EAST KING COUNTY
COORDINATED WATER SYSTEM PLAN

VOLUME II
APPENDICES

October, 1989

Prepared By:

Economic and Engineering Services, Inc.

Under the Direction Of:

East King County
Water Utility Coordinating Committee

In Association With:

Carr/Associates
CH2M-Hill
Pacific Groundwater Group, Inc.
ST Engineering, Inc.

APPENDICES

TABLE OF CONTENTS

APPENDIX A

INDIVIDUAL WATER SYSTEM PLANS

(On File with King County and/or
Department of Social and Health Services)

APPENDIX B

REGULATIONS RELATED TO THE COORDINATED WATER SYSTEM PLAN

(On File with King County)

APPENDIX B

SUPPORTING LAWS, REGULATIONS, AND ORDINANCES

1. Ordinance No. 7893 - Designating East King County as a Critical Water Supply Service Area
2. Ordinance No. 7894 - Establishing the Water Utility Coordinating Committee
3. Ordinance No. 8214 - Approving the Boundaries for the East King County Critical Water Supply Service Area
4. Chapter 70.116 RCW, Public Water System Coordination Act of 1977
5. Chapter 248-56 WAC, Water System Coordination Act - Procedural Regulations
6. Chapter 248-57 WAC, Water System Coordination Act - Fire Flow Regulations
7. Chapter 248-59 WAC, Water System Coordination Act - Rules for Resolving Water Service Area Conflicts

APPENDIX C

CONTENT REQUIREMENTS FOR WATER SYSTEM PLANS

C-1 Complete Plan

C-2 Abbreviated Plan

C-3 Planning Questionnaire

APPENDIX C-1

COMPLETE PLAN

PLAN CONTENT CHECKLIST

The following checklist summarizes the topics which are discussed in each section of this handbook. It is intended to function as a checklist for the utility, assuring that key topics are in the draft water system plan. DSHS will use this checklist during the plan review process. Another copy of this checklist is included at the end of the handbook so it can be torn out for easy reference.

Section	Topic
☐ Future Service Area	
Map of Existing Service Area	☐
Criteria for Future Service Area	☐
Map of Future Service Area	☐
Explanation of Boundaries Shown on Map	☐
☐ Service Area Characteristics	
History of Growth and Water Service	☐
Inventory and Summary of Related Plans	☐
Geography of the Service Area	☐
Other Items Affecting the Service Area	☐
☐ Service Area Policies	
Summary of Applicable Policies	☐
Discussion on Effect of Applicable Policies	☐
☐ Future Growth	
Existing Land Use Patterns	☐
Map of Future Land Use Patterns	☐
Methodology and/or Source of Land Use Projections	☐
Population Forecasts	☐
Methodology and/or Source of Population Forecasts	☐
Map of Future Population Distribution	☐
☐ Future Water Demand	
Amount of Water Used by Category	☐
Evaluation of Existing Water Use	☐
Conservation	☐
Assumptions for Future Water Demand Calculations	☐

- [ ] Future Water Demand Projections
- [ ] Justification of Future Water Demand
- [ ] Map Showing High Demand Areas

- [ ] Performance and Design Criteria
  - [ ] List of Applicable Criteria
  - [ ] How Criteria will be Applied

- [ ] Inventory of Existing System
  - [ ] List of Facilities in Each Grouping
  - [ ] Functions and Relationships of Facilities
  - [ ] Evaluation of Effectiveness of Facilities
  - [ ] Relationship of Groupings
  - [ ] Evaluation of Recent Improvements
  - [ ] Map of Facilities and Pressure Zones

- [ ] Fireflow
  - [ ] Identification of Standards
  - [ ] Source of Fireflow Standards
  - [ ] Map of Development Classifications (or the Utility's Own Categories)
  - [ ] Summary of Future Fireflow Needs

- [ ] Hydraulic Analysis
  - [ ] Methodology and/or Description of Program
  - [ ] Pressure Limitations and Justification
  - [ ] Description of Scenarios
  - [ ] How Input Data was Derived
  - [ ] Summary of Results

- [ ] Water Resources
  - [ ] Description and Evaluation of Existing Source
  - [ ] Inventory and Summary of Water Resource Studies
  - [ ] Evaluation of Potential for Contamination
  - [ ] Water Rights Assessment (Chart)

- [ ] Water Quality
  - [ ] Assessment of Source Water Quality
  - [ ] Assessment of Distribution System Water Quality
  - [ ] How Identified Problems will be Addressed

- [ ] Summary of System Deficiencies
  - [ ] List of Documented Deficiencies
  - [ ] Discussion of Deficiencies not Previously Documented

☐ Identification of Improvements

- List of Alternative Packages ☐
- Evaluation Criteria ☐
- Assessment of Alternatives ☐
- Description and Justification of Selected Alternatives ☐
- Map of Improvements ☐

☐ Scheduling of Improvements

- Five-Year Definite Schedule ☐
- Schedule for Remaining System Needs ☐
- Improvement Program (Chart) ☐

☐ Financial Program

- Past and Present Financial Status ☐
- Available Revenue Sources ☐
- Allocation of Revenue Sources ☐
- Ability to Secure Needed Revenue ☐
- Assessment of Impact Upon Rates ☐

☐ Operations Program

- Organizational Chart ☐
- Responsibilities of Positions ☐
- Certification Status ☐
- Identification of System Components ☐
- Routine Operation ☐
- Preventive Maintenance Program ☐
- Inventory of Chemicals, Equipment and Supplies ☐
- Sampling Procedure ☐
- Violation Response Procedure ☐
- Emergency Call-up List ☐
- Vulnerability Analysis ☐
- Contingency Plans ☐
- Cross-Connection Control Program ☐

☐ Miscellaneous Supportive Documents

- Environmental Impact Statement or Determination of Non-Significance ☐
- Satellite System Management Program ☐
- Text of Appropriate Agreements ☐
- Response from Affected Entities ☐
- Standard Construction Specifications (Chart) ☐
- Watershed Control Program ☐

APPENDIX C-2

ABBREVIATED WATER SYSTEM PLAN

An abbreviated water system plan is required from water systems between 100 and 1,000 services which are located within a Critical Water Supply Service Area. Some systems may be exempted from this requirement, so be sure to check with the Department of Social and Health Services prior to beginning the plan.

The abbreviated water system plan is intended to be less detailed than a water system plan. In general, the larger the water system, the more effort and detail should go into plan preparation. For more complete information about topics identified in this outline, please refer to the DSHS Planning Handbook for Water System Plans.

A. Basic Planning Data

1. Future service area map and agreement(s).
2. History of water system development.
3. Existing population and land use.
4. Future population and land use projections for at least the next ten years.
5. Existing water consumption and future water demand for at least the next ten years.

B. System Analysis

1. Inventory of existing facilities, including map of facilities and pressure zones.
2. Evaluation of existing system, including:
   a. Hydraulics
   b. Fireflow
   c. Water Quality
   d. Water Rights
   e. Adequacy of Source

C. Improvements

1. Identify improvements which will be needed in the next ten years.
2. Improvement schedule (definite for at least the first five years).
3. Cost of scheduled improvements, and how each will be financed.

D. Operations Program

1. Name, phone numbers, and responsibilities of person(s) involved in water system operations. (Identify who is certified and at what level.)

2. Routine operation procedures.

3. Preventive maintenance procedures.

4. Sampling procedure, including response when sample results exceed state standards.

5. Response to emergencies.

E. Relationship with other Plans

1. Compatibility with Regional Supplement.

2. Compatibility with other related plans, including water system, land use, and water resource planning efforts.

F. Compliance with SEPA Requirements

PLANNING QUESTIONNAIRE

This questionnaire is to be filled out by water purveyors which have less than 100 services and are located within a Critical Water Supply Service Area. Some small water systems may be exempted, so be sure to check with the Department of Social and Health Services before completing this questionnaire.

Part 1 - Facilities

1. Describe how your existing system works. _____

2. Has your system had any past water quality problems? If so, how have they been corrected? _____

3. a. How many existing services does your system have? _____

   b. How many services do you expect to have ten years from now? How did you arrive at that number? _____

4. Does your system have adequate water rights? If not, explain the situation. Attach a copy of your existing water rights. _____

5. What improvements will your system need in the next five years? Describe why each one will be needed. _____

5. (cont.) _____

6. a. How much will each improvement cost?

   b. How will each improvement be financed? _____

7. Attach a copy of your service area map and agreement(s).

8. a. Are you interested in sharing facilities or intertying with another water system? _____

   b. Are you interested in having another entity operate and maintain your system? _____

Part 2 - Operations Program

1. List name and phone number of person(s) responsible for your water system.

2. What are procedures for turning your system on and off, and for routine operation? _____

3. a. Who do you call when an operational problem arises? _____

3. b. How do they respond to emergencies? _____

4. List procedures for cleaning your system (tanks, mains, etc.). _____

5. a. What is your sampling frequency and procedure? _____

   b. How do you respond when results of samples exceed state standards? ____

APPENDIX D

SERVICE AREA MAPS FOR CLASS 1 AND 2 UTILITIES WITH RELATED AUTOCAD DATA DISKS

(On File with King County Building and Land Development Division)

APPENDIX E

LISTING OF CLASS 3 AND 4, AND PENDING WATER SYSTEMS

APPENDIX E

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Camp Gilead Supply	30919 NE Carnation Farm Rd	Carnation	WA	98014	10850B	ne	sw	08	25	07	.F.	EKC	3
Camp Wascowitz #1	15675 Ambaum Blvd SW	Seattle	WA	98166	10960-Y	ne	sw	24	23	08	.F.	EKC	3
Camp Waskowitz #2	15675 Ambaum Blvd SW	Seattle	WA	98166	23540-Y	ne	sw	24	23	08	.F.	EKC	3
Carnation Golf Course	1810 W. Snoqualmie River Rd NE	Carnation	WA	98014	11182A	ne	ne	29	25	07	.F.	EKC	3
Cascade Golf Club	14303 436th SE	North Bend	WA	98045	11482A	ne	sw	22	23	08	.F.	EKC	3
Cedar River Auto Parts	22620 SE 216th Pl.	Maple Valley	WA	98038				9	22	6	.F.	EKC	3
Cleveland Memorial Forest	810 Dexter Ave N	Seattle	WA	98109	136509	sw	sw	07	24	07	.F.	EKC	3
Cougar Mt. Academy	PO Box 1441	Bellevue	WA	98009	15145-3	sw	se	19	24	06	.F.	EKC	3
Eastside Masonry	PO Box 535	Redmond	WA	98052	377642	nw	ne	07	25	06	.F.	EKC	3
Evans, James	1431 NE 130th	Bellevue	WA	98005	23980	ne	sw	27	25	05	.F.	EKC	3
Forest Theater	14240 SE Allen Rd	Bellevue	WA	98006	259550	sw	se	24	24	07	.F.	EKC	3
Fraternity Snoqualmie	PO Box 985	Seattle	WA	98111	26420F	sw	sw	09	27	07	.F.	EKC	3
Friends of Youth	20208 Bothell Way NE	Bothell	WA	98011		nw	ne	06	26	05	.F.	EKC	3
Friends of Youth	20208 Bothell Way NE	Bothell	WA	98011		nw	ne	06	26	05	.F.	EKC	3
Garcia Rest Area	40505 NE Snoqualmie	North Bend	WA	98045	HD215H	nw	sw	34	23	09	.F.	EKC	3
Heiting	4442 158th Ave SE	Issaquah	WA	98027	17397T	nw	sw	14	24	05	.F.	EKC	3
Hollingsworth	23912 Tiger Mt Rd SE	Issaquah	WA	98027	165276	sw	se	15	23	06	.F.	EKC	3
Issaquah Christian Church	3227 228th SE	Issaquah	WA	98027	00066M	sw	ne	03	23	06	.F.	EKC	3
Issaquah Church Community Well	PO Box 281	Issaquah	WA	98027	359516	nw	ne	03	23	06	.F.	EKC	3
Issaquah Highlands Campgrounds	PO Box 638	Issaquah	WA	98027	36280T	nw	se	06	23	06	.F.	EKC	3
King County Solid Waste Division	16645 228th Ave SE	Maple Valley	WA	98038	119301	se	ne	28	23	6	.F.	EKC	3
Lake Sammamish St Pk	PO Box 1128	Issaquah	WA	98027	SP410B	nw	sw	16	24	06	.F.	EKC	3
Lake Wilderness County Park	709 Smith Tower	Seattle	WA	98104	45078C	se	ne	21	22	06	.F.	EKC	3
Lake Wilderness Elementary	21630 244th SE	Maple Valley	WA	98038	37060	se	nw	21	22	06	.F.	EKC	3
Lutheran Bible Institute		Issaquah	WA	98027	69755J	ne	sw	09	24	06	.F.	EKC	3
M & M	11448 Avondale Rd.	Redmond	WA	98052	27586A	sw	se	23	25	06	.F.	EKC	3
Mt. Si Motel	43200 SE North Bend Way	North Bend	WA	98045	565700	ne	ne	15	23	08	.F.	EKC	3
Nor-West Motel	45818 SE N. Bend Way	North Bend	WA	98045	62180H	sw	se	13	23	08	.F.	EKC	3
North Star Lodge	1109 Virginia	Seattle	WA	98101	61330D	ne	se	30	24	05	.F.	EKC	3
Overlake Blueberry Farm	2380 Bellevue Way SE	Belleuve	WA	98004	65012T	sw	se	05	24	05	.F.	EKC	3
Overlake School	20301 NE 108th	Redmond	WA	98052	65016	nw	se	32	26	06	.F.	EKC	3
Peake Roofing	3552 W Howe	Seattle	WA	98199	66640C	ne	sw	34	26	05	.F.	EKC	3
Preston Industrial Park	30244 SE Highpoint Way	Issaquah	WA	98027	188791			32	24	07	.F.	EKC	3
Riverfront Park	W 226 King County Courthouse	Seattle	WA	98104	386450	ne	ne	15	24	07	.F.	EKC	3
Shepherd of the Valley Lutheran Ch.	P.O. Box 258	Maple Valley	WA	98038	78185H			10	22	06	.F.	EKC	3
Smitty's Inc.	42800 N. Bend Way	North Bend	WA	98045		ne	sw	10	23	08	.F.	EKC	3
Snoqualmie Valley Funeral Home	10650 Meadowbrook-N.Bend Rd SE	North Bend	WA	98045		ne	sw	04	23	08	.F.	EKC	3
Snoqualmie Winery	1000 Winery Rd.	Snoqualmie	WA	98065	28902R	se	nw	06	23	08	.F.	EKC	3
Stillwater Hill Church	18314 320th NE	Duvall	WA	98019	84355r	se	se	28	26	07	.F.	EKC	3
Theno's Dairy	12248 156th NE	Redmond	WA	98052	17153e	nw	se	26	26	05	.F.	EKC	3
Truck Town	Box 363	N. Bend	WA	98045	894705			14	23	08	.F.	EKC	3
Truss Span	8000 160th	Redmond	WA	98052	894789	se	se	06	25	06	.F.	EKC	3
Valley Camp	49515 SE Middle Fork Rd	North Bend	WA	98045	909671			21	23	09	.F.	EKC	3
West Slope Boys Home	20056 Everett Way NE	Everett	WA					06	26	05	.F.	EKC	3

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
250th	24929 SE 216th	Maple Valley	WA	98038	35514C	ne	sw	11	22	06	.F.	EKC	4
Abernathy	Box 813	Issaquah	WA	98027	25271Y	ne	nw	15	23	06	.F.	EKC	4
Adams	22928 178th Ave SE	Kent	WA	98031	002955	ne	ne	13	22	5	.F.	EKC	4
Adams,D.	5317 236 Ave NE	Redmond	WA	98052	22677C	se	nw	15	25	06	.F.	EKC	4
Aho, A.W.	4368 257 Pl SE	Issaquah	WA	98027	00521N	ne	se	14	24	06	.F.	EKC	4
Aldarra Farms	28902 SE Duthie Hill Rd.	Fall City	WA	98024	008851N	sw	nw	07	24	07	.F.	EKC	4
Alpine West	24225 NE 10	Redmond	WA	98053	01839H	se	se	27	25	06	.F.	EKC	4
Anderson Water System	9805 NE 23	Bellevue	WA	98004	130619	se	sw	07	23	09	.F.	EKC	4
Anderson, B.	4617 252 Ave SE	Issaquah	WA	98027		se	sw	14	24	06	.F.	EKC	4
Anderson, D.	28105 NE Tolt Hill Rd	Carnation	WA	98014	03593P	se	nw	30	25	07	.F.	EKC	4
Anderson, P.	5275 140 Ave NE	Bellevue	WA	98005	023644	se	nw	15	24	05	.F.	EKC	4
Anderson, W.	1806 346 Ave NE	Carnation	WA	98014	150916	se	nw	26	25	07	.F.	EKC	4
Anderson. A.A.	16524 NE 122	Redmond	WA	98052	03589J	nw	sw	25	26	05	.F.	EKC	4
Anderson/Hunt/Zenker	13517 246 Ave SE	Issaquah	WA	98027	034418	sw	nw	14	23	06	.F.	EKC	4
Aramaki, Alan	9051 136 Ave SE	Renton	WA	98056	186494A	nw	ne	34	24	05	.F.	EKC	4
Arerra, W.	22030 260th SE	Maple Valley	WA	98038	02990L	se	se	12	22	06	.F.	EKC	4
Artesian	c/o Puget Power Building	Bellevue	WA	98009	0601-B	sw	se	19	24	06	.F.	EKC	4
Arvon-Hayes	16025 SE 16	Bellevue	WA	98008	03169H	ne	se	02	24	05	.F.	EKC	4
Atkinson, J.M.	18496 43 Ave NE	Bothell	WA	98011	03310U	se	sw	03	26	04	.F.	EKC	4
Avara	379 Division St	Fairbanks	AK	99706							.F.	EKC	4
Avondale Park	7921 159 Ave NE	Redmond	WA	98052	36890U	sw	sw	29	26	06	.F.	EKC	4
BBFS	2838 E. Lk. Samm. Pkwy. NE	Redmond	WA	98052	03570M	nw	se	20	25	06	.F.	EKC	4
BTH-Lake Alice Water Works	7420 337 Pl SE	Fall City	WA	98024	20399D	ne	se	27	24	07	.F.	EKC	4
Back Forty	12122 196 Ave NE	Redmond	WA	98053	52820U	ne	se	30	26	06	.F.	EKC	4
Backman, B.	18818 NE 140 Pl	Woodinville	WA	98072	03715Y			19	26	06	.F.	EKC	4
Bacon, B.	23033 164th Ave SE	Kent	WA	98031	037256	se	ne	14	22	5	.F.	EKC	4
Bain, J.	22029 SE Bain Rd	Maple Valley	WA	98038	44296-2		se	9	22	06	.F.	EKC	4
Balkow, C. E.	835 E. Lk. Samm. Rd NE	Redmond	WA	98052	04175R	sw	se	29	25	06	.F.	EKC	4
Ball, M.	5607 238 SE	Issaquah	WA	98027	14276E	nw	se	22	24	06	.F.	EKC	4
Bannon, G.	22230 NE Woodinville-Duvall Rd	Woodinville	WA	98072	04188K	nw	se	09	26	06	.F.	EKC	4
Bard, S.	12827 164 Ave NE	Redmond	WA	98052	041959	se	ne	26	26	05	.F.	EKC	4
Barlow, P.	5220 NW Sammamish Rd.	Issaquah	WA	87927	16501K	sw	nw	20	24	06	.F.	EKC	4
Barnedt, F.	32305 NE 8	Carnation	WA	98014	04275W	ne	nw	27	25	07	.F.	EKC	4
Barron, L.	28404 NE Big Rock Rd.	Duvall	WA	98019	043838	sw	nw	19	26	07	.F.	EKC	4
Barron, R.	22221 153rd Pl. SE	Kent	WA	98031	043859	se	sw	11	22	5	.F.	EKC	4
Bartholomew	30520 SE 208th	Maple Valley	WA	98038	381440	sw	se	5	22	07	.F.	EKC	4
Bay Well	601 84th Ave NE	Bellevue	WA	98004	20001K	ne	ne	01	23	05	.F.	EKC	4
Bean, J.	14518 Tiger Mtn. Rd. SE	Issaquah	WA	98027	30386M	nw	nw	24	23	06	.F.	EKC	4
Beckenbaugh, L.	27012 Duthie Hill Rd	Issaquah	WA	98027	166027	nw	ne	12	24	06	.F.	EKC	4
Beckler, W.	25924 216th SE	Kent	WA	98031	28525-8			21	22	06	.F.	EKC	4
Beeson, E.	14804 275 Ave NE	Duvall	WA	98019	257270	se	se	13	26	06	.F.	EKC	4
Bendawald-Fall City	Box 637	Fall City	WA	98024	22299D	sw	nw	12	24	07	.F.	EKC	4
Benedict-Novelty Hill	11316 224 Ave NE	Redmond	WA	98052	276017	sw	ne	33	26	06	.F.	EKC	4
Benham, H.J.	5110 Lk. Alice Rd. SE	Fall City	WA	98024	05670W	se	ne	22	24	07	.F.	EKC	4
Benoliel	34630 SE Fall City-Snoq. Rd.	Fall City	WA	98024	05720Q	ne	nw	14	24	07	.F.	EKC	4
Bentzen	590 NE Alder St.	Issaquah	WA	98027	058135	nw	nw	30	24	07	.F.	EKC	4
Berg, H.	13013 206 Ave NE	Woodinville	WA	98072	221514	nw	ne	29	26	06	.F.	EKC	4
Bernert, L.	23415 SE 59 Pl	Issaquah	WA	98027	19341J	ne	sw	22	24	06	.F.	EKC	4
Beu, J.	21933 176th Ave SE	Kent	WA	98031	061405	nw	se	12	22	5	.F.	EKC	4
Beuslinch, R.	13720 246 SE	Issaquah	WA	98027	06118W	sw	nw	14	23	06	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Beutel, T.J.	4305 220 E.	Spanaway	WA	98387	33197B	nw	se	14	24	07	.F.	EKC	4
Beutel/Carlson	37907 SE 45 Pl	Snoqualmie	WA	98065	061243	ne	sw	18	24	08	.F.	EKC	4
Bir, C.O.	25810 SE 182nd St.	Maple Valley	WA	98038	02979Q	nw	sw	35	23	6	.F.	EKC	4
Bodwell Community	21646 253rd Ave SE	Maple Valley	WA	98038	25151A	sw	se	7	22	07	.F.	EKC	4
Bondo, P.	15965 NE 85 #107A	Redmond	WA	98052	356341	ne	nw	21	26	06	.F.	EKC	4
Bordner/Cadigan	16545 NE 122	Redmond	WA	98052	63433T	nw	sw	25	26	05	.F.	EKC	4
Bossier	30906 SE 43 Ct	Fall City	WA	98027	07615A	sw	nw	16	24	07	.F.	EKC	4
Bowman, A.	10436 132 Ave NE	Kirkland	WA	98033	15146L	nw	sw	34	26	05	.F.	EKC	4
Bowman, T.J.	PO Box 104	Hobart	WA	98025	08013A	sw	nw	6	22	7	.F.	EKC	4
Brammer	30910 NE Cherry Valley Rd.	Duvall	WA	98019	245632	nw	nw	16	26	07	.T.	EKC	4
Brewer Addition	11431 SE 89 Pl	Renton	WA	98056	08250-2			32	24	05	.F.	EKC	4
Bride/Brooks	13829 241 Pl SE	Issaquah	WA	98027	08326H	se	se	15	23	06	.F.	EKC	4
Bright, K.	24414 197th Ave. SE	Maple Valley	WA	98038	12301-2	sw	nw	20	22	06	.F.	EKC	4
Brill	14169 Batten Rd. NE	Duvall	WA	98019	13094L	sw	ne	19	26	07	.F.	EKC	4
Brock, S.	P.O. Box 366	Maple Valley	WA	98038	036302	ne	se	9	22	06	.F.	EKC	4
Brookside Community Well	30615 SE 44	Fall City	WA	98024	223013	ne	se	17	24	07	.F.	EKC	4
Brown, J. D.	24807 208th SE	Maple Valley	WA	98038	015059	nw	se	20	22	06	.F.	EKC	4
Brown, P.	24335 SE Tiger Mtn. Rd	Issaquah	WA	98027	07494B	se	se	15	23	06	.F.	EKC	4
Brown, R.	3115 266 Ave NE	Redmond	WA	98052	08813B	ne	sw	24	25	06	.F.	EKC	4
Browns Eastside Roofing	19205 NE 80	Redmond	WA	98052		sw	se	05	25	06	.F.	EKC	4
Brunette/Redmond	24127 NE 20	Redmond	WA	98052	36088N	se	ne	27	25	06	.F.	EKC	4
Bryant, J.	6406 224 Ave NE	Redmond	WA	98052	01992K	se	se	09	25	06	.F.	EKC	4
Burk and Pace	13412 428 Ave SE	North Bend	WA	98045	093909	ne	sw	15	23	08	.F.	EKC	4
Burke-Ellenswood	10245 174 Ave SE	Renton	WA	98056	360354	se	nw	01	23	05	.F.	EKC	4
Burnite, T.	Box 624	Duvall	WA	98019	074149	nw	nw	27	26	07	.F.	EKC	4
Buse Supply		Carnation	WA	98014	098700	ne	nw	04	25	07	.F.	EKC	4
Butchart, N.J.	24630 SE 133	Issaquah	WA	98027	17319r	nw	nw	14	23	06	.F.	EKC	4
Butenko	14234 SE 216th	Kent	WA	98031	10015	se	ne	10	22	5	.F.	EKC	4
Butterfield and Dunbar	18208 240 Ave NE	Woodinville	WA	98072	10097Y	se	ne	10	26	06	.F.	EKC	4
Butters Shingle Mill	Box 373	North Bend	WA	98045	010406	nw	nw	14	23	08	.F.	EKC	4
CHEC	27303 NE Ames Lk Rd	Redmond	WA	98052	23553Q	se	se	24	24	06	.F.	EKC	4
CRWH	17226 SE 60	Issaquah	WA	98027	066762	nw	se	24	24	05	.F.	EKC	4
Cade	20919 NE 25	Redmond	WA	98052		nw	ne	35	25	05	.F.	EKC	4
Caldwell Community	25237 SE Iss-Fall City Rd	Issaquah	WA	98027	23351E	se	nw	14	24	06	.T.	EKC	4
Campbell-Joule	30706 SE 40	Fall City	WA	98024	17601R	sw	se	08	24	07	.F.	EKC	4
Canyon Creek	3925 274 SE	Issaquah	WA	98027	11012C	se	se	12	24	06	.F.	EKC	4
Carlson/Everett	30101 SE Issaquah-Fall City Rd	Issaquah	WA	98027	11164U	nw	ne	17	24	07	.F.	EKC	4
Carter, E.V.	11315 196 Ave NE	Redmond	WA	98052	11350R	ne	ne	31	26	06	.F.	EKC	4
Cathcart	7717 216 Ave NE	Redmond	WA	98052	118299	ne	nw	09	25	06	.F.	EKC	4
Cedar Inn	18605 Maple Valley Hwy.	Maple Valley	WA	98038	1199322	ne	se	32	23	06	.F.	EKC	4
Cedar Lawns Memorial Park	Box 2015	Redmond	WA	98052	22150L	nw	nw	07	25	06	.F.	EKC	4
Cedar Rapids Arco	25445 SE 216th	Maple Valley	WA	98038	46980Q	nw	se	11	22	06	.F.	EKC	4
Cedar River Elementary	21630 244th SE	Maple Valley	WA	98038	87080	se	nw	16	22	06	.F.	EKC	4
Charbonneau, P.	28625 SE 225th	Maple Valley	WA	98038	24951-9	sw	se	11	22	06	.F.	EKC	4
Chaussee, Russell	23629 SE Black Nugget Rd.	Issaquah	WA	98027	12244H	nw	se	22	24	06	.F.	EKC	4
Chesser	22222 148th SE	Kent	WA	98031	25214Y	sw	sw	11	22	5	.F.	EKC	4
Childs	24730 NE 18	Redmond	WA	98052	22031F	nw	sw	26	25	06	.F.	EKC	4
Christensen, J.	14331 SE 232nd St	Kent	WA	98031	01544T	nw	se	15	22	5	.F.	EKC	4
Christiansen	13830 Issaquah-Hobart Rd	Issaquah	WA	87927	12900A	se	nw	15	23	06	.F.	EKC	4
Chuck-Tiger Mtn.	Rt. 4 Box 989	Hillsboro	OR	97123	37771R	ne	nw	14	23	06	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Cinker, J.R.	22614 212th SE	Maple Valley	WA	98038	28046P	nw	nw	16	22	6	.F.	EKC	4
Coal Creek	7406 Lakemont Blvd SE	Issaquah	WA	98027	24129L	nw	se	26	24	05	.F.	EKC	4
Coale	Box 2433	Redmond	WA	98052	28111F	sw	nw	31	26	06	.F.	EKC	4
Combs	14400 SE 208th	Kent	WA	98031	14300N	se	se	3	22	5	.F.	EKC	4
Connor	22506 SE 56	Issaquah	WA	98027	14617X	se	ne	21	24	06	.F.	EKC	4
Corbin, P.	19030 250th Ave SE	Maple Valley	WA	98038	14940F	se	sw	35	23	6	.T.	EKC	4
Cordon Assoc.	25443 SE 224th	Maple Valley	WA	98038	15005X	nw	sw	10	22	06	.F.	EKC	4
Corvino	47903 Mt. Si Rd SE	North Bend	WA	98045	06714L	sw	se	07	23	09	.F.	EKC	4
Coselman, D.	24502 SE 224th	Maple Valley	WA	98038	10281-V	sw	sw	11	22	06	.F.	EKC	4
Couners-Cherry Gardens	19721 305 Pl NE	Duvall	WA	98019	25526M	nw	nw	05	26	07	.F.	EKC	4
Country Manor	15821 Springtree Lane	Mill Creek	WA	98012	45079W	sw	ne	10	26	06	.F.	EKC	4
Country Woods Estate	11454 176 Pl NE	Redmond	WA	98052	016166	nw	ne	30	26	05	.F.	EKC	4
Cox Spring	35202 SE David Powell Rd.	Fall City	WA	98024	14328A	ne	se	25	23	06	.F.	EKC	4
Coyote Point	26918 NE 23	Redmond	WA	98053	36084	nw	ne	25	25	06	.F.	EKC	4
Crittenden-Preston II	30380 SE High Point Way	Preston	WA	98058	159011	sw	se	28	24	07	.F.	EKC	4
Croonsquist	18804 SE 109	Issaquah	WA	98027	159264	nw	se	06	23	06	.F.	EKC	4
Damm, J.	8055 144 Ave SE	Renton	WA	98055	232813	sw	nw	34	24	05	.F.	EKC	4
Davidson, L.	22806 228th Ave SE	Maple Valley	WA	98038	11413-D	nw	nw	15	22	06	.F.	EKC	4
Davidson, L.	22806 228th Ave SE	Maple Valley	WA	98038	11413D	nw	nw	15	22	06	.F.	EKC	4
Davis Construction	13325 164 Ave NE	Redmond	WA	98052	00252K	se	se	23	26	05	.F.	EKC	4
Davis-North Bend	Box 410	North Bend	WA	98045	70030	nw	nw	15	23	08	.T.	EKC	4
Dawson, G.	25111 SE 208th St.	Maple Valley	WA	98038	20301-Y	ne	nw	11	22	06	.F.	EKC	4
De Rosa	13902 241 Pl SE	Issaquah	WA	98027	190180	sw	se	15	23	06	.F.	EKC	4
Dean, J.	24109 SE Black Nugget Rd.	Issaquah	WA	98027	18260B	nw	se	22	24	06	.F.	EKC	4
Deep Rock	26325 NE 24	Redmond	WA	98052	18395U	nw	nw	25	25	06	.F.	EKC	4
Dehline	1147 NW 14	North Bend	WA	98045	18560Q	nw	sw	04	23	08	.F.	EKC	4
Deman, A.	18832 SE 240th	Kent	WA	98031	18780H	se	sw	8	22	06	.F.	EKC	4
Denney, T.	19410 305 Ave NE	Duvall	WA	98019	18814W	sw	ne	05	26	07	.F.	EKC	4
Denning, R.	17838 SE 285th	Kent	WA	98031	188203	se	sw	8	22	06	.F.	EKC	4
Diamond Water Association	924 W. Emerson	Seattle	WA	98119	14341-7	ne	sw	22	22	06	.F.	EKC	4
Dillon/McLaughlin	25909 SE Issaquah-Fall City Rd	Issaquah	WA	98027	00732P	se	ne	14	24	06	.T.	EKC	4
Diltz, M.	25421 Tiger Mtn. Rd SE	Issaquah	WA	98027	193401	nw	ne	23	23	06	.F.	EKC	4
Distinctive	5809 238 Ave SE	Woodinville	WA	98072		se	nw	10	26	06	.F.	EKC	4
Ditzler-Stoneburger	Box 916	Issaquah	WA	98027	020571	ne	ne	26	23	06	.F.	EKC	4
Drip Drop	25420 SE 224th	Maple Valley	WA	98038	20005M	nw	ne	14	22	06	.F.	EKC	4
Dugger	20446 NE 133	Woodinville	WA	98072	203414	sw	se	20	26	06	.F.	EKC	4
Dunstan/Bettes	24126 NE 43	Redmond	WA	98052	20471W	se	se	15	25	06	.F.	EKC	4
Duvall Meadows	Box 561	Duvall	WA	98019	248644	nw	sw	17	26	07	.F.	EKC	4
East Lake Alice	7302 Lake Alice Rd. S.E.	Fall City	WA	98024	19121R	nw	sw	26	24	07	.F.	EKC	4
Edwards	36606 224th Ave SE	Kent	WA	98031	43125	se	nw	14	22	5	.F.	EKC	4
Edwards, S.	Box 490	Fall City	WA	98024	22570M	se	sw	30	25	07	.F.	EKC	4
Eguchi	28505 SE 58	Issaquah	WA	98027	225860	sw	se	19	24	07	.F.	EKC	4
Eisenmann, U.	21235 276th SE	Maple Valley	WA	98038	42461U	se	ne	12	22	6	.F.	EKC	4
Elderberry	4548 Tolt River Road	Carnation	WA	98014	44821E	ne	nw	22	25	07	.F.	EKC	4
Elduen, O.C.	4045 220 NE	Redmond	WA	98052	22820Q	nw	nw	21	25	06	.F.	EKC	4
Ellsworth, W.	13110 244 SE	Issaquah	WA	98027	230702	nw	nw	14	23	06	.F.	EKC	4
Emigh	21708 Redmond-Fall City Hwy.	Redmond	WA	98052	131346	sw	nw	16	25	06	.F.	EKC	4
Erickson, F.	Rt. 2 Box 5022	Issaquah	WA	98027	23730X	nw	ne	03	23	06	.F.	EKC	4
Erickson-Tiger Mtn.	25525 SE Tiger Mtn. Rd.	Issaquah	WA	98027	14634W	se	se	14	23	06	.F.	EKC	4
Ericson, G.	5037 117 SE	Bellevue	WA	98006	23760P	se	sw	24	24	05	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Evans, J.	7815 224 Ave NE	Redmond	WA	98052	117744	ne	nw	09	25	06	.F.	EKC	4
Everest/Siel	23418 SE 59 Pl	Issaquah	WA	98027	240155	ne	sw	22	24	06	.F.	EKC	4
Evergreen Investment	22018 270th SE	Maple Valley	WA	98038		sw	se	12	22	6	.F.	EKC	4
Eychaner	9325 372 SE	Snoqualmie	WA	98065				36	24	07	.F.	EKC	4
Fahrney Public Water System	13102 248th Ave SE	Issaquah	WA	98027	47165U	sw	nw	14	23	06	.F.	EKC	4
Far Out	704 Redmond-Fall City Rd.	Redmond	WA	98052	002976	ne	nw	31	25	07	.F.	EKC	4
Fasano	22510 NE 114	Redmond	WA	98052	22812C	ne	ne	33	26	06	.F.	EKC	4
Federspiel	13329 208 NE	Woodinville	WA	98072	24735K	se	se	20	26	06	.F.	EKC	4
Fink, L.	3854 E. Lk. Samm. Rd. NE	Redmond	WA	98052	25114U	ne	ne	19	25	06	.F.	EKC	4
First Baptist Church	P.O. Box 257	Maple Valley	WA	98038	080119	nw	nw	11	22	06	.F.	EKC	4
Fish	1717 E. Lk Samm Rd NE	Redmond	WA	98052				29	25	06	.F.	EKC	4
Fish, D.	24505 250th SE	Maple Valley	WA	98038	25318	se	nw	23	22	06	.F.	EKC	4
Fisher, J.	17812 SE 60	Issaquah	WA	98027	160116	ne	se	24	24	05	.F.	EKC	4
Flatum	444 E. Lk. Samm. Rd. NE	Redmond	WA	98052	05850M	nw	ne	32	25	06	.F.	EKC	4
Fong Koo	31916 NE 155	Duvall	WA	98019	14651V	sw	ne	06	26	07	.F.	EKC	4
Fons, P.	3620 146 Pl NE	Bellevue	WA	98007	067460	ne	nw	12	24	07	.F.	EKC	4
Foreman	23923 SE Tiger Mtns. Rd.	Issaquah	WA	98027	25857A	se	se	15	23	06	.F.	EKC	4
Forest Grove Hills	23805 202nd SE	Maple Valley	WA	98038	25932-8	se	sw	17	22	06	.F.	EKC	4
Formby	7813 288 SE	Issaquah	WA	98027	23284M	sw	se	30	24	07	.F.	EKC	4
Forvus	18919 NE 109 St	Redmond	WA	98052	26110U	sw	ne	31	26	06	.F.	EKC	4
Franks	24001 SE 103	Issaquah	WA	98027	23129J	sw	ne	03	23	06	.F.	EKC	4
Frease	Box 816	Issaquah	WA	98027	26430	sw	sw	09	24	07	.F.	EKC	4
Fries	19650 NE 40	Redmond	WA	98052	266131	sw	sw	17	25	06	.F.	EKC	4
Froyen	347 NW 77	Seattle	WA	98117	200710	sw	ne	14	23	06	.F.	EKC	4
Fury	14536 415 SE	North Bend	WA	98045	261564	nw	nw	15	23	08	.F.	EKC	4
GTE-Redmond Facility	20929 NE Redmond-Fall City Rd.	Redmond	WA	98052		ne	ne	17	25	06	.F.	EKC	4
Gallagher, B.	32820 NE 142	Duvall	WA	98019	062559	se	nw	22	26	07	.F.	EKC	4
Gaunt, Robert	17233 SE 228th St	Kent	WA	98031	498775	sw	ne	13	22	5	.F.	EKC	4
Gehring/Euscher	19298 303 Pl NE	Duvall	WA	98019	14647P	se	se	25	26	06	.F.	EKC	4
Georgeff, J.	4102 SE 3rd Pl	Renton	WA	98056	27415V	nw	ne	04	23	07	.F.	EKC	4
Gill-Tellvik-Hillier	Box 105	Issaquah	WA	98027	01344J	ne	sw	29	24	06	.F.	EKC	4
Glenacres	Box 13	Snoqualmie	WA	98065	27850U	se	sw	13	24	07	.F.	EKC	4
Glenora	300 123rd Pl NE	Bellevue	WA	98005	44322A	sw	se	24	25	06	.F.	EKC	4
Gold Hill	Box 441	Fall City	WA	98024	380647	nw	nw	27	24	07	.F.	EKC	4
Golombek	272 216 SE	Issaquah	WA	98027	284657	sw	nw	09	24	06	.F.	EKC	4
Gooch #1	23719 NE Woodinville-Duvall RD	Woodinville	WA	98072	19401M	sw	ne	10	26	06	.F.	EKC	4
Gooch, R.	12420 95 NE	Kirkland	WA	98034	28475F	ne	nw	10	26	06	.F.	EKC	4
Gooch-Duvall	12420 95 NE	Kirkland	WA	98034	360073	nw	se	05	26	07	.F.	EKC	4
Gooch-NE 155	12420 95 NE	Kirkland	WA	98034	45040F	ne	sw	16	26	07	.F.	EKC	4
Gooch-Rakwanna	12420 95 NE	Kirkland	WA	98034	29319X	se	nw	10	26	06	.F.	EKC	4
Gooch-Woodinville Community	12420 95 NE	Kirkland	WA	98034	19414E	ne	nw	10	26	06	.F.	EKC	4
Goodsell, D.	22203 260th Ave. SE	Maple Valley	WA	98038		se	se	11	22	06	.T.	EKC	4
Goss	12323 209th Pl NE	Redmond	WA	98052	092799	ne	se	29	26	06	.F.	EKC	4
Graham Homes	3900 Iss-Fall City Rd.	Bellevue	WA	98009	286515	sw	sw	12	24	06	.F.	EKC	4
Grandridge	Box 1098	Issaquah	WA	98027	28850W	ne	sw	20	24	07	.F.	EKC	4
Granger	11833 204 NE	Redmond	WA	98053	30719W	se	sw	29	26	06	.F.	EKC	4
Grassit-Clark	35180 NE 14	Carnation	WA	98014		nw	ne	26	25	07	.F.	EKC	4
Graves, T.	Box 526	Issaquah	WA	98027	29180U	ne	sw	16	23	06	.F.	EKC	4
Green	8487 Tillicum Rd.	Seattle	WA	98116	032410	se	se	16	25	06	.F.	EKC	4
Greene, J.	Box 908	Fall City	WA	98052	360643	nw	ne	12	24	07	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Grimsly, D.	19060 NE 136	Woodinville	WA	98072	29920A	sw	se	23	26	05	.F.	EKC	4
Grotheer/Weckwerth	1775 NW Mall St	Issaquah	WA	98027	090266	sw	sw	19	24	07	.T.	EKC	4
Guenther, E.	5935 Preston-Fall City Rd.	Fall City	WA	98024	30124T	se	nw	22	24	07	.F.	EKC	4
Guiberson	4350 186 Pl SE	Issaquah	WA	98027	19974M	se	nw	18	24	06	.F.	EKC	4
Gunther	31610 NE 176	Duvall	WA	98019	30240C	sw	ne	09	26	07	.F.	EKC	4
Gutschmidt	23949 SE Issaquah-Fall City Rd	Issaquah	WA	98027	30275Q	sw	ne	22	24	06	.F.	EKC	4
H & M Homes	13804 NE 175	Woodinville	WA	98072	30361J	se	se	22	26	06	.F.	EKC	4
H. Carlin	8106 Preston-Fall City Rd SE	Issaquah	WA	98027	24666Q	nw	se	28	24	07	.F.	EKC	4
Habaerkorn	31407 Issaquah-Fall City Rd.	Fall City	WA	98024	21201W	ne	sw	16	24	07	.F.	EKC	4
Hale, B.	28651 SE 208th	Maple Valeley	WA	98038	29736D	nw	ne	7	22	07	.F.	EKC	4
Hale, R.	23347 SE May Valley Rd	Issaquah	WA	98027	29715C	NE	SW	15	23	06	.T.	EKC	4
Hale, S.	8502 312nd Pl. SE	Preston	WA	98050	30390T	sw	nw	33	24	07	.F.	EKC	4
Hamann	13421 251 SE	Issaquah	WA	98027	00039	ne	sw	14	23	06	.F.	EKC	4
Hamilton	24216 NE Redmond-Fall City Rd.	Redmond	WA	98053	23579B	ne	ne	22	25	06	.F.	EKC	4
Hansen, G.	16523 Issaquah Hobart Rd.	Issaquah	WA	98027	422011	se	ne	26	23	06	.T.	EKC	4
Hanson	26802 SE 76 Pl	Issaquah	WA	98027	248575	se	sw	25	24	06	.F.	EKC	4
Hanson-Wolford	4923 242 SE	Issaquah	WA	98027	30925B	ne	ne	22	24	06	.F.	EKC	4
Harde, B.	2914 E. Lk. Samm. Pkwy NE	Redmond	WA	98052	10207W	sw	nw	20	25	06	.F.	EKC	4
Harder	Box 100	Duvall	WA	98019		se	se	13	26	06	.F.	EKC	4
Harmony	18528 SE 64 Way	Issaquah	WA	98027	557430	se	sw	19	24	06	.F.	EKC	4
Harris Creek	14310 322 NE	Duvall	WA	98019	06305B	se	ne	21	26	07	.F.	EKC	4
Harris, H.	18233 Maple Valley Hwy.	Maple Valley	WA	98038	23620-J	sw	ne	32	23	06	.F.	EKC	4
Harry Osborne Park	Dept. Natural Resources	Olympia	WA	98504	NR300X	se	se	16	25	06	.F.	EKC	4
Hawkes, D.	17401 NE 138	Redmond	WA	98052	318304	ne	se	03	23	06	.F.	EKC	4
Healey	20826 SE May Valley Rd.	Issaquah	WA	98027		se	ne	17	23	06	.F.	EKC	4
Heggen	19622 SE 16	Issaquah	WA	98027	322601	sw	nw	05	24	06	.F.	EKC	4
Hengtgen #1	11722 325 NE	Duvall	WA	98019		sw	sw	27	26	07	.F.	EKC	4
Hennig, J.	16909 212 NE	Woodinville	WA	98072	33971R	se	se	08	26	06	.F.	EKC	4
Hilde, Bud	21260 276th SE	Maple Valley	WA	98038	385301	sw	nw	7	22	07	.F.	EKC	4
Hill	26821 SE Preston Way	Issaquah	WA	98027	22314W	se	se	30	24	07	.F.	EKC	4
Hill Tops	6726 244 Pl NE	Redmond	WA	98052	22314W	sw	nw	11	25	06	.F.	EKC	4
Hillside	6235 182 SE	Issaquah	WA	98027	14932U	sw	sw	19	24	06	.F.	EKC	4
Hitchcock	18002 SE 132	Renton	WA	98055	335040	sw	sw	06	23	06	.F.	EKC	4
Hoffman	14222 Hobart Rd. SE	Issaquah	WA	98027	24827F	ne	sw	14	23	06	.T.	EKC	4
Holter	25555 NE 80	Redmond	WA	98052		ne	ne	11	25	06	.F.	EKC	4
Holts	30025 SE 86	Issaquah	WA	98027	338957	sw	nw	32	24	07	.F.	EKC	4
Holtzner	2617 271 SE	Issaquah	WA	98027	338999	sw	ne	12	24	06	.F.	EKC	4
Hoover	21002 NE 93 Pl	Redmond	WA	98052	34188N	se	ne	05	25	06	.F.	EKC	4
Houghtaling/Snortum	17507 Tiger Mtn. Rd. SE	Issaquah	WA	98027	34524K	se	se	25	23	06	.F.	EKC	4
Howard, Henry A.	20600 276th Ave SE	Hobart	WA	98025	519516	nw	sw	06	22	07	.F.	EKC	4
Howatson	29728 SE 82nd	Issaquah	WA	98027	25731K	nw	ne	32	24	07	.F.	EKC	4
Howatson Community	29728 SE 82	Issaquah	WA	98027	25156W	ne	nw	32	24	07	.F.	EKC	4
Hughes, W.	3202 E. Sammamish Rd. NE	Redmond	WA	98053	01642			20	25	06	.T.	EKC	4
Humphrey	6926 411 SE	Snoqualmie	WA	98065	034858	se	nw	28	24	08	.F.	EKC	4
Hunter, W.	10538 NE 48 Pl	Kirkland	WA	98033	06814Q	sw	ne	15	25	06	.F.	EKC	4
Huskinson	6710 289 SE	Issaquah	WA	98027	19761K	ne	ne	30	24	07	.F.	EKC	4
Imel	7717 252 NE	Redmond	WA	98053	153775	ne	nw	11	25	06	.F.	EKC	4
Issaquah Family Well	1295 Front St. S.	Issaquah	WA	98027	00275M	ne	ne	34	24	06	.F.	EKC	4
J. Dill	22509 152nd Ave SE	Kent	WA	98031	19315	nw	nw	14	22	5	.F.	EKC	4
J.R. Lund Addition	15414 SE Jones Rd.	Renton	WA	98058	48900T			23	23	5	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Jacobson	11010 196 Ave NE	Redmond	WA	98052	36505P	nw	se	32	26	06	.F.	EKC	4
Jensen-Doughty	Box 2640	Renton	WA	98056	36716Q	nw	sw	01	23	05	.F.	EKC	4
Johnson, B.	24814 SE 184th	Maple Valley	WA	98038	03860-R	se	ne	35	23	06	.F.	EKC	4
Johnson, Ben	21111 NE 50	Redmond	WA	98052	18514H	se	ne	17	25	06	.F.	EKC	4
Johnson, D.	4240 162 Ave NE	Redmond	WA	98052	179714	se	se	14	25	05	.F.	EKC	4
Johnson, P.	10215 302 Way NE	Carnation	WA	98014	12175N	se	se	32	26	07	.F.	EKC	4
Jorgensen, D.	23404 NE 8	Redmond	WA	98053	37015C	se	sw	27	25	06	.F.	EKC	4
Kahn, L.	15206 Cedar Falls Rd. SE	North Bend	WA	98045	374044	ne	ne	27	23	08	.F.	EKC	4
Kanemoto	2110 102 Pl SE	Bellevue	WA	98004	07466L	nw	se	26	24	05	.F.	EKC	4
Kantor Lane	13234 NE 40	Bellevue	WA	98005	37700E	sw	sw	15	25	05	.F.	EKC	4
Kelly	23707 71 Dr SE	Woodinville	WA	98072	25944M	nw	ne	30	26	06	.F.	EKC	4
Kelly Road	32102 NE 146	Duvall	WA	98019	37949C	se	se	16	26	07	.F.	EKC	4
Kenyon, R.	Box 139	Issaquah	WA	98027	005392	se	ne	26	24	06	.F.	EKC	4
Kick	4608 S. 256th	Federal Way	WA	98032	16129P	NE	NE	15	25	05	.F.	EKC	4
Killip, A.	P.O. Box 3581	Seattle	WA	98124		sw	sw	4	22	06	.F.	EKC	4
Kim	4009 NE 6 Ct.	Renton	WA	98056	228764	ne	se	14	23	06	.F.	EKC	4
Kinell	PO Box 476	Fall City	WA	98024	14541F	sw	sw	08	24	07	.F.	EKC	4
King County Cadman Pit	Rm. 900, King Co. Admin. Bldg.	Seattle	WA	98104	386389	ne	nw	07	25	06	.F.	EKC	4
Kirk, P.	4634 Issaquah-Pine Lake Rd.	Issaquah	WA	98027		sw	se	15	24	06	.F.	EKC	4
Klinkenberg BCI	14200 Bear Creek Rd NE	Woodinville	WA	98072	381078	sw	nw	20	26	06	.F.	EKC	4
Klint	40017 SE 53	Snoqualmie	WA	98065	428302	ne	ne	20	24	08	.F.	EKC	4
Klopfenstein	5130 164 Way SE	Issaquah	WA	98027	428344	nw	nw	24	24	05	.F.	EKC	4
Knapp, E.	42253 SE 102	North Bend	WA	98045	428650	se	nw	03	23	08	.F.	EKC	4
Kneisley-Tiger Mtn.	24104 SE 132 Way	Issaquah	WA	98027	321156	ne	ne	15	23	06	.F.	EKC	4
Koutonen	407 E. Lk. Samm. Rd. SE	Redmond	WA	98052	043110	sw	sw	32	24	06	.F.	EKC	4
Kutzer-Snoqualmie	6930 409 SE	Snoqualmie	WA	98065	22764P	ne	nw	28	24	08	.F.	EKC	4
Lake Alice Plateau	7428 Lk. Alice Rd. SE	Fall City	WA	98024	37976L	ne	sw	26	24	07	.F.	EKC	4
Lake Alice Water System #1	5725 91 SE	Mercer Island	WA	98040	21864R	sw	sw	26	24	07	.T.	EKC	4
Lakey	1617 195 Pl SE	Issaquah	WA	98027	45560M	se	ne	06	24	06	.F.	EKC	4
Lance, P.	18115 228 NE	Woodinville	WA	98072	154526	ne	ne	09	26	06	.F.	EKC	4
Lane	10325 Fay Rd NE	Carnation	WA	98014	204390	nw	sw	33	26	07	.F.	EKC	4
Langold	4816 194 SE	Issaquah	WA	98027	12774X	nw	ne	19	24	06	.F.	EKC	4
Lawrence	41120 SE 81	Snoqualmie	WA	98065	463907	ne	nw	33	24	08	.F.	EKC	4
Lee	29626 SE 40th St.	Fall City	WA	98024	20314R	se	sw	08	24	07	.F.	EKC	4
Leland and Fine	1116 E. Lk. Samm. Pkwy SE	Issaquah	WA	98027	467153	se	ne	06	24	06	.F.	EKC	4
Lemon, B.	17836 Cedar Grove Rd. SE	Maple Valley	WA	98038	21890F	ne	nw	33	23	06	.T.	EKC	4
Liffick, G.	2844 E. Lk.Samm.Rd. N	Redmond	WA	98052	172128	ne	sw	20	25	06	.F.	EKC	4
Lind	23264 SE 54 Pl	Issaquah	WA	98027			sw	02	23	07	.F.	EKC	4
Lindsley	2711 270 SE	Issaquah	WA	98027	47381J	nw	ne	12	24	06	.F.	EKC	4
Long House	23201 Redmond-Fall City Rd.	Redmond	WA	98052	16827K	ne	nw	22	25	06	.F.	EKC	4
Lowery, G.	29925 NE Big Rock Rd.	Duvall	WA	98019	48748P	se	nw	29	26	07	.F.	EKC	4
Lucarelli	1615 208 SE #45	Bothell	WA	98011	48850	ne	se	04	24	05	.F.	EKC	4
Ludens	14140 Batten Rd. NE	Duvall	WA	98019	35094T	sw	ne	19	26	07	.F.	EKC	4
Lundwall	42901 SE North Bend Way	North Bend	WA	98045	48925W	sw	sw	10	23	08	.F.	EKC	4
Lynch	7822 Moon Valley Rd SE	North Bend	WA	98045	24865C	se	sw	26	24	08	.F.	EKC	4
Lyons Water Works	Box 1138	Fall City	WA	98024	06421X	nw	ne	12	24	07	.F.	EKC	4
Mabry	6419 282 SE	Issaquah	WA	98027	49635U	ne	nw	30	24	07	.F.	EKC	4
MacDonald	P.O. Box 983	Issaquah	WA	98027	18025M	ne	ne	21	24	06	.F.	EKC	4
MacDonald, R.	1631 282 NE	Fall City	WA	98024	49680	se	nw	30	25	07	.F.	EKC	4
MacDuff, Marie B.	620 S.E. Bush St.	Issaquah	WA	98027	05821C	se	ne	20	24	08	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Madsen, A.	22031 250th Pl SE	Maple Valley	WA	98038	50224			11	22	06	.F.	EKC	4
Magruder	16506 NE 128	Redmond	WA	98052	06851	nw	nw	25	26	05	.F.	EKC	4
Manfred, D.	13527 Avondale Rd.	Woodinville	WA	98072	448348	sw	sw	19	26	06	.F.	EKC	4
Mansmith-Johnson	16907 NE 106	Redmond	WA	98052	02237R	se	ne	14	24	06	.F.	EKC	4
Mark-Kramer	13200 Issaquah-Hobart Rd. SE	Issaquah	WA	98027	1473J	ne	nw	15	23	06	.F.	EKC	4
Marshall-Krell	14426 320 NE	Duvall	WA	98019	25933V	ne	ne	21	26	07	.F.	EKC	4
Martinell	5818 404 SE	Snoqualmie	WA	98065	51880A	ne	nw	20	24	08	.F.	EKC	4
Martinell-Howe	Box 13	Fall City	WA	98024	104068	sw	nw	13	24	07	.F.	EKC	4
Mason-Hayward	4138 287 SE	Fall City	WA	98024	05936B	nw	ne	18	24	07	.F.	EKC	4
Maxfield/Crenshaw	19920 NE 127	Redmond	WA	98053	37944T	se	nw	30	26	06	.T.	EKC	4
McBride	23303 SE 48	Issaquah	WA	98027	15509M	nw	nw	22	24	06	.F.	EKC	4
McCabe-Roloson	49120 SE Middle Fork Rd.	North Bend	WA	98045	191311	nw	ne	20	23	09	.F.	EKC	4
McCorkle	30129 NE Tolt Hill Rd.	Carnation	WA	98014	119765	nw	se	20	25	07	.F.	EKC	4
McFadden	39450 SE 101	Snoqualmie	WA	98065	523420	se	nw	05	23	08	.F.	EKC	4
McIntosh	24400 SE 14	Issaquah	WA	98027	2462E1	sw	nw	02	24	06	.F.	EKC	4
McNeil-Ives	4028 288 Ave NE	Redmond	WA	98052	529024	nw	ne	08	25	07	.F.	EKC	4
McNelley	13303 252 SE	Issaquah	WA	98027	52910P	sw	ne	14	23	06	.F.	EKC	4
McPherson	14004 232 NE	Woodinville	WA	98072	1862016	nw	ne	22	26	06	.F.	EKC	4
McUmber	23713 NE 43rd	Redmond	WA	98052		sw	se	15	25	06	.F.	EKC	4
Mead-Gilman	22035 NE 175	Woodinville	WA	98072	53135U	sw	ne	09	26	06	.F.	EKC	4
Mech, D.	20011 Renton-Maple Val. Rd SE	Maple Valley	WA	98038	022450	ne	sw	4	22	06	.F.	EKC	4
Merrix Industries	5648 221st Pl SE	Issaquah	WA	98027	540559	ne	se	21	24	06	.F.	EKC	4
Mettler, J.	38207 SE 45 Pl	Snoqualmie	WA	98065	35090Q	nw	se	18	24	08	.F.	EKC	4
Michalski	19660 NE 133	Woodinville	WA	98072	323288	sw	sw	20	26	06	.F.	EKC	4
Michaud, D.	35625 NE 80	Carnation	WA	98014	54455T	nw	nw	12	25	07	.F.	EKC	4
Mickelson, K.	1057 244 NE	Redmond	WA	98052	155295	se	se	27	25	06	.F.	EKC	4
Middle Fork Woodlands	3847 S. 177th St	Seattle	WA	98188	081751	nw	ne	20	23	09	.T.	EKC	4
Middleton	4736 E. Lk. Samm. Pkwy. SE	Issaquah	WA	98027	544800	se	ne	17	24	06	.F.	EKC	4
Miller-Bradley	24015 SE 127	Issaquah	WA	98027	009638	nw	ne	15	23	06	.F.	EKC	4
Millikan, M.	9110 Coal Cr Pkwy SE	Renton	WA	98056		ne	sw	34	24	05	.F.	EKC	4
Mitchell Hill North	Box 531	Preston	WA	98050	290561	ne	ne	20	24	07	.F.	EKC	4
Mittlestaedt	21007 SE 42	Issaquah	WA	98027	554021	ne	ne	17	24	06	.F.	EKC	4
Mix	23424 SE 58 Pl	Issaquah	WA	98027	17436V	ne	sw	22	24	06	.F.	EKC	4
Moody	12225 210 Pl SE	Issaquah	WA	98027	006523	se	ne	08	23	06	.F.	EKC	4
Moon Valley	7346 Moon Valley Rd. SE	North Bend	WA	98045	00651K	sw	nw	26	24	08	.F.	EKC	4
Morgan, J.	13124 184 NE	Redmond	WA	98052	501649	ne	nw	30	26	06	.F.	EKC	4
Morris	32514 NE 77	Carnation	WA	98014	338915	nw	nw	10	25	07	.F.	EKC	4
Mountain Meadows Public Water	4101 185th Place SE	Issaquah	WA	98027	26982F	sw	se	25	23	06	.F.	EKC	4
Mt. View	26015 SE 164	Issaquah	WA	98027	56800K	se	ne	26	23	06	.F.	EKC	4
Mull, H.	4531 160 Pl SE	Issaquah	WA	98027	57590K	nw	se	14	24	05	.F.	EKC	4
Muralt, Ted	17855 Renton-Maple Valley Hwy	Maple Valley	WA	98038	52541F	se	se	24	23	5	.F.	EKC	4
Myers, J.	13816 196 NE	Woodinville	WA	98072	254928	nw	sw	20	26	06	.F.	EKC	4
NW Pipeline Corp.	Box 2198	Redmond	WA	98073	225950	nw	nw	22	25	06	.F.	EKC	4
Nachtman/Howe	13568 139 Pl SE	Renton	WA	98056	006565	se	sw	25	23	06	.F.	EKC	4
Nardone	8731 Maltby Rd	Snohomish	WA	98290	248768	sw	ne	09	26	06	.F.	EKC	4
Neault, A.	24807 SE 224th	Maple Valley	WA	98038		ne	nw	14	22	6	.F.	EKC	4
Nelson, H.	30116 SE 208th	Maple Valley	WA	98038	43076-7	sw	se	5	22	07	.F.	EKC	4
Nelson/Sargent	27401 NE 22	Redmond	WA	98052	004433	ne	ne	25	25	06	.F.	EKC	4
Newell	12621 NE 73	Kirkland	WA	98033	59230r	sw	sw	05	25	06	.F.	EKC	4
Newman, D.	6602 Tolt River Rd. NE	Carnation	WA	98014	386041	nw	se	11	25	07	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Nichols	21808 NE 175	Woodinville	WA	98072	593782	se	nw	09	26	06	.F.	EKC	4
Nikko Community	7525 Renton-Issaquah Rd SE	Issaquah	WA	98027	59525f	nw	sw	20	24	06	.F.	EKC	4
No Name	17108 Tiger Mt. Rd SE	Issaquah	WA	98027	169013	ne	se	25	23	06	.F.	EKC	4
North Cougar Mtn.	17606 SE 60	Issaquah	WA	98027	19032D	ne	sw	24	24	05	.F.	EKC	4
Norton	16633 SE 112	Renton	WA	98055	62155A	se	sw	34	24	05	.F.	EKC	4
Novelty Hill Ranchettes	20224 NE Novelty Hill Rd	Redmond	WA	98052	623104	se	sw	32	26	06	.F.	EKC	4
Nyman	13645 162nd NE	Woodinville	WA	98072	19239k	ne	se	23	26	05	.F.	EKC	4
O'Dell, C.	16707 Tiger Mtn. Rd SE	Issaquah	WA	98027		sw	nw	30	23	07	.F.	EKC	4
O'Leary	11425 176 Pl NE	Redmond	WA	98052	63385D	nw	ne	36	26	05	.F.	EKC	4
Oberholtzer-Novelty Hill	22129 NE 114	Redmond	WA	98053	20451C	se	ne	33	26	06	.F.	EKC	4
Odegard	18701 NE 143	Woodinville	WA	98072	23566J	sw	ne	19	26	06	.F.	EKC	4
Olels, C.	13003 230 SE	Issaquah	WA	98027	633903	nw	nw	15	23	06	.F.	EKC	4
Oliver Improvement Co.	16416 261 SE	Issaquah	WA	98027	634038	sw	nw	25	23	06	.F.	EKC	4
One Seventy Fourth SE	6015 174 SE	Issaquah	WA	98027	16952W	sw	se	24	24	05	.F.	EKC	4
Orchard View Auto Camp	43404 SE North Bend Way	North Bend	WA	98045	64130	ne	ne	15	23	08	.F.	EKC	4
Ouillette	36323 SE 56	Fall City	WA	98024	65038D	se	sw	24	24	07	.F.	EKC	4
Oxley	13023 229 SE	Issaquah	WA	98027	23241-2	nw	nw	15	23	06	.T.	EKC	4
PNB-Issaquah	1600 Bell Plaza	Seattle	WA	98191		ne	nw	22	24	06	.F.	EKC	4
Pacecca	30506 SE 31	Fall City	WA	98024	25139X	se	ne	08	24	07	.F.	EKC	4
Palmer	3910 120 SE	Bellevue	WA	98006	24743P	nw	ne	30	24	06	.F.	EKC	4
Palmer, Jack	P.O. Box 84	Hobart	WA	98025	22334D	ne	se	12	20	6	.T.	EKC	4
Paradise Park	20607 NE 181 Pl	Woodinville	WA	98072	148345	nw	ne	08	26	06	.F.	EKC	4
Park Lake	Box B	Snoqualmie	WA	98065	66170H	se	ne	03	23	06	.F.	EKC	4
Park Place	10616 Hobart Rd	Issaquah	WA	98027	66140Q	se	ne	03	23	06	.T.	EKC	4
Parr	13805 Bear Creek Rd NE	Woodinville	WA	98072	662620	nw	ne	19	26	06	.F.	EKC	4
Patterson	19028 132 NE	Woodinville	WA	98072	66567C	sw	se	19	26	06	.F.	EKC	4
Paylor	21215 NE 50	Redmond	WA	98052	66610L	se	se	17	25	06	.F.	EKC	4
Peck	1335 25 SE	Auburn	WA	98002	486001	se	se	36	24	07	.F.	EKC	4
Pel Mac	18206 NE 141 Pl	Woodinville	WA	98072	30745L	sw	nw	19	26	06	.F.	EKC	4
Perrow, R.	17217 NE 86 Pl	Redmond	WA	98052	670392	se	sw	19	24	06	.F.	EKC	4
Peters-Issaquah	Box 1314	Issaquah	WA	98027	245252	se	ne	17	23	06	.F.	EKC	4
Pheasant Creek	26614 SE 168	Issaquah	WA	98027	19163	sw	ne	25	23	06	.F.	EKC	4
Phillips, D.	24424 228th	Maple Valley	WA	98038	03214R	nw	nw	22	22	06	.F.	EKC	4
Pierce/Johnson	13422 Issaquah-Hobart Rd	Issaquah	WA	98027	67303K	sw	ne	15	23	06	.T.	EKC	4
Pigort	21409 SE 39	Issaquah	WA	98027	846555	sw	sw	09	24	06	.F.	EKC	4
Pleasant Hill Farms	32517 SE 3rd	Carnation	WA	98014	673607	sw	nw	34	25	07	.F.	EKC	4
Pleasure Pt Park	5243 Pleasure Pt Lane	Bellevue	WA	98006	67970L	sw	ne	20	24	05	.F.	EKC	4
Polverari	12844 164 NE	Redmond	WA	98052		sw	nw	36	26	05	.F.	EKC	4
Powell/Preston	619 170 Pl NE	Bellevue	WA	98008	275994	sw	ne	32	24	07	.F.	EKC	4
Preston Center Co	29728 SE 82	Issaquah	WA	98027	692803	sw	nw	32	24	07	.F.	EKC	4
Preston Maintenance Yard	10833 Northrup Way NE	Bellevue	WA	98004	HD5804	se	sw	29	24	07	.F.	EKC	4
Price, K.	Box 872	Preston	WA	98050	69320N	nw	sw	28	24	07	.F.	EKC	4
Primbs/Jones	16908 NE 122	Redmond	WA	98052	16994Y	ne	sw	25	26	05	.F.	EKC	4
Prittie-Issaquah	22923 SE 48	Issaquah	WA	98027	29061P	nw	nw	22	24	06	.F.	EKC	4
Profit	12612 167 Pl NE	Redmond	WA	98052	69640K	sw	nw	25	26	05	.F.	EKC	4
Purnell-Willard	Box 392	Redmond	WA	98052	69865X	nw	se	33	25	07	.F.	EKC	4
R & S	16541 Redmond Way, 150-C4	Redmond	WA	98052	445803	ne	ne	09	24	06	.F.	EKC	4
Ragland/Jones	14514 SE 14th	Bellevue	WA	98006	36984R	ne	ne	33	26	06	.F.	EKC	4
Rainier View	13420 252 SE	Issaquah	WA	98027	70925F	sw	ne	14	23	06	.F.	EKC	4
Rambow	20408 W. Snoq Valley Rd NE	Duvall	WA	98019				02	26	06	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Randall, R.	21840 284th SE	Maple Valley	WA	98038	26114X	nw	se	7	22	07	.F.	EKC	4
Rasmussen, L.	20061 258th SE	Maple Valley	WA	98038		ne	se	2	22	06	.F.	EKC	4
Ray's Sites Community	1w1436 SE 208th, #72	Kent	WA	98031	02376D	ne	ne	10	22	5	.F.	EKC	4
Reed/Patterson	21627 NE 133	Woodinville	WA	98072	17014T	se	sw	21	26	06	.F.	EKC	4
Reid Sand and Gravel	13627 Bel-Red Rd	Bellevue	WA	98004	71733H						.F.	EKC	4
Reidt	12713 164 NE	Redmond	WA	98052	717383	se	ne	26	26	05	.F.	EKC	4
Rennaker-Evanson Weil	15400 275 NE	Duvall	WA	98019	000565	ne	se	13	26	06	.F.	EKC	4
Resident	3408 226th SE	Issaquah	WA	98027	31741L	se	ne	09	24	06	.F.	EKC	4
Reynolds-Issaquah	11211 Issaquah Hobart Rd	Issaquah	WA	98027	30787N	ne	ne	10	23	06	.F.	EKC	4
Reznick, G.	28440 NE Tolt Hill Rd	Carnation	WA	98014		nw	ne	30	25	07	.F.	EKC	4
Ricci	16606 NE 122	Redmond	WA	98052	72221M	ne	sw	25	25	05	.F.	EKC	4
Rice	Box 355	Fall City	WA	98024	02415	ne	sw	16	24	07	.F.	EKC	4
Richardson	46007 SE 150	North Bend	WA	98045	061011	nw	ne	24	23	08	.F.	EKC	4
Ridgeview	25930 NE 89	Redmond	WA	98052	07531C	se	se	02	25	06	.F.	EKC	4
Riepl	2102 Bellevue Way SE	Bellevue	WA	98004	72419R	sw	se	05	24	05	.F.	EKC	4
Ring Hill Water Co.	15322 227 NE	Woodinville	WA	98072	109618	ne	se	16	26	06	.F.	EKC	4
Roberts	Box 335	North Bend	WA	98045	73150U						.F.	EKC	4
Robey	13903 432 SE	North Bend	WA	98045	73157E	nw	se	15	23	08	.F.	EKC	4
Roetemeyer	22606 Inglewood Hill Rd	Redmond	WA	98052	738257	ne	ne	33	25	06	.F.	EKC	4
Rogers	14338 250th Pl SE	Issaquah	WA	98027	73906N	sw	se	14	23	06	.F.	EKC	4
Running Springs	8214 293 SE	Issaquah	WA	98027	74970E	nw	nw	31	24	07	.F.	EKC	4
Russell	31760 NE 170 Ct	Duvall	WA	98019	10601A	sw	se	09	26	07	.F.	EKC	4
S.E. 10th	14008 SE 10th	Bellevue	WA	98007	82810N	nw	ne	03	24	05	.F.	EKC	4
SE 176th St.	5315 NE 74th	Seattle	WA	98115	351790		nw	35	23	06	.F.	EKC	4
Saddleback	26403 SE 166	Issaquah	WA	98027	752102	sw	se	27	25	06	.F.	EKC	4
Saline	14510 NE 145	Bothell	WA	98011	321747	sw	sw	17	26	05	.F.	EKC	4
Sammamish Valley Associates	Box 256	Issaquah	WA	98027	756978	ne	ne	28	24	06	.F.	EKC	4
Sauvage	2331 309 Ave SE	Fall City	WA	98024	175405	nw	nw	09	24	07	.F.	EKC	4
Schaff	13410 249 Ave SE	Issaquah	WA	98027	16257K	ne	sw	14	23	06	.F.	EKC	4
Schlepp	2823 E. Lk Samm Rd N	Redmond	WA	98052	09281D	ne	sw	20	25	06	.F.	EKC	4
Schneider, J.	5352 402 Pl SE	Snoqualmie	WA	98065	767201	sw	ne	20	24	08	.F.	EKC	4
Schneider, K.	5306 402 pl se	Snoqualmie	WA	98065	76716V	sw	ne	20	24	08	.F.	EKC	4
Schneider, K.	Highland Dr	Snoqualmie	WA	98065	76716V	sw	ne	20	24	08	.F.	EKC	4
Schramm, R.E.	23220 SE May Valley Rd	Issaquah	WA	98027	76732A	sw	nw	15	23	06	.F.	EKC	4
Schreur	19048 171st Pl NE	Woodinville	WA	98072	039768	nw	se	01	26	05	.F.	EKC	4
Schroeder	17314 SE 42 Pl	Issaquah	WA	98027	360519	ne	sw	03	23	06	.F.	EKC	4
Scott	11328 SE 266th	Kent	WA	98031	64862	sw	se	7	22	07	.F.	EKC	4
Scott's Plateau	6340 135 NE	Kirkland	WA	98033		ne	ne	27	25	06	.F.	EKC	4
Scott, Dean	11626 Avondale Place NE	Redmond	WA	98052	38142T	ne	nw	03	26	06	.F.	EKC	4
Scott, J.	13416 248 SE	Issaquah	WA	98027	266145	nw	sw	14	23	06	.F.	EKC	4
Scottsdale	2823 244 NE	Redmond	WA	98052	26261R	ne	se	22	25	06	.F.	EKC	4
Seely-Duvall	Box 143	Duvall	WA	98019	24927-L	nw	ne	24	26	06	.F.	EKC	4
Sewell, J.	26403 SE 166 St	Issaquah	WA	98027		nw	ne	26	23	06	.F.	EKC	4
Sharp, B.	4024 116 NE	Kirkland	WA	98033	17553Y	sw	sw	16	25	05	.F.	EKC	4
Sharpe	18505 NE 109	Redmond	WA	98052	00471U	se	nw	31	26	06	.F.	EKC	4
Shelman/Poussier	23514 SE 137	Issaquah	WA	98027	78138R	ne	sw	15	23	06	.F.	EKC	4
Shields	14060 240 SE	Issaquah	WA	98027	78293V	sw	se	15	23	06	.F.	EKC	4
Shoemaker II	Box 430	Duvall	WA	98019	19646H			09	26	07	.F.	EKC	4
Shoreridge	9827 SE 42nd Pl	Mercer Island	WA	98040	78700M	ne	se	18	24	05	.F.	EKC	4
Short-Baxton	23201 276th SE	Maple Valley	WA	98038	036740	se	ne	13	22	06	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Simon, J.	25045 SE 235th Pl.	Maple Valley	WA	98038		se	se	14	22	06	.F.	EKC	4
Sinnema	8415 W. Snoqualmie Vly. Rd NE	Carnation	WA	98014	00192F	sw	se	01	25	06	.F.	EKC	4
Smith Public Water System	PO Box 639	Issaquah	WA	98027	01051V	se	ne	18	24	07	.F.	EKC	4
Smith, D.	23053 SE 200th	Maple Valley	WA	98038	26941S	ne	se	2	22	06	.F.	EKC	4
Smith-Hussey	7514 27 NE	Seattle	WA	98117	80485D	ne	se	25	26	05	.F.	EKC	4
Smith/Rusnak	PO Box 461	Preston	WA	98050	356886	se	sw	21	24	07	.F.	EKC	4
Snoqualmie Valley Land Co.	202 8th St SE	Auburn	WA	98002	81073N	sw	ne	05	23	08	.F.	EKC	4
So. Squak	22433 SE 134th	Issaquah	WA	98027		sw	nw	16	23	06	.F.	EKC	4
Soleim-Tiger Mt	PO Box 276	Issaquah	WA	98027		ne	ne	15	23	06	.F.	EKC	4
Sorem	3004 94th NE	Bellevue	WA	98004	813400	nw	se	19	25	05	.F.	EKC	4
Sorensen	24433 137th Ave. SE	Kent	WA	98031	81342R	se	nw	33	23	5	.F.	EKC	4
Sorstokke, W.	28124 NE Tolt Hill Rd	Carnation	WA	98014		se	nw	30	25	07	.F.	EKC	4
Sparks, G.	17621 Cougar Mt Rd	Bellevue	WA	98006		nw	ne	25	24	05	.F.	EKC	4
Sparks, W.	2132 N. 115th	Seattle	WA	98133		ne	ne	28	24	07	.F.	EKC	4
Sprague	22021 SE 29th Pl	Issaquah	WA	98027	83146P	nw	se	09	24	06	.F.	EKC	4
Spring Glen	35422 SE 47th Pl	Fall City	WA	98024	83295L			14	24	07	.F.	EKC	4
Spring Glen	35422 SE 47th Pl	Fall City	WA	98024		nw	nw	24	24	07	.F.	EKC	4
Spring Glen	35422 SE 47th Pl	Fall City	WA	98024		sw	sw	13	24	07	.F.	EKC	4
St. Mary's Convent	1663 Killarney Wy	Bellevue	WA	98009	31114L						.F.	EKC	4
Steele, H.	22037 SE 60th	Issaquah	WA	98027	10686Y	se	sw	21	24	06	.F.	EKC	4
Stern, W.	18115 NE 113th	Redmond	WA	98052	01226X	nw	nw	31	26	06	.T.	EKC	4
Stormo	9227 240th SE	Issaquah	WA	98027	84560P	nw	se	34	24	06	.F.	EKC	4
Strand	26022 SE 36	Issaquah	WA	98027	122517	nw	sw	12	24	06	.F.	EKC	4
Stratton	14603 SE 214th	Kent	WA	98031	320764	se	ne	10	22	5	.F.	EKC	4
Strugar	26815 Duthie Hill Rd	Issaquah	WA	98027	175761	sw	ne	12	24	06	.F.	EKC	4
Studebaker	29424 SE Preston Way	Issaquah	WA	98027	055421	sw	sw	29	24	07	.F.	EKC	4
Stuth Co.	17815 SE 146th	Renton	WA	98056	399525			34	22	06	.F.	EKC	4
Sullivan, D.	28931 SE 208th	Maple Valley	WA	98038	162942	ne	ne	7	22	07	.F.	EKC	4
Summit View	5713 285th SE	Issaquah	WA	98027	85000K	nw	nw	30	24	07	.F.	EKC	4
Sutherland, G.	3256 E Lake Sam. Pkwy NE	Redmond	WA	98053	01271M	sw	nw	20	25	06	.T.	EKC	4
Swan	13532 Batten Rd.	Duvall	WA	98019	01301Y	sw	sw	20	26	07	.F.	EKC	4
Sweetwater	17605 SE 228th St	Kent	WA	98042	331179	nw	se	13	22	5	.F.	EKC	4
Syringia Springs	1629 E. Lake Samm.	Redmond	WA	98052	86750U	sw	nw	29	25	06	.F.	EKC	4
Tall Timber	13505 251st SE	Issaquah	WA	98027	871301	se	nw	14	23	06	.F.	EKC	4
Tarr/Tuinstra	18731 Echo Lk Cutoff	Issaquah	WA	98027	87186O	sw	ne	24	24	04	.F.	EKC	4
Thomas, J.	12914 164 NE	Redmond	WA	98052	10941Q	nw	nw	25	25	05	.F.	EKC	4
Thompson	3 Mt. Ave	North Bend	WA	98065	258538	sw	nw	35	24	08	.F.	EKC	4
Thompson, G.	26831 SE 76th Pl	Issaquah	WA	98027	880209	se	sw	25	24	06	.F.	EKC	4
Thompson-Schuemann	22621 NE 76	Redmond	WA	98052	013473	ne	ne	09	25	06	.F.	EKC	4
Tiger-Mtn.	13124 255 SE	Issaquah	WA	98027	88320N	sw	ne	14	23	06	.F.	EKC	4
Tokul Creek Hatchery	516 N Washington	Olympia	WA	98024	886202	nw	nw	19	24	08	.F.	EKC	4
Tokul Plateau	5700 390th SE	Snoqualmie	WA	98065	062793	nw	sw	20	24	08	.F.	EKC	4
Tolt River Estates	4101 185th Place SE	Issaquah	WA	98027		ne	sw	14	25	07	.T.	EKC	4
Tovey	PO Box 398	Snoqualmie	WA	98065	29612P	ne	sw	28	24	08	.F.	EKC	4
Travis	PO Box 791	North Bend	WA	98045	213119	ne	se	15	23	08	.F.	EKC	4
Treisman-Crumbley	30701 Issaquah-Fall City Rd E	Fall City	WA	98024	379310	sw	ne	17	24	07	.F.	EKC	4
Tripp	22440 Benson Rd. #F-3	Kent	WA	98031	44984N	ne	sw	14	22	5	.F.	EKC	4
Uht	5104 W Lk Sammamish Parkway SE	Issaquah	WA	98027	90192R	sw	nw	20	24	06	.F.	EKC	4
Upper Tiger Mt.	27515 SE 154th Pl	Issaquah	WA	98027	170812	sw	se	24	23	06	.F.	EKC	4
Valley View	Box 585	North Bend	WA	98045	04276D	ne	ne	18	23	09	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Van Dyne	15602 Issaq. Hobart Rd	Issaquah	WA	98027	91134A	nw	sw	23	23	06	.F.	EKC	4
Van Valkenberg	11213 196th NE	Redmond	WA	98053	19344U	ne	ne	31	26	06	.F.	EKC	4
Vanderlaan	12107 194 NE	Redmond	WA	98052	91225P	ne	se	30	26	06	.F.	EKC	4
Varney-Dubois	6900 242 Ave NE	Redmond	WA	98052	07159H	ne	se	10	25	06	.F.	EKC	4
Vidos/Kier	23831 SE Tiger Mt Rd	Issaquah	WA	98027	018024	sw	se	15	23	06	.F.	EKC	4
Wakefield/Stillwater	29851 NE 107th	Carnation	WA	98014	30411C	ne	sw	32	26	07	.F.	EKC	4
Walker, W.	7212 238th NE		WA		202767						.F.	EKC	4
Wallace Bros.	27600 Vernard Rd	Duvall	WA	98019	014013	ne	nw	30	26	07	.F.	EKC	4
Wallace Farms	11602 W. Snoq. Valley Rd NE	Carnation	WA	98109	014516	nw	ne	35	26	06	.F.	EKC	4
Waln	4606 E. Lk Samm Rd NE	Redmond	WA	98052							.F.	EKC	4
Waptus	17811 SE 106	Renton	WA	98056	35531B	se	ne	01	23	05	.F.	EKC	4
Washington Heights	23713 NE 43	Redmond	WA	98052	52975U	sw	se	15	25	06	.F.	EKC	4
Wasson, R.	5724 290th SE	Issaquah	WA	98027	42340P	nw	se	19	24	07	.F.	EKC	4
Waterwell	3832 134th Ave. N.E.	Bellevue	WA	98005	93605U	nw	ne	22	25	05	.F.	EKC	4
Waugaman	40021 SE 106th Pl	North Bend	WA	98045	93740D	sw	sw	04	24	08	.F.	EKC	4
Webster	805 111th NE	Bellevue	WA	98004	10488Q	nw	se	29	26	06	.F.	EKC	4
Weikert-McElroy	15924 SE 41st Pl	Bellevue	WA	98006		se	sw	24	24	05	.F.	EKC	4
Weppler	16916 464th Way SE	North Bend	WA	98045	11981U	nw	se	25	23	08	.F.	EKC	4
West Assn	14501 255th SE	Issaquah	WA	98027	01626E	se	ne	23	23	06	.F.	EKC	4
West Lake Alice WS #1	33321 SE 76th	Fall City	WA	98024	088898	nw	se	27	24	07	.F.	EKC	4
Williams	12443 Bel-Red Rd., Suite H	Bellevue	WA	98005	252015	se	se	22	25	06	.F.	EKC	4
Williams, J. W.	2523 125th NE	Bellevue	WA	98005		ne	se	09	25	06	.F.	EKC	4
Williams, P.	20310 178 NE	Woodinville	WA	98072	97117Q	ne	ne	01	26	05	.F.	EKC	4
Williams-Darrah	34902 SE David Powell Rd	Fall City	WA	98024	97140W	sw	ne	23	24	07	.F.	EKC	4
Wilson-Nielson	32916 NE 138th	Duvall	WA	98019	17094V	ne	sw	22	26	07	.F.	EKC	4
Wilson-Stroud	24515 NE 18th	Redmond	WA	98052	10208D	sw	nw	26	25	06	.F.	EKC	4
Winikoff	17124 SE Cougar Mt Dr	Issaquah	WA	98027	171014	se	sw	24	24	05	.F.	EKC	4
Work	2604 244th NE	Redmond	WA	98052	98550Q	sw	sw	23	25	06	.F.	EKC	4
Worley-Darlington	PO Box 664	Duvall	WA	98019	240514	se	nw	15	26	06	.F.	EKC	4
Woulf	27902 NE 5th	Redmond	WA	98053	53368D	nw	nw	31	25	07	.F.	EKC	4
Wright	30515 SE 58	Preston	WA	98027	38207F	sw	nw	21	24	07	.F.	EKC	4
Wright-Aycock	1215 Oakcrest St.	Iowa City	WA	52240	14557U	se	se	20	24	06	.F.	EKC	4
Wulff, A.S.	13204 249th Ave SE	Issaquah	WA	98027	38401M	ne	nw	14	23	06	.F.	EKC	4
Young	2617 Boyer E	Seattle	WA	98102	22777H	se	ne	03	23	06	.F.	EKC	4
Young, W.	4812 SW Stevens St	Seattle	WA	98116	99510R	sw	ne	34	25	07	.F.	EKC	4
Young-Pedeferri	24323 NE 80th	Redmond	WA	98052	99490P	ne	ne	10	25	06	.F.	EKC	4
Zuver-Simonson	7316 Moon Valley Rd SE	North Bend	WA	98045	25479B	ne	se	26	24	08	.F.	EKC	4
Zylstra	19529 W Snoqualmie Val. Rd NE	Duvall	WA	98019	999001	sw	nw	02	26	06	.F.	EKC	4

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Abney, M.	46715 SE 119th	North Bend	WA	98045			NE	12	23	08	.F.	EKC	0
Adams/Armbruster	24002 NE 22nd	Redmond	WA	98052		NE	NE	27	25	06	.F.	EKC	0
Ahia, H.	22235 Sweeney Rd. SE	Maple Valley	WA	98038		sw	sw	9	22	5	.F.	EKC	0
Albin, C.	832 NE 135th St	Seattle	WA	98125		se	ne	14	22	5	.F.	EKC	0
Alderlane Water Co.	24058 SE 223rd	Maple Valley	WA	98038		se	se	10	22	06	.F.	EKC	0
Allison, K.	13339 191st Pl SE	Renton	WA	98055		NE	SE	10	25	07	.F.	EKC	0
Andersen Ranch	14500 148th Ave NE Apt #453 B	Redmond	WA	98052		SW	NE	14	25	06	.F.	EKC	0
Anderson's Water System	PO Box 60	Duvall	WA	98019		NW	NW	29	26	07	.F.	EKC	0
Anderson, Darold	21809 148th Ave SE	Kent	WA	98031		ne	se	10	22	5	.F.	EKC	0
Anderson, E.	4266 356 Dr SE	Fall City	WA	98024		SW	NW	13	24	07	.F.	EKC	0
Anderson, P.	26624 SE 224th	Maple Valley	WA	98038		se	sw	12	22	06	.F.	EKC	0
Anderson, R.	PO Box 441	Fall City	WA	98024							.F.	EKC	0
Anderson/Oliver	10549 NE 137th Pl	Kirkland	WA	98033		NW	NE	08	24	07	.F.	EKC	0
ApRoberts, P.	6106 Oakhurst Rd. S.	Seattle	WA	98118		NW	NW	25	24	05	.F.	EKC	0
Arnold, E.	15407 275th Ave NE	Duvall	WA	98019		NE	SE	13	26	06	.F.	EKC	0
Arnts, R.	14217 SE 224th	Kent	WA	98042		nw	nw	15	22	5	.F.	EKC	0
Ashbaugh, A.	21858 NE 133rd St	Woodinville	WA	98072		SE	SW	21	26	06	.F.	EKC	0
Auerbach, K.	212 167th Pl NE	Bellevue	WA	98008							.F.	EKC	0
Backster, K.	PO Box 754	Issaquah	WA	98027		SW	SW	10	23	07	.F.	EKC	0
Baer, D. #1	3901 Tolt River Road	Carnation	WA	98014		NW	SE	11	25	07	.F.	EKC	0
Ballard Community	500 Wall St., Apt. 302	Seattle	WA	98121	35426J	nw	ne	01	23	05	.T.	EKC	0
Ballard, F.	11506 190th Ave SE	Issaquah	WA	98027		NW	NE	07	23	06	.F.	EKC	0
Bar-O	PO BOX 732	Preston	WA	98050		NW	NE	33	24	07	.F.	EKC	0
Barber, T.	25301 SE Mirrormont Pl.	Issaquah	WA	98027		SE	NE	15	23	06	.F.	EKC	0
Barem, A.	906 13th SE	Puyallup	WA	98371							.F.	EKC	0
Barker, C.	13525 Seattle Hill Rd.	Snohomish	WA	98290		NE	NE	04	26	06	.F.	EKC	0
Barker, C.	PO Box 649	Duvall	WA	98019		NE	NE	19	26	07	.F.	EKC	0
Bauman, J. #1	16030 NE 116th	Redmond	WA	98052		SE	SE	26	26	05	.F.	EKC	0
Baumann, J.	16030 NE 116	Redmond	WA	98052		ne	se	30	26	06	.F.	EKC	0
Bechtel #1	3920 120th SE	Bellevue	WA	98006		NE	NW	30	24	06	.F.	EKC	0
Becker	1918 3rd St	Kirkland	WA	98033		ne	se	26	23	6	.F.	EKC	0
Bedand, P.	PO Box 243	Maple Valley	WA	98038		ne	nw	14	22	6	.F.	EKC	0
Beeson, E.	14805 275th Ave NE	Duvall	WA	98019		SE	SE	13	26	06	.F.	EKC	0
Behrhorst, H.	7438 Moon Valley Rd	North Bend	WA	98045							.F.	EKC	0
Behse	22526 251st Ave SE	Maple Valley	WA	98038		ne	nw	14	22	06	.F.	EKC	0
Bennett, B.	4663 159 Ave SE	Bellevue	WA	98006		se	ne	32	26	06	.F.	EKC	0
Berg, W.	15029 206th Ave SE	Renton	WA	98056			NE	01	23	05	.F.	EKC	0
Berndt, R.	18442 Byers Rd.	Maple Valley	WA	98038	16611-Y			32	23	06	.F.	EKC	0
Bernstein	11202 204 Ave NE	Redmond	WA	98053		nw	ne	32	26	06	.F.	EKC	0
Bersch, B.	4902 Issaquah-Pine Lake Rd.	Issaquah	WA	98027			ne	22	24	06	.F.	EKC	0
Betrozoff, J.	11818 156th Ave NE	Redmond	WA	98052				26	26	05	.F.	EKC	0
Betten, C.	3227 NE 103rd	Seattle	WA	98125		ne	nw	33	22	06	.F.	EKC	0
Billington, S.	20329 SE 243rd	Maple Valley	WA	98038		ne	nw	20	22	6	.F.	EKC	0
Bingham, D.	3323 Island Pl.	Sumner	WA	98390		se	sw	17	22	06	.F.	EKC	0
Bingisser, M.	12204 Upper Preston Rd.	Issaquah	WA	98027				10	23	07	.F.	EKC	0
Birdsey, D Water Supply	3535 SW 95th St.	Seattle	WA	98126		NW	SE	20	24	07	.F.	EKC	0
Black's Water System	19833 320th Ave NE	Duvall	WA	98019		SW	SE	09	26	07	.F.	EKC	0
Blackwood Farms	24221 NE Union Hill Rd.	Redmond	WA	98052		SE	SE	10	25	06	.F.	EKC	0
Blain, R.	3002 134th Ave. NE	Bellevue	WA	98005		nw	se	16	26	07	.F.	EKC	0
Blake	20226 244th Ave SE	Maple Valley	WA	98038	26354-6			6	22	07	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Blanton, R.	23044 148th SE	Kent	WA	98042		sw	nw	14	22	5	.F.	EKC	0
Blumer, C.	8214 293rd SE	Issaquah	WA	98027		NW	NW	32	24	07	.F.	EKC	0
Blumer, C.	8214 293rd Ave SE	Issaquah	WA	98027		nw	nw	32	24	07	.F.	EKC	0
Bowie, J.	22220 SE 272nd	Maple Valley	WA	98038		nw	nw	15	22	06	.F.	EKC	0
Briggs Boys Community System	30406 SE Issaquah-Fall City Rd	Fall City	WA	98024				17	24	07	.F.	EKC	0
Brighton	26846 Maple Valley Rd.	Maple Valley	WA	98038		sw	se	17	22	06	.F.	EKC	0
Brown, D.	6136 402nd SE	Snoqualmie	WA	98065		SE	SE	20	24	08	.F.	EKC	0
Brown, M.	10903 Issaquah-Renton Rd.	Issaquah	WA	98027		se	sw	06	23	06	.F.	EKC	0
Buchholtz, G.	31002 SE 36th t.	Fall City	WA	98024		ne	sw	09	24	07	.F.	EKC	0
Burke, J.	16053 NE 8th	Bellevue	WA	98008		NE	SW	20	24	07	.F.	EKC	0
Burnite, T.	29201 NE 150th	Duvall	WA	98019		SW	SW	17	26	07	.F.	EKC	0
Campbell, L.	23932 Black Nuggett Rd.	Issaquah	WA	98027			SE	22	24	06	.F.	EKC	0
Canady, K.	10736 Kelly Rd.	Carnation	WA	98014		NE	SW	34	26	07	.F.	EKC	0
Carlson, O.J.	Rt 4 Box 6003	Issaquah	WA	98027				29	24	06	.F.	EKC	0
Carnation Lumber Supply	PO Box 835	North Bend	WA	98045				28	25	07	.F.	EKC	0
Carnation Water Company	10304 296 Ave NE	Carnation	WA	98014		ne	sw	32	26	07	.F.	EKC	0
Catterall, R.	160 NW Gilman Blvd.	Issaquah	WA	98027		SE	SW	06	23	06	.F.	EKC	0
Cedar River Homestead Tracts	24806 SE 239th	Maple Valley	WA	98038	11985	sw	sw	14	22	06	.F.	EKC	0
Chapman, I.	14943 SE Jones Rd.	Renton	WA	98055		se	se	12	22	6	.F.	EKC	0
Charboneau, R.	Box 606	Snoqualmie	WA	98065		se	se	18	24	08	.F.	EKC	0
Charbonneau, R. Water System	PO Box 606	Snoqualmie	WA	98065		SE	SE	18	24	08	.F.	EKC	0
Cherry Water System	11250 Kirkland Way	Kirkland	WA	98033		NW	SW	04	26	07	.F.	EKC	0
Chew, D.	11404 296th Ave NE	Carnation	WA	98104		NW	NW	32	26	07	.F.	EKC	0
Chouinard, L. Water System	13424 409th Ave SE	North Bend	WA	98045		SE	NW	16	23	08	.F.	EKC	0
Clay, R.	24717 SE 133rd St.	Issaquah	WA	98027			NW	14	23	06	.F.	EKC	0
Coleman, K.	2500 N 45th St.	Seattle	WA	98103		SE	NW	28	24	08	.F.	EKC	0
Cooper, J.	18610 SE 58th	Issaquah	WA	98027		ne	sw	19	24	06	.F.	EKC	0
Cornerstone Partners 1	7900 SE 28th	Mercer Island	WA	98040		NE	NW	31	26	06	.F.	EKC	0
Corra, R.	20916 SE 12th	Issaquah	WA	98027				05	24	06	.F.	EKC	0
Cougar Mtn Park Water Supply	3005 NE 4th	Renton	WA	98056		SE	SE	24	24	05	.F.	EKC	0
Court/Urpman	13201 Squak Mt. Rd S.	Issaquah	WA	98027		SE	NE	16	23	06	.F.	EKC	0
Covenant Presbyterian Church	22116 SE 51st Pl.	Issaquah	WA	98027		NW	NE	21	24	06	.F.	EKC	0
Crittenden, O.	18814 72nd Ave S	Kent	WA	98031			NE	32	24	07	.F.	EKC	0
Currier, W.	21414 260th SE	Maple Valley	WA	98038		sw	nw	12	22	06	.F.	EKC	0
Davick, M.	6611 413th Ave SE	Snoqualmie	WA	98065		NW	NE	28	24	08	.F.	EKC	0
Davis, D.	10404 428th Ave SE	North Bend	WA	98045			NW	03	23	08	.F.	EKC	0
Dawson, R.	21635 260th SE	Maple Valley	WA	98038		ne	se	11	22	06	.F.	EKC	0
Dawson, W.	P.O. Box 432	Maple Valley	WA	98038		ne	se	9	22	6	.F.	EKC	0
De Salvo, S.	18715 SE 43rd Pl.	Issaquah	WA	98027		nw	nw	33	24	07	.F.	EKC	0
Decker, D.	24061 SE 216th	Maple Valley	WA	98038	32386-R	ne	se	10	22	06	.F.	EKC	0
Delmar Estates	HC84, Box 29	Potter	NE	69156		ne	se	18	22	06	.F.	EKC	0
Demetrick, R.	10309 SE 200th	Kent	WA	98031			SW	04	25	06	.F.	EKC	0
DenBoer, G.	10101 181 SE	Issaquah	WA	98027			nw	06	23	06	.F.	EKC	0
DiOrio, C.	20525 292nd SE	Maple Valley	WA	98038			se	6	22	07	.F.	EKC	0
Dick #1	430 12 Ave E	Seattle	WA	98102		ne	ne	04	26	06	.F.	EKC	0
Dodge, M.	17730 SE 245	Kent	WA	98042		se	se	24	22	5	.F.	EKC	0
Donway	19797 272nd SE	Maple Valley	WA	98038		sw	ne	1	22	06	.F.	EKC	0
Doss	PO Box 8050	Issaquah	WA	98027		se	sw	15	23	6	.F.	EKC	0
Dropping, P.	12001 194 Ave NE	Redmond	WA	98052		nw	se	30	26	06	.F.	EKC	0
Durbin, M.	8448 NE 169	Bothell	WA	98011		ns	ne	04	26	05	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Dye, D.	12825 SE 45th Pl.	Bellevue	WA	98006		se	nw	35	23	6	.F.	EKC	0
Dyson, W.	21222 132nd Ave SE	Kent	WA	98042		sw	ne	10	22	5	.F.	EKC	0
Eadie, G.	7837 Lk. Alice Rd.	Fall City	WA	98024		sw	sw	26	24	07	.F.	EKC	0
Eagle	7025 121 Ave SE	Renton	WA	98056			se	32	24	07	.F.	EKC	0
East Hill Hardware	10432 Kent-Kangley Rd.	Kent	WA	98031		nw	se	12	22	06	.F.	EKC	0
East Mitchell Hill	11256 NE 116	Kirkland	WA	98034		sw	nw	21	24	07	.F.	EKC	0
Eaton Well #2	PO Box 947	Duvall	WA	98019		nw	se	05	26	07	.F.	EKC	0
Edgewater Estates	1200 112 Ave NE Suite 187	Bellevue	WA	98004				18	24	06	.F.	EKC	0
Ellenswood Community	12827 163 Ave SE	Renton	WA	98055		se	se	01	23	05	.F.	EKC	0
Elliot, L.	21845 148th Ave SE	Kent	WA	98031		ne	se	10	22	5	.F.	EKC	0
England, C.	12246 46 Ave S.	Seattle	WA	98178		nw	nw	25	24	05	.F.	EKC	0
Enloe, T.	PO Box 143	Duvall	WA	98019							.F.	EKC	0
Enloe, T.	PO Box 167	Duvall	WA	98019		ne	se	09	26	07	.F.	EKC	0
Fahlen, A.	21224 NE 10 Pl	Redmond	WA	98053		se	sw	25	26	05	.F.	EKC	0
Falkenberg, D.	PO Box 363	Redmond	WA	98052				15	25	07	.F.	EKC	0
Ferrier, J.	20014 312 Ave NE	Duvall	WA	98019		sw	nw	04	26	07	.F.	EKC	0
Fire Station #85	22225 SE 231st	Maple Valley	WA	98038		nw	nw	7	22	07	.F.	EKC	0
Fischer, L.	17812 NE 116	Redmond	WA	98052		ne	se	25	26	05	.F.	EKC	0
Ford, Ford and Ford	6828 S. 133 St.	Seattle	WA	98178		nw	se	01	23	05	.F.	EKC	0
Forslin, E.	46323 SE 174	North Bend	WA	98045		sw	se	25	23	08	.F.	EKC	0
Fossen, S.	PO Box 172	Woodinville	WA	98072		sw	ne	22	26	06	.F.	EKC	0
Foster, W.	87 Cascade Key	Bellevue	WA	98006		nw	se	24	24	05	.F.	EKC	0
Fowler	10901 SE 236th	Kent	WA	98031		se	se	7	22	07	.F.	EKC	0
Franks, F.	12240 SE 240th St	Kent	WA	98031		se	sw	16	22	5	.F.	EKC	0
Friedmann, J.	4541 89th Ave. S.E.	Mercer Island	WA	98040		sw	se	34	23	06	.F.	EKC	0
Galasso, S.	101 Lake St. S.	Kirkland	WA	98033		se	ne	10	25	06	.F.	EKC	0
Garver, C.	4309 NE 11	Renton	WA	98055		se	sw	05	26	07	.F.	EKC	0
Gaudy, O.	2466 E. Sammamish Rd NE	Redmond	WA	98052		se	sw	20	25	06	.F.	EKC	0
Gaumont, E.	18026 236 NE	Woodinville	WA	98072		nw	ne	10	26	06	.F.	EKC	0
Gerbing, G.	25806 SE 192nd	Maple Valley	WA	98038		se	se	35	23	6	.F.	EKC	0
Golob, D.	4018 Interlake N.	Seattle	WA	98103		se	se	34	24	06	.F.	EKC	0
Gooch-Drew	15206 232 NE	Woodinville	WA	98072		se	sw	09	26	06	.F.	EKC	0
Gores	P.O. Box 249	Maple Valley	WA	98038		nw	sw	12	22	06	.F.	EKC	0
Grage, H.	11865 194 Ave NE	Redmond	WA	98052		nw	se	30	26	06	.F.	EKC	0
Grant, H.	4730 164 Ave SE	Issaquah	WA	98027		nw	nw	15	23	06	.F.	EKC	0
Greising, R.	249th Ave. SE on Cedar River	Maple Valley	WA	98038				23	22	06	.F.	EKC	0
Gunderson, J.	12724 167 Pl NE	Redmond	WA	98052		sw	nw	25	26	05	.F.	EKC	0
H. Zoff	14846 SE 50th St	Bellevue	WA	98006		sw	sw	22	23	6	.F.	EKC	0
Hillcroft Nursery	19805 Novelty Hill Rd.	Redmond	WA	98052		sw	nw	05	25	06	.F.	EKC	0
Hagman, R.	22555 SE Petrovitsky Rd.	Maple Valley	WA	98038		ne	ne	16	22	06	.F.	EKC	0
Hambleton, B.	4631 92 Ave NE	Bellevue	WA	98004		sw	ne	33	26	06	.F.	EKC	0
Hamerly, R.	5510 396 Dr. SE	Snoqualmie	WA	98065		sw	ne	20	24	08	.F.	EKC	0
Hardie, R.	14036 145 Ave SE	Renton	WA	98055				04	26	07	.F.	EKC	0
Harris, M.	15135 294 Ave NE	Duvall	WA	98019		nw	sw	17	26	07	.F.	EKC	0
Harris, W.	7517 123 Ave NE	Kirkland	WA	98033		ne	se	14	24	07	.F.	EKC	0
Hedeen	22904 NE Union Hill Rd	Redmond	WA	98052				10	25	06	.F.	EKC	0
Heid Nursery	12218 NE 132	Kirkland	WA	98033				30	25	07	.F.	EKC	0
Henry, D.	11001 Arroyo Beach Pl SW	Seattle	WA	98146				22	24	07	.F.	EKC	0
Herzberg, F.	10724 228 Ave SW	Edmonds	WA	98020				15	25	06	.F.	EKC	0
Hillwood	14302 415 Ave SE	North Bend	WA	98045		se	se	16	23	08	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Himes/Bennett	13511 121 Ave NE	Kirkland	WA	98033				36	26	05	.F.	EKC	0
Hines, W.	25628 SE 164	Issaquah	WA	98027		ne	ne	26	24	06	.F.	EKC	0
Hix, E.	17808 252nd Ave SE	Maple Valley	WA	98038				35	23	06	.F.	EKC	0
Hogue, S.	4147 52 Ave SW	Seattle	WA	98116		se	nw	08	23	09	.F.	EKC	0
Hoyt	6530 154 Ave NE	Redmond	WA	98052		nw	nw	35	25	06	.F.	EKC	0
Huffman/Harder	14911 275 Ave NE	Duvall	WA	98019		se	se	13	26	06	.F.	EKC	0
Hyltin, D.	13528 409 Ave SE	North Bend	WA	98045		se	nw	15	23	08	.F.	EKC	0
Ireland, T.	12807 322 Ave NE	Duvall	WA	98019		nw	ne	28	26	07	.F.	EKC	0
Issaquah Grocery	1928 Pike Place	Seattle	WA	98101		nw	nw	27	24	06	.F.	EKC	0
JLM Water Company	Box 88	Duvall	WA	98019		se	se	08	26	07	.F.	EKC	0
Jack Croman Proposed Comm	154 Front Street	Issaquah	WA	98027		se	ne	26	24	08	.F.	EKC	0
Jackson, G.	16121 Cedar Grove Road SE	Issaquah	WA	98027							.F.	EKC	0
Jepsley, N.	24226 SE Tiger Mt. Rd.	Issaquah	WA	98027							.F.	EKC	0
Johansen, J.	19228 136 Pl SE	Renton	WA	98055		nw	nw	27	25	07	.F.	EKC	0
Johnson, E.	P.O. Box 212	Maple Valley	WA	98038			sw	10	22	06	.F.	EKC	0
Johnson, P. #3	PO Box 227	Raymond	WA	98577		nw	se	32	26	07	.F.	EKC	0
Johnson, P. #4	PO Box 143	Duvall	WA	98109		sw	sw	07	25	07	.F.	EKC	0
Johnson, R.	20017 312th NE	Duvall	WA	98019		nw	nw	04	26	07	.F.	EKC	0
Johnston, A. #1	22313 NE 114	Redmond	WA	98052		nw	ne	33	26	06	.F.	EKC	0
Johnston, A. #2	22312 NE 114	Redmond	WA	98052		nw	ne	33	26	06	.F.	EKC	0
Jung/Oestreich	12930 277 Ave NE	Duvall	WA	98019		ne	ne	24	24	07	.T.	EKC	0
Justus, J.	P.O. Box25	Hobart	WA	98025		nw	se	6	22	07	.F.	EKC	0
Kaplan, W.	17027 NE 190	Woodinville	WA	98072		se	sw	01	26	05	.F.	EKC	0
Keesling, M.	15241 NE 153	Woodinville	WA	98072		nw	ne	10	26	06	.T.	EKC	0
Kendall, J.	PO Box 751	Duvall	WA	98019				16	26	07	.F.	EKC	0
King, D.	129 244 Ave SW	Bothell	WA	98021		ne	ne	09	25	06	.F.	EKC	0
King, D.	129 244th Ave SW	Bothell	WA	98021			ne	09	25	06	.F.	EKC	0
King, T.	7322 137 Ave SE	Renton	WA	98055				34	24	05	.F.	EKC	0
Kiser East	20512 SE 159 St	Renton	WA	98055		nw	sw	25	23	08	.F.	EKC	0
Kiser West	20512 SE 159	Renton	WA	98055			sw	25	23	08	.F.	EKC	0
Kloepfer, R.	14030 182 Ave NE	Woodinville	WA	98072				19	26	06	.F.	EKC	0
Knight, C.	12420 95 Ave NE	Kirkland	WA	98034		se	sw	27	26	07	.F.	EKC	0
Knowles, P.	22013 SE 34	Issaquah	WA	98027				34	25	07	.F.	EKC	0
Koba, J.	32511 SE Redmond-Fall City Rd	Fall City	WA	98024		nw	nw	15	24	07	.F.	EKC	0
Koskala 7	22626 SE 216th Pl	Maple Valley	WA	98038		sw	ne	2	22	06	.F.	EKC	0
Kraght, K.	22520 141st SE	Kent	WA	98042		nw	ne	15	22	5	.F.	EKC	0
Krsak, M.	4716 89 Ave SE	Mercer Island	WA	98040				33	24	08	.F.	EKC	0
Kryger #1	17027 318 Way NE	Duvall	WA	98019		se	se	09	26	07	.F.	EKC	0
Krysinski, F.	18633 39th Ave. S.	Burien	WA	98188		sw	sw	11	22	06	.F.	EKC	0
Kuchin, L.	8423 S. 120th St.	Seattle	WA	98178		ne	se	25	23	06	.F.	EKC	0
Kurt's Waterworks	Box 485	Preston	WA	98050		nw	se	10	23	07	.F.	EKC	0
Kyar, C.	P.O. Box 306	Maple Valley	WA	98038		se	nw	35	23	06	.F.	EKC	0
L&E	22210 SE 272nd St	Maple Valley	WA	98038		se	se	14	22	5	.F.	EKC	0
La France	2410 244 Ave NE	Redmond	WA	98052		sw	sw	23	25	06	.F.	EKC	0
LaBlanc, L.	P.O. Box 507	Woodinville	WA	98072				5	22	06	.F.	EKC	0
LaGrande - Reed	P.O. Box 485	Maple Valley	WA	98038			sw	18	22	07	.F.	EKC	0
Lamoreaux, F.	20525 SE 248th St.	Maple Valley	WA	98038		nw	se	20	22	06	.F.	EKC	0
Lapinski, S.	30051 232nd Pl. SE	Kent	WA	98031		nw	nw	21	22	06	.F.	EKC	0
Larson, M.	Box 430	Carnation	WA	98014		sw	sw	23	25	07	.F.	EKC	0
Latchkey Realty	70 Front St. South	Issaquah	WA	98028			ne	28	24	06	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Lenser, H.	17723 SE 110	Renton	WA	98056		ne	ne	01	23	05	.T.	EKC	0
Lewis, R.	1125 N. 85th St.	Seattle	WA	98103		sw	ne	35	23	06	.F.	EKC	0
Lind/Falcon	41715 SE 101	North Bend	WA	98045		ne	nw	03	24	08	.F.	EKC	0
Lindblad, G.	27024 SE 171	Issaquah	WA	98027				25	23	06	.F.	EKC	0
Lindquist, N.	2107 166th Pl NE	Bellevue	WA	98008		sw	ne	22	23	6	.F.	EKC	0
Lockwood, A.	17015 300 Ave NE	Duvall	WA	98019			sw	08	26	07	.F.	EKC	0
Lott, E.	11919 SE 252nd Pl	Kent	WA	98031		nw	sw	15	22	5	.F.	EKC	0
MacLachlan	14029 SE 224th St	Kent	WA	98031		nw	ne	15	22	5	.F.	EKC	0
Mack, G.	12044 Woodinville Way	Woodinville	WA	98072		se	se	01	26	05	.F.	EKC	0
Madrona Hill	2838 E. Lake Sammamish Rd NE	Redmond	WA	98052				20	25	06	.F.	EKC	0
Mardel	P.O. Box 838	Auburn	WA	98002		ne	sw	24	22	06	.F.	EKC	0
Marth, B.	20325 Paradise Lake Rd.	Woodinville	WA	98072		sw	nw	05	26	06	.F.	EKC	0
Mathis, M.	12111 326 Ave NE	Duvall	WA	98019				27	26	07	.F.	EKC	0
Maxwell, R.	2841 60 Ave SE	Mercer Island	WA	98040			nw	20	26	06	.F.	EKC	0
McCarty, F.	30320 6th Ave. NW	Federal Way	WA	98003		nw	sw	29	23	06	.F.	EKC	0
McClosky, T.	2607 244 Ave NE	Redmond	WA	98052		se	se	22	25	06	.F.	EKC	0
McCuen, G.	38410 SE 47	Snoqualmie	WA	98065		sw	se	18	24	08	.F.	EKC	0
McElroy, D.	Box 2393	Renton	WA	98055		sw	se	01	23	05	.F.	EKC	0
McGinnis/Carey Public	Box 584	Duvall	WA	98019		se	ne	16	26	07	.F.	EKC	0
McLenaghan, G.	9717 Renton-Issaquah Rd SE	Issaquah	WA	98027			nw	05	23	06	.F.	EKC	0
McMurtrey #2	12122 196 Ave NE	Redmond	WA	98053		nw	sw	29	26	06	.F.	EKC	0
McNabb, J. L.	12345 Upper Preston Rd SE	Issaquah	WA	98027			sw	10	23	07	.F.	EKC	0
Meadow Creek	Box 561	Duvall	WA	98019				18	26	07	.F.	EKC	0
Meyer #1	3910 120 Ave SE	Bellevue	WA	98006		ne	nw	30	24	06	.F.	EKC	0
Miller, G.	135 Lake St. S. #110	Kirkland	WA	98033		se	sw	25	26	05	.F.	EKC	0
Miller, J.	12230 415 Ave SE	North Bend	WA	98045		se	nw	08	23	06	.F.	EKC	0
Miner, G.	26307 NE 17	Redmond	WA	98053		sw	nw	25	25	06	.F.	EKC	0
Mitchell, L.	10724 Issaquah-Hobart Rd. SE	Issaquah	WA	98027		nw	se	03	23	06	.F.	EKC	0
Mitchell, L.	10724 Issaquah-Hobart Rd	Issaquah	WA	98027		nw	se	03	23	06	.F.	EKC	0
Moellendorf, O.	13301 SE 225th St	Maple Valley	WA	98038		nw	nw	15	22	5	.F.	EKC	0
Moeller, N.	Box 852	Preston	WA	98050		se	se	20	24	07	.F.	EKC	0
Munroe, J.	33006 NE 66	Carnation	WA	98014				10	25	07	.F.	EKC	0
Murray, W.	23939 SE 231st St.	Maple Valley	WA	98038		se	ne	15	22	06	.F.	EKC	0
Nelson, G.	16442 NE 122	Redmond	WA	98052				26	26	05	.F.	EKC	0
Nelson, N.	19543 SE 23	Issaquah	WA	98027		se	se	14	24	06	.F.	EKC	0
Nemeth, M.	6910 S. 123 St. #209	Seattle	WA	98178		nw	se	04	26	06	.F.	EKC	0
Newman, J.	3057 E. Laurelhurst Dr. NE	Seattle	WA	98105		se	se	07	24	07	.F.	EKC	0
Nielsen Duvall	33014 NE 138	Duvall	WA	98019		ne	se	22	26	07	.T.	EKC	0
Nikko, R.	9421 W. Snoqualmie Rd.	Carnation	WA	98014		sw	ne	01	25	06	.F.	EKC	0
Norstrom, J.	30609 SE 352nd St.	Enumclaw	WA	98022							.F.	EKC	0
Novelty Hill Estates	4548 W. Sheridan	Seattle	WA	98199		sw	nw	26	26	06	.T.	EKC	0
O'Meara, T.	17237 Cedar Grove Rd	Maple Valley	WA	98038			ne	27	23	6	.F.	EKC	0
Olson Estates	P.O. Box 485	Maple Valley	WA	98038		ne	ne	10	22	06	.F.	EKC	0
Olson, J.	4114 236 Ave NE	Redmond	WA	98052		sw	se	15	25	06	.F.	EKC	0
Olson, J.	Box 983	Redmond	WA	98052							.F.	EKC	0
Olson/Hymes	1943 3rd St.	Kirkland	WA	98033	706532	ne	ne	36	26	05	.F.	EKC	0
Oxford, P.	1921 10th Ave W.	Seattle	WA	98119		sw	ne	15	23	06	.F.	EKC	0
PIA	PO Box 993	Preston	WA	98050		se	sw	10	23	07	.F.	EKC	0
Parker, G.	Box 13	Snoqualmie	WA	98065		sw	se	18	24	08	.F.	EKC	0
Paulson, C.	23812 215th SE	Maple Valley	WA	98038		sw	sw	16	22	06	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Pearson, D.	465 Mtn. Blvd SW	Issaquah	WA	98027				16	23	08	.F.	EKC	0
Peck, J.	1335 25 St SE	Auburn	WA	98002		se	sw	17	23	09	.F.	EKC	0
Pengilly, K.	36816 SE 47 Pl	Fall City	WA	98024		se	se	13	24	07	.F.	EKC	0
Perry, L.	12240 SE 200th St.	Kent	WA	98031		nw	se	4	22	5	.F.	EKC	0
Petersen, M.	7123 197 Ave SE	Snohomish	WA	98290		se	se	22	26	06	.F.	EKC	0
Peterson, R.	4516 356 Ave SE	Fall City	WA	98024			sw	13	24	07	.F.	EKC	0
Petitjean, W.	18415 SE 44	Issaquah	WA	98027		ne	nw	12	24	07	.F.	EKC	0
Petrich, J.	10605 325 NE	Carnation	WA	98014		ne	sw	34	26	07	.F.	EKC	0
Petrick/Hall	20905 S.E. 83rd Pl.	Issaquah	WA	98027		ne	ne	32	24	06	.F.	EKC	0
Pettigrew, D.	19721 288th SE	Hobart	WA	98025		nw	nw	6	22	07	.F.	EKC	0
Phillips, M.	13601 SE 282nd	Kent	WA	98042		se	nw	01	22	06	.F.	EKC	0
Pirak	18019 3rd Ave NW	Seattle	WA	98177		ne	sw	09	26	05	.F.	EKC	0
Porter, D.	428 171 Pl NE	Bellevue	WA	98008		sw	nw	21	25	05	.F.	EKC	0
Potter, Gaul, Davis	18128 NE 30	Redmond	WA	98052		ne	ne	15	23	06	.F.	EKC	0
Preble, R.	Box 185	Issaquah	WA	98027		nw	se	18	24	07	.T.	EKC	0
Price, N.	5405 108 Ave NE	Kirkland	WA	98033			ne	05	26	06	.F.	EKC	0
Provan Woods	19018 NE 127	Redmond	WA	98052		sw	ne	30	26	06	.F.	EKC	0
Provost	20825 NE 75	Redmond	WA	98053		sw	ne	30	26	06	.F.	EKC	0
RHD	c/o 640 NW Gilman Blvd.	Issaquah	WA	98027		nw	ne	14	24	07	.F.	EKC	0
Raging River Tree Farm	12210 NE 67	Kirkland	WA	98033		nw	nw	10	23	07	.F.	EKC	0
Rahm-Lingo	13424 246 Ave SE	Issaquah	WA	98027		sw	nw	14	23	06	.F.	EKC	0
Reed, B.	33530 SE 74	Fall City	WA	98024			se	27	24	07	.T.	EKC	0
Reel, W.A.	Box 63	Redmond	WA	98052			ne	10	25	06	.F.	EKC	0
Reidt/Burrows	12713 164 Ave NE	Redmond	WA	98052		se	sw	09	26	07	.F.	EKC	0
Renfro, L.	4540 359 Ave SE	Fall City	WA	98024				14	24	07	.F.	EKC	0
Rennick, D.	P.O. Box 397	Maple Valley	WA	98038		ne	se	11	22	06	.F.	EKC	0
Richardson, E.	11723 194 Ave NE	Redmond	WA	98052		se	se	30	26	06	.F.	EKC	0
Richert, G.	9311 SE 36th	Mercer Island	WA	98040		ne	sw	16	22	06	.F.	EKC	0
Ridlon, A.	1220 250 Ave NE	Redmond	WA	98053		ne	sw	26	25	06	.F.	EKC	0
Ristine, S.	8315 309 Pl SE	Preston	WA	98050				33	24	07	.F.	EKC	0
Rock	47609 SE Mt. Si Rd.	North Bend	WA	98045		sw	se	07	23	09	.F.	EKC	0
Rocky Ridge	Box 2007	Snoqualmie	WA	98065	39754X	nw	sw	16	24	08	.F.	EKC	0
Roloson, G.	Box 1420	North Bend	WA	98045				18	23	09	.F.	EKC	0
Ronnel/Cook	10503 268 Ave NE	Carnation	WA	98104		nw	ne	36	26	06	.F.	EKC	0
Ross, W.	26215 SE 42	Issaquah	WA	98027		nw	sw	13	24	06	.F.	EKC	0
Rowe, B.	15928 Cedar Grove Rd. S.E.	Issaquah	WA	98027		sw	se	22	23	06	.F.	EKC	0
Running/Sheldon	25216 SE 184th	Maple Valley	WA	98038		sw	ne	35	23	06	.F.	EKC	0
Sahlin, D.	21831 260th SE	Maple Valley	WA	98038		ne	se	11	22	06	.F.	EKC	0
Sammamish River Park	2040 84 Ave SE	Mercer Island	WA	98040		sw	sw	26	26	05	.F.	EKC	0
Sater, D.	39927 SE 53	Snoqualmie	WA	98065		nw	ne	16	23	08	.F.	EKC	0
Satterthwaite, D.	28411 SE Preston Way	Issaquah	WA	98027		se	sw	30	24	07	.T.	EKC	0
Schepper, S.	21110 SE 240th	Maple Valley	WA	98038		se	se	17	22	06	.F.	EKC	0
Schuyleman, J.	31603 NE 162	Duvall	WA	98019		nw	ne	16	26	07	.F.	EKC	0
Schwab, L.	13422 SE 99	Renton	WA	98056		se	se	15	24	06	.F.	EKC	0
Selg, B.	2224 3rd St	Bothell	WA	98011				16	26	06	.F.	EKC	0
Seubert, R.	44430 SE Edgewick Rd.	North Bend	WA	98045		ne	ne	35	23	08	.F.	EKC	0
Sewell, J.	26520 SE 168	Issaquah	WA	98027			nw	25	23	06	.F.	EKC	0
Shaw, R.	5909 Orchard St. W.	Tacoma	WA	98467			sw	24	22	06	.F.	EKC	0
Shorewood, V.	10767 16th SW	Seattle	WA	98168		ne	se	2	22	06	.F.	EKC	0
Shreve, W.	21923 SE May Valley Rd.	Issaquah	WA	98027		sw	ne	16	23	06	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Siddens	29216 NE Big Rock Rd.	Duvall	WA	98019		sw	sw	20	26	07	.F.	EKC	0
Sires, J.	17811 SE 106	Renton	WA	98056							.F.	EKC	0
Smith, G.	14002 NE 181 Pl #A-105	Woodinville	WA	98072		ne	se	08	26	06	.F.	EKC	0
Smith, W.	17205 204 Ave NE	Woodinville	WA	98072		ne	sw	08	26	06	.F.	EKC	0
Smith-Wall	2537 37 Ave W.	Seattle	WA	98199		sw	se	24	24	05	.F.	EKC	0
Smith/Howdon/Kelly	Box 3283	Bellevue	WA	98009		se	sw	21	24	07	.F.	EKC	0
Sode	14846 SE 50	Bellevue	WA	98006				09	25	06	.F.	EKC	0
Solovjen	16701 32nd Ave SW	Seattle	WA	98166		sw	sw	14	26	07	.F.	EKC	0
Southwell,K.	17490 SE 102	Renton	WA	98056			ne	01	23	05	.F.	EKC	0
Spielholz, R.	3043 NE 105	Seattle	WA	98125		se	se	15	25	07	.F.	EKC	0
Stabbert, D.	17618 SE 102	Renton	WA	98056			ne	01	23	05	.F.	EKC	0
Steele, S.	14236 246 Pl SE	Issaquah	WA	98027		sw	sw	14	23	06	.F.	EKC	0
Stern, B.	4030 Issaquah-Pine Lake Rd.	Issaquah	WA	98027				15	24	06	.F.	EKC	0
Stock, S.	12400 NE 36 Pl	Bellevue	WA	98004		sw	ne	21	25	05	.F.	EKC	0
Stockholm, J.	28520 SE 43 St.	Fall City	WA	98024		sw	ne	18	24	07	.T.	EKC	0
Stockwell, W.	27212 NE Ames Lake Rd.	Redmond	WA	98053		se	se	24	25	06	.F.	EKC	0
Storey, L.	14424 SE May Valley Rd.	Renton	WA	98056		se	se	34	24	05	.F.	EKC	0
Stott, G.	24824 SE 200th	Maple Valley	WA	98038		se	nw	2	22	06	.F.	EKC	0
Strand, J.	10924 Issaquah-Hobart Rd. SE	Issaquah	WA	98027		sw	se	03	23	06	.T.	EKC	0
Stroup, J.	22240 276th Ave SE	Maple Valley	WA	98038		se	sw	7	22	07	.F.	EKC	0
Sutton	46313 SE 150	North Bend	WA	98045			ne	24	23	08	.F.	EKC	0
Swanson, P.	8543 S. 118th	Seattle	WA	98178		ne	ne	32	23	06	.F.	EKC	0
Swearingen	Box 4083	Bellevue	WA	98009		sw	se	24	24	05	.F.	EKC	0
Tainter, G.	22110 NE 133	Woodinville	WA	98072		se	se	21	26	06	.F.	EKC	0
Talbott, M.	5505 S. Holly St.,	Seattle	WA	98118		sw	ne	09	26	06	.F.	EKC	0
Tellvik, J.	7516 201 Ave SE	Issaquah	WA	98027		ne	ne	23	23	06	.F.	EKC	0
The Water Hui	3820 NE 93rd St.	Seattle	WA	98115		se	sw	27	26	07	.F.	EKC	0
Thompson, J.	33420 SE 126	Issaquah	WA	98027		sw	se	10	23	07	.F.	EKC	0
Thorpe, D.	2019 E. Lk. Sammamish Pkwy SE	Redmond	WA	98052		ne	nw	29	25	06	.F.	EKC	0
Thorpe, S.	1521 145 Pl SE #E-3	Bellevue	WA	98007				22	24	07	.F.	EKC	0
Tiede	1314 Evergreen Park Dr.	Olympia	WA	98502		nw	ne	27	25	06	.F.	EKC	0
Tranquil Estates	Box 444	Carnation	WA	98014		se	nw	10	25	07	.F.	EKC	0
Twitchell, A.	3123 113 Ave SE	Bellevue	WA	98004		ne	sw	06	23	06	.F.	EKC	0
Ulrich, J.	18021 Issaquah-Hobart Rd. SE	Issaquah	WA	98027		sw	ne	36	23	06	.T.	EKC	0
Upton-Lake Alice	7503 337 Pl SE	Fall City	WA	98024		se	se	27	24	07	.F.	EKC	0
Vetter, B.	2616 S. 135th St.	Seattle	WA	98168		se	se	34	23	06	.F.	EKC	0
Waddington, W.	16309 Kelly Rd.	Duvall	WA	98019		ne	ne	16	26	07	.T.	EKC	0
Waidmann	18533 204 NE	Woodinville	WA	98072		sw	sw	5	26	6	.F.	EKC	0
Walker, R.	32612 NE 8	Carnation	WA	98104				34	25	08	.F.	EKC	0
Walser, R.	6022 232 Ave NE	Redmond	WA	98052		ne	ne	08	24	07	.F.	EKC	0
Wang, J.	9908 Upper Preston Rd.	Issaquah	WA	98027		nw	ne	04	23	07	.F.	EKC	0
Watkins, R.	20460 NE 50	Redmond	WA	98052		sw	ne	17	25	06	.F.	EKC	0
Watson, B.	15133 NE 92	Redmond	WA	98052				06	24	07	.F.	EKC	0
Welland, B.	21027 102 SE	Kent	WA	98031		sw	nw	34	24	05	.F.	EKC	0
Westwood	4546 45 SW #103	Seattle	WA	98116							.F.	EKC	0
Wickersham, F.	550 102 SE #8	Bellevue	WA	98004		ne	se	30	24	07	.F.	EKC	0
Williams, B.	21705 102 Ave SE	Snohomish	WA	98290				02	25	06	.F.	EKC	0
Witt, S.	15531 I-90	Bellevue	WA	98006		se	se	19	26	06	.F.	EKC	0
Wylie	18013 SE 102 St.	Renton	WA	98056			ne	01	23	05	.F.	EKC	0
Yakipa	24860 Fall City Road	Redmond	WA	98053		se	nw	23	25	06	.F.	EKC	0

APPENDIX E continued

East King County Critical Water Supply Service Area: Class 3 and 4 Public Water Systems*

*Class 0 = Pending system

System Name	Address	City	STATE	Zip	ID #	QQ	Q	S	T	R	FUTEXP	CWSSA	CLASS
Young, R.	19007 NE 132nd	Redmond	WA	98052		nw	ne	30	26	06	.F.	EKC	0
Yount, A.	10901 Renton-Issaquah Rd. SE	Issaquah	WA	98027		se	sw	06	23	06	.F.	EKC	0

APPENDIX F

WATER SERVICE AGREEMENT/SATELLITE SYSTEM MANAGEMENT

APPENDIX F

WATER SERVICE AGREEMENT

It is recognized that a number of instances may arise early in the implementation of the Coordinated Water System Plan (CWSP) where relatively small developments may be proposed within a utility's designated service area but which are remote to the existing water supply system. It may not be economically feasible for the utility to provide service by direct connection, ownership, and/or operation at that time. However, in the long-term, the utility does propose to assume full responsibility for water service to the area in question.

In these instances, a number of options exist for the utility and developer to enter into an agreement for providing mutually acceptable service. Conditions of such an agreement will vary on a case-by-case basis.

The Water Service Agreement document, attached hereto, is recommended as the general form of a legal instrument to achieve an understanding between parties in those situations described above. The Agreement is generally intended to accomplish the following objectives:

1. Establish relationships in new developments with two or more services where the designated utility wishes to retain its service area.

2. If a new, remote system is installed and the designated utility wants to retain the service area, the designated utility shall:

    - Enter into a water service agreement with the developer.

    - Be responsible for ensuring the collection of water quality samples and submittal of reports.

    - Provide other O&M duties and services as specified in the agreement.

    - Be reimbursed for all services at a "reasonable" rate.

3. All costs for capital improvements and correcting water quality problems are the responsibility of the developer and/or system customers.

4. Provide for eventual connection of the development to the water system of the designated utility.

5. Annexation, ULID formation, and "non-opposition" clauses are agreement considerations.

6. For new subdivisions of four lots or less, where the designated utility wants to retain the service area, interim water piping facilities smaller than the utility standards may be allowed by the designated utility when:

   - The designated utility has planned for the eventual direct connection of the development.

   - Fire protection requirements, if any, can be met during the interim.

7. If the new subdivision of four lots or less is within the designated utility's service area, but a water service agreement is not executed, the new development must meet the CWSP minimum design standards.

WATER SERVICE AGREEMENT

IT IS AGREED by and between (name of utility), hereinafter referred to as UTILITY, and (name of developer), hereinafter referred to as OWNER, to the following:

1. Parties. The UTILITY is the designated water purveyor established in accordance with the East King County Coordinated Water System Plan with responsibilities for water service to the area being developed by the OWNER. The OWNER is the owner of certain real property as described in Addendum A, attached hereto and incorporated herein by this reference to this Agreement.

2. Objective. The objective of this Agreement is to establish the service responsibilities of the UTILITY and OWNER in order to meet all applicable local, State, and federal requirements; and to provide for the planned connection of small remote water systems to the UTILITY, whenever and wherever possible.

3. Ownership/Operation Services. The UTILITY and the OWNER have reviewed a range of services described below which are offered by the UTILITY. The OWNER has selected the preferred level of services as hereby indicated below:

☐ A. Ownership and Operation. Ownership and operational responsibilities of the water system facility serving the property described in Addendum A is hereby transferred to the UTILITY. Other major conditions of service are specified in Addendum B.

☐ B. Contract Operation. The Ownership of the system is retained by the OWNER with operational responsibilities provided by UTILITY. Other major conditions of service are specified in Addendum B.

☐ C. Water Quality Monitoring. Ownership of the system is retained by the OWNER and the UTILITY will ensure that required water quality monitoring is performed by (utility/contractor/owner). All costs for the collection, submittal, and testing of water quality results will be borne by the OWNER. OWNER retains operational responsibility. Other major conditions of service are specified in Addendum B.

4. Rates and Charges.

A. Capital Improvements Charge. The OWNER will be responsible for financing all capital improvements and those facilities identified on

Addendum B. Addendum A represents the current DSHS/County/Utility approved plans and specifications of the OWNER's water system and a description of the real property.

B. Renewal and Replacement Charge. The OWNER will be responsible for financing all major repairs or system upgrades necessary to comply with regulatory requirements or customers' service needs, except as provided in Addendum B.

C. Operation and Maintenance Charge. A monthly user charge will be assessed against all properties for which water service is available as shown initially in Addendum A. A monthly ready-to-serve charge will be assessed to finance the base operating cost. A water use or "commodity" charge will be assessed based on the actual water use to finance operating costs associated with daily system operation. The Operation and Maintenance Charge will be identified in Addendum B.

D. Reserve Account. The OWNER and UTILITY shall establish a reserve account or security deposit against payment for services and to ensure the availability of funds necessary for renewal or replacement of facilities. The monthly renewal and replacement charge shall be adjusted as required to maintain a minimum balance as identified in Addendum B.

5. Delinquent Payments/Liens. If at any time the rates and charges are not paid in full within 30 days of receipt, the UTILITY may, in its sole discretion, file a lien or liens against all of the properties served by the remote/satellite system or against the property of those customers who have not paid their monthly charges in full. Said charges are agreed to be statutory rates and charges for water supplies, and the lien or liens may be foreclosed in the manner provided by statute.

If, in the future, the utility's system is extended to serve the remote/satellite system area, then the balance of the account shall be applied to any amount then owed the utility, and the balance shall be divided and paid equally to all the then owners.

6. Covenant Running with the Property. It is agreed that this Agreement is a covenant running with the property described in Section 1 of this Agreement and any other properties receiving water in the future all such property, their heirs, and successors.

7. Term and Duration. This Agreement shall remain in full force and effect until the utility system is extended to provide water service to the service area defined in Section 1 of this Agreement in lieu of the provision of water service through the satellite system. Neither party may terminate this Agreement except as specifically provided for in Addendum B.

Signed this _____ day of _____, 1989.

_____	_____
Utility	Date
_____	_____
Owner	Date

ADDENDUM A

COPY OF LEGAL DESCRIPTION AND PLANS AND SPECIFICATIONS FOR REMOTE/SATELLITE SYSTEM

ADDENDUM B

WATER SERVICE AGREEMENT

SERVICE AREA	Utility	Owner
(See Addendum A - Legal Description and DSHS/County Approved Plans and Specifications)		
OWNERSHIP	(1) See Footnote	
o Existing System o Future Options - Transfer to UTILITY with conditions specified - Remain independent & agree to no protest provision for ULID and Annexation - Remain independent system & be fully responsible (subject to Utility Agreement)		
OPERATION RESPONSIBILITY	(1) See Footnote	
o Water quality monitoring o Administration, reporting, billing o Routine operation o System improvement/repairs o Emergency repair o Other (specify)		
FINANCIAL RESPONSIBILITY	(1) See Footnote	
Capital Improvements Cost o Initial o Expansion o System Intertie		
Renewal and Replacement Cost o System upgrade o System replacement o Reserve fund		

Operation and Maintenance Cost	Utility	Owner
o Operation		
o Maintenance		
o Monitoring/Reporting		
o Customer Services		
o Emergency		

RATES AND CHARGES FOR THE PERIOD FROM _____ TO _____.

o Capital charge	$_____
o Renewal and replacement charge	$_____
o Operation and maintenance	
- Base Charge	$_____
- Commodity Charge	$_____

LEGAL RESPONSIBILITY (1) See Footnote

- o Regulatory Compliance
- o Utility Permits/Easements
- o Rates/Charges/Collection

(1) Responsibility for each activity shall be assigned to either the utility or the OWNER. The actual Agreement shall expand on each item to clearly assign responsibility.

3.0 WATER SYSTEM COMPREHENSIVE PLAN STATUS

WATER SYSTEM COMPREHENSIVE PLAN STATUS

Water systems in areas utilizing the Public Water System Coordination Act, Chapter 70.116 RCW are required to have water system plans approved by the Department of Social and Health Services. These plans should be updated at least once every five years. Table III -System Comprehensive Plan Status identifies the status of each water system in their comprehensive planning efforts. Systems with 1,000 or more services are required to complete a detailed report or plan containing planning data, system analysis, improvements, an operations program and any supportive documents. Systems with between 100 and 1,000 services are required to complete a less detailed abbreviated plan identifying planning data, system analysis and improvements. In addition, all systems within the East King County Coordinated Water System Plan area (mandated by Public Water System Coordination Act) must address the following Regional Supplemental Data within their upcoming comprehensive plan updates:

- Map of Future Service Area
- Signed Service Area Agreement
- Population and Water Demand Projections
- Design Standards
- Implementation of Minor Regional Projects
- Implementation of Major Regional Projects
- Implementation of Water Utility Service Review Procedure
- Implementation of Satellite System Management Program
- Water Conservation Program

If a plan is current, each purveyor must provide a supplement addressing each of the above items. To assist in these efforts, the status review in Table III identifies whether a plan is current which, in turn, is affected by the last date of preparation of the system's comprehensive plan. If a plan is not current, the State may take enforcement action.

Table III also lists and tabulates the number of service connections. These service connections also identify whether an abbreviated or full plan must be prepared. The current number of service connections from the systems reported within the East King County Coordinated Water System Plan are 145,195.

Table III - System Comprehensive Plan Status

System Name	DSHS ID #	Class	Service Connections	Type of Plan Full (F) Abbreviated (A)	Date of Last Plan	Status
Bellevue	05575B	1	29,202	F	1985	Plan is current
Bothell	07900L	1	2,300	F	1980	Plan due/extension granted.
Cedar River	418007	1	3,090	F	1982	Plan due/extension granted.
Issaquah	363505	1	2,275	F	1987	Plan is current
KCWD #107	41750C	1	5,427	F	1986	Plan is current
KCWD #42	39600E	1	7,500	F	1982	Plan due/State action past due.
KCWD #90	41150L	1	3,946	F	1984	Plan is current
Kirkland	42250T	1	6,555	F	1984	Plan is current
Mercer Island	536405	1	6,582	F	1981	Plan due/extension granted.
North Bend	60100A	1	1,023	F	1985	Plan is current
N.E. Sammamish	75265X	1	1,985	F	1983	Plan is current
N.E.Lake Washington	408005	1	15,357	F	1980	Plan due/extension granted.
Redmond	71650R	1	4,943	F	1983	Plan is current
Renton	71850L	1	11,735	F	1983	Plan is current
Rose Hill	40850E	1	6,200	F	1982	Draft plan in review.
Sammamish Plat	409009	1	5,200	F	1980	Plan due/extension granted.
Soos Creek	401008	1	16,547	F	1988	Plan is current
Union Hill	902603	1	1,100	F	1975	Plan due/State action past due.
Woodinville	41600Y	1	8,614	F	1984	Plan is current
Ames Lake	020550	1	402	A	1984	Plan is current
Carnation	11200R	1	535	A	1974	Plan due/State action past due.
Duvall	207508	1	403	A	1987	Plan is current
KCWD #119	419850	1	470	A	1983	Plan is current
KCWD #122	419958	1	175	A	1986	Plan is current
KCWD #127	245508	1	673	A	1982	Plan due/State action past due.
KCWD #83	40950K	1	800	A	1984	Plan is current
Mirrormont Services	552501	1	605	A	1985	Plan is current
Sallal	75560Q	1	586	A	1979	Plan due/State action past due.
Snoqualmie	81080C	1	965	A	1975	Plan due/State action past due.
TOTAL NUMBER OF SERVICE CONNECTIONS			145,195			

4.0 PROBLEM IDENTIFICATION

PROBLEM IDENTIFICATION

An overview of each water system's water quality, source quantity and system facilities is shown in Table IV - Problem Identification. This evaluation and identification of problems is derived through interviews with key water system personnel, interviews with DSHS personnel, system reports, DSHS records and the questionnaires circulated to each purveyor for preparation of Table I - Existing Facilities.

This problem identification is only intended as a general indication of problems. Therefore, each category is marked only as adequate (A) or as needing improvement (N). Each purveyor or water system is aware of and taking steps to solve each of their problems. This table is only a general indicator as to the condition of each purveyors facilities and not intended to identify specific or individual problems.

It is the opinion of the DSHS staff that the water systems evaluated for the East King County Coordinated Water System Plan operate their facilities in a professional manner. The DSHS staff has also indicated that, in general, these systems do not let their facilities reach a crisis level and effectively eliminate problems through effective comprehensive planning.

Table IV - Problem Identification

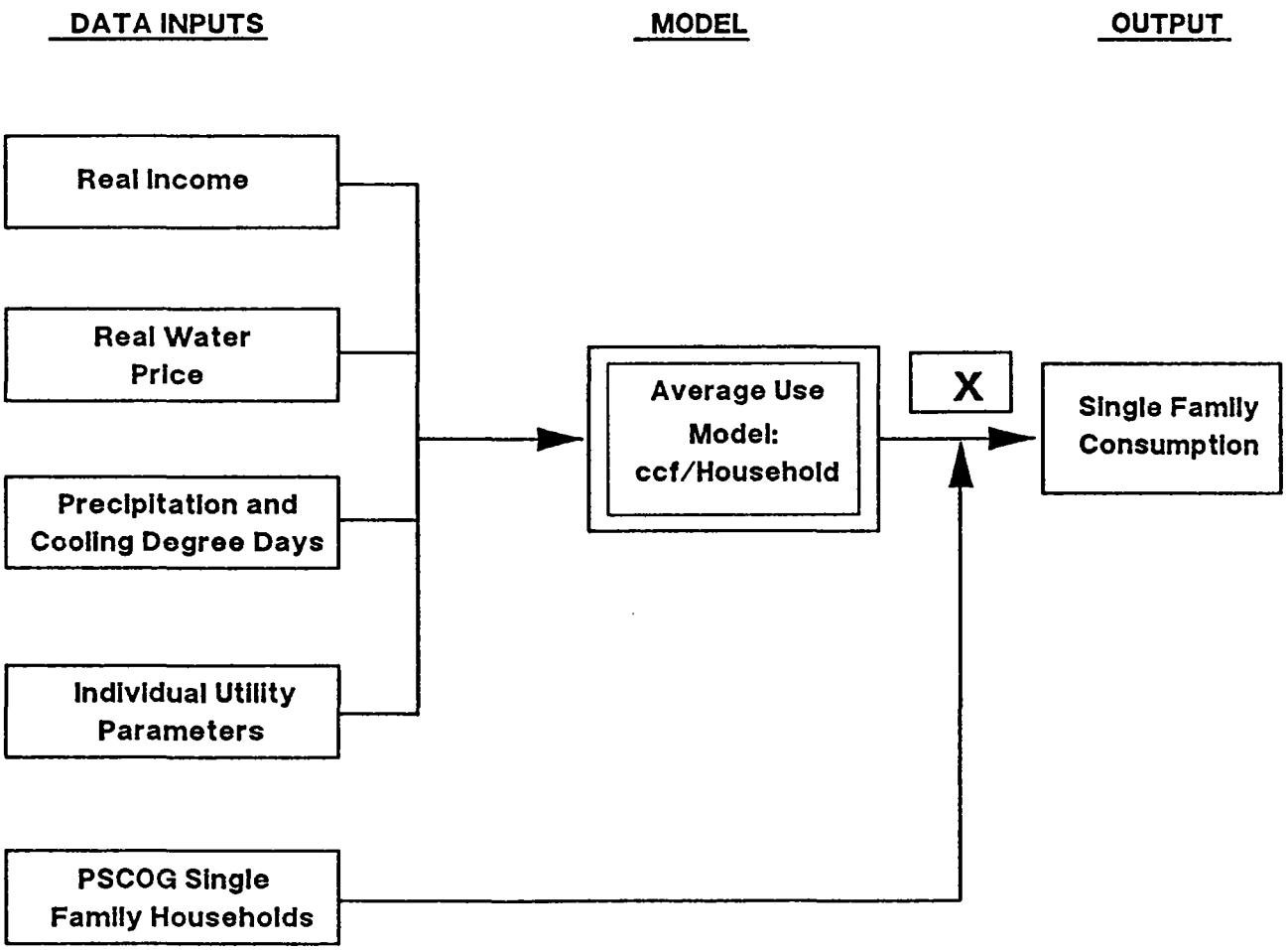
System Name	(A) Adequate	(N) Needs Improvement	
	Water Quality	Source Quantity	System Facilities
Ames Lake	A	A	A
Bellevue	A	A	A
Bothell	A	A	A
Carnation	A	A	N
Cedar River	A	A	A
Duvall	A	A	A
Issaquah	A	A	A
KCWD #107	A	A	A
KCWD #119	A	A	A
KCWD #122	A	N	N
KCWD #127	A	A	A
KCWD #42	A	A	A
KCWD #83	A	A	A
KCWD #90	A	A	A
Kirkland	A	A	A
Mercer Island	A	A	A
Mirrormont Services	A	A	A
North Bend	A	A	A
N.E. Sammamish	A	N	A
N.E.Lake Washington	A	A	A
Redmond	A	N	A
Renton	A	A	A
Rose Hill	A	A	A
Sallal	A	A	A
Sammamish Plat	A	A	A
Snoqualmie	A	A	A
Soos Creek	A	A	A
Union Hill	A	N	A
Woodinville	A	A	A

APPENDIX G

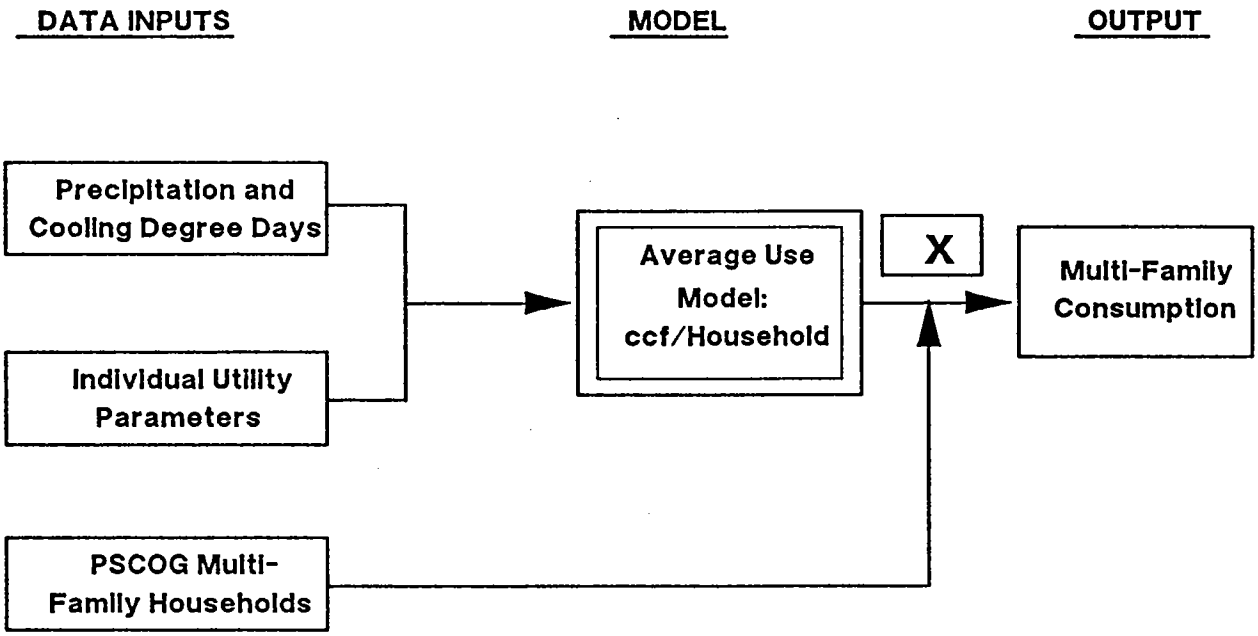
SCHEMATIC DIAGRAMS OF DEMAND FORECAST MODELS

APPENDIX G

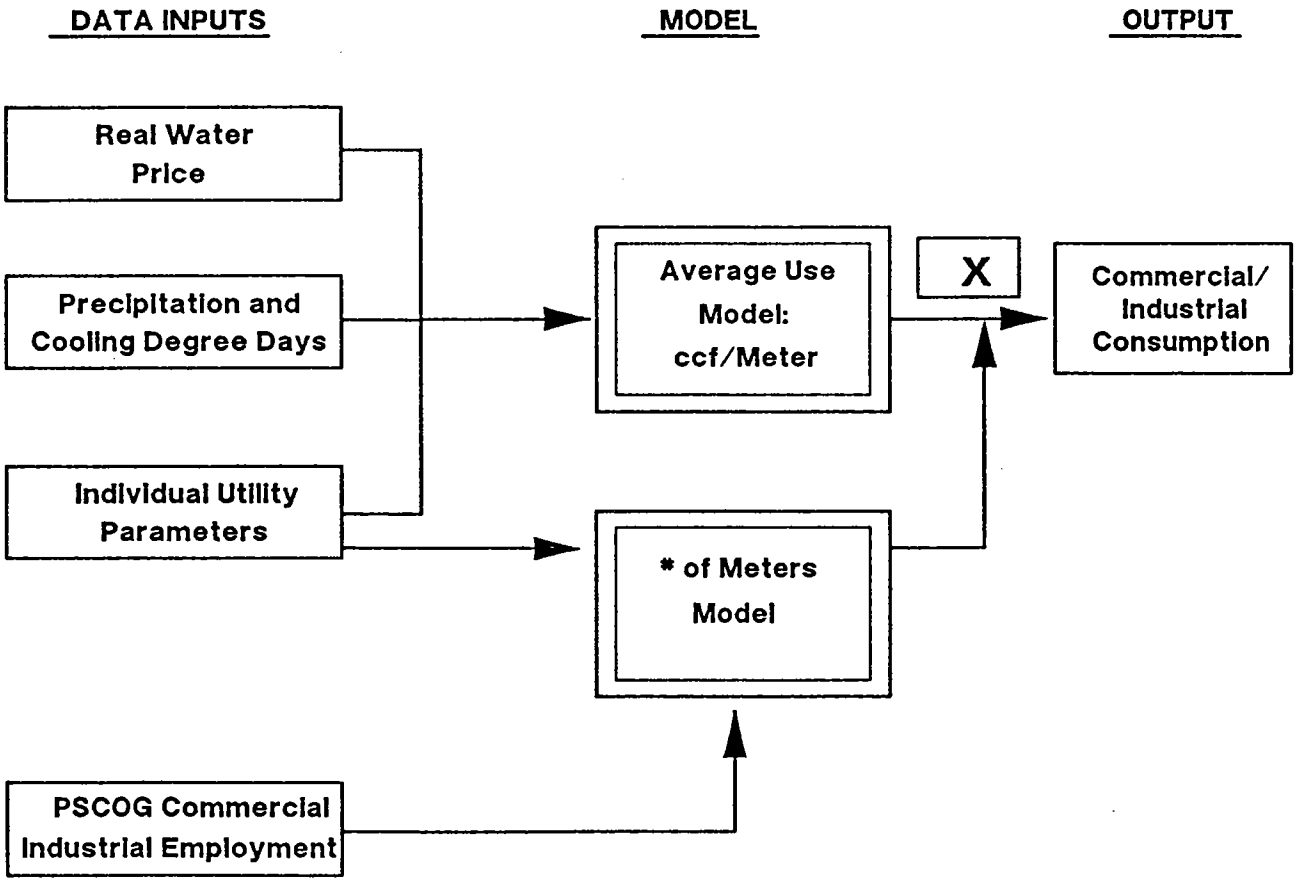
SINGLE FAMILY SUB-MODEL



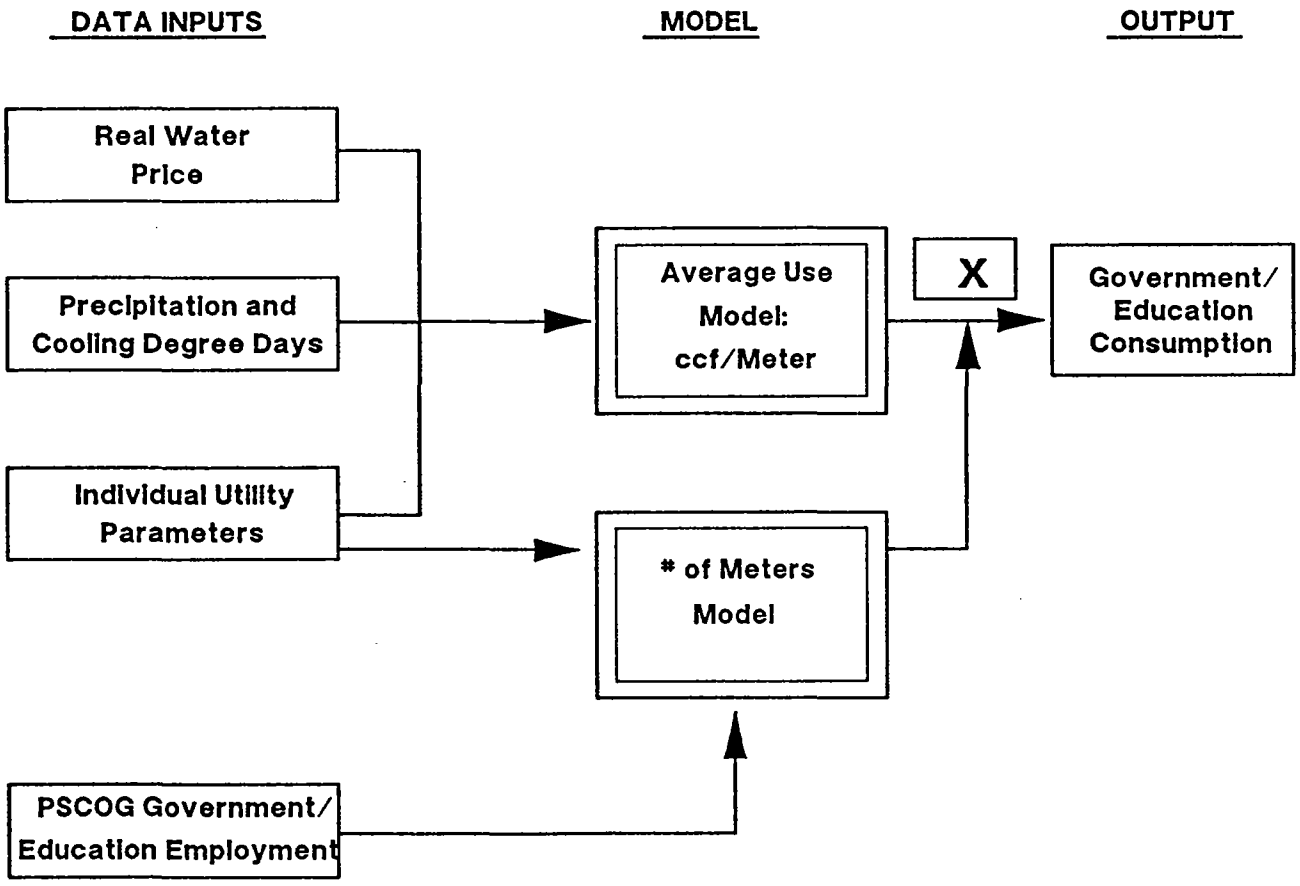
MULTI-FAMILY SUB-MODEL



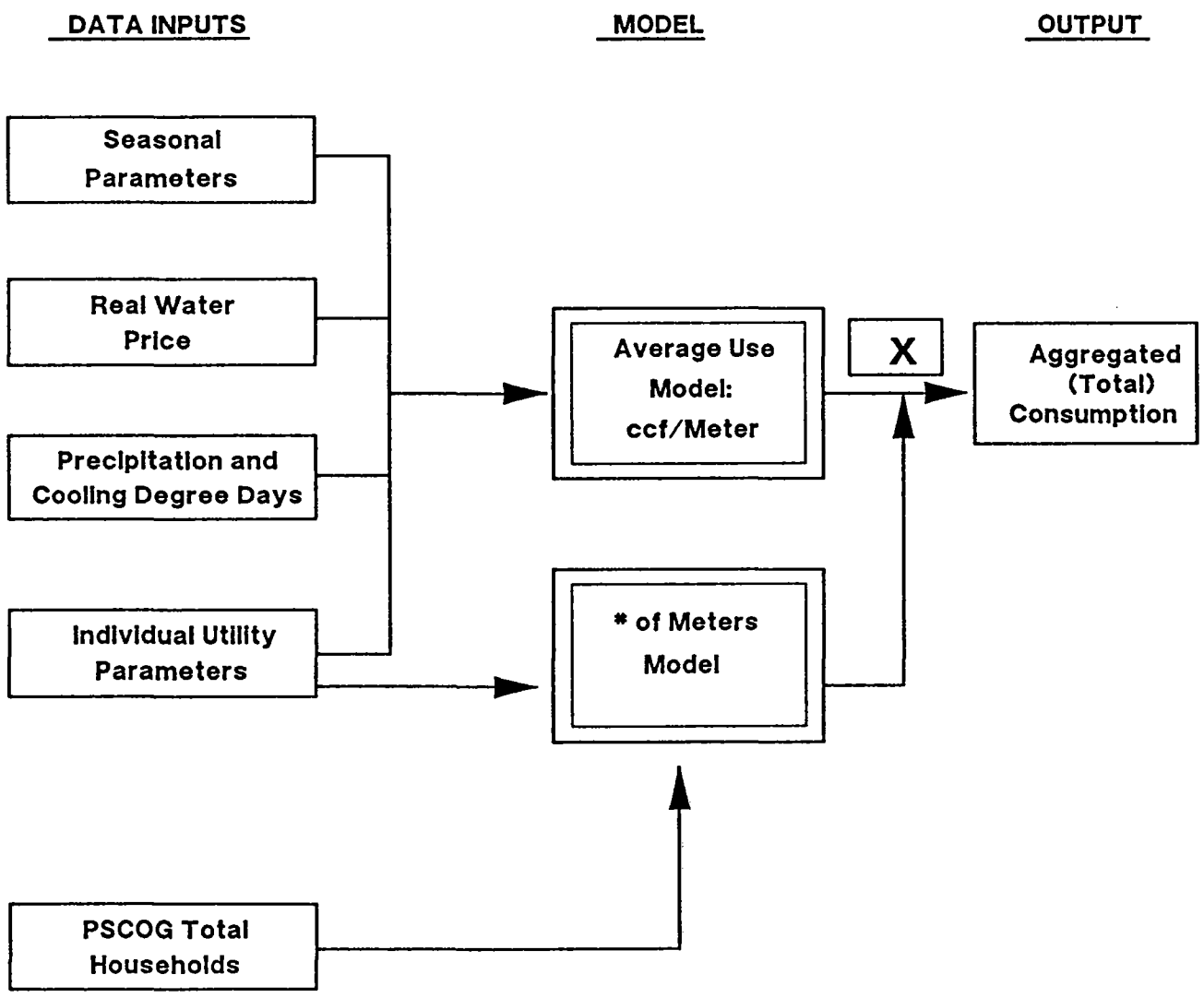
COMMERCIAL/INDUSTRIAL SUB-MODEL



GOVERNMENT/EDUCATION SUB-MODEL



AGGREGATED (TOTAL) SUB-MODEL



APPENDIX H

REPORT - ASSESSMENT OF SYSTEM CAPABILITIES TO MEET EXISTING AND PROJECTED NEEDS

Prepared By: ST Engineering, Inc.

DRAFT

TASK 4

EAST KING COUNTY COORDINATED WATER SYSTEM PLAN

ASSESSMENT OF SYSTEM CAPABILITIES

TO MEET

EXISTING AND PROJECTED NEEDS

February 9, 1989

A. T. Harrigan, P. E.

1.0 EXISTING FACILITIES

TABLE OF CONTENTS

EXISTING FACILITIES

In an effort to evaluate the water supply capabilities of selected Class 1 water systems within the East King County Coordinated Water System plan area, information from each water system has been tabulated. This information is presented in Table I - Inventory of System Information. This information has been obtained from the Washington State Department of Social and Health Services (DSHS) files, recent water system comprehensive plans, questionnaires and personal interviews. The water systems in this table are divided alphabetically into two groups, as Class 1 systems with greater than 1,000 connections and Class 1 systems with less than 1,000 connections. Each of the water sytems is further identified with the DSHS identification number as well as the date of its last comprehensive plan preparation. The items listed for evaluation on each water system are supply source, installed supply capacity, water treatment, fire flow capability, storage and any present or planned interties.

The supply source can be classified into two groups, the Seattle Water Department (SWD) and local groundwater sources (generally wells). The Seattle Water Department supplies the eastside area from two surface water sources, the Cedar River watershed with a reservoir at Chester Morse Lake and the Tolt River watershed with a reservoir on the Tolt South Fork. East King County is divided by the Eastside supply line (ESSL), occasionally referred to as the Tolt Eastside Supply Line (TESSL) for the northern section and the Cedar Eastside Supply Line (CESSL) for the southern section. The East King County purveyors in this study are presently purchasing 48 MGD out of a total of about 64 MGD supplied to all contractual users by SWD. The SWD treats this supply with both fluoride and chlorine, thereby relieving most of their contract users from treating the water purchased. The Cedar River watershed has the best quality and, at present, supplies about two-thirds of the quantity.

Local groundwater sources (wells) supply the remainder of the Eastside water systems. These wells draw water from local wells within the systems service area. This groundwater is supplying approximately 23 MGD to the East King County Regional Water Study Area, of which approximately 12 MGD is treated. As shown on the table, most of these systems using wells have less than 1,000 customers. This is very typical of the development of water systems which, in the beginning as a small community, can be supplied from one or two wells but, with extensive population growth, soon outstrip their local well field capacity and must seek a regional supply.

Fire flow capacity is also shown on this table. The fire flow capacity of a water system not only projects it ability for fire protection, but is a direct indication of the main size within its network. A larger fire flow capability would indicate larger

main sizes and better transmission capabilities. Large fire flow capabilities, such as 4,000-6,000 gpm, indicate that a fire within the largest structure, generally a school or church, can be extinguished.

Storage capacity is also shown on this table. The storage capabilities of a water system can generally be regarded as the system's emergency source of water. This emergency source may provide additional water for a fire or other peak use or be used as a backup should the primary supply fail. The present storage capacity of the East King County Water Systems is approximately 173 MG. This could conceivably provide water for 2.3 days, should a major catastrophe occur.

Present and planned interties are also shown on this table. Some of the present interties, such as Rose Hill, Redmond, Kirkland are for water supply; however, most of the interties are for emergency or peak demand use. The outward expanding development of most water systems has precluded efficient hydraulic compatibility with adjoining water systems and, therefore, allowed only a limited use. Efficient use of interties, as in the "wheeling" of water, could only have been accomplished with an early coordinated regional effort.

Table I - Inventory of System Information

System Name	DSHS ID #	Class	Date of Comp Plan	Supply Sources	Source Installed Capacity (MGD) (1) Avg.	Source Installed Capacity (MGD) (1) Peak	Water Treatment (2)	Fire Flow (GPM) (3)	Storage (MG) (4)	Interties Present	Interties Planned	Comments
Renton	71850L	1	1983	Spring Brook Springs	0.98	2.00	Yes-FL, CL2	1000-4500	13.95	None	Soos Creek	Well No. 4 and 5 not in use, however water rights remain active and wells capable of producing 1.0 MGD. System in good condition.
				Liberty Pk Well#2	2.12	4.32	Yes-FL, CL2					
				Liberty Pk Well#3	1.13	2.30	Yes-FL, CL2					
				Well #8	2.47	5.04	Yes-FL, CL2					
				Well #9	0.88	1.80	Yes-CL2					
				SWD	1.34	1.34	None					
Rose Hill	40850E	1	1982	SWD	2.97	2.97	None	1000-6000	12.70	Redmond, Kirkland, Bellevue	NELWSWD	District commencing with watermain replacement program. Additional 8MG storage recommended. System in execellent condition.
Sammamish Plateau	409009	1	1980	Well #1	0.15	0.36	None	1000-4000	4.30	NE Sammamish	Issaquah	System in excellent condition. Wells have minor hydrogen sulfide problem.
				Well #2	0.22	0.52	None					
				Well #4	0.27	0.65	Yes-CL2					
				Well #5	0.38	0.90	Yes-CL2					
				Well #6	0.36	0.86	Yes-CL2					
				Well #7	0.72	1.73	None					
				Well #8	1.20	2.88	None					
Soos Creek	401008	1	1988	SWD	3.86	3.86	None	1000-4000	14.55	None	KCWD #111, Renton, Kent, Cedar River	System in excellent condition. Recommendations include improving supply.
Union Hill	902603	1	1975	Well	0.53	1.22	None	1250-3000	1.44	From Redmond	None	System in good condition.
Woodinville	41600Y	1	1984	SWD	3.70	3.70	None	1000-6000	9.10	NELWSWD	Bothell	Pursuing joint construction of storage facilities with Bothell. Recent Hydraulic Analysis update indicate rapid development and higher consumption rate. System in good condition.
Ames Lake	020550	1(5)	1984	Well # 1	0.05	0.09	None	1000	0.907			System in adequate condition.
				Well #1-A	0.11	0.22	None					
				Well #2	0.02	0.05	Filt (Fe/Mg)					
				Well #3	0.01	0.02	None					
				Well #4	0.01	0.01	None					
Carnation	11200B	1(5)	1974	Well No. 1	0.40	1.01	None	1000	0.00	None	None	Two 250,000 gallon reservoirs under construction.
				Carnation Spring	0.26	0.65	Yes-CL2					System in adequate condition.
Duvall	20750B	1(5)	1987	SWD	0.15	0.15	None		0.10			System in adequate condition.
KCWD #83	40950K	1(5)	1984	SWD	0.27	0.76	None	1000-3500	0.50	WD #42	NELWSWD	Intertie agreement with WD #42 allows the use of storage for fire protection. Settlement tank in use due to pumping of sand by wells. Old well #3 abandoned.
				Well No. 1	0.15	0.44	None					
				Well No. 2	0.21	0.60	None					
				Well No. 3	0.15	0.43	None					System in adequate condition.

Table I - Inventory of System Information

System Name	DSHS ID #	Class	Date of Comp Plan	Supply Sources	Source Capacity Installed (MGD) (1) Avg.	Source Capacity Installed (MGD) (1) Peak	Water Treatment (2)	Fire Flow (GPM) (3)	Storage (MG) (4)	Interties Present	Interties Planned	Comments
KCWD #119	419850	1(5)	1983	SWD	0.11	0.11	None	1250	0.20	None	Carnation Duvall	District contracts maintenance with sub-contractor. System in adequate condition.
KCWD #122	419958	1(5)	1986	Well No. 1	0.15	0.29	None	1000	0.07	None	Union Hill, Ames Lake	Joint storage with Ames Lake proposed to eliminate fire reserve shortage. System in adequate condition.
KCWD #127	245508	1(5)	1982	Well #1	0.33	0.65	None		0.51			System in adequate condition.
				Well #2	0.43	0.86	None					
				Artesian	0.01	0.02	None					
Mirrormont Services	552501	1(5)	1985	Well #1	0.06	0.12	None	1000	0.28	None	None	System in adequate condition.
				Well #2	0.06	0.12	None					
				Well #3	0.02	0.04	None					
				Well #4	0.03	0.06	None					
				Tiger Mountain Spring	0.06	0.12	None					
Sallal	755608	1(5)	1979	Well #1	0.58	1.15	None	1000-4000	0.54	None	North Bend	Connection to SWD recently terminated.
				Well #2	0.58	1.15	None					System in adequate condition.
				Well #3	0.07	0.14	None					
Snoqualmie	810806	1(5)		Canyon Springs	0.51	0.86	None		0.50		North Bend	System in adequate condition.
				Well No. 1	0.35	0.58	None					
TOTAL SOURCE CAPACITY					67.51	92.17						
TOTAL STORAGE CAPACITY									173.54			

Footnotes:

1. Instantaneous capacity of installed facilities at source. For Seattle Water Department (SWD) supply, average and peak day capacity is derived from 1986 annual use. For major supply planning SWD makes no distinction between average and peak day demand. For purposes of this analysis, each rated pump capacity was reduced to an average capacity by use of the maximum day peaking factor found in each comprehensive plan.
2. The SWD treats water supplied to contractual purveyors. Both CL2 and FL are added at the source. Subsequently most of these contractual purveyors do not treat the supply from the SWD.
3. The minimum fireflows required by statute are: Residential - 500 gpm for 30 minutes
   Commercial - 750 gpm for 60 minutes
   Industrial - 1000 gpm for 60 minutes
4. The storage indicated includes both working and dead storage.
5. These purveyors are class 1 systems with less than 1000 customers.
6. Bellevue, Kirkland, and Rose Hill share an additional 11.9 MG of storage. Sammamish Plateau and NE Sammamish share an additional 3.0 MG of storage. This is additional storage and not shown in total storage capacity.

Table I - Inventory of System Information

System Name	DSHS ID #	Class	Date of Comp Plan	Supply Sources	Source Installed Capacity (MGD) (1) Avg.	Source Installed Capacity (MGD) (1) Peak	Water Treatment (2)	Fire Flow (GPM) (3)	Storage (MG) (4)	Interties Present	Interties Planned	Comments
Bellevue	05575B	1	1985	SWD	14.93	14.93	None	1000-6000	26.90 (6)	Redmond, WD 17, WD 117, Rose Hill	Redmond	Recommendations include improvement of Grid in Central Business District for additional fire protection. System in excellent condition.
Bothell	07900L	1	1980	SWD	0.98	0.98	None	1000-4000	6.65	NELWSWD, Woodinville	Alderwood	System in good condition with only minor looping necessary.
Cedar River	418007	1	1982	SWD	1.31	1.31	None	2000-3500	5.50	WD 108	Renton, WD 58	System in good condition, however eastern area will require improvement in grid for required fire protection.
Issaquah	363505	1	1987	Risdon Well #1 Risdon Well #2 Gun Club Well #3	0.37 0.69 0.19	0.86 1.58 0.43	None None None	1000-4500	4.37	None	Sammamish Plateau	City maintains abandoned spring watershed rights. Wells No. 4 and 5 drilled for future use. Wells No. 4 and 5 have a combine capacity of 1.8 MGD. System in good condition.
Kirkland	42250T	1	1984	SWD	2.29	2.29	None	1000-1800	6.35 (6)	Rosehill	Bellevue	System in good condition. Breaks/leaks in AC pipelines may require rehabilitation program.
KCWD #42	39600E	1	1982	SWD	2.69	2.69	None	1000-4000	4.10	WD #83	NELWSWD	Additional 1.5 MG of storage required. No major transmission lines required. System in excellent condition.
KCWD #90	41150L	1	1984	SWD	1.41	1.41	None		7.12			
KCWD #107	41750C	1	1986	SWD	1.71	1.71	None	1000-6000	8.00	Bellevue	Renton	System in good condition.
Mercer Island	536405	1	1981	SWD	2.96	2.96	None	2000-7000	8.00	Shorewood, Mercer Crest	None	System in excellent condition
NE Lake Washington	408005	1	1980	SWD	5.94	5.94	None	1000-6000	23.90	To WD83, WD 104 Bothell	Rose Hill, WD 42	District nearing completion of steel watermain replacement program. System in excellent condition.
NE Sammamish	75265X	1	1983	Well No. 2 Well No. 3 Well No. 4	0.08 0.27 0.27	0.25 0.86 0.86	None None None	1500	1.80	Sammamish Plateau	None	Well No. 1 (.25 MGD) sold to Sahalee Country Club. System in good condition.
North Bend	60100A	1	1985	Mt. Si Spring	1.40	3.24	Yes-CL2	1000-3500	0.50	Sallal	Snoqualmie	Spring has additional 2.58 MGD capacity. The city has water rights for 3.24 MGD. Pump has 2.16 MGD capacity. System in good condition.
Redmond	71650B	1	1983	Well #1 Well #2 Well #3 Well #4 Well #5 SWD (Rose Hill)	0.54 0.28 0.22 0.45 0.59 0.86	1.21 0.63 0.49 1.01 1.33 0.86	Yes-FL, CL2 Yes-FL, CL2 Yes-FL, CL2 Yes-FL, CL2 Yes-FL, CL2 None	1500-5000	10.70	Union Hill, Rose Hill, Bellevue	None	Treatment required for corrosive water in well system. SWD indicates that 6.5 MGD will be made available to Redmond. System in good condition.

2.0 FUTURE DEMAND

FUTURE DEMAND

Projections for future demand have been determined and are shown on Table II - System Quantity Analysis. This table identifies the total supply excess or deficiency for each of the major purveyors in the East King County Coordinated Water System Plan area. This table is divided into two parts, the first part for the water systems served by the Seattle Water Department (SWD) and the second for the water systems served by other sources (groundwater).

The source requirements section for both the present and future demands on this table have been obtained from the East King County Regional Water Demand Forecast (October, 1988), prepared by Economic and Engineering Services, Inc. It should be noted that the Cities of Carnation, North Bend, Snoqualmie and Water District No. 122 and Sallal Water Association, are not individually included in the East King County Regional Demand Forecast; however, they are included as part of the grouped section of this forecast. By totaling recent water use records, the proportionate parts for Carnation, North Bend, Snoqualmie, Water District No. 122 and Sallal Water Association have been extracted from this grouped section of the East King County Regional Demand Forecast.

The installed capacity section on this table has been obtained from the Department of Social and Health Services (DSHS) records, questionnaires returned from each purveyor, recent water system comprehensive plans and personal interviews. The excess or shortage for the years 2000, 2010, 2020 and 2040 have been obtained by using the present day installed capacity and not by using proposed improvements (such as future well) as shown in the individual water system comprehensive plans. By doing so, a true future excess or shortage can be shown as if the water systems relied solely on the facilities they are using today.

It should be noted that data for peaking flow for the SWD and the groundwater sources are not compatible. Well sources typically report the maximum or instantaneous capacity of the well pump. For purposes of this analysis, each rated pump capacity was reduced to an average capacity by use of the maximum day peaking factor found in each comprehensive plan. The SWD data represents average day requirements. It is assumed that present needs are fully met by SWD for its wholesale customers and that year 2000 requirements are measured by average day needs. For these reasons, a dash is shown in the timetable where data are not pertinent.

The forecast in this table should not be alarming. As mentioned in Footnote 4 on Table II, the SWD will be adding the Highline and Tolt well fields of which the Highline well field will supply 12 MGD. This is more than enough to eliminate the deficit shown

in the year 2000. What should be properly noted for the year 2000 is that some of the groundwater or well users may have to develop additional sources or be supplied from and added to the SWD source. The years beyond 2000 indicate that the region's source of supply will have to be doubled by the year 2040. The proposals to meet this future demand will be discussed in other chapters.

Table II - System Quantity Analysis

System Name	DSHS ID #	Class	Source	Source Requirements (1) (MGD) Present Avg.	Present Peak	2000 Avg.	2000 Peak	2010 Avg.	2020 Avg.	2040 Avg.	Installed Capacity (2) (MGD) Present Avg.	Present Peak	Supply Excess or Shortage (3) (MGD) Present Avg.	Present Peak	2000 (4) Avg.	2000 (4) Peak	2010 Avg.	2020 Avg.	2040 Avg.	Comments
Served by Seattle Water Department (SWD)																				
Bellevue	05575B	1	SWD	14.93	14.93	16.90	16.90	18.49	20.30	24.17	14.93	14.93	--	--	(1.97)	--	(3.56)	(5.37)	(9.24)	
Bothell	07900L	1	SWD	0.98	0.98	1.51	1.51	1.95	2.55	3.90	0.98	0.98	--	--	(0.53)	--	(0.95)	(1.57)	(2.92)	
Cedar River	41800Z	1	SWD	1.31	1.31	2.29	2.29	3.19	4.49	7.46	1.31	1.31	--	--	(0.98)	--	(1.88)	(3.18)	(6.15)	
KCWD #107	41750C	1	SWD	1.71	1.71	2.20	2.20	2.69	3.29	4.61	1.71	1.71	--	--	(0.49)	--	(0.98)	(1.58)	(2.90)	One 1.44 MGD well drilled but not used.
KCWD #42	39600E	1	SWD	2.69	2.69	2.46	2.46	2.44	2.43	2.40	2.69	2.69	--	--	0.23	--	0.25	0.26	0.29	
KCWD #83 (6)	40950K	1	SWD(6)	0.03	0.03	0.03	2.46	0.02	0.02	0.02	0.03	0.03	--	--	0.00	--	0.01	0.01	0.01	
KCWD #90	41150L	1	SWD	1.41	1.41	1.45	0.03	1.57	1.71	2.02	1.41	1.41	--	--	(0.04)	--	(0.16)	(0.30)	(0.61)	
Kirkland	42250T	1	SWD	2.29	2.29	2.87	2.87	3.30	3.81	4.84	2.29	2.29	--	--	(0.58)	--	(1.01)	(1.52)	(2.55)	
Mercer Island	536405	1	SWD	2.96	2.96	2.68	2.68	2.61	2.55	2.43	2.96	2.96	--	--	0.28	--	0.35	0.41	0.53	
N.E.Lake Washington	408005	1	SWD	5.94	5.94	7.81	7.81	9.35	11.24	15.43	5.94	5.94	--	--	(1.87)	--	(3.41)	(5.30)	(9.49)	Studies indicate local wells could supply 4.3 MGD.
Redmond (6)	71650B	1	SWD(6)	1.69	1.69	2.62	2.62	3.12	3.74	5.08	1.69	1.69	--	--	(0.93)	--	(1.43)	(2.05)	(3.39)	
Renton (6)	71850L	1	SWD(6)	1.34	1.34	1.55	1.55	1.80	2.10	2.69	1.34	1.34	--	--	(6.21)	--	(0.46)	(0.76)	(1.35)	
Rose Hill	40850E	1	SWD	2.97	2.97	4.09	4.09	4.85	5.74	7.66	2.97	2.97	--	--	(1.12)	--	(1.88)	(2.77)	(4.69)	Provides supply for Kirkland and Redmond.
Soos Creek	401008	1	SWD	3.86	3.86	5.05	5.05	6.14	7.49	10.46	3.86	3.86	--	--	(1.19)	--	(2.28)	(3.63)	(6.60)	
Woodinville	41600Y	1	SWD	3.70	3.70	6.91	6.91	9.80	13.98	23.78	3.70	3.70	--	--	(3.21)	--	(6.10)	(10.28)	(20.08)	
Duvall	20750B	1(5)	SWD	0.15	0.15	0.32	0.32	0.43	0.57	0.86	0.15	0.15	--	--	(0.17)	--	(0.28)	(0.42)	(0.71)	
KCWD #119	419850	1(5)	SWD	0.11	0.11	0.18	0.18	0.23	0.29	0.43	0.11	0.11	--	--	(0.07)	--	(0.12)	(0.18)	(0.32)	Resistivity survey indicates 1.1 MGD well possible.
Served by Other																				
Issaquah	363505	1	3-Wells	1.23	2.83	2.10	4.83	2.66	3.37	4.83	1.25	2.87	0.02	0.04	(0.85)	(1.96)	(1.41)	(2.12)	(3.58)	
North Bend	60100A	1	1-Spring	0.21	0.49	0.33	0.76	0.45	0.59	0.89	1.40	3.24	1.19	2.75	1.07	2.48	0.95	0.81	0.51	
N.E. Sammamish	75265X	1	3-Wells	0.55	1.78	1.28	4.13	1.77	2.45	3.91	0.61	1.97	0.06	0.19	(0.67)	(2.16)	(1.16)	(1.84)	(3.30)	
Redmond	71650B	1	5-Wells	1.83	4.12	2.83	6.38	3.39	4.05	5.50	2.94	5.53	1.11	1.41	0.11	(0.85)	(0.45)	(1.11)	(2.56)	
Renton	71850L	1	6-W;1-S	5.37	10.97	6.22	12.70	7.19	8.42	10.75	7.58	15.46	2.21	4.49	1.36	2.76	0.39	(0.84)	(3.17)	Instream Resource Protection Pgm. limits well yield.
Sammamish Plat	409009	1	7-Wells	1.29	3.09	2.58	6.18	3.71	5.38	8.94	3.30	7.90	2.01	4.81	0.72	1.72	(0.41)	(2.08)	(5.64)	
Union Hill	902603	1	1-Well	0.40	0.90	0.86	1.94	1.27	1.82	3.02	0.53	1.22	0.13	0.32	(0.33)	(0.72)	(0.74)	(1.29)	(2.49)	
Ames Lake	020550	1(5)	5-Wells	0.12	0.24	0.24	0.48	0.34	0.49	0.81	0.20	0.39	0.08	0.15	(0.04)	(0.04)	(0.14)	(0.29)	(0.61)	
Carnation	11200B	1(5)	1-W;1-S	0.19	0.48	0.29	0.73	0.39	0.52	0.79	0.40	1.01	0.21	0.53	0.11	0.28	0.01	(0.12)	(0.39)	
KCWD #122	419958	1(5)	1-Well	0.03	0.06	0.04	0.08	0.05	0.07	0.11	0.15	0.29	0.12	0.23	0.11	0.21	0.10	0.08	0.04	Present wellfield capable of 0.60 MGD yield.
KCWD #127	245508	1(5)	3-Wells	0.19	0.38	0.28	0.56	0.37	0.48	0.74	0.77	1.53	0.58	1.15	0.49	0.97	0.40	0.29	0.03	
KCWD #83	40950K	1(5)	3-Wells	0.24	0.67	0.22	0.70	0.22	0.21	0.20	1.74	4.87	1.50	4.20	1.52	4.17	1.52	1.53	1.54	
Mirrormont Services	552501	1(5)	4-W;1-S	0.16	0.32	0.23	0.46	0.31	0.41	0.65	0.23	0.46	0.07	0.14	0.00	0.00	(0.08)	(0.18)	(0.04)	
Sallal	75560Q	1(5)	2-Wells	0.24	0.48	0.37	0.74	0.50	0.66	1.00	1.22	2.44	0.98	1.82	0.85	1.70	0.72	0.56	0.22	
Snoqualmie	81080C	1(5)	1-W;1-S	0.31	0.62	0.47	0.94	0.64	0.84	1.29	0.72	1.44	0.41	0.82	0.25	0.50	0.08	(0.12)	(0.57)	
TOTAL SUPPLY EXCESS OR SHORTAGE													8.45	17.11	(15.62)	6.30	(24.50)	(44.95)	(90.18)	

Footnotes:

(1) Present Requirement reported as 1986 use. Future requirements obtained from Regional Water Demand Forecast or Individual Utility Comprehensive Plans.

(2) Instantaneous capacity of installed facilities at source. For SWD supply, Average and Peak Day capacity is derived from 1986 Annual use. For major supply planning SWD makes no distinction between average & peak day demand.

(3) Supply shortage shown in brackets.

(4) It is anticipated that with the addition of the Highline and Tolt well fields the source requirements for the year 2000 will be met by the SWD and that shortage shown for SWD wholesale customers will actually be met.

(5) These purveyors are a class 1 system with less than 1000 customers.

(6) Portions served by other sources.

APPENDIX I

WATER RIGHT INFORMATION FOR CLASS 1 AND 2 SYSTEMS

APPENDIX I
TABLE A

WATER RIGHT INFORMATION FOR CLASS I SYSTEMS
(Served by Seattle Water Department)

KCWD #42 - 39600E (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

KCWD # 83 - 40950K (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 1	26N 04E 03Q	G1*00835S	100	0.14	162	300	0.43	Capacity exceeds water right
Well No. 2	26N 04E 03Q	G1*05680C	440	0.63	704	400	0.58	
Well No. 3	26N 04E 03Q	G1*08167C	225	0.32	360 (s)	300	0.43	Capacity exceeds water right
Totals			765	1.09	866	1,000	1.44	
	Purchased 16,853 ccf from the City of Seattle in 1987							

KCWD #90 - 41150L (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

KWCD #107 - 41750C (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

KCWD #119 - 419850 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

BELLEVUE, CITY OF - 05575B (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
NF Snoqualmie	24N 08E 12	S1-24336A (3)	(1,000)					
Lake Hancock	24N 09E 08	S1*21475A (3)	(50)					
Lake Sammamish	25N 05E 36	S1-22229C	337 (.75)	0.48	30			Not used
NF Snoqualmie	25N 09E 20	S1-22451A (3)	(250)					
Calligan Lake	25N 09E 32P	S1*21473A (3)	(50)					
Snoqualmie R.	26N 06E 36	S1-20566A (3)	(250)					
Totals			337 (.75)	0.48	30			
	Purchased all water from the City of Seattle							

BOTHELL, CITY OF - 07900L (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 05E 05	G1*05981C	200	0.29	320			Not used
Totals			200	0.29	320			
	Purchased all water from the City of Seattle							

CEDAR RIVER WATER AND SEWER - 418007 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

DUVALL, CITY OF - 207508 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 06E 13	G1*00849S	65	.09	36			Not used
Totals			65	.09	36			
	Purchased all water from the City of Seattle							

KIRKLAND, CITY OF - 42250T (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	25N 05E 05	G1*02944C	700	1.01	700			Not used
Well	25N 05E 05	G1*02945C	250	.36	400			Not used
Cochrane Spr.	25N 05E 17Q	S1*05762C	673 (1.5)	.97				Not used
Well	26N 05E 32	G1*02946C	200	.29	320			Not used
Totals			1,823	2.63	1,420			
	Purchased all water from Rose Hill Water and Sewer (who buys from the City of Seattle)							

MERCER CREST WATER ASSOCIATION - 536004 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

MERCER ISLAND, CITY OF - 536405 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

NE LAKE WASHINGTON SEWER AND WATER DISTRICT - 408005 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 04E 03E	G1-23919P	1,000	1.44	1,100			Not developed
	Purchased all water from the City of Seattle (1988)							

RENTON, CITY OF - 71850L (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Spring Brook Cr.	22N 05E 06H	S1*02983C	1,032 (2.3)	1.49		1,600	2.30	
Well No. 5	23N 05E 05F	G1*03040C	1,300	1.87	2,000	1,300	1.87	Standby
Well No. 5	23N 05E 05F	G1*08039C	200	0.29	320			Standby
Spring Brook (Infilt. Tr)	22N 05E 06H	G1-20605C	1,050	1.51	1,680			
Well No. 4	23N 05E 09C	G1*00814S	170	0.24	273.5	100	0.14	Standby
	23N 05E 16	G1-24782A (3)	1,600					
Well No. 1	23N 05E 17F	G1*00816S	1,040	1.50	1,676			
Well No. 2	23N 05E 17	G1*00817S	1,040	1.50	838			
Well No. 3	23N 05E 17F	G1*08040C	1,600	2.30	2,560 (s)	1,600	2.30	
Well No. 2	23N 05E 17F	G1*08041C	1,960	2.82	3,136 (s)	3,000	4.32	
Well No. 1	23N 05E 17F	G1*08042C	960	1.38	1,536 (s)	2,000	2.88	
Well No. 8	23N 05E 17F	G1*09349C	3,000	4.32	4,532	3,500	5.04	
					307 (s)			
Well No. 8	23N 05E 17	G1*09985C	500	0.72	800			
Well No. 9	23N 05E 17G	G1-24191P	1,300	1.87	1,040	1,300	1.87	
	23N 05E 21	G1-24781A (3)	1,600					
	23N 05E 22	G1-25069A (3)	1,600					
	23N 05E 22	G1-25070A (3)	1,600					
	23N 05E 22	G1-25071A (3)	1,600					
	23N 05E 23	G1-24783A (3)	1,600					
Totals			15,152	21.81	13,159.5	14,400	20.72	
	Purchased 44,703 ccf from the City of Seattle in 1987							

NE LAKE WASHINGTON SEWER AND WATER DISTRICT - 408005 (1)

Source	Location	Water Rights Control No.	GPM (cfs)	MGD	AF/YR (s)	In-Service Capacity (2) GPM	MGD	Comments
Well	26N 04E 03E	G1-23919P	1,000	1.44	1,100			Not developed
	Purchased all water from the City of Seattle (1988)							

RENTON, CITY OF - 71850L (1)

Source	Location	Water Rights Control No.	GPM (cfs)	MGD	AF/YR (s)	In-Service Capacity (2) GPM	MGD	Comments
Spring Brook Cr.	22N 05E 06H	S1*02983C	1,032 (2.3)	1.49		1,600	2.30	
Well No. 5	23N 05E 05F	G1*03040C	1,300	1.87	2,000	1,300	1.87	Standby
Well No. 5	23N 05E 05F	G1*08039C	200	0.29	320			Standby
Spring Brook (Infilt. Tr)	22N 05E 06H	G1-20605C	1,050	1.51	1,680			
Well No. 4	23N 05E 09C	G1*00814S	170	0.24	273.5	100	0.14	Standby
	23N 05E 16	G1-24782A (3)	1,600					
Well No. 1	23N 05E 17F	G1*00816S	1,040	1.50	1,676			
Well No. 2	23N 05E 17	G1*00817S	1,040	1.50	838			
Well No. 3	23N 05E 17F	G1*08040C	1,600	2.30	2,560 (s)	1,600	2.30	
Well No. 2	23N 05E 17F	G1*08041C	1,960	2.82	3,136 (s)	3,000	4.32	
Well No. 1	23N 05E 17F	G1*08042C	960	1.38	1,536 (s)	2,000	2.88	
Well No. 8	23N 05E 17F	G1*09349C	3,000	4.32	4,532	3,500	5.04	
					307 (s)			
Well No. 8	23N 05E 17	G1*09985C	500	0.72	800			
Well No. 9	23N 05E 17G	G1-24191P	1,300	1.87	1,040	1,300	1.87	
	23N 05E 21	G1-24781A (3)	1,600					
	23N 05E 22	G1-25069A (3)	1,600					
	23N 05E 22	G1-25070A (3)	1,600					
	23N 05E 22	G1-25071A (3)	1,600					
	23N 05E 23	G1-24783A (3)	1,600					
Totals			15,152	21.81	13,159.5	14,400	20.72	
	Purchased 44,703 ccf from the City of Seattle in 1987							

ROSE HILL WATER AND SEWER DISTRICT - 40850E (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

SOOS CREEK WATER AND SEWER DISTRICT - 401008 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

WOODINVILLE WATER DISTRICT - 41600Y (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	Purchased all water from the City of Seattle							

APPENDIX I
TABLE B

WATER RIGHT INFORMATION FOR CLASS 1 SYSTEMS
(Not Served by Seattle Water Department)

AMES LAKE WATER ASSOCIATION - 020550 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 1	25N 07E 19E	G1*10471C	60	0.09	48	65	.09	Capacity exceeds water right
Well No. 2	25N 07E 19E	G1-23183C	150	0.22	212	150	.22	
Well No. 3	25N 07E 18M	G1*10472C	50	0.07	48	35	0.05	
Well Nos. 4 & 5	25N 07E 29E							No water right standby
Well No. 6	25N 07E 30H	G1-20647C	20	0.03	32	25	.04	Location (?) cap. exceeds water right
Well No. 7	25N 07E 20M					35	.05	No water right
Well No. 8	25N 07E 08N	G1-24895A (3)	300			60	.09	
Totals			280	0.41	340	370	.54	

BEAUX ARTS, CITY OF - 051600 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 1	24N 05E 08D	G1-23795C	150	0.22	100	80	0.12	
Totals			150	0.22	100	80	0.12	

CARNATION, CITY OF - 11200B (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 1	25N 07E 16R	G1-22827C	800	1.15	538	700	1.01	
Spring	25N 07E 23Q	Claim #117902				450	0.64	
Totals			800	1.15	538	1,150	1.65	

ISSAQUAH, CITY OF - 363505 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Risdon Well #1	24N 06E 27M	G1*08632C	630	0.91	1,000	600	0.86	
Risdon Well #2	24N 06E 27M	G1*10071C	1,200	1.73	1,600	1,100	1.58	
Well #5	24N 06E 28B	G1-24633P	1,000	1.44	1,600 (s)			Not in use
Well #4	24N 06E 28B	G1-24809P	250	0.36	200			Not in use
Gunclub #3-A	24N 06E 34F	G1-22733C	300	0.43	119 (s)			Not in use
Gunclub #3	24N 06E 34F	G1-22734C	500	0.72	645 (s)	275	.40	
Totals			3,880	5.59	2,800	1,975	2.84	

KCWD NO. 1, YARROW - 38650N (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well Field #1	25N 05E					25	0.04	a, b
Well Field #2	25N 05E					27	0.04	
Well Field #3	25N 05E					37	0.05	
Well Field #4	25N 05E					18	0.02	
Well Field #5	25N 05E					42	0.06	
Well Field #6	25N 05E					69	0.10	
Well Field #7	25N 05E					68	0.10	
Totals						286	0.41	

a = DSHS shows 7 wellfields located in 25N 05E 17F (location appears wrong; may be in Section 18 or 19).
b = No water rights found.

KCWD NO. 122 - 419958 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	25N 06E 13M	G1-00027C	100	.14	108	200	.28	
		G1-24363C	100	.14	12			
Totals			200	.28	120	200	.28	

KCWD NO. 127 - 245508 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
(Springs) Well 3	24N 07E 11L	S1*01159C	314 (0.7)	0.45	Unk.	12	0.02	a
Well No. 1	24N 07E 15F	G1*05153C	300	0.43	358	250	0.36	a
Well No. 2	24N 07E 15F	G1*06191C	500	0.72	448	500	0.72	a
Totals			1,114	1.60	806	762	1.10	
a = Right issued to Fall City Water Company.								

MAPLEWOOD ADDITION WATER COOP - 51400Q (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
2-Wells	23N 05E 22E	G1-20454C	400	0.58	56	400	.58	
Totals			400	0.58	56	400	.58	

MIRRORMONT SERVICES, INC. - 552501 (1)

Source	Location	Water Rights Control No.	Water Rights GPM (cfs)	Water Rights MGD	Water Rights AF/YR (s)	In-Service Capacity (2) GPM	In-Service Capacity (2) MGD	Comments
Well Nos. 1,2,3	23N 06E 23J	G1-21456C	110	0.16	118	350	.50	a, b, c
Spring	23N 06E 25A	S1*13488C	49 (.11)	0.07	21	80	.12	
Spring	23N 06E 25A	S1*19545C	36 (.08)	0.05	29.4			
Totals			195	0.28	168.4	430	.62	

a = Capacity exceeds water rights.
b = DSHS location records and capacity figures are significantly different.
c = 1985 Comprehensive Plan indicates three wells with installed capacity of 100 gpm, 100 gpm, and 150 gpm, plus a spring flow between 50 and 150 gpm.

NORTH BEND, CITY OF - 60100A (1)

Source	Location	Water Rights Control No.	Water Rights GPM (cfs)	Water Rights MGD	Water Rights AF/YR (s)	In-Service Capacity (2) GPM	In-Service Capacity (2) MGD	Comments
Spring	24N 08E 35N	S1-00620C	2,250 (5.0)	3.24	336	2,250	3.24	
Totals			2,250	3.24	336	2,250	3.24	

NE SAMMAMISH SEWER AND WATER DISTRICT - 75265X (1)

Source	Location	Water Rights Control No.	Water Rights GPM (cfs)	Water Rights MGD	Water Rights AF/YR (s)	In-Service Capacity (2) GPM	In-Service Capacity (2) MGD	Comments
Well No. 2R	25N 06E 21C	G1*09644C	230	0.33	335	350	0.50	Capacity exceeds water right
Test Well No. 1	25N 06E 21H	G1-25021A (3)	1,000					
Well No. 4	25N 06E 21J	G1-23133C	300	0.43	150	575	0.83	
Well No. 4	25N 06E 21J	G1-23685C	400	0.58	315			
	25N 06E 21N	G1*09267C	190	0.27	275			
Well No. 3	25N 06E 21Q	G1-22777C	250	0.36	200	650	0.94	
Well No. 3	25N 06E 21Q	G1-23488C	350	0.50	300			
Well No. 5	25N 06E 27B	G1-24736P	350	0.50	441			
Totals			2,070	2.97	2,016	1,575	2.27	DSHS shows different capacities

OVERDALE PARK WATER ASSOCIATION - 65000H (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well A	24N 06E 21J	G1*03656C	190	0.27	30	175	0.25	
Well B	24N 06E 22F	G1*04988C	50	0.07	80	25	0.04	
Totals			240	0.34	110	200	0.29	

REDMOND, CITY OF - 71650B (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 4	25N 05E 02K	G1-22608C	800	1.15	1,280			DSHS shows different capacities and locations. Well No. 4 abandoned.
	25N 05E 12	G1*02043C	200	0.29	224			
Well No. 2	25N 05E 12C	G1*04934C	500	0.72	224 (s)	450	0.65	
					381			
Well No. 1	25N 05E 12C	G1-00130C	700	1.01	1,120 (s)	700	1.01	
Well No. 5	25N 05E 12H	G1-24204C	1,000	1.44	1,600	1,000	1.44	
Well No. 3	25N 06E 06E	G1*09901C	480	0.69	400 (s)	340	.49	
Seidel Creek	26N 06E 29	S1*02039C	2,250 (5.0)	3.24				
Totals			5,930	8.54	3,485	2,490	3.59	

RIVERBEND HOMESITES - 72750J (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Wells (2)	23N 08E 23	G1-20414C	600	0.86	367	280	0.40	
Well	23N 08E 23	G1-21298C	400	0.58	194	250	0.36	
Totals			1,000	1.44	561	530	0.76	

RIVERBEND MOBILE HOME PARK - 72808H (1)

Source	Location	Water Rights Control No.	Water Rights GPM (cfs)	Water Rights MGD	Water Rights AF/YR (s)	In-Service Capacity (2) GPM	In-Service Capacity (2) MGD	Comments
Well	23N 05E 24	G1-20407P	268	0.39	120	400	0.58	Capacity exceeds water right. DSHS shows location variance.
Totals			268	0.39	120	400	0.58	

SALLAL WATER ASSOCIATION, INC. - 75560Q (1)

Source	Location	Water Rights Control No.	Water Rights GPM (cfs)	Water Rights MGD	Water Rights AF/YR (s)	In-Service Capacity (2) GPM	In-Service Capacity (2) MGD	Comments
Wells (2)	23N 08E 34B	G1-24671C	1,600	2.30	696	1,600	2.30	a
	23N 09E 18N	G1-24975A (3)	500			100	.14	b
Totals			1,600	2.30	696	1,700	2.44	

a = Questionnaire shows one of these wells to be in -34G.
b = Questionnaire shows this well to be in -18P.

SAMMAMISH PLATEAU WATER AND SEWER - 409009 (1)

Source	Location	Water Rights Control No.	Water Rights GPM (cfs)	Water Rights MGD	Water Rights AF/YR (s)	In-Service Capacity (2) GPM	In-Service Capacity (2) MGD	Comments
Well No. 1	24N 06E 10H	G1-00342C	300	0.43	448	500	0.72	a, b, c
Well No. 2	24N 06E 11K	G1*09533C	500	0.72	800	300	0.43	b, c
Well Nos. 7 & 8	24N 06E 28A	G1-00289C	3,200	4.61	936	4,200	6.05	a, b, c, d
	25N 06E 28F	G1*07653C	100	.14	160			
Well No. 6	25N 06E 32J	G1-23897C	600	0.86	768	600	0.86	
Well No. 4	25N 06E 34M	G1*10373C	200	0.29	224			a, b
Well No. 5	25N 06E 34E	G1-22861C	1,000	1.44	1,600	425	0.61	a, b
Well No. 4	25N 06E 34M	G1-23022C	550	0.79	880 (s)	575	0.83	a, b, c
Totals			6,450	9.28	4,936	6,600	9.50	

a = Locations at variance with DSHS.
b = Capacities at variance with DSHS (totals 5,485 gpm).
c = Water rights appear to need clarification or are deficient.
d = New applications pending on Well Nos. 7, 8, and 1.

SHOREWOOD APARTMENTS - 78795J (1)

Source	Location	Water Rights Control No.	GPM (cfs)	MGD	AF/YR (s)	In-Service Capacity (2) GPM	MGD	Comments
	All Water Purchased from the City of Seattle							

SNOQUALMIE, CITY OF - 81080C (1)

Source	Location	Water Rights Control No.	GPM (cfs)	MGD	AF/YR (s)	In-Service Capacity (2) GPM	MGD	Comments
Canyon Springs	24N 08E 24Q	S1*06205C	900 (2.0)	1.30		600	0.86	
Well	24N 08E 31Q	G1*00059S	90	0.13	100			Not used
Well	24N 08E 31Q	G1*00060S	90	0.13	100			Not used
Well	24N 08E 32F	G1-20316P	1,000	1.44	500	400	0.58	a
Totals			2,080	3.00	700	1,000	1.44	
a - DSHS shows this well to be -32C; and shows no wells in -31Q.								

UNION HILL WATER ASSOCIATION, INC. - 902603 (1)

Source	Location	Water Rights Control No.	GPM (cfs)	MGD	AF/YR (s)	In-Service Capacity (2) GPM	MGD	Comments
Well	25N 05E 16J	G1-22756P	1,300	1.87	2,080	850	1.22	
Totals			1,300	1.87	2,080	850	1.22	
	Water also purchased from the City of Redmond							

WILDERNESS RIM MAINTENANCE CORP. - 96878M (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	All water purchased from Sallal Water Association							

Footnotes:

(1) Water Facility Inventory (WFI) ID No. of Department of Social and Health Services (DSHS).
(2) In-Service Capacity - amounts taken from questionnaire first, then Comp Plans and DSHS WFI.
(3) Application amounts not included in totals.

APPENDIX I
TABLE C

WATER RIGHT INFORMATION FOR CLASS 2 SYSTEMS

ALPINE MOBILE MANOR - 01830V (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 07E 33P	G1-20282C	10	.01	13			DSHS shows 2 wells; 60 gpm and 5 gpm

AVON VILLA TRAILER PARK - 034352 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 06E 31C					35	0.05	DSHS shows 1 well; no water rights found

BLUE SKY II MOBILE HOME PARK - 01001K (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 07E 32J					30	.04	DSHS shows 1 well; no water rights found

CAMPTON WATER SUPPLY - 109974 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	25N 05E 12J							DSHS shows 1 well; no water rights found

CARNATION FARMS - 111809 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	25N 07E 08D	G1-24711C	200	0.29	40			DSHS shows different well

CEDAR GROVE MOBILE HOME PARK - 119153 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 06E 32B					40	.06	DSHS shows 1 well; no water rights found

CEDAR HEIGHTS WATER DISTRICT - 11925B (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	23N 06E 15					50	.07	DSHS shows 1 well; no water rights found

DAWNBREAKER WATER ASSOCIATION - 12154M (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 06E 35	G1-23905C	55	0.08	24	55	0.08	

DORRE DON WATER SYSTEM - 19850X (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Un. Spring	22N 06E 15	S1-20446C	197 (.44)	0.28	39.8	100	.14	

ECHO GLEN CHILDRENS CENTER - 22330B (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
2 Wells (WA DNR)	24N 07E 34F	G1*07918C	200	0.29	81.6	200	0.29	

EDGEHILL WATER ASSOCIATION - 22400P (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 2	24N 06E 19P	G1*03686C	15	0.02	24	15	0.02	
3 Wells	24N 06E 19Q	G1*04216C	60	0.09	45	60	0.09	
Well	24N 06E 19Q	G1-21627C	45	0.06	22	40	0.06	

ELDERWOOD - 226909 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 06E 14R	Claim #050836				25	.04	DSHS shows 1 well

EVERGREEN HEIGHTS WATER COOP ASSOCIATION - 24100E (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	24N 06E 25K					38	.05	DSHS shows 1 well; no water rights found

FOREST GROVE HILLS - 25932B (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 06E 17P					10	.01	DSHS - 2 wells; no water rights found
Well	22N 06E 17P					17	.02	

FOUR CREEKS RANCH ROAD WATER SYSTEM - 227404 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 06E 15M	G1-22983C	60	.09	30	90	.13	DSHS capacity of 90 gpm exceeds water right

FOUR LAKES - 26195F (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 1	23N 06E 27H	G1-00518C	150	0.22	82	115	0.17	
Wellfield	23N 06E 27H					50	0.07	No water right found

GESELL ADDITION - 27510D (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 06E 03N	G1-00519C	250	0.36	26.7	250	0.36	

GREENACRES WATER ASSOCIATION - 296559 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 06E 22L					40	0.06	DSHS shows 1 well; no water rights found

HARTMAN WATER - 31540U (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 05E 08C	Claim #004172				10	.01	

HEATHERCREST, PLAT OF - 32125E (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	24N 07E 22B	G1-00657C	130	0.19	40	150	0.22	DSHS capacity of 150 gpm exceeds water right

INGLEWOOD PARK WATER COMPANY - 35700A (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Spring	26N 04E 23K	S1-21637C	45 (0.10)	.06	18	100	0.14	DSHS capacity of 100 gpm exceeds water right

ISSAQUAH VALLEY WATER ASSOCIATION - 36300V (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 06E 10Q	G1-23202C	100	.14	21	55	0.08	DSHS shows well to be in -15B
Un. Stream	23N 06E 10Q	S1*07719C	22 (.05)	.03				

KING COUNTY WATER DISTRICT #17 - 38850X (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	All water purchased.							

KING COUNTY WATER DISTRICT #117 - 41980D (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 05E 23C							DSHS shows 1 well and purchase from Bellevue; no water right found

KING COUNTY WATER DISTRICT #123 - 41996R (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 07E 33E	G1-23312C	125	.18	90	200	0.29	Capacity exceeds water right

LAKE MARGARET WATER SYSTEM - 44200M (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Wells (3)	26N 07E 03	G1-20502P	200	0.29	135	120	0.19	

LAKE TUCK WATER SYSTEM - 44965N (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 06E 03N	G1-22731C	80	0.12	54	80	0.12	

LOCLOMAN SUBDIVISION - 47660W (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 07E 18D	G1*07377C	150	0.22	33.6	150	0.22	Water right under Silver Pacific

MAPLE VISTA - 51350W (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
2 Wells	22N 06E 11K					80	0.12	DSHS shows 2 wells; no water rights found

MINT GROVE - 55150W (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 06E 06H	G1-06228C	100	.14	22.5			DSHS shows 2 wells, 25 gpm and 15 gpm
Un. Spring	24N 06E 06H	S1*07087C	9 (.02)	.01				

MOBILE HOME WONDERLAND - 55455V (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 05E 23M	G1-00387C	100	0.14	46	100	0.14	DSHS shows 2d well in -22J

MOUNT SI MOBILE HOME ESTATES - 56560Q (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
	23N 08E 10Q					300	0.43	DSHS shows 1 well; no water right found

MT. VIEW WATER DISTRICT - 569500 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 05E 08E					60	0.09	DSHS shows 1 well; no water right found

NORTH BEND MOBILE HOME PARK - 600593 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 08E 10E					40	0.06	DSHS shows 1 well; no water right found

ORCHARD GROVE - 640708 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Spring	22N 06E 15J	S1*21698C	45 (.10)	.06	20	48	.07	DSHS capacity of 48 gpm exceeds water right

PANTHER LAKE NORTH - 659607 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 05E 05L	Claim #023451				35	0.05	

RAKWANNA PARK WATER SYSTEM - 255866 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
2 Wells	26N 06E 03R					39	0.06	DSHS shows 2 wells, 9 gpm and 30 gpm; no water rights found

REED RANCH ROAD WATER - 11985W (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Spring	22N 06E 14N	Claim #146763						DSHS shows spring, no quantity

SAMMAMISH VIEW PARK - 75700E (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	25N 06E 18G	G1-22254C	40	0.06	25	20	0.03	

SKYLINE, DUVALL - 122282 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	26N 07E 16R					40	0.06	DSHS shows 1 well; no water right found

SPRING GLEN ASSOCIATION - 83295L (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 3	24N 07E 13N					80	0.12	No water right found
Well No. 1	24N 07E 14R	G1-22712C	320	0.46	72	320	0.46	
Well No. 2	24N 07E 24D					70	0.10	No water right found

SPRING GLEN MOBILE - 832901 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 07E 14H					60	0.09	DSHS shows 1 well; no water right found

SPRING HILL DEVELOPMENT COMPANY - 833103 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 08E 19Q					43	0.06	There is a water right, G1*10300C in 24N 07E 13L for 43 gpm, 12 AF/YR under Spring Hill Development Company

STONE CREEK ESTATES - 84530X (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	22N 06E 11B					60	0.09	DSHS shows 1 well; no water right found

STRANDVIK - 845807 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Lake Sammamish	24N 05E 13A					45	0.06	DSHS shows 1 SW diversion and purchase; no water right found

TIGER MOUNTAIN TRACTS - 883150 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	23N 06E 24J					40	0.06	DSHS shows 1 well; no water right found

TOKUL CREEK COMMUNITY - 88625M (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Spring	24N 08E 18R	Claim #038459				100	.14	

TRAILS END - 890504 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Wellfield	25N 05E 15P	G1*08072C	120	0.17	24	110	0.16	

TWENTY-THREE 800 TIGER MOUNTAIN ROAD - 90875P (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well No. 1 and No. 2	23N 06E 15Q	G1-22645C G1-22645C	40	0.06	27	28 20	0.04 0.03	Capacity exceeds water right

TWIN CEDARS - 89870N (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 06E 08N					30	0.04	DSHS shows 1 well; no water right found

UPPER PRESTON WATER ASSOCIATION - 907006 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well A	23N 07E 03L					51	0.07	DSHS shows 1 well; no water right found

VALLEY VIEW TRAILER PARK - 90998W (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
2 Wells	23N 05E 23R					14 6	.02 .01	DSHS shows 2 wells; no water rights found

WEBER POINT - 93970E (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	25N 06E 19H	Claim #030853				45	0.06	

WEONA BEACH - 944002 (1)

Source	Location	Water Rights				In-Service Capacity (2)		Comments
		Control No.	GPM (cfs)	MGD	AF/YR (s)	GPM	MGD	
Well	24N 05E 01P					30	0.04	DSHS shows 1 well; no water right found

Footnotes:

(1) Water Facility Inventory (WFI) I.D. number of Department of Social and Health Services (DSHS).
(2) Amounts taken from WFI of DSHS.

APPENDIX J

PRELIMINARY SOURCE EVALUATION PAPERS

APPENDIX J

EAST KING COUNTY REGIONAL WATER SUPPLY PLAN

PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Seattle Metro sewage treatment plant effluent

CONCEPT:

Discharge treated effluent to Lake Washington Ship Canal to offset demand on Cedar River for lockage flow requirements at the Chittenden Locks.

DISCUSSION:

Seattle Metro operates two major secondary treatment plants. The West Point plant discharges to Puget Sound with a current peak capacity of 380 MGD. The plant is to be expanded to 420 MGD. The Renton plant also discharges directly to Puget Sound through a recently completed effluent transfer system. It has a capacity of 144 MGD. Metro proposes to expand the Renton plant to about 185 MGD. An equalizing reservoir will be considered to limit the rate of discharge to 144 MGD.

Arriving at the decision to expand the West Point Plant has been a difficult technical, environmental, and political process. Any proposal to alter the level of treatment or discharge point would be ill-timed.

Expansion of the Renton plant is now being considered by Metro. An alternative to an equalizing reservoir may be advanced waste treatment (nutrient removal) of a portion of the waste flow with discharge to the south end of Lake Washington.

Water requirements for operation of the Lake Washington Ship Canal at Ballard are shown on Attachment A. An increased flow of 40 MGD/62 cfs (from the Renton plant) would represent 14 percent of the annual average lockage requirement. This would increase to 28 percent in a drought year.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

Federal and state approval for Renton sewage treatment plant modifications must be obtained. Advanced waste treatment would be required for a discharge to Lake Washington and/or the Ship Canal. The level of treatment must be determined. An EIS would be required.

FACILITY/FEASIBILITY CONSIDERATIONS:

Considerations include:

- o Space requirement at the Renton plant for nutrient removal facilities.
- o Access to Lake Washington for an outfall.
- o Relative cost of advanced treatment/discharge to Lake Washington to an equalizing reservoir.

PRELIMINARY FINDING:

Further consideration of this concept appears warranted.

ATTACHMENT A

WATER REQUIREMENTS (1) (2) (3)
LAKE WASHINGTON SHIP CANAL/CHITTENDEN LOCKS

Month	Boat Passage	Fish (4) Ladder	Salt Water Return System	Total
January	73 cfs	55 cfs	276 cfs	404 cfs
February	85	"	285	425
March	96	"	293	444
April	117	"	302	474
May	131	"	302	488
June	131	"	302	488
July	132	"	302	489
August	126	"	296	477
September	118	"	288	461
October	98	"	283	436
November	74	"	276	405
December	68	"	276	399
			Average	449 cfs
				290 MGD

(1) Corps of Engineers estimate for period 1985-1990 based upon last 40 years of record.

(2) Lake Washington operated between levels of 22-feet maximum and 20-feet minimum.

(3) Up to 50 percent reduction in water requirement possible under severe drought conditions. Significant adverse impact on commerce.

(4) Includes 25 cfs for fish ladder operation and 30 cfs for leakage at spillway gates.

EAST KING COUNTY REGIONAL WATER SUPPLY PLAN

PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Walsh Lake

CONCEPT:

Construct dam on outlet stream of Walsh Lake. Release stored water to the Cedar River at Landsburg during the summer months to meet instream flow requirements. Divert equivalent amount of Cedar River water at Landsburg.

DISCUSSION:

Walsh Lake is located in the lower Cedar River watershed of the City of Seattle. The lake has a surface area of about 105 acres at an elevation of 725 feet. The location of the Lake, with respect to the Cedar River and the Seattle Water Department Landsburg intake, is shown on Attachment A.

Preliminary studies conducted by the Seattle Water Department (SWD) indicate about 15 percent of the local inflow between Cedar Falls and Renton could be stored in Walsh Lake during the months of October through June. Storage at Walsh Lake would approximate 15,000 acre-feet. The SWD estimates the effective yield would be 25 MGD.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

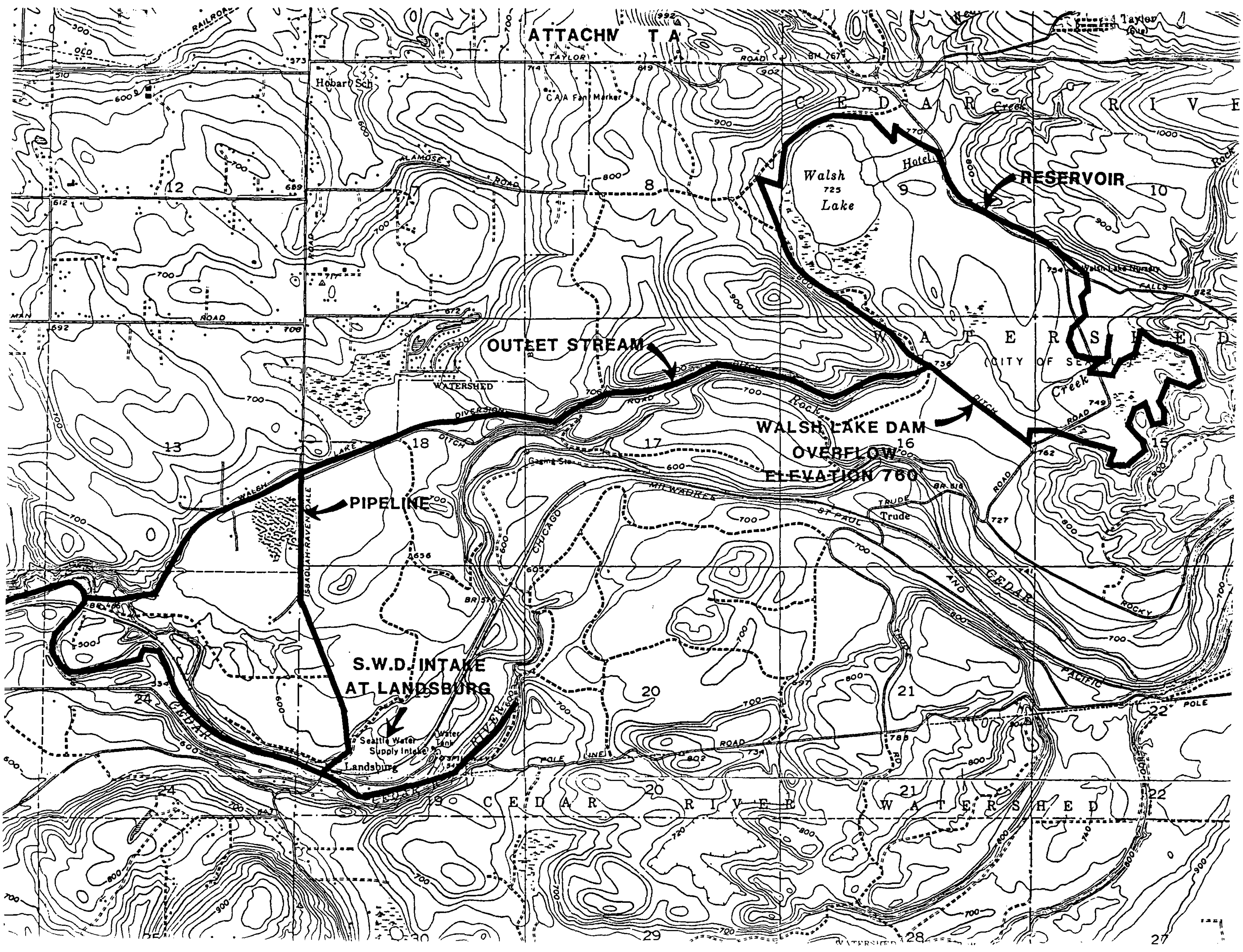
Both storage and appropriation/diversion rights would be required from the Department of Ecology (Ecology). Environmental considerations may be sensitive since an impoundment dam would flood about 15 acres of wetland.

FACILITY/FEASIBILITY CONSIDERATIONS:

All lands involved are located within the Cedar River watershed and owned by the City of Seattle. A major issue may be whether Ecology would approve construction of a storage reservoir at this location.

PRELIMINARY FINDING:

This concept should be further evaluated.


ATTACHM T A
RESERVOIR
OUTLET STREAM
WALSH LAKE DAM
OVERFLOW
ELEVATION 760'
PIPELINE
S.W.D. INTAKE
AT LANDSBURG
Walsh Lake
CEDAR RIVER WATERSHED
CITY OF SEATTLE
Rock Creek
Seattle Water Supply Intake
Landsburg
Hobart Sch
CAA Fan Marker
Trude
ISSAQUAH-RAVENSDALE
DIVERSION DITCH
WALSH LAKE DITCH
CHICAGO MILWAUKEE ST PAUL AND PACIFIC
Walsh Lake Nursery
POLE LINE ROAD
Gaging Sta
Water Tank
Taylor

PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Cedar River well field located near Landsburg

CONCEPT:

Develop a well field in the vicinity of the Seattle Water Department (SWD) intake on the Cedar River at Landsburg and pump groundwater directly to the main line system.

DISCUSSION:

Investigations by the SWD have identified two aquifer systems in the vicinity of Landsburg and within the Cedar River watershed. Those aquifers are referred to as the Alpha and Beta Aquifers.

The Alpha Aquifer is an areally extensive, highly confined system, lying generally between 475 and 520 feet above mean sea level (MSL). The piezometric level is about 620 feet in elevation, approximately 100 feet higher than the top of the formation. The Beta Aquifer consists of about 15 feet of sand and gravel lying between elevations 45 and 60 feet above MSL. The Beta Aquifer is also highly confined with a piezometric level at about elevation 650 feet, 590 feet above the top of the formation. The areal extent of the Beta Aquifer is not known. This relationship is shown on Attachment A.

The estimated yield of the Alpha Aquifer is 8 MGD. However, this aquifer appears to be in direct hydraulic continuity with the Cedar River and withdrawals of groundwater would result in an equivalent reduction in river flow within ten days. The Beta Aquifer has an estimated yield of 10 MGD and would not adversely impact river flows. Water quality of the Alpha Aquifer is excellent. There may be iron and manganese problems associated with the Beta Aquifer.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

Groundwater permits would be required. Permits issued for withdrawals from the Alpha Aquifer would probably be subject to Cedar River instream flows. This would not be the case with respect to the Beta Aquifer. Potential adverse effects upon other wells in the area must also be considered.

FACILITY/FEASIBILITY CONSIDERATIONS:

Primary considerations are:

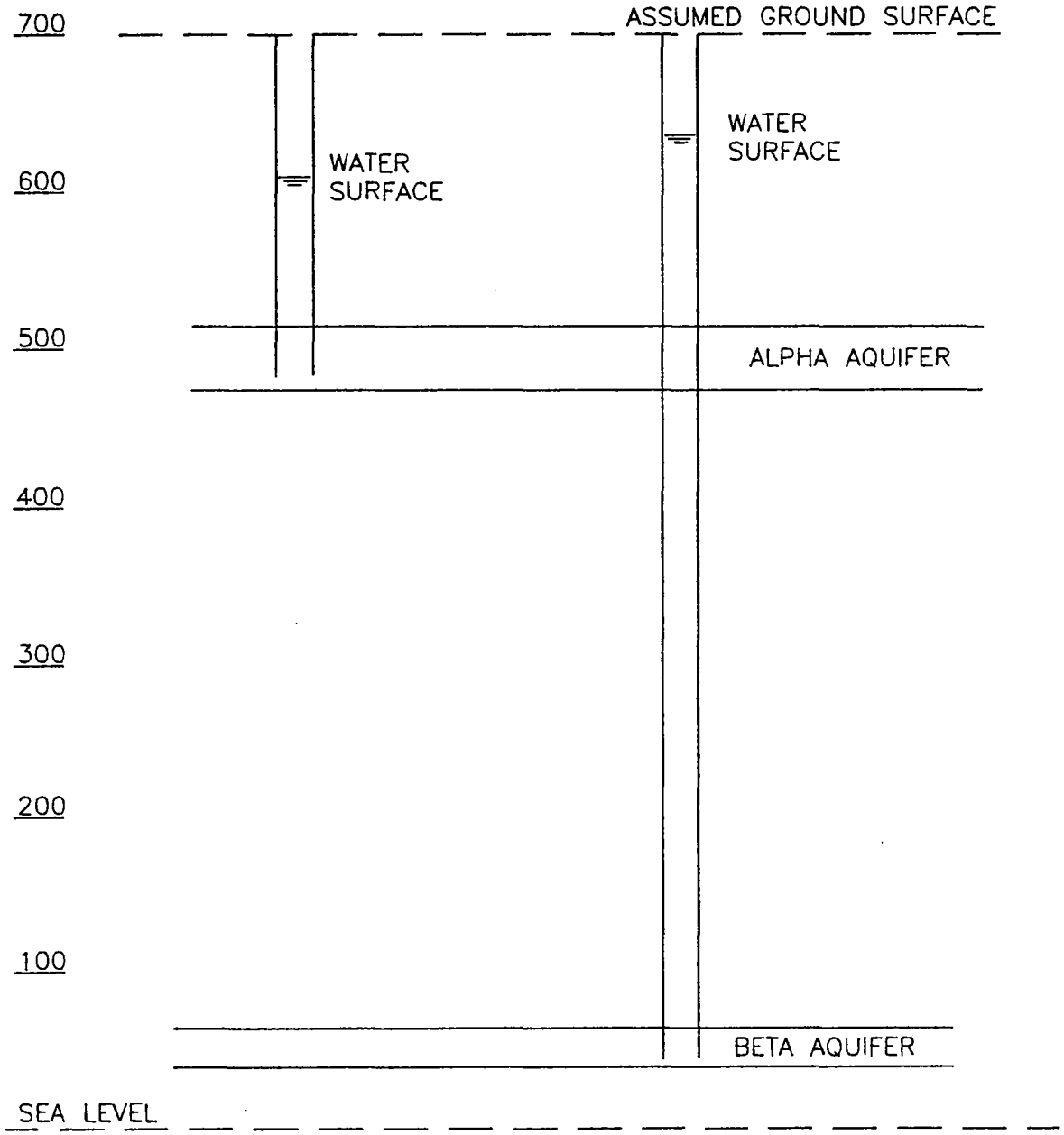
1. Due to the direct hydraulic continuity of the Alpha Aquifer with the Cedar River, there would be no net increase in yield from its development.

2. Specific capacity (unit yield) of the Beta Aquifer is low. A number of wells would be required with small yield at a considerable pumping lift. Iron and manganese removal may be required. Long-term production capacity of the aquifer is unknown.

PRELIMINARY FINDING:

This concept has questionable merit and should not be further examined.

CEDAR RIVER AQUIFERS
NEAR LANDSBURG



PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Lake Sammamish

CONCEPT:

Regulate discharge from Lake Sammamish by construction of a control structure at the outlet. Winter lake levels would be retained into the summer months for release to the Lake Washington system to offset Cedar River requirements for lockage water at the Chittenden Locks.

DISCUSSION:

Lake Sammamish is located immediately south of the City of Redmond and is a tributary to Lake Washington via the Sammamish River. It has a reported surface area of 4,897 acres, a maximum depth of 100 feet, and a drainage area of 99.6 square miles.

A water level recording station has been continuously operated on the Lake by the U.S. Geological Survey since January, 1939. Recorded annual lake level fluctuations for recent years are shown on Attachment A. The maximum fluctuation (8.31 feet) occurred in 1951. Assuming a control structure was in place at the outlet of the Lake to store water within the limits of historic fluctuations, the resulting storage is also shown on Attachment A. Releasing stored waters over a 90-day period (e.g. July, August, September) would produce the equivalent flows shown.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

A reservoir/storage permit (and associated EIS) would be required from the Department of Ecology (Ecology). Due to the intensive development around the lake, including the State Park at the south end (see Attachment B), any proposal to significantly alter the natural lake level would be extremely controversial. According to the Corps of Engineers, many private docks are now flooded at high water. To maintain such a condition into the summer months would surely be objectionable to the dock owners. Also, a controlling consideration might be the ability to acquire ownership or flood easements for the lake front land that would be affected by the storage proposal.

An Instream Resources Protection Program has been adopted by Ecology for the Cedar-Sammamish Basin. Instream flows were not set for the Sammamish River. Instead, the Sammamish River and all its tributaries, including Sammamish Lake, were closed to future consumptive appropriations.

FACILITY/FEASIBILITY CONSIDERATIONS:

The feasibility of constructing a controlling structure at the lake outlet has not been determined.

PRELIMINARY FINDING:

The concept of enhancing low flows of the Sammamish River and the Lake Washington Ship Canal has considerable merit. Whether this enhancement would directly translate to increased use of Cedar River water for municipal supply (because of Cedar River low flows) is unknown. However, the level of development on the lake (there are at least 400 existing docks) and the probable complexity of acquiring needed permits and flowage easements raise serious questions as to the feasibility of the concept. It should not be further considered.

ATTACHMENT A

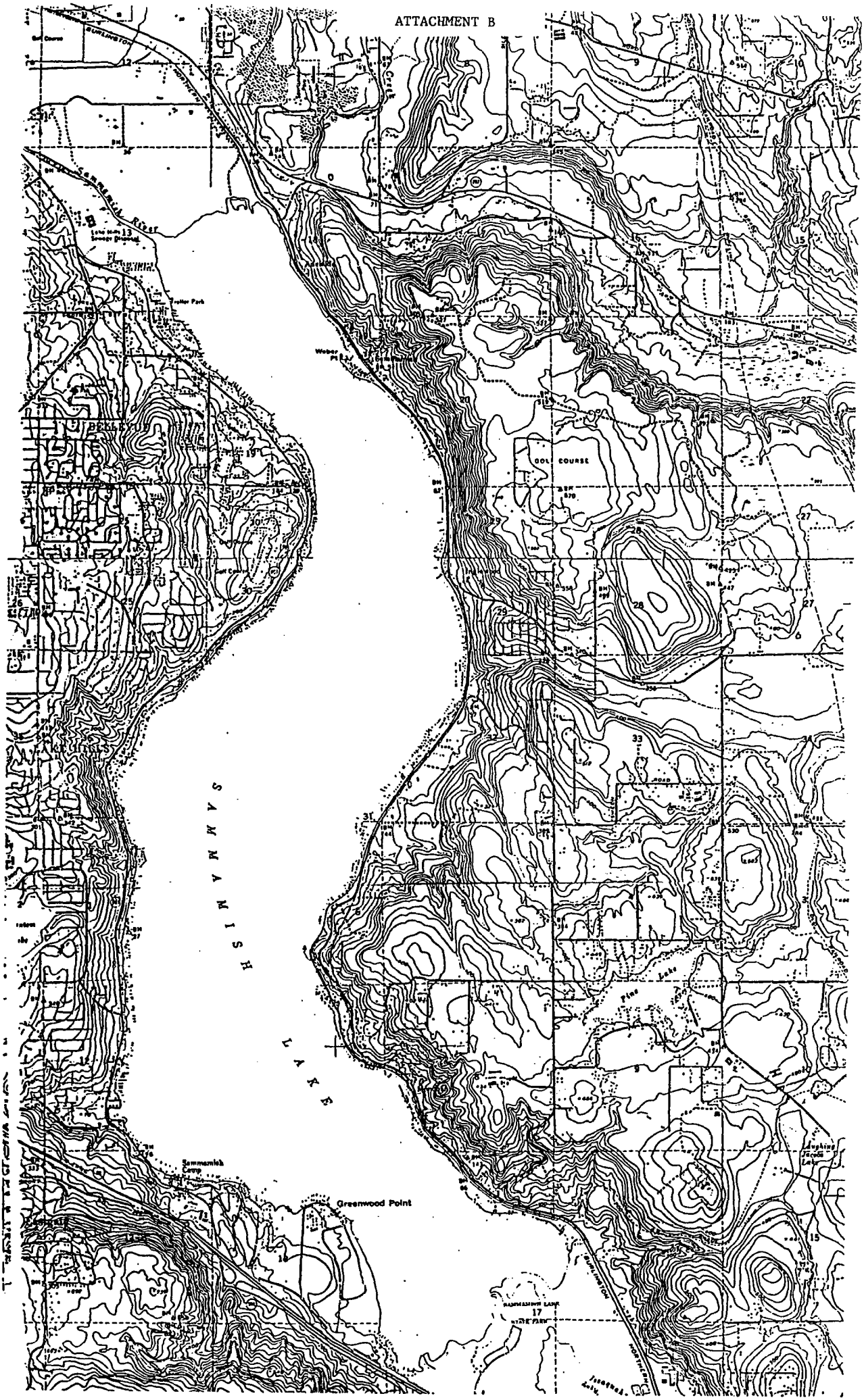
LAKE SAMMAMISH STORAGE
EQUIVALENT STORAGE BASED UPON HISTORIC LAKE LEVEL FLUCTUATIONS

Calandar Year	Lake Level Max.	Min.	Diff.	Equivalent(1) Storage (AF)	Equivalent Flow(2) CFS	MGD
1976	3.95	1.76	2.19			
77	4.65	1.48	3.17			
78	3.29	1.64	1.65			
79	4.89	1.48	3.41			
80	3.90	1.64	2.26			
81	3.85	1.58	2.27			
82	4.80	1.54	3.26			
83	4.77	1.71	3.06			
84	3.28	1.41	1.87			
85	3.04	1.20	1.84			
		Avg.	2.50	12,500	69	45
		Min.	1.84	9,200	51	33
		Max.	3.41	17,050	95	62
1951	9.40	1.09	8.31	41,550	230	150

(1) Based upon a lake surface area of 5,000 acres.

(2) Based upon a release of stored water over a 90-day period.

ATTACHMENT B



PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Lake Washington

CONCEPT:

Pump directly from Lake Washington through a treatment plant into the existing Seattle Water Department municipal system.

DISCUSSION:

Lake Washington is a natural lake covering an area of about 22,000 acres. It is 19.5 miles long and fed by a number of tributaries. Major sources are the Cedar and Sammamish Rivers. The outlet is via the Lake Washington Ship Canal to Puget Sound. The lake elevation is controlled by a dam and ship locks located near Ballard and operated by the Corps of Engineers. The lake level fluctuates between elevations of 20 and 22 feet mean sea level.

According to the Corps of Engineers, the federal government holds first rights to use of the waters of Lake Washington under the doctrine of navigational servitude. Water requirements for operation of the lake level control structure are shown on Attachment A.

No comprehensive study has been made of the water budget (inflow/outflow relationship) for the Basin. Since adoption of the state Instream Resources Protection Program in 1979, management in water-short years has been by negotiation among parties representing the principal interests of navigation, fisheries, municipal water supply, power generation, and recreation. Since 1979, shortages have occurred on a frequency of about 1 year in 4.

A pumping plant on the lake operating under water rights established in the future would be the most junior priority in the system. The supply would be interruptible in water short years at the time of peak municipal supply needs; i.e. late summer and fall. Potentials for augmenting the supply by other concepts under consideration (storing water on Lake Sammamish and discharging appropriately treated wastewater to the lake from the Metro system) could create a more firm supply from the lake.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

A water right permit must be obtained from Ecology. The filing of an application would surely result in the need to conduct a comprehensive study of the water resources of the Lake Washington Basin. Operating agreements could be negotiated as a part of the water right process.

FACILITY/FEASIBILITY CONSIDERATIONS:

Major considerations include:

- Availability of pumping plant/treatment plant site
- Reliability of supply
- Public acceptability of source
- Relative cost to other alternatives (construction, operation, and maintenance)
- Shoreland management issues

PRELIMINARY FINDING:

Further consideration should be given to this concept only:

- In conjunction with the other concepts identified for the Cedar-Sammamish Basin, and
- Should the other concepts, even though considered feasible, not increase the yield of the Cedar River at Landsburg for municipal supply due to instream flow requirements on the river below Landsburg.

ATTACHMENT A

WATER REQUIREMENTS (1) (2) (3)
LAKE WASHINGTON SHIP CANAL/CHITTENDEN LOCKS

Month	Boat Passage	Fish (4) Ladder	Salt Water Return System	Total
January	73 cfs	55 cfs	276 cfs	404 cfs
February	85	"	285	425
March	96	"	293	444
April	117	"	302	474
May	131	"	302	488
June	131	"	302	488
July	132	"	302	489
August	126	"	296	477
September	118	"	288	461
October	98	"	283	436
November	74	"	276	405
December	68	"	276	399
			Average	449 cfs
				290 MGD

(1) Corps of Engineers estimate for period 1985-1990 based upon last 40 years of record.

(2) Lake Washington operated between levels of 22-feet maximum and 20-feet minimum.

(3) Up to 50 percent reduction in water requirement possible under severe drought conditions. Significant adverse impact on commerce.

(4) Includes 25 cfs for fish ladder operation and 30 cfs for leakage at spillway gates.

EAST KING COUNTY REGIONAL WATER SUPPLY PLAN

PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Unused major industrial sources

CONCEPT:

Acquire water rights from industrial users who have terminated use. Transfer/change rights to public water supply.

DISCUSSION:

This evaluation was conducted under the assumption that at least 3 MGD (2,083 gpm/4.64 cfs) from a particular industrial activity would be required to warrant further study as a regional water supply source. Water right printouts of the Department of Ecology were reviewed for screening purposes. Sixty-five (65) water rights were identified where industrial use was a purpose of use. Where commercial and industrial use were included as part of a public water supply, the right was screened out and not included in the 65.

Of the 65, four rights were identified that met the above assumption. Three of these have annual limitations of 1,027 AF, 1,200 AF, and 1,200 AF, or an average day of 0.92 mgd, 1.07 mgd, and 1.07 mgd, respectively. the fourth right has Salmon Bay as a water source for 25 cfs and 17,500 AF/annually for industrial supply.

Pertinent documents from the above four water right files have been reviewed. All four are identified as "largely non-consumptive."

Because of the above findings, no attempt has been made to identify the status of use of the above rights.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

As a general rule, water rights cannot be changed from non-consumptive to consumptive uses.

FACILITY/FEASIBILITY CONSIDERATIONS:

None considered.

PRELIMINARY FINDING:

This concept has little, if any, potential for East King County Regional Water Supply and should not be further evaluated.

PRELIMINARY EVALUATION OF SOURCE OPTIONS

SOURCE:

Puget Sound seawater

CONCEPT:

Desalination process to treat Puget Sound seawater for municipal water supply.

DISCUSSION:

The technologies for desalinating seawater in order to produce drinking water has increased throughout the world. The total cost for desalination processes has decreased over time, yet still is not at competitive levels with costs of conventional methods for water treatment as seen on Attachment A. Also, total costs for desalination vary greatly with geographic location.

Five desalination technologies for treatment of seawater exist: distillation, ion exchange, freeze distillation, electrodialysis, and reverse osmosis. Distillation plants typically have very high capital costs and depend largely on energy costs; ion exchange is more effective in treating relatively dilute solutions; the engineering involved in constructing and operating a freeze desalination plant is quite complicated; and seawater electrodialysis is not yet commercially available. Thus, the most viable alternative is reverse osmosis (RO).

Recent analyses indicate seawater reverse osmosis costs run approximately $4 to $6 per 1,000 gallons under near-optimum operating conditions. Without efficient operation, these costs can increase to as much as $10 per 1,000 gallons (1985 dollars). In comparison, current costs for existing, conventional, major water supplies range from $0.40 (Seattle) to $1.15 (Everett) per 1,000 gallons.

The costs involved in desalination processes decrease as plant sizes increase, as shown in Attachment B. However, as seen in Attachment C, the costs shown are theoretical, since no plants larger than 3 MGD are operating in the United States.

With future water demand forecasts for East King County increasing in the range of 100 MGD, the technology for large-scale seawater desalination does not appear to be feasible at this time.

INSTITUTIONAL/PERMIT CONSIDERATIONS:

- o Salinity of raw water
- o Government approval
- o Environmental Impact Statement

FACILITY/FEASIBILITY CONSIDERATIONS:

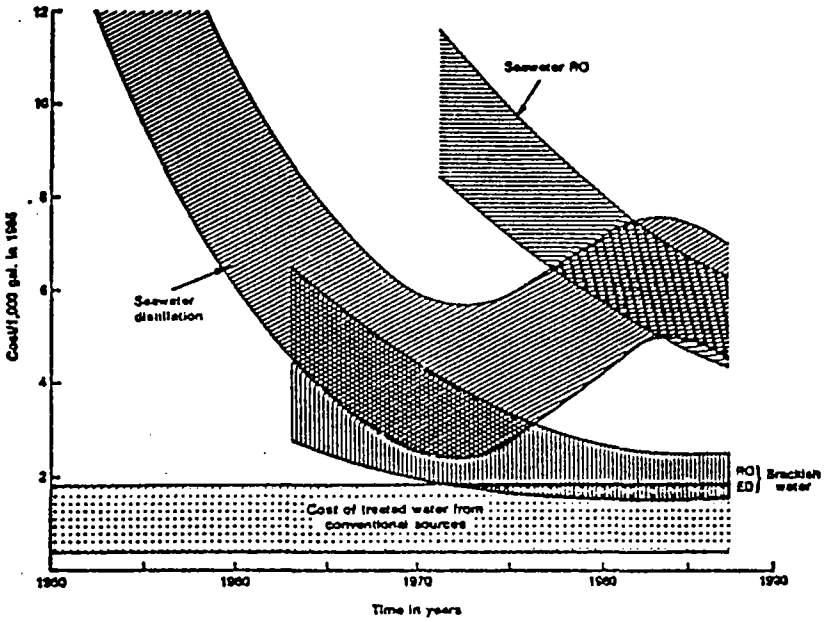
- o Location of a new plant
- o Product water feed to municipal system
- o Energy source

PRELIMINARY FINDING:

Further consideration of this concept appears to be unwarranted.

ATTACHMENT A

Approximate Desalination Costs

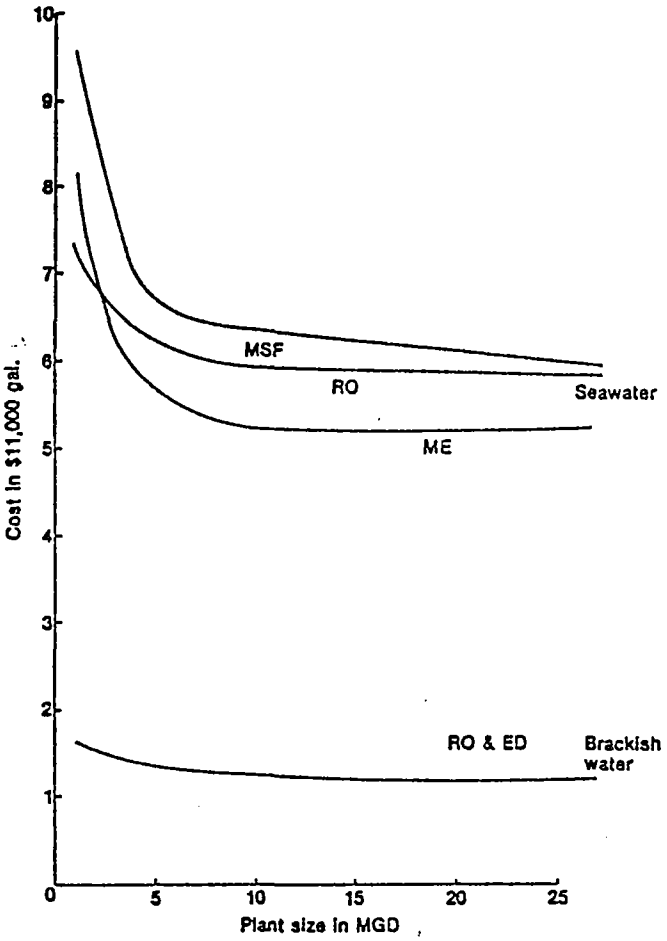


Desalination costs (including capital and operating costs) for distillation and RO over the last 40 years for plants producing 1 mgd to 5 mgd of "polished" water ready to drink. Costs may be higher than the curves indicate when desalination equipment is not operated efficiently. The increasing distillation costs during the 1970s primarily reflect rising capital and energy costs.

SOURCE: Lamb, 1962; U.S. Office of Saline Water, 1971; Koelzer, 1972; U.S. Bureau of Reclamation, 1972; Robinson et al., 1983; Schroeder, 1978; U.S. General Accounting Office, 1979; Toups, 1982; Reed, 1982; Bechtel Group, 1983; United Nations, 1985; Leitner, 1987 (WDR), and discussions with desalination experts. (See Bibliography.)

ATTACHMENT B

Desalination Costs v. Plant Size



This graph shows how the cost of "polished" product water decreases with size of plant for all desalination processes. Although it is also clear that the costs of desalinating seawater are about 5 times comparable costs for brackish water, this graph should not be used as evidence that one desalination technique is more cost effective than another for seawater and brackish water.

SOURCE: S.A. Reed, "Desalting Seawater and Brackish Water: 1981 Cost Update," DE82020482, ORNL/ TM-8191, Office of Water Research and Technology, Washington, DC, August 1982; and United Nations, "Progress Report on the International Drinking Water Supply and Sanitation Decade," 1985.

ATTACHMENT C

Present Desalination Costs in the United States

	Plant size (mgd)	Overall cost (1985 dollars/1,000 gal.)
Brackish water:		
Reverse osmosis ...	1	1.67
	3	1.41
	5	1.33
	10	1.23
	25	1.21
Electrodialysis	1	1.72
(reversing)	5	1.47
	10	1.37
	25	1.26
Seawater:		
Distillation		
Multi-stage flash .	1[a]	9.73
	5[a]	6.78
	10[a]	6.50
	25[a]	6.10[b]
Multiple-effect ...	1	8.31
	5[a]	5.70
	10[a]	5.36
	25[a]	5.36[b]
Reverse osmosis ...	0.01	13.42
	0.1	9.88
	1	7.40
	3	6.64
	5[a]	6.36
	10[a]	6.03[c]
	25[a]	5.96[c]

[a]theoretical costs since no plants of this size are operating in the United States
[b]approximated from Reed (57).
[c]extrapolated cost

SOURCE: United Nations, "The Use of Nonconventional Water Resources in Developing Countries," (77); adopted from Reed, S.A., "Desalting Seawater and Brackish Water: 1981 Cost Update," (57).

APPENDIX K

REPORT - EAST KING COUNTY REGIONAL WATER STUDY, GROUNDWATER SUPPLY ASSESSMENT

Prepared By:

Carr/Associates and
Pacific Groundwater Group

EAST KING COUNTY REGIONAL WATER STUDY
GROUNDWATER SUPPLY ASSESSMENT

I. INTRODUCTION

I.A Summary

The most productive aquifers in East King County occur within highly permeable sand and gravel outwash deposits. Examples include Renton, Cedar Falls, Issaquah, Redmond, Tolt Delta, and Fall City aquifer systems. These aquifers are relatively shallow and typically occur in proximity to surface water features such as streams, lakes and wetlands. Their productivity is due in part to the abundant recharge which occurs from both surrounding uplands as well as from induced recharge from the surface water system. Extensive development of these aquifers could result in some adverse impact to surface water features. In addition, some of these aquifer systems are susceptible to land use impacts given the high permeability of the overlying soils and the limited depth to water. Expanded use of these systems will require that appropriate management strategies be employed to assure that the quantity and quality of the resource is protected.

The deeper aquifer systems are generally less productive than the shallow systems. In addition these systems are generally more difficult to characterize given the lack of deep subsurface information. Overlying low permeability zones typically limit the amount of recharge to the deeper aquifer systems. In addition, the low permeability zones tend to restrict the downward migration of contaminants. The deeper systems are generally less coupled to surface water features. Thus, groundwater development from these zones will result in less overall impact to the hydrologic system. Deep aquifer systems have been identified within the Sammamish Plateau, Snoqualmie Flats, Kirkland, and Snoqualmie Falls area and likely occur within many other areas of East King County.

I.B. Study Objectives

The objectives of the groundwater supply assessment were as follows:

- Identify areas which may be capable of meeting regional water supply needs;
- Evaluate the potential well and aquifer yield of the groundwater supply areas;
- Identify possible constraints on increased groundwater development including limitations on natural recharge and impacts to surface water features such as streams, wetlands, and lakes;
- Assess the general vulnerability of the aquifer to land use impacts;
- Identify the general feasibility of using artificial recharge technology within the water supply areas;

- o Identify possible water quality treatment concerns regarding iron and manganese;
- o Assess probable development costs.

I.C. Methods and Approach

This assessment was cursory in nature and intended to provide an overall screening of the major groundwater supply areas within East King County. The approach to assessing the groundwater development potential of the East King County area was restricted to evaluating existing data from consultant reports, WDOE well logs, and Water Supply Bulletin No. 20 (Liesch, et.al, 1963). A listing of consultant reports and other pertinent hydrogeologic references are presented within the bibliography.

Data for selected wells were tabulated (Appendix A) and plotted onto a base map of the project area (Exhibit 1) in order to assess the general distribution of aquifer occurrence and productivity. The well summary table includes information such as well location, ownership, elevation, depth, depth of producing zone, static water level depth, specific capacity data, and potential as well as installed well yield. Surficial geologic maps were used in conjunction with well information to identify the occurrence of shallow recessional outwash aquifers which tend to be relatively productive. Potential water supply areas were then identified based on the hydrogeologic data summarized within existing reports, the surficial geologic maps, and the well information contained within Appendix A.

The water supply areas were divided into two categories (regional and subregional) depending upon their groundwater development potential. The regional water supply areas include aquifer systems where individual well yields would exceed 700 gpm (1.0 mgd) and the total sustainable yield would be in excess of 5.0 mgd. The subregional water supply areas include aquifer systems where individual well yields would range between 300 and 700 gpm and the total sustainable yield of the system would be less than 5.0 mgd. The regional aquifer systems would in general be capable of meeting regional water supply needs whereas the subregional aquifer systems would be of importance to providing local water supply needs.

A total of 14 water supply aquifer areas were identified within East King County including seven regional systems and seven subregional systems. Many other aquifer systems likely occur within the planning area and will be identified as additional exploration and testing takes place.

Because much of East King County is undeveloped, there are large areas where very few wells have been drilled and tested. It is likely that one or more unexplored areas could be capable of providing significant regional water supplies to the area. The water supply potential of many areas such as the Tolt Delta, Fall City, and other areas that lie east of North Bend appear to be quite promising. However, exploratory drilling and testing will be required to more fully quantify their development potential.

I.D Water Supply Evaluation Matrix

A water supply evaluation matrix was prepared in order to more easily present and compare the various development characteristics of each of the water supply areas. The water supply evaluation matrix is presented in Table 1. The following provides a brief discussion of each of the matrix elements:

- Aquifer Occurrence - This matrix element provides an estimate of the aquifer depth of occurrence below ground surface. An aquifer's depth has significance relative to its recharge characteristics, potential development impacts, aquifer vulnerability, and cost of development.

- Potential Well Yield - This matrix element provides an estimated range in well yield for properly designed and developed wells. The potential well yield was computed as the product of the specific capacity and 2/3 of the available drawdown. The estimates assume that drawdown would not exceed 100 feet.

- Aquifer Yield - This matrix element provides an estimate of the total yield of the aquifer. The yield estimates for some systems such as Renton, Redmond, Issaquah, and Cedar Falls are based in part on modeling investigations and historical monitoring of system performance under groundwater development. For other systems such as Tolt Delta, Fall City, and Upper Tolt River where limited data are available, the yield of the system was evaluated in terms of the yield characteristics of similar hydrogeologic environments. Continuous withdrawal and peaking withdrawal estimates were identified for the regional supply areas. The continuous estimates represent the potential rate of withdrawal that could be developed on a sustained basis without producing significant long-term water level declines. The peaking supply estimates represent the potential yield of the system over short term high demand periods of one to three months.

- Existing Development - This matrix element provides an estimate of existing groundwater withdrawal from the water supply area. Groundwater withdrawal was estimated from a water use inventory of the major water purveyors. The water use estimates reflect average rates of groundwater withdrawal. Water usage was not tabulated for the subregional supply areas.

- Available Development - This matrix element provides an estimate of the amount of groundwater that is potentially available for development. The estimate generally represents the difference between the total continuous aquifer yield and existing development. In the case of Cedar Falls, the estimate represents the potential peaking yield of the aquifer.

- Recharge Characteristics - This matrix element provides a qualitative estimate of the overall recharge to the water supply area. Shallow aquifer systems that occur within valley discharge areas were considered to have a high recharge potential. Deep aquifer systems that occur beneath upland areas were considered to have low recharge potential. The productivity of the water supply

areas will be a function of the areas recharge characteristics. Areas with high recharge will generally be able to sustain larger rates of development than areas with low recharge.

- Potential Development Impacts - This matrix element provides a qualitative measure of the degree to which groundwater development may impact surface water features. Groundwater development from shallow unconfined aquifer systems that lie in proximity to streams, lakes, and wetlands have a high potential for impact (some measurable reduction in stream flow may occur from development). Conversely, development from deep confined aquifer systems that occur at some distances from surface water features will have a lower potential for impact (no measurable reduction in streamflow will likely occur). Impacts are of primary concern in areas where there are instream flow requirements or stream closures. In most cases, groundwater development can be managed so as to minimize the level of impact to surface water features.

- Aquifer Vulnerability - This matrix element provides a qualitative measure of the aquifer systems susceptibility to land use impacts. Land use impacts include degradation of water quality and reduction in recharge associated with impervious surfaces. Shallow unconfined aquifers that lie in proximity to urbanized areas would be most vulnerable to land use impacts. Deep confined aquifers which have overlying low permeable units would generally have a low vulnerability.

- Artificial Recharge Potential - The matrix element provides a qualitative measure of the potential for augmenting aquifer yield through artificial recharge. The feasibility of artificially recharging aquifers is a function of many variables including availability of recharge water, water chemistry compatibility, and aquifer characteristics. To be suitable for recharge, an aquifer must be able to effectively transmit and store groundwater. Low permeability aquifers will not be able to efficiently transfer water away from recharge centers. Shallow water table aquifers that underlie urbanized areas would be generally ineffective in storing recharge water because of the potential for flooding structures. Aquifers that lie in proximity to discharge areas may not be suitable for recharge given their limited capacity to contain recharge water.

- Fe & Mn Quality - This matrix element provides a qualitative measure of anticipated aquifer water quality as it relates to iron and manganese. Iron and manganese concentrations within Puget Lowland aquifers tends to be highly variable and difficult to predict. The probability of encountering iron and manganese concentrations was rated as "high" for areas where a large percentage of wells exceed State Drinking Water Standards (0.3 mg/l and 0.05 mg/l for iron and manganese, respectively). A "low" rating was given to areas where most wells show concentrations less than the State standards. Areas having limited data or concentrations near the State standard were given a "moderate" probability. Elevated iron and manganese concentrations can in many cases be effectively treated through blending with higher quality sources or using oxidizing agents.

II. REGIONAL WATER SUPPLY AREAS

II.A Renton Supply Area

Two aquifer systems were identified within the lower Ceder River Valley near Renton (Exhibit 1). A shallow water table aquifer occurs at depths of between 40 and 100 feet beneath the City of Renton. A deeper confined aquifer system also locally occurs beneath the Maplewood golf course at depths of between 100 and 300 feet. Both aquifers are quite productive with individual well yields that commonly exceed 2,000 gpm. The total yield of the aquifers is estimated to range between 10 and 20 mgd. The estimated sustainable yield would be approximately 10 to 15 mgd and short term peaking yield would be between 15 and 20 mgd.

Recharge to the system is quite high and includes underflow from the surrounding uplands, direct recharge to the valley floor, as well as some induced recharge from the Cedar River.

Potential development impacts to the Cedar River are considered to be quite high for the shallow aquifer given the probable hydraulic coupling between the surface and groundwater systems. The development impacts associated with the deeper aquifer are considered to be more moderate given its depth of occurrence. Recharge to the deeper aquifer appears to be dominated by upland underflow.

The shallow aquifer is very susceptible to land use impacts given the high permeability of the overlying soils, the limited depth to water, and the existence of several sources of contamination. The deeper aquifer has a low to moderate susceptibility to land use impacts given its depth of occurrence, the presence of overlying lower permeability zones, and an upward flow gradient.

The potential for artificial recharge is considered to be low given the shallow water table conditions and the proximity of the Cedar River.

Iron and manganese concentrations within the shallow aquifer are generally quite low. Organic contamination poses the most significant threat to water quality. Groundwater contamination has been documented within the main well field area on two occasions (i.e. petroleum hydrocarbons and chlorinated organics). Iron and manganese concentrations within the deeper aquifer are somewhat problematic. Water quality samples from the Maplewood golf course well show concentration of 0.47 and 0.09 mg/l for iron and manganese, respectively. The deeper aquifer also has somewhat elevated hydrogen sulfide levels. Renton anticipates that existing iron and manganese problems can be addressed through blending with higher quality sources. More elaborate treatment may be required if additional supplies are developed from the deeper aquifer.

II.B Cedar Falls Supply Area

The Cedar Falls aquifer system lies downgradient of the Masonry Pool within the upper Cedar River area (Exhibit 1). The aquifer occurs within highly permeable sand, gravel, and cobble outwash deposits. Seepage from the north bank of the Masonry Pool provides a major source of water to the aquifer. The average historical rate of seepage loss is estimated to be approximately 185 cubic feet per second (cfs), or approximately 37 percent of the total flow of the Cedar River at the Masonry Dam.

The seepage losses serves to maintain flows and lake levels in many surface water features that exist downgradient of the Masonry Pool (Boxley Creek, Canyon Creek, Hobo Springs, Rattlesnake Lake, etc.). A portion of the seepage is returned to the Snoqualmie River via Boxley Creek and subsurface return flow north of Rattlesnake Lake (i.e. approximately 30 percent). This seepage is effectively lost from the Cedar River system. Another minor component of seepage returns to the Cedar River via Canyon Creek (approximately 5-10 percent). The largest component of seepage returns to the Cedar River near Talyor Creek via a subsurface return flow channel that lies south of Rattlesnake Lake (approximately 60-65 percent).

Numerous test/exploratory wells have been installed within the Cedar Falls area as apart of previous seepage and embankment stability studies. Test wells north and south of Rattlesnake Lake indicate that the aquifer is capable of individual well yields that exceed 2,500 gpm. The aquifer within this area occurs at depths of 50 to 300 feet.

Any groundwater development from the Cedar Falls aquifer system would likely have some impact on existing surface water features as well as the instream flows within the Cedar River. Groundwater development would have to be restricted to periods of time when reduction in seepage underflow would not produce significant impacts to the surface water system. A six-week to two-month lag exists between changes in seepage inflow at the Masonry Pool and a subsurface seepage return flow response north and south of Rattlesnake Lake (note however that seepage return to Canyon Creek and Upper Boxley Creek are only lagged approximately 10 and 20 days behind seepage inflow at the Masonry Pool). The timing of the subsurface seepage return flow response may allow development of groundwater supplies for peak demand periods without imposing significant adverse impacts on the surface water system.

Given the high rates of underflow through the Cedar Falls aquifer, we estimated that between 10 and 15 mgd could be developed as a short term peaking supply. Detailed analysis would be required to evaluate the impacts associated with this level of withdrawal.

The vulnerability of the aquifer to land use impacts is considered to be quite low because most of the aquifer lies within a protected watershed area.

The potential for artificial recharge is considered to be high given the regulation of the Masonry Pool and seepage inflow to the aquifer (i.e. the existing system is effectively controlled through artificial recharge).

Water quality is of a generally good because the aquifer is recharged from pristine surface water runoff from the upper Cedar watershed. The high seepage velocities within the aquifer provide for short residence times in which groundwater may react with the surrounding geologic materials to alter its chemistry. Iron and manganese concentrations are generally well below State standards.

II.C Redmond Supply Area

A shallow relatively productive water table aquifer occurs within permeable sand and gravel outwash deposits beneath the Redmond area (Exhibit 1). The aquifer occurs at depths of between 20 and 70 feet. Potential well yields range from 500 to over 2,500 gpm.

The City of Redmond water supply is currently obtained from this aquifer. The total yield of the aquifer is estimated to be approximately 5 to 10 mgd. The estimated sustainable yield would be approximately 5 mgd and short term peaking yield would be between 5 and 10 mgd. The available drawdown for wells is quite limited given the limited thickness of the aquifer. Thus, the overall yield of the system will be somewhat susceptible to seasonal water level fluctuations and drought conditions.

Recharge to the system is considered to be moderate to high and includes underflow from the surrounding uplands, direct recharge to the valley floor, and potentially some induced recharge from Evans Creek and the Sammamish River.

The potential for groundwater development impacts is considered to be moderate to high given the aquifer's shallow occurrence and the probable hydraulic coupling between the surface and groundwater systems. The aquifer lies within the Sammamish River drainage system which is currently closed to any additional withdrawal.

The aquifer is very susceptible to land use impacts given the high permeability of the overlying soils, the limited depth to water, and the existence of several sources of contamination within the area.

The potential for artificial recharge is considered to be low given the shallow water table conditions and the proximity of Evans Creek and the Sammamish River.

The on-going Ground Water Management Program studies within the Redmond area will serve to provide additional data regarding the character of the aquifer system and the potential for additional water supply development.

II.D Issaquah Water Supply Area

A productive aquifer system has been identified in the lower part of Issaquah Creek (Exhibit 1). The broad valley, located between the City of Issaquah and Lake

Sammamish, contains a very permeable sequence of deltaic and alluvial sand and gravel deposits.

Three aquifer zones have been identified. The shallow aquifer zone, including sediments to a depth of 100 feet, responds as a water table aquifer. An intermediate aquifer underlies the shallow aquifer to a depth of 200 feet. This aquifer is composed of more permeable sand and gravel deposits. Water levels within this zone are near or slightly above ground surface. A deep aquifer zone composed of fine sand has been identified between depths of 300 and 450 feet at one well site. Water levels in the deep aquifer are also near ground surface. Table 1 provides an overall characterization of the upper two aquifer zones.

Production wells in the uppermost 200 feet of sediments are currently producing between 2,000 and 3,000 gpm. The deep sand aquifer is reportedly capable of 1,000 gpm. The continuous yield of the aquifer system is believed to be at least 15 mgd. The peak yield could be as high as 25 mgd. At the present time, the aquifer system is recharged from the east and south. Extended high volume withdrawals could reverse the gradient and eventually induce recharge from Lake Sammamish.

Large continuous withdrawals could eventually impact Issaquah Creek. A hydraulic connection has been noted between the confined 200 foot aquifer and the shallow aquifer.

The shallow aquifer is susceptible to contamination from surface sources. The hydraulic connection between the intermediate and shallow zones coupled with the rapid growth of commercial development renders both aquifers quite susceptible to contamination from surface sources.

The potential for artificial recharge in the Issaquah Creek Delta is low. High groundwater levels offer very little opportunity to store significant quantities of water.

Analyses of water quality samples in the Issaquah Delta area have shown measurable concentrations of manganese. While measured concentrations have not exceeded State limits of 0.05 mg/l, extended pumping or new wells at untested locations could result in higher concentrations.

II.E Tolt Delta Aquifer

The Tolt Delta aquifer occurs in vicinity of the Town of Carnation near the confluence of the Tolt and Snoqualmie River drainages (Exhibit 1). The aquifer is largely untested and unexplored. Available records from the City of Carnation's well and one private well indicate the presence of a permeable aquifer in the deltaic and alluvial sediments that extend to approximately 100 feet.

Based on the yield potential of hydrogeologic systems in similar environments (i.e. Renton, Issaquah, etc.), we anticipate that the aquifer may be able to sustain individual

well yields of 1,000 gpm or more and a total continuous withdrawal of 5 to 10 mgd. Peak withdrawals of 15 mgd or more may be possible, but expanded estimates are considered inappropriate without further exploration and testing. Recharge to the system is quite high and includes underflow from the surrounding uplands as well as direct recharge to the valley floor. Induced recharge from the Tolt River could also potentially provide a source of water to the system under groundwater development.

Development of a well field in the Tolt Delta area could potentially impact the instream flows of the Tolt River. Impacts to existing groundwater users would be minimal.

The aquifer may be susceptible to contamination from surface sources. There are presently very few potential sources of contamination within the area. The most significant source is the City of Carnation landfill which lies just south of the aquifer.

Because of the relatively high water table and the proximity of the Tolt River, the potential for artificial recharge is believed to be relatively low.

Water quality data for the area are quite limited. It is possible that iron and/or manganese could be a problem at some locations in the aquifer.

II.F Fall City Water Supply Area

The Fall City area is underlain by two or more productive aquifers (Exhibit 1). A shallow aquifer extends to a depth of approximately 200 feet and is composed of permeable deltaic and alluvial sand and gravel deposits of the Raging River. A deeper aquifer occurs at depths of 550 to 600 feet. Potential well yields for both aquifers should exceed 1,000 gpm. The total continuous aquifer yield for both systems is estimated to be approximately 5 mgd. During peak periods, the aquifer system could yield as much as 10 mgd.

Recharge to the system is quite high and includes underflow from the surrounding uplands as well as direct recharge to the valley floor. Induced recharge from the Raging and Snoqualmie Rivers could also potentially provide a source of water to the system under groundwater development. Recharge to the deep aquifer is probably quite low.

Withdrawals from a well field in the area of Fall City could adversely impact instream flow and some existing groundwater users. Potential impacts associated with development of the deeper aquifer would be primarily limited to interference effects upon existing water users.

The shallow aquifer, particularly the permeable zones at depths of less than 100 feet, would be susceptible to surface sources of contamination. However, the aquifer recharge areas are not heavily developed and potential groundwater contamination should not be considered a serious threat.

The potential for artificial recharge is considered low because of high groundwater levels

and the proximity of hydraulically connected surface water sources which would limit any containment of artificial recharge. The deep aquifer may have some potential for artificial recharge.

II.G Upper Tolt River Supply Area

The Upper Tolt River water supply aquifer occurs within permeable outwash deposits that lie between the Tolt water supply reservoir and regulating basin (Exhibit 1). The existence of the Tolt water supply pipeline and other future water supply transmission facilities that may be installed as part of developing the North Fork Tolt River source enhances the economic feasibility of groundwater development within this area.

The Seattle Water Department is currently conducting hydrogeologic studies of the area. The studies include reconnaissance geologic mapping, geophysical surveys, exploratory drilling, and testing.

The aquifer occurs within outwash sediments that have been deposited over a channelized bedrock surface. The aquifer appears to be somewhat discontinuous in nature. The geophysical surveys, exploratory drilling and testing suggest that the aquifer may be confined to localized bedrock trough areas. Bedrock features may act to limit hydraulic coupling between the groundwater system and the Tolt River.

Potential short term well yields may exceed 2,500 gpm. However, the bounded nature of the aquifer system may restrict longer term well yields to approximately 1,000 gpm.

The total sustainable aquifer yield has been estimated at 5 to 6 mgd (Hart Crowser, 1988). Larger peaking supplies would only be possible if the aquifer has continuity with surface water system.

Recharge to the system is considered to be moderate to low because the aquifer is believed to have limited areal extent and limited continuity with surface water features.

The vulnerability of the aquifer to potential contamination is considered to be low because the system lies entirely within a restricted forest management area. Application of forest chemicals within the recharge area would need to be closely monitored.

The potential for artificial recharge is considered to be moderate. The Tolt water supply pipeline would provide a cost effective means of providing a recharge source to the area. The aquifer may also be capable of locally storing significant quantities of water because the water table is relatively deep. The proximity of the aquifer to the Tolt River may limit the capacity of the system to contain the recharge water.

The general water chemistry within the upper Tolt area appears to be similar to the groundwater chemistry which occurs within the Cedar Falls area. Water quality analysis of samples collected during aquifer testing indicate that water quality is quite good with all primary and secondary parameters lying well below State Drinking Water Standards.

III. SUBREGIONAL WATER SUPPLY AREAS

The overall productivity of the subregional water supply areas is significantly lower than that of the regional supply areas. However, the subregional systems represent important sources of water which can be developed to meet local supply needs. In addition, any demand which is met through subregional source development, lessens the overall regional demand within the supply area.

Subregional supply systems have been identified within the Sammamish Plateau, Snoqualmie Flats, Kirkland, Mirrormont, North Redmond, Evans Creek, and Snoqualmie Falls areas. Other subregional systems likely occur within many other areas of East King County. The occurrence and characteristics of these systems will likely be delineated in more detail as additional deep exploratory drilling and testing occurs.

The characteristics of the seven subregional water supply areas identified during the study are presented within Table 1.

The subregional aquifer systems occur primarily within older glacial and interglacial deposits which underlie the upland areas. The aquifers tend to be more discontinuous in nature than the regional systems and occur at greater depths.

The aquifers typically have individual well yields that range between 300 and 500 gpm and an overall aquifer yield of generally less than 5 mgd.

Recharge to the subregional aquifers tends to be much lower than the regional systems because the aquifers are generally deeper and have overlying low permeability zones that restrict the downward movement of recharge. In addition, the aquifers are generally less coupled to surface water features which could act as a source of water.

The subregional aquifers tend to be less susceptible to land use impacts because overlying low permeability zones tend to restrict the downward migration of contaminants.

The subregional systems are generally less coupled to surface water features. Thus, groundwater development from these zones will result in less overall impact to the hydrologic system.

The water quality of the subregional systems is highly variable in nature. Elevated iron and manganese concentrations have been reported for many of the older water supply wells which were previously operated by the Cities of Bellevue and Kirkland. Iron and manganese will be influenced to a large degree by the chemical makeup of the soil and redox potential of the local groundwater regime. However, to date there is no effective means of predicting the occurrence of these constituents. For this analysis, there was no attempt to assess the probable occurrence of iron and manganese within the subregional supply areas.

IV. WATER SUPPLY AREAS OF UNKNOWN POTENTIAL

Many other significant groundwater supply systems likely occur within the East King County area. Relatively little hydrogeologic data is available outside the major existing supply areas.

The unconsolidated deposits within the project area locally extend to depths of approximately 1,000 to 1,500 feet (Hall and Othberg, 1974). To date only a small portion of these deposits have been explored. Deeper exploration will help identify the possible existence of aquifers that may be of regional or subregional significance.

Three promising water supply areas that were identified during the course of this investigation are shown on Exhibit 1 (see "Aquifer Systems with Unknown Water Supply Potential"). The first area lies upstream of North Bend on the North Fork of the Snoqualmie River. The second area lies upstream of North Bend on the South Fork of the Snoqualmie River. Permeable outwash and alluvial deposits occur within both areas. The hydrogeologic setting for both of these areas are similar to that found within Renton, Issaquah, and other highly productive areas. The third area lies immediately south of Mirrormont in Section 36, Township 23N, Range 6E.

V. WELL DEVELOPMENT COSTS

This discussion examines the costs of installing and equipping production wells in East King County. Important factors contributing to cost include:

- Drilling and well installation,
- Pump and well head equipment, and
- Engineering.

Exhibit 2 illustrates the relationship between well depth and cost for installation of 1 mgd water supply wells. As shown, production wells have certain fixed costs that are not depth dependent. Pump and well head equipment includes the pump house and controls and valves and telemetry needed to operate the system. Engineering costs include professional services to design the pumping facilities and hydrogeologic services to design, supervise, and test the well.

In East King County, 1 mgd water supply wells would probably have an average depth no greater than 300 feet. Pumping lift requirements and depth setting are expected to be on the order of 150 feet below ground surface. It is also assumed that most installations would lie within 1,000 feet of existing power lines.

Based on these assumptions, the cost of an average 1 mgd production well is estimated as follows:

1.	Well installation and completion (Exhibit 2)	$ 65,000
2.	Pump and well head equipment	$125,000
3.	Engineering	$ 35,000
Total Costs		$225,000

In addition to these costs, it is appropriate to consider the cost of property acquisition. A square acre parcel is usually required for production well sites. Installation of multiple wells as a regional water supply source obviously requires larger acreages. Aquifer characteristics which would support a well field with spacings of 500 feet between wells, would require about 20 acres, assuming six wells in the well field.

Finally, some candidates for consideration as regional supply sites will require extensive test drilling to determine the extent and capacity of the resource. Within the Tolt Delta area, most test drilling will be relatively shallow. The test drilling program should include at least 2 large diameter test/production wells. These wells could be tested at high capacities and converted for permanent use in the well field network. The other test wells would be smaller diameter and used to primarily define the hydrogeology and monitor water levels during testing.

The cost of the test/production wells would be in the low range of the envelope shown in Exhibit 2. Drilling smaller diameter test wells would be about 1/3 to 1/2 of the costs illustrated in Exhibit 2.

At other sites where additional withdrawals are anticipated, more monitoring wells will be needed. These wells are needed to monitor impacts on adjacent surface water features and existing supply wells as well as to provide overall management of the resource. The program should also include permanent well monitoring equipment for water level and water quality evaluation.

TABLE 1 - WATER SUPPLY EVALUATION MATRIX
EAST KING COUNTY (Regional Supply Source Areas)

WATER SUPPLY SOURCE AREAS	EVALUATION CRITERIA												
	Aquifer Occurrence (ft-bgs) (1)	Potential Well Yield (gpm) (2)	Aquifer Yield (mgd) Cont. (3)	Aquifer Yield (mgd) Peak (3)	Existing Development (mgd) (4)	Available Development (mgd) (5)	Recharge Character. (6)	Potent. Dev Impacts (7)	Aquifer Vulner. (8)	Artificial Recharge Potential (9)	Fe & Mn Quality Problems (10)	Remarks
Renton	40 - 100 100 - 300	> 2500 > 2000	8 - 10 3 - 5	10 - 15 > 5	9 0	0 - 1 3 - 5	High High	High Moderate	High Mod. - Low	Low Low	Low Mod. - High	Two subsystems; Shallow Renton aquifer and deep Maplewood aquifer. Instream flow impacts are major concern.
Cedar Falls	50 - 300	> 2500	0	10 - 15	0	10 - 15 (P)	High	High	Low	High	Low	Most all groundwater is from seepage losses from Masonry Pool. Development may adversely impact return flow.
Redmond	20 - 70	500 - > 2000	5	5 - 10	2	3	Moderate - High	Moderate - High	High	Low	Moderate	Aquifer is highly subsectible to contamination given is shallow nature and existing land use.
Issaquah	50 - 200 (shallow aquifers)	2000 - > 2500	15	15 - 25	3	12	High	Moderate ?	High	Low	Moderate	Two productive aquifers within shallow deltaic sands and and gravel deposits. A deeper aquifer may also be present.
Tolt Delta	0 - 200	> 1000	5 - 10	10 - 15	< 1	4 - 9	High	Moderate - High	Moderate	Low	Moderate	Very limited data. Hydrogeologic setting is similar to Renton and other recessional outwash aquifer systems
Fall City	50 - 200 550 - 600	1000 - 2000 > 1000	5	5 - 10	< 1	4	High Mod. - Low	Mod. - High Low	Mod. - High Low	Low Moderate	High Moderate	Two aquifers identified. Shallow recessional outwash aquifer and deep aquifer.
Upper Tolt River	200 - 400	> 2500	5	5 - 10	0	5	Mod. - Low	Mod. - Low	Low	Moderate	Low	Occurs near existing pipeline. Aquifer may be discontineous and have limited areal extent.

TABLE 1 - WATER SUPPLY EVALUATION MATRIX

EAST KING COUNTY (Subregional Supply Source Areas)

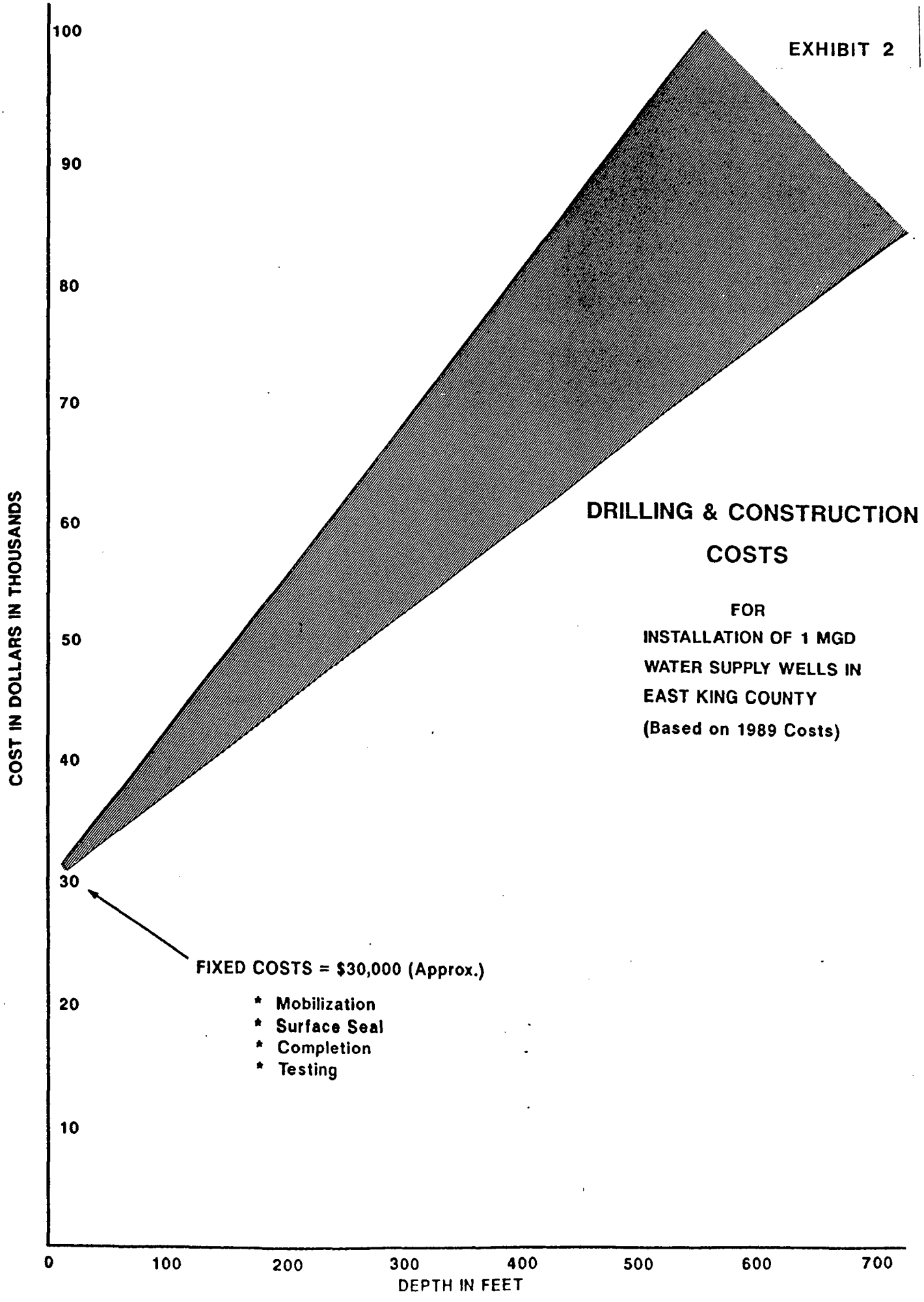
Water Supply Source Area	EVALUATION CRITERIA											Remarks
	Aquifer Occurrence (ft-bgs) (1)	Potential Well Yield (gpm) (2)	Aquifer Yield (mgd) Cont. (3)	Aquifer Yield (mgd) Peak (3)	Existing Development (mgd) (4)	Available Development (mgd) (5)	Recharge Character. (6)	Potent. Dev Impacts (7)	Aquifer Vulner. (8)	Artificial Recharge Potential (9)	Fe & Mn Quality Problems (10)	
Sammamish Plateau	50 - 150 500 - 700	500 500	< 5	?	Not Determined	Not Determined	Mod. - High Low	Mod. - High Low	Mod. - High	Low Mod. - Low	?	A shallow water table aquifer overlies a deep confined system.
Snoqualmie Flats	100 - 200 550 - 700	300 - 500 500	< 5	?	Not Determined	Not Determined	Low Low	Low Low	Mod. - Low Low	Low ?	?	Shallow aquifer with limited areal extent and deep confined aquifer with unknown continuity.
Snoqualmie Falls	500 - 550	500 - 1000	< 5	?	Not Determined	Not Determined	Low	Low	Low	?	?	Limited data available. Deep confined aquifer which may have limited extent. Shallow aquifers may also occur locally.
Mirrormont	250 - 350	500	< 5	?	Not Determined	Not Determined	Low	Low	Moderate	Mod. - Low	?	Isolated aquifer with unknown continuity and extent.
North Redmond	50 - 150	300 - 500	< 5	?	Not Determined	Not Determined	Low	Low	Moderate - High	Low	?	Isolated aquifer with unknown continuity and extent.
Evans Creek	50 - 150	500 - 1000	< 5	?	Not Determined	Not Determined	Moderate	Moderate	Moderate	Mod. - Low	?	
Kirkland	100 - 200	500	< 5	?	Not Determined	Not Determined	Moderate	Moderate	Mod. - High	Mod. - Low	?	Aquifer occurs within older unnamed gravel unit.

TABLE 1 - WATER SUPPLY EVALUATION MATRIX
EAST KING COUNTY

Notes:

(1) Approximate depth of aquifer in feet below ground surface.
(2) The estimated range in well yield for properly designed and developed wells.
(3) Estimated range in aquifer yield in million gallons per day. The estimated range in yield includes contineous and peaking supply for Regional Areas. The reader should refer to the text for clarification of these estimates.
(4) Estimated existing water useage in million gallons per day. Estimates are based on water use questionaire.
(5) The estimated groundwater available for development in million gallons per day. Reflects the difference between the estimated total yield (3) and current useage (4). Groundwater availability is based on contineous yield estimates unless otherwise noted (i.e. P for peaking).
(6) Qualitative estimate of aquifer recharge conditions (high, moderate, low).
(7) Qualitative estimate of the degree to which groundwater development may impact surface water features.
(8) Qualitative estimate of the aquifer system's susceptibility to groundwater contamination.
(9) Qualitative estimate of the potential for augumenting aquifer yield through artificial recharge.
(10) Qualitative estimate of the likelyhood of encountering problematic levels of iron and manganese.

EXHIBIT 2


100
90
80
70
60
50
40
30
20
10
COST IN DOLLARS IN THOUSANDS
0
100
200
300
400
500
600
700
DEPTH IN FEET
DRILLING & CONSTRUCTION COSTS
FOR
INSTALLATION OF 1 MGD
WATER SUPPLY WELLS IN
EAST KING COUNTY
(Based on 1989 Costs)
FIXED COSTS = $30,000 (Approx.)
* Mobilization
* Surface Seal
* Completion
* Testing

Appendix A - Summay of Selected Well Data
East King County Regional Water Study

LOCAL WELL NUMBER (1)	WELL OWNER (2)	OWNER WELL NUMBER (3)	SURFACE ELEVATION (ft-MSL) (4)	WELL DEPTH (ft) (5)	WELL DIAMETER (inches) (6)	COMPLETION DEPTH (ft) (7)	STATIC W.L. DEPTH (ft) (8)	SPECIFIC CAPACITY (gpm/ft) (9)	TEST TYPE/ DURATION (hrs) (10)	PEAK POTENT. WELL YIELD (gpm) (11)	INSTALLED CAPACITY (gpm) (12)
T22N/R7E-34M01	WA Dept of Insti.		950	405	12	396 - 432	351	17	?/2	510	400
T22N/R8E-04F01	Seattle Water	TW-2	952	322	12	110 - 312	45	157	P/24	> 2500	
T23N/R5E-17F01	City of Renton	RW-1	40	94	24	57 - 91	24	370	P/24	> 2500	2200
T23N/R5E-17F02	City of Renton	RW-2	40	75	24	51 - 70	25	420	P/24	> 2500	2200
T23N/R5E-17F03	City of Renton	RW-3	40	77	24	52 - 72	25.5	510	P/2	> 2500	2200
T23N/R5E-17F04	City of Renton	PW-8	43.15	102	24	66 - 92	22				
T23N/R5E-17G01	City of Renton	PW-9	42	116	20	65 - 105	23	34	P/24	952	
T23N/R5E-22D01	City of Renton	PW-11	79	345	16	285 - 342	10	38	P/24	> 2500	2500
T23N/R6E-23H01	Mirrormont			461	6	285 - 320	213.49	11	P/8	524	
T23N/R8E-34E01	Seattle Water	TW-1	962	190	12	122 - 184	60	96	P/24	> 2500	
T24N/R4E-12M01	Mercer Is. CWA		270	62	20	32 - 62	36	50	P/?	> 500	
T24N/R4E-25B03				128		-	60	25			
T24N/R5E-02D01	KCWD 97		300	160	12	130 - 160	101.67	11	P/?	208	
T24N/R5E-02D02	KCWD 97		300	220	18	195 - 220	101.47	10	P/?	624	
T24N/R5E-03G02	Sunset Hills		325	189		174 - 189	144	32	P/?	640	
T24N/R5E-24R02	Russell		1150	265	10	- 47					
T24N/R5E-32G01				144		-	95	20			
T24N/R6E-27D01	Lakeside S & G	S27D1				-					650
T24N/R6E-21R01	Reid Sand & Grvl	S21R1				-					500
T24N/R6E-27M01	Issaquah (City)	1-Risdon	92	200	12	82 - 97	26	86.2		> 2500	
T24N/R6E-27M02	Issaquah (City)	2-Risdon	92	200	12	62 - 97	26	86.2		2069	
T24N/R6E-28A01	Sammamish P.W.D.	Well 7		151	16	82.6 - 147	6.17	51.5	P/24	> 2500	
T24N/R6E-28A02	Sammamish P.W.D.	Well 8		190	16	105 - 179	12.6	89.9	P/8	> 2500	
T24N/R6E-10H01	Sammamish P.W.D.	Well 1	465	154	12	138 - 150	111.5	20-40		530	
T24N/R6E-11M01	Sammamish P.W.D.	Well 2	414	132	12	96 - 116	62	13-15		317	
T24N/R6E-28B01	Issaquah (City)	Well 5	60	412	16	323 - 405	7.5	7.8	P/24	780	
T24N/R6E-28J01	Darigold		80			-		40			

Appendix A - Summay of Selected Well Data
East King County Regional Water Study

LOCAL WELL NUMBER (1)	WELL OWNER (2)	OWNER WELL NUMBER (3)	SURFACE ELEVATION (ft-MSL) (4)	WELL DEPTH (ft) (5)	WELL DIAMETER (inches) (6)	COMPLETION DEPTH (ft) (7)	STATIC W.L. DEPTH (ft) (8)	SPECIFIC CAPACITY (gpm/ft) (9)	TEST TYPE/ DURATION (hrs) (10)	PEAK POTENT. WELL YIELD (gpm) (11)	INSTALLED CAPACITY (gpm) (12)
T24N/R7E-15A01	King Co. Parks		90	46	10	43 - 46	14	70	P/3	1353	
T24N/R7E-15F01	Fall City Water		110	207	18	191 - 206	26	4	P/168		
T24N/R7E-15F02	Fall City	Well 2	100	177	10	161 - 177	32	23	P/?	1978	
T24N/R7E-22B01	Heathercrest, Inc.		310	567	8	561 - 567	194	33	P/6	> 2500	
T24N/R7E-26N01	Lk Alice Water		876	292	6	287 - 291	244	17	P/24	487	
T24N/R8E-32F01	Town of Snoqualmie	Well 1	410	544	12	516 - 539	40	10		1000	550
T25N/R5E-02K01	City of Redmond	Well 4	27	40	12	23 - 40	6	75	P/16	850	750
T25N/R5E-02R01	Doctor's Clinic		33	38	8	33 - 38	8	27	P/6	450	
T25N/R5E-05H01	City of Kirkland		243	200	12	157 - 200	82.65	7.1	P/?	352	
T25N/R5E-05R01	City of Kirkland		220	204	12	161 - 204	70.54	20.5	P/?	1236	
T25N/R5E-05R02	City of Kirkland		220	273	12	155 - 204	9	5.5		550	
T25N/R5E-12A01	City of Redmond	Well 5	44	41	20	20 - 35	6	500	P/24	> 2500	1500
T25N/R5E-12C01	City of Redmond	Well 1	49	56	18	51 - 56	16	100	P/4	2333	700
T25N/R5E-12C02	City of Redmond	Well 2	49	72	36	53 - 68	19	20	P/?	453	450
T25N/R5E-12J01	Anderson		40	41	6	36 - 41	16	25	B/2	333	
T25N/R5E-17C03	Lake WA Shipyard		245	115	10	105 - 115	39	13	P/?	572	
T25N/R5E-17C04	Lake WA Shipyard		230	102	10	-					
T25N/R5E-17Q02	Kirkland (City)	Well 4	270	131	10	111 - 131					
T25N/R5E-17R02	Kirkland (City)		218	134	8	-	88				
T25N/R5E-20C01	KCWD 68-Bellevue	Well 3	45	244	12	60 - 244	37	10	P/1	153	
T25N/R5E-20Q02	Scheafer, L.R.		150	65	8	55 - 65	29.97	55	P/4	918	
T25N/R5E-29P01	KCWD 68-Bellevue		170	1125	24	247 -1115	120	0.8	P/0.5	68	
T25N/R5E-32N01	KCWD 68-Bellevue	Well 2	25	1055	12	270 - 475	5	7	P/2	700	
T25N/R6E-06E01	City of Redmond	Well 3	67	73	16	36 - 46	20	41	P/	437	350
T25N/R6E-16H01	Union Hill W.A.			238	16	210 - 236	14	16	P/24	1600	
T25N/R6E-16J01	Dyke		200	237	16	185 - 236	20	6	P/2	600	
T25N/R6E-21R01	Sahalee Water Co	Well 4	380	388	16	353 - 383	272.85	13.8	P/16.6	737	

Appendix A - Summay of Selected Well Data
East King County Regional Water Study

LOCAL WELL NUMBER (1)	WELL OWNER (2)	OWNER WELL NUMBER (3)	SURFACE ELEVATION (ft-MSL) (4)	WELL DEPTH (ft) (5)	WELL DIAMETER (inches) (6)	COMPLETION DEPTH (ft) (7)	STATIC W.L. DEPTH (ft) (8)	SPECIFIC CAPACITY (gpm/ft) (9)	TEST TYPE/ DURATION (hrs) (10)	PEAK POTENT. WELL YIELD (gpm) (11)	INSTALLED CAPACITY (gpm) (12)
T25N/R6E-21Q01	Sahalee Water Co	Well 3	461.5	692	12	610 - 660	346.5	4.7	P/16.4	470	
T25N/R6E-21C01	NE Sammamish WD	Well 2R	160	187	16	120 - 185	71	9.7	P/24	317	
T25N/R6E-32L01	Sammamish P.W.D.	Well 6	232	366	12	340 - 360	112.1	4.8		480	
T25N/R6E-34E01	Sammamish P.W.D.	Well 4	375	717	12	697 - 717	175	8.1		810	
T25N/R6E-34M01	Sammamish P.W.D.	Well 5	714	714	12	655 - 713	195.43	6.1		610	
T25N/R7E-06G01	L. McLellan		50	500	6	470 - 490	flows	1.6		160	
T25N/R7E-06R01	Carnation Farms	Well 1	63	630	16	567 - 612	flows				
T25N/R7E-08D01	Carnation Farms	Well 2	140	161	12	129 - 159	11	9.6	P/24	755	
T25N/R7E-08D02	Carnation Farms	Well 3	144	729	12	694 - 719	58.11	4.25	P/24	425	
T25N/R7E-15M01	Carnation (City)	Well 1	85	101	10	91 - 101	26	45	P/5	1950	
T26N/R4E-03Q05	KCWD 83		280	186	8	-		8	P/4		
T26N/R4E-16Q01	Acacia Mes. Park		250	287	10	125 - 275		4	P/?		
T26N/R4E-30C01	Evergreen Cem.		395	188	10	155 - 185	82	2.5	P/4	122	
T26N/R4E-30F01	Evergreen Cem.		365	185	18	165 - 185	55.35	7	P/?	512	
T26N/R4E-30K01	Washelli Cem.		330	260	12	-	24	8	P/0.5		
T26N/R5E-05E01	Bothell Water		245	224	8	200 - 220	120	11		587	
T26N/R5E-18E01	Nielson		400	105	6	-	28	17	/2		
T26N/R5E-25D03	Magruder		150	75	6	72 - 75	24	35	/1	1120	
T26N/R5E-25E01	Heard		200	66	6	66 - 66	20	30	A/1	920	
T26N/R5E-25E02	Gunderson		300	77	6	77 - 77	37	70	A/1	1867	
T26N/R5E-25P02	Miller		320	130	6	122 - 130	77	10	B/2	300	
T26N/R5E-32R01	City of Kirkland	Well 8	325	309	12	-	178	8	P/4.5		
T26N/R5E-34Q02	Aries Gardens		40	24	30	-	7	70	P/5		
T26N/R5E-36B01	O'Leary		200	86	6	77 - 86	15	54	B/1	2232	
T26N/R6E-20L01	Bear Cr. Golf Crs.		163	510	10	460 - 480	flows	2	P/8	+200	
T26N/R7E-30A02	Wiley		480	166	6	161 - 166	90	12	/1	568	
T26N/R8E-36F01	Seattle Water	Tolt TW-2	1321	356	12	204 - 258	171	169	P/24	> 2500	

Appendix A - Summay of Selected Well Data
East King County Regional Water Study

1) Local well numbers are based on public-land survey system which designates locations by township-range-section procedure.
2) Name of well owner.
3) Owner well number.
4) Approximate ground surface elevation in feet above mean sea level.
5) Well depth in feet below ground surface.
6) Primary well diameter. Some wells may have reduced casing diameters at depth. The well diameter reflects the largest casing diameter which generally reflects the pump chamber diameter.
7) Completion depth in feet below ground surface. Some wells are completed with several screen sections over multiple water bearing zones. The completion depth reflects the top of the upper most interval and the bottom of the lowest most interval.
8) Static water level below ground surface in feet.
9) Specific capacity which is equal to the pumping rate divided by the drawdown.
10) Test types include: P - pumping; B - bailer; A - airlift. Test duration is reported in hours.
11) Peak potential well yield is computed as the product of 2/3 of the available drawdown and specific capacity. Drawdown is limited to no more than 100 feet. Maximum potential well yields are assumed to be approximately 2500 gpm.
12) Installed well capacity in gpm. Generally reflect the actual capacity of the well and pump.

APPENDIX B

GROUND WATER MANAGEMENT ADDENDUM TO THE EAST KING COUNTY REGIONAL WATER STUDY

BIBLIOGRAPHY

Associated Earth Sciences, Inc. Snoqualmie Ridge Project, King County, Washington, 8607-14. July, 1987.

Bauer, H. H., and Vaccaro, J. J. Documentation of a Deep Percolation Model for Estimating Groundwater Recharge, U.S. Geological Survey, Open File Report 86-536, 180 p. 1987.

Carr, J. R. & Associates. Ground Water Resource Study for Future Water Supply, prepared for King County Water District No. 82 (Sammamish Plateau Water and Sewer). 1983.

CH2M-Hill. Well Field Protection Study, for the City of Renton. 1984.

CH2M-Hill. Water Comprehensive Plan, for the City of Issaquah. 1987.

CH2M-Hill. Well Field Monitoring Study, for the City of Renton. January, 1988.

Converse Ward Davis Dixon. Geohydrologic Analysis of Municipal Well Field, prepared for King County Water District No. 83. July 1, 1980.

Dames and Moore. Report of Evaluation, Groundwater Development Considerations, Redmond, Washington, prepared for the City of Redmond. 1973.

Economic and Engineering Services, Inc., The Hydrogroup, Inc., and others. South King County Ground Water Management Plan. In progress.

Economic and Engineering Services, Inc., Herrera Environmental Consultants, Hart-Crowser & Associates. Tolt River Pipeline Well Field Project, Technical Memorandum No. 1, prepared for the Seattle Water Department and CH2M-Hill Northwest, Inc. March, 1988.

Foxworthy, B. L. Emergency Groundwater Supplies in the Seattle-Tacoma Urban Complex and Adjacent Areas, Washington, U.S. Geological Survey, Open File Report, Basic Data Contribution 2, 1 PL. 1972.

Gray & Osborne, Inc., P.S. Water System Comprehensive Plan, prepared for the City of Redmond. 1983.

Gray & Osborne, Inc., P.S. Water Resources Study, prepared for the City of Redmond. February, 1985.

Hall and Othberg. Thickness of Unconsolidated Sediments, Puget Sound Lowland, Washington, State of Washington, Department of Natural Resources, Geologic Map, GM-12. 1974.

Hammond, Collier, and Wade-Livingston Associates, Inc., Consulting Engineers. Comprehensive Water System Plan, prepared for King County Water District No. 83. March, 1984.

Hammond, Collier, and Wade-Livingston Associates, Inc., Consulting Engineers. Engineering Report, Water Use Analysis and Study of Well System, Redmond, Washington. 1981.

Hart-Crowser & Associates, Inc. Ground Water Investigations for the Sahalee Water Company, King County, Washington, J-440, J-440-02, and J-440-03. 1979 and 1980.

Hart-Crowser & Associates, Inc. Groundwater Development Feasibility, Proposed Well Site in T25N, R6E, S15, J-797. 1979.

Hart-Crowser & Associates, Inc. Groundwater Availability in the Highline and Tolt River Pipeline Areas, J-1271. 1984.

Hart-Crowser & Associates, Inc. Summary Report, Hydrogeologic Analysis, Renton Well 9, Renton, Washington, J-1148. November, 1983.

Hart-Crowser & Associates, Inc. Replacement Wells, RW-1, RW-2, and RW-3, City of Renton, Washington, J-1667. July, 1987.

Hart-Crowser & Associates, Inc. Groundwater Development Feasibility Study, City of Redmond, J-1342. May, 1984.

Hart-Crowser & Associates, Inc. Groundwater Development Study, Sahalee Water District, King County, Washington, J-1362. May, 1984.

Hart-Crowser & Associates, Inc. Hydrogeologic Services, Production Wells, NE Sammamish Water and Sewer District, J-1613. July, 1986.

Hart-Crowser & Associates, Inc. Letter Report on Raging River Hydrogeologic Study, J-1398-01. August, 1984.

Hart-Crowser & Associates, Inc. Letter Report on Hydrogeologic Characteristics of Silviculture Sites, Snoqualmie Tree Farms Area, J-1398-01. September, 1984.

Hart-Crowser & Associates, Inc. Groundwater Development Feasibility Evaluation, Mercer Island, Washington, J-1623. January, 1986.

Liesch, B. A., Price, C. E., and Walters, K. L. Geology and Ground Water Resources of Northwestern King County, Washington, Washington Division, Water Resources, Water Supply Bulletin No. 20, 241 p. 1963.

Liesch, B. A. Records of Wells, Water Levels, and Quality of Groundwater in the Sammamish Lake Area, King County, Washington, U.S. Geological Survey, Open File Report, 4 pls, 1 fig., 193 p. 1955.

Luzier, J. E. Geology and Ground Water Resources of Southwestern King County, Washington, Washington Department of Water Resources, Water Supply Bulletin No. 28, 206 p. 1969.

Molenaar, Dee. Flowing Artesian Wells in Washington State, Washington Division Water Resources, Water Supply Bulletin No. 16, 115 p. 1961.

Molenaar, Dee, Grimstad, Peder, and Walters, K. L. Principal Aquifers and Well Yields in Washington, Washington Department of Ecology, Geohydrologic Monograph 5, 1 pl, Multicolor. 1980.

Parker, G. G. Jr. Public Water Supplies in the Seattle-Tacoma Urban Complex and Adjacent Areas, Washington, U.S. Geological Survey, Open File Report, Basic Data Contribution 3, 1 pl. 1974.

PEI Consultants, The Hydrogroup, Inc. Preliminary Report, Snoqualmie Ridge Test Well No. 4, JM8702. November, 1987.

Redmond Water Supply Alternatives Committee. Report of Evaluation, Additional Water Supply Development for the City of Redmond. February, 1986.

Reid, Middleton, and Associates, Inc. Comprehensive Water and Sewer Plan for the City of Bothell. November, 1980.

RH2 Engineering, P.S. Comprehensive Water System Plan for Sahalee Sewer District. November 1983.

RH2 Engineering, P.S. Comprehensive Water System Plan for the City of Renton. 1983.

Richardson, Donald, Bingham, J. W., and Madison, R. J. Water Resources of King County, Washington, U.S. Geological Survey, Water Supply Paper 1852, 74 p. 1968.

Shannon and Wilson, Inc. Municipal Groundwater - Supply Assessment Proposed Well No. 5 Site, Project No. 85-W-65 (City of Redmond). November, 1982.

Shannon and Wilson, Inc. Water Supply Development Municipal Water Well No. 4, Redmond, Washington, prepared for the City of Redmond. 1975.

Shannon and Wilson, Inc. Municipal Water Supply Well No. 5, Redmond, Washington, prepared for the Public Works Department of the City of Redmond. 1983.

Turney, G. L. Quality of Ground Water in the Puget Sound Region, Washington, U.S. Geological Survey, Water Investigations Report 84-4258, 170 p. 1986.

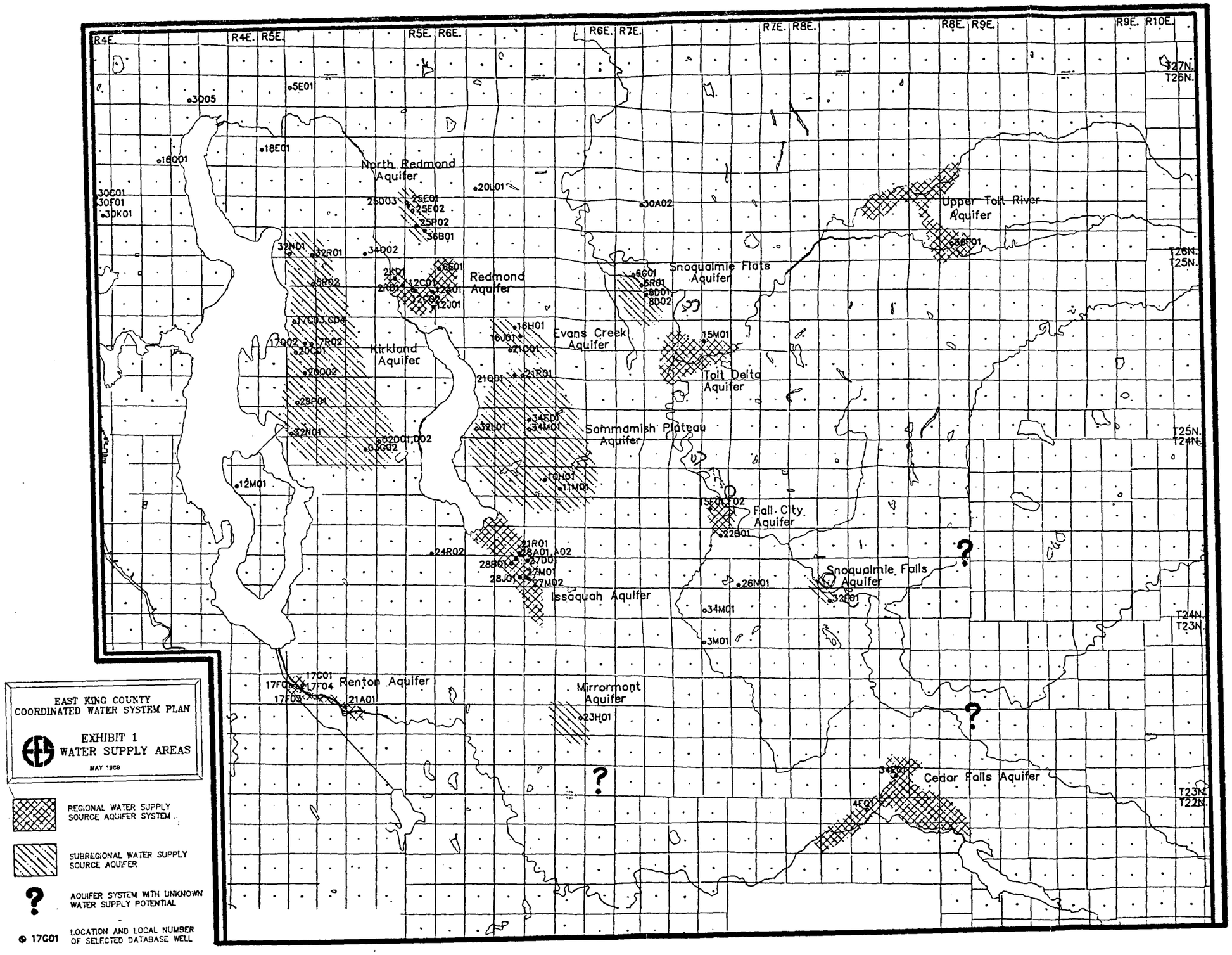
URS Company (Seattle). Comprehensive Water Plan for Northeast Lake Washington Sewer and Water District.

Yoshida, Inc. Comprehensive Water Plan for King County Water District No. 107. 1986.

(Author) _____. Comprehensive Water Plan for the City of Kirkland. November 1984; Text Updated August 1985.

(Author) _____. Groundwater Development Feasibility Evaluation, Mercer Island, Washington, prepared for the City of Mercer Island. 1986.

(Author) _____. Comprehensive Water System Plan for Water District No. 122 of King County. September, 1983.



EAST KING COUNTY
COORDINATED WATER SYSTEM PLAN

EXHIBIT 1
WATER SUPPLY AREAS

MAY 1989

REGIONAL WATER SUPPLY SOURCE AQUIFER SYSTEM

SUBREGIONAL WATER SUPPLY SOURCE AQUIFER

? AQUIFER SYSTEM WITH UNKNOWN WATER SUPPLY POTENTIAL

● 17G01 LOCATION AND LOCAL NUMBER OF SELECTED DATABASE WELL

APPENDIX L

SUPPLY DEVELOPMENT DESIGN CONSIDERATIONS
UNIT VALUES FOR ESTIMATING PROJECT CONSTRUCTION COSTS

APPENDIX L

SUPPLY DEVELOPMENT/DESIGN CONSIDERATIONS

All projects will be evaluated on the basis of the following:

1. The project must have the ability to meet 98 percent reliability of supply (including parallel pipelines*).

2. The project will be evaluated on the basis of an increment of the Regional Supply System (not a stand-alone supply) such that it may provide seasonal peaking or base yield.

3. Design consideration:

   A. Supply pipeline capacity = two times average annual flow.

   B. Water treatment plant capacity = nominal capacity based on average annual flow with hydraulic capacity two times nominal capacity.

   C. Well capacity = installed pump capacity considered to be peak flow design.

   D. Well yield = average annual yield based on 12-month installed capacity flow unless otherwise specified (i.e. 2-month peak yield).

   E. Peaking design factors/peak day to average day.

Regional service area	= 2.25 peak day to average day
	= 2.00 peak week to average day
	= 1.70 peak month to average day
Urban service area	= 2.2 peak day to average day
Transitional service area	= 2.4 peak day to average day
Rural service area	= 2.8 peak day to average day

   F. Per capita usage (not used if individual utility demand forecast is provided)

Urban	140 gpcd
Suburban	120 gpcd
Rural	100 gpcd

   * The necessity and economics for having parallell pipelines will be evaluated on a case-by-case basis.

APPENDIX L

UNIT VALUES FOR ESTIMATING PROJECT CONSTRUCTION COSTS

A number of water supply projects have been identified as having potential for meeting the long-term needs of the East King County Critical Water Supply Service Area. An evaluation is being undertaken by the Supply Studies Subcommittee to compare the relative merits of these projects. One element of comparison is project cost.

To facilitate this cost comparison, consistent unit values will be used for common project features. Although this approach may over-simplify the derivation of project costs, it does produce a valid basis for project comparison.

The unit values listed below represent bid costs indexed to March, 1989 values (ENR 4731). The bid cost for construction work includes the cost of labor, insurance, permanent materials, equipment rental, supplies, subcontracts, contractor's supervision, overhead, and profit. It does not include contingencies, indirect cost, land cost, and operating cost.

The unit costs to be used in the analysis of project alternatives are as follows:

1. SUPPLY AND TRANSMISSION PIPELINES

Pipe Diameter (inches)	Bid Cost	
	Per Foot	Per Mile
48	$221	$1,167,000
54	294	1,552,000
60	367	1,938,000
66	440	2,323,000
72	513	2,709,000
78	586	3,094,000
84	659	3,480,000

The basis for these costs is contained in Attachment 1.

2. WATER FILTRATION PLANT

$360,000 per million gallons per day peak flow. This cost includes intake, chemical addition, flocculation, clarification, multi-media filtration, and chlorination.

3. PUMPING PLANT

$60,000 per million gallons per day. This cost includes intake, screens, pumps, electrical, pumphouse, and related piping.

ATTACHMENT 1

COMPARISON OF
UNIT PIPELINE BID COST (1)(2)(3)

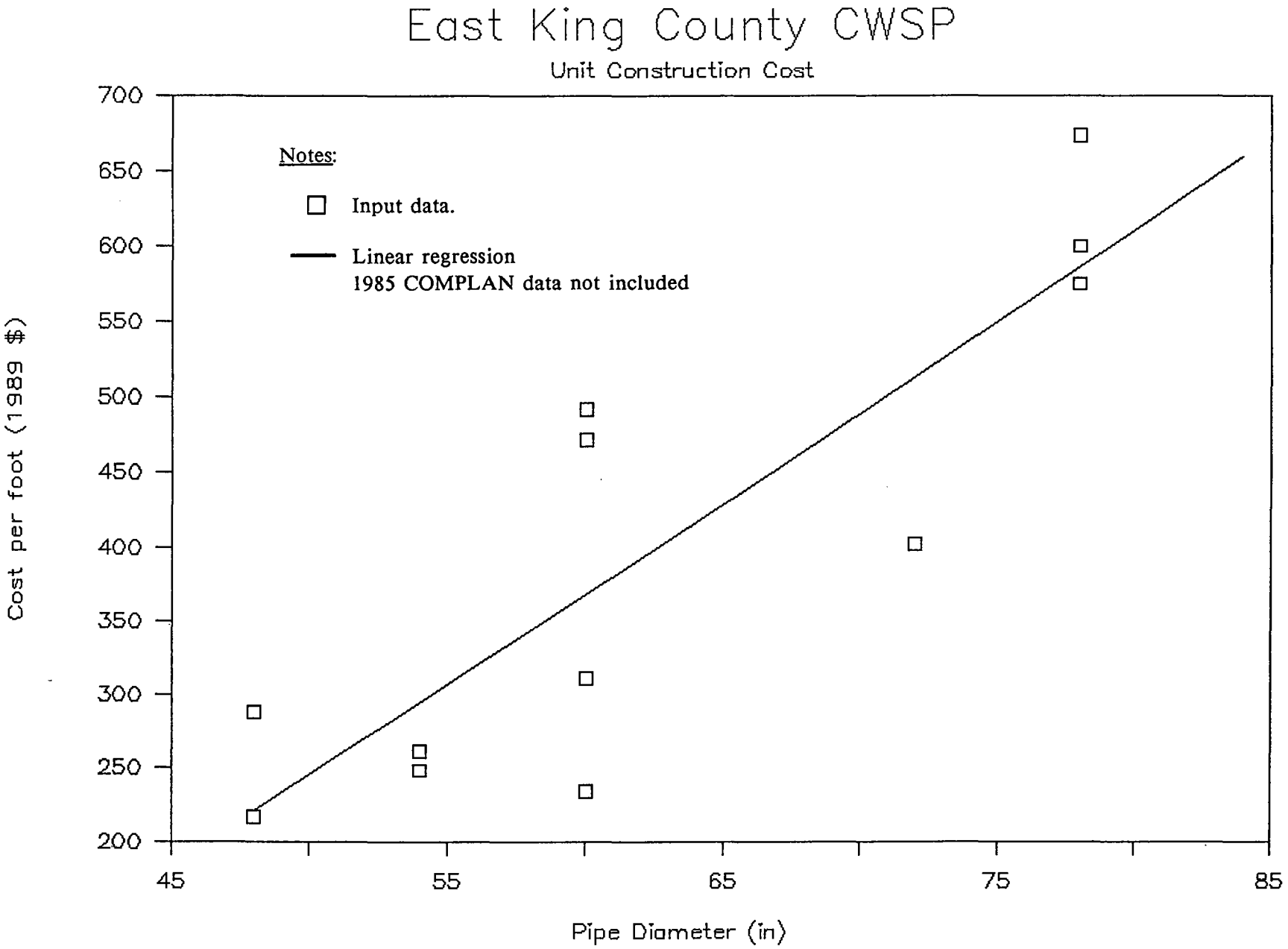
Diameter (Inches)	Cost in Dollars Per Foot						
	(A)(4)	(B)	(C)	(D)	(E)	(F)	(G)
48	189		217				288
54	210		261			248	
60	235	234*	311		492	472*	
66	256						
72	361		402				
78	465			600	575	673	
96	622						

Information sources:

(A) 1985 COMPLAN, Seattle Water Department.
(B) City of Everett, 1982 project.
(C) AWWA-Economics of Internal Corrosion (draft report, October, 1988).
(D) Seattle Water Department.
(E) Value Engineering Report for North Fork Snoqualmie Project, September, 1985.
(F) North Fork Tolt River Preliminary Investigation, December, 1988.
(G) CH2M-Hill.

Footnotes:

(1) Definition of "Bid Cost" contained in East King County CWSP paper entitled "Cost Estimates," dated February 14, 1989.
(2) All costs indexed to March, 1989 (ENR 4731).
(3) Steel pipe where denoted with asterisk, otherwise concrete cylinder pipe.
(4) These costs not included in regression analysis.


East King County CWSP
Unit Construction Cost
Notes:
Input data.
Linear regression
1985 COMPLAN data not included
Cost per foot (1989 $)
700
650
600
550
500
450
400
350
300
250
200
45
55
65
75
85
Pipe Diameter (in)

APPENDIX M

PROJECT SUMMARY PAPERS

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Cedar River (Concept #1)
Concept:	Chester Morse Lake in the upper Cedar River watershed is currently developed for water supply by construction of a control dam on the lake outlet stream. Drafting of stored water takes place only down to the elevation of the natural lake (elevation 1,532). By pumping from the lake, additional supply (dead storage) could be obtained between elevations 1,532 and 1,500.
Components:	
Source	265 MGD (maximum) pumping station located on Chester Morse Lake near outlet.
	84-inch diameter pipeline, 3,500 feet long, from pumping station to stilling basin and Cedar River (Masonry Pool) immediately below Chester Morse Dam.
	48-inch diameter pipeline, 52,000 feet long, from Landsburg to Lake Youngs (Lake Youngs Supply Line No. 6).
Transmission	54-inch diameter pipeline, 65,700 feet long from Lake Youngs. 50 MGD Lake Youngs pumping plant.
Project Costs:	
Source	$36 million (see Attachment No. 1).
Transmission	$41
Total	$77 million in first quarter 1989 values.

To be determined.

Yield:	
Water Supply	25 MGD annual average yield.

Benefits to CWSSA:

Water Supply	Moderate increase with respect to regional needs.
Power Generation	Minimal and incidental benefits at existing Cedar Falls Hydroelectric Project. Generation occurs during off-peak requirement period.
Recreation	No benefits.
Meets Need:	Supply = 25 MGD (average annual)
	Meets year 2012 average annual needs (assuming current supply meets year 1997 needs).
Water Right Issues:	Position of Seattle Water Department is that existing rights extend to proposed project. Agreement needed with Ecology.
Water Quality:	No filtration required/within controlled watershed.
Efficiency:	High.
	Further utilization of a developed watershed.
	Allows use of existing capacity of Chester Morse Lake.
	Utilizes existing transmission corridors and facilities.
	Could be planned as emergency/drought year supply.
Source Reliability:	High/98 percent reliability.

Environmental:	
Instream	Loss of habitat for resident fish due to lake level drawdown.
	Construction related water quality impacts.
	Additional flow in the Cedar River down to the Landsburg diversion.
Riparian	A seasonal drawdown in lake level would have moderate effects on riparian vegetation and habitat.
Wetlands	Moderate effect on wetlands in proximity to Lake due to annual drawdown of Lake level.
Other	Aesthetic characteristics of the lake would be diminished during periods of drawdown, but there is no public access to this area.
Implementable:	Should not be regionally or politically controversial except for the ongoing debate of open versus closed watersheds.
	Hydropower benefits to existing power plant may have FERC licensing implications. Licensing questions/issues may result in delay in implementation of water supply project.

ATTACHMENT 1

PROJECT COST

PROJECT: CEDAR RIVER (PHASE I)

1. Construction Cost (Source Facilities)

   A. Bid Cost (1)

o	Mobilization	$ 417,600
o	Diversion during Construction	837,500
o	Interim Embankment Dike	518,500
o	Pumping Station	2,383,000
o	Mechanical Equipment	676,100
o	Electrical Equipment	1,026,000
o	Pipeline	2,248,200
o	Outlet	242,400
o	Lake Youngs Supply Line No. 6	11,492,000
	Bid Cost =	$19,841,300

   B. Contingencies

o	Construction at 25%	
o	Environmental at 15%	
	40% Bid Cost =	$ 7,936,500
	Construction Cost =	$27,777,800

2. Indirect Cost

o	Sales Tax at 8%	
o	Engineering & Construction Management at 20%	
o	Administration, Legal, & Financial at 12%	
	Indirect Cost at 40% Bid Cost =	$ 7,936,500

3. Land Cost

o	Supply Line No. 6 R/W 52,000 feet at $10	$ 520,000

4. Project Cost

o	Construction	$27,777,800
o	Indirect	7,936,500
o	Land	520,000
	TOTAL	$36,234,300

(1) Construction cost data taken from Cedar Falls Project Appraisal Report, June 1984, as modified by Seattle Water Department to June 1986 level. Costs increased from June 1986 values (ENR 4610) to March 1989 values (ENR 4731). Cost of Lake Youngs Supply Line No. 6 and Chester Morse Lake discharge line are derived from unit bid cost values.

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Cedar River (Concept #2)
Concept:	Replace existing control structure at outlet of Chester Morse Lake with an earthen dam approximately 58 feet high (crest elevation of 1,590). Store runoff/surplus water (109,000 acre-feet) for release to Cedar River for water supply and power generation.
Components:	
Source	Storage dam with related spillway and control structure. Powerhouse located immediately below dam. 48-inch diameter pipeline, 52,000 feet long, from Landsburg to Lake Youngs (Lake Youngs Supply Line No. 6).
Transmission	66-inch diameter pipeline, 65,700 feet long from Lake Youngs. Lake Youngs pumping plant.
Project Cost:	
Source	Water Supply = $125 million Power Generation = $ 3 million Subtotal = $128 million (see Attachment 1)
Transmission	$ 60 million (1)
Total	$188 million in first quarter 1989 dollars
Yield:	
Water Supply	65 MGD annual average yield.

Power Generation	35,300,000 KWH/year combined output from new powerplant and increased production at Cedar Fall Plant.
Benefits to CWSSA:	
Water Supply	Significant increase with respect to regional needs.
Power Generation	Moderate as a secondary use of municipal water supply water.
Recreation	None/closed watershed area.
Meets Need:	Supply = 65 MGD (average annual)
	Meets year 2030 average annual needs (assuming current supply meets year 1997 needs).
Water Right Issues:	Position of Seattle Water Department is that existing rights extend to proposed project. Agreement needed with Ecology.
Water Quality:	No filtration required/within controlled watershed.
Efficiency:	High.
	Further utilization of a developed watershed.
	Utilizes existing transmission corridors.
	Allows further conjunctive use of Cedar and Tolt River systems.
Source Reliability:	High/98 percent reliability.
Environmental:	
Instream	Potential water quality impacts during construction.
	Increased nutrient loading in early years of storage from flooded vegetation.

	Greater regulation of river flows, some flood control benefits.
Riparian	Approximately 800 acres would be flooded, adversely affecting second growth forest, wetlands/meadows, game forage, and game habitat.
Wetlands	Considerable loss of wetlands.
Other	Reservoir area may contain Indian artifacts.
Implementable:	Could be a complicated project with respect to solving environmental problems.
	Joint ownership/operation agreement may be complicated by involvement of a third party, Seattle City Light.
	Existing Cedar River hydropower facility is not currently under FERC license/jurisdiction. Proposed new power plant may require license or be included under a licensing activity of all Cedar River facilities. Licensing will require long lead time.
	The lake interior reach is "unprotected" under the Power Planning Council program but the stream reach immediately above Chester Morse Lake is "protected" for resident fish and wildlife.

(1) Future consideration of this project concept should include a review of the hydraulic requirements/considerations for the transmission facilities.

ATTACHMENT 1

PROJECT COST

PROJECT: CEDAR RIVER (PHASE II)

WATER SUPPLY

1. Construction Cost (Source Facilities)

   A. Bid Cost (1)

o	Preparatory Work	$ 3,964,500
o	Reservoir Clearing	3,231,900
o	Diversion during Construction	1,436,400
o	Dam	12,292,800
o	Service Spillway	2,999,500
o	Emergency Spillway	10,385,300
o	Outlet Works and Penstock	4,267,000
o	Miscellaneous	205,200
o	Lake Youngs Supply Line No. 6 (78-inch diameter, 52,000 feet long)	30,472,000
	Bid Cost =	$69,254,600

   B. Contingencies

o	Construction at 25%	
o	Environmental at 15%	
	40% Bid Cost =	$27,701,840
	Construction Cost =	$96,956,440

2. Indirect Cost

o	Sales Tax at 8%	
o	Engineering & Construction Management at 20%	
o	Administration, Legal, & Financial at 12%	
	Indirect Cost at 40% Bid Cost =	$27,701,840

3. Land Cost

   o Supply Line No. 6 R/W

	52,000 feet at $10	$ 520,000

4. Project Cost (Water Supply Facilities)

o	Construction	$ 96,956,440
o	Indirect	27,701,840
o	Land	520,000
	TOTAL	$125,178,280

POWER GENERATION

1. Construction Cost

A. Bid Cost (1)

o	Civil	$ 307,800
o	Mechanical/Electrical	1,231,200
o	Switchgear and Transmission	267,800
	Bid Cost =	$ 1,806,800

B. Contingencies

at 40% Bid Cost =	$ 722,700
Construction Cost =	$ 2,529,500

2. Indirect Cost

at 40% Bid Cost =	$ 722,700

3. Land Cost

None

4. Project Cost (Hydro Power Facilities)

o	Construction	$ 2,529,500
o	Indirect	722,700
o	Land	0
	TOTAL	$ 3,252,200

TOTAL FOR WATER SUPPLY AND POWER GENERATION

o	Water Supply	$125,178,280
o	Power Generation	3,252,200
	TOTAL	$128,430,480

(1) Construction cost data taken from Cedar Falls Project Appraisal Report, June 1984, as modified by Seattle Water Department to June 1986 level. Costs increased from June 1986 values (ENR 4610) to March 1989 values (ENR 4731). Cost of Lake Youngs Supply Line No. 6 derived from unit bid cost values.

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Walsh Lake tributary to Cedar River.
Concept:	Construct dam on Walsh Lake outlet stream to store winter runoff. Release stored water during summer (4 months) via ditch and pipeline to Cedar River immediately below Landsburg Dam. Increase diversion of Cedar River flow at Landsburg commensurate with amount of substitute Walsh Lake water provided to the river.
Components:	
Source	40-foot high earthfill dam about 3,300 feet long, storing 14,000 acre feet of water.
	48-inch diameter diversion pipeline, 7,000 feet long.
	48-inch pipeline, 52,000 feet long, from Landsburg to Lake Youngs (Lake Youngs Supply Line No. 6).
Transmission	60-inch diameter pipeline, 65,700 feet long from Lake Youngs. Lake Youngs pumping plant.
Project Cost:	
Source	$ 54 million (see Attachment 1).
Transmission	$ 50 million
Total	$104 million in first quarter 1989 values.
Yield:	30 MGD average annual yield.
Benefits to CWSSA:	
Water Supply	Significant for peaking and low water year conditions.
Power Generation	No benefits.

Recreation	Limited benefits as recreation lake. Presently within watershed restricted area.
Meets Need:	Supply = 30 MGD average annual
	Meets year 2014 average annual needs (assuming current supply meets year 1997 needs).
Water Right Issues:	Diversion and storage permits may be required. Potential issues are environmental (wetlands) and fisheries (value of Walsh Lake outlet ditch for fisheries habitat).
Water Quality:	Not a concern from a public water supply standpoint.
Efficiency:	Enhances Cedar water supply facilities.
	Convenient to existing works.
	Compatible with other proposed Cedar system improvements.
Reliability (source):	Good within accuracy of current estimate of Walsh Lake basin runoff.
Environmental:	
Instream	Reduction or elimination of flow in Walsh Lake outlet stream for substantial portion of the year. Introduction of poor quality Walsh Lake waters into Cedar River during low flow periods. Impairment of habitat in Walsh Lake outlet stream.
Riparian	Flooding of approximately 160 acres of lowland area.
Wetlands	Loss of marsh/wetlands in proximity to Lake.
Other	Moderate recreational value of storage reservoir.

Implementable:	Environmental issues (loss of wetlands and fisheries and wildlife impacts) may be a major obstacle to project. A detailed environmental assessment should be conducted before project is considered further.

ATTACHMENT 1

PROJECT COST

PROJECT: WALSH LAKE TRIBUTARY TO CEDAR RIVER

1. Construction Cost (Source Facilities)

   A. Bid Cost (1)

o Reservoir	$ 1,469,000
o Spillway	2,819,000
o Embankment	10,391,000
o 48-Inch Diameter, 7,000 Feet Long, Diversion Pipeline	1,547,000
o 48-Inch Diameter, 52,000 Feet Long Landsburg to Lake Youngs Pipeline	11,492,000
Bid Cost =	$27,718,000

   B. Contingencies

o Construction at 35%	
o Environmental at 15%	
Subtotal (50% Bid Cost) =	$13,859,000
Construction Cost =	$41,577,000

2. Indirect Cost

o Sales Tax at 8%	
o Engineering & Construction Management at 20%	
o Administration, Legal, & Financial at 12%	
Indirect Cost at 40% Bid Cost =	$11,087,000

3. Land Cost

o Reservoir Area (640 Acres minus 30 Acres Existing Lake = 610 acres at $780/acre)	$ 476,000
o Pipeline Easement (Diversion)	70,000
o Pipeline Easement (Transmission)	520,000
Land Cost =	$ 1,066,000

4. Project Cost

o	Construction	$41,577,000
o	Indirect	11,087,000
o	Land	1,066,000
	TOTAL	$53,730,000

(1) Cost data for the reservoir, spillway, and embankment components are taken from a preliminary project study conducted by Seattle Water Department staff. These costs have been updated by ENR Index from January 1984 to March 1989 dollars. Pipeline costs are calculated from unit values. Construction contingency has been increased to 35 percent.

Yield:	A total of 18 MGD average annual, consisting of 8 MGD from the Main Stem Snoqualmie River and 10 MGD from increased drawdown of the South Fork Tolt Reservoir.
Benefits to CWSSA:	
Water Supply	Relatively small increment of supply from new source.
Power Generation	None, negative impact due to pumping cost.
Recreation	None.
Meets Need:	Supply = 18 MGD average annual yield
	Meets year 2008 needs (assuming current supply meets year 1997 needs).
Water Right Issues:	Permit required for water diversion.
	Approval would be subject to instream flow conditions.
	Permit should be available for a conditional use of water.
Water Quality:	Filtration required.
Efficiency:	High with respect to proximity to service area and existing transmission facilities.
	Complementary to existing South Fork Tolt storage.
Source Reliability:	Relatively low as a stand-alone source of supply. 98 percent reliability factor achieved only 1 month per year (May). For remaining months (during November through June period) reliability ranges from 80 to 96 percent. Reliability strongly dependent upon conjunctive use with South Fork Tolt storage.

Environmental:	
Instream	Minimal except for construction-related (pumping plant) water quality impacts. Reduction in flow below pumping station but established instream flows would not be impaired.
Riparian	Minimal - pumping plant would probably be situated in riparian zone of river.
Wetlands	None.
Other	Potential short-term construction impacts of noise, aesthetics, and traffic. Aesthetic considerations of pumping station design/ construction.
Implementable:	Should not be politically controversial.
	Instream flow issues should be minimal to non-existent.
	Financial implications associated with questions of joint ownership and/or operation as related to dependency on South Fork Tolt River storage.

ATTACHMENT 1

PROJECT COST

PROJECT: MAIN STEM SNOQUALMIE RIVER NEAR DUVALL

1. Construction Cost (Source Facilities)

   A. Bid Cost

o Two Pumping Stations (at River & booster) at $60,000 per MGD	$11,640,000
o 66-inch diameter Transmission Line 50,160 feet at $440/foot	22,070,400
o Discharge Structure	100,000
o Treatment/Filtration Plant, 16 MGD at $360,000/MGD	5,760,000
Bid Cost =	39,570,400

   B. Contingency

40% Bid Cost =	15,828,160
Construction Cost =	$55,398,560

2. Indirect Cost

at 40% Bid Cost =	$15,828,160

3. Land Cost

o Treatment Plant Site (20 acres at $4,000)	$ 80,000
o Pipeline Easement (50,160 feet at $10)	501,600
Total	$ 581,600

4. Project Cost

o Construction	$55,398,560
o Indirect	15,828,160
o Land	581,600
TOTAL	$71,808,320

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	North Fork Snoqualmie River - Run-of-River
Concept:	Construct a 16-foot high diversion structure at River Mile 8.6. Divert water to a power plant located on the Snoqualmie River, 0.8 miles downstream of Snoqualmie Falls, and near the confluence with Tokul Creek. Water supply taken from the pipeline/penstock, processed at filtration plant located in vicinity, and transported by gravity flow pipeline to Issaquah/Eastgate area. This project must be operated conjunctively with the existing South Fork Tolt reservoir to achieve the desired reliability.
Components:	
Source	Earthfill diversion structure.
	Penstock/pipeline, 78-inch diameter, 46,200 feet long.
	20 MW Tokul Creek powerhouse with 1 mile electrical transmission line.
	Two water filtration plants; North Fork Snoqualmie at 56 MGD average and 112 MGD peaking, and South Fork Tolt at 70 MGD average and 140 MGD peaking flows.
Transmission	81-inch diameter pipeline, 66,300 feet long from filtration plant to intertie with regional system.

Project Cost:

Source	Water Supply	= $123 million
	Power Generation	= 24 million
	Total	= $147 million (see Attachment 1). (Note: South Fork Tolt filtration plant cost not included.)
Transmission	$ 73 million	
Total	$220 million in first quarter 1989 values.	

Yield:

Water Supply	A total 66 MGD average annual yield, consisting of 56 MGD from the North Fork Snoqualmie and 10 MGD from increased drawdown of the South Fork Tolt Reservoir.
Power Generation	100,000,000 KWH/year.

Benefits to CWSSA:

Water Supply	Significant with respect to quantity and location.
Power Generation	Significant source of power in proximity to existing power grid.
Recreation	None.

Meets Need: Supply = 66 MGD (average annual)

Meets year 2030 needs (assuming current supply meets year 1997 needs).

Water Right Issues: Appropriation permit required.

Issues of: (1) impact on downstream power plant, (2) Northwest Power Planning Council protected stream area, (3) resident fishery, and (4) instream flows.

Water Quality: Filtration required.

Efficiency:	High - complements supply and pressure zone requirements of existing regional system.
	New major source transmission corridor in areas of growth/need - Issaquah, Sammamish Plateau, and Eastgate.
Reliability:	Reliability tied to storage on South Fork Tolt and filtration of South Fork water required to fully utilize this storage.
Environmental:	
Instream	Diversion would be regulated by established instream flows/minimum impact on native fish.
	Stream area beyond range of migrating fish. No impact.
	Diversion of high flows for hydropower may benefit habitat in the bypassed reach.
	Riverbed/bank stabilization concerns at powerhouse tailrace.
Riparian	Possible impacts along pipeline and electrical transmission corridors.
Wetlands	Minimal impacts.
Other	Constructed-related impacts.
Implementable:	FERC license a major consideration.
	Will require resolution of impact on Puget Power plant at Snoqualmie Falls.
	Frequent reduction/termination of diversion to meet instream flows may prevent reasonable operation of the filtration plant. This condition requires more detailed investigation.

Dependency of project on joint operation with existing South Fork Tolt River storage requires agreement with Seattle Water Department on joint operation/possible joint ownership of facilities.

PROJECT COST ESTIMATE

NORTH FORK SNOQUALMIE RIVER
(Run-of-River Option #1 - With Filtration at South Fork Tolt River)

1. CONSTRUCTION COST (Source Facilities)

A. Bid Cost

(From Exhibit D, City of Bellevue, October 1985, Application to FERC for hydropower license.)

		Hydropower	Water Supply
o	Run-of-River Diversion Works	$	$ 461,000
o	Tokul Cr. Powerhouse	1,759,100	
o	Tokul Cr. Powerhouse/ Generating Equip.	9,000,000	
o	Tokul Cr. Powerhouse/ Electrical Equip.	962,000	
o	Tokul Cr. Powerhouse/ Power Equipment	45,000	
o	Tokul Cr. Powerhouse/ Miscellaneous	474,000	
	Subtotal - FERC Facilities	12,240,100	461,000
	(adjusted for USBR Index to Jan. 1989 Cost - 1.69/1.55)	$13,345,700	$502,640
	(From Unit Values)		
o	Pipeline/Penstock, 78-inch, 46,200 feet ($586)(46,200)		27,073,000
o	Water Filtration Plant (56 MGD Average/112 MGD peaking) ($360,000 x 112)		40,320,000
	Bid Cost	13,345,700	67,895,640
	Total		$81,241,340

		Hydropower	Water Supply
B.	Contingencies		
	o Construction at 25%		
	o Environmental at 15%		
	40% Bid Cost	5,338,300	27,158,300
	Total	$ 32,496,600	
	Construction Cost	18,684,000	95,053,940
	Total	$113,737,940	
2.	INDIRECT COSTS		
	o Sales Tax at 8%		
	o Engineering & Construction Management at 20%		
	o Administration, Legal, & Financial at 12%		
	40% Bid Cost	5,338,300	27,158,300
	Total	$ 32,496,600	
3.	LAND COST		
	o Tokul Cr. Powerhouse Easement	2,450	
	o Treatment Plant Site (25 acres at $4,000)		100,000
	o Pipeline/Penstock Easement (46,200 feet at $10)		462,000
	Land Cost	2,450	562,000
	Total	$ 564,450	

4. PROJECT COST

		Hydropower	Water Supply	Total
o	Construction	$18,864,000	$ 95,053,940	$113,737,940
o	Indirect	5,338,300	27,158,300	32,496,600
o	Land	2,450	562,000	564,450
	TOTAL	$24,024,750	$122,774,240	$146,798,990

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source: North Fork Snoqualmie River (River Mile 6.7; hydro and water supply)

Concept: Construct a 200-foot high earthfill dam at River Mile 6.7. Power plant at base of dam. Reservoir would extend upstream approximately 4 miles, cover 930 acres, and store approximately 65,000 acre-feet of water. Water supply pipeline/penstock (78-inch diameter) to powerhouse on Snoqualmie River 0.8 miles downstream of Snoqualmie Falls. Water supply taken from the pipeline/penstock, processed at filtration plant in vicinity, and transported by gravity flow pipeline to Issaquah/ Eastgate area.

Components:

Source:

Zoned earthfill dam.

At-dam powerhouse (14.8 MW).

Penstock/pipeline, 78-inch diameter, 36,000 feet long.

Tokul Creek powerhouse (20 MW).

Water filtration plant, 90 MGD average and 180 MGD peaking flow.

Transmission: 102-inch diameter pipeline, 66,300 feet long from filtration plant to intertie with regional system. Pumping plant in vicinity of filtration plant.

Project Cost:

Source:

Water Supply = $299 million

Power Generation = 48

Subtotal = $347 million (Attachment 1).

Transmission	$121 million
Total	$468 million in first quarter 1989 values.
Yield:	90 MGD average annual water supply.
	Hydro generation is 163,000,000 KWH/year.
Benefits to CWSSA:	
Water Supply	Very significant; major new source of supply.
Power Generation	Major source of power in proximity to existing power grid.
Recreation	Significant; creates major water-based recreational facility near major population center.
Other	Benefits for power and recreation extend beyond the CWSSA.
Meets Need:	Supply = 90 MGD (average annual)
	Meets year 2040 needs (assuming current supply meets year 1997 needs).
Water Right Issues:	Appropriation/diversion permit required.
	Reservoir permit required.
	Issues of: (1) conflict with downstream rights (Snoqualmie Falls power plant), (2) competing downstream hydro project (Weyerhaeuser), (3) instream flows, and (4) Northwest Power Planning Council protected area streams program.
Water Quality:	Filtration required.
Efficiency:	High - new major source complements supply and pressure zone requirements of existing regional system.
	Transmission corridor in area of growth/need - Issaquah/Sammamish Plateau/Eastgate.
	Allows for phased construction of water supply facilities.

Source Reliability:	Highly reliable due to dam/reservoir storage capacity.
Environmental:	
Instream	Elimination of aquatic habitat will have impact on resident fish in 4.4 mile reach of river above dam site.
	No impact on anadromous fish.
	Proposed pool area may also be rearing area for fish hatched in upper stream reaches.
	Construction-related water quality impacts.
	Increased nutrient loading in pool area and in water released to lower river.
	Dam will provide controlled releases which reduce flood flows and augment low flows.
Riparian	Loss of habitat in riparian zone for 4.4 mile reach above dam plus tributary streams and pond areas.
Wetlands	Lowland and wetland habitat used by deer, bear, and other animals may be lost.
	Potential adverse impacts along route of transmission pipelines.
Other	Long-term potential for major recreational area within proximity of greater Seattle area.
	Minimal, if any, impact on cultural resources.
	May require off-site mitigation.
Implementable:	High capital cost/major financing required.
	Significant agreements required - power and water supply.

Potentially sensitive with current review of water resource policy by legislature.

Need for FERC license continues to be a major consideration.

PROJECT COST ESTIMATE

NORTH FORK SNOQUALMIE RIVER
(Storage Option)

1. CONSTRUCTION COST

A. Bid Cost (Source Facilities)

(From Exhibit D, City of Bellevue, October 1985, Application to FERC for hydropower license.)

	Hydropower	Water Supply
o Storage Dam & Related Works	$	$ 73,988,000
o Hydropower Facilities	26,726,000	
(adjusted for USBR Index to Jan. 1989 Cost - 1.69/1.55)		
(From Unit Values)		
o Pipeline/Penstock, 78-inch, 46,200 feet long		27,073,000
o Water Treatment Plant (180 MGD)		64,800,000
Bid Cost	26,726,000	165,861,000

B. Contingencies

o Construction at 25%		
o Environmental at 15%		
Subtotal 40% Bid Cost	10,690,000	66,344,000
Construction Cost	$37,416,000	$232,205,000
TOTAL	$269,621,000	

	Hydropower	Water Supply

2. INDIRECT COSTS

- Sales Tax at 8%
- Engineering & Construction Management at 20%
- Administration, Legal, & Financial at 12%

40% Bid Cost	$ 10,690,000	$ 66,344,000
Total	$ 77,034,000	

3. LAND COST

o Treatment Plant Site (25 acres at $4,000/acre)	$ 120,000

4. PROJECT COST

	Hydropower	Water Supply	Total
o Construction	$37,416,000	$232,205,000	$269,621,000
o Indirect	10,690,000	66,344,010	77,034,000
o Land	-	120,000	120,000
TOTAL	$48,106,000	$298,669,000	$346,775,000

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Skagit River
Concept:	Construct pumping plant and water treatment facilities on the Skagit River near the town of Sedro Woolley. Water would be conveyed 59.8 miles through two parallel 84-inch diameter pipelines to connect with the Tolt River pipeline near Woodinville. A second pumping plant would be located near Lake Stevens which is the approximate mid-point of the pipeline.
Components:	
Source	400 MGD pumping plant on Skagit River. Water treatment facility near Sedro Woolley to process 200 MGD average and 400 MGD peak flow. Two 84-inch diameter pipelines each 59.8 miles long. Pumping plant at mid-point of pipeline route.
Transmission	108-inch diameter pipeline, 22,500 feet long (designed only for an average flow of 100 MGD, i.e., the study area demand).
Project Cost:	
Source	$1,102 million (1)
Transmission	37
Total	$1,139 million in first quarter 1989 values.
Yield:	200 MGD annual average flow.

Benefits to CWSSA:

Water Supply	Major source of water supply having significance for an area far greater than the CWSSA. To be viable, the source must generally benefit the easterly Puget Sound region.
Power Generation	None, negative impact due to pumping costs.
Recreation	None.

Meets Need: Supply = 200 MGD (average annual)

Fully satisfies CWSSA needs through planning period.

Water Right Issues: Should be minimal at State level; "place of origin" issue may be sensitive at local level.

Instream flows not established on Skagit River; probably would be set before any permit is issued.

Water right permit required; flows of Skagit River at Mount Vernon compared to 400 MGD peak need (620 cfs) are:

Average Annual = 10,810 MGD (16,630 cfs)

Minimum Discharge = 1,780 MGD (2,740 cfs, 10/26/1942)

Water Quality: Filtration required.

Efficiency: Low with respect to East King County service area; supply source is remote, not conducive to phased development, controlled by economy of scale and energy intensive.

Source Reliability: Probably high, but subject to determination of instream flows.

Environmental:

Instream	Reduction in stream flow may have minor adverse affects on habitat.

	Construction related water quality impacts should be low.
Riparian	Minimal as related to the construction site of the river pumping station and intake.
Wetlands	Little to no effect, assuming transmission pipelines follow existing rights-of-way.
Other	Potential short-term pipeline construction impacts of noise, aesthetics, and traffic congestion.
Implementable:	Out-of-basin use of water will be a sensitive and political issue.
	Major financing considerations.
	Not a viable project for only East King County service area interest.
	Complicated project due to multitude of authorizations and approvals required by many State and local agencies.

(1) Total cost for 400 MGD (peak) project. Only Phase I (one pipeline at 200 MGD, peak) would be constructed during planning horizon of study, i.e., year 2040.

PROJECT COST ESTIMATE

SKAGIT RIVER

1. CONSTRUCTION COST

A. Bid Cost (Source Facilities)

o	Skagit River Pumping Plant (400 MGD)	$ 24,000,000
o	Lake Stevens Pumping Plant (400 MGD)	24,000,000
o	Two 84-inch Pipelines, 59.8 miles long	416,356,000
o	Water Treatment Plant (400 MGD peak)	144,000,000
	Subtotal	$ 608,356,000

B. Contingencies

o	Construction at 25%	
o	Environmental at 15%	
	Subtotal (40% Bid Cost)	243,342,000
	Construction Cost (A + B)	$ 851,698,000

2. INDIRECT COSTS

o	Sales Tax at 8%	
o	Engineering and Construction Management at 20%	
o	Administration, Legal, and Financial at 12%	
	Indirect Cost at 40% Bid Cost	$ 243,342,000

3. LAND COST

o	Treatment Plant Site (40 acres at $4,000/acre)	$ 160,000
o	Pipeline Easement (59.8 miles at $20/foot)	6,315,000
	Land Cost	$ 6,475,000

4. **PROJECT COST**

o	Construction	$ 851,698,000
o	Indirect	243,342,000
o	Land	6,475,000
	TOTAL	$1,101,515,000

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Well Field near Issaquah
Concept:	Develop a multiple well field in the area between Issaquah and Lake Sammamish. Phased development would take place to acquire more specific water yield information and water level trends. Potential effects of the development on the use of the aquifer by others and on other water resources (e.g., Lake Sammamish) should also be determined. Two phases of 6 MGD each are proposed. Future studies should include an evaluation of the potential for controlling the outflow of Lake Sammamish to allow induced recharge of the well field from the Lake.
Components:	
Source	Three wells, not to exceed 300 feet deep, each producing 2 MGD (instantaneous) for each of two phases. Pump houses, controls, telemetry, etc. at each station. No more than 1/2 mile transmission main to regional system. Assume 24-inch diameter pipeline.
Transmission	No facilities included beyond the source considerations
Project Cost:	
Source	$2,942,000 in first quarter 1989 values.
Transmission	None.
Yield:	12 MGD annual average yield from six wells (assume 6 MGD each for two phases in 1997 and 2000).

Benefits to CWSSA:

Water Supply	Small increment of supply relative to regional needs. Each well offsets approximately 1 year of regional demand increase (2 MGD).
Power Generation	None.
Recreation	None.

Meets Need: Supply = 12 MGD (average annual)

Meets year 2004 average annual need assuming current supply meets year 1997 needs.

Water Right Issues: Permit(s) required from Ecology; could be requested on a well-by-well basis or as a well field.

Primary issues would be potential adverse effects upon existing users of aquifer and hydraulic continuity with surface water sources in the area.

Water Quality: Potential for manganese problems. Water treatment not included as a cost considering the dilution factor of the regional system.

Efficiency: Very high. Aquifer is in proximity to route of potential future regional transmission mains.

Use of aquifer could also be evaluated as a peaking/seasonal use.

Source Reliability: Based upon existing data, meets 98 percent criterion.

Environmental:

Instream	Non-measurable impacts would probably be a condition of water right permits issued by Ecology.

Riparian	Not applicable.
Wetlands	None.
Implementable:	Opportunities exist to consider the policy issues of regional use of the aquifer system through the ongoing Issaquah Valley Ground Water Management Program. A long-range program for protection and use of the aquifer will be developed through this Plan.

PROJECT COST ESTIMATE

WELL FIELD NEAR ISSAQUAH

1.	**CONSTRUCTION COST PER WELL (1)**	
	o Well Installation and Completion	$ 75,000
	o Pump and Well Head Equipment	125,000
	o Engineering	35,000
	o Three Test/Observation Wells at $30,000	90,000
	Subtotal	325,000
	Subtotal six wells	$1,950,000
2.	**TRANSMISSION LINE**	
	o Transmission Line to Regional system (24-inch diameter, 2,640 feet long, high strength at $67/foot)	$ 176,800
	Plus contingencies and indirect at 65%	114,970
	Subtotal	$ 291,770
3.	**LAND COST**	
	o 20 acres at $35,000/acre	$ 700,000
4.	**PROJECT COST**	$2,941,770

(1) Includes construction contingencies and indirect costs.

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Sultan River (Concept #1).
Concept:	Construct 50 MGD (peak flow) pipeline from existing City of Everett filtration plant located at the southerly end of Lake Chaplain (elevation 640). The pipeline will traverse in a southerly and westerly direction to its intersection in the vicinity of the City of Snohomish with the north-south route of the Skagit River to Woodinville pipeline. The second pipeline segment, also sized to carry 50 MGD, will follow the Skagit route in a southerly direction to connection with the Tolt River pipeline in the vicinity of Woodinville.
Components:	
Source	54-inch diameter pipeline, 166,667 feet long (31.6 miles), from Everett filtration plant to connection with Tolt Pipeline #1. Expansion of Everett filtration plant. 50 MGD pumping plant.
Transmission	22,500 feet of 54-inch diameter pipeline.
Project Cost:	
Source	$127.7 million
Transmission	12.1
Total	$139.8 million in first quarter 1989 dollar values.
Yield:	Non-firm supply. 25 MGD average annual yield in the year 1997, declining to zero by the year 2020. Availability to East King County will diminish as the City of Everett demand increases.

Benefits to CWSSA:

Water Supply	Significant source in short-term. Could also constitute a long-term intertie with a major source for emergency water supply purposes.
Power Generation	Negative impact. Reduced power generation.
Recreation	None.
Other	Potential first phase of multi-regional Skagit River project.
Meets Need:	To the year 2007, assuming 25 MGD (average annual) is available beginning in the year 1997 and declines to zero in the year 2020.
Water Right Issues:	Authority of the City of Everett to deliver water outside its service area (i.e., to East King County) may be an issue. Consultation with Ecology is necessary. Amendment of Everett's existing water rights with respect to place of use will probably be required, or a new (temporary) permit be obtained by the East King County RWA for interim use of those waters committed to Everett's future needs.
Water Quality:	Filtration required. Expansion of Everett filtration plant is necessary to accommodate East King County demand.
Efficiency:	Source is located outside of service area and fairly remote from existing transmission facilities.
Source Reliability:	Culmback Dam/Spada Lake provide high degree of reliability to supply. Term use of water must be accepted.

Environmental:	
Instream	Reduction in stream flow would take place earlier (in time) than would occur for use only within the Everett service area.
	Pipeline stream crossings may have temporary, construction-related impacts on water quality.
Riparian	Potential construction-related adverse effects.
Wetlands	Minimal effects, if any.
Other	Construction related; i.e., noise, increased traffic, potential for toxic materials spill, etc.
Implementable:	Out-of-basin water use may be controversial from regulatory and jurisdictional standpoints.
	Multiple-party agreements required; issues may be complicated. Principle parties appear willing to negotiate.
	Further use of a developed watershed may be more acceptable than developing a new source.
	Significant financial agreements required among several parties.

ATTACHMENT 1

PROJECT COST

PROJECT: SULTAN RIVER (CONCEPT #1)

1. Construction Cost

	Source	Transmission
	(Thousands)	
A. Bid Cost		
o Supply pipeline, Everett filtration plant to Woodinville 54-inch diameter, 166,667 feet long	$ 49,000	
o Expansion of filtration plant $360,000 x 50 MGD	18,000	
o Pumping plant $60,000 x 50 MGD	3,000	
o Transmission line 54-inch diameter, 22,500 feet long		$ 6,615
Subtotal	$ 70,000	$ 6,615
B. Contingencies at 40% Bid Cost	$ 28,000	$ 2,646
Construction Cost	$ 98,000	$ 9,261

2. Indirect Cost

at 40% Bid Cost	$ 28,000	$ 2,646

3. Land Cost

	Source	Transmission
o Source pipeline right-of-way	$ 1,667	
o Transmission pipeline right-of-way		$ 225

4. Project Cost

o Construction	98,000	9,261
o Indirect	28,000	2,646
o Land	1,667	225
Subtotal	$127,667	$12,132
TOTAL	$139,799	

PROJECT SUMMARY

FUTURE SOURCE ALTERNATIVES

Source:	Sultan River (Concept #2)
Concept:	Same conditions as Sultan River (Concept #1) except that pipeline segment from Snohomish to Woodinville is sized at 84-inch diameter as a first phase of the Skagit River pumping plant project.
Components:	
Source	54-inch diameter pipeline, 84,167 feet long (16 miles) from Everett filtration plant to connection with Skagit River pipeline in vicinity of Snohomish.
	84-inch diameter pipeline, 82,500 feet long (15.6 miles) from Snohomish to connection with Tolt Pipeline #1.
	Expansion of Everett filtration plant.
	50 MGD pumping plant.
Transmission	22,500 feet of 54-inch diameter pipeline.
Project Cost:	
Source	$181.9 million
Transmission	12.1
Total	$194.0 million in first quarter 1989 dollar values.

(Other considerations are as described in Sultan River - Concept #1)

ATTACHMENT 1

PROJECT COST

PROJECT: SULTAN RIVER (CONCEPT #2)

1. Construction Cost

	Source	Transmission
	(Thousands)	
A. Bid Cost		
o Supply pipeline, Everett filtration plant to Woodinville		
54-inch diameter, 84,167 feet long	$ 24,745	
84-inch diameter, 82,500 feet long	54,368	
o Expansion of filtration plant $360,000 x 50 MGD	18,000	
o Pumping plant $60,000 x 50 MGD	3,000	
o Transmission line 54-inch diameter, 22,500 feet long		$ 6,615
Subtotal	$100,113	$ 6,615
B. Contingencies at 40% Bid Cost	$ 40,045	$ 2,646
Construction Cost	$140,158	$ 9,261

2. Indirect Cost

at 40% Bid Cost	$ 40,045	$ 2,646

3. Land Cost

	Source	Transmission
o Source pipeline right-of-way	$ 1,667	
o Transmission pipeline right-of-way		$ 225

4. Project Cost

o Construction	140,158	9,261
o Indirect	40,045	2,646
o Land	1,667	225
Subtotal	$181,870	$12,132
TOTAL	$194,002	

APPENDIX N

POPULATION FORECASTS

PUGET SOUND COUNCIL OF GOVERNMENTS

EAST KING COUNTY WATER UTILITY POPULATION FORECAST – AUGUST 1988

UTILITY	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990–2020
Bellevue	101,022	112,295	119,330	128,894	0.6%
NE Lake Washington Sewer & Water	53,801	68,455	88,748	115,664	1.7%
Soos Creek Water & Sewer	40,258	54,630	85,251	133,636	2.5%
Renton	37,284	42,994	53,634	68,842	1.2%
Rose Hill Water & Sewer	36,200	40,560	43,520	46,770	0.6%
Woodinville	32,766	52,647	90,382	158,262	3.4%
Kirkland	28,747	33,186	38,935	45,727	1.0%
Cedar River Water & Sewer	26,169	35,173	55,385	87,569	2.5%
Disputed Area – Redmond, Wood. & Union.	26,034	32,236	40,676	51,660	1.5%
Redmond	24,919	33,528	45,613	63,712	2.0%
KCWD No. 42	23,044	24,314	25,444	26,626	0.3%
Mercer Island	19,990	20,474	20,660	20,848	0.1%
Sammamish Plateau Water & Sewer	16,313	25,408	47,057	87,156	3.6%
KCWD No. 90	14,379	19,167	28,377	42,343	2.3%
KCWD No. 107	14,238	20,950	33,688	56,204	2.9%
Issaquah	11,686	16,115	23,142	35,329	2.3%
Bothell	8,569	11,357	15,973	22,474	2.1%
NE Sammamish Sewer & Water	6,075	9,464	17,531	32,476	3.6%
KCWD No. 127	3,905	5,185	8,266	13,378	2.5%
Union Hill Water Association	3,360	5,804	11,167	21,488	4.1%
KCWD No. 119	3,166	4,393	7,157	11,661	2.8%
KCWD No. 83	2,946	3,110	3,259	3,415	0.3%
Ames Lake Water Association	1,691	2,922	5,605	10,761	4.1%
Duvall	1,037	1,439	2,344	3,819	2.8%

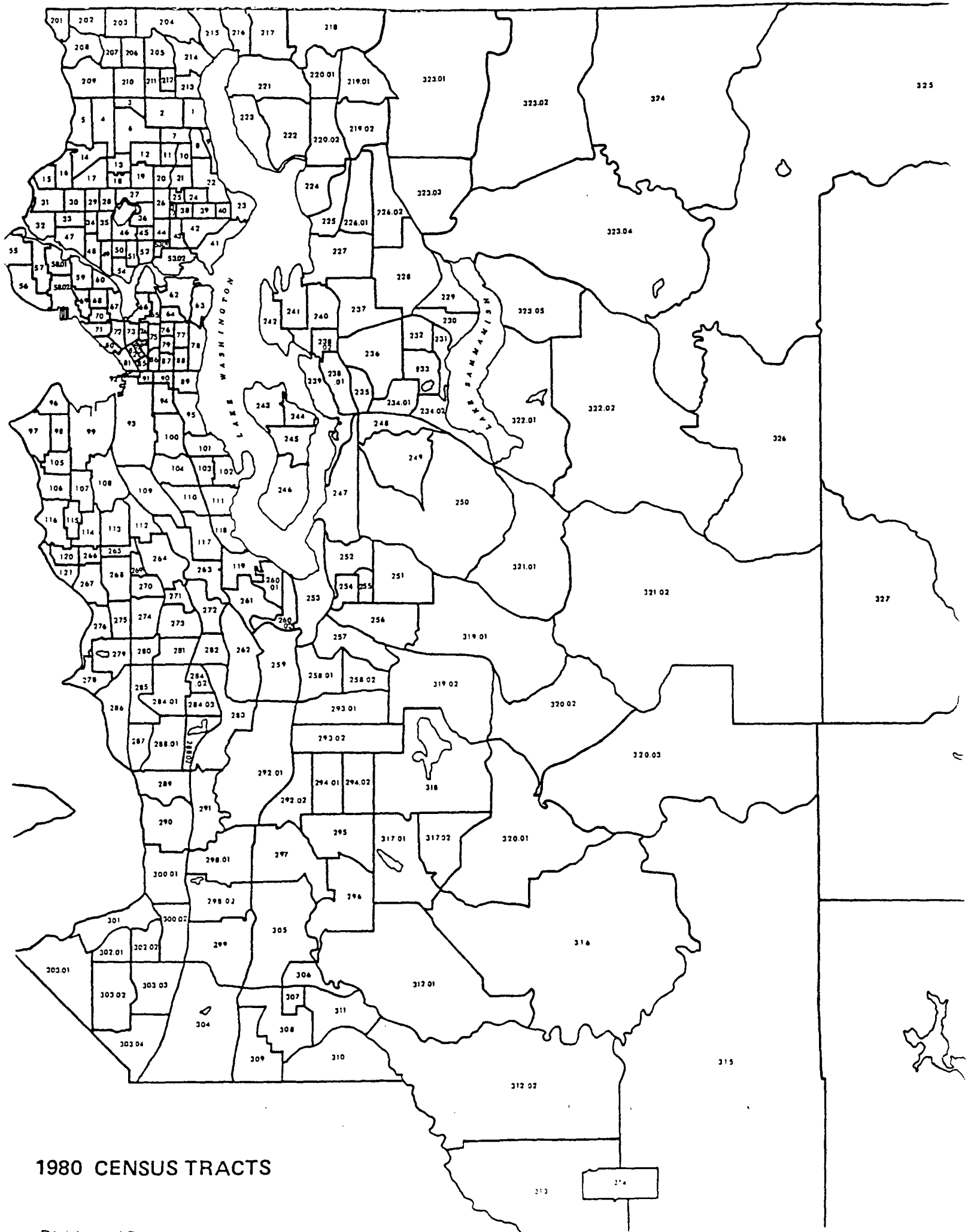
POPULATION ALLOCATED TO UTILITIES BASED ON CENSUS TRACT MAPPING TO UTILITY SERVICE AREA

PUGET SOUND COUNCIL OF GOVERNMENTS

EAST KING COUNTY WATER UTILITY POPULATION FORECAST - AUGUST 1988

UTILITY	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990-2020
Mercer Crest	729	747	754	760	0.1%
Mirrormont Services, Inc.	687	888	1,483	2,480	2.6%
Wilderness Rim Maint. Assn.	358	434	542	685	1.4%
Beaux Arts	263	283	285	286	0.3%
Out of EKC	54,599	67,741	97,972	144,947	2.0%
Unclaimed	29,482	38,841	60,200	94,526	2.4%
Grouped Small Utility	10,618	13,890	21,210	33,334	2.3%
TOTAL	634,331	798,630	1,093,591	1,565,733	1.8%

POPULATION ALLOCATED TO UTILITIES BASED ON CENSUS TRACT MAPPING TO UTILITY SERVICE AREA



1980 CENSUS TRACTS

Division of Planning

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT - AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990-2020
100	4,492	4,735	4,996	5,271	0.4%
200	7,014	7,393	7,801	8,232	0.4%
300	2,388	2,497	2,552	2,608	0.2%
400	7,911	8,186	8,430	8,681	0.2%
500	3,383	3,500	3,604	3,711	0.2%
600	5,681	5,941	6,073	6,208	0.2%
700	3,314	3,493	3,686	3,890	0.4%
800	2,608	2,749	2,901	3,061	0.4%
900	1,920	2,024	2,136	2,254	0.4%
1000	1,551	1,635	1,725	1,820	0.4%
1100	2,169	2,286	2,412	2,545	0.4%
1200	5,262	5,503	5,625	5,750	0.2%
1300	3,398	3,553	3,632	3,713	0.2%
1400	4,276	4,424	4,556	4,692	0.2%
1500	2,395	2,478	2,552	2,628	0.2%
1600	3,726	3,855	3,970	4,088	0.2%
1700	6,025	6,234	6,420	6,612	0.2%
1800	3,009	3,147	3,217	3,289	0.2%
1900	54	56	57	58	0.2%
1900	3,142	3,286	3,359	3,434	0.2%
2000	2,995	3,056	3,075	3,094	0.1%
2100	3,534	3,606	3,628	3,650	0.1%
2200	5,559	5,672	5,707	5,742	0.1%
2300	183	187	188	189	0.1%
2400	2,936	2,995	3,013	3,031	0.1%
2500	1,362	1,390	1,399	1,408	0.1%
2600	4,000	4,081	4,106	4,131	0.1%
2700	4,770	4,988	5,099	5,212	0.2%
2800	3,876	3,862	3,795	3,729	-0.1%
2900	3,867	3,853	3,786	3,720	-0.1%
3000	5,059	5,041	4,953	4,867	-0.1%
3100	5,612	5,592	5,494	5,398	-0.1%
3200	6,382	6,359	6,248	6,139	-0.1%
3300	5,038	5,020	4,932	4,846	-0.1%
3400	3,051	3,040	2,987	2,935	-0.1%
3500	3,705	3,692	3,627	3,563	-0.1%
3600	4,240	4,434	4,532	4,632	0.2%
3700	1,091	1,113	1,120	1,127	0.1%
3800	1,891	1,929	1,941	1,953	0.1%
3900	2,813	2,870	2,888	2,906	0.1%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT – AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990–2020
4000	2,081	2,123	2,136	2,149	0.1%
4100	7,645	7,989	8,388	8,807	0.3%
4200	6,921	7,233	7,594	7,973	0.3%
4300	5,564	5,815	6,105	6,409	0.3%
4400	5,333	5,573	5,851	6,143	0.3%
4500	2,335	2,390	2,409	2,428	0.1%
4600	3,103	3,176	3,201	3,226	0.1%
4700	3,869	3,855	3,788	3,722	-0.1%
4800	3,876	3,862	3,795	3,729	-0.1%
4900	4,881	4,863	4,778	4,694	-0.1%
5000	2,644	2,706	2,728	2,750	0.1%
5100	3,457	3,538	3,566	3,594	0.1%
5200	3,711	3,798	3,828	3,858	0.1%
5301	5,626	5,880	6,174	6,483	0.3%
5302	4,441	4,641	4,873	5,117	0.3%
5400	3,624	3,709	3,739	3,769	0.1%
5500	356	367	381	396	0.2%
5600	6,284	6,477	6,723	6,978	0.2%
5700	6,467	6,666	6,919	7,182	0.2%
5801	4,169	4,297	4,460	4,629	0.2%
5802	5,364	5,529	5,739	5,957	0.2%
5900	6,108	6,213	6,317	6,423	0.1%
6000	4,369	4,444	4,518	4,593	0.1%
6100	4,184	4,291	4,342	4,394	0.1%
6200	3,888	3,987	4,034	4,082	0.1%
6300	4,767	4,889	4,947	5,006	0.1%
6400	3,480	3,569	3,611	3,653	0.1%
6500	3,898	3,998	4,045	4,093	0.1%
6600	3,229	3,312	3,351	3,390	0.1%
6700	3,914	3,982	4,048	4,115	0.1%
6800	2,565	2,609	2,652	2,696	0.1%
6900	3,550	3,611	3,671	3,732	0.1%
7000	6,092	6,197	6,300	6,405	0.1%
7100	1,405	1,429	1,453	1,477	0.1%
7200	804	976	1,185	1,439	1.3%
7200	795	809	822	835	0.1%
7300	321	390	473	574	1.3%
7300	509	509	507	505	-0.0%
7400	7,234	7,231	7,196	7,161	-0.0%
7500	4,902	4,900	4,877	4,854	-0.0%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT - AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990-2020
7600	3,094	3,093	3,078	3,063	-0.0%
7700	3,756	3,754	3,736	3,718	-0.0%
7800	5,176	5,174	5,149	5,124	-0.0%
7900	3,413	3,412	3,396	3,380	-0.0%
8000	467	567	688	835	1.3%
8000	1,686	2,047	2,485	3,017	1.3%
8000	1,384	1,680	2,039	2,475	1.3%
8100	1,009	1,216	1,491	1,828	1.3%
8100	694	836	1,025	1,257	1.3%
8100	680	820	1,005	1,232	1.3%
8100	1,357	1,636	2,006	2,460	1.3%
8200	1,464	1,765	2,164	2,653	1.3%
8300	3,861	3,859	3,840	3,821	-0.0%
8400	2,516	2,515	2,503	2,491	-0.0%
8500	2,395	2,394	2,383	2,372	-0.0%
8600	3,043	3,042	3,027	3,012	-0.0%
8700	3,410	3,409	3,393	3,377	-0.0%
8800	3,427	3,426	3,410	3,394	-0.0%
8900	3,881	3,954	3,862	3,772	-0.0%
9000	1,854	1,889	1,845	1,802	-0.0%
9100	926	1,116	1,368	1,677	1.3%
9200	831	1,002	1,229	1,507	1.3%
9300	360	334	308	284	-0.5%
9300	240	223	206	190	-0.5%
9300	676	628	579	534	-0.5%
9300	0	0	0	0	0.0%
9400	4,916	5,009	4,892	4,778	-0.0%
9500	5,907	6,018	5,878	5,741	-0.0%
9600	4,745	4,797	4,813	4,829	0.0%
9700	10,109	10,220	10,254	10,288	0.0%
9800	5,644	5,706	5,725	5,744	0.0%
9900	917	852	786	725	-0.5%
9900	2,434	2,261	2,085	1,923	-0.5%
10000	6,878	7,008	6,845	6,686	-0.0%
10100	5,576	5,681	5,549	5,420	-0.0%
10200	4,518	4,509	4,388	4,270	-0.1%
10300	5,173	5,163	5,025	4,891	-0.1%
10400	6,618	6,605	6,428	6,256	-0.1%
10500	4,893	4,947	4,964	4,981	0.0%
10600	6,579	6,651	6,673	6,695	0.0%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT - AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990-2020
10700	4,568	4,584	4,483	4,384	-0.1%
10800	3,076	3,086	3,018	2,951	-0.1%
10900	1,194	1,089	869	693	-1.1%
11000	5,493	5,482	5,335	5,192	-0.1%
11100	6,878	6,864	6,680	6,501	-0.1%
11200	2,559	2,568	2,511	2,455	-0.1%
11300	4,611	4,627	4,525	4,425	-0.1%
11400	5,575	5,594	5,470	5,349	-0.1%
11500	4,033	4,047	3,958	3,871	-0.1%
11600	5,954	5,974	5,842	5,713	-0.1%
11700	3,814	3,806	3,704	3,605	-0.1%
11800	6,040	6,028	5,867	5,710	-0.1%
11900	6,123	6,111	5,947	5,787	-0.1%
12000	3,505	3,517	3,439	3,363	-0.1%
12100	2,879	2,889	2,825	2,762	-0.1%
20100	2,905	3,044	3,137	3,233	0.3%
20200	5,469	5,730	5,905	6,085	0.3%
20300	4,377	4,586	4,726	4,870	0.3%
20400	8,621	9,102	9,538	9,995	0.3%
20500	6,142	6,485	6,795	7,120	0.3%
20600	3,607	3,779	3,894	4,012	0.3%
20700	3,138	3,288	3,388	3,491	0.3%
20800	4,696	4,920	5,070	5,225	0.3%
20900	2,717	2,847	2,934	3,024	0.3%
21000	5,744	6,018	6,201	6,390	0.3%
21100	3,808	4,020	4,212	4,413	0.3%
21200	574	606	635	665	0.3%
21300	3,618	3,820	4,003	4,195	0.3%
21400	3,895	4,112	4,309	4,515	0.3%
21500	4,766	5,032	5,273	5,526	0.3%
21600	4,588	5,812	8,185	11,527	1.9%
21700	3,788	4,799	6,758	9,517	1.9%
21800	10,012	13,456	18,997	26,820	2.2%
21901	6,457	7,409	9,122	11,231	1.2%
21902	13,116	15,050	18,531	22,817	1.2%
22001	3,044	3,856	5,430	7,646	1.9%
22002	12,999	17,122	21,583	27,206	1.7%
22100	7,033	8,909	12,546	17,668	1.9%
22200	15,143	19,946	25,143	31,694	1.7%
22300	3,398	4,476	5,642	7,112	1.7%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT – AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990–2020
22400	6,669	7,552	8,833	10,331	0.9%
22500	4,654	5,271	6,165	7,211	0.9%
22601	7,579	8,583	10,039	11,742	0.9%
22602	8,990	12,346	16,987	23,373	2.1%
22700	7,799	8,832	10,331	12,084	0.9%
22800	12,224	14,755	17,130	19,887	1.1%
22900	9,201	11,106	12,894	14,970	1.1%
23000	5,603	5,624	5,433	5,248	-0.1%
23100	3,971	3,986	3,851	3,721	-0.1%
23200	7,570	7,598	7,340	7,091	-0.1%
23300	6,778	6,803	6,572	6,349	-0.1%
23401	3,487	3,940	4,224	4,528	0.6%
23402	7,534	8,512	9,125	9,782	0.6%
23500	3,499	3,837	3,973	4,114	0.4%
23600	12,430	13,629	14,110	14,608	0.4%
23700	3,906	4,420	4,554	4,692	0.5%
23801	1,937	2,080	2,094	2,108	0.3%
23802	900	1,948	3,241	5,392	4.4%
23802	82	178	296	492	4.4%
23900	6,582	7,067	7,114	7,161	0.3%
24000	7,736	9,124	9,462	9,813	0.7%
24100	4,752	5,076	5,260	5,451	0.3%
24200	3,054	3,263	3,381	3,503	0.3%
24300	5,849	5,991	6,045	6,099	0.1%
24400	2,435	2,494	2,517	2,540	0.1%
24500	4,840	4,957	5,002	5,047	0.1%
24600	8,033	8,228	8,303	8,379	0.1%
24700	8,809	14,452	25,748	45,873	3.6%
24800	4,669	5,275	5,655	6,062	0.6%
24900	13,904	15,710	16,841	18,053	0.6%
25000	7,515	12,329	21,966	39,136	3.6%
25100	6,270	8,509	13,169	20,381	2.5%
25200	5,461	6,213	7,142	8,210	0.9%
25300	5,253	5,489	6,029	6,622	0.5%
25300	955	998	1,096	1,204	0.5%
25400	5,731	6,521	7,496	8,617	0.9%
25500	3,977	4,525	5,202	5,980	0.9%
25600	5,658	7,678	11,883	18,391	2.5%
25700	8,127	9,247	11,092	13,305	1.0%
25801	6,360	7,237	8,681	10,413	1.0%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT – AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990–2020
25802	8,982	12,560	19,558	30,455	2.6%
25900	245	279	335	402	1.0%
26001	5,081	5,223	5,388	5,558	0.2%
26002	4,095	4,279	4,700	5,162	0.5%
26100	5,402	5,553	5,729	5,911	0.2%
26200	4,172	5,096	6,530	8,368	1.5%
26300	1,330	1,367	1,410	1,454	0.2%
26400	4,453	4,743	4,976	5,220	0.4%
26500	2,293	2,329	2,356	2,383	0.1%
26600	1,997	2,029	2,053	2,077	0.1%
26700	5,457	5,543	5,608	5,674	0.1%
26800	8,368	8,501	8,600	8,700	0.1%
26900	1,386	1,476	1,548	1,624	0.4%
27000	2,802	2,985	3,131	3,284	0.4%
27100	2,468	2,629	2,758	2,893	0.4%
27200	1,977	2,106	2,209	2,317	0.4%
27300	5,687	6,058	6,355	6,667	0.4%
27400	4,284	4,563	4,787	5,022	0.4%
27500	5,017	5,096	5,155	5,215	0.1%
27600	3,876	3,937	3,983	4,030	0.1%
27701	4,248	4,628	5,252	5,960	0.7%
27702	3,620	3,944	4,475	5,077	0.7%
27800	3,928	3,990	4,036	4,083	0.1%
27900	6,575	6,679	6,757	6,836	0.1%
28000	2,522	2,686	2,818	2,956	0.4%
28100	1,837	1,957	2,053	2,154	0.4%
28200	3,095	3,297	3,459	3,629	0.4%
28300	3,491	4,753	6,892	9,994	2.3%
28401	829	903	972	1,046	0.5%
28402	3,121	3,398	3,658	3,938	0.5%
28403	4,184	4,555	4,903	5,278	0.5%
28500	3,715	4,044	4,353	4,686	0.5%
28600	6,194	6,743	7,258	7,812	0.5%
28700	5,086	5,537	5,960	6,415	0.5%
28801	4,239	4,615	4,968	5,348	0.5%
28802	4,754	5,176	5,571	5,996	0.5%
28900	9,474	10,314	11,102	11,950	0.5%
29000	9,308	10,845	13,608	17,075	1.3%
29100	5,473	7,452	10,806	15,670	2.3%
29201	2,958	4,027	5,840	8,469	2.3%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT – AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990–2020
29202	5,185	6,016	6,942	8,011	1.0%
29301	6,616	9,065	14,504	23,206	2.7%
29302	7,870	10,783	17,253	27,605	2.7%
29401	11,222	15,376	24,602	39,364	2.7%
29402	6,893	9,445	15,112	24,179	2.7%
29500	10,120	11,742	13,550	15,636	1.0%
29600	5,775	8,056	13,774	23,551	2.9%
29700	6,750	7,832	9,038	10,430	1.0%
29801	6,186	7,177	8,282	9,557	1.0%
29802	7,420	9,429	12,967	17,833	1.9%
29900	6,657	8,460	11,634	15,999	1.9%
30001	9,032	10,524	13,205	16,569	1.3%
30002	5,933	7,156	9,147	11,692	1.5%
30100	8,203	9,558	11,993	15,048	1.3%
30201	4,961	5,780	7,253	9,101	1.3%
30202	7,045	8,497	10,861	13,883	1.5%
30301	20,968	28,535	39,029	53,382	2.1%
30302	5,644	7,681	10,506	14,370	2.1%
30303	4,352	5,249	6,709	8,575	1.5%
30304	2,008	2,733	3,738	5,113	2.1%
30400	8,827	11,217	15,425	21,212	1.9%
30500	9,235	11,189	14,105	17,781	1.4%
30600	5,463	6,619	8,344	10,519	1.4%
30700	3,164	3,790	5,095	6,849	1.6%
30800	7,935	9,504	12,777	17,177	1.6%
30900	5,135	7,141	10,585	15,690	2.4%
31000	276	331	445	598	1.6%
31100	5,831	6,984	9,389	12,622	1.6%
31201	10,731	14,969	25,593	43,757	2.9%
31202	5,074	5,997	7,122	8,458	1.1%
31300	4,755	5,620	6,675	7,928	1.1%
31400	5,004	5,914	7,024	8,342	1.1%
31600	9,656	12,516	20,362	33,126	2.5%
31701	7,754	10,816	18,493	31,619	2.9%
31702	5,217	7,277	12,442	21,273	2.9%
31800	4,562	6,251	10,002	16,004	2.7%
31901	9,544	12,508	18,360	26,950	2.2%
31902	12,792	17,888	27,854	43,372	2.6%
32001	15,887	20,941	33,742	54,368	2.5%
32002	2,989	3,855	6,561	11,166	2.7%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES

PUGET SOUND COUNCIL OF GOVERNMENTS

KING COUNTY POPULATION FORECAST BY CENSUS TRACT – AUGUST 1988

CENSUS TRACT	1990 POPULATION	2000 POPULATION	2020 POPULATION	2040 POPULATION	ANNUAL % CHANGE 1990–2020
32003	4,127	5,322	9,058	15,417	2.7%
32101	8,058	10,130	10,840	11,600	1.0%
32102	4,782	6,167	10,496	17,864	2.7%
32201	10,474	16,318	30,229	55,999	3.6%
32202	5,890	9,176	16,998	31,488	3.6%
32301	20,933	37,530	68,390	124,625	4.0%
32302	6,760	11,830	22,861	44,178	4.1%
32303	12,995	17,845	24,553	33,783	2.1%
32304	7,948	13,909	26,878	51,940	4.1%
32305	9,798	15,264	28,276	52,380	3.6%
32400	5,183	7,193	11,719	19,093	2.8%
32500	3,377	4,686	7,635	12,440	2.8%
32600	3,682	4,511	6,487	9,329	1.9%
32700	11,335	13,889	19,974	28,725	1.9%
50300	5,972	6,553	7,294	8,119	0.7%
50401	7,497	8,227	9,158	10,194	0.7%
50402	6,111	6,706	7,464	8,308	0.7%
50500	6,467	7,422	7,628	7,840	0.6%
50600	924	1,060	1,089	1,119	0.5%
50700	5,027	5,769	5,929	6,093	0.6%
50800	6,767	7,766	7,982	8,204	0.6%
50900	3,386	3,886	3,994	4,105	0.6%
TOTAL	1,494,881	1,734,154	2,138,308	2,765,009	1.2%

CONTAINS CENSUS TRACTS NOT SERVED BY EKC UTILITIES