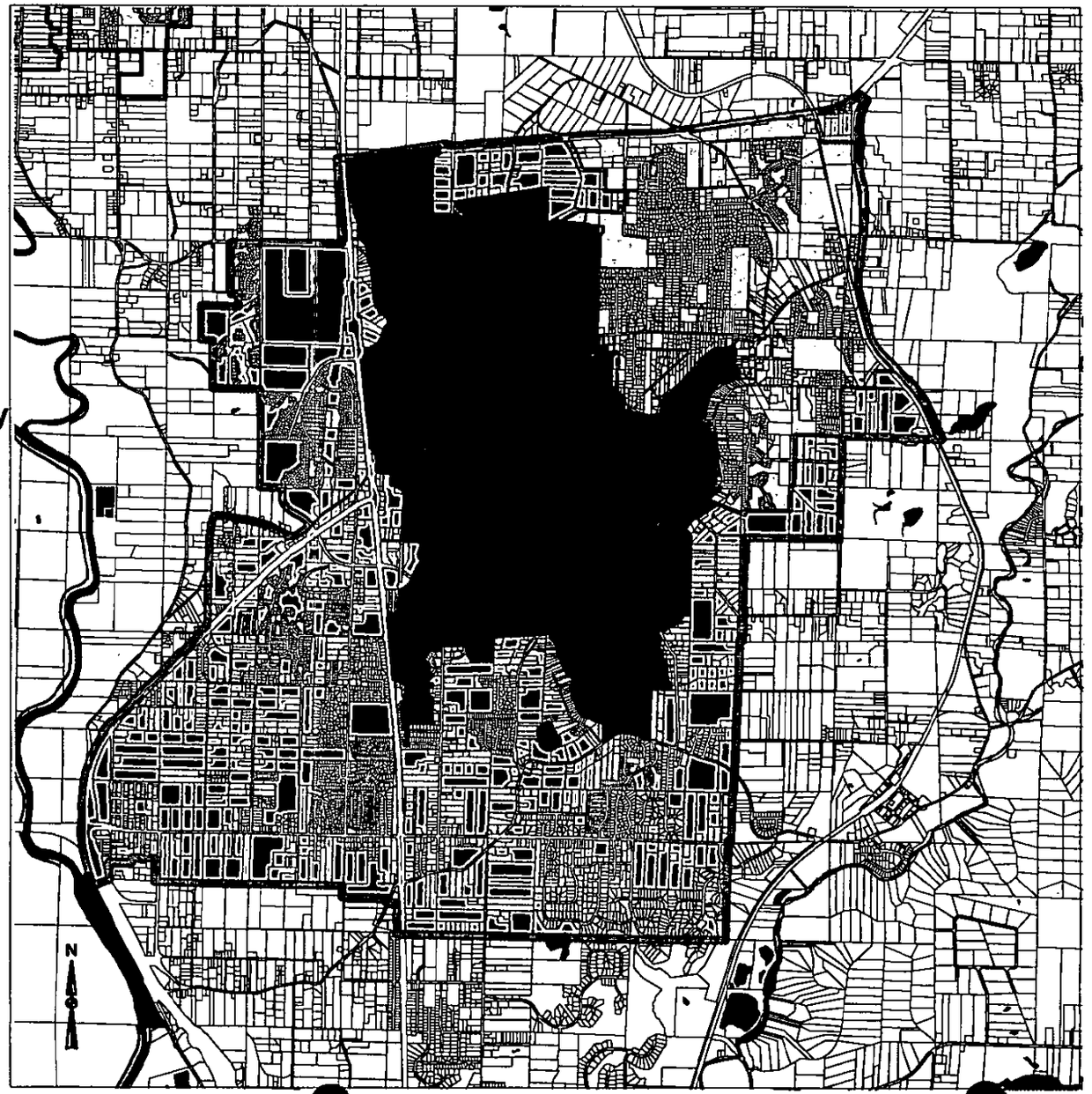

LAKE STEVENS WATER DISTRIBUTION
SNOHOMISH COUNTY P. U. D.
LAKE STEVENS WATER SERVICE AREA
SCALE: 1" = 3000'
LEGEND
LESS THAN 4"
4" PIPE
6" PIPE
8" PIPE
12" PIPE
PUMP STATIONS
RESERVOIRS
SNOHOMISH COUNTY
PUD
PUBLIC UTILITY DISTRICT NO. 1
N
LAKE STEVENS

FIG. 8-3

Red/Green Areas

December 2001

- Green Area
- Red Area
- Incorporated City Boundary
- UGA Boundary



This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. This map is based on the best available information as of the date shown on the map.

Produced by Snohomish County Department of Planning and Development Services.

0 2000 4000 Feet

Figure 8-4

Chapter 9

Implementation

A. Introduction

The vision articulated for the Lake Stevens UGA in this plan will remain as a bundle of paper or computer digits unless specific actions are taken. This chapter outlines how the County, City and service providers will make the translation from paper to reality.

Some changes will begin immediately. *General Policy Plan* (GPP) policies, *Park and Recreation Plan*, and *Transportation Plan* changes and the zoning for the UGA will be revised simultaneously with adoption of the plan. Development phasing will go into effect concurrently with adoption of the UGA plan. Some policies however will not go into effect immediately and will be part of later phases of plan implementation. These include changes to county codes, administrative rules and entering into interlocal agreements. There is more to putting a plan into effect than just these changes. Yearly decisions that appropriate money for capital facilities projects should support the planned land uses, for instance.

The County will monitor the area's growth and development. If that monitoring points out trends in development different than those relied upon for this plan, it may warrant early updating of the plan. Such continual evaluation and revision is the last segment of any implementation program.

B. Relationship with State and Other County Policies and Plans

This plan, as well as any current and future measures that put the plan into effect, must continue to be consistent with state law, especially the Growth Management Act, state subdivision laws, the State Environmental Policy Act (SEPA) and the Shoreline Management Act.

At the County level, this plan must continue to be consistent with the *Countywide Planning Policies* (CPP). This UGA plan relies on a population target that has not been reviewed through the Snohomish County Tomorrow process outlined in CPP policy UG-2. Therefore, SCT must review the new population target.

This plan furthers the vision of the GPP as well as remains consistent with its policies. And, the plan is consistent with other related, countywide plans, especially those that are components of the County's GMA comprehensive plan. In addition to the GPP, they include the *Transportation Element for the Snohomish County Comprehensive Plan*, the *Snohomish County 1995-2000 Capital Plan*, and the *Countywide Comprehensive Park and Recreation Plan*. Policies in those plans set the foundation for this UGA plan. As the plan is implemented through the years, new regulations should be evaluated to ensure continual consistency.

C. Development Phasing Overlay

In addition to concurrent adoption of zoning, phasing regulations were adopted simultaneously with plan adoption. The purpose of this tool is to prevent development from occurring prior to

the provision of a full range of urban facilities and services, including transportation and surface water capital facilities.

Phasing regulations shall direct new development to areas that have access to a full range of urban services. They also provide opportunities for private sector financing of improvements in areas where existing levels of urban service are low and the cost to improve service levels exceeds public revenues. Criteria in the phasing regulations guide the application and removal of any phasing boundaries and related regulations or policies. The phasing strategy used within the Lake Stevens UGA is tied to a capital facilities plan. Release of properties from any phasing requirements is contingent upon the applicant showing that adequate infrastructure is or can be available. In this way, implementing the plan is dependent, through regulations, on the extension of urban facilities. For that reason, the following policy is proposed. (Please see Chapter 8, Capital Facilities and Utilities, for a more detailed discussion of this regulation.)

> ***Policy 19:*** The County shall adopt policies and regulations that phase development. Such regulations shall direct new development to areas that have access to a full range ofurban services. The regulations shall provide opportunities for private sector financing of improvements in areas where existing levels of urban service are low and the need for public investment to improve the LOS exceeds revenues. Clear and concise criteria shall be developed for the application and removal of any phasing boundaries and related regulations or policies. The phasing strategy used in the Lake Stevens UGA shall be tied to a capital facilities plan, and release of properties from any phasing requirements shall be supported by a demonstration that adequate infrastructure is available in Lake Stevens UGA.

D. Zoning

The relationship between the comprehensive plan and the zoning map is fundamental to community planning. The comprehensive plan, text and map provide recommendations about long term use of land, including density. The zoning subsequently refines those uses and densities by dictating minimum lot sizes and providing specific development guidelines in the form of setbacks, lot coverage requirements and height limitations. Zoning adopted for this UGA plan approximates the land uses and density as shown in the land use plan.

Concurrent with adoption of the plan, the County is initiating rezones to ensure that zoning and the plan are consistent. Approximately 3,500 acres are rezoned with adoption of the UGA plan. With the implementation of this plan and the Development Phasing Overlay approximately 4,000 acres are rezoned within the Lake Stevens UGA.

The zoning matrix below outlines the implementing zoning for each plan designation. To gain a better understanding of the reason for any given zoning, look first at the left column of the matrix. Compare the densities in that column with the densities in the right column (under zoning). The densities or uses should be similar. Also, see Appendix 3-A for a more detailed discussion of the purpose of each designation and the matching zone.

Plan Designation	Implementing Zoning
Urban Low Density Residential (ULDR 4 DU/Ac)	R-20,000 (where critical areas exist) and R-9,600
Urban Low Density Residential (ULDR 6 DU/Ac)	R-7,200 and PRD-7,200
Urban Medium Density Residential (UR-M: 6-12 DU/Ac)	R-7,200, PRD-7,200, Townhouse, LDMR, PRD-LDMR
Urban High Density Residential (UR-H: 12-24 DU/Ac)	LDMR, PRD-LDMR, MR, PRD-MR
Urban Commercial	PCB, NB
Urban Industrial	BP
Public Use	Existing Zoning

E. Shoreline Management Master Program and Critical Areas

While zoning indicates the intended densities and uses for an area, two regulations affect the ultimate uses and densities. The first, the Snohomish County *Shoreline Management Master Program* (SMMP) establishes a classification system and corresponding development guidelines for areas affected by stream and river flooding. These development guidelines establish minimum densities for five types of shoreline designations: Urban, Suburban, Rural, Conservancy and Natural. The uses and densities permitted under the SMMP in these five designations would take precedence over any permitted by the zoning districts. There are several areas inside the UGA that fall under the jurisdiction of the Shoreline Management Act. Those areas include the shorelines of Lake Stevens, and areas along Catherine Creek, the Pilchuck River and Little Pilchuck Creek.

In the Lake Stevens UGA, an area southeast of the City boundaries is designated "Rural" by the SMMP. The SMMP designation does not match the plan and zoning designation. The County plans to update the SMMP for the whole County at one time. Therefore, the plan designation, zoning and SMMP designation for this area will be reconciled following the countywide update of the *Shoreline Management Master Program.*

The second regulation, Snohomish County's Critical Areas ordinance, requires that each owner identify locations of environmentally constrained portions of their property before development permits are issued. Once such areas are identified, final development plans must show mitigation to protect the critical areas.

F. Capital Improvement Program

The County annually reviews the need for capital facilities and compares that need with other budget needs. Where it is deemed timely and appropriate, needed capital facilities are designated for construction on the County's Capital Improvement Program (CIP). A project so designated means it is slated for construction within six years. Most transportation, surface water and parks projects would need to be added to the CIP as a prerequisite for receiving County funds and being constructed. The CIP will be a necessary tool for putting this plan into effect.

G. Cooperating With Other Jurisdictions and Service Purveyors

Effective implementation of the plan will also depend on coordinating and cooperating with other jurisdictions such as the Cities of Lake Stevens and Marysville and special districts such as the Lake Stevens School and Sewer districts. The plans of all of these jurisdictions would need to be consistent with each other if effective implementation is to occur. An example of issues already emerging and which will require such cooperation follows.

1. Parks

The Parks chapter identifies a clear need for additional parks in the UGA. While there are a number of ways this need could be filled, the most effective implementation will occur if the County and City cooperate after plan adoption. Such cooperation could take the form of jointly acquiring the needed parks land, for instance. It could also include applying joint mitigation fees, seeking grants, developing a program of volunteers, working with the school district to jointly use facilities and forming a park and recreation service area. The County, the City and the School District could more effectively meet the needs of the community by forming a mutually acceptable implementation strategy after plan adoption.

Funding of future park land acquisition and improvements will rely on the collection of impact fees. Snohomish County currently administers a SEPA based impact fee ordinance. The County is working on developing a GMA based impact fee ordinance. As a future implementation step the County Council will need to adopt a GMA based impact fee ordinance to ensure that parks within the Lake Stevens UGA are acquired and developed.

2. Coordinated Development Review

The County's and City's development standards differ. In addition, the City has adopted urban design guidelines that go beyond construction standards and encourage development to meet criteria which reflects the design vision of the community. The City's design guidelines and urban construction standards currently do not apply to lands in the unincorporated portion of the County.

The costs of "retrofitting" areas to different standards after development and annexation occurs, for instance, could be prohibitive and sometimes impossible. The City and County consequently share the concern that construction standards be applied consistently inside and outside the City. Cooperating through interlocal agreements, such as suggested by the GPP Objective and Policies under IC 1.D, could ensure consistency between County and City development regulations. Such cooperation in putting the plan into effect as well as applying consistent development standards will reduce confusion, increase the likelihood of effective plan implementation and eventually reduce costs of services. The following policy addresses this issue:

> ***Policy 20:*** The County and City shall pursue an interlocal agreement to jointly develop strategies for implementing GPP objectives LU 5.A, LU 5.B and HO 2.B and their supporting policies.

3. Coordinated Annexations

The GMA anticipates annexation of the UGA to the cities. Completing review of proposals for development originally in the County but now in the process of annexing, and eventually completing construction in the City, presents problems. In addition, tying neighborhoods together without coordinated facilities (such as different widths or no sidewalks) is a third annexation-related issue. Coordination between the City and County of annexation timing and process and development review could reduce delay of development and services as well as better ensure continuous provision of basic urban amenities like sidewalks.

The GMA is clear that the legislature intended that governance would become more efficient and seamless over time, both inside and outside of cities, as a result of the Act. The County and City agree that a smooth transition of jurisdiction from County to City should take place so that transfer of urban services to annexing areas occurs in an orderly way (GPP IC 1.B.1). To that end, the County and City should complete interlocal agreements to facilitate annexation of unincorporated lands inside the UGA. In addition, the following policy is proposed to further ensure coordinated work on annexations:

> ***Policy 21:*** The County and the City shall explore entering into an annexation master agreement that sets forth annexation areas and timing for annexation as well as mutually acceptable standards for development.

4. Special District Services

Within the Lake Stevens UGA there are seven Special Purpose Districts providing varied government services including electricity/water, sewer, schools, drainage, dike maintenance, transit, and fire protection/emergency services. In some cases the County, City, and one or more districts provide overlapping services in the UGA. As the UGA continues to urbanize, it will become more important to consolidate the provision of these services so that urban governmental services are provided in an affordable and consistent manner. It is critical that the community continues to receive uninterrupted services at a level that will sustain the high quality of life they have come to know. To achieve this within the context of the growth projected for this area will require aggressive coordination and consolidation where it is possible.

H. Updates and Amendments

As the area grows and urbanizes, as services are extended and as some areas annex, there may be a need to review the provisions of this plan and its implementing regulations. Trends in the area and region will continue to be monitored and changes in those trends may also point towards a need to review the plan. In addition, under the GMA, the County's comprehensive plan, including the *General Policy Plan*, will be reviewed every ten years. The GPP, in addition, calls for reviewing the effectiveness of UGAs at least every five years. The GPP discussion of circumstances that would merit consideration of an amendment would also apply to this UGA plan.

This plan identifies a number of future implementation actions. The actions can be classified as 2nd tier implementation actions. Second tier actions include but are not limited to future amendments to county codes or entering into interlocal agreements. Some amendments will occur following completion of other planning processes, such as the centers project in

Southwest UGA that will be applied to the Cavalero Hill Master Plan. Other amendments such as changes to Title 24 will be developed and brought to the Planning Commission and County Council for their consideration.

In addition, individual property owners may sometimes believe that a change in the designation of their specific property is merited because of changed circumstances or conditions in the area. That individual change can be proposed through the County's docketing process.

A plan is a dynamic tool in realizing a vision for a community. Its regulations are the tools by which that vision is realized. As the community and governance of that community change, revisions would be critical if the plan is to accurately reflect the community's vision.

Criteria that can be used in considering plan revision should include:

- Consistency with the goals and requirements for plan components in the GMA.
- Consistency with Countywide Planning Policies.
- Consistency with GPP Objective and Policies.
- Consistency with the County's GMA Comprehensive Plan.

I. Summary

A plan is realized through application of many tools at varying levels of government. The key regulatory tools that will implement this UGA plan are the zoning and phasing regulations. In addition to regulations, coordination of capital facilities construction, development review and annexations with other jurisdictions and special districts will also be key to ensuring that land is used in a way consistent with this plan. This plan will be reviewed and updated regularly. Those updates should confirm that both implementation is occurring consistently with the plan's intent, as well as ensure that the plan continues to represent the community's vision.

Policy 22: The County and City should negotiate interlocal agreements which address issues arising from plan adoption, and a master annexation interlocal agreement, to address issues arising from annexations within the UGA.

Appendix 1-A

Public Participation

This Appendix summarizes the public participation in the planning process for the Lake Stevens UGA.

A. Summary of Growth Management Coordinating Committee Meetings July 1993 - January 1996

The Lake Stevens Growth Management Coordinating Committee's (GMCC) initial purpose was to determine Interim Urban Growth Area (IUGA) boundaries. During the formulation of the IUGA boundary, several geographic areas emerged as areas of special concern. These areas in question included Sunnyside, Machias, and plats of Valterra and Soperwood I and II. The GMCC was unable to agree unanimously on the IUGA boundaries, so both a minority report and majority report were submitted to the Snohomish County Council. The minority report proposed that the westerly boundary be the existing powerline, because of need for a buffer between urban and agricultural land, critical areas, i.e. steep slopes and wetlands, and potential drainage into floodplains. Upon adoption of UGA boundaries by the Snohomish County Council, the GMCC went on to create draft land use alternatives for the UGA. The following are highlights of GMCC meetings.

At the September 15, 1993 meeting, area residents expressed concerns about drainage from development in the Sunnyside area. Specifically, runoff into Ebey Slough that was impacting agricultural land west of Sunnyside Blvd. This issue would continue to be talked about over the next year.

It was in October of 1993 that the Cavalero Hill issue first surfaced. Citizens attending the October 13, 1993 meeting stated that the area referred to as "North Hewitt Hill" (aka Cavalero Hill) should not be included in the Lake Stevens UGA.

By the spring of 1994, the county was busy preparing the General Policy Plan for unincorporated Snohomish County. Environmental analysis was required by SEPA to be completed on the plan and the county was busy preparing information for an Environmental Impact Statement (EIS). Part of the SEPA process included holding scoping meetings to determine environmental issues that should be covered in the plan EIS. The GMCC devoted two meetings, March 1 and March 3, to this topic. Following EIS scoping, the GMMC continued their discussion of the UGA boundary. At the March 23rd meeting, the GMCC voted unanimously to support a UGA boundary that did not extend beyond State Route 92.

At the April 27th meeting, Ruth Brandal (GMCC member and Minority Report author), offered an alternative for the western boundary of the UGA. Ruth proposed drawing the boundary along the existing north/south power line right-of-way. This boundary would provide an agricultural buffer consistent with the GMA's requirements for the protection of agricultural lands from incompatible use, the ravines provide a natural boundary, the additional area is not required to accommodate the projected future population, and the presence of the sewer trunk line does not necessarily mean a commitment of the entire area to future urban development.

The focus of the May 11 meeting was on a draft GPP policy pertaining to minimum net densities in UGA's. Dave McGuire, Planning Director for the City of Lake Stevens, explained his concerns over requiring a minimum of 4-6 dwelling units per net acre in UGA's. He was concerned that this policy would limit the technique of "feathering" densities within the UGA, including in agricultural buffers. He also noted that if the policy remains in the GPP, the city may lobby for removing the area west of State Route 204 from the UGA. Dave further stated that the need to achieve 4-6 DU/Ac can be achieved on a UGA-wide basis. The members of the GMCC agreed with his positions.

At the September 28, 1994 meeting, the GMCC developed one future alternative. The foundation of this alternative was a large Planned Business District area at Cavalero Corner. This type of land use would provide a higher jobs to housing ratio for the UGA. Later at the October 19th meeting, high density residential nodes were added.

By November 1994, the GMCC had a working alternative. At the November 9th meeting, Dave McGuire suggested a new alternative that would shift some of the Planned Business District to the intersection of State Route 9 and Hewitt Avenue. Other items discussed at this meeting included the benefits of higher density residential and the importance of good design in order to insure public acceptance.

In January 1995, the City of Lake Stevens calculated planning targets for jobs/housing balance for the two alternatives that the GMCC had been working on since September 1994. Under the regional centers alternative, the ratio was 1.35 jobs per household. Under the diversified centers alternative, the ratio was 1.7 jobs per household.

By April 1995, the GMCC decided to discontinue meeting on a regular basis. Following the April 4th meeting, the GMCC took a sabbatical and did not reconvene until September 26, 1995. From September 1995 through January 1996, the GMCC meetings primarily focused on updates from county and city staff on the development of future land use alternatives. By January 1996 only four members remained on the GMCC, with three having resigned during the process.

B. Summary of May & June 1996 Public Workshops

Questionnaire, May 7, 1996

Community Aspects. When citizens were asked to rank a variety of community aspects, environmental and safety issues ranked "very important," along with "sense of community." Those issues considered "somewhat important" included affordable housing, well paying jobs in the UGA, and supervised after school activities for kids. Hospitals, retirement homes, and shops within walking distance ranked "not very important."

Transportation. Concerning transportation, citizen comments reflected the 1993 countywide Opinion Survey, where preferences included safety improvements and more sidewalks. Less emphasis was placed on transit and assistance with carpools and vanpools. Those issues of least importance included adding more lanes on roads or building new roads.

Multifamily Housing. When asked to indicate their willingness to accept different types of multifamily housing in their neighborhood, people were most accepting of townhouses and starter homes, but well designed apartment buildings and group homes for the disabled were

least accepted. Once again, survey replies were similar to the 1993 Opinion Survey in the visioning report.

Small Groups, May 7, 1996

Future Growth Concerns. Citizens were asked to discuss issues of future growth within their community. Responses were similar to those in the questionnaire. Issues of highest importance included better infrastructure, i.e. transportation, fire and safety, and surface water. All groups expressed concern for the environment, specifically, protecting the lake watershed and stream corridors, as well as preserving open space. Other issues included a need for parks, employment, and affordable housing. All groups were concerned about maintaining area livability and character.

Small Groups, June 25, 1996

Alternatives. Overall, groups favored Alternative 3, particularly because of additional employment opportunities and the increased commercial and industrial tax revenues which will help finance infrastructure. However, citizens expressed concern over the size of the Cavalero Hill center and its compatibility with the neighborhood.

Parks. One group recommended park bonds be used to pay for parks, while another group suggested that parks and open space areas be designed with natural systems.

Multifamily Housing. Two of the three groups proposed that the designated 6-12 dwelling units per acre along Highway 9, shown in all three alternatives, be changed to reflect what primarily exists, 4-6 dwelling units per acre, and relocate the 6-12 designation elsewhere in the UGA. Citizens stated that high density residential be dispersed throughout the UGA. "No high density concentrations like Casino Road."

Design Standards. Citizens expressed that design standards be established for multifamily, commercial, and business parks.

Other Issues. Other issues included shadow platting, surface water drainage, school sites, and market flexibility within centers.

C. May 22, 1997 Public Workshop Summary

Land Use Issues

Citizens were asked to respond to the land use alternatives. Comments were made without the transportation modeling and surface water modeling which will be presented at the May 29th workshop.

Alternatives. Two new alternatives were presented during the small group sessions. The Cavalero Residents for Responsible Growth (CRRG) formally proposed Alternative 4. It is similar to Alternatives 2 and 3, but without a center at Cavalero Hill. Alternative 5 was informally proposed within one group; it was generally defined as no commercial or industrial growth, with a net decrease in population. Many citizens still want a "bedroom community." The "bedroom community" ideal may have prompted the new Alternative 5. However, other citizens stated, "The community cannot sustain itself, if it is only residential."

Commercial and Industrial. While several groups were supportive of industrial development for employment purposes, another group wanted to "increase the commercial base to help revenue needs." Two of the five groups questioned the need for a new center at Cavalero Hill while a center exists at Frontier Village. Feelings were mixed concerning the type and number of centers; some wanted one big center at Frontier Village, while others wanted more small centers. In terms of industrial lands, some questioned the potential of the designated industrial land north of the city center; but others wanted to restrict industrial development to the city and

Employment. Citizens were generally supportive of industrial jobs, particularly high-paying/family-wage jobs. While other citizens opposed development which would yield employment, because they do not feel the need for jobs, others recognized the need for more jobs over a twenty year growth period. Concern was also expressed that incoming employers hire people already living within the area.

Transportation. Comments received concerning transportation included access to and from Frontier Village, traffic on Cavalero Hill (specifically Alternative 3), and the trestle.

Surface Water. Similar to transportation, surface water continued to be an important issue of Cavalero Hill, surface water runoff, soil erosion, and flooding of drainfields leading to their failure and creation of health hazards. Proposed solutions differed from avoiding development to encouraging development, which would bring sewers to the area.

Miscellaneous. It was also proposed that the urban growth area (UGA) boundaries be changed. Citizens did not feel a center at Cavalero Hill was the best use of land. They suggested taking that area out of the UGA and extending the UGA boundaries to include the portion north of Hewlett Packard, therefore "filling in the gap between the Lake Stevens UGA and the Marysville UGA."

High Density Residential

Citizens were asked where they would like to locate high density residential development, 12 to 24 dwelling units per acre. Groups differed in their opinions. One group voted unanimously to disperse multifamily away from urban centers. A recurring comment from workshops past was "No high density concentrations like Casino Road." Three of five groups generally favored multi-family development at centers only, while the fifth group divided their opinion between partially dispersed and entirely at centers. Effective design review standards which will ensure compatibility with the neighborhood was a key issue for all groups. Citizens supporting high density residential at centers, stated the importance of accessibility to transit routes, parks, and shopping.

Parks

The majority of citizens stated that there are too few parks. One citizen submitted a formal proposal for a park site, just outside the UGA. Several groups discussed financing of future parks. Suggestions included forming local improvement districts and parks and making park bonds available. Citizens also recommended increased mitigation fees for developers, development regulations requiring minimum open space, park maintenance by convicts, and citizen volunteer groups. Other groups discussed types of parks, expressing a need for both passive and active parks, specifically neighborhood parks.

Environmental Impacts

SEPA (State Environmental Protection Act) scoping prompted a discussion of environmental issues. Virtually every topic was mentioned. Common topics were noise pollution, surface water, traffic, wildlife habitat, and air pollution. One citizen stated the importance of all environmental topics. "We live in an ecosystem; everything is interrelated."

D. May 29, 1997 Small Group Sessions

At the May 29, 1997, Lake Stevens urban growth area (UGA) public workshop, citizens viewed related maps and displays and heard presentations on transportation, surface water, sewer, and public water. Citizens then divided into three groups to ask questions and express concerns to the appropriate agency representative. The groups primarily functioned in a question-answer format as opposed to past workshops where the small group functioned basically as an opportunity for citizens to voice concerns.

Transportation

Cavalero Hill and the trestle were of greatest concern to citizens with respect to transportation issues. All three groups mentioned these issues. One group questioned if Cavalero Hill was removed from the urban growth area, whether or not transportation costs would be decreased. In terms of proposed development on Cavalero Hill, citizens were concerned about traffic impacts, road design improvements, and safety. In regard to the trestle, citizens primarily asked about the state's progress. They wanted to see more capacity on the trestle before improvements are made in the Lake Stevens subarea.

All groups expressed concern over funding of proposed transportation infrastructure, especially with regard to how much homeowners will pay. Some citizens wanted to see developers pay larger mitigation fees. Other transportation related topics included bike paths, sidewalks, and mass transit.

Surface Water

Many citizens expressed concern over existing surface water problems. Some existing conditions include super-saturation of soil, drainage problems, and flooding. Many of the areas currently flooding are at the top of hills, which creates worse problems at the bottom of hills. Citizens were also concerned about the filling of wetlands and wetland banking, as well as a lack of open space and trees, which they felt might be contributing to existing drainage problems. Fish and wildlife were concerns which people felt would be helped by providing open space corridors. Citizens cited specific locations that are currently experiencing drainage problems, most being adjacent to Cavalero Hill. These existing problems brought about a greater concern for the future, particularly the potential impacts of the proposed development on Cavalero Hill. One citizen suggested a possible solution of balancing the city development regulations with the county's, since the city has stricter guidelines.

Sewer and Public Water

Citizens primarily asked questions about sewer and public water, rather than stating concerns. The most commonly asked questions were related to service in the Cavalero Hill area. Citizens were also concerned about cost of sewer hook-up and whether or not they would be required to hook-up. Questions were also asked about shadow platting and the new treatment facility. In

terms of public water issues, citizens asked about contamination, use of wells, and future supply.

Land Use Alternatives

At the end of the workshop, citizens were asked to vote by a show of hands for their preferred land use alternative. The distribution was as follows:

Table 1-A-1 Characterization of Alternatives

Alternatives	Number of Votes	% of Total Votes	Characterization of Alternatives
Alternative 1	17 votes	38%	Predominately 4-6 DU/Ac with designated Activity Center at Frontier Village and community commercial centers at Tom Thumb and City Center
Alternative 2	5 votes	11%	Frontier Village and Tom Thumb centers expanded from Alternative 1, City Center remains the same as Alternative 1, medium (6-12 DU/Ac) and high (12-24 DU/Ac) density residential replaces previously designated 4-6 DU/Ac, community commercial center introduced at Cavalero Hill
Alternative 3	0 votes	0%	Frontier Village, Tom Thumb, City Center, and medium and high density residential remain the same as Alternative 2, community commercial center at Cavalero Hill expanded from Alternative 2
Alternative 4	9 votes	20%	Similar to Alternative 2, but Cavalero Hill center and adjacent medium density residential (6-12 DU/Ac) is removed
Alternative 5	14 votes	31%	No commercial or industrial growth, with a net decrease in population
Alternative 6	0 votes	0%	Similar to Alternative 3, but access to/from trestle from/to Hewitt denied, in order to allow for safer, smoother traffic flow
Total	45 votes	100%	

Clearly, with approximately 80 in attendance, not everyone voted. Many citizens expressed the view that the information presented was overwhelming. As a result, they may not have felt comfortable choosing a preferred alternative at that time. Interestingly enough, these results are opposite of the opinions held at the June 25, 1996, Lake Stevens workshop, where citizens predominately favored Alternative 3 or a combination of Alternatives 2 and 3.

Throughout the groups, citizens questioned the future growth of the Lake Stevens community. Some did not want growth to occur. While others saw growth already occurring and were concerned about accommodating traffic and providing future locations for schools and parks.

May 29, 1997 Questionnaire

The questionnaire was distributed at the Lake Stevens urban growth area (UGA) public workshop May 29, 1997. Approximately 80 people attended the workshop. A few additional questionnaires were sent per citizen request to those who were unable to attend the workshop. However, only twenty completed questionnaires were received in total. Citizens were asked eight questions. Topics varied from choosing a preferred land use alternative to ranking options for park financing.

Land Use

Before being asked which land use alternative they preferred, citizens were asked how they would shape the way the Lake Stevens area develops, looks, and feels, assuming that growth is inevitable. In response, several citizens stated that they did not want to assume that growth is inevitable. Six of twenty citizens specifically stated that they wanted to limit growth. Eight additional citizens wanted to remove Cavalero Hill from the UGA and/or create a smaller UGA. Two of the eight citizens wanting to remove Cavalero Hill from the UGA, preferred the Planning Commission boundaries recommended July 26, 1994. Six citizens wanted future industrial, commercial and high density residential to develop at existing centers and/or along Highway 9.

Other issues important to citizens included senior housing availability; design standards for industrial, commercial, and high density residential; employment projects; and planning for future schools and parks. In fact, several citizens recommended that Cavalero Hill be used for a school and park site. Opinions on employment varied. Some recommended increasing employment in UGA so people could work near their home, thus minimizing trestle travel; others felt the employment was not necessary and might encourage people to move to the area.

In terms of how the Lake Stevens area should look and feel, common responses included "quaint," "small town atmosphere," and a "rural feeling." "Quality of life" was very important to citizens. One citizen suggested maintaining wooded buffers around the UGA, separating the urban from the rural.

Alternatives

Citizens were then asked which alternative they preferred and why. Alternatives 1, 2, and 3 were prepared by Snohomish County Planning and Development Services jointly with the City of Lake Stevens. All three were presented at the May 22 and 29 workshops. During the course of the workshops, Alternatives 4, 5 and 6 were proposed by citizens. As a result, some citizens responding to the question may not have been familiar with Alternatives 4, 5, and/or 6.

In tallying the responses, eight of the twenty did not indicate a preference or stated that they did not prefer any of the alternatives. Of the remaining twelve responses, five preferred Alternative 1, two for Alternative 2, four for Alternative 4, and one for Alternative 5. Supporting Alternative 1, citizens stated that Alternative 1 was equivalent to the "lowest rate of growth" and the "least amount of roads and land destruction." Opposing Alternative 1, citizens stated, "It conflicts with some GMA requirements," and "It needs to show expansion in the three existing centers."

With respect to Alternative 2, one citizen stated that it "achieves moderate job growth to help fund infrastructure;" but in opposition, another citizen stated that the center proposed at Cavalero Hill was "unacceptable." Although no one preferred Alternative 3, one citizen did state that it was "too extreme."

Citizens supporting Alternative 4 stated, "There is not a commercial center at Cavalero Hill," and "It will allow for a bedroom community." Alternative 4 was proposed by the Cavalero Residents for Responsible Growth. According to their written proposal, it is similar to Alternative 2, but without the Cavalero Hill center and adjacent medium density. Alternative 5 was informally proposed within a small group at the May 22, 1997 workshop. It was generally defined as a net decrease in population, without commercial or industrial growth. Alternative 6 was distributed by a citizen to some attendees and staff members at the May 29, 1997 workshop. It appears to be similar to Alternative 3 with transportation changes. Specifically, there would be no access to and from the trestle at Hewitt, thus creating smoother and safertraffic flow. One citizen who preferred Alternative 4, stated that Alternatives 5 or 6 would be acceptable, although Alternative 6 appeared "logistically difficult."

Parks and Recreation

The third question asked citizens to indicate from a list which park and recreation facilities should be given priority. Choices provided on the questionnaire were as follows: linear trails, athletic fields, playgrounds, recreation centers, community swimming pool, neighborhood parks, and regional parks. Linear trails and neighborhood parks received highest priority, with regional parks and athletic fields falling shortly behind. Playgrounds and community swimming pool received the fewest votes. No one voted for a recreational center. Not listed on the questionnaire, but suggested by five of the twenty citizens, was the importance of preserving natural areas.

The following question related to the financing of parks. Financial options included private, county acquisition, city acquisition, joint school and park, developer required to put in neighborhood parks, and developer impact fees. The highest ranked responses were the developer related options. One citizen even stated that people would be willing to pay a higher price for a home if nearby parks were available.

Transportation

Citizens were also asked about transportation, more specifically, projects which should receive the most funding. The Hewitt Avenue Trestle and "fixing" Frontier Village were the most common responses. Other answers included sidewalks, shoulders, better local road grid, bus service, and bike lanes.

Surface Water

Following transportation, citizens were asked to cite areas with drainage problems. Of the seventeen responses, twelve stated Cavalero Hill. Specific Cavalero Hill sites included 32nd Street SE and 95th Avenue SE, Sunnyside Boulevard, and 10th Street SE. White Oak's and Crestline Estates subdivisions, just west of Cavalero Hill, were noted several times.

Public Water

Citizens stated concerns about the public water supply in response to Question #7. The most common issues were water quality; pollution of wells, also related to water quality; and the ability of the water supply to support future population.

Sewer

Concerns over the future sewer system differed. While some citizens did not want sewer hook-up, others wanted sewer lines to extend to their neighborhood. Cost to citizens was an issue, as well as the need for a new sewage treatment facility. Pollution and health were also concerns. Two citizens felt that composting toilets should be required of new developments.

Overall, citizens responding to the questionnaire were concerned about the environment and the future of the urban growth area. Several citizens recommended that the development be slowed, if not stopped, until the planning process is complete.

E. Community Summits 6/97-8/97

The City of Lake Stevens hosted the following Community Summits:

- June 21, 1997
- August 27, 1997
- September 24, 1997

Community Summit I--June 21, 1997

The first community summit brought together representatives from the City of Lake Stevens and Snohomish County government, special districts (sewer, water, schools, fire, etc.), Business Associations (Chamber of Commerce, etc.), and citizens within the greater Lake Stevens Area. The meeting was chaired by Charlie Earl. Topics discussed included Current Urban Growth Issues and Trends, Implications and Risks of Current Growth on Services/Jobs, and Developing a Leadership Response Strategy. The results of the meeting were compiled into a report titled "City of Lake Stevens Community Summit June 21, 1997." The Summit was attended by 43 participants.

Community Summit II--August 27, 1997

The second Community Summit focused developing a vision statement for the Lake Stevens UGA. Participants at the meeting were asked to complete a two-page Vision Worksheet on which they were to list the three things they liked most about Lake Stevens, the three things they like least, and to make notes under a series of eleven topical headings designed to prompt their thinking about their vision of our community. After sharing a few responses with all participants, those in attendance broke into two groups for more detailed sharing and discussion of what people had recorded on the worksheets. Following an hour's discussion, each group made a presentation from their recorded notes to all participants.

Community Summit III--September 24, 1997

The third Community Summit on September 24, 1997 focused on reports from the neighborhood meetings, review of the visioning exercise, status of the phase II UGA plan and where to go from here. The results of the visioning portion of the summit were summed up in the following vision statement.

> Lake Stevens is a full-service suburban community surrounding a thousand-acre lake with abundant greenery and mountain vistas in all directions. It has a family-oriented civic life built around strong neighborhoods, quality schools, and a first-class system of

parks and public spaces. Shopping, family-wage jobs and higher density housing are concentrated at [three or four] centers, each with its own design-sensitive character. A variety of lower-density detached housing opportunities fill in the spaces between the centers, separated by natural green corridors. Urban standard roads with curbs, gutters and sidewalks and a system of trails link the neighborhoods and centers.

F. Public Workshops 8/97-11/97

The City of Lake Stevens hosted the following public workshops:

- August 21, 1997 North neighborhood meeting
- August 28, 1997 South neighborhood meeting
- September 4, 1997 West neighborhood meeting
- October 16, 1997 Community meeting
- November 20, 1997 Community meeting

Summary of Neighborhood Meetings

The meetings were advertised by targeted saturation mailings to al addresses and post office boxes in the UGA - a total of 9,600 notices. A total of 209 citizens attended the meetings, a few more that once.

Following brief staff presentations on the process and key issues in the phase II plan, the bulk of all three meetings was taken up answering questions and hearing comments. Citizen comments were recorded and transcribed into a list of 115 statements for analysis.

In reviewing all this material, six common themes were repeated over and over again:

- Substandard roads can't handle the traffic.
- If we need more jobs in the community, they should be high paying and near existing job centers.
- Governance is fragmented and uncoordinated. Nobody is in charge.
- The planning is moving too fast without enough citizen participation. Growth should be stopped until the plan is complete.
- Citizens don't feel part of the process. Their comments are ignored.
- We moved here for the rural character and don't want to change.

While there certainly was not universal agreement on any of these six points (except, perhaps the first one), the greatest weight of common opinion and sentiment supported these six points. It is interesting to note that three of the points are about the planning process (3, 4, and 5), and three are about the substance of the plan.

Summary of Community Meetings

In October 1997 the city hosted a community meeting to present a city staff alternative. This alternative addressed the above six concerns from the neighborhood meetings. Citizen feedback to the staff alternative was generally negative. The meeting also included a citizen survey asking for feedback on the draft vision statement and how many centers and uses within the centers were desired.

The survey asked two questions, "What elements should be included in the Vision Statement?" and "Which centers and what land uses in each?" In the first question, citizens were asked to pick out key phrases from the vision statement and rate them ("keep it, take it out or amend it"). The results are summarized in Table C-2 below:

Table 1-A-2 Summary Public Workshop Survey Question 1

Element	Favorable Response
Accept (keep it):	
Quality Schools	87%
Abundant greenery	86%
Mountain vistas	85%
Thousand-acre lake	83%
Preserved natural corridors	79%
Strong neighborhoods	76%
Family-oriented civic life	72%
OK, but...(amend it)	
Variety of housing styles	65%
Trail system	63%
Design-sensitive character	60%
First class park system	58%
Urban street standards	52%
Reject (take it out)	
Family-wage jobs	28%
Full-Service Community	24%
Multiple Centers	22%

The second question in the survey presented a list of centers and uses in each (Shopping, Family-wage jobs, High Density Housing and No Center Here). Citizens were asked to pick the location of centers and types of uses within each. The responses are as follows.

Table 1-A-3 Summary of Public Workshop Survey Question 2

Centers	Shopping	Family-Wage Jobs	High Density Housing	No Center Here
Frontier Village	131	47	53	9
Downtown Lake Stevens	119	51	33	9
Tom Thumb	58	18	15	67
Cavalero Hill	25	25	19	117
Hewlett-Packard	19	93	27	17
Hartford	25	57	34	32

In November 1997 the city hosted a fifth Community meeting. The meeting focused on educating the citizens on GMA, Comprehensive Planning, Zoning and Urban Design. Other topics of discussion included a summary of the October meeting, presentation of city preferred commercial and employment land needs and next steps in the planning process.

G. Facilitated Community Meetings

In February 1998, the County and City held a series of community meetings to gain public comment on the three alternative plan concepts and draft SEIS, and to attempt to gain consensus on a preferred alternative. The process utilized the services of a facilitator to assist in gaining consensus on a preferred alternative. As an outgrowth of the process the County developed three additional alternatives (4, 5 and 6) to address concerns of the City of Lake Stevens and the public regarding population growth rates and employment estimates, parks and open space, and transportation concurrency issues. Volume 2 of the Draft Lake Stevens UGA Plan Alternatives and SEIS was issued in October 1998 and presents the analysis of Alternatives 4, 5, and 6. Please refer to the Report on Community Meetings Regarding land Use and Related Issues of Growth Management in the Lake Stevens Urban Growth Area for more information on the facilitated meetings.

Appendix 2-A

2012 Population Calculation Analysis

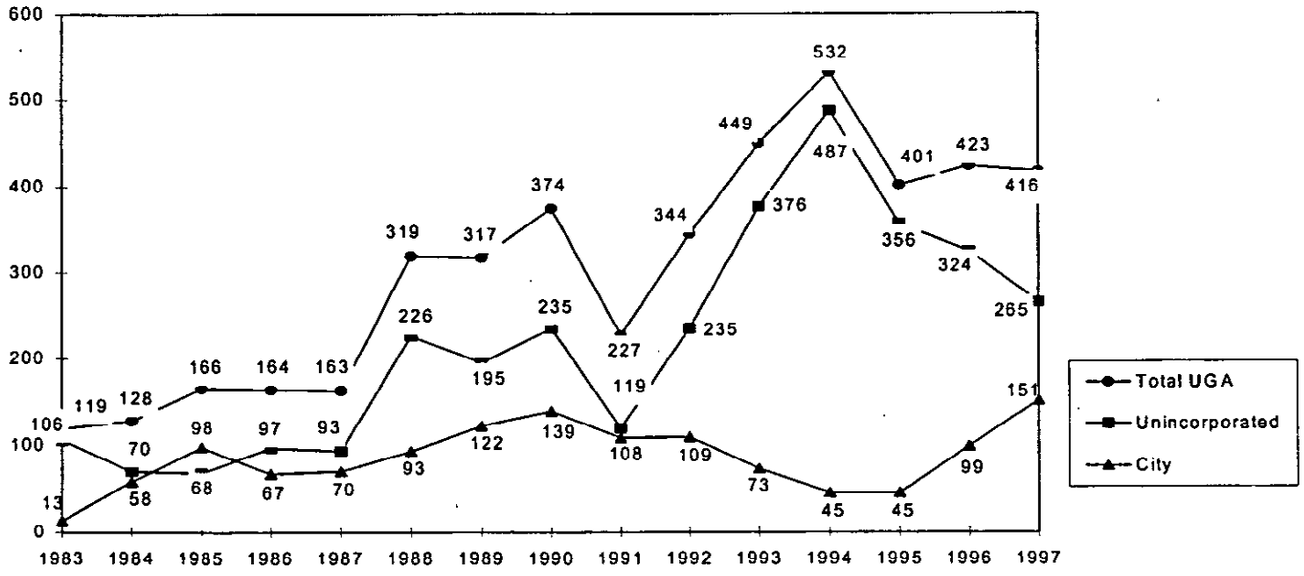
Revised 2012 Population Forecast

To develop a new 2012 target population, County planners started by looking at trends in building permits issued for new housing in the Lake Stevens UGA since 1990. Since 1990, the average number of housing units permitted per year was 396. Planners then analyzed residential building permit data prior to 1990 in order to derive an average development activity level over a longer period of time, consequently reflecting the building/business cycle observed in the Lake Stevens area. The number of housing units permitted since 1983 averaged 303 per year in the Lake Stevens UGA. This measurement covers 15 years of development activity (1983-1997), and includes both permit peaks and troughs. Figure 2-A-1 shows the 15 years of building permits used in the analysis.

New growth projections assume that development will continue at the average rate of the past 15 years, 303 permits per year. Assuming the same development trend continues, the population will grow to 31,062 within the Lake Stevens UGA by 2012. This compares with the SCT forecast.

Table 2-A-1

Lake Stevens UGA
Housing Units Authorized by Building Permit, 1983-97



Appendix 3-A

Rationale for Land Use

A. Introduction

Effective implementation of this UGA plan depends on having clear understanding of the map over time. Eventually, the County will need to revise the plan. That future revision will also rely on the map and its designations being well understood.

The Land Use Plan Map is the visual expression of the community's goals. If it isunclear, the goals become muddied also. The map sets forth detailed land use densities for the unincorporated UGA.

The GPP is the policy basis behind each land use designation on the map. It sets forth the criteria for designating each area a particular land use. As this plan was developed, additional criteria particular to this plan were developed for each designation. These criteria are discussed below.

There were some overriding criteria used to designate the land use for an area. One criterion was if the predominant use was similar to the land use designation. Other reasons included the type and location of environmental constraints, compatibility with surrounding uses, availability of urban services and the type of existing or planned street network.

There were criteria, also, for locating the boundaries of each land use designation. Criteria for placing boundaries included following edges of land ownership where possible (usually parcel boundaries). Where there were environmental constraints, the boundaries tried to follow the approximate edges of the constrained areas to avoid splitting parcels. Existing or proposed street alignment was also, typically, used as a boundary for designations. Edges of existing subdivisions and the UGA boundary also acted as boundaries.

The zoning applied to an area should act as a further illumination of the map and the community's goals. There should be consistency between zoning and the plan. The discussion below explains how the land use designations were defined and then zoning applied so that consistency would be maintained.

The following rationale was used for assigning land use designations and zoning.

B. Residential

The purpose of the Urban Residential designation is to provide opportunities for housing. The density ranges shown below indicate the allowable number of dwelling units per acre. These are further defined by the zoning applied. There are four residential designations used in this plan.

1. Urban Low Density Residential-4 (ULDR; 4 dwelling units per acre [DU/Ac]).

This designation is intended for single family detached housing developments on larger lot sizes with a provision for other housing types, such as accessory apartments, that are compatible with single family neighborhoods.

These ULDR areas are different from the ULDR-6 areas in that many have environmental constraints and/or are not fully served yet by necessary services, utilities and roads. It is appropriate for these areas to remain in the UGA because of the need to maintain regular UGA boundaries or logical extension of services.

In these cases, where there were environmental constraints or limited existing services, the plan designated the area for ULDR-4. These areas are proposed for R-9,600 or R-20,000 zoning. (R-20,000 zoning is appropriate only in areas that are limited due to environmental constraints.) PRD zoning is not proposed for these areas because of the constraints on services that would result from the additional density allowed in PRDs.

2. Urban Low Density Residential-6 (ULDR; 6 dwelling units per acre [DU/Ac]).

This designation is, also, intended for single family detached housing developments with a provision for other housing types, such as accessory apartments, that are compatible with single family neighborhoods. Rationale used, in addition to the GPP, to designate these areas ULDR-6 was that they were marked by pasture or rural lots as opposed to forests and did not have significant environmental constraints. Also, these areas generally are served or can be served by a connected roadway grid and other necessary urban services eventually. The zoning proposed for these areas is R-7,200 and PRD-7,200.

3. Urban Medium Density Residential (UMDR: 6 to 12 dwelling units per acre).

This designation is intended for detached homes on small lots, as well as townhouses, and low density, multi-family developments. Rationale used in addition to the GPP to designate these areas UMDR was that they were adjacent to Centers or transportation corridors.

The UMDR areas next to a Neighborhood, Community or Activity Center should be zoned for the highest density (12 dwelling units per acre). In that way they provide a transition of density between the center and lower density residential areas. Areas not near a Center, but located on a collector or arterial street, should be zoned 9 dwelling units per acre. Areas of infill should be zoned for 6 units per acre to ensure compatibility. Development in these areas should meet the minimum net density of the zoning applied to that property.

4. Urban High Density Residential (UHDR: 12 to 24 dwelling units per acre).

This designation allows higher density residential land uses such as townhouses and apartments. Lands designated for 12-24 DU/Ac are either part of a Center or are abutting both medium density residential and an arterial. Where applicable, they are also near transit stations, medical facilities, urban centers, and recreational amenities.

Rationale used in addition to the GPP to designate these areas UHDR included using UHDR when there were large, vacant parcels adjacent to Centers. They were designated UHDR, also, when there were smaller, underdeveloped parcels that might be assembled for one development application. Whole areas of smaller, underdeveloped parcels adjacent to Centers

were also designated UHDR. In addition, because this UGA is already deficit in the amount of designated UHDR, when a parcel appeared to have potential for several designations greater weight was given to the UHDR potential.

The properties located in a designated center that were vacant or had potential for redevelopment are proposed for zoning at the higher end of this designation (MR zoning). Areas not in centers and/or that are composed of small parcels are zoned at the lower end of the designation (LDMR). Development in these areas should meet the minimum net density of the zoning applied to that property.

C. Commercial

The purpose of the Commercial designations is to recognize existing retail and office uses and to discourage piecemeal and strip commercial development. In this plan, these areas are intended to provide safe, attractive and convenient services and shopping opportunities for the residents of the Lake Stevens UGA and the surrounding market area. Commercial land is also a source of needed jobs for the UGA. There is one designation used in this plan and there are two implementing zones:

1. *Urban Commercial (UC).* This designation, along with proposed Planned Community Business zoning (PCB), is intended for retail and commercial uses in existing centers as well as highway service areas. It is intended to produce pedestrian retail oriented activity with automobile uses on the periphery of the center. Rationale used in addition to the GPP to designate these areas UC with PCB zoning was that there were existing commercial uses and/or a need for additional uses to serve the community area and UGA.

2. Urban Commercial designation with Neighborhood Business (NB) zoning was proposed for two small existing sites in the Lundeen and Cavalero Hill neighborhoods. It is intended to provide an area for retail and service uses needed by the immediate neighborhood. Rationale used in addition to the GPP to designate these areas was that they were existing uses providing necessary services to the immediately surrounding neighborhood. Rationale also included that there was water service available and good visibility from a road serving the neighborhood.

NB zoning was used because it permits only smaller neighborhood commercial uses and discourages larger auto-oriented commercial uses.

D. Industrial

The purpose of the Industrial designation is to provide for a variety of industrial uses that are compatible with the environment and provide necessary employment land to meet future employment growth targets within the UGA.

Urban Industrial (UI). This designation is intended for a range of light industrial and business park uses in this plan. It is used in areas where there should be a mix of office and business park uses in a campus style development. Rationale used in addition to the GPP to designate these areas was that there were large, vacant parcels available for development. If there were several smaller vacant parcels that could be assembled under one application, that area was also designated UI.

Business Park zoning is used in all areas to provide for better site design and discourage outdoor oriented industrial uses. All development will be subject to approval of a site development plan upon being zoned BP.

E. Public Use

The *Public Use (PU)* designation was applied to existing developed public uses and/or facilities within the unincorporated UGA. These existing uses included parks, schools, fire stations, water utility facilities and phone facilities. These uses require land in dispersed sites throughout the UGA. Public services have important environmental, health, safety, and aesthetic considerations that are associated with their location and provision. The land use plan only designates PU where a site is developed as an existing public use or is owned by a public entity and committed to develop a capital plan. Properties designated Public Use will retain existing zoning.

Appendix 5-A

Potential Traffic Signal Projects

As part of the recommended road and street improvements identified in this plan, a listing of potential signalization projects was identified. This was accomplished by the consultant team, which prepared intersection-level traffic forecasts and analyzed them in terms of the existing capacity to handle traffic, and what additional capacity would be needed for future land use in the Lake Stevens UGA. Where nonsignalized intersections were found to be unable to handle future traffic volume forecasts, or where two roadways would be upgraded to arterials, with possible traffic conflicts thereby created, potential signalization projects were identified. Unless noted otherwise, these have been included in the cost estimates prepared for the UGA Plan and are shown in the Figure 5-2, the Arterial Circulation Plan for 2012, and Figure 5-3, which shows the locations of roadway improvement projects. The complete inventory of existing and proposed signals which would be needed by 2012 are listed below:

Table 5-A-1: TRAFFIC SIGNAL SUMMARY

INTERSECTION LOCATION	Project ID	STATUS OF SIGNAL IN PLAN			
		1999	2006	2012	Beyond 2012
SR-9 @ SR-92	N/A	Yes	Yes	Yes	Yes
SR-9 @ Soper Hill Road	N/A	Yes	Yes	Yes	Yes
SR-9 @ Lundeen Parkway	N/A	Yes	Yes	Yes	Yes
SR-9 @ SR-204	N/A	Yes	Yes	Yes	Yes
SR-9 @ Market Place	N/A	Yes	Yes	Yes	Yes
SR-9 @ 20th Street SE	N/A	Yes	Yes	Yes	Yes
SR-204 @ 91st Avenue NE	N/A	Yes	Yes	Yes	Yes
Market Place @ 91st Avenue NE/SE	N/A	Yes	Yes	Yes	Yes
SR-204 @ Market / Lundeen	NR-3	--	Yes	Yes	Yes
20TH Street SE @ 91st Avenue SE	AC/O-3	--	Yes	Yes	Yes
20th Street SE @ S. Lk. Stevens Rd	AC/O-1	--	Yes	Yes	Yes
Lundeen Pkwy @ Soper / Vernon	AC/O-5	--	Yes	Yes	Yes
SR-92 @ 99th Avenue NE	WS-4	--	Yes	Yes	Yes
SR-204 @ 81st Avenue NE	NR-6	--	--	Yes	Yes
20th Street SE @ 79th Avenue SE	NR-5	--	--	Yes	Yes
Market Place @ 99th Avenue NE/SE	AS-1	--	--	--	Yes
SR-92 @ Grade Rd. / Callow Rd.	WS-4	--	--	--	Yes
TOTAL NUMBER OF SIGNALS		**8**	**13**	**15**	**17**

Note that although this analysis identified potential new signalized intersections, it should not replace the signal warrant analyses which would normally be a part of a final design study. In other words, even though a signal is listed above, traffic volumes may not necessarily dictate the installation of a signal by 2012. Conversely, some other locations not identified in Figures 5-2

and 5-3, and may require a traffic signal. This would include intersections of new roads, existing roads upgraded to arterial standards, land use development which generates a high amount of truck traffic, or unforeseen changes to the traffic patterns around the Lake Stevens UGA.

The consultant's traffic study identified one signal location not included in the project cost lists, at 20th Street SE and Cavalero Road. This location may prove problematic to signalize, however, given the steep grade and limited sight distance immediately west of the intersection. Development circulation within this area should be focused on the proposed signal at 79th Avenue SE and 20th Street SE; traffic studies completed as part of the proposals should compare the traffic flow and safety issues under alternative access scenarios, in order to more precisely determine the best access plan.

Included in the signals identified at county and state roadway intersections is the signalization project from the City of Lake Stevens. City staff listed the signal at the intersection of SR-92 and Grade Road as one of the city's long-term (completed by 2012) road improvement projects. This was consistent with the consultant's traffic study as well, and has therefore been included in the potential traffic signals table, and listed in the project lists for the UGA Plan, as a state project. With the consultants analysis focusing on facilities within the UGA, as opposed to within city limits, there could be additional signalization needs in the City of Lake Stevens not identified here.

Appendix 5-B

Lake Stevens UGA – Revised Project List

Appendix 5-B
LAKE STEVENS SUBAREA STUDY: PROJECT LIST
Project Costs, All Jurisdictions

ID Num	Facility	Location	Construction +	Engineering +	Right of Way =	SUBTOTAL -	Access ROW =	TOTAL COST
PROJECTS WITH FUNDING IN ACP/TIP								
Snohomish County Projects:								
AC/O-1	SR-9	So. Lake Stevens Road	3,026,600	1,210,600	1,194,200	5,431,400	0	5,431,400
AC/O-3	20th St. SE	Cavalero Rd. to SR-9	1,880,000	715,200	2,822,800	5,418,000	0	5,418,000
NR-3	Lundeen Pkwy Ext.	Lundeen terminus to SR-204	5,406,200	173,800	0	5,580,000	0	5,580,000
Subtotal:	*3 Projects*		*10,312,800*	*2,099,600*	*4,017,000*	*16,429,400*	*0*	*16,429,400*
City of Lake Stevens Projects:								
LS-1	16th St NE	127th Ave NE to 130th Ave NE	34,000	8,000	13,000	55,000	0	55,000
LS-2	E Lakeshore Dr	Main St to 12th St SE	17,000	4,000	6,000	27,000	0	27,000
LS-3	Grade Road	20th St NE to 22nd St NE	208,000	47,000	80,000	335,000	0	335,000
LS-4	20th St NE	116th Ave NE to West City Limit	918,000	207,000	355,000	1,480,000	0	1,480,000
Subtotal:	*4 Projects*		*1,177,000*	*266,000*	*454,000*	*1,897,000*	*0*	*1,897,000*
WSDOT Projects:								
WS-1-3	SR-2	at I-5 and at SR-204	50,000,000	0	0	50,000,000	0	50,000,000
Subtotal:	*1 Project*		*50,000,000*	*0*	*0*	*50,000,000*	0	*50,000,000*
Total:	**8 Projects**		*61,489,800*	*2,365,600*	*4,471,000*	*68,326,400*	*0*	*68,326,400*
PROJECTS WHICH MITIGATE LOS AND IRC								
Snohomish County Projects:								
AS-2b	Vernon Road	Davies Road to SR-9	159,554	63,794	330,652	554,000	218,594	335,406
AS-3	4th St. NE	92nd Ave. NE to 99th Ave. NE	516,700	206,700	749,300	1,472,700	348,700	1,124,000
AS-5	91st Ave. SE	20th St. SE to Market Place	1,849,800	739,900	1,220,900	3,810,600	0	3,810,600

Appendix 5-B
LAKE STEVENS SUBAREA STUDY: PROJECT LIST
Project Costs, All Jurisdictions

ID Num	Facility	Location	Construction +	Engineering +	Right of Way =	SUBTOTAL -	Access ROW =	TOTAL COST
AS-6	92nd Ave. NE	SR-204 to 4th St. NE	329,700	131,900	214,300	**675,900**	0	**675,900**
AS-7	Lake View Dr/20 St NE	Lundeen Park Wy to Lk Stevens C/L	685,200	274,100	1,852,300	**2,811,600**	400,000	**2,411,600**
AC-1	99th Ave. NE/SE	4th St. NE to 20th St. SE	2,317,300	926,900	1,354,500	**4,598,700**	0	**4,598,700**
AC/O-3	20th St. SE	Cavalero Rd. to SR-9	1,776,600	675,800	2,667,400	**5,119,800**	0	**5,119,800**
AC/O-4	20th St. SE	SR-2 Ramps to Cavalero Rd.	462,000	184,800	472,900	**1,119,700**	0	**1,119,700**
AC/O-5	Lundeen Pkwy	500' East of SR-9 to intersection	169,400	67,800	136,700	**373,900**	0	**373,900**
AC/O-5	Lundeen Pkwy	SR-9 to 99th Ave. NE	1,774,100	709,700	792,500	**3,276,300**	0	**3,276,300**
AC/O-6	91st Ave. NE/SE	Market Place to SR-204	214,900	86,000	701,000	**1,001,900**	288,100	**713,800**
Subtotal:	*11 Projects*		*10,255,254*	*4,067,394*	*10,492,452*	***24,815,100***	*1,255,394*	***23,559,706***
WSDOT Projects:								
WS-4	SR-9	500' South of Market Pl to Int.	77,700	31,100	223,700	**332,500**	0	**332,500**
WS-4	SR-9	at SR-92	354,100	141,600	209,800	**705,500**	0	**705,500**
WS-4	SR-92	at 99th Avenue NE	432,200	172,900	80,900	**686,000**	0	**686,000**
WS-5	SR-9	500' N of SR-204 to SR-204	167,600	67,000	310,400	**545,000**	0	**545,000**
WS-6	SR-204	SR-2 to SR-9	3,283,800	1,247,800	3,668,400	**8,200,000**	0	**8,200,000**
WS-7	SR-9	20th St. SE to Market Pl.	2,201,700	880,700	2,852,200	**5,934,600**	0	**5,934,600**
WS-7	SR-9	32nd St. SE to 20th St. SE	1,264,600	505,900	1,020,100	**2,790,600**	0	**2,790,600**
WS-7	SR-9	Lundeen Pk Way to SR-92	2,015,100	806,000	2,140,900	**4,962,000**	0	**4,962,000**
WS-10	SR-2	I-5 to SR-204	80,000,000	0	0	**80,000,000**	0	**80,000,000**
Subtotal:	*9 Projects*		*89,796,800*	*3,853,000*	*10,506,400*	***104,156,200***	*0*	***104,156,200***
Total:	**20 Projects**		100,052,054	7,920,394	20,998,852	**128,971,300**	1,255,394	**127,715,906**

OTHER ENHANCEMENT PROJECTS

Appendix 5-B
LAKE STEVENS SUBAREA STUDY: PROJECT LIST
Project Costs, All Jurisdictions

ID Num	Facility	Location	Construction +	Engineering +	Right of Way =	SUBTOTAL -	Access ROW =	TOTAL COST
Snohomish County Projects:								
AS-1	Chapel Hill Road	Davies Rd. to 99th Ave. SE	959,400	383,800	1,169,000	2,512,200	652,900	1,859,300
AS-2a	Vernon Road	Lundeen Park Way to SR-9	522,746	209,106	1,657,348	2,389,200	942,906	1,446,294
AS-4	4th St. SE	SR-9 to 99th Ave. SE	434,400	173,700	554,700	1,162,800	196,400	966,400
AS-8	S/E Lk Stevens Rd	Machias Cutoff to Lk Stevens C/L	2,374,000	949,600	4,389,200	7,712,800	962,400	6,750,400
AS-9	103rd Ave SE	S. Lk Stevens Rd. to 32nd St SE	785,400	314,200	1,550,700	2,650,300	905,700	1,744,600
AS-10	10th St. SE	SR-204 to 79th Ave. SE	482,400	193,000	1,191,900	1,867,300	780,100	1,087,200
AS-11	4th St. SE	81st Ave. SE to 83rd Ave. SE	185,600	74,200	323,900	583,700	157,100	426,600
AS-12	Soper Hill Rd	Lundeen Park Wy to SR-9	833,700	333,500	1,006,900	2,174,100	265,200	1,908,900
AS-13	Callow Rd	Lundeen Park Wy to SR-92	1,225,100	490,100	2,037,700	3,752,900	1,081,200	2,671,700
AS-14	Machias Cutoff	E Lk Stevens Rd to 123rd Ave NE	1,100,300	440,100	981,300	2,521,700	96,900	2,424,800
AS-15	Cavalero Rd	20th St SE to UGA line	506,800	202,700	222,900	932,400	0	932,400
AS-16	Lake Dr	Soper Hill Rd to SR-92	946,400	378,600	1,608,100	2,933,100	834,700	2,098,400
AC-2	S Lk Stevens Rd	SR-9 to 20th St SE	981,800	392,700	845,400	2,219,900	0	2,219,900
AC-2	S Lk Stevens Rd.	20 St SE to Machias Cutoff	1,741,200	696,500	3,010,500	5,448,200	759,300	4,688,900
AC-3	S/N Davies Rd	S Lk Stevens Rd to Vernon Rd	3,058,600	1,162,300	6,110,700	10,331,600	2,919,300	7,412,300
AC-4	79th Ave. SE	20th St SE to 8th St. SE	1,169,350	467,739	1,749,411	3,386,500	497,600	2,888,900
AC-5	99th Ave SE	20th Ave SE to S. Lk Stevens Rd.	282,600	113,100	415,000	810,700	200,300	610,400
AC-6	Vernon Road	SR-9 to Lundeen Parkway Ext.	654,700	261,900	2,015,500	2,932,100	1,030,700	1,901,400
AC-7	83rd Ave. SE	20th St. SE to 4th St. SE	1,008,400	403,400	2,112,300	3,524,100	1,309,400	2,214,700
AC-8	131st Ave NE	16th St NE to 2nd St SE	1,198,400	479,400	2,906,500	4,584,300	1,349,900	3,234,400
AC-9	2nd St SE	131st Ave NE to 123rd Ave SE	422,500	169,000	1,171,600	1,763,100	544,000	1,219,100
AC-10	Nyden Farms Rd	2nd St SE to 4th St SE	426,900	170,800	788,200	1,385,900	361,400	1,024,500
AC-11	Purple Pennant Rd	E Lk Stevens Rd to Nyden Farms Rd	216,500	86,600	453,300	756,400	261,900	494,500

Appendix 5-B
LAKE STEVENS SUBAREA STUDY: PROJECT LIST
Project Costs, All Jurisdictions

ID Num	Facility	Location	Construction +	Engineering +	Right of Way =	SUBTOTAL -	Access ROW =	TOTAL COST
AC-12	4th St NE	N Nyden Farms Rd to 131st Ave NE	652,700	261,100	1,399,400	**2,313,200**	772,000	**1,541,200**
AC-13	123rd Ave SE	2nd St SE to Machias Cutoff	828,300	331,300	2,023,000	**3,182,600**	950,400	**2,232,200**
AC-14	8th St SE	79th Ave SE to 91st St. SE	1,049,900	420,000	1,204,900	**2,674,800**	382,400	**2,292,400**
AC-15	32nd St SE	103rd Ave SE to 91st Ave SE	629,000	251,600	432,400	**1,313,000**	0	**1,313,000**
AC-16	81st Ave. NE / Vernon Rd	Lundeen Pkwy Ext. to SR-204	1,354,000	541,600	2,782,600	**4,678,200**	1,033,300	**3,644,900**
AC-17	99 Ave NE	SR-92 to Lundeen Park Wy	1,222,700	489,100	2,273,400	**3,985,200**	1,209,800	**2,775,400**
AC/O-2	20th St SE	S Lk Stevens Rd to Williams Rd	2,233,600	893,400	2,105,000	**5,232,000**	0	**5,232,000**
NR-1	87th Ave. SE	4th St. SE to Market Pl. Ext.	400,400	160,200	1,033,400	**1,594,000**	491,000	**1,103,000**
NR-2	83rd Ave. NE	Lundeen Pk Wy to Soper Hill Rd.	3,475,500	1,390,200	3,519,300	**8,385,000**	2,090,600	**6,294,400**
NR-5	79th Ave SE Ext.	20th St SE to 24th St SE Ext	766,900	306,800	903,800	**1,977,500**	572,900	**1,404,600**
NR-6	79th Ave. SE	8th St. SE to SR-204	1,117,673	447,126	3,099,759	**4,664,700**	1,558,000	**3,106,700**
NR-7	4th St. SE Ext.	83rd Ave. SE to 91st Ave. SE	1,113,500	445,400	1,660,200	**3,219,100**	942,800	**2,276,300**
NR-8	24th St SE Ext.	SR-9 to 79th Ave SE	1,736,000	694,400	4,064,100	**6,494,500**	3,116,400	**3,378,100**
NR-9	83rd Ave SE Ext.	20th St SE to 24th St SE Ext	456,300	182,500	1,318,800	**1,957,600**	982,100	**975,500**
NR-10	91st Ave SE Ext.	20th St SE to 32nd St SE	1,253,100	501,200	2,329,300	**4,083,600**	1,634,900	**2,448,700**
NR-11	12th St SE	79th Ave SE to 83rd Ave SE	358,400	143,400	1,275,500	**1,777,300**	982,100	**795,200**
NR-12	Cavalero Road	20th St. SE to 10th St. SE	993,200	397,300	3,146,100	**4,536,600**	2,474,800	**2,061,800**
NR-13	87th Ave SE	8th St SE to 20th St SE	1,486,200	594,500	3,321,700	**5,402,400**	2,388,400	**3,014,000**
Subtotal:	*41 Projects*		*42,644,569*	*16,997,171*	*76,164,718*	***135,806,600***	*37,691,206*	***98,115,394***
City of Lake Stevens Projects:								
LS-5	E Lakeshore Dr	Main St to South City Limit	372,000	84,000	144,000	**600,000**	0	**600,000**
LS-6	Grade Road	22nd St NE to North City Limit	1,869,000	422,000	724,000	**3,015,000**	0	**3,015,000**

Appendix 5-B
LAKE STEVENS SUBAREA STUDY: PROJECT LIST
Project Costs, All Jurisdictions

ID Num	Facility	Location	Construction +	Engineering +	Right of Way =	SUBTOTAL -	Access ROW =	TOTAL COST
LS-7	Hartford Dr	Grade Rd to Old Hartford Rd	1,228,000	277,000	475,000	**1,980,000**	0	**1,980,000**
LS-8	16th St NE	Main St to East City Limit	908,000	205,000	352,000	**1,465,000**	0	**1,465,000**
LS-9	Main St	16th St NE to N of 18th St NE	512,000	115,000	198,000	**825,000**	0	**825,000**
LS-10	20th St NE	Main St to East City Limit	2,353,000	531,000	911,000	**3,795,000**	0	**3,795,000**
LS-12	20th St NE	Main St 116th Ave NE	419,000	94,000	162,000	**675,000**	0	**675,000**
LS-13	N Lakeshore Dr	West City Limit to Main St	648,000	146,000	251,000	**1,045,000**	0	**1,045,000**
Subtotal:	*8 Projects*		*8,309,000*	*1,874,000*	*3,217,000*	***13,400,000***	*0*	***13,400,000***
WSDOT Projects:								
WS-4	SR-92	500' W of Grade to 500' E of Grade	432,200	172,900	80,900	**686,000**	0	**686,000**
WS-4	SR-92	SR-9 to 500' E of SR-9	75,600	30,300	11,100	**117,000**	0	**117,000**
Subtotal:	*2 Projects*		*507,800*	*203,200*	*92,000*	***803,000***	*0*	***803,000***
Total:	51 Projects		51,461,369	19,074,371	79,473,718	**150,009,600**	37,691,206	**112,318,394**
Total: Snohomish County, All Projects			51,461,369	19,074,371	79,473,718	**150,009,600**	37,691,206	**112,318,394**

Appendix 6-A

Surface Water Analyses for the Lake Stevens UGA

Introduction

The surface water analyses that have been conducted for the Lake Stevens UGA have been completed in phases. Preliminary drainage analyses were first conducted by URS Greiner Woodward Clyde for those drainage basins along the west side of the UGA known as the Sunnyside Basins, which drain into Ebey Slough (see Figure 6A-1). Following that study, detailed drainage and aquatic habitat analyses were conducted by the County for the remaining basins in the Lake Stevens UGA.

Though the specific methods differed somewhat with each phase, the general approach for these analyses involved: conducting an inventory of the existing surface water facilities; constructing hydrologic and/or hydraulic models of these facilities; evaluating surface water problems for both existing and future land use conditions; and developing capital improvement projects designed to address the predicted problems. In general, the detailed analyses were primarily conducted for the major conveyance systems and only limited analyses were performed for some of the smaller tributary systems.

Drainage Inventories

The County has recently begun the process of using Global Positioning System (GPS) equipment to conduct updated inventories of existing surface water facilities within the County. This process provides highly accurate data and is a significant improvement over previous inventory methods in which existing drainage facilities were only approximately located and sketched onto maps by hand. Another advantage of this method is that the data can be downloaded into computers and viewed within a Geographic Information System (GIS) environment.

The drainage inventories that were conducted for this project were completed in phases. The first phase of the inventory, completed in 1997, was conducted for those surface water facilities located within the Sunnyside basins (see Figure 2). The second phase, currently ongoing and nearly completed, was conducted for the remaining basins within the Lake Stevens UGA (see Figure 2). Because these inventories were conducted at different times, the methods used were somewhat different. The primary difference is that the earlier inventory in the Sunnyside basins used instruments with a moderate level of accuracy while the more recent inventory of the remaining basins used instruments with a high degree of accuracy.

For the Sunnyside basins, the locations of existing drainage features were collected using Trimble Pathfinder ProXR GPS equipment. The Trimble Pathfinder ProXR has a horizontal accuracy of ± 1 meter and a vertical accuracy of ± 2 meters. The facilities that were inventoried generally included existing drainage ditches, culverts, storm drains, and stream channels. Elevation information on catch basin grates and invert measure downs were taken from as-built drainage plans for plats in the area. In areas where as-built data was not available, catch basin grate elevations were obtained from intersection with the 2-foot contours that are based on a 1998 aerial photograph. Additional information that was collected included such drainage features as catch basin type, pipe diameter, pipe material and condition, direction of flow, etc.

For the remaining basins in the Lake Stevens UGA, the drainage inventory was conducted using survey grade Trimble 4700 real time GPS units. The Trimble 4700 GPS receivers have a much higher degree of accuracy, with a horizontal accuracy of ± 1 centimeter and a vertical accuracy of ± 2 centimeters. In addition to using more accurate equipment, all drainage facilities were directly measured instead of using as-built and contour information. Cross sections of the existing stream channels were also measured, though the sections were generally taken near road crossings where the stream channels were more accessible. The additional drainage feature information that was collected (pipe diameter, material, etc.) was similar to what was collected for the Sunnyside inventory. All GPS data is then reviewed to find any potential problems with the data that may require additional verification.

As previously mentioned, GIS coverages were created from the data that was downloaded from the GPS equipment. Five program routines were specifically developed by the County to assist in the construction of the drainage network from the point features collected by the GPS units.

Finally, the cross section and drainage feature information that was collected from the inventory was then extracted from the GIS coverage and exported for the hydrologic and hydraulic analyses that were conducted for this project.

Stream Habitat Assessments

Field data was also collected in order to perform habitat assessments for some of the major streams within the UGA. Some of the field observations were conducted during the winter months when habitat assessments can be more challenging. Heavy rainfall with seasonally high stream flows, freezing weather and lack of vegetative cover tends to obscure some of the important stream and wetland characteristics. However, in the Lake Stevens area, lake-dwelling kokanee salmon and anadromous coho salmon spawn in these streams well into December. This is advantageous because it helps to determine the locations of suitable spawning habitat and to define the upstream extent of the anadromous zone.

The stream assessment and inventory protocol consisted of the following:

1. Completion of a modified Level II Rosgen Analysis of the stream systems (Rosgen, 1996). This is a relatively quick procedure which provides standardized and useful stream channel descriptions, and, with other analysis tools, can be used to predict stream sensitivity to future land use impacts.

2. In-stream data collection to determine the extent to which stream systems are presently "Properly Functioning," "At – Risk," or "Not Properly Functioning." These criteria, listed in Table 6A-1, are adapted from published National Marine Fisheries Service (NMFS, 1999) guidelines and were modified (Scholz and Booth, 1999) to conform to the limitations of the December data collection period. Stream slope and stream canopy coverage were assessed and measured from maps and aerial photos, and then field checked. Data collection activity was also limited due to short wintertime daylight hours and short project timelines. In conformance with accepted sampling methodology, approximately 25 percent of the total stream length for each basin was physically inventoried.

3. An overall evaluation of the quality of existing habitat and the potential for impact and recovery due to future development.

Table 6A-1
Field Measurements for Stream Assessments

STREAM FEATURE	METHOD OF MEASUREMENT
Bank Full Width	Measured in field
Bank full Depth	Measured in field
Slope	Computed from GPS survey data and/or from County contour map and then field checked
Percent Canopy Cover	Estimated from aerial photos and then field checked
Large Woody Debris (LWD)	Counted pieces in field in which: (a) dia >= 10 in and length >=10 ft (b) dia >= 20 in and length >= bank full width
Pools	Counted in field (yields #pools/unit length)
Stream Substrate Condition	(a) Performed Wolman pebble count in field, when flows were low enough (b) Measured embeddedness in field, when flows were low enough

The results of the habitat assessments for some of the major streams within the Lake Stevens UGA are listed in Table 6A-2. Additional field observations were made along many of the other streams within the Lake Stevens UGA, though not to the same level of detail as those listed in Table 6A-2.

Stream Geomorhologic Assessments

Susan Perkins also conducted stream assessments with County staff to assess erosion and geomorphologic conditions within the major Sunnyside streams, including Hulbert Creek, Weiser Creek, Burri Creek, and Fox Creek. The results of these evaluations are included in a memorandum to the County dated September 1, 2000. This memorandum is also attached to this Appendix.

Wetland Assessment

While performing the stream habitat analyses, several ecologically important wetland areas within the proposed UGA were identified for further assessment. The criteria in which these wetlands were selected for further assessment included the following:

1. Stream support value and proximity to the stream corridor,

2. Size and position within the watershed,

3. Potential for conversion into other non-stream and wetland uses,

4. Potential to alleviate flood problems.

In accordance with these criteria, the following three wetland complexes were chosen for delineation and assessment:

1. The Stevens Creek wetland corridor,

2. The Lundeen Creek wetland corridor,

3. The Mosher Creek wetland complex between 20th Ave SE and South Lake Stevens Road.

During February and March of 2000, additional field reconnaissance was then conducted in order to roughly delineate the current boundaries for these wetlands. Wetland functions and values were assessed under current Snohomish County standards.

Wetland boundaries were roughly delineated on maps (see Figure 6-1 in main body) using appropriate "routine determination" criteria. As described in the wetlands delineation manuals published by both the U.S. Army Corps of Engineers (1987) and the Washington State Department of Ecology (1997), routine determinations involve simplified, rapidly-applied methods that result in sufficient qualitative data for making a wetland determination.

Drainage Complaints

All citizen drainage complaints recorded by the County between 1996 and January 2000 were reviewed for the unincorporated portion of the UGA, except for the Sunnyside basins, which had already been reviewed and included in the planning-level analyses of those basins. DID #8 also supplied information related to additional drainage problems located within the UGA.

Hydrologic and Hydraulic Analysis of the Sunnyside Basins

The preliminary evaluation of surface water problems in the Sunnyside basins was conducted by Woodward-Clyde (January 1998). The County has recently updated that analysis as well as the list of proposed projects.

To evaluate flooding problems, a hydrologic model of these basins was used to determine flows through the major stream reaches. The hydrologic model was created using the Hydrologic Simulation Program - Fortran (HSPF), which is capable of using long-term historical precipitation records to simulate a long-term series of flows through existing surface water facilities. The HSPF model was developed by Aqua Terra (June 1997) and then updated again for this project. Using flow data from gauges installed in Fox Creek and Hulbert Creek, the HSPF model was calibrated so that the flows predicted by the model would more closely match the flows recorded by the gauges.

The HSPF model was used to simulate flows for both existing and future land use conditions. For future conditions, the assumption was made that the basin would be fully developed according to the proposed land use plan. The analysis of future land use included the installation of private detention facilities that would be installed by future developers per current Title 24 standards. The simulated flows were then compared with the estimated capacities of existing facilities to predict potential flooding problems.

Stream channel and erosion problems were generally evaluated based on the field reconnaissance that was conducted for the existing streams. In addition, drainage complaints that were reported to the County were reviewed to further define historical problems that have occurred in the Sunnyside basins.

Table 6A-2
Stream Habitat Inventory Results

Stream Reach	Rosgen Class	Average Slope	LWD/Mile	Pools/Mile	Canopy Cover	Substrate D-50	Substrate Embeddedness
Stevens Creek							
Mouth to Lundeen Pkwy.	E4 Ditched	1.5%	0	2	5%	12 mm	15%
Lundeen Pkwy to 31st Pl. NE	E3-E4	1.7%	49	71	92%	50 mm-E3 15 mm-E4	15%
31st Pl NE to SR 92	C4	1.75%	53	68	95	20 mm	10%
SR 92 to SR 92 (outside UGA)	B4-B5 C4-C5	1.5 to 3%	52	121	85%	5-15 mm-B4, B5 5-20 mm-C4, C5	20%
Lundeen Creek							
Mouth to Lundeen Pkwy.	E4	2.5%	18 beaver activity	17	90%	20 mm	15%
Lundeen Pkwy to 30th St. NE	E4 and C4	1 to 2.0%	15	10	75%	30 mm	15%
30th St. NE to SR 92	C4 to C5	1.5%	36	18	90%	25 mm	10%
SR 92 to vicinity 42nd St NE	B4 to C4	3.0% B4 1.5% C4	35	133	95%	25 mm	15%
Fox Creek							
Sunnyside Blvd to SR204	C4b	2.5%	78	98	95%	20mm	25%
SR 204 to 79th Ave SE	Upstream: C4 to A1 to G4	C3b-3.5% A1-8% G4-2.7%	C3b-32 A1-glacial till G4-170mm	C3b-64 A1-6 G4-25	90%	C3b-102 mm A1-till G4-40 mm	50%
79th SE to 20th St SE	E5	1.5%	N/A	N/A	N/A	N/A	N/A
Mosher Creek							
20th St SE to 12th Pl. SE	B4 to C4	2.0%	52	87	75%	15mm	25%
20th St SE to South Lake Stevens Rd.	Mostly a wetland complex, much unwadeable	1.0%	Much beaver activity noted	Mostly pooled	90% est.	N/A	N/A
South Lake Stevens Rd. to 87th Ave SE	B4 to C4	1.8%	22	32	40%	10mm	50%
87th Ave SE to SR 2	C4-C6 (wetland) B4	C4-C6 1.5% B4 3.5%	85	102	90%	C4-10mm C6-silt B4-20mm	C4-20% C6-N/A B4-25mm
Centennial Creek							
Vicinity 5th Pl SE to Lake 205	Intermittent stream-Wetland complex	1%	N/A	N/A	N/A	N/A	N/A
Lake 205 outlet to Pilchuck River terrace	B3a to B4	B3a-5% B4-3%	22	15	95%	B3a-240mm B4-25mm	25%
Pilchuck River terrace to mouth	E4 to C5	1.75%	10	25	20%	E4-10mm C5->1.0mm	40%

Hydrologic and Hydraulic Analysis of the Remaining Basins

As previously mentioned, the County also conducted more detailed analyses of the remaining basins within the Lake Stevens UGA (see Figure 6A-1). The HSPF model was also calibrated to better reflect flows recorded by the flow gauge in Stevens Creek. The data for this gauge was provided by Drainage Improvement District #8.

Detailed hydraulic models of the major conveyance systems were created for primary conveyance systems in many, but not all, of these basins (see Figure 6A-1). The hydraulic models were created to more accurately predict water surface elevations and velocities along the stream channels and culverts and to improve the routing of flows performed by the HSPF model. For those basins that primarily consisted of stream and culverts systems, HEC-RAS was selected as an appropriate model to perform the hydraulic analyses (see Figure 6A-1). For those basins in which the primary conveyance system consisted of an urban drainage system, SWMM was selected as the most appropriate model to perform the hydraulic analyses (see Figure 6A-1).

Flows predicted by the HSPF model were input into the HEC-RAS and SWMM models for each conveyance system in order to determine the location of flooding problems under existing and future land use conditions as well as the location of fish passage problems for the existing stream culverts.

The results of the analyses for each of the drainage basins are graphically displayed in the attached Figures 6A-2 through 6A-15. These figures indicate the predicted flooding problems for existing land use conditions, future land use conditions, and fish passage restrictions.

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Washington State Department of Ecology
1997 *Washington State Wetlands Identification and Delineation Manual. Publication #96-94.*

Woodward Clyde
January 1998 *Sunnyside Stormwater Infastructure Plan, Existing Conditions and Preliminary Problems Report.*

January 2000 *Sunnyside Ravines Stormwater Master Plan.*

September 1, 2000

PERKINS GEOSCIENCES

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TO: Gregg Farris, P.E., Project Manager
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FROM: Sue Perkins, Geomorphologist

RE: Sunnyside Ravine Reconnaissance, Lake Stevens Master Drainage Plan

This memorandum summarizes the results of my field reconnaissance on four ravines in the Sunnyside area of the Lake Stevens Master Drainage Plan. Field inspections were conducted on August 18, 22, and 30, 2000 with staff from Snohomish County Surface Water Management (Darrell Smith, sometimes with Gregg Farris and Adrian Mintz). The work was authorized by field order dated August 9, 2000.

The purpose of the field reconnaissance was to evaluate from a geomorphic perspective the feasibility of, and need for, habitat improvement or instream stabilization projects in the locations recommended in the *Sunnyside Ravines Stormwater Master Plan* by URS Greiner Woodward Clyde (2000). In addition to the field work, the scope of work included a meeting with SWM staff and review of relevant documents, including my previous report to RW Beck on these streams in 1997.

Existing Channel Conditions

Conditions are described from upstream to downstream for each creek. Although the creeks show less evidence of recent landslides and high sediment loads than in 1997, this does not indicate a long-term improvement in conditions. It simply reflects the lack of high-intensity rainfall in the last few years.

Hulbert Creek

- Channel downstream of Sunnyside receives no sediment coarser than sand, due to an alluvial fan upstream of road that traps all bedload sediment. Narrow, straight, ditch-like channel overrun with Reed Canary Grass.
- Alluvial fan appears more vegetated than 1997, indicating relatively little coarse sediment deposition in recent winters. Viewed it in only one location in 2000.
- Did not reinspect the next 1300 feet above the fan. In 1997, minor incision was observed in between reaches whose grade was stabilized by LWD steps. Relative stability in this reach is attributed to abundant LWD steps, and erosion-resistant laminated glacial silt. Up to 1 foot of recent (past 10 or 20 years) downcutting into the silt. Only 1 small bank failure observed. Valley walls are not tall and generally not steep, so few areas of landslide hazard exist.
- Did not visit next section (several hundred feet long?) of channel in either 1997 or 2000
- Below the powerlines, creek is an incised slot without any LWD. Mostly still cutting down through alluvium (silty and sandy creek sediments), but has reached the glacial silt in a couple locations. Future erosion should slow once it incises into the glacial silt. Creek

no longer can flood its former broad floodplain. Continuous bank erosion is large source of silt to downstream. No sediment deposits; active deepening and widening are occurring.

- Nearer the powerlines, gradient flattens and it is less incised, with some small woody debris channel structure. Becomes sinuous, with bars. Incised at least a foot, so flow dissipation onto floodplain probably lost.
- 3 to 4 foot step up to powerline access road. Potential for erosion here, but couldn't view due to heavy brush. No culvert; flow spreads out wide and shallow across the road. The road serves as a grade control and may be responsible for existence of the wetland upstream.
- Black Rock Creek enters from north. Flows into wetland at Hulbert confluence. Creek small (2 feet wide by few inches deep) and not yet incised, but may be soon given new upstream development and significant projected flow increases.
- Hulbert Creek slightly upstream of Black Rock Creek is a slot-like ditch, 1 to 2 feet wide and 1 foot deep.
- Farther upstream is primarily wetlands and/or beaver ponds. These areas of slow, shallow flow probably trap all sand and most silt. Hence, erosion of sand and from State Route 9 could have local impacts in the wetlands, but is unlikely to contribute to fine sediment problems farther downstream.

Weiser Creek

- Throughout the entire ravine downstream from Vernon Road, the creek flows through laminated glacial silt and landslide deposits. The largest landslides appear to be caused by instability of the ravine walls unrelated to downcutting by the creek. At least some of the smaller landslides may be caused by streambank erosion oversteepening the toe of the slope.
- Lack of severe channel incision attributed to high sediment load from landslides, which apparently fills up the creek's sediment-transport capacity. Another stabilizing factor is the grade control provided by the landslides, which leave behind large stable LWD jams.
- Downstream of Sunnyside Blvd., large alluvial fan and sediment pond. Pond completely inadequate for sediment load in 1996, with large area downstream of pond reportedly buried by 2 feet of silt deposits. Did not inspect this time.
- Did not reinspect channel below powerlines. In 1997, extremely high fine sediment load, with thick deposits of fines covering gravel bars and floodplain. High lateral instability. Relatively little incision. Numerous small to medium landslides that looked fairly recent. Small landslides in glaciolacustrine silt due to stream undercutting of banks. Larger landslides originated high on valley walls in outwash sands, probably not caused by stream undercutting.
- Reinspected channel from powerlines to old wood dam. In 1997, channel plugged by wood and sediment deposits from 2 large and 3 small landslides that appeared to be fresh. Channel starting to incise through the deposits now, though LWD still forms steps in many places. Landslide deposits all heavily vegetated except one that may be new. Slide deposits (and LWD delivered to creek by slides) act as grade control, with low-gradient reaches upstream of each blockage.
- Old wood dam appears solid and unbreached. The creek drops over the dam as a waterfall over 10 feet high. The former pond upstream of the dam is completely filled with sediment, and hence gravel transport is not interrupted. Landslides and unstable banks continued upstream as far as we could see.
- Next reach uninspected.

- Downstream from Vernon Road the creek is much smaller. Eroding banks are 1 to 2 feet high and nearly continuous. At least 2 fairly recent landslides reached creek, scars and deposits now vegetated. Valley walls appear unstable, with numerous old slide scars. Valley bottom filled with landslide colluvium.

Burri Creek

- Gravel deposits in sediment ponds above road have become vegetated with grass. Ponds are nearly full of sediment.
- Between Sunnyside Blvd. and Vernon Road, creek shows continuous bank erosion. Channel is plane-bed riffle, no complexity, little/no LWD, incised into terrace. Underlying glacial deposits not exposed in creek bed. A terrace separates creek from ravine walls, and probably prevented sediment reaching the creek from the two ~1996 landslides near Vernon Road. Landslide scars have become vegetated.
- Did not continue further upstream. If the valley bottom is narrower, channel incision could possibly add to existing ravine walls instability and trigger landslides. However, it's a small stream so amount of incision will be limited. Glacial silt substrate would also likely slow channel incision.

Fox Creek ("Second Ravine" in my 1997 report)

- No sign of sediment deposits near Sunnyside Blvd. in my 1997 inspection or presently, but 1989 County report suggests there is a sediment problem. Local resident Jim Thrash reports that sediment has been excavated from below Sunnyside by landowner. A big pond upstream of Sunnyside used to be a swimming hole, gradually filled in with sediment and disappeared.
- This creek has large flow increases predicted for the future. Existing erosion problems therefore likely to worsen. Low summer flows, reportedly dries up at times. Flow a few inches deep during our inspection.
- Creek very overgrown, impassable on both sides of Sunnyside Blvd. Culvert passes gravel downstream. We did not inspect first 200 feet or so upstream of Sunnyside.
- Steepest part of this small ravine only about 3%. Gravel on stream bed, but subsurface sediment is quite sandy. Rectangular channel about 5 feet by 1 foot, almost no complexity or wood. Slightly incised.
- Gradient flattens near d/s side of State Route 204. Channel doubles in width, sandy bars, gravel bed. Long culvert is fish barrier, but passes bedload sediment downstream.
- Underlying glacial deposits are not exposed in the creekbed. Although the geologic map shows outwash sand and gravel, I saw no evidence of it. Uncontrolled runoff from 204 has formed a gully on the ravine wall, exposing what appears to be a gravelly glacial till. Upstream of 204, landslides and colluvial deposits have high clay content and are definitely not outwash. I suspect the map is incorrect.
- Low gradient reach upstream of 204 shows scars of multiple channels, evidence of shifting during floods. Stream banks impinge on hillside colluvium, with small bank sloughs common. Some small wood structure and fair habitat in this flatter reach, but looks very laterally unstable due to sediment deposition and backwater effects of culvert.
- About 300 feet above 204, creek steepens to 4%+. Becomes slot-like channel. Some scars of shallow landslides from the ravine walls. One landslide occurred recently (1996/7?). Did not continue upstream.
- Next viewed creek farther upstream, accessed by long walk south from 79th. Here the ravine is fairly small, only 25 feet high. V shaped valley bottom. Creek has incised through its alluvium and about 1 to 3 feet into very stiff, silty clay. This clay was not laminated, and it may be glacial till derived from glaciolacustrine sediments overridden

by the glacier. Incision looks recent (last 10-15 years); the broken clay surfaces are rough and angular, as opposed to smoothed off like older exposures. A discontinuous thin layer of gravel and cobbles lies above the clay bed in places.

Magnitude of Hydrologic Change

Studies on lowland streams in King County show that once the amount of effective impervious area (EIA) in a drainage basin increases above 10 percent, virtually all channels become

10-year discharge under forested conditions occurs every two years or more frequently. Unstable channels are defined as displaying long continuous reaches with bare and destabilized banks, indicative of severe downcutting and widening. On Figure 1, these two indices of instability are plotted for the four creeks in this study, both under present and future levels of development.

- All creeks are already well below the 1.0 flow ratio (10-yr forested flow/2-year developed flow. Therefore all would be predicted to be unstable.
- All creeks are above the 10 % impervious area that tends to coincide with instability, though Fox and Burri are still close to the threshold
- Future flow increases are predicted to be large for Fox Creek (46% increase in 2 year flood magnitude)
- Future flow increases are predicted to be fairly small for the other three creeks (6 to 12 percent for 2-year flood)
- Fox and Weiser both have large future increases in percent impervious area.

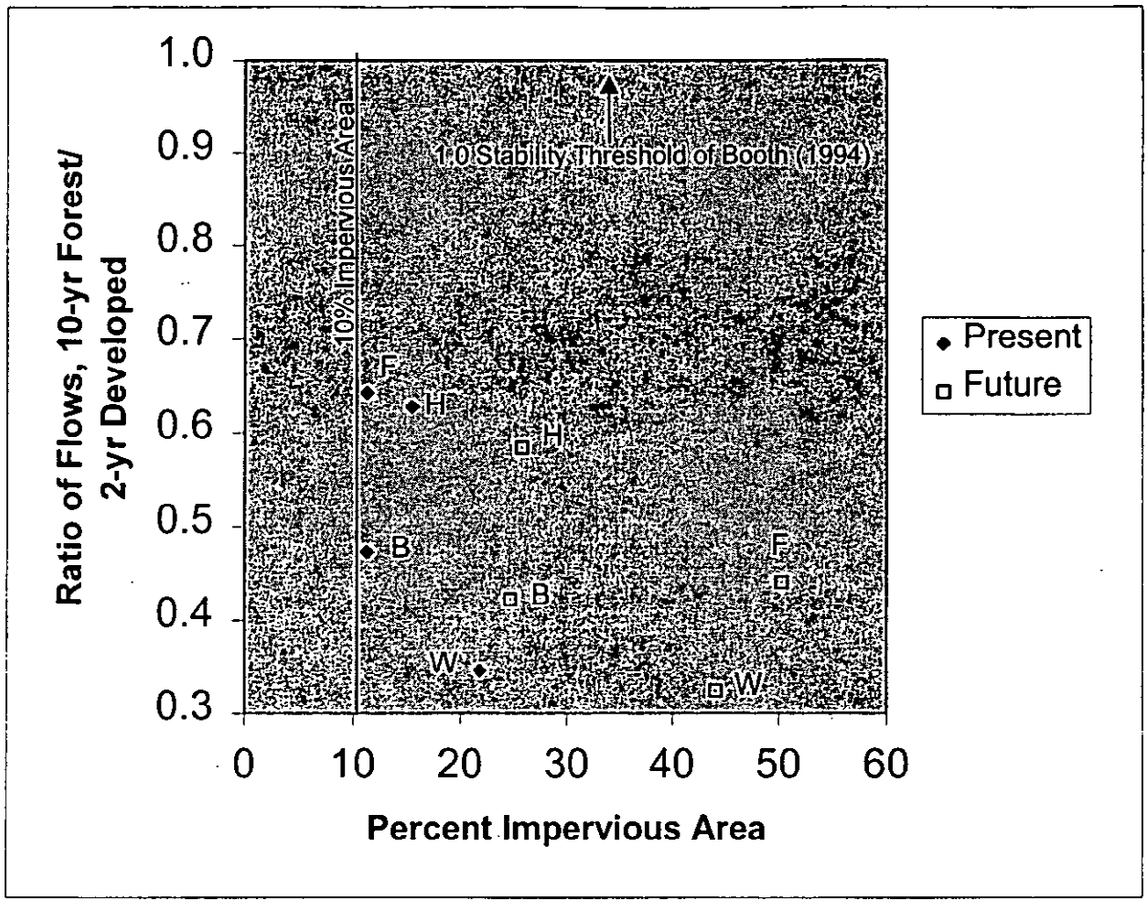

Figure 1. Present and future Impervious Area and Ratio of Flows for Fox (F), Hulbert (H), Burri (B), and Weiser (W) creeks.

Channel Erosion in the Ravines

Figure 2 shows typical evolution of a channel undergoing erosion due to channelization (Simon, 1995). A similar response occurs on channels experiencing pronounced flow increases due to urbanization, or upstream migration of a knickpoint from farther downstream. Initially, erosion is primarily downward. Due to downcutting, the former floodplain no longer is inundated and all flow stays in the channel, which further magnifies the erosive force of floods (Stage III). Continued downcutting destabilizes the banks, which widen in response (Stage IV). Downward erosion continues until the channel widens so much that the sediment load can no longer be transported and instead is deposited. After this point is reached (Stage V), banks continue to widen due to flow deflection by the sediment deposits as well as failures caused by oversteepening. Eventually, the banks erode to a stable, gentler slope and become vegetated, and a new floodplain develops that is inset into the former floodplain (Stage VI). The new, relatively stable channel has a flatter gradient and is much larger than the old channel, adjusted to the larger flows of the new hydrologic regime.

Very limited data suggest stabilization takes one to two decades to complete after development of the upstream watershed has occurred, although some streams never appear to stabilize (Henshaw, 1999). If development continues over many decades with ever-increasing flows, the adjustment cycle would presumably be lengthened. Upstream migration of successive knickpoints could also reinitiate erosion of a channel.

Most of the inspected stream segments show a ditch-like, incised, simplified configuration (Stage III or IV). Eroding banks are nearly continuous in these reaches. Bed sediment is probably scoured and mobilized several times a year, and the eroding banks contribute a high suspended sediment load. Wider channels with bars (Stage V) were observed only in low-gradient zones near the downstream ends of ravines, or locally behind landslide deposits or log steps. The high sediment load from channel erosion causes problems where it deposits on the alluvial fans downstream of each ravine, near Sunnyside Blvd. Sediment deposition problems are likely to increase significantly on Fox Creek in response to flow increases from future development.

Most of the stream segments meet Booth's definition of instability given in the previous section. However, downcutting on these streams has not caused the catastrophic channel enlargement observed in some urbanizing streams with flow increases of similar magnitude. Factors contributing to stability are:

- erosion-resistant glaciolacustrine silt: once the downcutting channel reaches this material, incision is slow and the cohesive banks resist widening.
- functional LWD steps provide grade control in Weiser and Hulbert Creeks (in Weiser, these LWD steps were emplaced by landslide deposits)
- relatively gentle stream gradients in Hulbert and Fox ravines
- large sediment load from landslides in Weiser, which apparently supplies much of the creek's sediment-transport capacity and hence reduces downcutting.

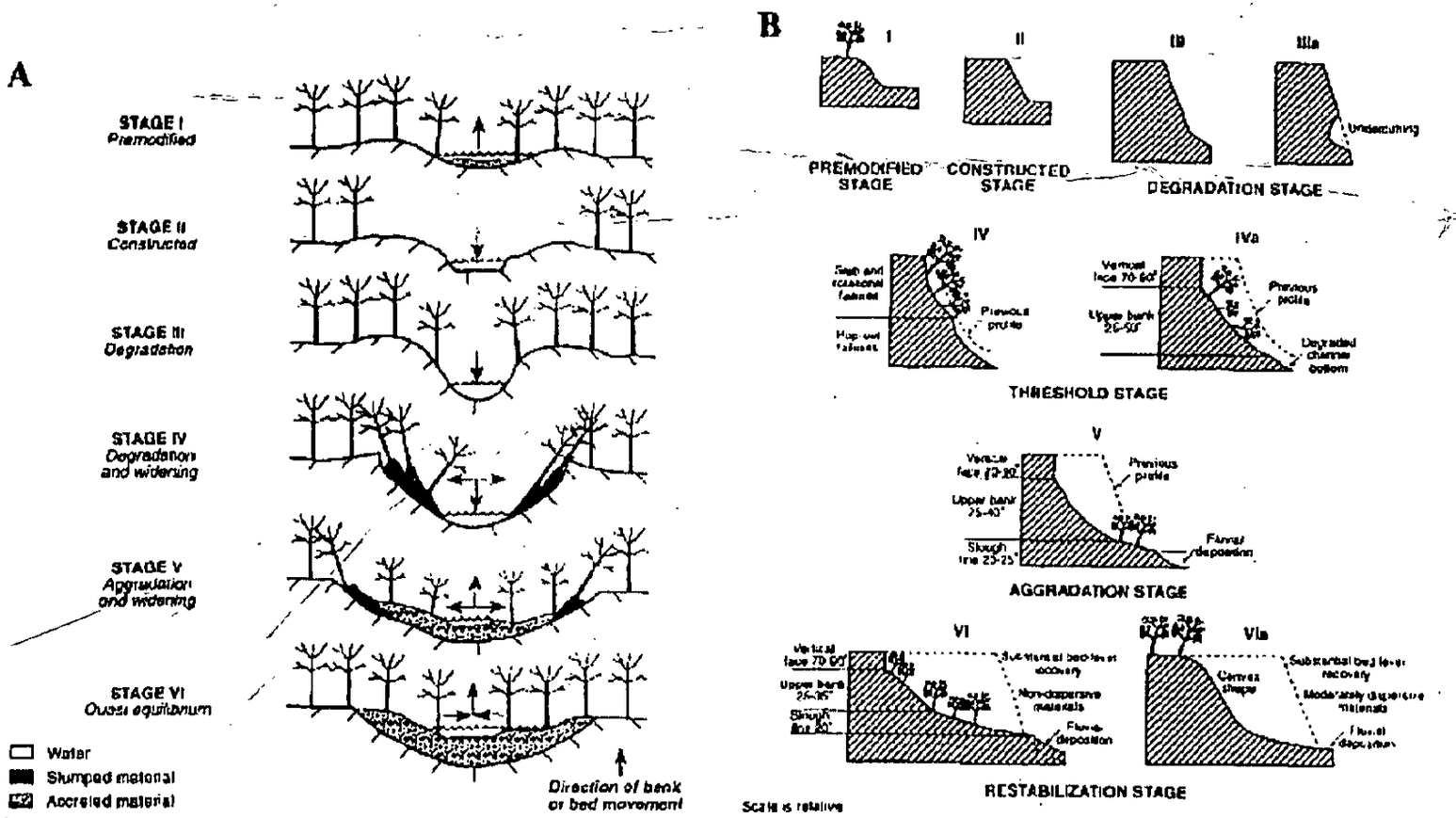

Figure 2. Models of (A) channel evolution and (B) bank-slope development for disturbed alluvial channels (modified from Simon and Hupp, 1986b; Simon 1989a)

From Simon 1995

The very steep, unstable walls of the Weiser, Burri, and upper Fox ravines are the legacy of thousands of years of gradual channel downcutting following the last deglaciation. Logging of the slopes probably reduced root strength and may have triggered many landslides prior to urban development. These steep landforms are already inherently unstable and subject to landsliding during high-intensity rainfall events. However, undercutting of the toes of the slopes by rapid channel downcutting could further decrease slope stability. On Weiser Creek, the largest landslides appear to be unrelated to recent downcutting, but fluvial erosion of the toe of the slope may have been a contributing factor to some of the smaller landslides. The same situation may exist on Fox and Burri Creeks. On these creeks, future flow increases could therefore increase the sediment load from landsliding as well as channel enlargement.

Instream Stabilization Projects in the Ravines

In general, once a stream has become unstable along long reaches it is very difficult and expensive to restabilize it. It is much easier to prevent (by controlling flows) than to repair. Erosion control measures applied to eroding banks will fail if the channel continues to downcut, or if the banks are steeper than their angle of repose. Grade control structures need to be closely spaced to be effective (closer on steeper channels) and are subject to failure by undercutting or erosion around the side. Wholesale grading of oversteepened stream banks to a stable 3:1 slope is costly and disruptive of riparian vegetation, and infeasible for more than a short reach of stream. In most cases in which an entire stream channel is severely eroding, economics and lack of access dictate that the only feasible alternative is to do nothing except clean up the sediment deposits at the downstream end. After some decades the stream may reach a more stable configuration on its own.

Table 1 presents my opinions on implementing in-stream stabilization measures in each of the project reaches identified in the URS report.

Habitat Improvement Projects on Floodplain Channel Segments (below Sunnyside Blvd.)

These channels are presently straight ditches lined with reed canary grass. Channel improvements could include a more complex cross-section, pools located at the outside of bends, meandering planform, and addition of woody debris.

Table 2 shows the advisability of implementing habitat improvements in these floodplain channels, based on channel stability and sedimentation concerns. Tide gate access, discharge, and other biological factors would also determine advisability.

Table 1. In-Stream Stabilization Projects on Ravine Channel Segments

Project numbers refer to Figure 3-1 of Sunnyside Stormwater Master Plan (URS, 2000)

Creek	Project	Advisability	Rationale
Hulbert	SR-2	Possible project opportunities at transmission lines and along ravine reach approx. 1500 feet long.	This creek segment has the best remaining habitat of the four creeks, so good investment to protect it from additional damage. Grade control structures to prevent further incision and prevent knickpoint migration. Possible bank protection measures where downcutting appears complete. Improve stream crossing at road under transmission lines.
Hulbert	SR-3	No project recommended.	Very small creek, poor access. Much is in wetlands already.
Weiser	SR-2	No project recommended.	Channel improvements would not solve the severe instability of the ravine walls. Channel improvements would be obliterated by high sediment load from landslides in combination with high flows. Habitat is poor and unlikely to be improved by in-stream projects. Suggest investigating surface drainage into the ravine: tightline all culverts or ditches that discharge onto ravine slopes to reduce landsliding. Prevent future flow increases.
Weiser	SR-4	No project recommended.	ditto
Weiser	SR-6	No project recommended.	ditto
Burri	SR-2	No project recommended	Due to very small stream size, relatively steep gradients, and probable impassable culvert at Sunnyside, potential habitat gains are limited. Downstream of Vernon Road, probably best to let it stabilize naturally. Sediment removal from ponds at Sunnyside, or alluvial fan reach just downstream, will be needed periodically. Upstream of Vernon Road, conditions unknown. Investigate surface drainage into the ravine: tightline all culverts or ditches that discharge onto ravine slopes to reduce landsliding.
Fox	SR-2	Project recommended	Presently not too unstable. Install series of grade control structures to prevent future downcutting in response to flow increases from proposed new development. Relatively low gradient, so the fair habitat could be substantially improved with steps and pools added by these structures. Grade controls are subject to failure from lateral erosion by the enlarging channel. Best course would be to prevent future flow increases.
Fox	SR-3	Possible project	Although fish habitat potential would be limited due to steeper slopes, possibly grade control structures could prevent some incision and thereby prevent some landslides from destabilization of ravine walls. Project success is questionable, as grade controls are subject to failure from lateral erosion by the enlarging channel. Best course would be to prevent future flow increases.
Fox	SR-4	No project recommended	Channel already incised into resistant clay. Habitat is so lousy it's unlikely to get significantly worse. Restoration here would require such substantial grading that it is infeasible.
Fox	SR-5	Possible project	Wetland has reportedly been ditched. Improve detention by spreading flow and eliminating channelization.

Table 2. Habitat Improvement Projects in Floodplain Channel Segments

Creek	Advisability	Rationale
Hulbert	BEST	Sediment is trapped upstream of Sunnyside, so it won't deposit in floodplain channel and bury constructed habitat improvements. Good fish passage to upstream reaches with fair to good habitat.
Weiser	WORST	Any project in the long alluvial fan reach is subject to complete burial by sediment. Projects located downstream of the alluvial fan would receive less sediment, but there is a definite risk of the creek abandoning the improved channel if it shifts to another location on the alluvial fan. Connects to poor habitat upstream of Sunnyside.
Burri	OK	Locate project downstream of the short alluvial fan. Sediment loads lower than Weiser, and some sediment is trapped upstream of the road.
Fox	CAUTION	Conditions OK now, but sediment load is likely to increase significantly with future flow increases. Locate improvements downstream of the alluvial fan.

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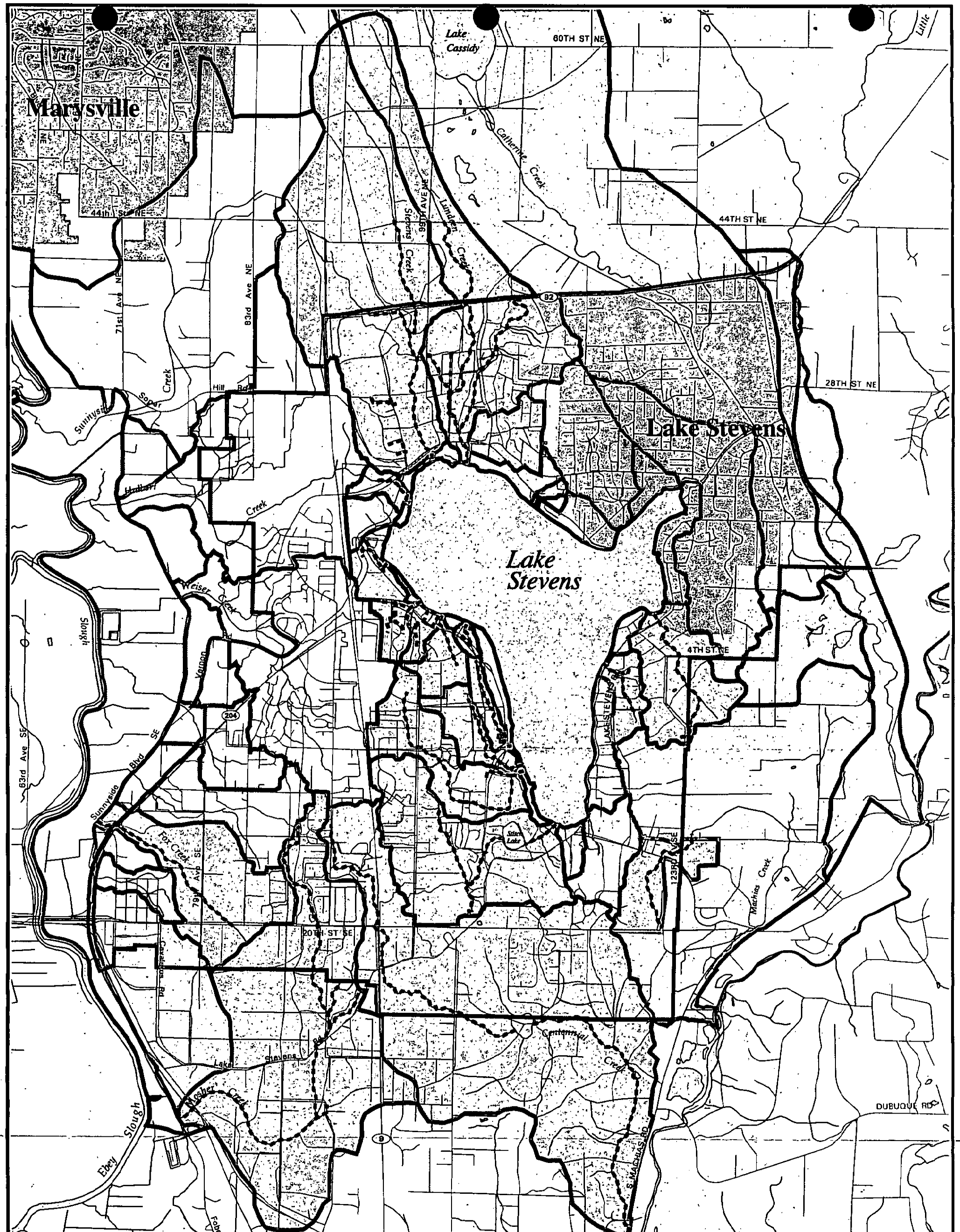
Henshaw, P.C., 1999. Restabilization of stream channels in urban watersheds: long-term channel response to urbanization in the Puget Sound lowlands. M.S. Thesis, Civil Engineering Dept., Univ. of Washington, 98 p.

Simon, A., 1995. Adjustment and recovery of unstable alluvial channels: identification and approaches for engineering management. Earth Surface Processes and Landforms, vol. 20, p. 611-628.

Figure 6A-1

Hydrologic and Hydraulic Models



Legend

- Hec-Ras
- SWMM
- UGA Boundary
- Basin Boundaries
- Hydrologic Analysis, Detailed Hydraulic Analysis
- Hydrologic Analysis, Some Hydraulic Analysis
- Hydrologic Analysis, No Hydraulic Analysis

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Figure 6A-2

Existing Flooding Locations

Lundeen Creek, Stevens Creek, Eagle Creek, and West Drainages

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watersheds
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	Drainage District 8
▲ 25 yr	◆ 25 yr	● 25 yr	Streams
△ 50yr	◇ 50yr	○ 50yr	
△ 100yr	◇ 100yr	○ 100yr	

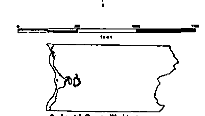

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Figure 6A-3

Future Flooding Locations

Lundeen Creek, Stevens Creek, Eagle Creek, and West Drainages

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watersheds
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	Drainage District 8
▲ 25 yr	◆ 25 yr	● 25 yr	Streams
△ 50yr	◇ 50yr	○ 50yr	
△ 100yr	◇ 100yr	○ 100yr	

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Figure 6A-4

Existing Fish Passage Restrictions

Lundeen Creek, Stevens Creek, Eagle Creek, and West Drainages

Legend

- Fish Passage Restrictions
- Watersheds
- UGA Boundary
- Drainage District 8
- Streams

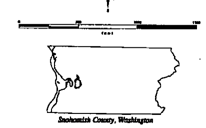

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Figure 6A-5

Existing Flooding Locations

Lockhart Creek, Stitch Creek, Giti Creek, and West Drainages

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	Drainage District 8
△ 10yr	◇ 10yr	○ 10yr	Streams
▲ 25 yr	◆ 25 yr	● 25 yr	
△ 50yr	◇ 50yr	○ 50yr	
△ 100yr	◇ 100yr	○ 100yr	

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County 1:24,000 roads, DNR 1:24,000 DEM contours.
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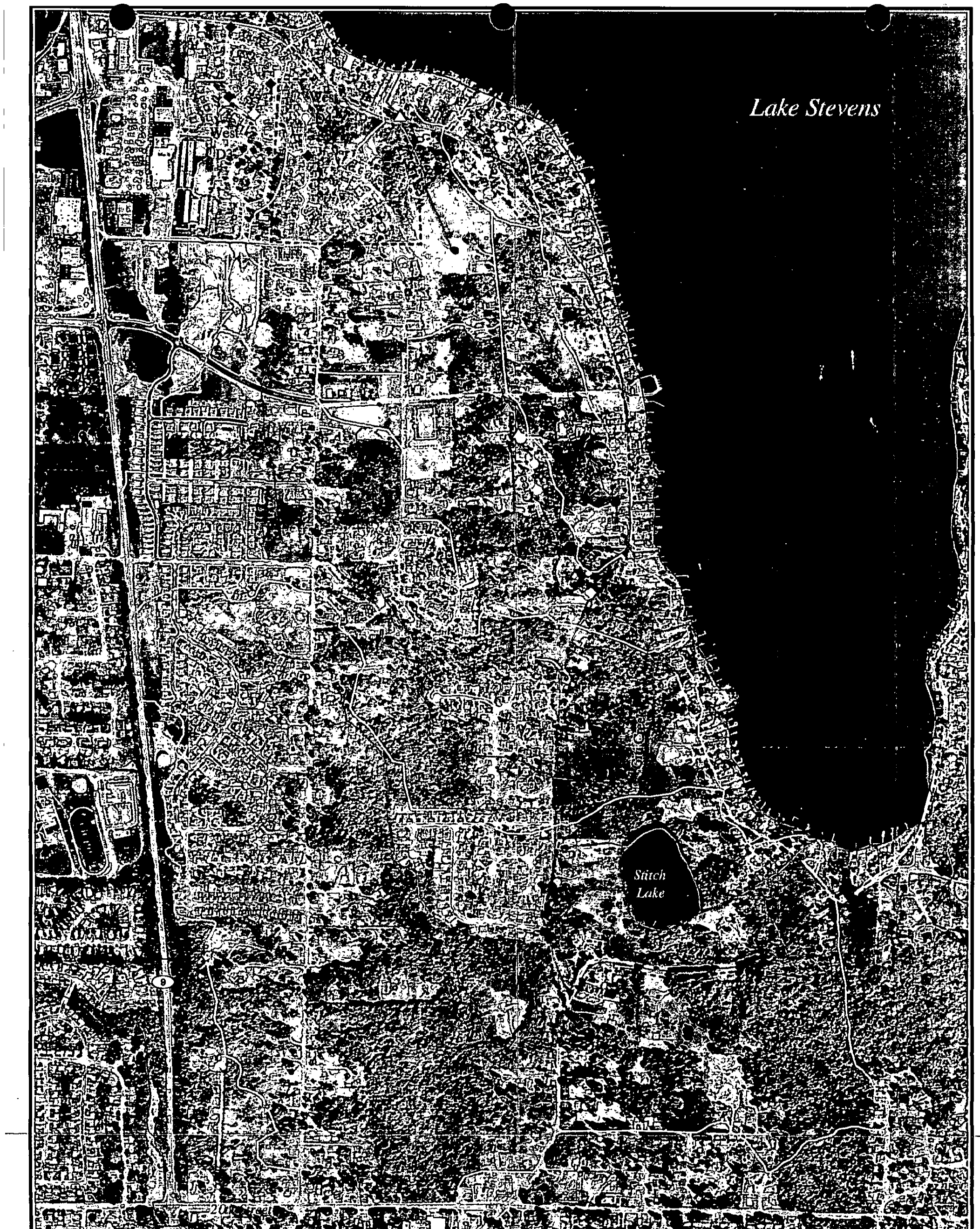

Figure 6A-6

Future Flooding Locations

Lockhart Creek, Stitch Creek, Giti Creek, and West Drainages

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	Drainage District 8
△ 10yr	◇ 10yr	○ 10yr	Streams
▲ 25 yr	◆ 25 yr	● 25 yr	
△ 50yr	◇ 50yr	○ 50yr	
△ 100yr	◇ 100yr	○ 100yr	

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Figure 6A-7

Existing Fish Passage Restrictions

Lockhart Creek, Stitch Creek, Giti Creek, and West Drainages

Legend

- Fish Passage Restriction
- Watershed
- UGA Boundary
- Drainage District 8
- Streams

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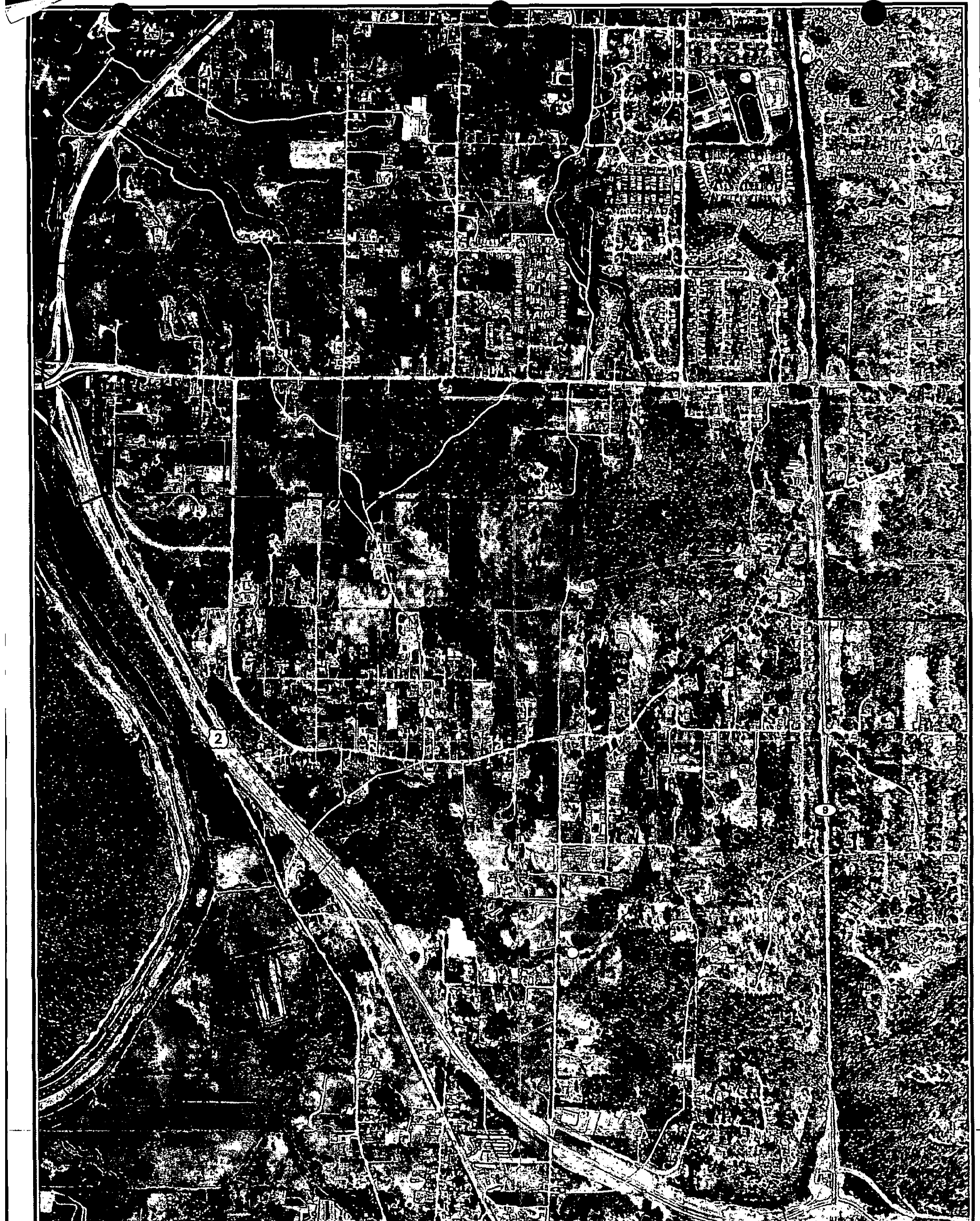
Figure 6A-8

Existing Flooding Locations
Mosher Creek and Fox Creek



Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	Streams
▲ 25 yr	◆ 25 yr	● 25 yr	
△ 50yr	◇ 50yr	○ 50yr	
△ 100yr	◇ 100yr	○ 100yr	

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County 1:24,000 roads, DNR 1:24,000 DEM contours.
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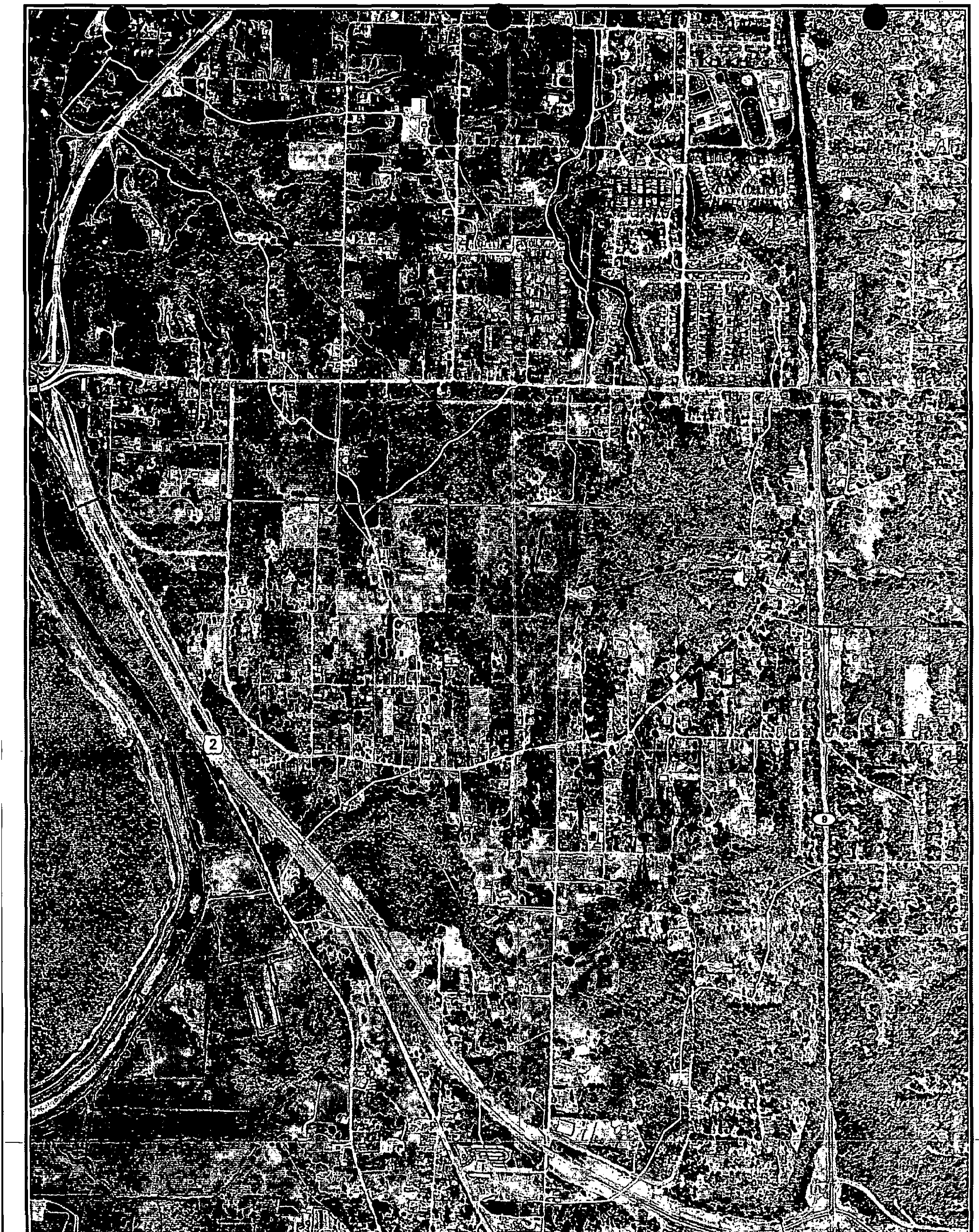
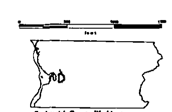


Figure 6A-9

Future Flooding Locations
Mosher Creek and Fox Creek

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	Streams
▲ 25 yr	◆ 25 yr	● 25 yr	
▲ 50yr	◆ 50yr	● 50yr	
△ 100yr	◇ 100yr	○ 100yr	



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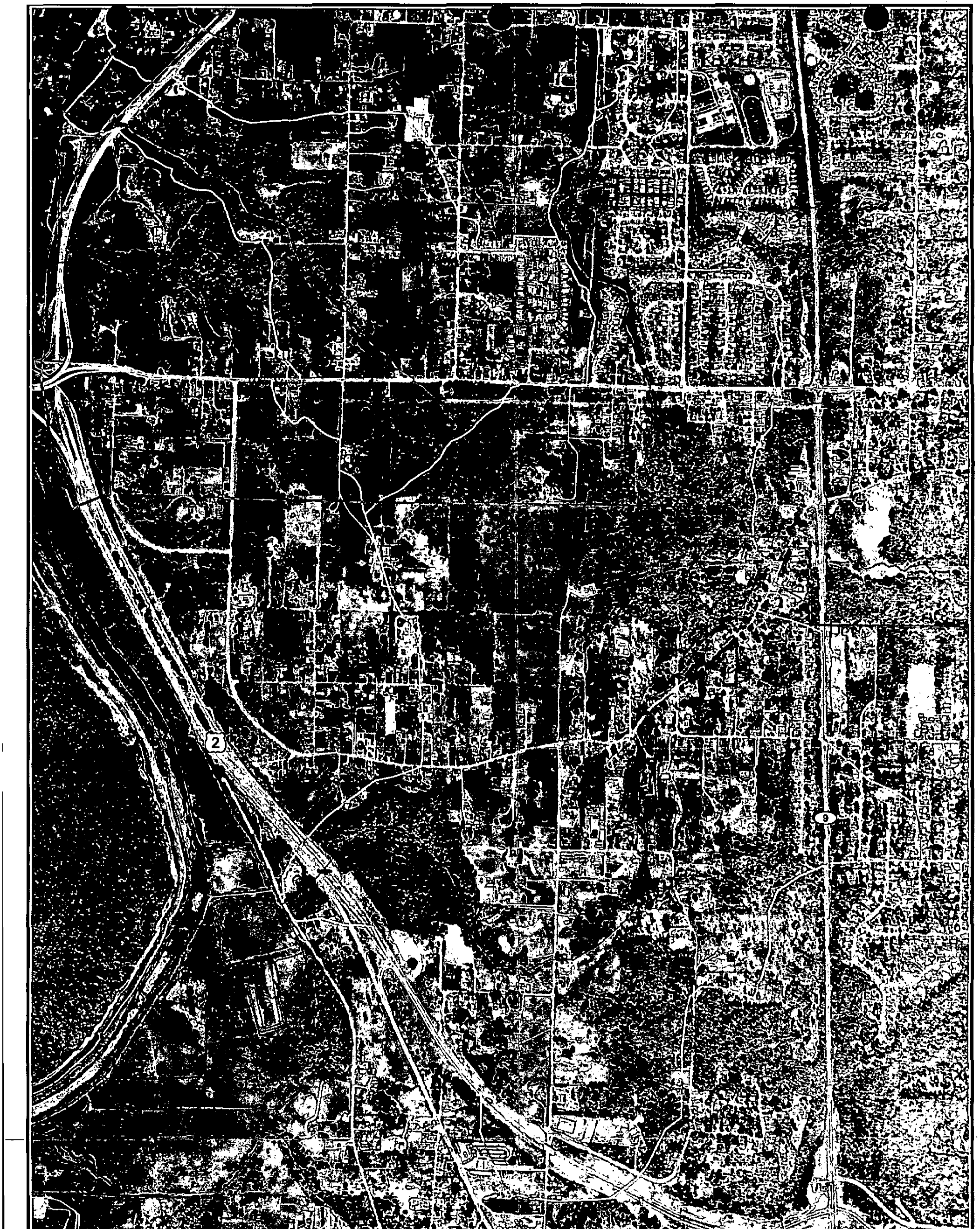

Figure 6A-10

Existing Fish Passage Restrictions
Mosher Creek and Fox Creek

Legend

- Fish Passage Restriction
- Watershed
- UGA Boundary
- Drainage District 8
- Streams

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County 1:24,000 roads, DNR 1:24,000 DEM contours.
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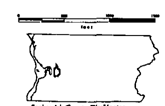
Figure 6A-11

Existing Flooding Locations
Centennial Creek

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	Drainage District 8
▲ 25 yr	◆ 25 yr	● 25 yr	Streams
△ 50yr	◇ 50yr	◎ 50yr	
△ 100yr	◇ 100yr	○ 100yr	



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County 1:24,000 roads, DNR 1:24,000 DEM contours.
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Figure 6A-12

Future Flooding Locations
Centennial Creek

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	Drainage District 8
▲ 25 yr	◆ 25 yr	● 25 yr	Streams
△ 50yr	◇ 50yr	○ 50yr	
△ 100yr	◇ 100yr	○ 100yr	

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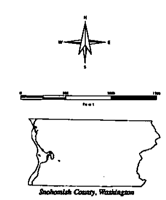
Sources: County 1:24000 hydrography and waterbodies, SWM 1:24000 basins, County 1:24,000 roads, DNR 1:24,000 DEM contours.

Figure 6A-13

Existing Fish Passage Restrictions
Centennial Creek

Legend

- Fish Passage Restriction
- Watershed
- UGA Boundary
- Drainage District 8
- Streams



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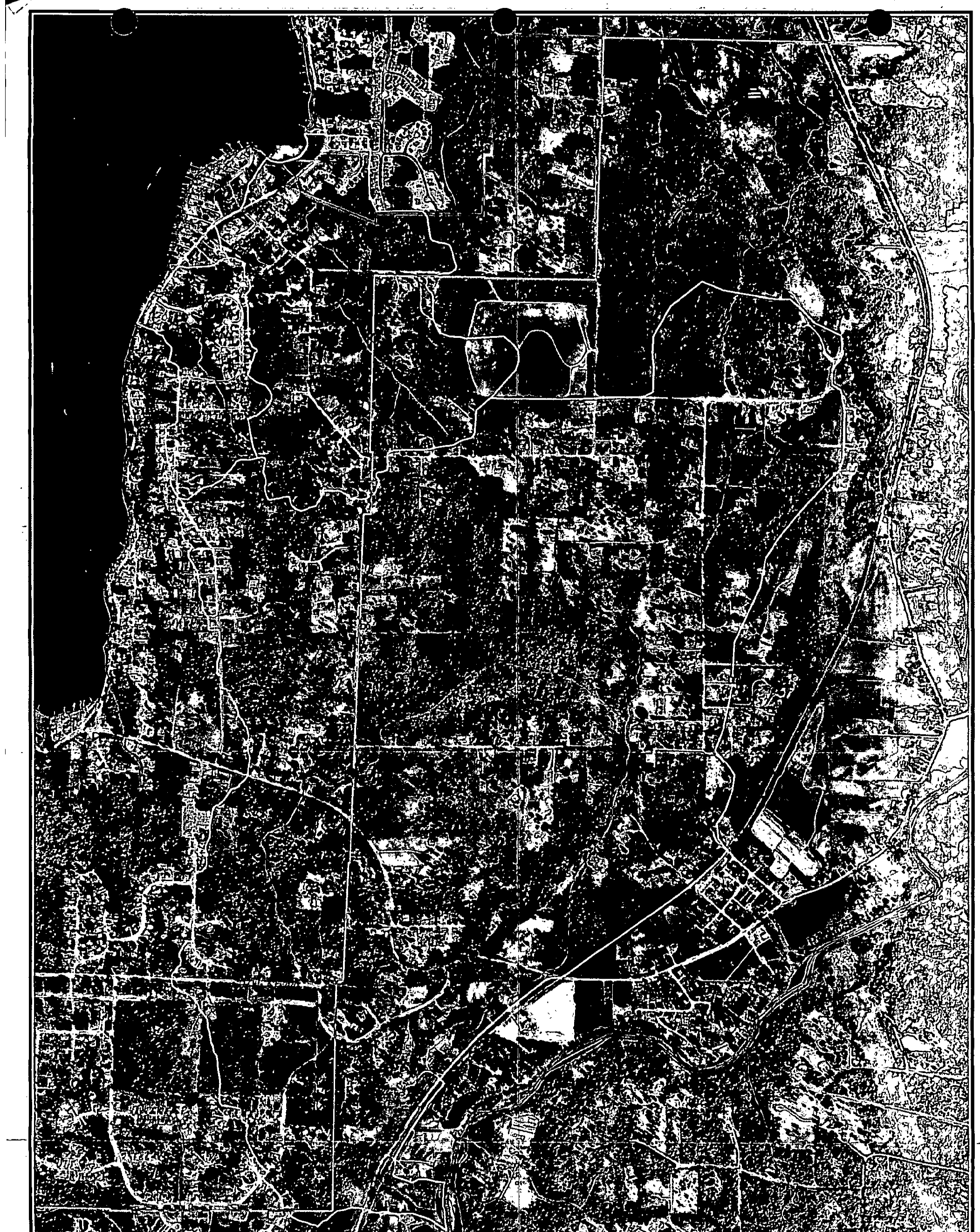


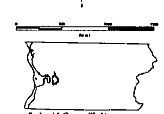
Figure 6A-14

Existing Flooding Locations

Cedar Cove Creek, Eastside Creek, and Machias Creek Tributary

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	City Boundary
▲ 25 yr	◈ 25 yr	◉ 25 yr	Drainage District 8
△ 50yr	◇ 50yr	○ 50yr	Streams
△ 100yr	◇ 100yr	○ 100yr	



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County 1:24,000 roads, DNR 1:24,000 DEM contours.
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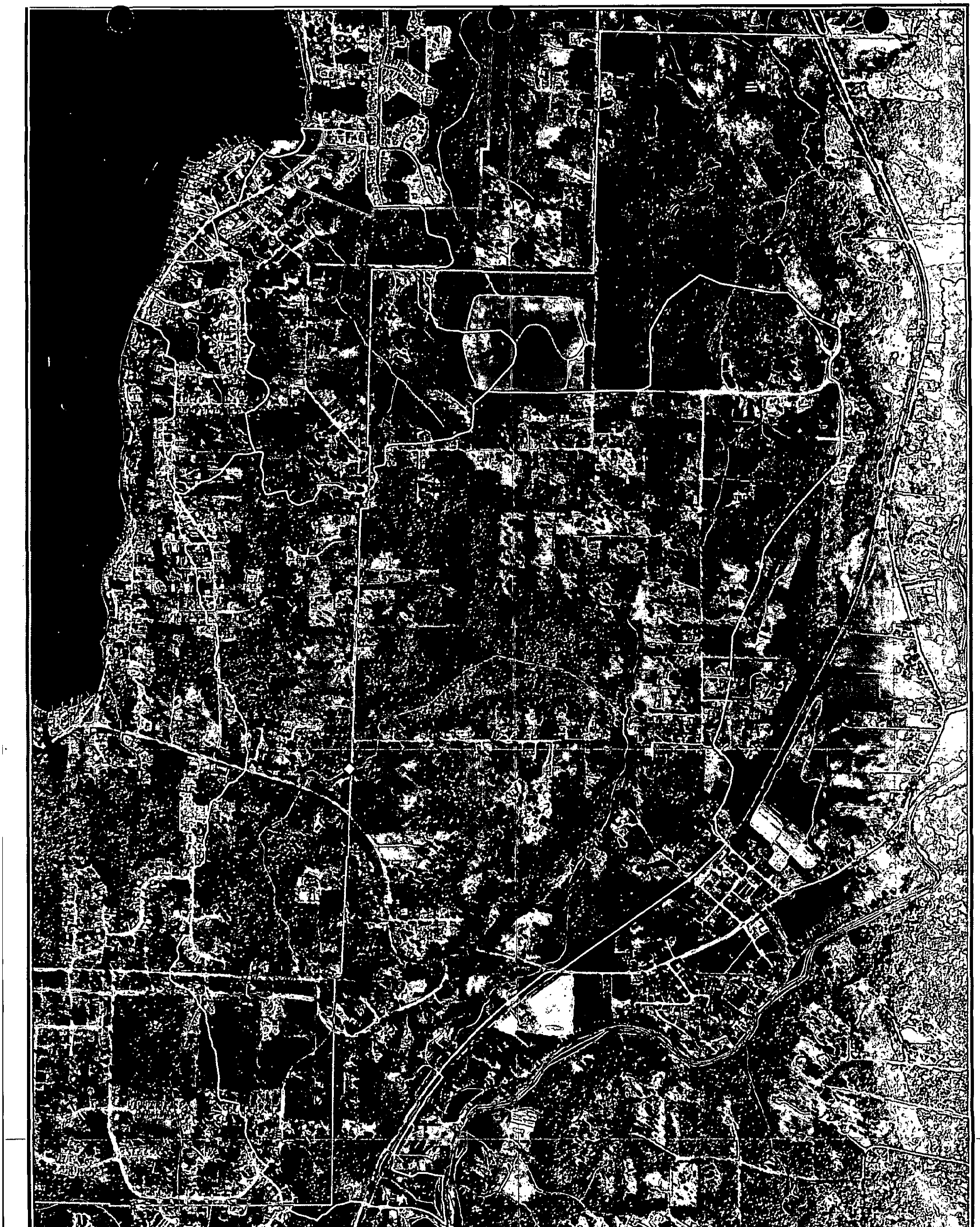

Figure 6A-15

Future Flooding Locations

Cedar Cove Creek, Eastside Creek, and Machias Creek Tributary

Legend

Overbank Flow	County Roads	Driveways	
△ 2 yr	◇ 2 yr	○ 2 yr	Watershed
△ 5 yr	◇ 5 yr	○ 5 yr	UGA Boundary
△ 10yr	◇ 10yr	○ 10yr	City Boundary
△ 25 yr	◇ 25 yr	○ 25 yr	Drainage District 8
△ 50yr	◇ 50yr	○ 50yr	Streams
△ 100yr	◇ 100yr	○ 100yr	

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County 1:24,000 roads, DNR 1:24,000 DEM contours.
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Appendix 8-A

Development Phasing Overlay Red/Green Maps

The following maps reflect the Transportation and Surface Water Management Red and Green Areas. These maps form the basis for the Combined Green Area Map and eventually the Overlay that appears on the zoning map. An explanation of the formation of these maps is provided below and in Chapter 8.

As an initial step toward creating the DPO map, the Plan includes "Red/Green" maps for roads and for surface water capital facilities and a "Combined Green Area" map, which merges the two "Red/Green" to create the final DPO map.

The "Green" Area: The Green area is the portion of the Lake Stevens UGA where capital projects costs match the available financial capacity of the UGA. In other words, it is the area where the total expected revenues from the UGA over the lifetime of the Plan are equal to the capital needs identified within that area. Please refer to Chapter 5, Transportation, and Chapter 6, Surface Water, for lists of capital facilities that would be funded with the available revenue. On the Roads Red/Green map, the Green area is also the portion of the Lake Stevens UGA that has the fullest range of existing infrastructure and is in the closest relative proximity to the City of Lake Stevens.

To state it briefly, it's "business as usual" within the Green area. Public funding of capital facilities is provided in the Green area through the standard CIP process. As described below, urban level development is allowed to proceed through the normal permit review process.

The "Red" Area: Within the Red area portion of the DPO map, there are insufficient funds available to pay for necessary capital facilities. Within this area, the County's capital facilities planning information identifies: (a) the list of capital facilities needed within that DPO area, and (b) a list of public and private revenue sources for the construction of those facilities. Updates to those lists may be developed in the annual CIP process.

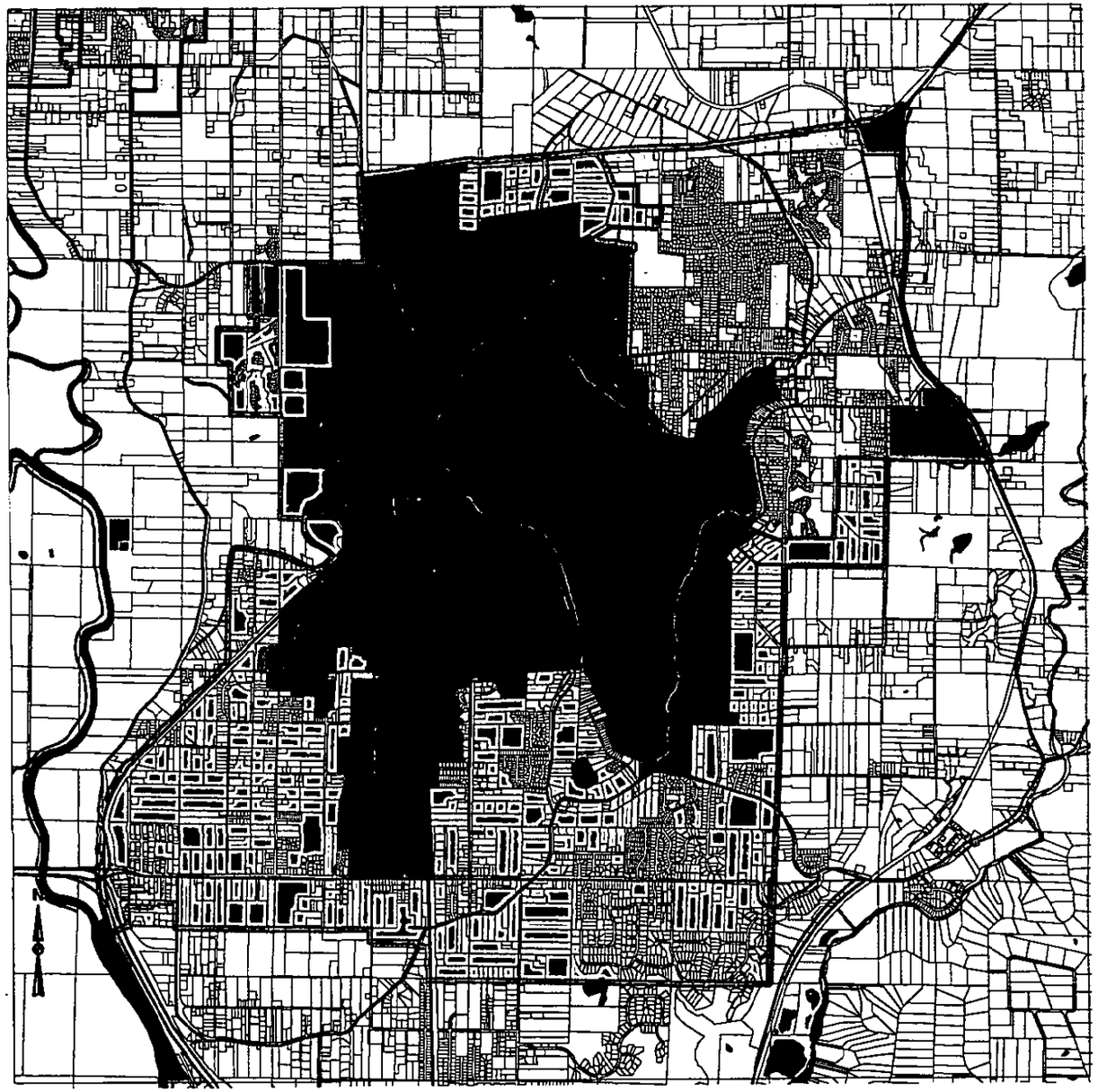
In the Red areas, urban development would be deferred until financing of the requisite capital facilities was assured. This may be achieved through the standard capital facilities planning process over time, or by private sources of funding such as the formation of road improvement districts or other mechanisms.

The Combined Green Area: map merges the Red/Green maps for roads and surface water, using a geographic information system (GIS), to create a Combined Green Area map (Figure 8 4). The Combined Green Areas map was then transferred to the zoning map (Figure 3-2) as an overlay. Adjustments were made to the zoning map to eliminate splits in parcels by the DPO overlay. This overlay is implemented as a "suffix" to zoning categories. For example a property zoned for 7,200 square foot lots and covered by the DPO overlay would be zoned "R-7,200-DPO.

Red/Green Area-Roads

December 2001

- UGA Boundary
- Incorporated City Boundary
- Transportation Green Areas
- Transportation Red Areas



This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. This map is based on the best available information as of the date shown on the map.

Produced by Snohomish County Department of Planning and Development Services.

0 2000 4000 Feet

Figure 8A-1

Red/Green Area-Surface Water

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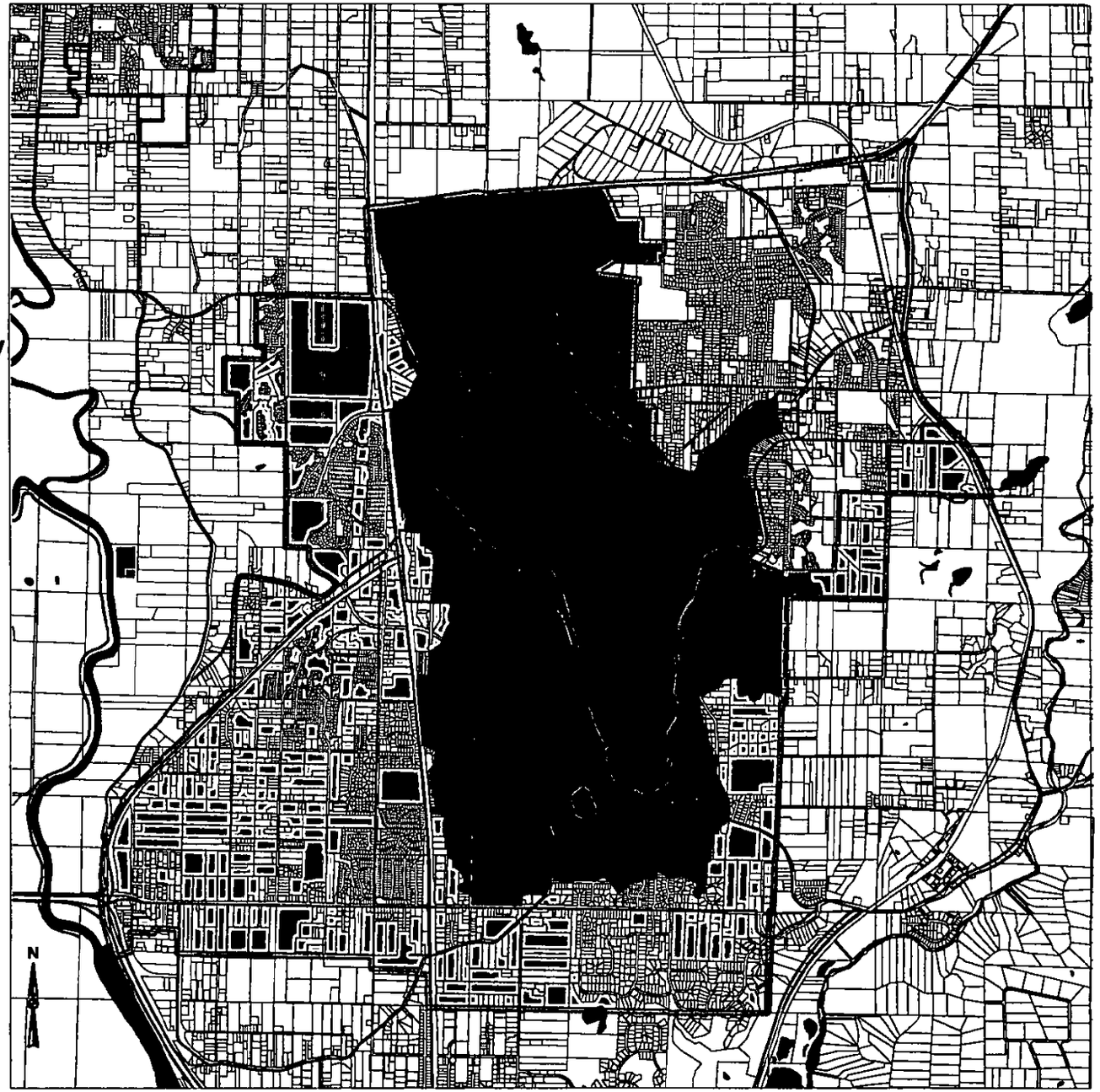


UGA Boundary
Incorporated City Boundary
Surface Water Green Area
Surface Water Red Area

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. This map is based on the best available information as of the date shown on the map.

Produced by Snohomish County Department of Planning and Development Services.

0 2000 4000 Feet

Figure 8A-2

Appendix 9-A

Policies

Policies

The following summarizes all of the policies proposed in the previous plan chapters:

Policy 1: In order to ensure provision of adequate capital facilities and services, Planned Residential Development (PRD) zoning shall not be allowed in areas designated ULDR-4. Criteria for designating areas ULDR-4 with no PRDs include:

1a. Areas with significant environmental constraints.
1b. Areas that have limited potential for expanding necessary capital facilities because of physical constraints to expansion (such as adjacent to water bodies, wetlands or steep slopes).

Policy 2: Because of flooding, wetland conditions, and the presence of threatened species, the Lake 205 and southeast of City areas are zoned R-20,000. Individual sites that meet the following conditions and can demonstrate that they are capable of achieving urban densities may be approved for R-9,600 zoning if:

2a. The applicant can demonstrate that adequate urban services, including sewer, water, roads and power, can be supplied to the site.
2b. The applicant can demonstrate that critical areas and threatened species will be protected and will not rule out feasible placement of dwelling units and services on the site.
2c. The proposed zoning is consistent with densities allowed in any applicable Shoreline Management Master Program designation.

Policy 3: Where *Shoreline Management Master Program* designations allow lower densities than current zoning in the Lake Stevens UGA, development approval shall not be granted at zoned densities until the Master Program designation and the zoning are revised to be consistent with each other.

Policy 4: The County shall prepare for future adoption a neighbor centers designation for use in the Lake Stevens UGA Plan. This new designation shall have the objective of providing an area of retail, residential and employment uses (serving the residences in the immediate neighborhood). The new designation shall emphasize a focus on neighborhood services rather than regional growth, a pedestrian orientation, service by local transit and encompass three to fives acres in size.

Policy 5: Circulation and Private Roads within the Lake Stevens UGA

5a. Circulation roadways and driveway access shall be designed and/or aligned in such a way as to avoid impacting environmentally sensitive or critical areas.
5b. Permanent cul-de-sac and private roads shall be approved only where road connectivity within and between adjacent neighborhoods has been established or planned.

5c. Access to a single roadway by multiple lots shall be limited, as determined necessary to protect public safety and minimize traffic conflicts and delay.
5d. A private road shall be permitted only where it would not obstruct, become part of, or undermine the safety of any existing or planned public roadway.
5e. Private roads shall not be permitted where a public road is required to meet public road access and circulation standards.

Policy 6: County and City Interlocal Agreements

6a. The County and the City of Lake Stevens shall establish a reciprocal mitgation agreement to deal with the traffic impacts of land development occurring within the UGA.
6b. The County and the City of Lake Stevens shall establish an agreement regarding annexations that will address sharing of improvement and debt costs for transportation facilities, evaluating traffic impacts of land use changes and the maintenance costs of future transportation services and facilities.
6c. The County and the City of Lake Stevens shall form joint development and plan review teams for projects having interjurisdictional traffic impacts within the UGA.

Policy 7: Administration of Transportation Improvements

7a. The County and City of Lake Stevens shall identify, prioritize and program transportation improvements within the UGA, using consistent methods and practices.
7b. The County and City of Lake Stevens shall collaborate to ensure compatibility between County and City road standards within the UGA.

Policy 8: Transportation and Land Use Concurrency

8a. The County and City of Lake Stevens shall establish compatible methods for evaluating level of service and the concurrency of transportation improvements with land development.
8b. The County and City of Lake Stevens shall designate land uses within the UGA consistent with the County's, City's and WSDOT's ability to fund needed transportation improvements and maintain transportation concurrency with planned land use.

Policy 9: Transportation Finance

9a. The County and City of Lake Stevens shall encourage the use of road improvement districts (RID) and local improvement districts (LID) to finance transportation improvements not fundable from traditional revenue sources.
9b. The County shall consider bonding as a method for financing transportation improvements, and as a mutually agreed upon basis for transferring debt for the improvements to the City of Lake Stevens; particularly within unincorporated parts of the UGA that are likely to be annexed to the City within six years.
9c. The County and City of Lake Stevens shall consider jointly funding road and street improvements of mutual benefit.

Policy 10: Public Transportation

10a. The County and City of Lake Stevens shall work with Community Transit to plan and implement additional transit services and facilities within the Lake Stevens UGA.
10b. The County and City of Lake Stevens shall promote transit compatible design features on new or upgraded arterial roadways (i.e., bus pullouts, bus shelters, and walkways).
10c. Transit-related and pedestrian related improvements within the Lake Stevens UGA shall be included in the master plans of designated urban centers.

Policy 11: Nonmotorized Transportation

11a. The County and City of Lake Stevens shall work cooperatively to ensure planned walkway and bikeway improvements are included as part of arterial roadway design and construction.
11b. The County and City of Lake Stevens shall promote walkway and bikeway connections to the Centennial Trail.
11c. Bikeway-related improvements within the Lake Stevens UGA shall be included in the master plans of designated urban centers.
11d. Priority shall be given to constructing arterial walkways to urban standards within "green areas" where land development can occur without delay or phasing.
11e. Priority shall be given to constructing arterial walkways to urban standards where they serve schools and parks, and promote overall pedestrian safety.

Policy 12: Important stream and wetland habitat areas should not be degraded and important stream and wetland habitat areas that have been degraded should be restored. Stream buffer averaging shall not be allowed for those streams in the Lake Stevens UGA that are more sensitive to disturbance, including Stevens Creek, Lundeen Creek, Stitch Creek, Hulbert Creek, Weiser Creek, Burri Creek, Mosher Creek, Centennial Creek, and Catherine Creek.

Implementation: This policy would require a modification to the County's Critical Areas Regulations.

Policy 13: All new drainage systems that discharge into stream channels with steep ravine walls shall install tightlines to convey the stormwater from the top of the ravine wall to the stream channel in order to prevent erosion.

Implementation: This policy would require a modification to the County's Critical Areas Regulations and/or to Title 24 of the Snohomish County Code.

Policy 14: The County shall consider the adoption of sensitive lake protection standards for the portion of the UGA that drains into Lake Stevens. These standards would be designed to reduce the amount of phosphorous that is carried by stormwater runoff from new development into the lake.

Implementation: This policy would require additional study by the County and, if recommended, would require a modification to the County's Critical Areas Regulations and/or to Title 24 of the Snohomish County Code.

Policy 15: The County should form an agreement with Drainage Improvement District #8 regarding the funding and implementation of projects located within the jurisdictional boundaries of the drainage district.

Implementation: This policy would be implemented by establishing an interlocal agreement between the County and Drainage Improvement District #8.

Policy 16: All new development within the Weiser Creek, Burri Creek, and Fox Creek basins must base the design of their detention facilities on the use of a flow duration[1] control standard. This means that duration of stormwater flows being released from a site after it is developed must not exceed the existing duration of flows being released from a site for all flows in between 50% of the existing 2-year peak flow rate and existing 50-year flow rate.

Implementation: This Policy would require a modification to Title 24 of the Snohomish County Code.

1. Flow duration means the aggregate time that peak flows are at or above a particular flow rate of interest. For example, the total amount of time over the past forty years in which flows exceeded the 2-year peak flow rate.

Policy 17: Prioritize the use of UGA-generated community/neighborhood park fees for acquisition in the southwest quadrant of the UGA.

Policy 18: Locate regional facilities in the southwest quadrant of the Lake Stevens UGA wherever appropriate and possible, in order to augment the lack of parks in this area.

Policy 19: The County shall adopt policies and regulations that phase development. Such regulations shall direct new development to areas that have access to a full range of urban services. The regulations shall provide opportunities for private sector financing of improvements in areas where existing levels of urban service are low and the need for public investment to improve the LOS exceeds revenues. Clear and concise criteria shall be developed for the application and removal of any phasing boundaries and related regulations or policies. The phasing strategy used in the Lake Stevens UGA shall be tied to a capital facilities plan, and release of properties from any phasing requirements shall be supported by a demonstration that adequate infrastructure is available in Lake Stevens UGA.

Policy 20: The County and City shall pursue an interlocal agreement to jointly develop strategies for implementing GPP objectives LU 5.A, LU 5.B and HO 2.B and their supporting policies.

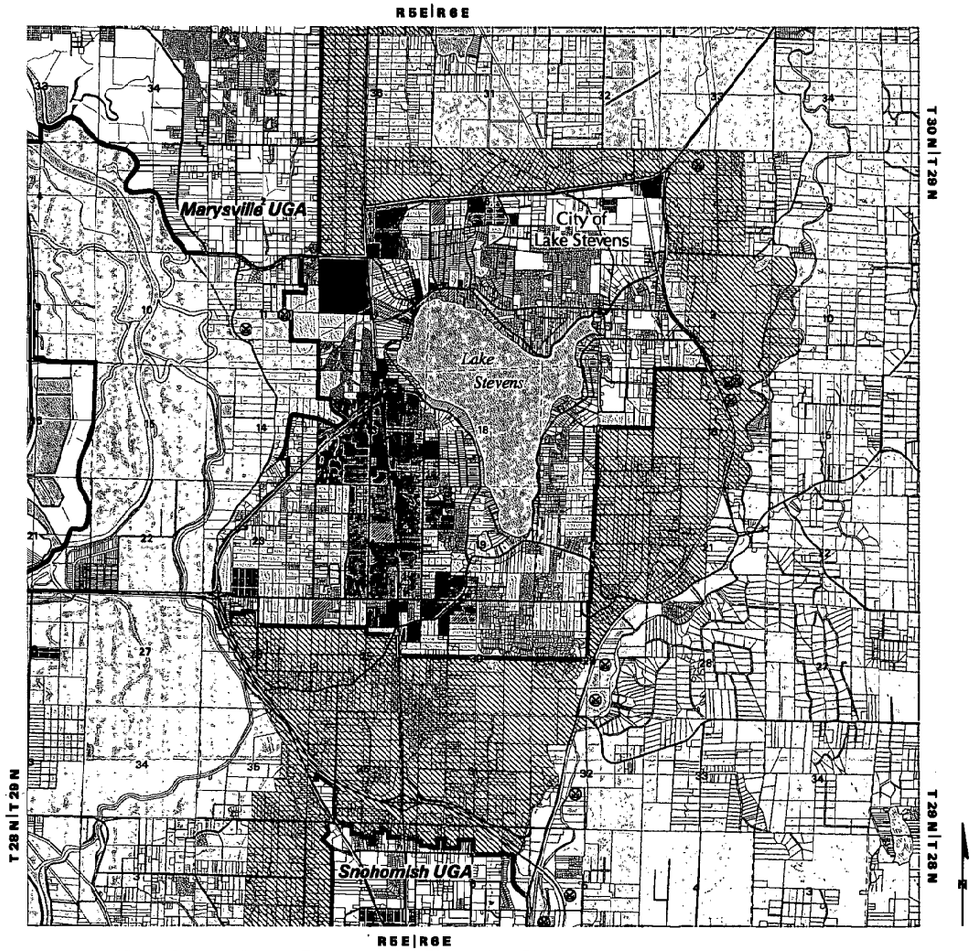
Policy 21: The County and the City shall explore entering into an annexation master agreement that sets forth annexation areas and timing for annexation as well as mutually acceptable standards for development.

Policy 22: The County and City should negotiate interlocal agreements which address issues arising from plan adoption, and a master annexation interlocal agreement, to address issues arising from annexations within the UGA.

EXHIBIT B

Plan adoption and GPP amendment
LAKE STEVENS UGA

Future Land Use Map



Snohomish County GMA Comprehensive Plan
Future Land Use for the Lake Stevens UGA Area

LEGEND **ADOPTED DEC. 7, 2001**

- Riverway Commercial Farmland
- Rural Residential-5 (1 DU/5 Acres)
- Rural Residential (1 DU/5 Acres Basic)
- Urban Low Density Residential (4 DU/Acre)
- Urban Low Density Residential (6 DU/Acre)
- Urban Low Density Residential (4-8 DU/Acre)
- Urban Medium Density Residential (6 - 12 DU/Acre)
- Urban High Density Residential (12 to 24 DU/Acre)
- Rural Industrial
- Urban Industrial
- Urban Commercial
- Public Use
- Incorporated Cities, Towns, Tribal Lands, & Rights-of-Way
- Rural Urban Transition Area
- Urban Growth Area Boundary
- Incorporated City Boundary
- Mineral Lands

0 2000 4000 6000

Scale in Feet

.../lastreports/fu_ordinance_b_1201.eml

Snohomish County disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. No representation or warranty is made concerning the accuracy, currency, completeness or quality of data depicted on this map. Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.

Produced by Snohomish County Department of Planning and Development Services, dkt, September 30, 1999. Revised 12-7-2001.

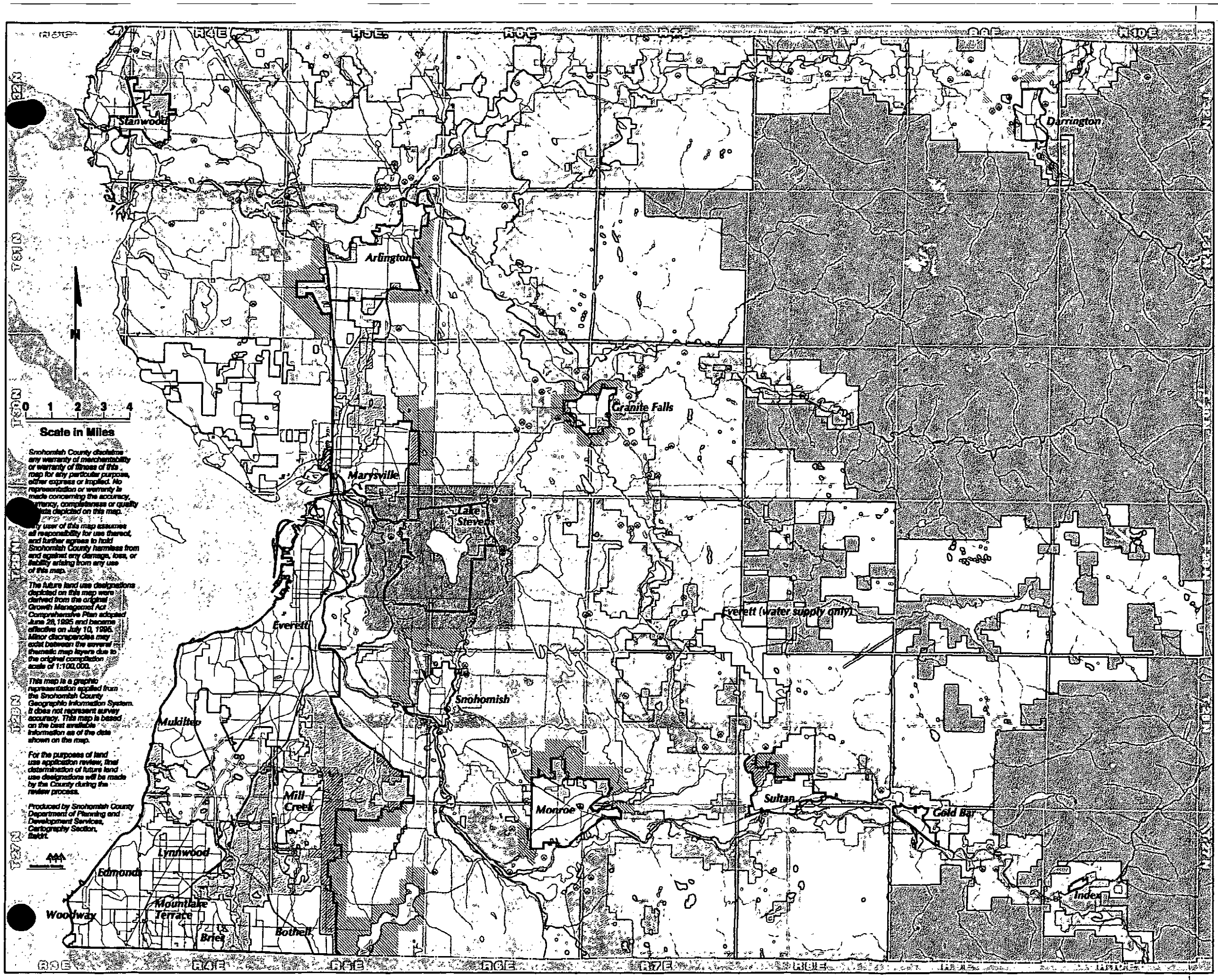
For official City designations and boundaries, refer to the City of Stevens Comprehensive Plan.

This map is a graphic representation derived from the Snohomish County Geographic Information System. It does not represent survey accuracy. Property lines are for illustrative purposes only and depict only generalized parcelization. This map is based on the best available information as of the date shown on the map.

Snohomish County

ORDINANCE 01-073

EXHIBIT B


Stanwood
Arlington
Darrington
Granite Falls
Marysville
Lake Stevens
Everett
Everett (water supply only)
Snohomish
Mukilteo
Mill Creek
Monroe
Sultan
Gold Bar
Index
Lynnwood
Edmonds
Mountlake Terrace
Woodway
Brier
Bothell
0 1 2 3 4
Scale in Miles
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Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.
The future land use designations depicted on this map were derived from the original Growth Management Act Comprehensive Plan adopted June 28, 1995 and became effective on July 10, 1995. Minor discrepancies may exist between the several thematic map layers due to the original compilation scale of 1:100,000.
This map is a graphic representation applied from the Snohomish County Geographic Information System. It does not represent survey accuracy. This map is based on the best available information as of the date shown on the map.
For the purposes of land use application review, final determination of future land use designations will be made by the County during the review process.
Produced by Snohomish County Department of Planning and Development Services, Cartography Section.

Snohomish County
GMA Comprehensive Plan
FUTURE LAND USE
Latest Revision December 2001

LEGEND

- National Forest (Includes some private and non-federal public lands)
- Local Forest (Tulalip Only)
- Commercial Forest
- Commercial Forest - Forest Transition Area
- Local Commercial Farmland
- Upland Commercial Farmland
- Riverway Commercial Farmland
- Low Density Rural Residential (1 DU/20 Acres)
- Rural Residential-10 Resource Transition (1 DU/10 Acres)
- Rural Residential-10 (1DU/10 Acres)
- Rural Residential-5 (1 DU/5 Acres)
- Rural Residential - RD (1 DU/5 Acres)
- Rural Residential (1 DU/5 Acres Basic)
- Urban Low Density Residential - Limited (4 - 5 DU/Acre for Marysville UGA Only)
- Urban Low Density Residential - Limited (5 - 6 DU/Acre for Marysville UGA Only)
- Urban Low Density Residential (4 - 6 DU/Acre)
- Urban Medium Density Residential (6 - 12 DU/Acre)
- Urban High Density Residential (12 to 24 DU/Acre)
- Public Use (Marysville UGA Only)
- Parks/Openspace (Arlington UGA Only)
- Other Land Uses (See Subarea or UGA Plans)
- Rural Freeway Service
- Rural Commercial
- Urban Commercial
- Rural Industrial
- Urban Industrial
- Incorporated Cities, Towns, Tribal Lands, & Rights-of-Way
- Urban Reserve Overlay
- Growth Phasing Overlay
- Rural/Urban Transition Area
- Please refer to UGA Plans for future land use designations.
- Proposed Lake Stevens Urban Growth Area Boundary
- Existing Urban Growth Area Boundary
- Incorporated City Boundary
- Arterial Roadway
- Mineral Lands
- Portion of the Tulalip Subarea Plan Remanded by County Council to the Planning Commission for further consideration by Motion 99-262.

AMENDMENTS to Growth Management Act Comprehensive Plan-General Policy Plan: Effective 7/10/95; ORD. 94-125.

By Most Recent Date:

Maltby FLU/UGA 01/08/01, Ord. 00-094;
2000 Docket-FLU 01/08/01, Ord. 00-91;
Arlington FLU/UGA 07/26/00, Ord. 00-050;
1999 Docket-FLU 01/02/00, Ord. 99-100;
Marysville and Arlington Areas FLU 01/02/00, Ord. 99-099;
Tulalip Reservation FLU, 08/01/99, Ord. 99-031;
Lake Stevens Area FLU, GM Hearings Board Remand, 05/28/99, Ord. 99-028;
Darrington Area FLU, GM Hearings Board Remand, 03/14/99, Ord. 99-005;
Marysville FLU/UGA, 01/23/99, Ord. 98-142;
1998 Docket-FLU, 12/27/98, Ord. 98-112/98-119;
1998 Docket-Arlington/Marysville UGA, 12/27/98, ORD. 98-114;
1998 Docket-Sultan UGA, 12/27/98, ORD. 98-115;
Smith-Spencer Islands FLU, GM Hearings Board Remand, 9/20/98, ORD. 98-072;
Southwest Cities UGA, GM Hearings Board Remand, 9/20/98, ORD. 98-071;
Island Crossing FLU, GM Hearings Board Remand, 9/20/98, ORD. 98-069;
Arlington UGA, GM Hearings Board Remand, 9/20/98, ORD. 98-068;
Mill Creek UGA Plan, 8/16/98, ORD. 98-051;
Snohomish UGA, 8/8/98, ORD. 98-036;
Snohomish UGA Plan, 8/8/98, ORD. 98-035;
Arlington/Marysville UGA, 9/27/97, ORD. 97-076;
Commercial Forest FLU, GM Hearings Board Remand, 7/12/97, ORD. 97-056;
Gold Bar UGA Plan, 6/14/97, ORD. 97-036;
Gold Bar UGA, 6/14/97, ORD. 97-034;
GPP Text and FLU, GM Hearings Board Remand, 12/12/96, ORD. 96-074;
Maltby UGA, 12/12/96, ORD. 96-073;
Arlington/Smokey Point/Marysville FLU, 10/14/96, ORD. 96-079;
Lake Stevens UGA Plan, 12/7/01, ORD. 01-073

City Annexation Update 12/05/01

EXHIBIT B

THIS DOCUMENT CONTAINED
LARGE FORMAT PAGES.

SEE **LRG_FORMAT** DOCUMENT
TYPE FOR IMAGES.

Exhibit C

General Policy Plan (GPP) Text Amendments Adopted Concurrently with the Lake Stevens UGA Plan

Note: All page references are to page numbers in the GPP that was adopted on June 28, 1995, has been in effect since July 10, 1995, and was last amended on December20, 2001, by Amended Ordinance No. 00-091.

Amend the second full paragraph on page LU-7 to read:

To improve the efficiency of urban residential land utilization, new UGA plans and development regulations will ensure that future residential subdivisions will achieve a minimum net density of 4 to 6 dwelling units per acre except in areas within or near critical areasthat are large in scope, with a high rank order value, and are complex in structure and function. In addition, the county will provide for higher density and mixed use housing types around and within centers and along major transportation corridors; encourage infill and intensification of areas at existing residential densities; and also broaden the variety of housing types within both traditional single family and multi-family neighborhoods while respecting the vitality and character of established residential neighborhoods. A mix of housing types with a range of densities will be encouraged throughout UGAs, as long as they are carefully sited, well designed, and sensitively integrated into existing communities.

Amend Policy 2.A.1 on page LU-8 to read:

2.A.1 Within UGAs, development regulations shall be adopted which will require that new residential subdivisions achieve a minimum net density of 4-6 dwelling units per acre in all unincorporated UGAs, except (1) in the UGAs of Darrington, Index, and Gold Bar as long as those cities do not have sanitary sewer systems, (2) in areas without sanitary sewers which the sewer purveyor with jurisdiction, or in nearest reasonable servicing proximity, will certify are either an unsewerable urban enclave or are not capable of being connected to public sewers via annexation within the next six years or by the improvements provided pursuant to its adopted six year capital facilities plan, ~~or~~ 3) where regulations for development on steep slopes require reduced lot or dwelling unit yields, or 4) where a lower density is necessary because of the existence of critical areas that are large in scope, with a high rank order value, and are complex in structure and function. Lot size averaging, planned residential developments, sewerage regulations and other techniques may be used to maintain minimum density or to insure later development at minimum densities is not inhibited when sanitary sewers become available. The county shall not support any proposed annexation by a city unless and until an annexation agreement has been signed by the county and said city ensuring the continued implementation of this policy for the area to be annexed.

Add new policy 2.A.10 on page LU-9 to read:

2.A.10 Detailed UGA plans may identify minimum and maximum allowable densities of less than four dwellings per net acre in areas within or near critical areas that are large in scope, with a high rank order value, and are complex in structure and function.

Repeal policy 2.B.9 on page LU-10 to read:

~~Within the Lake Stevens UGA, the Urban Commercial designations in the southeast quadrant of the intersection of 4th Street NE and SR-9 shall be zoned to the Planned Community Business zone.~~

Add new policy 2.C.6 on page LU-12 to read:

In those areas where an UGA Plan identifies that revenues from public and/or private sources to fund capital facilities are lacking and, consequently, a full range of public facilities necessary to support development is unavailable, the county may apply a development phasing overlay. The development phasing overlay will be applied as an overlay to a zoning classification within an UGA, pursuant to direction in an UGA plan, and will require that urban development of the overlay area be delayed until a commitment is in place to fund and construct public facilities necessary to support development.

Amend the first paragraph of the first column on page LU-62 to read:

These designations encompass residential lands within the unincorporated UGA and are intended to provide for urban housing opportunities. The density ranges shown indicate the allowable number of dwelling units per acre and are further defined by zoning classifications that implement the Future Land Use Map. The allowable density for a development will be determined by the provisions of the GMA zoning code rather than the density values associated with the plan designations, except that the minimum density in UGAs may not be less than 4 dwelling units per net acre except as specified in Policy LU 2.A.1. There are no other minimum density requirements imposed by these plan designations. Rezones to any of the zoning categories listed below for urban residential designations may be approved consistent with general zoning criteria, GPP policies, and existing pre-GMA subarea plan policies, if applicable and consistent with the GPP. ~~Phase 2 planning for UGAs and zoning adopted concurrently with subarea plan adoption will determine final zoning.~~

Add a new paragraph between the first and second paragraphs of the second column on page LU-62 to read:

The UGA plans and any associated development regulations will provide the detail necessary to interpret the GPP as applied to specific geographic areas and circumstances. Detailed UGA plans may further limit urban residential density ranges and implementing

zoning within the designations described below. Planning for UGAs and zoning adopted concurrently with a detailed UGA plan will determine final zoning.

Amend the second paragraph of the first column on page LU-62 to read:

If existing pre-GMA [TAKE OFF UNDERLINE; ALREADY IN TEXT] subarea comprehensive plan densities fall within the GPP designation's density range, they will continue to be used to determine allowable dwelling unit yield until replaced by more detailed UGA subarea plans. The listed densities may be exceeded by the bonus density provided by the zoning code such as in planned residential development zones. The urban residential designations include some lands that are currently designated on pre-GMA subarea comprehensive plans with maximum densities of only two dwelling units or less per acre. These areas are specifically identified on the Future Land Use Map by a growth phasing overlay. In those areas, no subdivisions will be allowed until a UGA plan detailing the appropriate urban land use and density is adopted or unless they meet criteria specified in the GPP's land use policies.

Amend the first full paragraph of the second column on page LU-62 to read:

Urban Low Density Residential (ULDR: 4 to 6 dwelling units per acre). This designation covers various pre-GMA and GMA subarea plan designations which allow mostly detached housing developments on larger lot sizes. Land in this category may be developed at a density of four to six dwelling units per acre in areas without significant physical constraints. More detailed UGA Plans may determine more specific density limits within this density range. UGA plans may designate lower densities in areas within or near critical areas that are large in scope, with a high rank order value, and are complex in structure and function. Potential implementing zones include the R-7,200, PRD-7,200, R-8,400, PRD-8,400, R-9,600, PRD-9,600 and WFB zones. An additional implementing zone for areas within or near critical areas that are large in scope, with a high rank order value, and are complex in structure and function is R-20,000.

Add a new paragraph on page LU-62 after the third full paragraph in the second column to read:

Development Phasing Overlay

Where parts of an Urban Growth Area lack revenues from public and/or private sources to provide adequate public facilities necessary to support development, the county may apply a Development Phasing Overlay suffix to implementing zoning. This suffix may be applied along with any urban zone based on direction from an UGA plan containing an UGA-level capital facility needs analysis. Once in place, the development phasing overlay regulation will require that urban development of the overlay area be delayed until a commitment is in place to fund and construct pubic facilities necessary to support development.

Amend the last full paragraph of the second column on page LU-62 to read:

Marysville and Lake Stevens UGA Designations Public Use (PU). The Public Use designation applies to existing or planned government-owned and/or operated properties in

the Marysville and Lake Stevens UGAs, including schools, parks, government buildings, utility plants and other government operations or properties. There are no specific implementing zones for this designation since zoning will vary from site to site. However, only zones that allow the use outright or conditionally may implement this designation. Generally, implementing zoning will be consistent with surrounding zones.

dd two new paragraphs on page LU-63 after the second full paragraph to read:

Urban Low Density Residential – Limited (ULDR-L (4)): 4 dwelling units per acre. Like the ULDR designation, the ULDR-L (4) designation allows mostly detached housing development on larger lot sizes in the Lake Stevens UGA. This designation is applied in a portion of the Sunnyside area, around Lake Stevens and southeast of the City that are confined to the lowest density urban zone because of environmental constraints and difficulties in service provision. Implementing zones include R-9,600 and R-20,000.

Urban Low Density Residential – Limited (ULDR-L (6)): 6 dwelling units per acre. The ULDR-L (6) designation allows mostly detached housing development on larger lot sizes. It is applied to most of the non-constrained ULDR land in the Lake Stevens UGA. Land in this category may be developed at a density of six dwelling units per acre. Implementing zones include R-7,200 and PRD-7,200.

Add new Objective CF 6.C on page CF-14 to read:

CF 6.C Investigate and adopt minimum level of service standards for park land as part of the preparation and adoption of UGA plans or future revisions to the Capital Plan or Parks and Recreation Plan.

Add a new policy CF 6.C.1 on page CF-14 to read:

CF 6.C.1 Establish minimum level of service standards for park land in UGAs as part of the completion of UGA plans. Minimum LOS standards for park lands will be adopted in UGA plans and/or through amendments to this plan. These standards will require budget actions or other measures to ensure that LOS for park lands will not decrease below minimum levels.

EXECUTIVE VERSION

Exhibit D

Amendments to the Transportation Element of Snohomish County's Comprehensive Plan Adopted Concurrently with the Lake Stevens Urban Growth Area Plan

This Exhibit contains tables and references to maps that amend the Transportation Element of Snohomish County's Comprehensive Plan. The actions and documentation contained herein supplement those previously adopted within the transportation element by the county council in July of 1995 and June of 2001. References to the transportation element are provided in terms of specific page, table and map numbers.

Amendment of Tables within the GMA Comprehensive Plan Transportation Element adopted the Summer 1995.

1. Amend Table 17 – Major Roadway Widenings and Lane Additions, on pages 78-83, by supplementing the original project recommendations with the Lake Stevens UGA project recommendations contained within Table 1- Recommended Major Roadway Widenings, Lane Additions, and Design and Safety Standards.

2. Amend Table 20 – Recommended Bikeways, on pages 88-92, by supplementing the original project recommendations with bikeway projects contained within Table 2- Recommended Bikeways Classifications.

Definitions for the roadway and bikeway improvements that are abbreviated within Tables 1 and 2 are defined below.

- Arterial Capacity Enhancement (AC) – project improvements that enhance effective capacity and traffic flow on a county arterial by significantly widening lanes, adding shoulders, adding walkways, improving positive guidance and implementing traffic control revisions. The primary intent of these improvements is to enhance existing capacity in order to safely and efficiently handle existing and future traffic on the subject arterial.

- Arterial Capacity and Operations (AC/O) – project improvements that enhance effective capacity and traffic operations on a county arterial by adding through- and/or turn-lanes, adding shoulders and walkways, introducing channalization and implementing traffic control and signalization. The primary intent of these improvements is to increase arterial lane capacity, enhance traffic safety and efficient traffic operations at key intersections, and have a positive effect on areawide traffic circulation and level of service.

- Arterial Design and Safety Standards (AS) – project improvements that allow a county arterial to meet the geometric and structural design standards defined within the most current version of the Engineering, Design and Development Standards (EDDS) Handbook. The primary intent of these improvements is to enhance traffic flow and make the subject arterial safe for automobiles, pedestrians and nonmotorized transportation.

- New Arterial Alignments (NR) – project improvements that entail construction of an arterial roadway or the extension of an existing roadway across a new alignment. The primary intent of these improvements is to increase arterial lane capacity, relieve congestion on existing arterials, serve developing areas of the county and have a positive effect on areawide traffic circulation and level of service.

- Bikeways Classification (B) – bikeway improvements as part of an arterial roadway project. The primary intent is to provide areawide circulation for bicycle use as an alternative mode of travel.

Amendment of Maps that are part of the GMA Comprehensive Plan Transportation Element Amendments adopted June 2001.

1. Amend Map 1 – Arterial Circulation, a separate map that is part of the Transportation Element, to include the arterial classifications and references to supplemental arterial roadway projects listed by Table 1 and adopted within the Lake Stevens UGA Plan.

2. Amend Map 2 – Countywide Bicycle Facility System, a separate map that is part of the Transportation Element, to include bikeway classifications and references to supplemental bikeway projects presented by Figure Table 2 and adopted within the Lake Stevens UGA Plan.

TABLE 1

Snohomish County Transportation Element
Lake Stevens UGA Plan
Recommended Major Roadway Widenings, Lane Additions, and Design and Safety Standards

(Supplemental Projects for Table 17, Transportation Element)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Staging	
					Mid-Range	Long-Range
AC-2	S. Lake Stevens Rd. SR-9 to Machias Cutoff	CL	1.68	Urban 2-Lane		$7,668.1
A/C0-1	20th Street SE SR-9 to S. Lake Stevens Rd.	MA	0.51	Urban 5-Lane	$5,431.4	
AC/O-2	20th Street SE S. Lk. Stev. Rd. to Williams Rd.	MA	1.13	Urban 3 -Lane		$5,232.0
AC/O-3	20th Street SE Cavalero Road to SR-9	MA	1.25	Urban 5-Lane	$10,537.8	
AC/O-5	Lundeen Pkwy SR-9 to 99th Ave. NE	MA	0.65	Urban 3-Lane (Ops.)	$3,650.2	
A/CO-6	91st Avenue NE/SE Market Place to SR-204	CL	0.31	Urban 3-Lane	$1,001.9	
AS-2	Vernon Road and Bridge					
	Lundeen Pk Wy to N. Davies Rd	CL	0.69	Urban 2-Lane		$2,389.2
	N. Davies Rd to SR-9	CL	0.16	Urban 3-Lane	$554.0	
AS-6	92nd Ave. NE SR-204 to 4th St. NE	CL	0.22	Urban 2-Lane	$675.9	
AS-7	Lake View Dr./ 20th St. SE Lundeen Pk Wy to Lk Stev. C/L	MA	0.47	Urban 2-Lane	$2,811.6	
	Subtotal		7.07		$24,662.8	$15,289.3
				Total	$39,952.1	

PA = Principal Arterial (urban)
CL = Collector (urban)
MA = Minor Arterial (urban)
MaC = Major Collector (rural)
MiC = Minor Collector (rural)

Mid-Range 2001 to 2006
Long-Range 2007 to 2012

TABLE 2

Snohomish County Transportation Element
Lake Stevens UGA Plan
Recommended Bikeways Classification

(Supplemental Projects for Table 20, Transportation Element)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Staging	
					Mid-Range	Long-Range
B-62	Soper Hill Road 83rd Ave. NE to Lundeen Pk Way	MA	1.08	Bicycle Lane		X
B-63	Market Place SR-204 to 99th Ave NE	CL	0.90	Bicycle Lane		X
B-64	Chapell Hill Rd 99th Ave. NE to N. Davies Rd	CL	0.48	Bicycle Lane		X
B-65	20th Street SE SR-2 Ramps to Cavalero Hill Rd	MA	0.38	Bicycle Lane	X	
B-66	20th Street SE Cavalero Hill Rd to SR-9	MA	0.51	Bicycle Lane	X	
B-67	20th Street SE SR-9 to Williams Rd	MA	1.60	Bicycle Lane		X
B-68	79th Ave. SE 20th Street SE to 8th Street SE	CL	0.76	Bicycle Lane		X
B-69	91st Ave. NE SR-204 to 20th Street SE	CL	1.65	Bicycle Lane		X
B-70	99th Ave. NE 20th Street SE to 4th Street NE	CL	1.49	Bicycle Lane		X
B-71	4th Street NE 99th Ave. NE to 92nd Ave. NE	CL	0.34	Bicycle Lane		X
B-72	92nd Ave. NE 4th Street NE to N. Davies Rd	CL	0.22	Bicycle Lane		X

PA = Principal Arterial (urban)
CL = Collector (urban)
MA = Minor Arterial (urban)
MaC = Major Collector (rural)
MiC = Minor Collector (rural)

Mid-Range 2001 to 2006
Long-Range 2007 to 2012

TABLE 2 (continued)

Snohomish County Transportation Element
Lake Stevens UGA Plan

Recommended Bikeways Classification

(Supplemental Projects for Table 20, Transportation Element)

Map No.	Location and Limits	Road Class	Miles	Recommended Improvement	Staging	
					Mid-Range	Long-Range
B-73	4th Street SE 91st Ave. to 99th Ave. NE	CL	0.60	Bicycle Lane		X
B-74	20th Street NE Hartford Rd to N. Machias Rd	MA	0.56	Bicycle Lane		X
B-75	8th Street NE 79th Ave. to 91st St. NE	CL	0.72	Bicycle Lane		X
B-76	10th Street NE SR-204 to 79th Avenue SE	CL	0.37	Bicycle Lane		X
	Total		11.66			

PA = Principal Arterial (urban)
CL = Collector (urban)
MA = Minor Arterial (urban)
MaC = Major Collector (rural)
MiC = Minor Collector (rural)

Mid-Range 2001 to 2006
Long-Range 2007 to 2012