A G E N D A

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METRO

MEETING: METRO COUNCIL REGULAR MEETING
DATE: September 21, 1995
DAY: Thursday
TIME: 2:00 p.m.
PLACE: Council Chamber

Approx. Time *			Presenter
2:00 PM		**CALL TO ORDER AND ROLL CALL**	
(5 min.)	**1.**	**INTRODUCTIONS**	
(5 min.)	**2.**	**CITIZEN COMMUNICATIONS**	
(5 min.)	**3.**	**EXECUTIVE OFFICER COMMUNICATIONS**	
	4.	**CONSENT AGENDA** approved w/ correction	
2:15 PM (5 min.)	4.1	Consideration of Minutes for the September 14, 1995 Metro Council Meeting.	
	5.	**INFORMATIONAL ITEMS**	
2:20 PM (45 min.)	5.1	Briefing on the preliminary regional water supply plan and adoption process.	McLain Furfey Stickel
	6.	**RESOLUTIONS**	
3:05 PM (5 Min.)	6.1	**Resolution No. 95-2193**, For the Purpose of Adopting Minority Business Enterprise, Women Business Enterprise, and Disadvantaged Business Enterprise Goals for FY 95-96.	Morissette
3:10 PM (5 Min.)	6.2	**Resolution No. 95-2204**, For the Purpose of Opposing H.R. 961- The Federal Clean Water Act Reauthorization Bill of 1995.	McCaig
	7.	**ORDINANCES - SECOND READINGS**	
3:15 pm (10 Min.)	7.1	**Ordinance No. 95-615,** Amending the Urgan Growth Boundary for Urban Growth Boundary Contested Case 94-1: Richards	McLain

For assistance/Services per the Americans with Disabilities Act (ADA), dial TDD 797-1804 or 797-1540 (Council Office)

* All times listed on the agenda are approximate; items may not be considered in the exact order listed.

Approx. Time *			Presenter
3:25 PM (10 Min.)	8.	**COUNCILOR COMMUNICATIONS**	
3:35 PM		**ADJOURN**	

* All times listed on the agenda are approximate; items may not be considered in the exact order listed.

AGENDA ITEM: 4.1
Meeting Date: September 21, 1995

Minutes of the September 14, 1995 Metro Council Meeting were not ready at the time the agenda packet was produced. The documents will be distributed to Council prior to adoption.

MINUTES OF THE METRO COUNCIL MEETING

September 14, 1995

Council Chamber

Councilors Present: Rod Monroe (Deputy Presiding Officer), Jon Kvistad, Patricia McCaig, Susan McLain, Don Morissette, Ed Washington

Councilors Absent: Ruth McFarland (Presiding Officer)

Deputy Presiding Officer Monroe called the meeting to order at 2:00 p.m.

1. INTRODUCTIONS

Deputy Presiding Office Monroe introduced Metro staff member Cheri Arthur and presented her with a certificate expressing appreciation for her efforts serving the Council as Council Secretary.

2. CITIZEN COMMUNICATIONS

None.

3. EXECUTIVE OFFICER COMMUNICATIONS

None.

4. CONSENT AGENDA

4.1 Consideration of Minutes for the September 7, 1995 Metro Council Meeting.

Motion: Councilor Washington moved approval of the Minutes, seconded by Councilor McCaig.

Vote: All those present voted aye. Councilor Kvistad was absent. The vote was 6-0 and the motion passed unanimously.

5. ORDINANCES -- FIRST READINGS

5.1 Ordinance No. 95-615, Amending the Urban Growth Boundary for Urban Growth Boundary Contested Case 94-1: Richards.

The clerk read the ordinance for the first time by title only.

Daniel Cooper, General Counsel, explained there is no requirement for a public hearing on the ordinance and said it is not necessary for the ordinance to be referred to committee.

The ordinance will be placed on next week's agenda for second reading.

6. COUNCILOR COMMUNICATIONS

Councilor Morissette said he attended a Tualatin/Stafford CPO meeting Tuesday night to share information with the property owners about the UGB and hear their concerns . A portion of the group in attendance gave him a letter from Stafford-Wankers Corner Area property owners stating they want to be added into the UGB. He presented copies of their letter to councilors, a copy of which is included as part of the meeting record.

Councilor McCaig invited the Councilors to attend the kick-off on September 25, 1995 at 10 a.m. for Metro's Regional Open Spaces Citizen Bond program, where mini-bonds will be offered to local investors as zero coupon bonds. The event location is Hoyt Arboretum.

Councilor McLain said she would like the Councilors to identify people in their districts to buy these mini-bonds. She said Lisa Godwin, Senior Public Affairs Specialist, will put together a one-page handout explaining the event for distribution to constituents.

Councilor McLain discussed Metro Matters cable access television, which is taped during Council meetings on the second and fourth day of the month. There are five shows left for this budget year and the council should be pro-active in selecting topics for the show. She sent a memo to Cathy Thomas, Senior Public Affairs Specialist, stating that one topic might be the Region 2040 growth concept. Councilor McLain indicated it was unfortunate today's meeting was the one that will be broadcast on cable access, because the agenda is short. Metro should be able to choose which meeting is covered, instead of wasting one taping on a short meeting when a large public hearing last week's Council session could have been taped instead. The Council needs to look for opportunities to be more visible.

Councilor McLain said she met this week with the Willamette COG to discuss land use and transportation issues. They want to coordinate with the Council for the next COG meeting December 11, 1995 in Yamhill.

Councilor Kvistad said he and the Greenspaces staff today did a fly-over survey along the Tualatin. He thanked Ray Meyers for flying them around that area. Looking outside the current UGB there is dramatic growth and it is a great concern.

Councilor Washington said a helicopter tour of the UGB has been extended to anyone on the Council by Westwood Corporation Developers and Contractors, at no cost. They will be sending him the information so Councilors should let him know if they are interested.

There being no further business before the Council, Deputy Presiding Officer Monroe adjourned the meeting at 2:14 p.m.

Prepared by,

Jodie Willson

Jodie Willson
Council Assistant

c:\jodie\council\minutes\091495mn.

AGENDA ITEM: 5.1
Meeting Date: September 21, 1995

Briefing on the preliminary regional water supply plan and adoption process.

REGIONAL WATER SUPPLY PLAN

Portland Metropolitan Area

September 6, 1995

PARTICIPATING WATER PROVIDERS

City of Beaverton
Canby Utilities Board
Clackamas Water District
City of Gladstone
Clairmont Water District
Damascus Water District
City of Fairview
City of Gresham
City of Hillsboro, Utilities Commission
City of Forest Grove
City of Lake Oswego
City of Milwaukie
Mt. Scott Water District
Oak Lodge Water District
City of Portland
Raleigh Water District
Rockwood Water
City of Sandy
City of Sherwood
South Fork Water Board, (City of Oregon City City of West Linn)
Tigard Water Dist.
City of Troutdale
City of Tualatin
Tualatin Valley Water District
West Slope Water District
City of Wilsonville
City of Wood Village
Metro

Interested citizens, organizations, and agencies:

The enclosed Preliminary Regional Water Supply Plan represents more than four years of cooperative partnership among twenty-seven municipal water providers and Metro. It contains technical information, findings, alternatives and recommended strategies for meeting future water demands in the tri-county Portland metropolitan region.

The region's water providers are now circulating the plan for review and comment on the choices and recommendations contained in the report. Throughout the planning process, we have sought and used input from local residents, organizations, businesses, and decision makers to ensure that important public values and concerns are addressed. Your comments will be considered carefully as the Preliminary Plan is revised in late 1995.

We have learned that our existing water resources can be managed to meet regional needs for the next couple of decades. The completion of planned system enhancements and continued conservation efforts can stretch existing supplies. A more aggressive commitment to conservation can delay further the need for new supply increments. In addition, several of the region's water sources appear viable to meet long-term needs. The plan provides a list of actions to maintain and enhance the quality and quantity of today's water sources to benefit current and future generations.

The plan also sets forth several strategies for meeting demand to the year 2050. The strategies are evaluated against key public concerns including water quality, system reliability, cost, environmental protection and conservation. The choices contained in the plan meet different objectives to different extents. There is no "right answer." The recommended strategy reflects an attempt to meet multiple objectives and provide sufficient flexibility to accommodate changing circumstances over the next fifty years. The region must now give careful consideration to the tradeoffs associated with the choices.

We invite you to review these preliminary reports and share your views at upcoming public workshops (see enclosed flyer) or in writing. More workshops and public hearings will be held over the next several months. Our goal is to submit a proposed final plan to local decision makers for adoption in early 1996.

(over)

Regional Water Supply Plan Project, 1120 S.W. 5th #601, Portland, Oregon 97204-1926 (503) 823-7528

Please call your local water provider or project management staff for more information or to arrange a briefing on the Regional Water Supply Plan (see attachment for contacts).

Sincerely,

Tim Erwert

Tim Erwert

City of Hillsboro, Joint Water Commission
and Chair, Steering Committee
Regional Water Supply Plan

Michael Rosenberger

Michael Rosenberger

Portland Water Bureau, and
Chair, Participants Committee
Regional Water Supply Plan

Attachments

REGIONAL WATER SUPPLY PLAN – PHASE 2
PARTICIPANTS COMMITTEE

Clackamas County Area

CANBY UTILITY BOARD
Bob Rapp, 266-1156

CITY OF GLADSTONE
Ron Partch, 656-5223

CITY OF LAKE OSWEGO
Duane Cline, 635-0280

CITY OF MILWAUKIE
Dan Bartlett, 659-5171

SOUTH FORK WATER BOARD
Larry Sparling, 657-5030

CITY OF SANDY
Mike Walker, 668-5533

CITY OF WILSONVILLE
Jeff Bauman, 682-9772

CLACKAMAS RIVER WATER *
Dale Jutila, 656-5752
Alan Fletcher, 656-7240

DAMASCUS WATER DISTRICT
Dennis Klingbile, 658-5585

MT. SCOTT WATER DISTRICT
John Thomas, 761-0220

OAK LODGE WATER DISTRICT
Thomas Hoffman, 654-7765

Multnomah County Area

CITY OF FAIRVIEW
Jeff Sarvis, 665-9320

CITY OF GRESHAM
Greg DiLoreto, 669-2402

CITY OF TROUTDALE
Jim Galloway, 665-5175

CITY OF WOOD VILLAGE
Sheila Ritz, 667-6211

Multnomah County Area - Cont.

PORTLAND WATER BUREAU
Mike Rosenberger, 823-7555

ROCKWOOD WATER
Duane Robinson, 665-4179

Washington County Area

CITY OF BEAVERTON
David Winship, 526-2434

CITY OF FOREST GROVE
Rob Foster, 359-3225

CITY OF HILLSBORO
Tim Erwert, 681-6119

CITY OF SHERWOOD
Ron Hudson, 625-5522

CITY OF TUALATIN
Mike McKillip, 692-2000

RALEIGH HILLS WATER DISTRICT
Von Walter, 292-4894

CITY OF TIGARD WATER DEPARTMENT
Ed Wegner, 639-4171

TUALATIN VALLEY WATER DISTRICT
Gene Seibel, 642-1511

WEST SLOPE WATER DISTRICT
Roger Meyer, 292-2777

Regional

METRO
John Fregonese, 797-1763

Project Management Staff

Lorna Stickel, Project Manager - 823-7502
Roberta Jortner, Senior Planner - 823-7493
Dominique Bessée, Admin. Assistant - 823-7528

* Formerly Clackamas Water District and Clairmont Water District

❖ How should future water needs be met in the ❖
Portland tri-county metropolitan area?

Learn about the choices - Express your views

REGIONAL WATER SUPPLY PLAN
PUBLIC WORKSHOPS

❖

Tuesday, September 26, 1995
Tualatin Valley Water District
1850 SW 170th Ave., Beaverton

❖

Wednesday, September 27, 1995
Oregon Convention Center, Rooms 107 and 108
777 NE Martin Luther King Jr. Blvd., Portland

❖

Thursday, September 28, 1995
OIT/North Clackamas Chamber of Commerce
7726 SE Harmony Road, Milwaukie

❖

Open House at 6 p.m. - Workshops from 7 to 9 p.m.

❖ *Refreshments provided* ❖

sponsored by the region's municipal water providers and Metro

EXECUTIVE SUMMARY

PRELIMINARY REGIONAL WATER SUPPLY PLAN
for the
Portland Metropolitan Area

August 1995

THIS PLAN WAS FINANCED AND MANAGED BY THE FOLLOWING PARTICIPANTS:

City of Beaverton
Canby Utility Board
Clackamas River Water
Damascus Water District
City of Fairview
City of Gladstone
City of Gresham
City of Hillsboro Utilities Commission
City of Forest Grove
City of Lake Oswego
Metro
City of Milwaukie
Mt. Scott Water District
Oak Lodge Water District
City of Portland
Raleigh Water District
Rockwood Water
City of Sandy
City of Sherwood
South Fork Water Board:
City of Oregon City/City of West Linn
Tigard Water District
City of Troutdale
City of Tualatin
Tualatin Valley Water District
West Slope Water District
City of Wilsonville
City of Wood Village

CONSULTANT TEAM:

Barakat & Chamberlin, Inc.
Montgomery Watson
Barney & Worth
Murray, Smith & Associates
Squier Associates
Parametrix, Inc.
McArthur & Associates
Pete Swartz

EXECUTIVE SUMMARY

HISTORY OF THE REGIONAL WATER SUPPLY PLANNING EFFORT

The Portland, Oregon, metropolitan region is located on the lower Columbia River, where the Willamette River joins the Columbia. Its urban area is made up of 3 counties and 24 cities with a combined 1990 population of 1,138,000. This population is growing.

The region is served by a number of different surface water and groundwater sources. The water supply system operated by the City of Portland currently supplies about 750,000 people; the rest are served by a variety of sources, most notably the Clackamas River, the Trask River/Tualatin River system, and groundwater.

In 1989, a number of the region's water providers convened to discuss future water supply issues. It was agreed that the region was going to face future supply shortfalls given current supplies, use patterns, and growth projections. A group called the Regional Providers Advisory Group (RPAG) was formed. It met on a monthly basis and had about 35 members.

The RPAG process has evolved into a regional water supply planning effort of unprecedented scope. Phase 1 of this effort, which was completed in 1992, found that:

- Water demands would increase significantly throughout the region;
- Existing supplies would not meet all of these demands;
- Conservation could play an important role in meeting regional water needs; and
- New sources of water and efficient transmission systems offered the potential to meet these increasing needs.

The Phase 1 "Water Source Options Study" evaluated 29 different water supply options that could potentially be developed to serve the Portland/Vancouver metropolitan area's water needs and ranked these sources against a predetermined set of criteria. The evaluation concluded that six supply source options were worthy of additional analysis and should be carried forward to a second phase Regional Water Supply Plan (RWSP). The six source options are:

- A third dam in the Bull Run Watershed;
- Additional diversion and treatment capacity on the Clackamas River;
- Diversion and treatment capacity on the Willamette River;
- Diversion and treatment capacity on the Columbia River;
- Raising the height of Barney Dam on the Trask River, thereby increasing the storage capacity of Barney Reservoir; and
- Aquifer Storage and Recovery, involving the use of one or more of the region's surface water sources.

Since the completion of Phase 1, the Joint Water Commission and the Tualatin Valley Water District have continued to pursue the Barney Reservoir option[1] and have initiated construction on that project. The RWSP therefore focuses on the remaining five supply options.

The RWSP also considers water conservation as a key resource option.

This document reports on the results of the RWSP. Phase 2 was funded and managed by a group of 27 water providers in the metropolitan region.[2] In 1994, the Metropolitan Service District (Metro) became the 28th participant. The project used the techniques of Integrated Resource Planning and was conducted by a team of consultants led by the firm of Barakat & Chamberlin, Inc. Following is a list of the project participants:

City of Beaverton*
Canby Utilities Board
Clackamas Water District**
City of Gladstone
Clairmont Water District**
Damascus Water District
City of Fairview
City of Gresham
City of Hillsboro Utilities Commission*
City of Portland
Raleigh Water District
Rockwood Water PUD
City of Sandy
City of Sherwood
South Fork Water Board
City of Tigard
City of Troutdale
City of Tualatin

[1]An Environmental Impact Statement was being developed for this project before Phase 2 began.

[2]The City of Vancouver and Clark County, Washington chose not to participate in Phase 2. The Phase 2 participants are all Oregon jurisdictions.

City of Forest Grove*
City of Lake Oswego
City of Milwaukie
Mt. Scott Water District
Oak Lodge Water District
Tualatin Valley Water District*
West Slope Water District
City of Wilsonville
City of Wood Village
Metropolitan Service District (Metro)

*Denotes members of the Joint Water Commission.
**The Clackamas and Clairmont Water Districts have recently merged to form Clackamas River Water.

SCOPE OF THE PHASE 2 REGIONAL WATER SUPPLY PLAN

The scope of the Regional Water Supply Plan (RWSP) is comprehensive. It includes the following major elements:

(1) An active and ongoing **public information and involvement** program.

(2) Development of **policy objectives** that reflect the important regional values that this plan must attempt to meet.

(3) Development of a logical and defensible **demand forecast** for the region.

(4) Evaluation of five potential **supply sources**.

(5) Identification and evaluation of possible **transmission system improvements and expansions**.

(6) Identification and evaluation of a broad range of voluntary and mandatory **demand management and conservation options** available to the region.

(7) Development and evaluation of **integrated resource strategies** based on the information developed in the foregoing elements. A sophisticated modeling tool was developed to assist this process.

(8) Identification of **short-term and long-term actions** that the region must undertake to ensure that the needs of the regional water providers and

their customers are met throughout the planning period, which runs through the year 2050.

This report contains the preliminary results of the RWSP. The plan is "preliminary" at this point because of the critical need for public feedback over the next several months on the report contents. Based on that input, the plan will be finalized in early 1996.

Chapters of the preliminary plan document provide descriptions of all RWSP elements. For most of these, more detailed documentation has been prepared over the course of the project in the form of interim reports or technical memoranda. These are listed in Appendix A of the plan. Arrangements to review these documents may be made through participating water providers.

THE REGION'S NEED FOR NEW RESOURCES

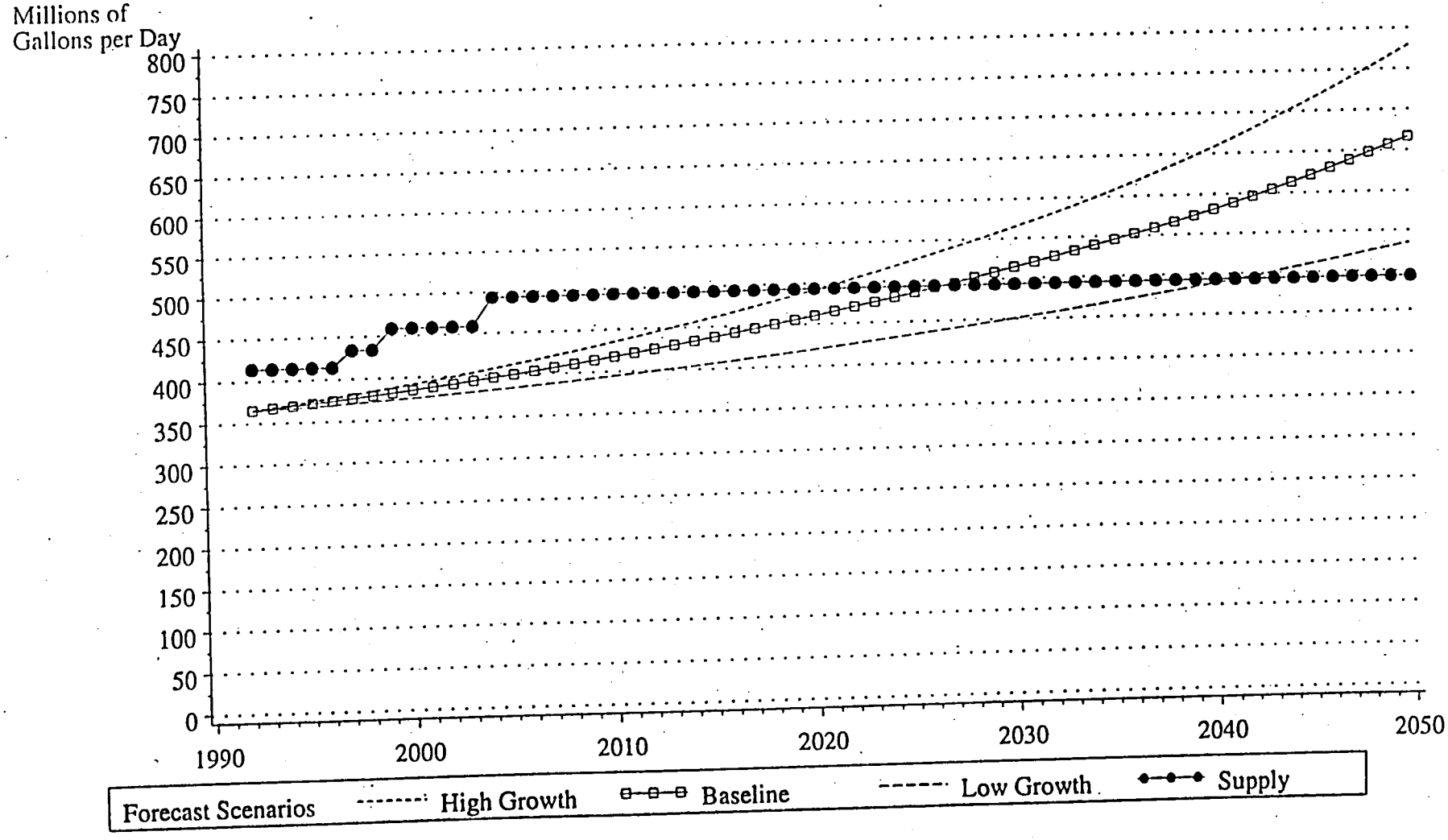
A key conclusion of the RWSP is that, *with current resources and facilities supplemented by the resource additions to which the region's providers have already committed, the earliest point at which the region will need major new supply additions will be around the year 2017.* This point is illustrated in Figure ES-1, which shows a simple comparison between available supplies and peak-day demands under extreme weather conditions, assuming no utility-sponsored conservation programs. An active conservation effort by providers can put off this need until at least the early-to-mid 2020s.

This does not imply that there is no work to be done until that time. *There is, in fact, much to be done in the near-term to ensure that the region meets the needs of its water customers.* Some of these near-term actions include the timely completion of resource additions to which the regional providers have committed, development of necessary transmission and interconnection facilities to meet the needs of all providers, conservation program planning and implementation, and design of a suitable institutional and financial structure to govern the delivery of water service in the region.

Figure ES-1

Comparison of Regional Peak-Day Demand To Existing and Committed Supply

Portland Metropolitan Region
1992--2050: All Customer Classes



PUBLIC INVOLVEMENT IN THE REGIONAL WATER SUPPLY PLANNING PROCESS

Public information and involvement (PI&I) has been a cornerstone of the RWSP. Water provider participants demonstrated their commitment to PI&I by making it a key element of the project's scope, Substantial fiscal and staff resources have been dedicated to ensuring that the values of the citizenry are understood and heard.

From its inception, the RWSP was designed to obtain input from various audiences through a mix of activities. Some activities targeted the general regional population, while others involved those with specific interests. Through this process, providers also attempted to promote consensus-building concerning the process and findings of the Plan.

Vehicles used to obtain that input and inform the public about the project have included:

- A broad range of written materials made available to the public;
- A variety of workshops, roundtable discussions, and public forums;
- Over 80 interviews of key stakeholders in the region;
- A detailed public opinion research study;
- A survey to assess the value that customers place on water supply reliability;
- More than 100 presentations to interested agencies, organizations, and citizens;
- Various newsletters, informational materials, and bill inserts;
- An Environmental Task Force of environmental organization representatives and government officials to review the environmental analysis;
- Exhibits at county fairs in Multnomah, Clackamas, and Washington counties;
- Two focus groups with residential water customers;

- A slide show on the RWSP; and
- A 15 minute RWSP video.

Thus, there has been, throughout the planning process, a great deal of information exchanged between project participants and interested citizens, organizations, and decision makers. Over 300 persons receive regular notification of committee meetings and documentation of ensuing discussions. Approximately 3,300 citizens receive updates and invitations to submit feedback through newsletters and other information pieces related to the project. Many customers have received bill inserts on the RWSP process. In turn, project participants have received input from over 3,200 people through surveys and public workshops or briefings.

Participating providers made it a priority to *listen to the public*. Several key public values and priorities have emerged from the PI&I effort. The issues that people most care about include:

- Cost
- Equity
- Water quality
- Environmental protection
- System reliability
- Efficient water use
- Implications of growth

Not surprisingly, these key issues reflect the diverse interests of the region's citizenry. The goal of the public involvement process has been to capture the range of interests and concerns held throughout the region.

REGIONAL POLICY OBJECTIVES

The PI&I efforts provided key input to the development of a set of regional policy objectives developed specifically for the RWSP. The policy objectives, along with associated evaluation criteria, provide a framework to design and evaluate the relative strengths and weaknesses of alternative resource configurations.

The region's water providers have not attempted to prioritize the policy objectives. This is consistent with not providing a single "best" resource plan. Rather, the plan presents several options that emphasize different sets of objectives. The plan makes

tradeoffs among these options clear. The region must now make choices among these alternatives.

Some of the policy objectives complement each other, while others compete or conflict. The complexity of the water supply planning and decision-making process is appropriately reflected in the broad range of policy objectives identified.

The policy objectives include:

Efficient Use of Water

- Maximize the efficient use of water resources, taking into account the potential for conservation, availability of supplies, practicality, and relative cost-effectiveness of the options.

- Make the best use of available supplies before developing new ones.

Water Supply Reliability

- Minimize the frequency of water shortages of any magnitude and duration.

- Ensure that the duration and magnitude of shortages can be managed (e.g., through the operation of raw water storage facilities or through access to alternative sources of water).

Water Quality

- Meet or exceed all current federal and state water quality standards for finished water.

- Utilize sources with the highest raw water quality.

- Maximize the ability to protect water quality in the future, including using watershed-protection based approaches.

- Maximize the ability to deal with aesthetic factors, such as taste, color, hardness, and odor.

Impacts of Catastrophic Events

- Minimize the magnitude, frequency, and duration of service interruptions due to natural or human-caused catastrophes, such as earthquakes, landslides, volcanic eruptions, floods, spills, fires, sabotage, etc.

Economic Costs

- Minimize the economic impact of capital and operating costs of new water resources on customers.
- Assure the ability to relate rate impacts associated with new water resources to benefits gained within the region on an equitable basis over time.

Environmental Impacts

- Minimize the impact of water resource development on the natural and human environments.

Growth

- Be consistent with Metro's regional growth strategy and local land-use plans.

Flexibility to Deal with Future Uncertainty

- Maximize the ability to anticipate and respond to unforeseen future events or changes in forecasted trends.

Ease of Implementation

- Maximize the ability to address local, state, and federal legislative and regulatory requirements in a timely manner.

Operational Flexibility

- Maximize operational flexibility to best meet the needs of the region, including the ability to move water around the region and to rely on backup sources as necessary.

Comparisons and tradeoffs among alternatives are facilitated through a set of measurable *evaluation criteria*. Each policy objective is associated with one or more evaluation criteria. Each alternative resource strategy is evaluated against these criteria.

FUTURE WATER DEMANDS IN THE REGION

A well-developed and defensible water demand forecast is critical to the RWSP. The demand forecast underlies the entire planning effort. The RWSP demand forecast was a complex undertaking that projected annual, seasonal, monthly, and peak-day demands for the region as a whole and for each of the three counties. These projections are based on demographic and employment forecasts developed as part of Metro's Region 2040 project. RWSP staff and consultants have coordinated closely with Metro staff throughout the process to ensure consistency.

Tables ES-1 through ES-3 summarize the forecasting results for annual average, summer average, and peak-day demands respectively. The 1992 base demands are shown, as are the high, medium, and low demand forecasts for the year 2050, the last year of the planning period. Average annual growth rates over the planning period are also shown.

These demands reflect naturally-occurring conservation, which results from legal, regulatory, and market forces which tend to increase water efficiency over time regardless of any utility conservation programs.

Table ES-1
ANNUAL AVERAGE WATER DEMAND FORECAST (MGD) AND AVERAGE ANNUAL GROWTH RATES

	1992	2050: High	2050: Medium	2050: Low
Region	172	310 (2.1%)	264 (1.5%)	211 (0.7%)
Multnomah County	97	144 (1.4%)	126 (0.9%)	106 (0.3%)
Clackamas County	33	67 (2.6%)	56 (1.9%)	43 (0.9%)
Washington County	42	99 (3.1%)	82 (2.4%)	62 (1.4%)

Table ES-2
PEAK SEASON WATER DEMAND FORECAST (MGD) AND AVERAGE ANNUAL GROWTH RATES

	1992	2050: High	2050: Medium	2050: Low
Region	220	417 (2.3%)	350 (1.7%)	275 (0.8%)
Multnomah County	123	190 (1.6%)	165 (1.1%)	136 (0.4%)
Clackamas County	41	90 (2.8%)	74 (2.1%)	56 (1.1%)
Washington County	56	137 (3.2%)	111 (2.5%)	84 (1.5%)

Table ES-3
PEAK DAY WATER DEMAND FORECAST (MGD) AND AVERAGE ANNUAL GROWTH RATES

	1992	2050: High	2050: Medium	2050: Low
Region	365	780 (2.7%)	667 (2.2%)	535 (1.4%)
Multnomah County	183	305 (1.8%)	269 (1.4%)	227 (0.8%)
Clackamas County	87	221 (3.4%)	185 (2.7%)	144 (1.8%)
Washington County	96	255 (3.6%)	213 (2.9%)	164 (1.9%)

CURRENT AND COMMITTED RESOURCES

Existing water systems in the region have an estimated usable storage capacity of 11.4 billion gallons and a delivery capacity of 413.8 million gallons per day (mgd). Current regional peak-day demand, even under weather conditions that approach the hottest and driest that the region has experienced over a 65-year historical period of record, is about 370 mgd. Despite this apparent excess capacity, some individual providers within the region do face more immediate shortfalls due to transmission and distribution system constraints.

Existing water sources and facilities for the region include:

- **The Bull Run watershed**, with two dams that impound 10.2 billion gallons of usable storage. About 750,000 residents of the region rely on the Bull Run as their primary supply.

- **The Clackamas River**, on which regional providers have developed 66 mgd of intake and treatment capacity. The Clackamas is currently the primary source of water to 175,000 residents.

- **The Trask/Tualatin water system**, which includes the 1.3 billion gallon Barney Reservoir on the Trask River, a conduit from the reservoir to the Tualatin River, and 43.5 mgd of intake and treatment capacity on the Tualatin. In addition, in most years, the region has access to 4.2 billion gallons from Hagg Lake, which is owned by the Bureau of Reclamation and located on Scoggins Creek. This system supplies water to over 120,000 residents in the western part of the region.

- **The Columbia Southshore Wellfield**, which was developed in the 1980s as an emergency backup and peaking supply source. Since 1986, the ability to use the wellfield has been limited to prevent migration of contamination plumes. As a result, the current usable delivery capacity of the wellfield is assumed to be 35 mgd. The City of Portland is working closely with the Oregon Department of Environmental Quality and with the responsible parties to implement a remediation program that restores the wells to their full capacity of up to 90 mgd.

- **Local sources**, which are used by a number of smaller communities in the region for base use or peaking purposes. These are largely

groundwater sources scattered throughout the region and provide nearly 60 mgd of capacity.

- **Transmission lines**, which range from 4-inch diameter pipes in small districts to the 66-inch diameter Bull Run Conduit No. 4.

In addition to maintaining existing water supply sources and transmission facilities, the region's water providers are committed to completing several facility additions, expansions and improvements over the next two to ten years. The projects will provide another 80 mgd of delivery capacity and 5.2 billion gallons of storage. These additions are not being evaluated as part of the Regional Water Supply Plan. Rather, the RWSP assumes these projects will be completed, and includes them in the plan's baseline resource assumptions or "base case".

Resources to which regional providers have committed, but which are not yet operational, include:

- **The Barney Reservoir expansion**, which will increase the water storage capacity of Barney Reservoir from 1.3 billion gallons to 6.5 billion gallons. This project is expected to be completed by 1998. In addition, improvements to the Joint Water Commission's intake and treatment facilities on the Tualatin River and addition of a new transmission line are expected to increase delivery capacity by 20 mgd to 63.5 mgd by 1997.

- **Additional Clackamas River capacity** beyond the 66 mgd that already exists. Several Clackamas providers have committed to developing a total of 22.5 mgd of additional capacity. This would bring the total "base case" capacity on the Clackamas to 88.5 mgd.

- **Columbia South Shore Wellfield enhancements**, which the RWSP assumes will increase the current 35 mgd of capacity to 72 mgd by 2005.

Table ES-4 summarizes the existing and committed resources being assumed in the RWSP "base case."

As discussed earlier, these committed resources enable the region to defer the need for further resources or facilities until at least the year 2017. Without these committed additions, needs can occur as early as 2004.

Table ES-4
REGIONAL WATER SUPPLY PLAN
EXISTING AND COMMITTED SUPPLY SOURCES

Source	Existing		Additional Committed		Existing and Committed	
	Delivery Capacity (mgd)	Usable Storage Capacity (mg)	Delivery Capacity (mgd)	Usable Storage Capacity (mg)	Delivery Capacity (mgd)	Usable Storage Capacity (mg)
Bull Run Res 1,2	**210**	**10,200**			**210**	**10,200**
Clackamas						
CRW	30				30	
SFWB	20		10		30	
Lake Oswego	16		4		20	
Oak Lodge			8.5		8.5	
Subtotal	**66**		**22.5**		**88.5**	
Trask/Tualatin	**43.5**	**1,153**	**20**	**5,214**	**63.5**	**6,367**
Southshore Wellfield	**35**		**37**		**72**	
Local Sources						
South	28.4				28.4	
West	12.8				12.8	
East	18.1				18.1	
Subtotal	**59.3**				**59.3**	
Total	**413.8**	**11,353**	**79.5**	**5,214**	**493.3**	**16,567**

ANALYSIS OF SOURCE OPTIONS

For each source option, possible facility locations were screened to identify **representative sites**, which the RWSP defines as:

> *Potential facility locations that merit detailed analysis because they offer the highest likelihood of successful permitting and potential development based on preliminary analyses of technical, land use, water quality, environmental, cost, and other relevant factors.*

Identified representative sites are as follows:

- **Bull Run Dam 3:** Bull Run River canyon just downstream of Log Creek and about one-half mile downstream of the confluence of Blazed Alder Creek and the Bull Run River.
- **Clackamas River:** A consolidated facility adjacent to the current Clackamas River Water site.[3]
- **Willamette River:** Just upstream (west) of the existing railroad bridge in Wilsonville on the north side of the river on property currently owned by Oregon Pacific which is currently used for sand and gravel operations.
- **Columbia River:** Just below the Sandy's mouth, on a site currently used for gravel mining and storage.
- **Aquifer Storage & Recovery:** Two sites, one in the Powell Valley area southeast of Gresham and the other in the Cooper-Bull Mountain area about four miles to the southwest of the City of Beaverton in Washington County.

Extensive analyses of each option were then performed. Areas analyzed include:

- Water Availability and Water Rights
- Raw Water Quality and Treatment Requirements
- Environmental Impacts
- Vulnerability to Catastrophic Events

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[3]Several configurations were considered that use this consolidated facility instead of or in conjunction with the various existing or planned Clackamas River facilities.

- Costs
- Ease of Implementation

One of the key conclusions is that all of the surface sources can readily be treated to meet or surpass all safe drinking water standards.

These analyses formed the basis of ratings of each option against key evaluation criteria and provided crucial information to the development and assessment of alternative resource strategies. Table ES-5 summarizes the ratings of the source options.

ANALYSIS OF TRANSMISSION OPTIONS

In addition to the source options, transmission is critical to efficiently meeting the region's needs. The region's transmission systems include several components, including:

- Pipelines that move treated water from the treatment plant to the regional storage reservoirs;
- The regional reservoirs themselves;
- Major lines linking sources to demands in other parts of the region;
- Major lines designed to serve demands within a portion of the region; and
- Local "spokes" to serve the needs of individual providers.

Representative regional reservoir sites for the surface source options are as follows:

- Bull Run and Columbia sources: Existing Powell Butte reservoir site.
- Clackamas source: Forsythe Road site near the unincorporated community of Outlook in Clackamas County.
- Willamette source: Cooper Mountain site in unincorporated Washington County west of Beaverton.

Nine major representative transmission corridors were identified, as follows:

- Lusted Hill/Powell Butte
- Columbia River/Powell Butte
- Powell Butte/Clackamas River
- Powell Butte/Beaverton
- Clackamas/Tualatin
- Clackamas/Forsythe Road
- Willamette/Tualatin
- Tualatin/Beaverton
- Cooper Mountain/Beaverton

Corridor alignments were chosen for each of these based on preliminary land use, environmental, and geotechnical analyses. Based on specified design criteria, cost functions were then generated for each corridor. These cost functions also included base cost estimates for the local "spokes" between the corridor and the appropriate local providers.

The final components of the transmission system are the "spokes" that deliver water to the local providers from one of the major transmission lines. For each provider, these spokes were sized to meet the projected 2050 demand deficit based on forecasted high peak-day demands. As discussed below, *a key plan implementation issue for the region is the specific local interconnections that are needed to ensure that provider needs are met in the near-term as well as the long-term.* The region should attempt to configure these local transmission additions to be consistent with the adopted long-term regional resource strategy.

Table ES-5
RATINGS OF SOURCE OPTIONS

Source Option	Natural Environment	Human Environment	Raw Water Quality	Water Aesthetics	Watershed Protection	Vulnerability to Catastrophic Events	Ease of Implementation
Bull Run Dam 3	4.9	3.6	1.2	1.0	1.0	3.5	4.5
Columbia	2.6	2.5	2.1	2.5	5.0	3.3	3.5
Willamette	1.0	2.5	2.2	2.0	4.0	2.5	4.0
Clackamas (>50 mgd)	2.4	1.0	1.8	2.0	2.0	2.5	2.0
Clackamas (≤ 50 mgd)	1.0	1.0	1.8	2.0	2.0	2.5	2.0
ASR	1.5	2.2	3.0	3.0	N/A*	2.0	3.0

Note: Ratings range from 1 to 5; lower scores are preferred.
* This issue was not directly addressed in the RWSP. It is assumed that rigorous wellhead protection programs will be required for any ASR site.

It is critical that the development of regional, subregional, and local transmission options meets local needs over the entire planning period in a manner consistent with the region's anticipated ultimate resource configuration. At times, there will be some friction between short-term local needs and long-term regional needs. The manner in which this friction is resolved must recognize that a regional plan that cannot flexibly meet the ongoing needs of the participant providers will not retain the critical support of those providers. These needs should, however, be met in the context of the strategic direction the region has chosen.

ANALYSIS OF CONSERVATION PROGRAMS

A basic premise of the RWSP is that water conservation is a resource that can play a key role in meeting future water needs and that this resource must be carefully considered and subjected to the same level of analysis as are supply sources. A comprehensive framework was used to examine water conservation to assure that all viable conservation technologies and management practices are considered.

The framework began by specifying a large universe of potential conservation measures. These measures were then subjected to a qualitative screen to narrow the focus to those that had potential value to the region. For those measures that passed the qualitative screen, technology profiles were developed that described each measure's key technical and economic characteristics. The profiles formed the basis of an economic screen of the remaining measures.

The next step was to combine measures passing both screens into effective conservation program concepts. A conservation program is a set of conservation measures bundled for delivery to a defined target market of customers. The results of this step are presented in Table ES-6, in which the program concepts are divided into three levels in increasing order of "aggressiveness." Detailed descriptions were developed for each of 24 program concepts. In addition, estimates were made of the further savings that could be achieved through conservation pricing programs beyond those already in place in the region.

The RWSP also included a preliminary analysis of opportunities for increasing water reuse and recycling, and for the direct use of stormwater. Options evaluated include:

- Stormwater capture
- Cisterns
- Gray water systems

- Recycling of industrial cooling water
- Reuse of treated wastewater effluent

DEVELOPMENT OF ALTERNATIVE RESOURCE STRATEGIES

The final product of the RWSP is a set of *resource strategies* that best meet the region's needs as expressed through the policy objectives. There are many possible strategies that reflect the tradeoffs the region must make among the policy objectives.

In light of the importance of future uncertainties, it is useful to distinguish between a *resource sequence* and a *resource strategy*.

- A *resource sequence* is a linear progression of resource and transmission additions over the planning period. Note that a resource sequence does not provide flexibility for the region. It is a single development path that does not respond to changing future conditions.

- A *resource strategy* is a multi-branched "tree" of sequences that defines actions that should be taken under various sets of uncertainty outcomes. It is a "road map" of recommended actions under a wide range of future conditions, and provides a series of points at which the region can respond to new information about then-current conditions.

Table ES-6
REGIONAL CONSERVATION PROGRAM CONCEPTS

	Residential Indoor	Residential Outdoor	Commercial, Industrial, Institutional Indoor	Commercial, Industrial, Institutional Outdoor
Level 1	Public education and awareness	Public education and awareness Customer landscaping workshops Trade ally landscaping workshops—res. portion	Commercial plumbing and appliances education HVAC workshops	CI&I outdoor education and awareness C&I watering practices workshops Trade ally landscaping workshops—C&I portion
Level 2	Indoor audit (combined with outdoor) Appliance incentives and equipment tagging	Outdoor audits Incentives for new efficient landscaping and irrigations systems	Commercial indoor audit HVAC financial incentives Industrial process technical assistance and incentives	CI&I outdoor audits Large landscape audits Incentives for new efficient landscaping and irrigation systems
Level 3	Ultra low-flush toilet rebate	Landscaping ordinance	Ultra low-flush toilet direct installation and incentives Incentives for early retirement of single-pass cooling	Landscaping ordinance

Water ~~Supply~~ Reliability

One of the fundamental goals of the RWSP is to address the issue of water supply reliability. This goal is embodied in the policy objective of "minimiz(ing) the frequency of water shortages of any magnitude and duration." In many ways, supply reliability is basic to the RWSP, as concern about future *un*reliability is the key reason the region's providers joined to develop the plan.

The region must ultimately choose a desired level of future reliability, just as it must make choices about other policy objectives. Tradeoffs occur between increased reliability levels and other important objectives, such as minimizing costs and environmental impacts. Policymakers must understand the consequences of different reliability levels to make informed decisions. To accomplish this, resource sequences and strategies were defined for each of three reliability levels.

The definition of these reliability levels was guided by the key finding that, given existing and committed resources, the Portland region will have sufficient total water supply volumes to avoid all *volume-related* shortages for the entire planning period (i.e. through 2050), even under high demand and low flow conditions. However, in the absence of further resource and facility additions, the region will face *shortages in delivery capacity* on high-demand days.

Since the region must concern itself with shortages in delivery capacity that are driven by peak demands, the alternative reliability levels should be defined accordingly. Thus, the key distinctions in reliability relate to the level and frequency of shortages during peaking events.

- A system that achieves **Level 1 reliability** would be perfectly reliable. No shortages would be experienced even under the worst historical weather conditions.

- A system that achieves **Level 2 reliability** would allow for no more than a 10% peak day shortage for any of the three counties under the worst historical weather conditions.

- A system that achieves **Level 3 reliability** would allow for no more than a 20% peak day shortage for any of the three counties under the worst historical weather conditions.

Resource Sequences That Achieve Level 1 Reliability

There are many ways for the region to add resources and facilities to ensure that future shortages do not occur. The RWSP proposes five approaches to meeting the region's needs and achieving this highest possible level of reliability. Each of these five sequences was designed to emphasize different policy objectives or combinations of objectives. Table ES-7 provides a guide to the key policy objectives addressed by each sequence. The sequences themselves are illustrated in Figure ES-2. Each of these sequences assumes high demands.

These resource sequences were evaluated against the evaluation criteria. Table ES-8 shows the results of the key assessments.

Table ES-7
KEY POLICY OBJECTIVES
ADDRESSED BY LEVEL 1 RESOURCE SEQUENCES

Sequence	Natural Environment	Water Use Efficiency	Raw Water Quality	Costs	Catastrophic Events
1.1	✓	✓			
1.2		✓	✓		
1.3		✓	✓	✓	
1.4		✓			✓
1.5	✓	✓		✓	✓

Table ES-8
PERFORMANCE OF LEVEL 1 RESOURCE SEQUENCES AGAINST KEY EVALUATION CRITERIA

Sequence	Cost		Efficiency: % Conservation Savings for Planning Period	Natural Environment*	Water Quality		Catastrophic Events			Ease of Implementation*
	Present Value Societal ($ millions)	Present Value Utility ($millions)			Raw Water Quality*,†	Watershed Protection*	Expected Seasonal Unserved Demand in Worst Year Without: Bull Run	Expected Seasonal Unserved Demand in Worst Year Without: 2nd Largest Source	No. of New Sources	
1.1 Natural Environment/ Efficiency	996.6	962.9	10.57%	1	2.2	2.1	23%	1.5%	1	2.5
1.2 Raw Water Quality/Efficiency	722.2	802.6	5.04%	4.9	1.2	1.3	60%	0.7%	0	4.5
1.3 Cost/Water Quality/Efficiency	611	647.6	5.04%	3.2	2	2.1	16%	9.0%	1	3.1
1.4 Catastrophic Events/Efficiency	635.1	673.9	5.04%	2.9	2.2	2.1	2%	0.7%	3	3.8
1.5 Costs/Natural Environment/ Catastrophic Events/Efficiency	647.9	673.9	5.04%	2.1	2.2	1.8	2%	0.9%	2	3.3

* Comparative scale ranging from 1-5 with 1 as the most favorable rating and 5 as the least favorable rating.
† Volume weighting of raw water quality ratings of new sources.

Resource Strategies That Achieve Level 1 Reliability

For each of the five sequences, associated resource strategies that reflect demand uncertainty were developed. These strategies indicate how future resource and facility development activities would vary as future demands deviate from earlier forecasts. In all cases, the objective would still be to achieve Level 1 reliability. To illustrate, a resource strategy diagram is shown in Figure ES-3.

Table ES-9 shows the expected values of the key evaluation ratings for each of the strategies.[4] The flexibility rating is based on the number of possible resource paths in the strategy.

[4]These expected ratings are based on assumed probabilities for each possible demand outcome (high, medium, or low) for the successive demand reassessments that occur throughout the planning period.

Table ES-9

EXPECTED VALUES OF KEY EVALUATION CRITERIA FOR LEVEL 1 STRATEGIES

Strategy	Costs		Natural Environment*	Water Quality		Flexibility*
	Present Value Societal ($million)	Present Value Utility ($million)		Raw Water Quality*	Watershed Protection*	
1.1 Natural Environment/Efficiency	864.3	797.8	1.0	2.0	1.8	3
1.2 Raw Water Quality/Efficiency	580.6	619.9	4.1	1.2	1.2	5
1.3 Costs/Water Quality/Efficiency	494.0	501.4	2.2	1.7	1.7	3
1.4 Catastrophic Events/Efficiency	534.4	546.9	2.2	2.1	1.7	1
1.5 Costs/Natural Environment/ Efficiency/Catastrophic Events	539.9	539.9	1.8	2.1	1.5	2

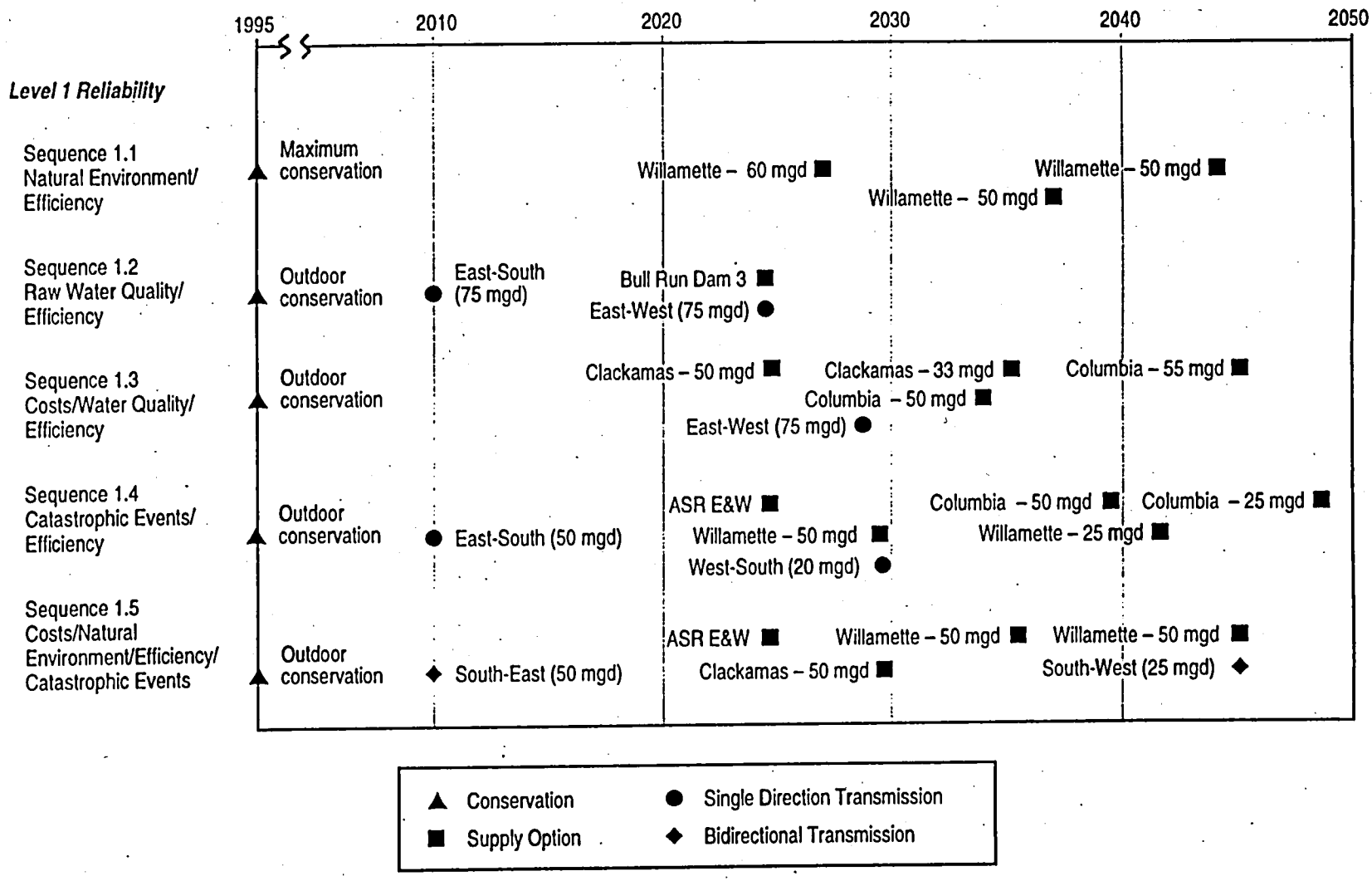
*Comparative scale ranging from 1-5 with 1 as the most favorable rating and 5 as the least favorable rating.

Implications

As mentioned earlier, these results indicate that—even if the region were to pursue the highest possible level of reliability and future demands turn out to be high—major resource additions would not be required until well into the 2020s. This conclusion assumes that the region pursues a menu of conservation programs that focus on outdoor uses and is critically dependent on the region's developing committed sources in a timely manner. If the region undertakes those near-term activities, there is considerable time before additional sources must be developed.

Figure ES-2

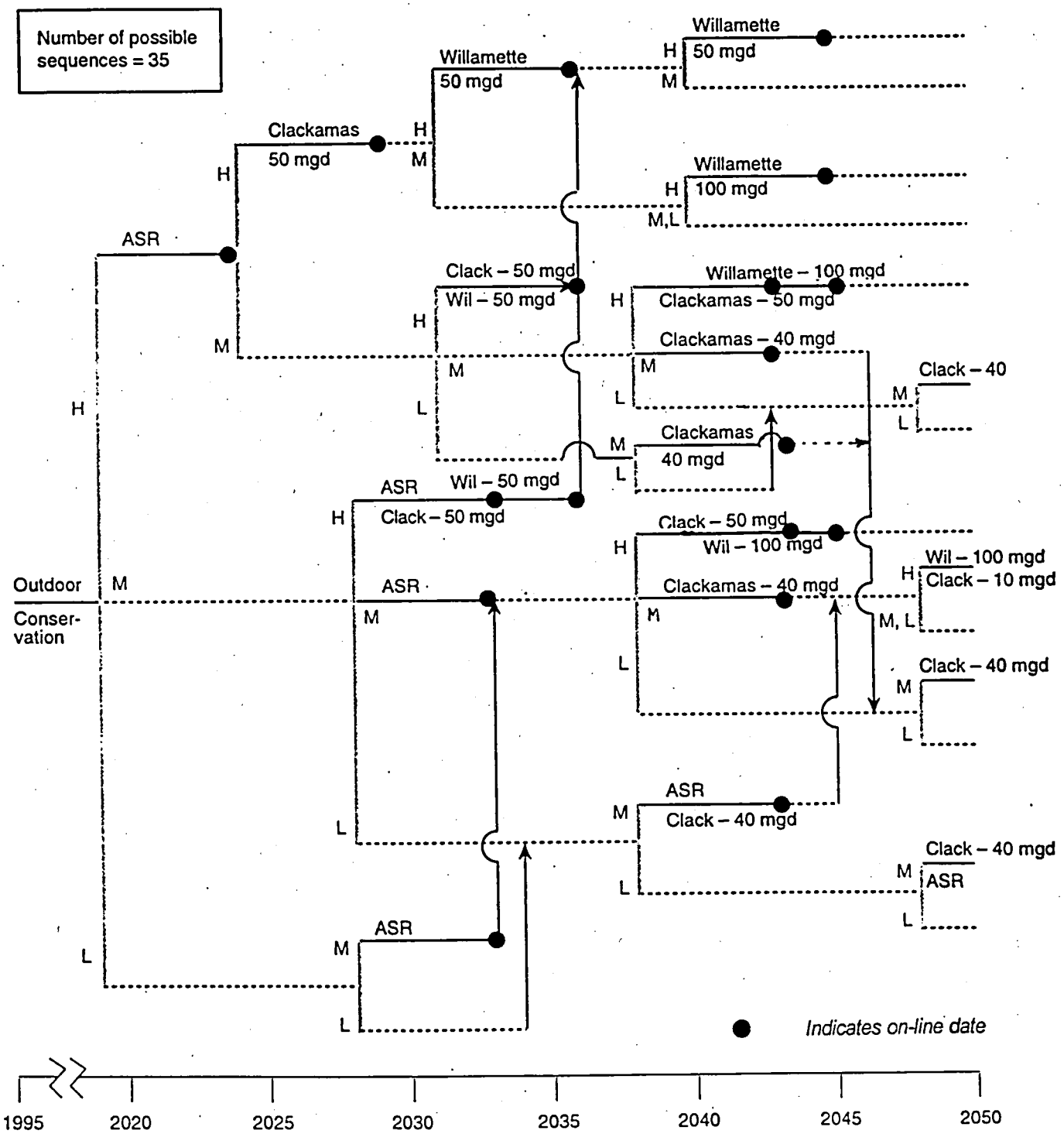
Level 1 Resource Sequences–High Demand



95-920293.port1.bct.7/95.ap

Figure ES-3

Level 1 Reliability – Strategy 1.5



95-920293 Fig.XI-18.7/95.fh

This does *not* mean the region can afford to defer a decision on which resource strategy will be pursued. As discussed below, the region faces many challenges in the short-term that will require action to ensure the needs of individual providers will be met. Policymakers' adoption of a long-term resource strategy will provide important direction to water providers, guiding near-term actions such as regional conservation program implementation and additions to the region's transmission system.

Resource Strategies that Achieve Level 2 or 3 Reliability

It is important to understand the implications of the region choosing less-than-perfect reliability, particularly in terms of costs. To illustrate, Level 2 and 3 strategies were developed that correspond to Level 1 strategies 1.2 and 1.5. Table ES-10 contains the mean values of key evaluation indices for these four new resource strategies. Their expected costs are significantly less than for their Level 1 counterparts. This key tradeoff between costs and reliability is one of many such tradeoffs that the region must make.

Table ES-10

EXPECTED VALUES OF KEY EVALUATION CRITERIA FOR LEVEL 2 AND 3 STRATEGIES*

Strategy	Costs		Natural Environment**	Water Quality**		Flexibility**
	Present Value Societal ($million)	Present Value Utility ($million)		Raw Water Quality**	Watershed Protection**	
2.2 Raw Water Quality/Efficiency	517.2	537.2	3.7	1.1	1.3	5
2.5 Costs/Natural Environment/ Efficiency/Catastrophic Events	494.1	487.8	1.8	2.0	1.5	3
3.2 Raw Water Quality/Efficiency	481.9	490.9	3.7	1.1	1.3	5
3.5 Costs/Natural Environment/ Efficiency/Catastrophic Events	476.2	462.9	1.7	2.2	1.4	5

*Probability-weighted averages across all possible resource development paths.

** Scale ranging from 1-5 with 1 as the most favorable rating and 5 as the least favorable rating.

CONCLUSIONS AND RECOMMENDATIONS

A regional dialogue regarding the appropriate future level of water supply reliability should be undertaken. Yet, that decision does not have to be made before going forward with required near-term actions since the major impact of lesser reliability levels is to put off necessary resource additions even further. At the appropriate time, the region's decision makers must determine the desirable level of reliability for the region.

While long-term system reliability does not influence near-term actions, many of the near-term actions the region must pursue *will* be affected by resource choices pursued over the long-term. Thus, it is critical for the region to consider the five strategies presented for Reliability Level ,1 and to select one of these or develop an alternative.

Based on the evaluation of Strategies 1.1 through 1.5, the regional providers suggest a ranking based upon how well each strategy meets the entire range of policy objectives. Table ES-11 shows the ranking of the five strategies recommended by the regional providers.

Table ES-11
RANKING OF LEVEL 1 RESOURCE STRATEGIES

			Emphasized Policy Objectives				
Water Provider Ranking	Strategy Number	Resource Additions	Natural Environment	Water Use Efficiency	Raw Water Quality	Costs	Catastrophic Events
1	1.5	Outdoor Conservation, ASR, Clackamas, Willamette	✓	✓		✓	✓
2	1.3	Outdoor Conservation, Clackamas, Columbia		✓	✓	✓	
3	1.4	Outdoor Conservation, ASR, Willamette, Columbia		✓			✓
4	1.2	Outdoor Conservation, Bull Run Dam 3		✓	✓		
5	1.1	Maximum Conservation, Willamette	✓	✓			

Thus, based on the RWSP analysis conducted to date, water provider participants recommend Strategy 1.5 for consideration during preliminary RWSP review because it seems to best meet the broadest array of policy objectives identified through the planning process. This strategy focuses on the following major future resource additions:

- Outdoor water conservation;
- Aquifer Storage and Recovery;
- The Clackamas River; and
- The Willamette River

The advantages of Strategy 1.5 include:

- Relatively low costs;
- Relatively low environmental impacts;
- An emphasis on the efficient use of water;
- Relatively low vulnerability to catastrophic events; and
- Flexibility to deal with future uncertainty.

The overall raw water quality rating for Strategy 1.5 is comparable to Strategies 1.1 and 1.4. It is not as good as Strategies 1.2 or 1.3. The RWSP's raw water quality analysis has revealed that the quality of all the surface supply options is high when compared to most other municipal sources nationwide. The conservative treatment approaches recommended for the river sources will provide multiple-barrier protection against current and future contaminants and will yield good-tasting water. Moreover, the Willamette and ASR will both be used primarily as peaking sources. For the vast majority of any year, the region will be served by the Bull Run, the Trask/Tualatin system, and existing local supplies (primarily groundwater). In addition, the likely injection source for ASR will be the Bull Run.

The region's water providers are committed to an open and fair discussion about the merits of the alternative water futures available to the region. The public's response concerning the resource strategies presented and how these meet the region's needs is important. The providers fully recognize that no one "right answer" exists that perfectly meets all of the public's values. This is why several strategies are presented for consideration. Strategies 1.1 through 1.4 are also fully capable of meeting the region's water supply needs. They address some of the same policy objectives and, in many cases, do a better job at meeting particular objectives than Strategy 1.5. Nevertheless, none of the other alternatives seems to meet so many important objectives.

WHERE DOES THE REGION GO FROM HERE?

Regardless of the strategy adopted by the regional providers, a range of issues must be addressed in the near term. Providers have already expressed their commitment to establishing an ongoing regional organization to meet the region's water supply needs following RWSP completion. The exact form and functions of this organization will be discussed over the next few months prior to adopting the final RWSP. However, a key overall role will be to ensure that the needs of all water customers throughout the region are met within the context set by the adopted Regional Water Supply Plan. It will also consider possible long-term changes to the current institutional and financial arrangements under which water service is delivered in the region.

Not only must the ongoing relationships among the providers be defined, but so also must the critical role of Metro. Metro has the authority and responsibility to adopt and enforce the region's urban growth management strategy, including the adoption and revision of the Urban Growth Boundary (UGB). Thus, there is a direct relationship between Metro's role and the job of the regional providers to serve the water needs of the growing metropolitan region.

In addition, the Metro Charter requires Metro to adopt an Urban Water Supply and Storage Element in its Regional Framework Plan. As a RWSP participant, Metro itself will provide input on the preliminary and final RWSP documents. It will adopt the final RWSP by resolution. The relationship between the region's water providers and Metro requires further discussion as the region moves toward final adoption of a RWSP.

Specific near-term actions that must be undertaken by the region include:

- Adoption of a long-term regional resource strategy.
- Continued maintenance, upgrades, and remediation of the Columbia Southshore Wellfield.
- Expeditious completion of the Barney Reservoir and Joint Water Commission treatment plant and transmission expansions.
- Timely development of the additional committed capacity on the Clackamas River.
- Development of transmission and interconnection facilities to serve the short-term and medium-term needs of individual providers. It is critical

that these facilities be developed within the context of the adopted long-term regional strategy.

- Planning and implementation of an appropriate mix of conservation programs.

- Expanded coordination with the region's wastewater management agencies regarding the potential use of stormwater and treated effluent as non-potable water resources.

- Actions necessary to maintain the viability of all source options considered in the RWSP.

This last point deserves particular attention. Over the last two decades, events have shown that competing demands, coupled with increased regulatory requirements, will make securing water sources more difficult for the future. Contingencies must be considered if particular choices later become unavailable. The water providers should continue to protect their ability to utilize the water sources considered in the RWSP. This will require a variety of activities for each source option.

In short, completion of the RWSP project signals the region's water providers to continue and redouble the collaborative and visionary efforts that they have begun. Among the benefits of the RWSP effort has been an increase in trust and understanding among the providers that has allowed a truly regional plan to be developed. It is critical that the providers capitalize on this trust and understanding to immediately begin to undertake the near-term actions that will lead to effective plan implementation and will meet the needs of the region's water customers.

AGENDA ITEM: 6.1
Meeting Date: September 21, 1995

Resolution No. 95-2193

Resolution No. 95-2193, For the Purpose of Adopting Minority Business Enterprise, Women Business Enterprise, and Disadvantaged Business Enterprise Goals for FY 95-96.

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF ADOPTING MINORITY BUSINESS ENTERPRISE, WOMEN BUSINESS ENTERPRISE AND DISADVANTAGED BUSINESS ENTERPRISE GOALS FOR FISCAL YEAR 1995-96	))))))	RESOLUTION NO. 95-2193 Introduced by Doug Butler, Director of Administrative Services and Scott Moss, Risk & Contracts Manager

WHEREAS, Metro has implemented Minority Business Enterprise (MBE), Women Business Enterprise (WBE) and Disadvantaged Business Enterprise (DBE) programs, the purpose of which is to encourage participation of MBE's, WBE's and DBE's in Metro contracting activities; and

WHEREAS, Metro expresses a strong commitment to provide maximum purchasing and contracting opportunities to Minority, Women and Disadvantaged Businesses; and

WHEREAS, Section 2.04.145(a) of the Minority Business Enterprise Program, Section 2.04.245(a) of the Women Business Enterprise Program and Section 2.04.345(a) of the Disadvantaged Business Enterprise Program require that goals be set annually; and

WHEREAS, An analysis of MBE, WBE and DBE participation has been completed and Sections 2.04.145(b), 2.04.245(b) and 2.04.345(b) have been duly considered; now, therefore,

BE IT RESOLVED

That the Minority and Women Business Enterprise Program goals attached as Exhibit 1 are adopted for the period commencing July 1, 1995, through and including June 30, 1996, and that the Disadvantaged Business Program goals attached as Exhibit 1 are adopted for the period commencing October 1, 1995, through and including September 30, 1996.

ADOPTED by the Metro Council this _____ day of _____, 1995.

_____

J. Ruth McFarland, Presiding Officer

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STAFF REPORT

FOR THE PURPOSE OF ADOPTING MINORITY BUSINESS ENTERPRISE, WOMEN BUSINESS ENTERPRISE AND DISADVANTAGED BUSINESS ENTERPRISE GOALS FOR FISCAL YEAR 1995-96

Date: July 27, 1995 Presented by: Scott Moss

PROPOSED ACTION

Adoption of Resolution No. 95-2193, to establish annual goals for Metro to contract with MBE, WBE, and DBE businesses.

FACTUAL BACKGROUND AND ANALYSIS

Metro Code sections 2.04.145, 2.04.245, and 2.04.345 require the Council to establish annual minority business enterprise (MBE), women business enterprise (WBE), and disadvantaged business enterprise (DBE) goals. The Council has continually expressed its desire that Metro departments seek opportunities to do business with MBE, WBE and DBE businesses. To this end, the Metro Council annually establishes goals to benchmark the success of contracting with MBE's, WBE's, and DBE's. The Executive Office, through the Administrative Services Department, is dedicated to promote the goals of the Council and improve the participation of MBE's, WBE's and DBE's.

DISCUSSION

Current Activities:

The Administrative Services Department has made this program a top priority. The attached report details the efforts made to improve participation of minority, women-owned, and disadvantaged business enterprise programs. In brief, activities included the following:

- Two qualified Metro staff have been given direct responsibility to assure compliance, perform outreach activities, and teach Metro departments about the importance and ease of working with MBE's, WBE's and DBE's. Kathy Newton is responsible for women-owned business enterprises and qualified rehabilitation facilities, and Berthe' Carroll is responsible for minority and disadvantaged-owned businesses.

- One MBE and one WBE must be contacted for every purchase over $500 and for personal services over $2,500.

- Two outreach programs are held each year to inform minority and women-owned businesses about doing business with Metro.

- A comprehensive list of Metro projects is compiled and distributed to MBE and WBE firms to advise them of the type of contracts anticipated for the current fiscal year.

- Information is provided to individuals on the certification process, technical assistance and business development resources.

- Metro contracted with Talbot, Korvola and Warwick to address and recommend improvements to the MBE and WBE programs. The consultant's recommendations are being implemented.

- Metro is participating in the regional disparity study to determine how to solicit more MBE and WBE involvement.

- Mandatory pre-bid meetings are required for all major construction projects to introduce sub-contractors to prime contractors. The prime contractors must contact those in attendance.

Proposed Future Activities:

Despite efforts outlined above, Metro falls short of meeting the goals established by the Council. Therefore, additional outreach efforts are needed. Proposed future activities include:

- Teach departments about contracting and the importance of contacting minority and women-owned business. A contracting guide has been developed and will be provided to departments.

- Promote two "regional outreach meetings" in cooperation with the City of Portland and Multnomah County. The first meeting is set for August 17, 1995.

- Provide simple standard contracts for projects under $10,000.00.

- It is proposed that the Administrative Services Department handle all advertising to assure appropriate outreach activities are performed.

- Initiate discussion for an advisory committee made up of minority and women owned business owners and Metro departments representatives.

- Implement an enhanced database of certified MBE and WBE vendors to improve utilization.

- Provide quarterly reports on MBE/WBE participation to the Council, Executive Officer, Metro Auditor and Departments.

GOALS

A resolution is required for the setting of annual goals for the MBE, WBE and DBE programs in accordance with Metro Code.

Exhibit 1, attached, describes in detail the utilization for FY 1994-95.

The proposed annual goal for the FY 1995-6 Disadvantaged Business Enterprise program is 12 percent.

The proposed goals for the FY 1995-96 Minority Business Enterprise and Women Business Enterprise programs are shown in the following table:

Contract Category	No. of Contracts	Total	Proposed Goals	
			MBE%	WBE%
Personal Services	62	$6,394,068	7	9
Labor & Material	29	$4,838,735	5	6
Construction	8	$1,701,000	6	12
Procurement	9	$1,055,886	2	3

BUDGET IMPACT

No budget impact is anticipated.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 95-2193.

Exhibit 1

MBE/WBE Performance Report
Contracts Division
FY 1994-1995

I. BACKGROUND

Metro's present Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) programs for locally funded contracts were adopted in 1993. The primary focus of Metro's MBE and WBE programs is proactive outreach and documented good faith compliance. The Risk & Contract Management Division is, by Metro Code 2.04, responsible for the promotion, implementation, and administration of Metro's special programs for MBE, WBE, Disadvantaged Business Enterprise (DBE) and Qualified Rehabilitation Facilities (QRF) outreach and utilization.

II. CONTRACT AWARD SUMMARY

431 contracts were awarded from July 1, 1994 through June 5, 1995, totaling $16,386,482.85 (see Table A). 171 were exempt from MBE/WBE solicitation. The categories of exempt contracts include: Revenue, Intergovernmental Agreements (IGAs), Sole Source, awards to Qualified Rehabilitation Facilities (QRFs), Grants, and other miscellaneous contracts (sponsorships, temporary employees, past employees). Exempted contracts represented 28% of the total contracts awarded for a total of $4,537,320.23.

III. MBE/WBE UTILIZATION SUMMARY

260 contracts solicited MBE/WBE bids/proposals, totaling $11,849,162.62. Eight (8) of those contracts were awarded to MBEs and twenty (20) to WBEs, as follows:

MBEs:

Kurahashi & Associates - $14,804
Data Processing Resources Inc. - $26,650 (2)
S. Brooks and Associates - $38,000 (2)
Northwest Geotech Inc. - $996
Thermal Mechanical - $19,608 (2)

Total MBE Award: $100,058

WBEs:

Jeanne Galick Graphic Design - $9,500
SRI/Shapiro - $2,500
Andrea Bainbridge Design - $2,000
Palermini and Associates - $12,900 (3)
Watermark Press - $7,500
Steinberger & Associates - $22,200 (2)
Becker Projects - $7,000
New Dimensions Landscaping - $15,889
Wildcat Mt. Sandblasting - $17,760
Wild Rose Design - $4,500 (2)
Moore Commercial Interiors - $2,821
Rose City Electric Co. Inc. - $3,297
Rose City Resource Group - $2,000 (2)
Diane Martin - $10,145
Coates Advertising, Inc. - $32,000

Total WBE Award: $152,012

MBE utilization for all contracts awarded was .84%. WBE utilization for all contracts awarded was 1.28%.

TABLE "A"
CONTRACT SUMMARY

	CATEGORY	# of CONTRACTS	TOTALS
TOTAL CONTRACTS AWARDED	**All**	**431**	**$16,386,482.85**
Contracts Awarded - Exempt from MBE/WBE Solicitation:			
	Revenue	37	$1,493,806.98
	IGAs	69	$1,960,439.15
	Sole Source	19	$282,501.60
	QRFs	8	$328,324.96
	Grants	32	$460,997.54
	Other	6	$11,250.00
TOTAL:		**171**	**$4,537,320.23**
Contracts Awarded - MBE/WBE Solicitation:			
	Personal Services	164	$1,980,112.24
	Labor & Materials	62	$572,834.38
	Procurement	29	$2,220,576.00
	Construction	5	$7,075,640.00
TOTAL		260	$11,849,162.62

TABLE "B"
UTILIZATION SUMMARY by CONTRACT CATEGORY

CATEGORY	TOTAL	MBEs	FY 94-95 Goals	Actual FY 94-95 Utilization	WBEs	FY 94-95 Goals	Actual FY 94-95 Utilization
Personal Services	$1,980,112	$80,450	10%	4.6%	$139,270*	5%	7%
Labor & Materials	$572,834	$19,608	5%	3.4%	$23,878	5%	4.2%
Construction	$7,075,640	$310,000*	6%	4.4%	$785,889*	3%	11%
Procurement	$2,860,276*	$74,550*	2%	2.6%	$31,583*	3%	1%

*This includes Subcontracts and Purchase Orders awarded to MBEs/WBEs (see Tables C and D for Construction Subcontracts and Purchase Order breakdowns).

The following is a breakdown of the MBE/WBE utilization, as illustrated in Table B.

- **Personal Services:** 164 Personal Services contracts were awarded from July 1, 1994, through June 5, 1995. The dollar amount of those contracts totaled $1,980,112.24. Of the 164 contracts awarded, six (6) were awarded to MBEs ($80,450 total) and fifteen (15) to WBEs ($104,745 total).

  In addition, six (6) subcontracts were awarded to WBEs for personal services. The total WBE subcontracts awarded was $34,525. This increased the WBE utilization for Personal Services contracts to $139,270.

- **Labor & Materials:** 62 Labor & Materials contracts were awarded from July 1, 1994, through June 5, 1995. The dollar amount of those contracts totaled $572,834.38. Of the 62 contracts awarded, two (2) were awarded to MBEs ($19,608 total) and three (3) to WBEs ($23,878 total).

- **Procurement:** 29 Procurement contracts were awarded from July 1, 1994, through June 5, 1995. The dollar amount of those contracts totaled $2,220,576.00. Of the 29 contracts awarded, one (1) was awarded to a WBE ($7,500 total). There were no Procurement contracts awarded to MBEs for the reporting period.

- **Construction:** 5 Construction contracts were awarded from July 1, 1994, through June 5, 1995. The dollar amount of those contracts totaled $7,075,640. Of the 5 contracts awarded, one (1) was awarded to a WBE ($15,889 total). There were no Construction contracts awarded to MBEs for the reporting period.

  In addition, a total of six (6) subcontracts were awarded to MBEs/WBEs. The total dollar amount of subcontracts awarded to MBEs/WBEs was $1,080,000 ($310,000 -MBE and $770,000 - WBE). This increased the MBE/WBE utilization for construction contracts to $1,095,889.

  Below is a list of the prime contractors awarded construction contracts for the reporting period:

  Sorenson Construction - $15,171 - Contract #904095
  Harvey W. Buche Ent. Inc. - $22,960 - Contract #904212
  Harvey W. Buche Ent. Inc. - $13,000 - Contract #904213
  L & H Grading - $7,008,620 - Contract #904184
  New Dimensions Landscaping - $15,889 - Contract #904199

  New Dimensions Landscaping was the single MBE/WBE awarded a construction contract ($15,889) for the reporting period. This contract was for "Site Preparation and Construction of Home Compost Demo Site-Leach Botanical Gardens" solicited by the Solid Waste department.

Good Faith Efforts

Per Metro Code, Chapter 2.04.150, all construction contracts over $50,000 require the prime contractor to adhere to "good faith" efforts at maximizing MBE/WBE opportunities. This requirement applies to the above contract #904184 - L & H Grading ($7,008,620).

As a result of good faith efforts made by L & H Grading, the following contractors were awarded subcontracts under contract #904184 - Closure of Subarea 4 & 5:

MBEs:

Mike Shough Trucking - $280,000
United Petroleum Co. - $30,000

WBEs:

Don Hines Trucking - $140,000
Daileys Trucking - $280,000
Jack Eatch Construction Co. - $140,000
C.W. McCallen Construction - $210,000

L & H Grading successfully met all good faith requirements for maximizing MBE/WBE subcontracting opportunities. There is no record of additional subcontracts awarded by prime contractors for construction projects.

TABLE "C"
CONSTRUCTION SUBCONTRACT UTILIZATION SUMMARY

PRIME CONTRACTOR	TOTAL	MBE SUBS	%	WBE SUBS	%
L & H Grading	$7,008,620	$310,000	4.4	$770,000	11

IV. MBE/WBE UTILIZATION FOR PURCHASE ORDERS OVER $2,500

The Risk & Contract Management Division processes all purchase orders over $2,500. For the reporting period, 227 purchase order requests were processed by the Division, totaling $1,916,280.71. Of those, 64 were exempt from competitive bidding (sole source, State Price Agreement purchases), totaling $1,276,580.56. This left a total of $639,700.15 for MBE/WBE solicitation (33%).

As a result, fourteen (14) contracts were awarded to MBEs ($74,550.78 total) and five (5) to WBEs ($24,083.35 total). The total MBE/WBE utilization for purchase orders over $2,500 was 15%.

TABLE "D"
MBE/WBE UTILIZATION - PURCHASE ORDERS OVER $2,500

	TOTALS	MBEs	%	WBEs	%
All Purchase Orders	$1,916,280.71				
Exempt Purchase Orders	1,276,580.56				
Open for Competitive Bidding/MBE & WBE Solicitation	$ 639,700.15	$74,550.78	11	$24,083.35	4

V. FY 94-95 OUTREACH & OTHER ACTIVITIES

Outreach:

The MBE/WBE program requires that at least one (1) MBE and one (1) WBE firm be contacted to provide informal bids/proposals for each purchase of goods and routine services over $500 and personal services over $2,500. This program requirement is monitored by the Risk & Contract Management Division's MBE and WBE advocates.

The Risk & Contract Management Division, in cooperation with the City of Portland and Multnomah County, hosted two outreach meetings during the reporting period. The meetings were designed to inform minority and women-owned businesses on how to "do business with Metro/City/Multnomah County."

In an effort to enable MBE and WBE firms to prepare themselves adequately for contract opportunities, Metro/City/Multnomah County, cooperatively, developed and distributed comprehensive lists of upcoming projects. These lists were, in addition to being mailed out through periodic mailings, distributed at the outreach meetings mentioned above.

Information was provided to MBE and WBE firms on the State of Oregon's D/M/WBE certification process. As well, firms needing technical assistance were referred to various plan centers and business development centers. This information was, and will continue to be, promoted and made readily available to MBE and WBE firms.

Other Activities:

In January, 1994, the Metro Council adopted a Resolution to participate in a regional disparity study. Mason-Tillman and Associates are the consultants conducting the Disparity Study. The Study, at this time, is being conducted for the construction industry only. Metro's Risk & Contract Management Division has forwarded all information requested by Mason-Tillman and are awaiting an update meeting scheduled for the end of July, 1995.

In August of 1994, the Metro Council adopted Resolution No. 94-2005 to support the Risk & Contract Management Division's request to further proceed with the formulation of specific recommendations for improvement of the procurement/contracting process and a proactive MBE/WBE program. The adoption of that Resolution authorized the Executive Officer to execute a Personal Services contract for a consultant (awarded to Talbot, Korvola and Warwick) to assist in the development of a pragmatic Metro-wide action plan to contain operational costs, optimized Division services, and ensured MBE/WBE involvement and utilization.

VI. GOAL SETTING FOR FY 1995-96

There are a total of 108 projected contract opportunities for MBE/WBE firms for FY 95-96. The total dollar amount of those contracts is $13,989,689. The following table illustrates those contract opportunities and proposed MBE/WBE goals for the new year.

TABLE "E"
1995-96 CONTRACT OPPORTUNITIES/PROPOSED GOALS

CATEGORY	NO. OF CONTRACTS	FY 94-95	TOTAL	FY 94-95	PROPOSED GOAL			
					MBE %	FY 95-96	WBE %	FY 95-96
Personal Service	62	98	$6,394,068	7,186,000	7%	10%	5%	5%
Labor & Material	29	77	$4,838,735	1,953,148	5%	5%	5%	5%
Construction	8	14	$1,701,000	7,186,000	6%	6%	3%	3%
Procurement	9	16	$1,055,886	2,442,828	2%	2%	3%	3%

Based on FY 1994-95 utilization, the Risk & Contract Management Division recommends retaining the FY 1994-95 adopted goals. However, the MBE goals for personal services will be decreased based on the actual utilization for that year. The Risk & Contract Management Division believes that, with the enhanced outreach efforts designed for the new year, the proposed MBE/WBE goals can be achieved and/or exceeded.

VII. PROPOSED OUTREACH & OTHER ACTIVITIES

Outreach:

The following are tools/enhancements to be utilized for FY 1995-96 to increase MBE/WBE participation:

1. Program contracting procedures will continue for contacting at least one (1) MBE and one (1) WBE firm to provide bids/proposals for each purchase of goods and routine services over $500 and personal services over $2,500. The Risk & Contract Management Division will monitor the agency's compliance with this procedure.

2. The Risk & Contract Management Division's MBE and WBE advocates have been working cooperatively with the City of Portland and Multnomah County to plan the year's first "Regional Outreach Meeting." A tentative date of August 17, 1995, has been set for this meeting. Two outreach meetings are proposed for FY 1995-96.

3. Counseling assistance will continue to be provided to MBE and WBE firms who show interest in providing goods and services to Metro. Firms needing additional technical assistance will continue to be referred to plan centers and business development centers.

4. The State of Oregon's MBE/WBE certification process will continue to be promoted by the Division's MBE and WBE advocates. The State recently achieved goals in decreasing the processing time for certification. The Risk & Contract Management Division believes this will increase MBE and WBE's interests in becoming certified. Metro's MBE/WBE program requires that all MBE and WBE firms referred be State certified.

   As well, certification directories will continue to be distributed to all Metro departments.

5. Good faith efforts will continue to apply to construction contracts over $50,000 in value and other contracts when specified by the Risk & Contract Manager. The Risk & Contract Management Division will continue to notify all potential MBE and WBE subcontractors identified from the State's certification list and attend prebid conferences when feasible.

Proposed Enhancements to the MBE and WBE programs:

1. The Risk & Contract Management Division recommends that all advertisements, for all Metro departments, for formal and informal solicitation of bids/proposals be placed by the Risk & Contract Management Division (funded by the initiating division). This will allow the Division immediate knowledge of upcoming contracts and will result in increased time for proactive outreach. This activity will contribute to meeting the proposed MBE/WBE goals for FY 95-96.

2. Initiate discussions to implement an advisory committee made up of minority and women-owned business owners and associations to review upcoming Metro projects to identify contracts with MBE and WBE contracting potential. If this proves to be a viable tool in increasing MBE/WBE participation, the Risk & Contract Management Division would recommend this be adopted as part of the MBE and WBE programs.

3. Implement an enhanced database of MBE and WBE vendors with enhanced tracking capabilities (number of times referred, number of times bid, specialized services offered, etc.).

4. Provide quarterly reports on MBE/WBE participation and program outreach to the Metro Council, Executive Office, Metro Auditor and Metro departments.

Other Activities:

1. The Risk & Contract Management Division will implement a Metro-wide "Contract Training Workshop" designed to inform/train all Metro divisions on the procurement process and the MBE and WBE program's relation to the process. The Risk & Contract Management Division is, as well, preparing a "Contract Procedures Manual" which will be a tool for the proposed training workshops.

2. The Risk & Contract Management Division will continue to be active in various MBE and WBE committees, and stay informed of changing local and federal affirmative-action policies. It is proposed that no changes occur to the current MBE and WBE programs as a result of the recent "Adarand" Supreme Court decision.

3. The successes and short-falls of the MBE and WBE programs will continue to be monitored by the Risk & Contract Management Division. Recommendations will be made accordingly to maintain maximum MBE/WBE participation.

Exhibit 2

Status of DBE FY 1995/96

Authority

Requirements of Title 49 Code of Federal Regulations Part 23, Subpart A, General, Subpart C, Department of Transportation Financial Assistance Programs, and Subpart D, Implementation of Section 105 (f) of the Surface Transportation Assistance Act of 1982.

Participation by DBE's during Previous Fiscal Year:

During FY 1994/95 a total of 4 federally assisted (FA) contracts were awarded with a value of $600,890.00. Of the total contracts awarded, 4 Disadvantaged Business Enterprises (DBE) commitments were made on the contracts awarded. The total of all DBE commitments for the period was $49,680.00, 8% of all contract amounts.

DBE firms awarded contracts were Dotten & Associates, C. Tolon Design Studio, Pacific Rim, and Pittman & Associates.

In February, 1994, a contract was awarded to NuStats Inc. for a travel behavior survey. This firm has since been certified as a DBE. The contract awarded to NuStats was for the amount of $600,000. When we add this amount to our total contracts and DBE commitments, we achieve over 50% utilization.

Current OMWESB Certified M/W/DBE Directory:

As of July, 1995, a total of 909 firms were listed in the directory as certified DBE firms.

Projected Number of contracts to be awarded during FY 95/96:

During the fiscal year, Metro anticipates awarding 4 contracts in the amount of $1,965,800.00.

FY 1995/96 Goals:

Metro intends to establish an overall goal of 12% for FY 1995/96. In comparison, City of Portland sets goals of 10% MBE and 5% WBE, Tri-Met's goal is 14% overall, and Port of Portland sets goals on a project-to-project basis depending on the number of DBE's available.

Specific Contract Goals:

The Risk and Contracts Management Division reviews and assigns goals to all federally funded contracts to maximize DBE contracting opportunities to participate in the performance of contracts. Procedures followed in assigning such goals include:

Reviewing bid/RFP documents for subcontracting potential;
Reviewing subcontractable items for availability and capability of DBE firms;
Applying applicable federal standards in 49 CFR;
In accordance with Metro code.

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Qualified Rehabilitation Facilities
Utilization
FY 1994-1995

Program Background:

In 1977, Oregon passed a law allowing public agencies to directly negotiate with non-profit Qualified Rehabilitation Facilities (QRFs) to provide goods and services. Thereby creating a partnership that resulted in jobs, increased independence, and a greater self-worth for Oregon's citizens with disabilities. Use of goods and services provided by QRFs is strongly encouraged by the State and preempts the need for competitive bidding as an incentive for utilization.

Metro distributed a memo to department managers in August 1993 addressing the issue of QRF utilization. The memo specifically required the use of QRFs when they could "provide a product or service which satisfies the established specification(s)." Since issuance of that memo, utilization at Metro has risen dramatically.

Participation:

In the past two years, Metro has developed an active QRF program. Contracts, in addition to purchase orders, with QRF vendors are increasing and departments are satisfied with the service(s) provided.

The contracts vary in scope of work with the majority being for temporary clerical or labor support, however, there are exceptions. One such exception is a contract with St Vincent dePaul for a unique service -- *recovery of appliances at the transfer stations.*

Results:

We have identified below several contracts that the agency has established during the fiscal years 1993-94 and 1994-95. This illustrates that nearly every department has utilized the services of a QRF. If we were to include purchase orders, the list would be expanded to encompass these divisions/departments as well: Risk Management, Planning and Personnel.

As you will see, total expenditures since July 1, 1993 for QRFs utilized by Metro exceed **$380,000.00**!

Vendor	Department	Description	Contract	Amount	Total
Goodwill Temporary	Solid Waste	Temp Secretary SJLF	903404	$4,654	
	General Services	Temp Switchboard Relief	903966	$10,500	$15,154
Portland Habilitation	Solid Waste	Janitorial Services SJLF	903712	$2,664	
	General Services	Janitorial Services	904140	$170,272	$172,936
St Vincent dePaul	Information Services	Temp Secretarial	903479	$5,415	
	Information Services	Temp Secretarial	903791	$9,709	
	Solid Waste		903841	$4,800	
	MERC	Temp Labor	913929	$30,000	
	Solid Waste		903983	$2,400	
	General Services	Security Services	904141	$98,249	
	Solid Waste	Recovery of Appliances	904087	$35,000	
	Zoo	Temp Secretarial	904189	$6,092	$191,665
Port City Development	Zoo	Clean Zoo Vehicles	903490	$5,040	$5,040
					$384,795

Summary:

Metro's utilization of QRFs is on the rise and continues to be a positive experience for all parties involved.

The areas in which QRFs can be of service to Metro are expanding above and beyond temporary support. The contract between St Vincent dePaul and the Solid Waste Department for the recovery of appliances clearly illustrates that. Who knows what product or service QRFs will be providing in the future!

Exhibit 1

MBE/WBE Performance Report
Contracts Division
FY 1994-1995

Background

Metro's present Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) programs for locally funded contracts were adopted in 1993. The primary focus of Metro's MBE and WBE programs is proactive outreach and documented good faith compliance. The Risk & Contract Management Division is, by Metro Code 2.04, responsible for the promotion, implementation, and administration of Metro's special programs for MBE, WBE, Disadvantaged Business Enterprise (DBE) and Qualified Rehabilitation Facilities (QRF) outreach and utilization.

Contract Award Summary

431 contracts were awarded from July 1, 1994 through June 5, 1995, totalling $16,386,482.85 (see Table A). 171 were exempt from MBE/WBE solicitation. The categories of exempt contracts include: Revenue, Intergovernmental Agreements (IGAs), Sole Source, awards to Qualified Rehabilitation Facilities (QRFs), Grants, and other miscellaneous contracts (sponsorships, temporary employees, past employees). Exempted contracts represented 28% of the total contracts awarded for a total of $4,537,320.23.

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Total MBE Award: $100,058

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Total WBE Award: $152,012

MBE utilization for all contracts awarded was .84%. WBE utilization for all contracts awarded was 1.28%.

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CONTRACT SUMMARY

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	Procurement	29	$2,220,576.00
	Construction	5	$7,075,640.00
TOTAL		260	**$11,849,162.62**

TABLE "B"
UTILIZATION SUMMARY by CONTRACT CATEGORY

CATEGORY	TOTAL	MBEs	FY 94-95 Goals	Actual FY 94-95 Utilization	WBEs	FY 94-95 Goals	Actual FY 94-95 Utilization
Personal Services	$1,980,112	$80,450	10%	4.6%	$139,270*	5%	7%
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*This includes Subcontracts and Purchase Orders awarded to MBEs/WBEs (see Tables C and D for Construction Subcontracts and Purchase Order breakdowns).

The following is a breakdown of the MBE/WBE utilization, as illustrated in Table B.

Ÿ **Personal Services:** 164 Personal Services contracts were awarded from July 1, 1994, through June 5, 1995. The dollar amount of those contracts totaled $1,980,112.24. Of the 164 contracts awarded, six (6) were awarded to MBEs ($80,450 total) and fifteen (15) to WBEs ($104,745 total).

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Below is a list of the prime contractors awarded construction contracts for the reporting period:

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Jack Eatch Construction Co. - $140,000
C.W. McCallen Construction - $210,000

L & H Grading successfully met all good faith requirements for maximizing MBE/WBE subcontracting opportunities. There is no record of additional subcontracts awarded by prime contractors for construction projects.

TABLE "C"
CONSTRUCTION SUBCONTRACT UTILIZATION SUMMARY

PRIME CONTRACTOR	TOTAL	MBE SUBS	%	WBE SUBS	%
L & H Grading	$7,008,620	$310,000	4.4	$770,000	11

MBE/WBE Utilization for Purchase Orders over $2,500

The Risk & Contract Management Division processes all purchase orders over $2,500. For the reporting period, 227 purchase order requests were processed by the Division, totalling $1,916,280.71. Of those, 64 were exempt from competitive bidding (sole source, State Price Agreement purchases), totaling $1,276,580.56. This left a total of $639,700.15 for MBE/WBE solicitation (33%).

As a result, fourteen (14) contracts were awarded to MBEs ($74,550.78 total) and five (5) to WBEs ($24,083.35 total). The total MBE/WBE utilization for purchase orders over $2,500 was 15%.

TABLE "D"
MBE/WBE UTILIZATION - PURCHASE ORDERS OVER $2,500

	TOTALS	MBEs	%	WBEs	%
All Purchase Orders	$1,916,280.71				
Exempt Purchase Orders	1,276,580.56				
Open for Competitive Bidding/MBE & WBE Solicitation	$ 639,700.15	$74,550.78	11	$24,083.35	4

FY 1994-95 Outreach & Other Activities

Outreach:

The MBE/WBE program requires that at least one (1) MBE and one (1) WBE firm be contacted to provide informal bids/proposals for each purchase of goods and routine services over $500 and personal services over $2,500. This program requirement is monitored by the Risk & Contract Management Division's MBE and WBE advocates.

The Risk & Contract Management Division, in cooperation with the City of Portland and Multnomah County, hosted two outreach meetings during the reporting period. The meetings were designed to inform minority and women-owned businesses on how to "do business with Metro/City/Multnomah County."

In an effort to enable MBE and WBE firms to prepare themselves adequately for contract opportunities, Metro/City/Multnomah County, cooperatively, developed and distributed comprehensive lists of upcoming projects. These lists were, in addition to being mailed out through periodic mailings, distributed at the outreach meetings mentioned above.

Information was provided to MBE and WBE firms on the State of Oregon's D/M/WBE certification process. As well, firms needing technical assistance were referred to various plan centers and business development centers. This information was, and will continue to be, promoted and made readily available to MBE and WBE firms.

Other Activities:

In January, 1994, the Metro Council adopted a Resolution to participate in a regional disparity study. Mason-Tillman and Associates are the consultants conducting the Disparity Study. The Study, at this time, is being conducted for the construction industry only. Metro's Risk & Contract Management Division has forwarded all information requested by Mason-Tillman and are awaiting an update meeting scheduled for the end of July, 1995.

In August of 1994, the Metro Council adopted Resolution No. 94-2005 to support the Risk & Contract Management Division's request to further proceed with the formulation of specific recommendations for improvement of the procurement/contracting process and a proactive MBE/WBE program. The adoption of that Resolution authorized the Executive Officer to execute a Personal Services contract for a consultant (awarded to Talbot, Korvola and Warwick) to assist in the development of a pragmatic Metro-wide action plan to contain operational costs, optimized Division services, and ensured MBE/WBE involvement and utilization.

Goal Setting for FY 1995-96

There are a total of 108 projected contract opportunities for MBE/WBE firms for FY 95-96. The total dollar amount of those contracts is $13,989,689. The following table illustrates those contract opportunities and proposed MBE/WBE goals for the new year.

TABLE "E"
1995-96 CONTRACT OPPORTUNITIES/PROPOSED GOALS

CATEGORY	NO. OF CONTRACTS	FY 94-95	TOTAL	FY 94-95	PROPOSED GOAL			
					MBE %	FY 94-95	WBE %	FY 94-95
Personal Service	62	98	$6,394,068	7,186,000	7%	10%	5%	5%
Labor & Material	29	77	$4,838,735	1,953,148	5%	5%	5%	5%
Construction	8	14	$1,701,000	7,186,000	6%	6%	3%	3%
Procurement	9	16	$1,055,886	2,442,828	2%	2%	3%	3%

Based on FY 1994-95 utilization, the Risk & Contract Management Division recommends retaining the FY 1994-95 adopted goals. However, the MBE goals for personal services will be decreased based on the actual utilization for that year. The Risk & Contract Management Division believes that, with the enhanced outreach efforts designed for the new year, the proposed MBE/WBE goals can be achieved and/or exceeded.

Proposed Outreach & Other Activities

Outreach:

The following are tools/enhancements to be utilized for FY 1995-96 to increase MBE/WBE participation:

- Program contracting procedures will continue for contacting at least one (1) MBE and one (1) WBE firm to provide bids/proposals for each purchase of goods and routine services over $500 and personal services over $2,500. The Risk & Contract Management Division will monitor the agency's compliance with this procedure.

- The Risk & Contract Management Division's MBE and WBE advocates have been working cooperatively with the City of Portland and Multnomah County to plan the year's first "Regional Outreach Meeting." A tentative date of August 17, 1995, has been set for this meeting. Two outreach meetings are proposed for FY 1995-96.

- Counseling assistance will continue to be provided to MBE and WBE firms who show interest in providing goods and services to Metro. Firms needing additional technical assistance will continue to be referred to plan centers and business development centers.

- The State of Oregon's MBE/WBE certification process will continue to be promoted by the Division's MBE and WBE advocates. The State recently achieved goals in decreasing the processing time for certification. The Risk & Contract Management Division believes this will increase MBE and WBE's interests in becoming certified. Metro's MBE/WBE program requires that all MBE and WBE firms referred be State certified.

  As well, certification directories will continue to be distributed to all Metro departments.

- Good faith efforts will continue to apply to construction contracts over $50,000 in value and other contracts when specified by the Risk & Contract Manager. The Risk & Contract Management Division will continue to notify all potential MBE and WBE subcontractors identified from the State's certification list and attend prebid conferences when feasible.

Proposed Enhancements to the MBE and WBE programs:

- The Risk & Contract Management Division recommends that all advertisements, for all Metro departments, for formal and informal solicitation of bids/proposals be placed by the Risk & Contract Management Division (funded by the initiating division). This will allow the Division immediate knowledge of upcoming contracts and will result in increased time for proactive outreach. This activity will contribute to meeting the proposed MBE/WBE goals for FY 95-96.

- Initiate discussions to implement an advisory committee made up of minority and women-owned business owners and associations to review upcoming Metro projects to identify contracts with MBE and WBE contracting potential. If this proves to be a viable tool in increasing MBE/WBE participation, the Risk & Contract Management Division would recommend this be adopted as part of the MBE and WBE programs.

- Implement an enhanced database of MBE and WBE vendors with enhanced tracking capabilities (number of times referred, number of times bid, specialized services offered, etc.).

- Provide quarterly reports on MBE/WBE participation and program outreach to the Metro Council, Executive Office and Metro departments.

Other Activities:

- The Risk & Contract Management Division will implement a Metro-wide "Contract Training Workshop" designed to inform/train all Metro divisions on the procurement process and the MBE and WBE program's relation to the process. The Risk & Contract Management Division is, as well, preparing a "Contract Procedures Manual" which will be a tool for the proposed training workshops.

- The Risk & Contract Management Division will continue to be active in various MBE and WBE committees, and stay informed of changing local and federal affirmative-action policies. It is proposed that no changes occur to the current MBE and WBE programs as a result of the recent "Adarand" Supreme Court decision.

- The successes and short-falls of the MBE and WBE programs will continue to be monitored by the Risk & Contract Management Division. Recommendations will be made accordingly to maintain maximum MBE/WBE participation.

COUN0630.RPT
July 7, 1995
Revised July 25, 1995
bc

Exhibit 2

Status of DBE FY 1995/96

Authority

Requirements of Title 49 Code of Federal Regulations Part 23, Subpart A, General, Subpart C, Department of Transportation Financial Assistance Programs, and Subpart D, Implementation of Section 105 (f) of the Surface Transportation Assistance Act of 1982.

Participation by DBE's during Previous Fiscal Year:

During FY 1994/95 a total of 4 federally assisted (FA) contracts were awarded with a value of $600,890.00. Of the total contracts awarded, 4 Disadvantaged Business Enterprises (DBE) commitments were made on the contracts awarded. The total of all DBE commitments for the period was $49,680.00, 8% of all contract amounts.

DBE firms awarded contracts were Dotten & Associates, C. Tolon Design Studio, Pacific Rim, and Pittman & Associates.

In February, 1994, a contract was awarded to NuStats Inc. for a travel behavior survey. This firm has since been certified as a DBE. The contract awarded to NuStats was for the amount of $600,000. When we add this amount to our total contracts and DBE commitments, we achieve over 50% utilization.

Current OMWESB Certified M/W/DBE Directory:

As of July, 1995, a total of 909 firms were listed in the directory as certified DBE firms.

Projected Number of contracts to be awarded during FY 95/96:

During the fiscal year, Metro anticipates awarding 4 contracts in the amount of $1,965,800.00.

FY 1995/96 Goals:

Metro intends to establish an overall goal of 12% for FY 1995/96. In comparison, City of Portland sets goals of 10% MBE and 5% WBE, Tri-Met's goal is 14% overall, and Port of Portland sets goals on a project-to-project basis depending on the number of DBE's available.

Specific Contract Goals:

The Risk and Contracts Management Division reviews and assigns goals to all federally funded contracts to maximize DBE contracting opportunities to participate in the performance of contracts. Procedures followed in assigning such goals include:

Reviewing bid/RFP documents for subcontracting potential;
Reviewing subcontractable items for availability and capability of DBE firms;
Applying applicable federal standards in 49 CFR;
In accordance with Metro code.

e:CONTRACTS\STAFFRPT.doc

Qualified Rehabilitation Facilities
Utilization
FY 1994-1995

Program Background:

In 1977, Oregon passed a law allowing public agencies to directly negotiate with non-profit Qualified Rehabilitation Facilities (QRFs) to provide goods and services. Thereby creating a partnership that resulted in jobs, increased independence, and a greater self-worth for Oregon's citizens with disabilities. Use of goods and services provided by QRFs is strongly encouraged by the State and preempts the need for competitive bidding as an incentive for utilization.

Metro distributed a memo to department managers in August 1993 addressing the issue of QRF utilization. The memo specifically required the use of QRFs when they could "provide a product or service which satisfies the established specification(s)." Since issuance of that memo, utilization at Metro has risen dramatically.

Participation:

In the past two years, Metro has developed an active QRF program. Contracts, in addition to purchase orders, with QRF vendors are increasing and departments are satisified with the service(s) provided.

The contracts vary in scope of work with the majority being for temporary clerical or labor support, however, there are exceptions. One such exception is a contract with St Vincent dePaul for a unique service -- *recovery of appliances at the transfer stations.*

Results:

We have identified below several contracts that the agency has established during the fiscal years 1993-94 and 1994-95. This illustrates that nearly every department has utilized the services of a QRF. If we were to include purchase orders, the list would be expanded to encompass these divisions/departments as well: Risk Management, Planning and Personnel.

As you will see, total expenditures since July 1, 1993 for QRFs utilized by Metro exceed **$380,000.00**!

Vendor	Department	Description	Contract	Amount	Total
Goodwill Temporary	Solid Waste	Temp Secretary SJLF	903404	$4,654	
	General Services	Temp Switchboard Relief	903966	$10,500	$15,154
Portland Habilitation	Solid Waste	Janitorial Services SJLF	903712	$2,664	
	General Services	Janitorial Services	904140	$170,272	$172,936
St Vincent dePaul	Information Services	Temp Secretarial	903479	$5,415	
	Information Services	Temp Secretarial	903791	$9,709	
	Solid Waste		903841	$4,800	
	MERC	Temp Labor	913929	$30,000	
	Solid Waste		903983	$2,400	
	General Services	Security Services	904141	$98,249	
	Solid Waste	Recovery of Appliances	904087	$35,000	
	Zoo	Temp Secretarial	904189	$6,092	$191,665
Port City Development	Zoo	Clean Zoo Vehicles	903490	$5,040	$5,040
					$384,795

<u>Summary</u>:

Metro's utilization of QRFs is on the rise and continues to be a positive experience for all parties involved.

The areas in which QRFs can be of service to Metro are expanding above and beyond temporary support. The contract between St Vincent dePaul and the Solid Waste Department for the recovery of appliances clearly illustrates that. Who knows what product or service QRFs will be providing in the furture!

QRF-util.doc

REGIONAL FACILITIES COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 95-2193, FOR THE PURPOSE OF ADOPTING MINORITY BUSINESS ENTERPRISE, WOMEN BUSINESS ENTERPRISE, AND DISADVANTAGED BUSINESS ENTERPRISE GOALS FOR FISCAL YEAR 1995-96

Date: September 12, 1995 Presented by: Councilor Washington

COMMITTEE RECOMMENDATION: At its September 12 meeting, the Regional Facilities Committee voted unanimously (2-0) to recommend Metro Council adoption of Resolution No. 95-2193. Present and voting in favor: Councilors McCaig and Morissette. Councilor Washington was not present for this vote.

COMMITTEE ISSUES/DISCUSSION: Scott Moss, Risk and Contracts Manager, presented the staff report. He noted that the Metro Code requires the Metro Council to establish annual goals each fiscal year for contracting with minority, women and disadvantaged business enterprises. This resolution would establish the annual goals for fiscal year 1995-96.

In response to a question from Councilor Morissette, Mr. Moss stated that it is a policy decision for the Metro Council whether emerging small businesses are included in the Metro Code. Councilor McCaig asked what alternatives exist that would meet Councilor Morissette's interests in this area. Mr. Moss responded that Metro is aggressively pursuing all businesses, including emerging small businesses, through various methods including advertising and streamlining Metro's contracting process.

Councilor McCaig recommended that the committee keep the issue of emerging small businesses separate for now, but it should be reviewed by the committee at a later date. Councilor Morissette stated that at the next meeting he would like the committee to review a proposal that adds emerging small businesses to the Metro Code and does so without deterring from the existing business enterprises. Mr. Moss added that he would also like to study how this issue has been handled by the City of Portland and the State of Oregon.

STAFF REPORT

FOR THE PURPOSE OF ADOPTING MINORITY BUSINESS ENTERPRISE, WOMEN BUSINESS ENTERPRISE AND DISADVANTAGED BUSINESS ENTERPRISE GOALS FOR FISCAL YEAR 1995-96

Date: August 2, 1995 Presented by: Doug Butler and Scott Moss

PROPOSED ACTION

Adoption of Resolution No. 95-2193, to establish annual goals for Metro to contract with MBE, WBE, and DBE businesses.

FACTUAL BACKGROUND AND ANALYSIS

Metro Code sections 2.04.145, 2.04.245, and 2.04.345 require the Council to establish annual minority business enterprise (MBE), women business enterprise (WBE), and disadvantaged business enterprise (DBE) goals. The Council has continually expressed its desire that Metro departments seek opportunities to do business with MBE, WBE and DBE businesses. To this end, the Metro Council annually establishes goals to benchmark the success of contracting with MBE's, WBE's, and DBE's. The Executive Office, through the Administrative Services Department, is dedicated to promote the goals of the Council and improve the participation of MBE's, WBE's and DBE's.

DISCUSSION

Current Activities:

The Administrative Services Department has made this program a top priority. The attached report details the efforts made to improve participation of minority, women-owned, and disadvantaged business enterprise programs. In brief, activities included the following:

- Two qualified Metro staff have been given direct responsibility to assure compliance, perform outreach activities, and teach Metro departments about the importance and ease of working with MBE's, WBE's and DBE's. Kathy Newton is responsible for women-owned business enterprises and qualified rehabilitation facilities, and Berthe' Carroll is responsible for minority and disadvantaged-owned businesses.

- One MBE and one WBE must be contacted for every purchase over $500 and for personal services over $2,500.

- Two outreach programs are held each year to inform minority and women-owned businesses about doing business with Metro.

- A comprehensive list of Metro projects is compiled and distributed to MBE and WBE firms to advise them of the type of contracts anticipated for the current fiscal year.

- Information is provided to individuals on the certification process, technical assistance and business development resources.

- Metro contracted with Talbot, Korvola and Warwick to address and recommend improvements to the MBE and WBE programs. The consultant's recommendations are being implemented.

- Metro is participating in the regional disparity study to determine how to solicit more MBE and WBE involvement.

- Mandatory pre-bid meetings are required for all major construction projects to introduce sub-contractors to prime contractors. The prime contractors must contact those in attendance.

Proposed Future Activities:

Despite efforts outlined above, Metro falls short of meeting the goals established by the Council. Therefore, additional outreach efforts are needed. Proposed future activities include:

- Teach departments about contracting and the importance of contacting minority and women-owned business. A contracting guide has been developed and will be provided to departments.

- Promote two "regional outreach meetings" in cooperation with the City of Portland and Multnomah County. The first meeting is set for August 17, 1995.

- Provide simple standard contracts for projects under $10,000.00.

- It is proposed that the Administrative Services Department handle all advertising to assure appropriate outreach activities are performed.

- Initiate discussion for an advisory committee made up of minority and women owned business owners and Metro departments representatives.

- Implement an enhanced database of certified MBE and WBE vendors to improve utilization.

- Provide quarterly reports on MBE/WBE participation to the Council, Executive Officer, and Departments.

GOALS

A resolution is required for the setting of annual goals for the MBE, WBE and DBE programs in accordance with Metro Code.

Exhibit 1, attached, describes in detail the utilization for FY 1994-95.

The proposed annual goal for the FY 1995-6 Disadvantaged Business Enterprise program is 12 percent.

The proposed goals for the FY 1995-96 Minority Business Enterprise and Women Business Enterprise programs are shown in the following table:

Contract Category	No. of Contracts	Total	Proposed Goals	
			MBE%	WBE%
Personal Services	62	$6,394,068	7	9
Labor & Material	29	$4,838,735	5	6
Construction	8	$1,701,000	6	12
Procurement	9	$1,055,886	2	3

BUDGET IMPACT

No budget impact is anticipated.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 95-2193.

STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 95-2204 FOR THE PURPOSE OF OPPOSING H.R. 961 - THE FEDERAL CLEAN WATER ACT REAUTHORIZATION BILL OF 1995

Date: August 28, 1995 Presented By: Rosemary Furfey

FACTUAL BACKGROUND

The Clean Water Act (CWA) of 1972 was adopted with bi-partisan support to address the serious condition of water quality in U.S. rivers and streams. Two decades ago, sewage and toxic pollution made many U.S. waters unfit for human uses. Some bodies of water such as the Cuyahoga River in Ohio, were so polluted they even caught on fire. In Oregon, the polluted Willamette River could no longer sustain its thriving salmon populations.

Since implementation of the CWA, there has been marked improvement in the water quality of U.S. waters and achievement of designated uses for swimming and fishing in coastal, river, lake and estuary waters throughout the U.S. The CWA requires strict wastewater effluent discharge standards to rivers and oceans, requires national assessments of water quality, emphasizes nonpoint source pollution controls and controls industrial discharges.

Though national water quality improvements have been impressive, there is still a need to improve water quality, particularly in urban areas. For example, the Oregon Department of Environmental Quality has identified two water quality limited streams in the Metro region: the Tualatin River and the Columbia Slough. Others, such as Johnson Creek, may be named in the near future.

The CWA does not, however, address many of the sources of pollution that we now know significantly degrade U.S. waters. Polluted run-off -- rainfall and snowmelt carrying toxic pollutants and sediments -- continue to impair more U.S. waters than any other source and is virtually unregulated under the CWA. U.S. wetlands continue to disappear and untreated sewage continues to enter U.S. waters, including the Willamette River and Columbia Slough. Jurisdictions and special districts throughout the Metro region are actively implementing programs to address these issues and educate the public about how to reduce pollutants entering rivers and streams.

FACTUAL ANALYSIS

The U.S. House of Representatives on May 16, 1995 passed legislation which would dramatically weaken the Clean Water Act. This legislation, H.R. 961 -- *The Federal Clean Water Act Reauthorization Bill of 1995*, would make a wide range of changes to the CWA which will change many of its standards and programs. It would also have direct statewide implications for water quality, water-related recreational and economic activities dependent on clean rivers and

streams.

H.R. 961 will reverse many of the important gains in water quality improvements achieved since 1972. This bill will:

- repeal existing stormwater permitting programs for urban areas;
- change the definition of wetlands to one without scientific credibility and changes the regulatory administration of wetland permitting;
- waive secondary sewage treatment requirements when discharging into the ocean;
- weaken the definition and standards for pollution control technologies; and
- further weakens the nonpoint source pollution control requirements and use of best management practices.

There are several implications for the Portland metropolitan region if this bill is enacted. It can be expected that the current and future nonpoint source pollution control programs in the Metro region will not be implemented with a weakened CWA. Cities, counties and special districts are spending millions of dollars to address combined sewer overflow issues in the Willamette River and Columbia Slough, improve water quality in the Tualatin River watershed, develop nonpoint source management programs, and educate the public about how to protect rivers and streams. H.R. 961 puts these investments at risk because clean water in the Metro region is dependent on activities upstream in the Willamette River and Columbia River watersheds.

Numerous surveys document that citizens in the Metro region value clean water and enjoy water-related sports and recreation activities. Citizens in this region value natural areas and the rivers and streams associated with them. The future livability and economic viability of this region is tied to its environmental quality. For example, many high technology firms are moving to the Metro region because of its plentiful supply of clean water. H.R. 961 will result in deterioration of water quality in the Metro region and by extension will affect the economic health of the region.

The City of Portland and Association of Bay Area Governments have recently passed similar resolutions opposing excessive changes to the Clean Water Act as proposed in H.R. 961 -- The *Clean Water Act Reauthorization of 1995.*

There are no direct impacts to Metro's budget as a result of this resolution.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends adoption of Resolution No. 95-2204.

AGENDA ITEM: 6.2
Meeting Date: September 21, 1995

Resolution No. 95-2204

Resolution No. 95-2204, For the Purpose of Opposing H.R. 961- The Federal Clean Water Act Reauthorization Bill of 1995.

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF OPPOSING H.R. 961- THE FEDERAL CLEAN WATER ACT REAUTHORIZATION BILL OF 1995	)))	RESOLUTION NO. 95-2204 Introduced by the Land Use Committee

WHEREAS, Metro is the Clean Water Act Section 208 agency, as designated by the Environmental Protection Agency (EPA), for taking a lead role in regional planning efforts with regard to nonpoint source water pollution abatement and land use planning in the Portland metropolitan region; and

WHEREAS, On May 16th, 1995 the U.S. House of Representatives passed H.R. 961 - *The Clean Water Act Reauthorization Bill of 1995*, which significantly weakens the water quality protections now in force as part of the current Clean Water Act; and

WHEREAS, H.R. 961 if signed into law would result in curtailment of current and future efforts to reduce water pollution from urban, industrial and agricultural runoff, which according to the Oregon Department of Environmental Quality are now the most significant causes of degraded water quality in the nation; and

WHEREAS, H.R. 961 would also significantly reduce existing protections for the nation's wetlands, which provide numerous important environmental functions including filtration and clean-up of water pollution, flood storage, critical fish and wildlife habitat, and groundwater recharge; and

WHEREAS, Nonpoint source and stormwater pollution remain a major source of pollution in our state's rivers and streams. H.R. 961 fails to adequately address nonpoint source issues and would repeal the federal stormwater permit process; and

WHEREAS, Metro surveys have found that citizens of the region value clean rivers and streams and support environmental efforts that improve and restore water quality and protect natural areas; and

WHEREAS, H.R. 961 puts at risk wetlands, streams and natural areas managed by Metro; and

WHEREAS, The Senate is about to begin consideration of its own version of the Clean Water Act Reauthorization; now, therefore,

BE IT RESOLVED

1. That the Metro Council opposes excessive changes to the Clean Water Act as proposed in H.R. 961 - *The Clean Water Act Reauthorization Bill of 1995*, and urges members of the U.S. Senate to retain levels of water quality and wetlands protection similar to those contained in the current version of the Federal Clean Water Act.

ADOPTED by the Metro Council this ___ day of _____, 1995

_____
J. Ruth McFarland, Presiding Officer

Approved as to Form:

_____
Daniel B. Cooper, General Counsel

Land Use Planning Committee Report

Resolution No. 95-2204, Opposing H.R. 961 - The Federal Clean Water Act Reauthorization Bill of 1995

Date: September 13, 1995 Presented by: Councilor McCaig

COMMITTEE RECOMMENDATION: At its September 12, 1995 meeting, the Committee voted 2/0 to recommend Council adoption of Resolution No. 95-2204. Councilors McCaig and McLain voted aye. Councilor Morissette abstained from voting.

COMMITTEE DISCUSSION/ISSUES: Councilor McCaig stated she requested staff to prepare the resolution. She explained that the U.S. House of Representatives passed H.R. 961 - *The Federal Clean Water Act Reauthorization Bill of 1995*, on May 16, 1995. She contended the bill significantly weakens the existing Clean Water Act, particularly in the areas of pollution control. Adoption of the resolution includes urging the U.S. Senate to retain levels of water quality and wetlands protection similar to those contained in the current version of the Federal Clean Water Act.

AGENDA ITEM: 7.1
Meeting Date: September 21, 1995

Ordinance No. 95-615

Ordinance No. 95-615, Amending the Urgan Growth Boundary for Urban Growth Boundary Contested Case 94-1: Richards

STAFF REPORT

CONSIDERATION OF ORDINANCE NO. 95-615 AMENDING THE URBAN GROWTH BOUNDARY FOR URBAN GROWTH BOUNDARY CONTESTED CASE 94-1: RICHARDS.

Date: August 31, 1995 Presented by: Stuart Todd, Growth Management Services

FACTUAL BACKGROUND AND INFORMATION

On April 20, 1995, the Metro Council adopted Resolution No. 95-2126, expressing its intent to amend Metro's urban growth boundary (UGB) for Contested Case 94-1: Richards, upon annexation to Metro by the Boundary Commission. This is a 1.3 acre property adjacent to Charbonneau at the I-5 Interchange. On August 28, 1995 Metro received notification from the Boundary Commission of the annexation of this property to Metro. A copy of Metro Resolution 95-2126 and the Boundary Commission action are attached to this staff report.

PROCESS

The Council heard the Hearings Officer report and presentation on April 20th, parties of record were notified of that Council deliberation, and no exceptions to the Hearings Officer Report and Recommendation or to the Findings, Conclusions and Final Order were filed. The Council could not take final action at that time until the Boundary Commission annexed the property to Metro. Now Metro can take final action; there is no requirement for a hearing, the only remaining notice is that of adoption and right to review, which staff will prepare after Council action.

PROPOSED ACTION

According to the Metro Code, 3.01.065(f)(2), the Council shall take final action on UGB petitions within thirty days of receiving notice (received 8/28/95) from the Boundary Commission that annexation to the District has been approved.

The proposed action is an ordinance amending the UGB for the property petitioned for inclusion in Case 94-1: Richards. Public comment can be taken at the discretion of the Council when it takes final action.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends adoption of Ordinance No.95-615.

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I HEREBY CERTIFY THAT THE FOREGOING IS A COMPLETE AND EXACT COPY OF THE ORIGINAL THEREOF.

Clerk of the Metro Council

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF EXPRESSING COUNCIL INTENT TO AMEND METRO'S URBAN GROWTH BOUNDARY FOR CONTESTED CASE NO. 94-1: RICHARDS	))))	RESOLUTION NO. 95-2126 Introduced by: Mike Burton, Executive Officer

WHEREAS, Contested Case No. 94-1:Richards is an urban growth boundary locational adjustment petition for inclusion of a 1.3 acre parcel adjacent to Charbonneau at the I-5 interchange; and

WHEREAS, A hearing on this petition was held before an independent Hearings Officer on November 16, 1994, and the record was held open until February 16, 1995 at the request of the applicant, to receive additional evidence; and

WHEREAS, The Hearings Officer has issued his Report and Recommendations, attached as Exhibit A, and has prepared Findings, Conclusions and Final Order attached as Exhibit B; and

WHEREAS, The property is currently outside but contiguous with the Metro jurisdictional boundary, and

WHEREAS, The Metro Code Chapter 3.01.65(f) provides that action to approve a petition including land outside Metro's jurisdiction shall be by resolution expressing intent to amend the Urban Growth Boundary after the property is annexed to Metro; now, therefore,

BE IT RESOLVED,

That Metro, based on the findings in Exhibit B, attached, and incorporated herein, expresses its intent to adopt an Ordinance amending the Urban Growth Boundary for the subject property shown as tax lot 16100 in Exhibit C within 30 days of receiving notification that the property has been annexed to Metro, provided such notification is received within six (6) months of the date on which this resolution is adopted.

ADOPTED by the Metro Council this 20 day of April, 1995.

J. Ruth McFarland, Presiding Officer

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PORTLAND METROPOLITAN AREA LOCAL GOVERNMENT BOUNDARY COMMISSION.
800 NE OREGON ST #16 (STE 540), PORTLAND OR 97232-TEL: 731-4093

FINAL ORDER

RE: BOUNDARY CHANGE PROPOSAL NO: 3481 - Annexation of territory to the City of Wilsonville.

Proceedings on Proposal No. 3481 commenced upon receipt by the Boundary Commission of petitions from the property owners on May 10, 1995, requesting that certain property be annexed to the City. The petitions meet the requirements for initiating a proposal set forth in ORS 199.490, particularly paragraph (c) of Section (1).

Upon receipt of the petition the Boundary Commission published and posted notice of the public hearing in accordance with ORS 199.463 and conducted a public hearing on the proposal on June 29, 1995. The Commission also caused a study to be made on this proposal which considered economic, demographic and sociological trends and projections and physical development of the land.

The Commission reviewed this proposal in light of the following statutory guidance:

"199.410 Policy. (1) The Legislative Assembly finds that:

"(a) A fragmented approach has developed to public services provided by local government. Fragmentation results in duplications in services, unequal tax bases and resistance to cooperation and is a barrier to planning implementation. Such an approach has limited the orderly development and growth of Oregon's urban areas to the detriment of the citizens of this state.

"(b) The programs and growth of each unit of local government affect not only that particular unit but also activities and programs of a variety of other units within each urban area.

"(c) As local programs become increasingly intergovernmental, the state has a responsibility to insure orderly determination and adjustment of local government boundaries to best meet the needs of the people.

"(d) Local comprehensive plans define local land uses but may not specify which units of local government are to provide public services when those services are required.

"(e) Urban population densities and intensive development require a broad spectrum and high level of community services and controls. When areas become urbanized and require the full range of community services, priorities are required regarding the type and levels of services that the residents need and desire. Community service priorities need to be established by weighing the total service needs against the total financial resources available for securing services. Those service priorities are required to reflect local circumstances, conditions and limited financial

resources. A single governmental agency, rather than several governmental agencies is in most cases better able to assess the financial resources and therefore is the best mechanism for establishing community service priorities.

"(2) It is the intent of the Legislative Assembly that each boundary commission establish policies and exercise its powers under this chapter in order to create a governmental structure that promotes efficiency and economy in providing the widest range of necessary services in a manner that encourages and provides planned, well-ordered and efficient development patterns.

"(3) The purposes of ORS 199.410 to 199.534 are to:

"(a) Provide a method for guiding the creation and growth of cities and special service districts in Oregon in order to prevent illogical extensions of local government boundaries and to encourage the reorganization of overlapping governmental agencies;

"(b) Assure adequate quality and quantity of public services and the financial integrity of each unit of local government;

"(c) Provide an impartial forum for the resolution of local government jurisdictional questions;

" (d) Provide that boundary determinations are consistent with acknowledged local comprehensive plans and are in conformance with state-wide planning goals. In making boundary determinations the commission shall first consider the acknowledged comprehensive plan for consistency of its action. Only when the acknowledged local comprehensive plan provides inadequate policy direction shall the commission consider the statewide planning goals. The commission shall consider the timing, phasing and availability of services in making a boundary determination; and

"(e) Reduce the fragmented approach to service delivery by encouraging single agency service delivery over service delivery by several agencies.

"199.462 Standards for review of changes; territory which may not be included in certain changes. (1) In order to carry out the purposes described by ORS 199.410 when reviewing a petition for a boundary change or application under ORS 199.464, a boundary commission shall consider local comprehensive planning for the area, economic, demographic and sociological trends and projections pertinent to the proposal, past and prospective physical development of land that would directly or indirectly be affected by the proposed boundary change or application under ORS 199.464 and the goals adopted under ORS 197.225."

"(2) Subject to any provision to the contrary in the principal Act of the affected district or city and subject to the process of transfer of territory:

"(a) Territory within a city may not be included within or annexed to a district without the consent of the city council;'

"(b) Territory within a city may not be included within or annexed to another city; and

"(c) Territory within a district may not be included within or annexed to another district subject to the same principal Act."

The Commission also considered its policies adopted under Administrative Procedures Act (specifically 193-05-000 to 193-05-015), historical trends of boundary commission operations and decisions and past direct and indirect instructions of the State Legislature in arriving at its decision.

FINDINGS

(See Findings in Exhibit "A" attached hereto).

REASONS FOR DECISION

(See Reasons for Decision in Exhibit "A" attached hereto.)

ORDER

On the basis of the Findings and Reasons for Decision listed in Exhibit "A", the Boundary Commission approved Boundary Change Proposal No. 3481 on June 29, 1995.

NOW THEREFORE IT IS ORDERED THAT the territory described in Exhibit"B" and depicted on the attached map, be annexed to the City of Wilsonville as of 45 days from this date which is August 13, 1995 or at what other subsequent date that the law requires subject to the requirements of ORS 199.505.

PORTLAND METROPOLITAN AREA LOCAL GOVERNMENT
BOUNDARY COMMISSION

DATE: JUNE 29, 1995 BY: _____
Chair

ATTEST: _____

BEFORE THE METRO COUNCIL

AMENDING THE URBAN GROWTH BOUNDARY FOR URBAN GROWTH BOUNDARY CONTESTED CASE 94-1: RICHARDS.	)))	ORDINANCE NO. 95-615 Introduced by Mike Burton Executive Officer

WHEREAS, Contested Case No. 94-1: Richards is an urban growth boundary locational adjustment for inclusion of a 1.3 acre parcel adjacent to Charbonneau at the I-5 interchange; and

WHEREAS, The Metro Council received the record compiled by the Hearings Officer in Contested Case 94-1, as well as the Hearings Officer Report and Recommendation, and the Findings, Conclusions and Proposed Order on April 20, 1995; and

WHEREAS, the Metro Council adopted at that time in Resolution No. 95-2126 its intent to amend the boundary; and

WHEREAS, The property to be added to the Metro urban growth boundary was outside of Metro's jurisdiction, and annexation to the District was required prior to final action; and

WHEREAS, The Portland Area Local Government Boundary Commission annexed the property to the City of Wilsonville and to Metro, and notified Metro of its action on August 28, 1995; now, therefore,

THE METRO COUNCIL HEREBY ORDAINS AS FOLLOWS:

1. The record of Case 94-1 as compiled by the Hearings Officer is accepted, and the Hearings Officer Report and Recommendation is accepted and included in this Ordinance, attached herein as Exhibit A; and

2. The Hearings Officer Findings, Conclusions & Final Order in Exhibit B are hereby adopted and incorporated as part of this Ordinance; and

3. The Urban Growth Boundary is amended to include the subject property of Case 94-1: Richards, tax lot 16100, as shown in Exhibit C.

ADOPTED by the Metro Council this ____ day of _____, 1995.

_____

J. Ruth McFarland, Presiding Officer

ATTEST:

Approved as to Form:

_____

Recording Secretary

_____

Daniel B. Cooper, General Counsel

ST/srb-I:\gm\clerical\sherrie\res&ord\ugb94-1.ord

EXHIBIT "A"

BEFORE THE HEARINGS OFFICER OF THE
METROPOLITAN SERVICE DISTRICT

In the matter of the petition of Donald P. Richards and Roger A. Starr for a locational adjustment to the Urban Growth Boundary east of Interstate-5 and north of Miley Road in the Wilsonville area	))))	HEARINGS OFFICER REPORT AND RECOMMENDATION **Contested Case No. 94-01**

I. Summary of Basic Facts

1. On September 12, 1994, Donald Richards and Roger Starr ("petitioners") filed a petition for a locational adjustment to the Portland metropolitan area Urban Growth Boundary ("UGB") to add to the urban area a 1.3-acre parcel (the "subject property") which is identified as tax lot 16100.

a. The subject property is east of and abuts Interstate-5 and north of Miley Road in the Wilsonville area. Land already in the UGB (in Wilsonville) abuts three sides of the property, including a parcel owned by petitioners known as tax lot 15700.

b. The Clackamas County Comprehensive Plan designation and zoning for the subject property is Rural and RRFF-5 (5 acre minimum lot size). The subject property is in an exception area to Statewide Goals 3 and 4. Adjoining land in Wilsonville is designated and zoned Planned Development Commercial, including tax lot 15700.

c. The south part of the subject property is relatively flat. The north part is steep. North and east of petitioners' two parcels are 4.5 acres of designated open space and wetlands. Storm water drains through the open space/wetland to a culvert under the freeway. The steep sides of the open space are heavily forested, and help provide a visual buffer between the freeway and single family homes in the Spring Ridge subdivision about 200 feet east of the subject property. South of Miley Road is a church that was included in the UGB pursuant to the Council order regarding Contested Case 88-02 (St. Francis).

d. The subject property and tax lot 15700 are not served by water or sanitary sewer or an engineered drainage system. Wilsonville testified it can provide water service by extending a line in Miley Road. ODOT testified it would allow the subject property and tax lot 15700 to be served by the sewer on the east side of the Interstate-5

right of way. A gravity flow sewer line can be used if the subject property is included in the UGB. If it is not included, sewer service could be provided using a pump station.

e. The subject property does not have road frontage. But access to Miley Road can be provided through tax lot 15700. ODOT and a traffic engineer testified the road can accommodate traffic from the combined development on the properties.

f. Petitioners intend to develop the subject property and tax lot 15700 together for professional offices, and agreed to accept a condition of approval limiting the use of the property for that purpose.

2. The petition was accompanied by comments from affected jurisdictions and service providers. The Clackamas County Board adopted a resolution making no recommendation on the merits of the petition. Wilsonville commented that approval of the locational adjustment also would facilitate extension of water service to the St. Francis of Assisi Church on the south side of Miley Road. The Tualatin Fire and Rescue District commented that approval of the locational adjustment also would facilitate a more logical boundary between the Tualatin and Aurora Districts. The Canby School District commented with no recommendation, because approval of the petition will not generate school age children.

3. Metro hearings officer Larry Epstein (the "hearings officer") held a duly noticed public hearing on November 16, 1994 to receive testimony and evidence in the matter of the petition. Six witnesses testified in person, including a staff member from Metro and Wilsonville, the petitioners, and two residents of the Spring Ridge subdivision. At the conclusion of that hearing, the hearings officer held open the public record regarding the petition until December 16, 1994. At the petitioners' written request on December 2, 1994, the hearings officer issued an order dated December 6, 1994, in which he held open the record until February 16, 1995. Notice of that order was mailed to parties of record.

II. Summary of applicable standards and responsive findings

1. A locational adjustment to add land to the UGB must comply with the relevant provisions of Metro Code ("MC") sections 3.01.035(c) and (f). Compliance with two of these standards was not disputed (MC §§ 3.01.035(c)(5) and (f)(3)). The following highlights the principal policy issues disputed in the case.

2. MC § 3.01.035(c)(1) requires the petitioner to show public facilities can serve the area to be added and that the adjustment results in a net improvement in the efficiency of public facilities and services for land already in the UGB. Petitioners showed that the subject property can be served by the relevant public facilities. A significant issue in this case is whether the petitioners complied with the second part of that standard.

3. Metro rules do not define how to calculate net efficiency of urban services. Relying on past Council actions, the hearings officer found that merely using available capacity does not constitute a net improvement in service efficiency. If use of available capacity alone is enough to comply with MC § 3.01.035(c)(1), then the standard will not achieve the purpose for which it was adopted.

4. The hearings officer found that the adjustment resulted in a net improvement in the efficiency of sewer service, because it allows the subject property and tax lot 15700 to be served by a gravity flow line. The hearings officer also relied on the unrebutted statement of the Tualatin Fire and Rescue District that approving the locational adjustment results in a more logical boundary between service districts.

a. If the petition is not approved, tax lot 15700 can be served by a pump station. Relying on past Council actions, the hearings officer concluded that a locational adjustment that allows use of a gravity flow line instead of a pump station constituted a net improvement in sewer service efficiency and was enough to show the petition complies with the second part of MC § 3.01.035(c)(1).

b. Because of the importance of this service efficiency to the whole application, the hearings officer recommended a condition of approval requiring the subject property and tax lot 15700 to be served by a gravity flow sewer line. Such conditions can be imposed under MC § 3.01.40(a). Council has imposed a condition once before in Contested Case 91-01 (Dammasch State Hospital).

5. MC § 3.01.035(c)(2) requires the amendment to facilitate permitted development of adjacent land already in the UGB. The hearings officer found the petition complied with this standard, because including the subject property in the UGB facilitates sewer service to tax lot 15700 necessary for permitted development of that parcel.

6. MC 3.01.035(c)(3) requires consideration of environmental, energy, social and economic consequences of the petition. It also requires hazards to be addressed.

a. The hearings officer found that the steep slopes on the subject property constitute a hazard, and recommended a condition of approval to address it. That condition would require the portion of the subject property with slopes of 20 percent or more to be used for open space purposes, except for the sewer line and drainage facilities that comply with city standards.

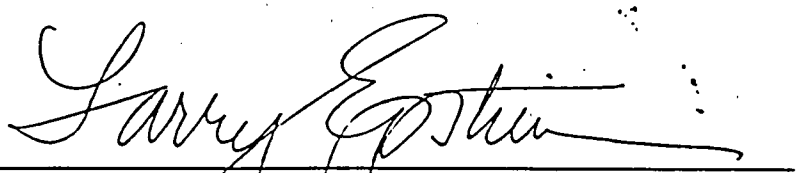
b. The hearings officer also found that some uses on the subject property could cause significant adverse environmental, energy and social effects, but that use of the property for open space and professional office purposes would not have those effects. Therefore the hearings officer recommended a condition of approval allowing the subject property to be used only for open space and professional office purposes.

7. MC § 3.01.035(f)(2) requires the proposed UGB to be superior to the existing UGB, but does not define what is superior. The hearings officer found the proposed UGB is superior, because it achieves service efficiencies, helps reinforce Interstate-5 as a logical boundary for the UGB in this area, and makes what is now an essentially inaccessible and useless residual parcel developable with adjoining land already in the UGB.

III. Ultimate Conclusion and Recommendation

For the foregoing reasons, the hearings officer concludes the petition complies with the relevant approval standards in Metro Code sections 3.01.035(c) and (f) for a locational adjustment adding land to the UGB. Therefore the hearings officer recommends the Metro Council grant the petition, based on this Report and Recommendation and the Findings, Conclusions and Final Order attached hereto, subject to the conditions of approval therein.

Respectfully submitted this 16th day of March, 1995.



Larry Epstein, AICP
Metro Hearings Officer

EXHIBIT "B"

BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

In the matter of the petition of Donald P. Richards and Roger A. Starr for a locational adjustment to the Urban Growth Boundary east of Interstate-5 and north of Miley Road in the Wilsonville area	))))	FINDINGS, CONCLUSIONS & FINAL ORDER **Contested Case No. 94-01**

I. Basic Facts

1. On September 12, 1994, Donald P. Richards and Roger A. Starr ("petitioners") completed filing a petition for a locational adjustment to the Urban Growth Boundary ("UGB"), including exhibits required by Metro rules for locational adjustments. See Exhibit 5 for the original petition for locational adjustment (the "petition"). Basic facts about the petition include the following:

a. The land to be added to the UGB is described as Tax Lot 16100, Section 25, T3S-R1W, WM, Clackamas County (the "subject property"). It is east of and adjoins the Interstate-5 freeway, which isolates the subject property from other land outside the UGB. The UGB forms the north and east edge of the subject property. Land to the north, east and south is inside the UGB and the City of Wilsonville. The subject property is about 30 feet north of the Miley Road right of way, but does not have frontage on that road. See Exhibits 1 and 40 for maps showing the subject property.

b. The subject property is an irregularly-shaped parcel about 575 feet north-south and about 100 feet wide, narrowing to a point at the south end. It contains 1.3 acres. It is in an exception area to Statewide Planning Goals 3 and 4. It is designated "Rural" on the acknowledged Clackamas County Comprehensive Plan Map and is zoned RRFF-5 (Rural Residential Farm and Forest, 5 acre minimum lot size).

c. The subject property slopes down to the north from a high of about 121 feet above mean sea level ("msl") at the south edge to a low of about 85 feet msl at the north edge. The south portion of the subject property contains slopes of 5 to 10 percent. The north portion of the site contains slopes of up to 50 percent.

d. Most of the land immediately north and east of the site is in one of three open space tracts totaling 4.5 acres. It is designated and zoned PDC (Planned Development Commercial). Homes in the Spring Ridge subdivision are about 200 feet east of the subject property measured "as the crow flies." But between the subject property and those homes and north of the subject property, the land slopes down to a drainageway and associated wetlands in the open space tracts. Storm water runoff from the subject property now drains into the wetland and drainageway. Land to the west is designated "Rural" and zoned RRFF-5 and is used for the Interstate-5 freeway. Land to the south (across Miley Road) was included in the UGB after approval of a locational adjustment in Contested Case 88-03 and annexed to Wilsonville. It is zoned PF (Public Facility). It is developed with the St. Francis of Assisi Church. Further southeast are rural residences and a golf course.

e. East of the south half of the site is a roughly 1-acre parcel in the City of Wilsonville identified as tax lot 15700. It is designated and zoned PDC. The petitioners own that tax lot. They want to build a 40,000 square foot building for professional offices on that tax lot and the south portion of the subject property. The petitioners testified that they would accept conditions of approval of the petition limiting the use of the south portion of the subject property to professional offices, and limiting the use of the north portion of the subject property for open space, provided necessary storm water drainage and sanitary sewer infrastructure can be installed in the open space area.

f. The subject property is not served by a sanitary waste system or water.

(1) The City of Wilsonville testified in writing it can provide water service to the subject property, tax lot 15700 and the church on the south side of Miley Road if the petitioners extend an 8-inch line from the existing main at Miley Road and French Prairie Road. That line can serve tax lot 15700 and the church whether or not the petition is approved; the line can serve the subject property with little or no additional cost.

(2) ODOT testified it can serve the subject property and tax lot 15700 with the sanitary sewer from a connection to a manhole at station 596+25 in the Interstate-5 right of way west of the site. The ODOT line already serves the church across Miley Road and the Baldock rest area. A gravity flow sewer line can be installed across the subject property if the petition is approved and ODOT approves a connection north of the subject property. If the petition is not approved, tax lot 15700 could be served by the city

or ODOT sewer system, but it would cost more to install and maintain, because a pump station would be needed that will not be needed if the line can cross the subject property.

g. The subject property does not have access to a road except through tax lot 15700. Tax lot 15700 has about 200 feet of frontage along Miley Road, a rural public street with a 20-foot wide paved surface between gravel shoulders. The subject property is not within 1/4-mile of a regional transit corridor, although the church property on the south side of Miley Road contains a designated park and ride lot.

h. The petition was accompanied by comments from affected jurisdictions and service providers. See Exhibits 6 through 10 and 16 through 18.

(1) The Clackamas County Board of Commissioners adopted a board order in which it made no recommendation on the merits of the petition.

(2) Wilsonville commented that the city could serve the subject property with sanitary sewer and water, but that approval of the petition would not improve efficiency of service delivery in the UGB. The City Council adoption a motion to support the petition, provided that the property is used only for offices, and that trees, wetlands and stream corridors on the property be protected.

(3) The subject property is in the Aurora Rural Fire Protection District. If the property is annexed following approval of the UGB petition, then it will be served by the Tualatin District. The subject property is roughly equidistant between the nearest stations of the two districts, and either district is likely to provide roughly the same degree of protection and about the same response time to the subject property, although response time for the Tualatin District may be somewhat quicker via Interstate-5. The District commented that approval of the petition would improve service efficiency.

(4) The Subject Property is in Canby High School District #1 and Elementary School District #86. Granting the petition would not affect school services, because the site is not used for a residential purpose. No change in school district boundaries are planned or reasonably expected as a result of granting the petition.

2. On October 25, 1994, Metro staff mailed notices of a hearing to consider the petition by certified mail to the owners of property within 250 feet of the subject property,

to the petitioner, to Clackamas County, and to the City of Wilsonville. The notice and certificate of mailing are included as Exhibit 20. A notice of the hearing also was published in *The Oregonian* at least 10 days before the hearing.

3. On November 16, 1994, Metro hearings officer Larry Epstein (the "hearings officer") held a public hearing at the Wilsonville Community Development Annex to consider the petition. After the hearings officer described the rules for the hearing and the relevant standards for the petition, six witnesses testified in person.

a. Metro planner Stuart Todd verified the contents of the record and introduced certain exhibits into the record. He summarized the staff report, (Exhibit 21), including basic facts about the site, the UGB and urban services, and comments from Wilsonville and Clackamas County. He testified that the petitioners failed to show that the proposed amendment would increase the efficiency of urban service delivery to or facilitate development of land already in the UGB; failed to introduce substantial evidence to support conclusions that the amendment would not have adverse environmental impacts or would have a positive social impact; and, failed to show why the amended UGB is better than the existing UGB based on the locational adjustment approval standards.

b. The petitioners testified on their own behalf. Mr. Richards argued that the subject property should have been included in the UGB when it was adopted in 1979, but the owner at that time wanted it to be outside the UGB; that the property is situated in a location convenient to city residents south of the Willamette River (the "river"); that there is a need for the amendment; and that the amendment is consistent with the locational adjustment for St. Francis of Assisi Church (Contested Case 88-03). He also introduced certain exhibits. Mr. Starr argued that the amended UGB is better, because it facilitates more development when combined with petitioners' land already inside the UGB (adjoining the subject property) in a manner that reduces vehicle miles traveled for city residents south of the river and reduces the impact of that traffic on the Interstate-5/Wilsonville Road interchange.

c. Peter E. Morgan and Max Paschall opposed the petition, because the property could be used for a highway commercial purpose with high light and noise levels or for a land extensive commercial use that requires extensive grading and tree removal and would not reduce noise levels to the east. Mr. Morgan also expressed concern that the amendment would increase development that could adversely affect wildlife habitat and

wetlands in the canyon area on and adjoining the site. He also expressed concern about water service.

d. Wilsonville Councilman Dean Sempert characterized his testimony as neutral. He argued that, if the amendment results in the subject property and the adjoining property already in the UGB being developed for uses that serve principally the city residents south of the river, then it could reduce vehicle miles traveled and enhance access by foot and bicycle. If it developed for uses that serve principally highway traffic or for certain other uses, such as auto sales or auto-oriented uses, he argued there would be no such benefits from the amendment. He argued that it would reduce the cost of water service to the church south of Miley Road if the applicant extends it through the subject property and/or their adjoining property already in the UGB. He argued a suitably oriented building could have a positive environmental impact by blocking highway noise. He expressed concern about preservation of trees on the subject property if the amendment is approved. In response to Mr. Morgan's concern about water service, Mr. Sempert testified there are six wells that serve Wilsonville, including two in Charbonneau. A pipeline carries water from the area north of the river to the Charbonneau area when the city has to supplement water from the two wells south of the river to serve Charbonneau.

e. Mr. Todd responded that the amendment is not necessary to enhance urban services by extending the water line to Miley Road, because the water line will have to be extended to Miley Road before the petitioner's parcel adjoining the subject site and already inside the UGB can be developed. He conceded it may be more economical to the petitioners, because they could spread the cost of the water line extension over a larger development, but that is not more efficient. He argued the petitioners failed to show there is a market demand for a given use or uses in the area of the city south of the river, or that there is an insufficient supply of vacant land for any use in the city generally or south of the river. He recommended limiting use of the property if the amendment is approved.

f. In their closing statement, petitioners argued the commercial area of Charbonneau is developed; none of it has been used for professional offices except in the Towncenter area of Charbonneau. They agreed to accept a condition limiting use of the property to professional offices. They also agreed to identify the steeply sloped area on the property and to accept an open space designation for that land.

4. At the close of the November 16 hearing, the hearings officer left the record open until December 16 to receive additional written evidence and testimony. By letter dated December 2, 1994, petitioners requested that the hearings officer hold open the public record regarding the petition until February 16, 1995. Metro staff concur with the petitioners' request. By written order dated December 6, 1994, incorporated herein by reference, the hearings officer held open the record until February 16, 1995.

5. Between November 16 and February 16, 1995, the hearings officer received other written evidence and testimony including the following:

a. Carol and John Kincaid testified in favor of the petition only if the use of the subject property is limited to a professional office. See Exhibit 27.

b. Max Paschall testified that the petition should be approved if the subject property and the adjoining land owned by the petitioners is developed for a multi-story professional office building oriented to block noise from the highway. He also reported noise levels along lots east of the subject property. See Exhibit 28.

c. Marshall and Linda Watkins testified against the petition, arguing there is no need for more commercial land in Wilsonville generally or in Charbonneau specifically; the subject property is environmentally sensitive; development on the subject property will increase noise levels from the highway and other nonresidential uses. See Exhibit 32.

d. The petitioners submitted a letter and five attachments, much of which repeat information and conclusions in the petition and petitioners' oral testimony. See Exhibits 33 through 38. In terms of new information, the petitioners include the following:

(1) A report by a professional engineer that sewer service can be provided to the petitioners' property already inside the UGB in three ways. Two of those alternatives require use of a pump station and installation costs of $63,000 to $67,000. The third alternative involves extending a gravity sewer north across the subject property to a connection with the ODOT sanitary sewer line in the Interstate-5 right of way at a cost of $18,000. This alternative also could serve the subject property. The petitioners argue that approving the petition so that the sewer line can cross the subject property is the most efficient means of providing service to their land already inside the UGB, because the

installation costs can be spread over a larger development reducing per unit costs, and because a gravity system requires less maintenance than a system with a pump station.

(2) Information about population and commercial zoning and land uses in Wilsonville south of the river. About one-third of the population of Wilsonville lives south of the river (3384 out of a population of 9680). About 40 acres of land in Wilsonville south of the river is zoned Planned Development Commercial ("PDC"), but about half that area is developed or approved for housing and most of the other half is developed with commercial or office uses. Existing commercial and office structures are fully leased. Only one 9500 square foot pad is available for commercial development in the area south of the river, and it is constrained by limited parking. The petitioners argue this shows there is a need for more commercial land in the city south of the river, and granting the petition would help fulfill that need by allowing petitioners to build about twice as large a professional office building as they can build if the subject property is outside the UGB.

(3) A traffic study describing the impact on area roads of a 40,000 square foot office use on the subject property and the adjoining land owned by petitioners. The study notes that the Wilsonville Road/Interstate-5 interchange operates at a Level of Service "F". The petitioner argue that by increasing the availability of professional offices in the city south of the river, the petition will reduce the volume of traffic traveling from the area south of the river to the area north of the river to receive office and commercial services, and, therefore will reduce existing road service inefficiencies.

(4) A written statement from the Tualatin Fire and Rescue District in which the District states that approval of the petition would make service delivery more efficient, because it would be less expensive on a per unit basis, and because it would establish a more logical boundary between the Tualatin and Aurora Districts.

6. On March 16, 1995, the hearings officer filed with the Council a report, recommendation, and draft final order granting the petition for the reasons provided therein. Copies of the report and recommendation were timely mailed to parties of record together with an explanation of rights to file exceptions thereto and notice of the Council hearing to consider the matter. No Timely exceptions were filed with the Council by 4/11/95.

7. On April 20, 1995, the Council held a duly noticed public hearing to consider testimony and timely exceptions to the report and recommendation. After considering the

testimony and discussion, the Council voted to grant the petition for Contested Case No. 94-01 (Starr/Richards), based on the findings in this final order, the report and recommendation of the hearings officer in this matter, and the public record in this matter. The record includes an audio tape of the public hearing on November 16, 1994 and the exhibits on the list attached to the final order.

II. Applicable Approval Standards and Responsive Findings

1. Metro Code section 3.01.035(c) contains approval criteria for all locational adjustments. Metro Code section 3.01.035(f) contains additional approval criteria for locational adjustments to add land to the UGB. The relevant criteria from those sections are reprinted below in italic font. Following each criterion are findings explaining how the petition does or does not comply with that criterion.

> ***Orderly and economic provisions of public facilities and services.*** *A locational adjustment shall result in a net improvement in the efficiency of public facilities and services, including but not limited to, water, sewerage, storm drainage, transportation, parks and open space in the adjoining areas within the UGB; and any area to be added must be capable of being served in an orderly and economical fashion.*
> Metro Code section 3.01.035(c)(1)

2. The subject property can be served by public water, based on the comment from the City of Wilsonville. The subject property can be served by sanitary sewer and roads, based on the comment from ODOT. Based on the Wilsonville City Code, storm drainage plans must be approved before the city will approve permits for development on the subject property. The proximity of the drainageway east and north of the subject property and the slopes on the property make it feasible for development to comply with city drainage regulations, including water quality enhancement regulations, by discharging storm water into the drainageway. Because of the relatively small size of the subject property, the proposed restriction on use, and the relatively large open space tracts adjoining the property, approval of the amendment does not create a need for more parks and open space. Therefore, the area to be added is capable of being served in an orderly and economical fashion.

3. Metro rules do not define how to calculate net efficiency of urban services. In the absence of such rules, the Council must construe the words in practice. It does so consistent with the manner in which it has construed those words in past locational adjustments, Particularly contested case . The Council concludes that the locational adjustment results in a net improvement in the efficiency of sewer services sufficient to comply with Metro Code section 3.01.035(c)(1), based on the following findings:

a. Including the subject property in the UGB does not increase the net efficiency of transportation services, because it does not result in any road improvements or dedications, necessary connections or realignment of existing roads, or other direct benefit to roads, such as was found to occur in the locational adjustment approved in Contested Case 90-01 (Wagner).

(1) The Council has found in past locational adjustment cases that the benefit to the petitioner of being able to amortize the cost of required road improvements over a larger development area does not constitute an improvement in efficiency. See Contested Case 88-02 (Mt. Tahoma).

(2) Based on the traffic study in the record, the traffic from a development on the subject property and tax lot 15700 will not reduce the level of service of affected intersections or cause affected streets to exceed their engineered capacity. Therefore, the Council finds that the locational adjustment has no net effect on the efficiency of roads.

b. Including the subject property in the UGB does not increase the net efficiency of water service, because it does not result in any water facilities or substantially greater water system efficiencies that could not otherwise be provided. See the Council Final Order in the matter of Contested Case 88-04 (Bean) for an example of where a locational adjustment improves the efficiency of water services (in that case, by creating a looped water system and providing water to land already in the UGB).

(1) The petitioners would have to extend the same size line in the same location to serve tax lot 15700 as it will have to extend to serve the subject property and tax lot 15700. It could be argued that including the subject property increases the economic feasibility of extending the water line to serve tax lot 15700, and to the church,

because installation costs can be spread over a larger development, but that is not relevant to efficiency.[1]

(2) Based on the written comment from Wilsonville and the testimony by Compass Engineering, including the subject property in the UGB does not have an adverse impact on the efficiency of water services. Therefore, the Council finds that the locational adjustment has no net effect on the efficiency of water service.

c. Including the subject property in the UGB increases the net efficiency of sewer service, because it enables the petitioners to serve tax lot 15700 and the subject property with a gravity flow sewer line. If the subject property is not included in the UGB, then tax lot 15700 would have to be served with a pump station. That is inherently less efficient than a gravity flow line, because a pump station contains mechanical and hydraulic parts that require maintenance and repair and relies on electricity to operate instead of gravity. This finding is consistent with the Council action is Contested Case 8-04 (Bean) where a locational adjustment allowed a gravity flow system instead of pump stations. Because of the importance of this service efficiency to the petition, Council finds that a condition of approval is warranted requiring the subject property and tax lot 15700 to be served by a gravity flow sewer system.

d. The petitioners failed to show that the locational adjustment results in a net improvement in the efficiency of storm drainage. Based on the topographic map in the record, storm water from the subject property will drain to the north and to the east across tax lot 15700. The natural grade of tax lot 15700 is to the east, so it will drain into the existing urban area. It is not necessary to include the subject property in the UGB to provide storm drainage to land already in the UGB.

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[1] In a number of cases in the past, the Council has recognized that a locational adjustment that allows a public water or sewer system with excess capacity to serve the property in question results in a very small incremental increase in system efficiency, because the system is used more to its capacity. See, e.g., Contested Case 88-03 (St. Francis of Assisi) and Contested Case 87-04 (Brennt). However, such recognition often has been dicta, because the locational adjustment in question clearly achieved other, more significant efficiencies. Council also has recognized that the incremental increase in system efficiency achieved simply as a result of using available capacity is not sufficient by itself to warrant a conclusion that a locational adjustment results in a net increase in system efficiency. See, e.g., Contested Case 88-02 (Mt. Tahoma) and Contested Case 90-01 (Wagner). Council finds the latter is the better rule. To hold otherwise would mean that every locational adjustment would comply with Section 3.01.035(1) if the property could be served with water or sewer by a system with more capacity. That would render the rule meaningless and would be inconsistent with the policy and legislative history regarding the rules for locational adjustments, incorporated herein. See, e.g., the discussion at pp. 7-9 of the Council Final Order in the matter of Contested Case 88-02. Council construes Section 3.01.035(1) to require more than the incremental increase in efficiency that could be construed to result from any use of excess system capacity.

e. The subject property can be served by Tualatin Valley Fire and Rescue District, and including the subject property in the UGB increases the net efficiency of fire protection services, based on the written statement from the District (Exhibit 9). The efficiency results from a more logical division between the Tualatin and Aurora Districts. The subject property is the only property served by the Aurora District north of Miley Road east of the freeway. The church south of Miley Road is served by Tualatin. This circumstance was identified as a system inefficiency by the Aurora District in the matter of Contested Case 88-03 (St. Francis).

f. If conditioned, including the subject property in the UGB can increase the area designated "open space" on a comprehensive plan or zoning map, because the petitioners agreed to accept such a designation on the steeply sloped portion of the subject property, and such a designation is consistent with Wilsonville regulations. Increasing the area of open space increases the efficiency of open space services for purposes of this section. However the Council also recognizes that, under existing zoning, use of the subject property is so constrained that it is reasonably likely to remain open space if it is not included in the UGB. Therefore, including the subject property in the UGB actually may reduce the area of open space in fact if not in designation. Given these facts, the Council concludes including the subject property has no net effect on open space efficiency.

> *Maximum efficiency of land uses. The amendment shall facilitate needed development on adjacent existing urban land. Needed development, for the purposes of this section, shall mean consistent with the local comprehensive plan and/or applicable regional plans.*
> Metro Code section 3.01.035(c)(2)

4. Including the subject property in the UGB facilitates needed development on adjacent existing urban land, (i.e., tax lot 15700), because it makes it possible to serve that property with a gravity flow sewer. Any use of the adjoining land in the UGB requires sewer service, including uses permitted in Wilsonville's PDC zone.

a. The Council acknowledges that it is not necessary to include the subject property in the UGB to provide <u>any</u> form of sewer service to tax lot 15700. It could be served by extending a sewer line east or west along Miley Road, but sewage would have to be pumped.

b. Given the importance of the efficiency of service delivery in section 3.01.035(c)(1), the Council finds that the availability of a less efficient means of sewer service, (i.e., a system that relies on a pump station), does not preclude and is not inconsistent with a finding that the locational adjustment in this case facilitates development on tax lot 15700 by enabling it to be served with a more efficient sewer system. This is consistent with and similar to the Council's action in the matter of Contested Case 88-04 (Bean).

5. This section introduces the concept of the need for a given kind of development into the analysis of the locational adjustment.

a. The petitioners have asserted that there is a need for professional offices to serve the portion of the City south of the river, and have introduced substantial evidence in support of that assertion.

b. Citizens of the adjoining area have testified that a professional office building could have positive social and environmental impacts by reducing noise levels from the highway among other things.

c. Council finds that, although need for more land in the UGB is not a relevant criterion for a locational adjustment, it is not inconsistent with Metro Code section 3.01.035(c)(2) to limit uses permitted on the subject to a subset of the uses permitted by the anticipated urban plan map designation for the property. In fact, Metro Code section 3.01.40(a) expressly authorizes it.[2]

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[2] Metro Code section 3.01.40(a) provides:

> *The District may attach conditions of approval which may be needed to assure compliance of the developed use with statewide planning goals and regional land use planning, . . . including but not limited to the following:*
>
> *(1) Conditions which may relate to findings of need for a particular type of use and for which the District finds a need to protect the opportunity for development of this type of use at the proposed site...*

Council first applied this provision to a locational adjustment in the matter of Contested Case 91-01 (Dammasch State Hospital) when it required public sewer to be extended to serve that property along a particular route.

d. Therefore, Council finds that the approval of the locational adjustment in this case should be subject to a condition that prohibits the subject property from being used for any purpose except open space and professional offices, because such a condition is needed to assure compliance of the developed use with the statewide planning goals and regional land use plans as implemented by the rules for locational adjustments. See additional discussion in the ESEE analysis following.

> ***Environmental, energy, social & economic consequences.*** *Any impact on regional transit corridor development must be positive and any limitations imposed by the presence of hazard or resource lands must be addressed.* Metro Code section 3.01.035(c)(3)

6. Council finds the subject property is not in a regional transit corridor and, because of its location at the extreme south end of the urban area of the metropolitan region, it is unlikely to be included in such a corridor in the future. Therefore the locational adjustment does not have an impact on regional transit corridor development.

7. Council further finds that the plan amendment could result in development that would cause significant adverse energy, social and environmental impacts.

a. Adverse energy, social and environmental effects could result if the amendment allows the property to be used for highway commercial purposes or for land extensive commercial purposes. Social impacts would be reasonably likely to include high noise levels that would adversely affect dwellings in the adjoining subdivision. Environmental impacts would be likely to include higher storm water runoff volumes and less landscaping and preservation of trees. Energy effects would include the potential for increasing vehicle miles traveled, rather than serving principally City residents south of the river. To address these potential effects, the Council finds that a condition of approval should be imposed limiting use of the property to professional offices and open space as defined by the City of Wilsonville land use regulations.

b. Adverse environmental effects could result if hazards affect development of the subject property. Council finds the subject property is affected by hazards, including steep slopes. To address that hazard, Council finds that a condition of approval should be imposed limiting use of the portion of the property with slopes of twenty percent or more to open space; provided, that such a limitation does not preclude sanitary sewer and storm

drainage facilities in that area if approved by the City of Wilsonville consistent with applicable City standards.

> ***Compatibility of proposed urban uses with nearby agricultural activities.*** *When a proposed adjustment would allow an urban use in proximity to existing agricultural activities, the justification in terms of this subsection must clearly outweigh the adverse impact of any incompatibility.* Metro Code section 3.01.035(c)(5)

8. Council finds there are no agricultural activities in proximity to the subject property, based on the findings regarding surrounding uses in this Final Order.

> ***Superiority.*** *[T]he proposed UGB must be superior to the UGB as presently located based on a consideration of the factors in subsection (c) of this section.* Metro Code section 3.01.035(f)(2)

9. Council finds that the proposed UGB would be superior to the UGB as presently located, because:

a. Public sanitary sewer could be provided to the subject site and land already within the UGB more efficiently by a gravity flow system.

b. The amended UGB creates a more logical and consistent boundary between the Tualatin and Aurora Fire Districts.

c. The amended UGB helps reinforce the Interstate-5 freeway as the edge of the urban area.

d. The subject property is an essentially inaccessible and useless residual parcel under the existing UGB. It cannot be used practicably for a resource purpose other than passive open space and does not buffer resource lands from urban lands. The amended UGB allows this residual piece to be put to a productive use without adverse impacts on or loss of resource lands in a manner that increases the efficiency of urban services and provides those services to land already in the UGB in a manner in which they could not be provided.

Similarly situated land. The proposed UGB amendment must include all similarly situated contiguous land which could also be appropriately included within the UGB as an addition based on the factors above. Metro Code section 3.01.035(f)(3)

10. The subject property is isolated from other land outside the UGB by the Interstate-5 freeway. Therefore there is no similarly situated property which could also be appropriately included within the UGB based on the factors above.

III. Conclusions and Decision.

1. Public services and facilities, including water, sewer, storm drainage, transportation, schools, and police and fire protection, can be provided to the site in an orderly and economical fashion.

2. Addition of the site would result in a slight improvement in the efficiency of public sewer and fire protection services, because the public sewer system can be extended to serve the subject property and adjoining land already in the UGB using a gravity system instead of using a pump stations, and because the amendment results in a more logical boundary between fire protection districts. Because of the importance of this service efficiency to the petition, Council further concludes that a condition of approval is warranted requiring that the subject property and tax lot 15700 be served by a gravity flow sewer line.

3. The locational adjustment facilitates development of land within the UGB consistent with the Wilsonville Comprehensive Plan and land use regulations by providing more efficient sewer service to that property.

4. The locational adjustment will not have an impact on regional transit corridor development. The subject property contains potential hazardous steep slopes. Council concludes a condition is warranted requiring the portion of the subject property within slopes of twenty (20) percent or more to be used only for open space purposes and sewer and storm drainage features. Including the subject property in the UGB could cause significant adverse energy, social and environmental consequences if the property is developed for certain uses. Council concludes a condition of approval is warranted limiting use of the subject property to professional offices.

5. The subject property does not include agricultural land, and is not in proximity to existing agricultural activities. Therefore, the location adjustment will not remove agricultural land or conflict with agricultural activities on nearby land.

6. The locational adjustment will result in a superior UGB, because it results in the service efficiencies noted herein, reinforces a major physical features (Interstate-5) as the edge of the UGB, and allows the subject property to be used productively.

7. The petition includes all similarly situated contiguous land outside the UGB.

8. For the foregoing reasons, the petition in Contested Case 94-01 is approved, subject to the following conditions:

a. The subject property may be used only for open space and professional office purposes as defined by the City of Wilsonville land use regulations.

b. The portion of the subject property with slopes of twenty (20) percent or more may be used only for open space purposes; provided, a sanitary sewer line may cross the sloped area, and storm drainage facilities may be established in the sloped area if approved by the City of Wilsonville.

c. The subject property and tax lot 15700 shall be served by a gravity flow sewer line.

ATTACHMENT "A" TO THE FINAL ORDER
IN THE MATTER OF CONTESTED CASE 94-01:
EXHIBITS

Exhibit No.	Subject matter
1	Tax Assessor Map, Sec. 26, T3S, R1W, WM, Clackamas County
2	Notice of public hearing and attached maps
3	Certificates of mailing of public notices
4	List of property owners within 500 feet
5	Petition for locational adjustment dated March 14, 1994
6	Clackamas County Board of Commissioners Order No. 94-287
7	Comment from Wayne Sorenson (Wilsonville) dated June 24, 1994
8	Comment from B. Applegarth (Canby Elem Sch Dist) dated March 9, 1994
9	Comment from Tualatin Rural Fire Protection District dated March 8, 1994
10	Letter from John Grassman (ODOT) dated June 11, 1993
11	Statement of intent to file annexation petition dated June 29, 1994
12	Memorandum from Denise Won (PMALGBC) dated March 4, 1994
13	PMALGBC petition and forms #1, #1a, #3, #4, #5 and #6
14	Affidavit of Donald Richards dated June 17, 1994 (re: notice list)
15	Letter from Vera Rojas (Wilsonville) dated June 17, 1994
16	Minutes of April 11, 1994 Wilsonville Planning Commission hearing
17	Wilsonville Staff Report dated May 16, 1994 with attachments
18	Minutes of May 16, 1994 Wilsonville City Council hearing
19	Metro Council Resolution 94-2016 with attachments
20	Hearing notice and certification of mailing
21	Metro Staff Report dated November 1, 1994 with attachments
22	*Wilsonville Spokesman* dated November 8, 1994
23	Response dated November 15, 1994 by Donald Richards to staff report
24	Site access analysis by DKS Associates dated October 20, 1993
25	Letter from Debra Iguchi (Friends of Goal 5) dated November 1, 1994 with handwritten note dated November 16, 1994
26	Memorandum from Stuart Todd dated November 22, 1995 with copy of Clackamas County tax assessor map 86-12 and UGB map
27	Letter from Carol and John Kincaid dated November 25, 1994
28	Letter from Max Paschall dated November 28, 1994
29	Letter from Donald Richards dated December 2, 1994
30	Order to Hold Record Open dated December 6, 1994
31	Memorandum from Stuart Todd dated December 12, 1994
32	Letter from Marshall and Linda Watkins dated December 14, 1994
33	Traffic data and analysis by DKS Associates (various dates)
34	Supplemental analysis of locational adjustment criteria by applicant
35	Evidence regarding Wilsonville population with certificate from Susan Johnson dated January 27, 1994
36	Letter from Bruce Goldson (Compass Engineering) dated February 3, 1995
37	Letter from Donald Richards and Mike Rumpakis dated February 3, 1995
38	Letter from Donald Richards dated February 15, 1995
39	Letter from Stuart Todd dated February 15, 1995
40	Map showing topography and property lines

R L I S

UGB Contested Case 94-1:Richards Zoning

- General Agricultural District
- Planned Development Commercial
- Planned Development Residential
- Public Facility
- Rural Residential Farm Forest 5
- Urban Growth Boundary

METRO

EXHIBIT "C"

STAFF REPORT

INFORMATIONAL BRIEFING ON PRELIMINARY REGIONAL WATER SUPPLY PLAN AND ADOPTION PROCESS

Date: August 31, 1995 Presented By: Rosemary Furfey

PURPOSE OF INFORMATIONAL BRIEFING

The purpose of this informational briefing is to: 1) present a brief summary of the newly-issued preliminary Regional Water Supply Plan (RWSP) and answer any questions regarding the plan; and 2) present the RWSP's adoption schedule and public involvement activities.

BACKGROUND

The preliminary RWSP (see Attachments 1 and 2) is the result of a five-year regional planning effort that has involved twenty-seven municipal water providers (cities and districts), together with Metro, in the three-county metropolitan region. The plan resulting from this unique multi-agency and inter-disciplinary program provides strategies for:

- cooperative regional conservation programs;
- efficient and flexible transmission systems;
- coordinated development of new supply sources; and
- options for institutional arrangements for providing municipal water service throughout the region.

The Metro Charter mandates that Metro adopt elements of the Regional Framework Plan that address regional water supply and storage, particularly as they relate to growth management. In addition, as the Region 2040 project progressed, it became clear that there was a need for coordination between Region 2040 growth planning and the demand forecasting being conducted by the Regional Water Supply Planning Study (RWSPS).

In order to facilitate coordination between these two major regional planning efforts, and to prepare for eventual adoption of water supply elements in the Regional Framework Plan, Metro formally joined the RWSPS effort on July 28, 1994 with adoption of Resolution No. 94-2010A. In addition, the Metro Council also authorized the transfer of Region 2040 population data to the RWSPS so that water demand scenarios could be modeled based on Metro's population growth projections. The data transfer was authorized by Metro Council resolution No. 1962A and the data transfer was completed during the summer of 1994. In addition, Metro Data Resources Center produced maps for several RWSPS technical reports.

When Metro formally joined the RWSPS, it appointed Planning Department Director Andy Cotugno as Metro's representative to the project. Since then staff have attended the study's steering committee and participant committee meetings as the preliminary plan was developed.

In addition, Councilor Jon Kvistad and Executive Office Mike Burton are members of Commissioner Lindberg's Regional Water Leadership Group which met periodically to brief the region's elected officials about the status of the project. Metro staff served on the study's Environmental Task Force which reviewed the ***Environmental Analysis of Future Water*** **Source Options** report. Metro provided written comments to the steering committee about this report. Metro's Water Resources Policy Advisory Committee (WRPAC), which is chaired by Councilor McLain, was briefed at each of its meetings about the status of the study. Finally, information and maps about this study were made available at the Region 2040 open houses which were held around the region in June 1995.

Since formally joining the study, the Metro Council, its former Planning Committee and current Land Use Committee have had periodic updates and briefings about the progress of the RWSPS. In September 1994, the Planning Committee reviewed the study's draft policy objectives and provided specific comments to the study's steering committee regarding Metro's policy interests in a letter dated October 20, 1994. These included:

- strong support for the efficient use of water resources in particular emphasis on water conservation and making the best use of existing supplies;

- the study should address the issue of planning for curtailment during drought. The study should examine the cost of continuing to provide water with high reliability versus curtailment of use during periods of drought. The committee emphasized the need to educate the public about managing water demand and that additional reliability can come from different sources (e.g. conservation);.

- strong support for watershed protection to protect water quality and ensure future water quality. The committee stressed the need to protect and ensure high water quality standards while ensuring the ability to mix water sources across the region;

- the need to avoid environmental impacts, not just minimize or mitigate them when developing new sources or transmission systems. Impacts need to be evaluated on a watershed basis in order to characterize the cumulative and downstream impacts of water supply facility development and operation. Metro will evaluate any supply planning option from an integrated multi-objective viewpoint. Retention of natural systems should be a goal.

- with regard to growth management the committee emphasized the need for continued cooperation between Metro and the region's water providers to determine where future growth should occur.

FACTUAL ANALYSIS

Phase I

Prior to Metro joining this study, the planning work began in 1991 with three "Phase I" studies. These studies projected future regional water demand, evaluated potential water sources and identified ways to conserve water. It recommended more detailed study of conservation, transmission and system efficiency, and new supply sources. Options that could provide enough water to meet population growth during the next 50 years included: demand management; a third dam and reservoir on the Bull Run River; expanding the Barney Reservoir on the Trask River; increased treatment and use of the Clackamas River; new diversions and treatment on the Willamette and Columbia rivers; and aquifer storage and recovery.

Phase II

The currently completed "Phase II" work included more detailed studies of promising water sources and alternatives to help meet water demand in the years ahead. It has investigated how to make new and existing water systems more efficient and cost-effective through conservation and transmission.

The study used an integrated resources planning (IRP) process that examined a range of water resource options including supply, transmission and conservation. The IRP process designs and evaluates different resource combinations to determine their respective and relative costs, benefits, impacts and risks. This involves identifying the policy values which guide the study, formulating and evaluating the mix of resource options, communicating with citizens and decision makers, and presenting tradeoffs which must be weighed and balanced before an informed decision can be made.

The key planning elements included: 1) evaluation of conservation and demand management opportunities; 2) analysis of water supply source options; 3) analysis of system efficiency and transmission; 4) identification of different water service governance and institutional arrangements; and 5) public involvement through newsletters, media coverage, slide show and video, stakeholder interviews, focus groups, public forums, workshops and briefings for interested groups and decision makers.

The project consultants developed a computer model called "IRPlanner" to assist in generating and evaluating the scenarios. The model allows planners to set up different scenarios by specifying different sources, supply amounts, transmission routes, conservation efforts, and timelines to determine how various choices differ in terms of system reliability, efficiency costs, environmental impacts, and the ability to manage catastrophic events.

Results and Recommended Long Term Strategy

The preliminary plan identifies and investigates five approaches to meeting the region's water supply needs and achieving the highest level of reliability. Each of these five sequences emphasizes different policy objectives and combinations of objectives. Some of the key findings in the plan are: 1) a significant amount of water is available to the region; 2) supply facilities will be added to the existing supply base in the near-term (see Attachment 3). These include

expansion of the Barney Reservoir and treatment facilities on the Tualatin River, additional intake and treatment capacity on the Clackamas River, and the return of Portland's Columbia South Shore Wellfield to full capacity; 3) given existing and committed resources, the region will not need major new supply increments until close to the year 2020, unless water demands increase faster than even high projections, or unless committee resource additions do not materialize. 4) conservation program opportunities and water reuse offer significant water savings to the region; 5) the region is fortunate to have so many viable supply options; 6) regional growth patterns are difficult to predict; and 7) the region's citizens care about their water supply.

Based on the provider's review of the five water supply sequences, they have recommended a particular long term strategy to meet the region's future water supply needs. The recommended strategy includes aggressive regional outdoor conservation programs, transmission, aquifer storage and recovery (east and west), expansion of Clackamas River supplies, and lastly development of a supply source on the upstream Willamette River in 2035 -2045. This multi-resource, phased approach provides a great deal of flexibility in responding to information needs and changing circumstances (e.g. demand, or regulatory requirements) over time.

Public Involvement and Plan Adoption Schedule

With publication and dissemination of the preliminary plan, Metro and the region's water providers now begin an extensive public involvement process. In addition to the full plan and executive summary, there will be a newsletter summarizing the results of the plan, a video, technical summary sheets (see Attachment No. 4) and a series of public forums to educate the public and seek their comments on the preliminary plan.

The overall plan adoption schedule is outlined on Attachment No. 5. In September, the plan will be reviewed by each participating agency and a series of regional public forums will be held around the region on September 26, 27 and 28, 1995. In October, the Metro Council will conduct a public hearing to receive testimony about the plan in October, as well as receive technical comments from the Water Resources Policy Advisory Committee (WRPAC). Metro's comments and recommendations will be submitted to the project management team and a decision alternative will be formulated. The draft final plan will then be reviewed again in public forums, WRPAC will provide technical comments and the Metro Council will again solicit public testimony before the final plan is prepared in early 1996. It is anticipated that Metro will adopt the plan in early 1996. The plan will then become a basis for the water supply element of the Regional Framework Plan.

ATTACHMENT 3

Near-term Strategies

- Completion of the Barney Reservoir
- Small expansions of existing Clackamas systems
- Remediation and maintenance of the Portland wellfielc
- Transmission and interconnection to areas facing immec
- Continued conservation
- Further study of potential non-potable sources including treated wastewater effluent and untreated groundwater and surface water
- Maintain the viability of supply options including:
  - Conduct water quality monitoring and pilot treatment testing
  - Participate in numerous state and federal studies relating to water quality and supply related issues
  - Participate in growing number of watershed related work
  - Conduct fishery studies (e.g., IFIM on ClackamasR.)
  - Acquire or protect land/right-of-way acquisition for facility sites.
  - Participate in Metro regional framework plan formulation and implementation
  - Participate in water rights adjudication in Willamette Basin.
  - Conduct pilot tests at potential ASR sites and participate in state rulemaking on ASR
  - Participate in wellhead protection rulemaking.

  <u>For Bull Run:</u>
  - Participate in implementation of President's NW Forest Plan;
  - Participate in Sandy Basin/Watershed activities;
  - Participate in Sandy Basin water rights adjudication;
  - Advocate protection of the Little Sandy Basin as optional municipal water supply if long-term storage on the Bull Run isn't available.

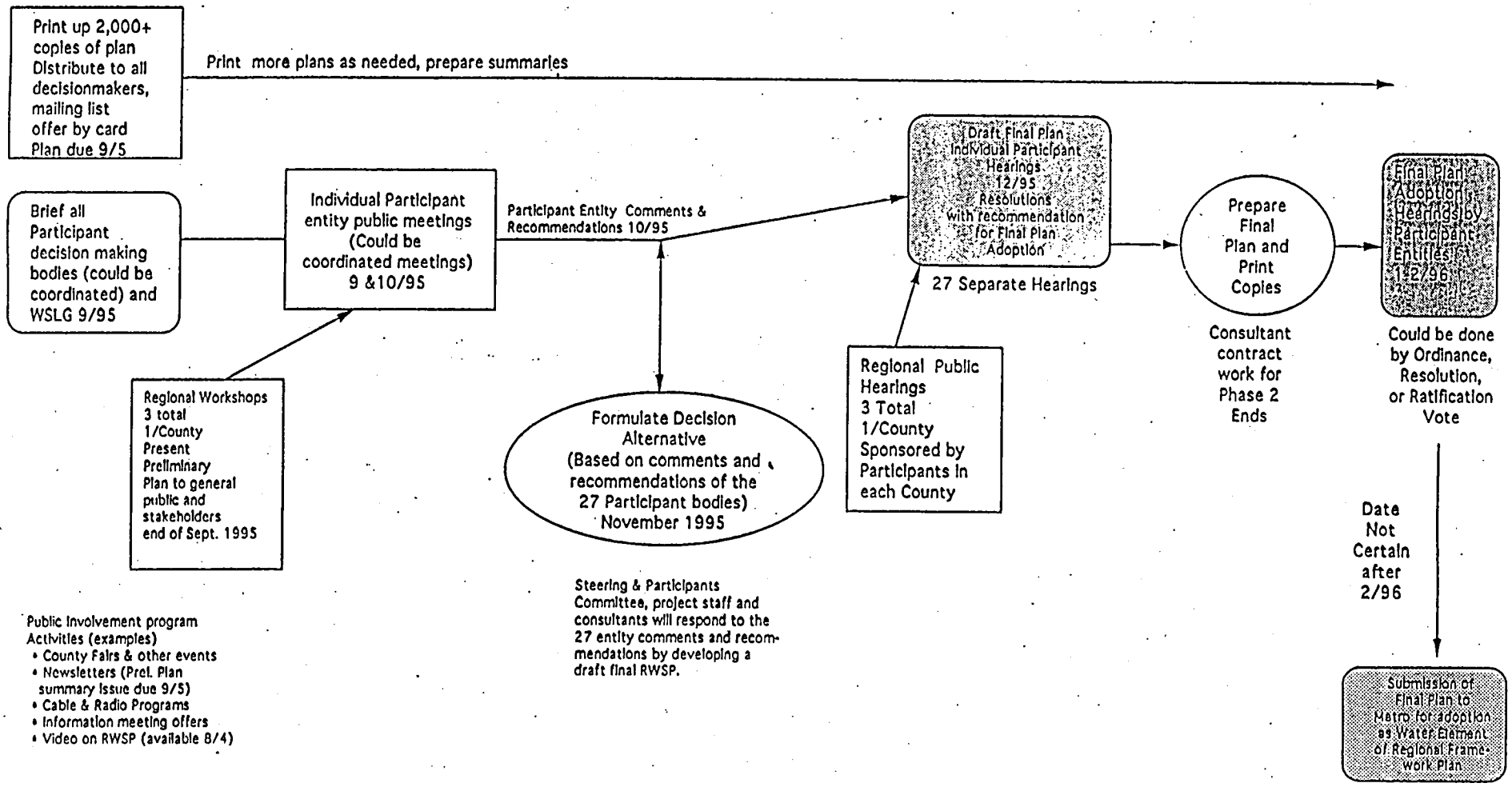
PRELIMINARY PLAN
AUG-SEPT 1995

October

November

December

FINAL PLAN
JANUARY-FEBRUARY 1996



Public Involvement program Activities (examples)

- County Fairs & other events
- Newsletters (Prel. Plan summary issue due 9/5)
- Cable & Radio Programs
- Information meeting offers
- Video on RWSP (available 8/4)

ATTACHMENT 5

REGIONAL WATER SUPPLY PLAN

Portland Metropolitan Area

September 6, 1995

PARTICIPATING WATER PROVIDERS

City of Beaverton
Canby Utilities Board
Clackamas Water District
City of Gladstone
Clairmont Water District
Damascus Water District
City of Fairview
City of Gresham
City of Hillsboro, Utilities Commission
City of Forest Grove
City of Lake Oswego
City of Milwaukie
Mt. Scott Water District
Oak Lodge Water District
City of Portland
Raleigh Water District
Rockwood Water
City of Sandy
City of Sherwood
South Fork Water Board,
(City of Oregon City
City of West Linn)
Tigard Water Dist.
City of Troutdale
City of Tualatin
Tualatin Valley Water District
West Slope Water District
City of Wilsonville
City of Wood Village
Metro

Interested citizens, organizations, and agencies:

The enclosed Preliminary Regional Water Supply Plan represents more than four years of cooperative partnership among twenty-seven municipal water providers and Metro. It contains technical information, findings, alternatives and recommended strategies for meeting future water demands in the tri-county Portland metropolitan region.

The region's water providers are now circulating the plan for review and comment on the choices and recommendations contained in the report. Throughout the planning process, we have sought and used input from local residents, organizations, businesses, and decision makers to ensure that important public values and concerns are addressed. Your comments will be considered carefully as the Preliminary Plan is revised in late 1995.

We have learned that our existing water resources can be managed to meet regional needs for the next couple of decades. The completion of planned system enhancements and continued conservation efforts can stretch existing supplies. A more aggressive commitment to conservation can delay further the need for new supply increments. In addition, several of the region's water sources appear viable to meet long-term needs. The plan provides a list of actions to maintain and enhance the quality and quantity of today's water sources to benefit current and future generations.

The plan also sets forth several strategies for meeting demand to the year 2050. The strategies are evaluated against key public concerns including water quality, system reliability, cost, environmental protection and conservation. The choices contained in the plan meet different objectives to different extents. There is no "right answer." The recommended strategy reflects an attempt to meet multiple objectives and provide sufficient flexibility to accommodate changing circumstances over the next fifty years. The region must now give careful consideration to the tradeoffs associated with the choices.

We invite you to review these preliminary reports and share your views at upcoming public workshops (see enclosed flyer) or in writing. More workshops and public hearings will be held over the next several months. Our goal is to submit a proposed final plan to local decision makers for adoption in early 1996.

(over)

Regional Water Supply Plan Project, 1120 S.W. 5th #601, Portland, Oregon 97204-1926 (503) 823-7528

Please call your local water provider or project management staff for more information or to arrange a briefing on the Regional Water Supply Plan (see attachment for contacts).

Sincerely,

Tim Erwert

Tim Erwert

City of Hillsboro, Joint Water Commission
and Chair, Steering Committee
Regional Water Supply Plan

Michael Rosenberger

Michael Rosenberger

Portland Water Bureau, and
Chair, Participants Committee
Regional Water Supply Plan

Attachments

REGIONAL WATER SUPPLY PLAN – PHASE 2
PARTICIPANTS COMMITTEE

Clackamas County Area

CANBY UTILITY BOARD
Bob Rapp, 266-1156

CITY OF GLADSTONE
Ron Partch, 656-5223

CITY OF LAKE OSWEGO
Duane Cline, 635-0280

CITY OF MILWAUKIE
Dan Bartlett, 659-5171

SOUTH FORK WATER BOARD
Larry Sparling, 657-5030

CITY OF SANDY
Mike Walker, 668-5533

CITY OF WILSONVILLE
Jeff Bauman, 682-9772

CLACKAMAS RIVER WATER *
Dale Jutila, 656-5752
Alan Fletcher, 656-7240

DAMASCUS WATER DISTRICT
Dennis Klingbile, 658-5585

MT. SCOTT WATER DISTRICT
John Thomas, 761-0220

OAK LODGE WATER DISTRICT
Thomas Hoffman, 654-7765

Multnomah County Area

CITY OF FAIRVIEW
Jeff Sarvis, 665-9320

CITY OF GRESHAM
Greg DiLoreto, 669-2402

CITY OF TROUTDALE
Jim Galloway, 665-5175

CITY OF WOOD VILLAGE
Sheila Ritz, 667-6211

Multnomah County Area - Cont.

PORTLAND WATER BUREAU
Mike Rosenberger, 823-7555

ROCKWOOD WATER
Duane Robinson, 665-4179

Washington County Area

CITY OF BEAVERTON
David Winship, 526-2434

CITY OF FOREST GROVE
Rob Foster, 359-3225

CITY OF HILLSBORO
Tim Erwert, 681-6119

CITY OF SHERWOOD
Ron Hudson, 625-5522

CITY OF TUALATIN
Mike McKillip, 692-2000

RALEIGH HILLS WATER DISTRICT
Von Walter, 292-4894

CITY OF TIGARD WATER DEPARTMENT
Ed Wegner, 639-4171

TUALATIN VALLEY WATER DISTRICT
Gene Seibel, 642-1511

WEST SLOPE WATER DISTRICT
Roger Meyer, 292-2777

Regional

METRO
John Fregonese, 797-1763

Project Management Staff

Lorna Stickel, Project Manager - 823-7502
Roberta Jortner, Senior Planner - 823-7493
Dominique Bessée, Admin. Assistant - 823-7528

* Formerly Clackamas Water District and Clairmont Water District

❖ How should future water needs be met in the ❖
Portland tri-county metropolitan area?

Learn about the choices - Express your views

REGIONAL WATER SUPPLY PLAN
PUBLIC WORKSHOPS

❖

Tuesday, September 26, 1995
Tualatin Valley Water District
1850 SW 170th Ave., Beaverton

❖

Wednesday, September 27, 1995
Oregon Convention Center, Rooms 107 and 108
777 NE Martin Luther King Jr. Blvd., Portland

❖

Thursday, September 28, 1995
OIT/North Clackamas Chamber of Commerce
7726 SE Harmony Road, Milwaukie

❖

Open House at 6 p.m. - Workshops from 7 to 9 p.m.

❖ *Refreshments provided* ❖

sponsored by the region's municipal water providers and Metro

EXECUTIVE SUMMARY

PRELIMINARY REGIONAL WATER SUPPLY PLAN
for the
Portland Metropolitan Area

August 1995

THIS PLAN WAS FINANCED AND MANAGED BY THE FOLLOWING PARTICIPANTS:

City of Beaverton
Canby Utility Board
Clackamas River Water
Damascus Water District
City of Fairview
City of Gladstone
City of Gresham
City of Hillsboro Utilities Commission
City of Forest Grove
City of Lake Oswego
Metro
City of Milwaukie
Mt. Scott Water District
Oak Lodge Water District
City of Portland
Raleigh Water District
Rockwood Water
City of Sandy
City of Sherwood
South Fork Water Board:
City of Oregon City/City of West Linn
Tigard Water District
City of Troutdale
City of Tualatin
Tualatin Valley Water District
West Slope Water District
City of Wilsonville
City of Wood Village

CONSULTANT TEAM:

Barakat & Chamberlin, Inc.
Montgomery Watson
Barney & Worth
Murray, Smith & Associates
Squier Associates
Parametrix, Inc.
McArthur & Associates
Pete Swartz

EXECUTIVE SUMMARY

HISTORY OF THE REGIONAL WATER SUPPLY PLANNING EFFORT

The Portland, Oregon, metropolitan region is located on the lower Columbia River, where the Willamette River joins the Columbia. Its urban area is made up of 3 counties and 24 cities with a combined 1990 population of 1,138,000. This population is growing.

The region is served by a number of different surface water and groundwater sources. The water supply system operated by the City of Portland currently supplies about 750,000 people; the rest are served by a variety of sources, most notably the Clackamas River, the Trask River/Tualatin River system, and groundwater.

In 1989, a number of the region's water providers convened to discuss future water supply issues. It was agreed that the region was going to face future supply shortfalls given current supplies, use patterns, and growth projections. A group called the Regional Providers Advisory Group (RPAG) was formed. It met on a monthly basis and had about 35 members.

The RPAG process has evolved into a regional water supply planning effort of unprecedented scope. Phase 1 of this effort, which was completed in 1992, found that:

- Water demands would increase significantly throughout the region;
- Existing supplies would not meet all of these demands;
- Conservation could play an important role in meeting regional water needs; and
- New sources of water and efficient transmission systems offered the potential to meet these increasing needs.

The Phase 1 "Water Source Options Study" evaluated 29 different water supply options that could potentially be developed to serve the Portland/Vancouver metropolitan area's water needs and ranked these sources against a predetermined set of criteria. The evaluation concluded that six supply source options were worthy of additional analysis and should be carried forward to a second phase Regional Water Supply Plan (RWSP). The six source options are:

- A third dam in the Bull Run Watershed;
- Additional diversion and treatment capacity on the Clackamas River;
- Diversion and treatment capacity on the Willamette River;
- Diversion and treatment capacity on the Columbia River;
- Raising the height of Barney Dam on the Trask River, thereby increasing the storage capacity of Barney Reservoir; and
- Aquifer Storage and Recovery, involving the use of one or more of the region's surface water sources.

Since the completion of Phase 1, the Joint Water Commission and the Tualatin Valley Water District have continued to pursue the Barney Reservoir option[1] and have initiated construction on that project. The RWSP therefore focuses on the remaining five supply options.

The RWSP also considers water conservation as a key resource option.

This document reports on the results of the RWSP. Phase 2 was funded and managed by a group of 27 water providers in the metropolitan region.[2] In 1994, the Metropolitan Service District (Metro) became the 28th participant. The project used the techniques of Integrated Resource Planning and was conducted by a team of consultants led by the firm of Barakat & Chamberlin, Inc. Following is a list of the project participants:

City of Beaverton*
Canby Utilities Board
Clackamas Water District**
City of Gladstone
Clairmont Water District**
Damascus Water District
City of Fairview
City of Gresham
City of Hillsboro Utilities Commission*
City of Portland
Raleigh Water District
Rockwood Water PUD
City of Sandy
City of Sherwood
South Fork Water Board
City of Tigard
City of Troutdale
City of Tualatin

[1]An Environmental Impact Statement was being developed for this project before Phase 2 began.

[2]The City of Vancouver and Clark County, Washington chose not to participate in Phase 2. The Phase 2 participants are all Oregon jurisdictions.

City of Forest Grove*
City of Lake Oswego
City of Milwaukie
Mt. Scott Water District
Oak Lodge Water District
Tualatin Valley Water District*
West Slope Water District
City of Wilsonville
City of Wood Village
Metropolitan Service District (Metro)

*Denotes members of the Joint Water Commission.
**The Clackamas and Clairmont Water Districts have recently merged to form Clackamas River Water.

SCOPE OF THE PHASE 2 REGIONAL WATER SUPPLY PLAN

The scope of the Regional Water Supply Plan (RWSP) is comprehensive. It includes the following major elements:

(1) An active and ongoing **public information and involvement** program.

(2) Development of **policy objectives** that reflect the important regional values that this plan must attempt to meet.

(3) Development of a logical and defensible **demand forecast** for the region.

(4) Evaluation of five potential **supply sources.**

(5) Identification and evaluation of possible **transmission system improvements and expansions.**

(6) Identification and evaluation of a broad range of voluntary and mandatory **demand management and conservation options** available to the region.

(7) Development and evaluation of **integrated resource strategies** based on the information developed in the foregoing elements. A sophisticated modeling tool was developed to assist this process.

(8) Identification of **short-term and long-term actions** that the region must undertake to ensure that the needs of the regional water providers and

their customers are met throughout the planning period, which runs through the year 2050.

This report contains the preliminary results of the RWSP. The plan is "preliminary" at this point because of the critical need for public feedback over the next several months on the report contents. Based on that input, the plan will be finalized in early 1996.

Chapters of the preliminary plan document provide descriptions of all RWSP elements. For most of these, more detailed documentation has been prepared over the course of the project in the form of interim reports or technical memoranda. These are listed in Appendix A of the plan. Arrangements to review these documents may be made through participating water providers.

THE REGION'S NEED FOR NEW RESOURCES

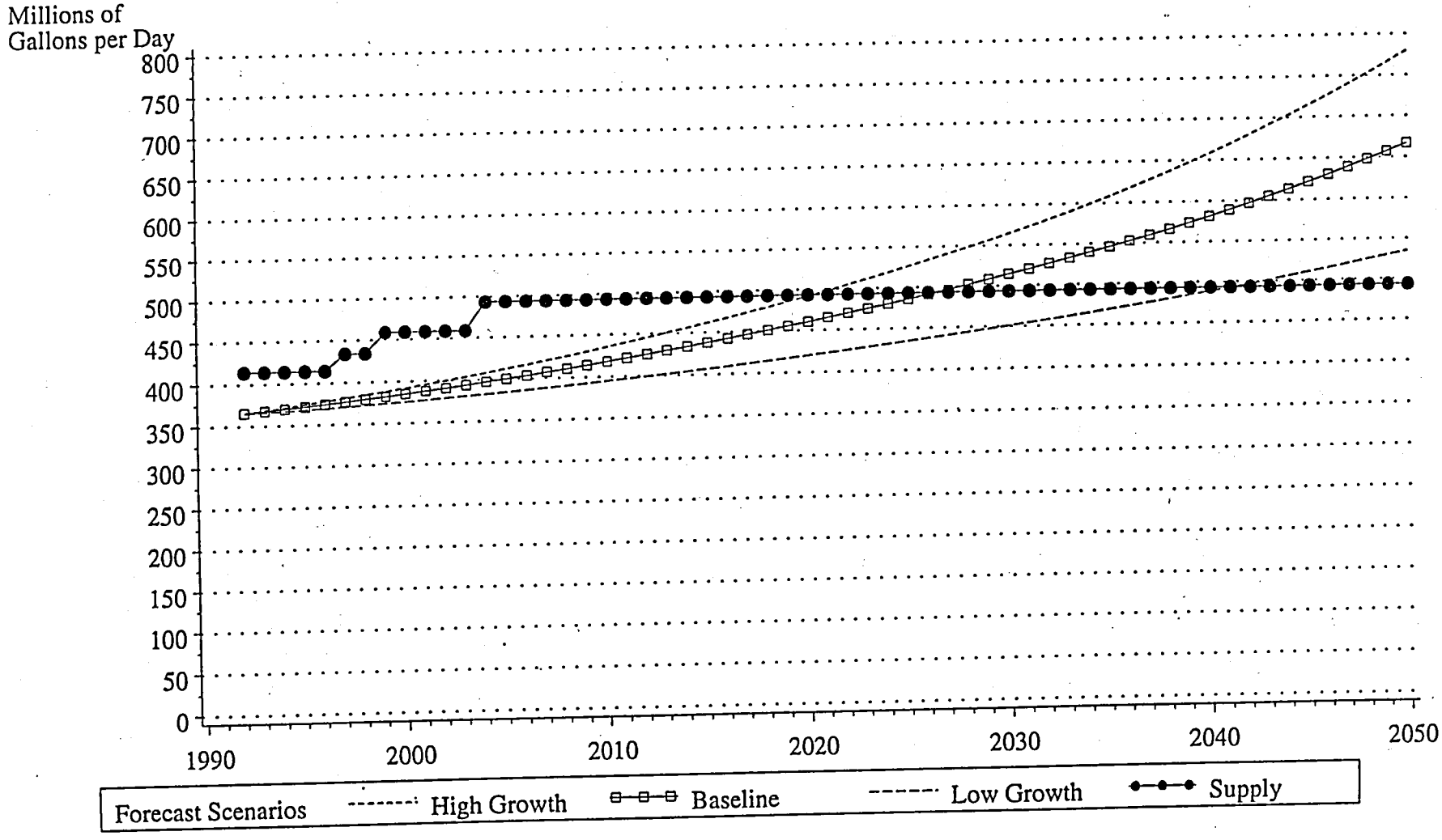
A key conclusion of the RWSP is that, *with current resources and facilities supplemented by the resource additions to which the region's providers have already committed, the earliest point at which the region will need major new supply additions will be around the year 2017.* This point is illustrated in Figure ES-1, which shows a simple comparison between available supplies and peak-day demands under extreme weather conditions, assuming no utility-sponsored conservation programs. An active conservation effort by providers can put off this need until at least the early-to-mid 2020s.

This does not imply that there is no work to be done until that time. *There is, in fact, much to be done in the near-term to ensure that the region meets the needs of its water customers.* Some of these near-term actions include the timely completion of resource additions to which the regional providers have committed, development of necessary transmission and interconnection facilities to meet the needs of all providers, conservation program planning and implementation, and design of a suitable institutional and financial structure to govern the delivery of water service in the region.

Figure ES-1

Comparison of Regional Peak-Day Demand To Existing and Committed Supply

Portland Metropolitan Region
1992--2050: All Customer Classes



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PUBLIC INVOLVEMENT IN THE REGIONAL WATER SUPPLY PLANNING PROCESS

Public information and involvement (PI&I) has been a cornerstone of the RWSP. Water provider participants demonstrated their commitment to PI&I by making it a key element of the project's scope, Substantial fiscal and staff resources have been dedicated to ensuring that the values of the citizenry are understood and heard.

From its inception, the RWSP was designed to obtain input from various audiences through a mix of activities. Some activities targeted the general regional population, while others involved those with specific interests. Through this process, providers also attempted to promote consensus-building concerning the process and findings of the Plan.

Vehicles used to obtain that input and inform the public about the project have included:

- A broad range of written materials made available to the public;
- A variety of workshops, roundtable discussions, and public forums;
- Over 80 interviews of key stakeholders in the region;
- A detailed public opinion research study;
- A survey to assess the value that customers place on water supply reliability;
- More than 100 presentations to interested agencies, organizations, and citizens;
- Various newsletters, informational materials, and bill inserts;
- An Environmental Task Force of environmental organization representatives and government officials to review the environmental analysis;
- Exhibits at county fairs in Multnomah, Clackamas, and Washington counties;
- Two focus groups with residential water customers;

- A slide show on the RWSP; and
- A 15 minute RWSP video.

Thus, there has been, throughout the planning process, a great deal of information exchanged between project participants and interested citizens, organizations, and decision makers. Over 300 persons receive regular notification of committee meetings and documentation of ensuing discussions. Approximately 3,300 citizens receive updates and invitations to submit feedback through newsletters and other information pieces related to the project. Many customers have received bill inserts on the RWSP process. In turn, project participants have received input from over 3,200 people through surveys and public workshops or briefings.

Participating providers made it a priority to *listen to the public*. Several key public values and priorities have emerged from the PI&I effort. The issues that people most care about include:

- Cost
- Equity
- Water quality
- Environmental protection
- System reliability
- Efficient water use
- Implications of growth

Not surprisingly, these key issues reflect the diverse interests of the region's citizenry. The goal of the public involvement process has been to capture the range of interests and concerns held throughout the region.

REGIONAL POLICY OBJECTIVES

The PI&I efforts provided key input to the development of a set of regional policy objectives developed specifically for the RWSP. The policy objectives, along with associated evaluation criteria, provide a framework to design and evaluate the relative strengths and weaknesses of alternative resource configurations.

The region's water providers have not attempted to prioritize the policy objectives. This is consistent with not providing a single "best" resource plan. Rather, the plan presents several options that emphasize different sets of objectives. The plan makes

tradeoffs among these options clear. The region must now make choices among these alternatives.

Some of the policy objectives complement each other, while others compete or conflict. The complexity of the water supply planning and decision-making process is appropriately reflected in the broad range of policy objectives identified.

The policy objectives include:

Efficient Use of Water

- Maximize the efficient use of water resources, taking into account the potential for conservation, availability of supplies, practicality, and relative cost-effectiveness of the options.

- Make the best use of available supplies before developing new ones.

Water Supply Reliability

- Minimize the frequency of water shortages of any magnitude and duration.

- Ensure that the duration and magnitude of shortages can be managed (e.g., through the operation of raw water storage facilities or through access to alternative sources of water).

Water Quality

- Meet or exceed all current federal and state water quality standards for finished water.

- Utilize sources with the highest raw water quality.

- Maximize the ability to protect water quality in the future, including using watershed-protection based approaches.

- Maximize the ability to deal with aesthetic factors, such as taste, color, hardness, and odor.

Impacts of Catastrophic Events

- Minimize the magnitude, frequency, and duration of service interruptions due to natural or human-caused catastrophes, such as earthquakes, landslides, volcanic eruptions, floods, spills, fires, sabotage, etc.

Economic Costs

- Minimize the economic impact of capital and operating costs of new water resources on customers.

- Assure the ability to relate rate impacts associated with new water resources to benefits gained within the region on an equitable basis over time.

Environmental Impacts

- Minimize the impact of water resource development on the natural and human environments.

Growth

- Be consistent with Metro's regional growth strategy and local land-use plans.

Flexibility to Deal with Future Uncertainty

- Maximize the ability to anticipate and respond to unforeseen future events or changes in forecasted trends.

Ease of Implementation

- Maximize the ability to address local, state, and federal legislative and regulatory requirements in a timely manner.

Operational Flexibility

- Maximize operational flexibility to best meet the needs of the region, including the ability to move water around the region and to rely on backup sources as necessary.

Comparisons and tradeoffs among alternatives are facilitated through a set of measurable *evaluation criteria*. Each policy objective is associated with one or more evaluation criteria. Each alternative resource strategy is evaluated against these criteria.

FUTURE WATER DEMANDS IN THE REGION

A well-developed and defensible water demand forecast is critical to the RWSP. The demand forecast underlies the entire planning effort. The RWSP demand forecast was a complex undertaking that projected annual, seasonal, monthly, and peak-day demands for the region as a whole and for each of the three counties. These projections are based on demographic and employment forecasts developed as part of Metro's Region 2040 project. RWSP staff and consultants have coordinated closely with Metro staff throughout the process to ensure consistency.

Tables ES-1 through ES-3 summarize the forecasting results for annual average, summer average, and peak-day demands respectively. The 1992 base demands are shown, as are the high, medium, and low demand forecasts for the year 2050, the last year of the planning period. Average annual growth rates over the planning period are also shown.

These demands reflect naturally-occurring conservation, which results from legal, regulatory, and market forces which tend to increase water efficiency over time regardless of any utility conservation programs.

Table ES-1
ANNUAL AVERAGE WATER DEMAND FORECAST (MGD) AND AVERAGE ANNUAL GROWTH RATES

	1992	2050: High	2050: Medium	2050: Low
Region	172	310 (2.1%)	264 (1.5%)	211 (0.7%)
Multnomah County	97	144 (1.4%)	126 (0.9%)	106 (0.3%)
Clackamas County	33	67 (2.6%)	56 (1.9%)	43 (0.9%)
Washington County	42	99 (3.1%)	82 (2.4%)	62 (1.4%)

Table ES-2
PEAK SEASON WATER DEMAND FORECAST (MGD) AND AVERAGE ANNUAL GROWTH RATES

	1992	2050: High	2050: Medium	2050: Low
Region	220	417 (2.3%)	350 (1.7%)	275 (0.8%)
Multnomah County	123	190 (1.6%)	165 (1.1%)	136 (0.4%)
Clackamas County	41	90 (2.8%)	74 (2.1%)	56 (1.1%)
Washington County	56	137 (3.2%)	111 (2.5%)	84 (1.5%)

Table ES-3
PEAK DAY WATER DEMAND FORECAST (MGD) AND AVERAGE ANNUAL GROWTH RATES

	1992	2050: High	2050: Medium	2050: Low
Region	365	780 (2.7%)	667 (2.2%)	535 (1.4%)
Multnomah County	183	305 (1.8%)	269 (1.4%)	227 (0.8%)
Clackamas County	87	221 (3.4%)	185 (2.7%)	144 (1.8%)
Washington County	96	255 (3.6%)	213 (2.9%)	164 (1.9%)

CURRENT AND COMMITTED RESOURCES

Existing water systems in the region have an estimated usable storage capacity of 11.4 billion gallons and a delivery capacity of 413.8 million gallons per day (mgd). Current regional peak-day demand, even under weather conditions that approach the hottest and driest that the region has experienced over a 65-year historical period of record, is about 370 mgd. Despite this apparent excess capacity, some individual providers within the region do face more immediate shortfalls due to transmission and distribution system constraints.

Existing water sources and facilities for the region include:

- **The Bull Run watershed**, with two dams that impound 10.2 billion gallons of usable storage. About 750,000 residents of the region rely on the Bull Run as their primary supply.

- **The Clackamas River**, on which regional providers have developed 66 mgd of intake and treatment capacity. The Clackamas is currently the primary source of water to 175,000 residents.

- **The Trask/Tualatin water system**, which includes the 1.3 billion gallon Barney Reservoir on the Trask River, a conduit from the reservoir to the Tualatin River, and 43.5 mgd of intake and treatment capacity on the Tualatin. In addition, in most years, the region has access to 4.2 billion gallons from Hagg Lake, which is owned by the Bureau of Reclamation and located on Scoggins Creek. This system supplies water to over 120,000 residents in the western part of the region.

- **The Columbia Southshore Wellfield**, which was developed in the 1980s as an emergency backup and peaking supply source. Since 1986, the ability to use the wellfield has been limited to prevent migration of contamination plumes. As a result, the current usable delivery capacity of the wellfield is assumed to be 35 mgd. The City of Portland is working closely with the Oregon Department of Environmental Quality and with the responsible parties to implement a remediation program that restores the wells to their full capacity of up to 90 mgd.

- **Local sources**, which are used by a number of smaller communities in the region for base use or peaking purposes. These are largely

groundwater sources scattered throughout the region and provide nearly 60 mgd of capacity.

- **Transmission lines**, which range from 4-inch diameter pipes in small districts to the 66-inch diameter Bull Run Conduit No. 4.

In addition to maintaining existing water supply sources and transmission facilities, the region's water providers are committed to completing several facility additions, expansions and improvements over the next two to ten years. The projects will provide another 80 mgd of delivery capacity and 5.2 billion gallons of storage. These additions are not being evaluated as part of the Regional Water Supply Plan. Rather, the RWSP assumes these projects will be completed, and includes them in the plan's baseline resource assumptions or "base case".

Resources to which regional providers have committed, but which are not yet operational, include:

- **The Barney Reservoir expansion**, which will increase the water storage capacity of Barney Reservoir from 1.3 billion gallons to 6.5 billion gallons. This project is expected to be completed by 1998. In addition, improvements to the Joint Water Commission's intake and treatment facilities on the Tualatin River and addition of a new transmission line are expected to increase delivery capacity by 20 mgd to 63.5 mgd by 1997.

- **Additional Clackamas River capacity** beyond the 66 mgd that already exists. Several Clackamas providers have committed to developing a total of 22.5 mgd of additional capacity. This would bring the total "base case" capacity on the Clackamas to 88.5 mgd.

- **Columbia South Shore Wellfield enhancements**, which the RWSP assumes will increase the current 35 mgd of capacity to 72 mgd by 2005.

Table ES-4 summarizes the existing and committed resources being assumed in the RWSP "base case."

As discussed earlier, these committed resources enable the region to defer the need for further resources or facilities until at least the year 2017. Without these committed additions, needs can occur as early as 2004.

Table ES-4
REGIONAL WATER SUPPLY PLAN
EXISTING AND COMMITTED SUPPLY SOURCES

Source	Existing		Additional Committed		Existing and Committed	
	Delivery Capacity (mgd)	Usable Storage Capacity (mg)	Delivery Capacity (mgd)	Usable Storage Capacity (mg)	Delivery Capacity (mgd)	Usable Storage Capacity (mg)
Bull Run Res 1,2	**210**	**10,200**			**210**	**10,200**
Clackamas						
CRW	30				30	
SFWB	20		10		30	
Lake Oswego	16		4		20	
Oak Lodge			8.5		8.5	
Subtotal	**66**		**22.5**		**88.5**	
Trask/Tualatin	**43.5**	**1,153**	**20**	**5,214**	**63.5**	**6,367**
Southshore Wellfield	**35**		**37**		**72**	
Local Sources						
South	28.4				28.4	
West	12.8				12.8	
East	18.1				18.1	
Subtotal	**59.3**				**59.3**	
Total	**413.8**	**11,353**	**79.5**	**5,214**	**493.3**	**16,567**

ANALYSIS OF SOURCE OPTIONS

For each source option, possible facility locations were screened to identify **representative sites**, which the RWSP defines as:

> *Potential facility locations that merit detailed analysis because they offer the highest likelihood of successful permitting and potential development based on preliminary analyses of technical, land use, water quality, environmental, cost, and other relevant factors.*

Identified representative sites are as follows:

- **Bull Run Dam 3:** Bull Run River canyon just downstream of Log Creek and about one-half mile downstream of the confluence of Blazed Alder Creek and the Bull Run River.

- **Clackamas River:** A consolidated facility adjacent to the current Clackamas River Water site.[3]

- **Willamette River:** Just upstream (west) of the existing railroad bridge in Wilsonville on the north side of the river on property currently owned by Oregon Pacific which is currently used for sand and gravel operations.

- **Columbia River:** Just below the Sandy's mouth, on a site currently used for gravel mining and storage.

- **Aquifer Storage & Recovery:** Two sites, one in the Powell Valley area southeast of Gresham and the other in the Cooper-Bull Mountain area about four miles to the southwest of the City of Beaverton in Washington County.

Extensive analyses of each option were then performed. Areas analyzed include:

- Water Availability and Water Rights
- Raw Water Quality and Treatment Requirements
- Environmental Impacts
- Vulnerability to Catastrophic Events

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[3]Several configurations were considered that use this consolidated facility instead of or in conjunction with the various existing or planned Clackamas River facilities.

- Costs
- Ease of Implementation

One of the key conclusions is that all of the surface sources can readily be treated to meet or surpass all safe drinking water standards.

These analyses formed the basis of ratings of each option against key evaluation criteria and provided crucial information to the development and assessment of alternative resource strategies. Table ES-5 summarizes the ratings of the source options.

ANALYSIS OF TRANSMISSION OPTIONS

In addition to the source options, transmission is critical to efficiently meeting the region's needs. The region's transmission systems include several components, including:

- Pipelines that move treated water from the treatment plant to the regional storage reservoirs;
- The regional reservoirs themselves;
- Major lines linking sources to demands in other parts of the region;
- Major lines designed to serve demands within a portion of the region; and
- Local "spokes" to serve the needs of individual providers.

Representative regional reservoir sites for the surface source options are as follows:

- Bull Run and Columbia sources: Existing Powell Butte reservoir site.
- Clackamas source: Forsythe Road site near the unincorporated community of Outlook in Clackamas County.
- Willamette source: Cooper Mountain site in unincorporated Washington County west of Beaverton.

Nine major representative transmission corridors were identified, as follows:

- Lusted Hill/Powell Butte
- Columbia River/Powell Butte
- Powell Butte/Clackamas River
- Powell Butte/Beaverton
- Clackamas/Tualatin
- Clackamas/Forsythe Road
- Willamette/Tualatin
- Tualatin/Beaverton
- Cooper Mountain/Beaverton

Corridor alignments were chosen for each of these based on preliminary land use, environmental, and geotechnical analyses. Based on specified design criteria, cost functions were then generated for each corridor. These cost functions also included base cost estimates for the local "spokes" between the corridor and the appropriate local providers.

The final components of the transmission system are the "spokes" that deliver water to the local providers from one of the major transmission lines. For each provider, these spokes were sized to meet the projected 2050 demand deficit based on forecasted high peak-day demands. As discussed below, *a key plan implementation issue for the region is the specific local interconnections that are needed to ensure that provider needs are met in the near-term as well as the long-term.* The region should attempt to configure these local transmission additions to be consistent with the adopted long-term regional resource strategy.

Table ES-5
RATINGS OF SOURCE OPTIONS

Source Option	Natural Environment	Human Environment	Raw Water Quality	Water Aesthetics	Watershed Protection	Vulnerability to Catastrophic Events	Ease of Implementation
Bull Run Dam 3	4.9	3.6	1.2	1.0	1.0	3.5	4.5
Columbia	2.6	2.5	2.1	2.5	5.0	3.3	3.5
Willamette	1.0	2.5	2.2	2.0	4.0	2.5	4.0
Clackamas (>50 mgd)	2.4	1.0	1.8	2.0	2.0	2.5	2.0
Clackamas (≤ 50 mgd)	1.0	1.0	1.8	2.0	2.0	2.5	2.0
ASR	1.5	2.2	3.0	3.0	N/A*	2.0	3.0

Note: Ratings range from 1 to 5; lower scores are preferred.
* This issue was not directly addressed in the RWSP. It is assumed that rigorous wellhead protection programs will be required for any ASR site.

It is critical that the development of regional, subregional, and local transmission options meets local needs over the entire planning period in a manner consistent with the region's anticipated ultimate resource configuration. At times, there will be some friction between short-term local needs and long-term regional needs. The manner in which this friction is resolved must recognize that a regional plan that cannot flexibly meet the ongoing needs of the participant providers will not retain the critical support of those providers. These needs should, however, be met in the context of the strategic direction the region has chosen.

ANALYSIS OF CONSERVATION PROGRAMS

A basic premise of the RWSP is that water conservation is a resource that can play a key role in meeting future water needs and that this resource must be carefully considered and subjected to the same level of analysis as are supply sources. A comprehensive framework was used to examine water conservation to assure that all viable conservation technologies and management practices are considered.

The framework began by specifying a large universe of potential conservation measures. These measures were then subjected to a qualitative screen to narrow the focus to those that had potential value to the region. For those measures that passed the qualitative screen, technology profiles were developed that described each measure's key technical and economic characteristics. The profiles formed the basis of an economic screen of the remaining measures.

The next step was to combine measures passing both screens into effective conservation program concepts. A conservation program is a set of conservation measures bundled for delivery to a defined target market of customers. The results of this step are presented in Table ES-6, in which the program concepts are divided into three levels in increasing order of "aggressiveness." Detailed descriptions were developed for each of 24 program concepts. In addition, estimates were made of the further savings that could be achieved through conservation pricing programs beyond those already in place in the region.

The RWSP also included a preliminary analysis of opportunities for increasing water reuse and recycling, and for the direct use of stormwater. Options evaluated include:

- Stormwater capture
- Cisterns
- Gray water systems

- Recycling of industrial cooling water
- Reuse of treated wastewater effluent

DEVELOPMENT OF ALTERNATIVE RESOURCE STRATEGIES

The final product of the RWSP is a set of *resource strategies* that best meet the region's needs as expressed through the policy objectives. There are many possible strategies that reflect the tradeoffs the region must make among the policy objectives.

In light of the importance of future uncertainties, it is useful to distinguish between a *resource sequence* and a *resource strategy*.

- A *resource sequence* is a linear progression of resource and transmission additions over the planning period. Note that a resource sequence does not provide flexibility for the region. It is a single development path that does not respond to changing future conditions.

- A *resource strategy* is a multi-branched "tree" of sequences that defines actions that should be taken under various sets of uncertainty outcomes. It is a "road map" of recommended actions under a wide range of future conditions, and provides a series of points at which the region can respond to new information about then-current conditions.

Table ES-6
REGIONAL CONSERVATION PROGRAM CONCEPTS

	Residential Indoor	Residential Outdoor	Commercial, Industrial, Institutional Indoor	Commercial, Industrial, Institutional Outdoor
Level 1	Public education and awareness	Public education and awareness Customer landscaping workshops Trade ally landscaping workshops—res. portion	Commercial plumbing and appliances education HVAC workshops	CI&I outdoor education and awareness C&I watering practices workshops Trade ally landscaping workshops—C&I portion
Level 2	Indoor audit (combined with outdoor) Appliance incentives and equipment tagging	Outdoor audits Incentives for new efficient landscaping and irrigations systems	Commercial indoor audit HVAC financial incentives Industrial process technical assistance and incentives	CI&I outdoor audits Large landscape audits Incentives for new efficient landscaping and irrigation systems
Level 3	Ultra low-flush toilet rebate	Landscaping ordinance	Ultra low-flush toilet direct installation and incentives Incentives for early retirement of single-pass cooling	Landscaping ordinance

Water Supply Reliability

One of the fundamental goals of the RWSP is to address the issue of water supply reliability. This goal is embodied in the policy objective of "minimiz(ing) the frequency of water shortages of any magnitude and duration." In many ways, supply reliability is basic to the RWSP, as concern about future *un*reliability is the key reason the region's providers joined to develop the plan.

The region must ultimately choose a desired level of future reliability, just as it must make choices about other policy objectives. Tradeoffs occur between increased reliability levels and other important objectives, such as minimizing costs and environmental impacts. Policymakers must understand the consequences of different reliability levels to make informed decisions. To accomplish this, resource sequences and strategies were defined for each of three reliability levels.

The definition of these reliability levels was guided by the key finding that, given existing and committed resources, the Portland region will have sufficient total water supply volumes to avoid all *volume-related* shortages for the entire planning period (i.e. through 2050), even under high demand and low flow conditions. However, in the absence of further resource and facility additions, the region will face *shortages in delivery capacity* on high-demand days.

Since the region must concern itself with shortages in delivery capacity that are driven by peak demands, the alternative reliability levels should be defined accordingly. Thus, the key distinctions in reliability relate to the level and frequency of shortages during peaking events.

- A system that achieves **Level 1 reliability** would be perfectly reliable. No shortages would be experienced even under the worst historical weather conditions.

- A system that achieves **Level 2 reliability** would allow for no more than a 10% peak day shortage for any of the three counties under the worst historical weather conditions.

- A system that achieves **Level 3 reliability** would allow for no more than a 20% peak day shortage for any of the three counties under the worst historical weather conditions.

Resource Sequences That Achieve Level 1 Reliability

There are many ways for the region to add resources and facilities to ensure that future shortages do not occur. The RWSP proposes five approaches to meeting the region's needs and achieving this highest possible level of reliability. Each of these five sequences was designed to emphasize different policy objectives or combinations of objectives. Table ES-7 provides a guide to the key policy objectives addressed by each sequence. The sequences themselves are illustrated in Figure ES-2. Each of these sequences assumes high demands.

These resource sequences were evaluated against the evaluation criteria. Table ES-8 shows the results of the key assessments.

Table ES-7
KEY POLICY OBJECTIVES
ADDRESSED BY LEVEL 1 RESOURCE SEQUENCES

Sequence	Natural Environment	Water Use Efficiency	Raw Water Quality	Costs	Catastrophic Events
1.1	✓	✓			
1.2		✓	✓		
1.3		✓	✓	✓	
1.4		✓			✓
1.5	✓	✓		✓	✓

Table ES-8
PERFORMANCE OF LEVEL 1 RESOURCE SEQUENCES AGAINST KEY EVALUATION CRITERIA

Sequence	Cost		Efficiency: % Conservation Savings for Planning Period	Natural Environment*	Water Quality		Catastrophic Events			Ease of Implementation*
	Present Value Societal ($ millions)	Present Value Utility ($millions)			Raw Water Quality*,†	Watershed Protection*	Expected Seasonal Unserved Demand in Worst Year Without: Bull Run	Expected Seasonal Unserved Demand in Worst Year Without: 2nd Largest Source	No. of New Sources	
1.1 Natural Environment/ Efficiency	996.6	962.9	10.57%	1	2.2	2.1	23%	1.5%	1	2.5
1.2 Raw Water Quality/Efficiency	722.2	802.6	5.04%	4.9	1.2	1.3	60%	0.7%	0	4.5
1.3 Cost/Water Quality/Efficiency	611	647.6	5.04%	3.2	2	2.1	16%	9.0%	1	3.1
1.4 Catastrophic Events/Efficiency	635.1	673.9	5.04%	2.9	2.2	2.1	2%	0.7%	3	3.8
1.5 Costs/Natural Environment/ Catastrophic Events/Efficiency	647.9	673.9	5.04%	2.1	2.2	1.8	2%	0.9%	2	3.3

* Comparative scale ranging from 1–5 with 1 as the most favorable rating and 5 as the least favorable rating.
† Volume weighting of raw water quality ratings of new sources.

Resource Strategies That Achieve Level 1 Reliability

For each of the five sequences, associated resource strategies that reflect demand uncertainty were developed. These strategies indicate how future resource and facility development activities would vary as future demands deviate from earlier forecasts. In all cases, the objective would still be to achieve Level 1 reliability. To illustrate, a resource strategy diagram is shown in Figure ES-3.

Table ES-9 shows the expected values of the key evaluation ratings for each of the strategies.[4] The flexibility rating is based on the number of possible resource paths in the strategy.

[4]These expected ratings are based on assumed probabilities for each possible demand outcome (high, medium, or low) for the successive demand reassessments that occur throughout the planning period.

Table ES-9

EXPECTED VALUES OF KEY EVALUATION CRITERIA FOR LEVEL 1 STRATEGIES

Strategy	Costs		Natural Environment*	Water Quality		Flexibility*
	Present Value Societal ($million)	Present Value Utility ($million)		Raw Water Quality*	Watershed Protection*	
1.1 Natural Environment/Efficiency	864.3	797.8	1.0	2.0	1.8	3
1.2 Raw Water Quality/Efficiency	580.6	619.9	4.1	1.2	1.2	5
1.3 Costs/Water Quality/Efficiency	494.0	501.4	2.2	1.7	1.7	3
1.4 Catastrophic Events/Efficiency	534.4	546.9	2.2	2.1	1.7	1
1.5 Costs/Natural Environment/ Efficiency/Catastrophic Events	539.9	539.9	1.8	2.1	1.5	2

*Comparative scale ranging from 1–5 with 1 as the most favorable rating and 5 as the least favorable rating.

Implications

As mentioned earlier, these results indicate that—even if the region were to pursue the highest possible level of reliability and future demands turn out to be high—major resource additions would not be required until well into the 2020s. This conclusion assumes that the region pursues a menu of conservation programs that focus on outdoor uses and is critically dependent on the region's developing committed sources in a timely manner. If the region undertakes those near-term activities, there is considerable time before additional sources must be developed.

Figure ES-2

Level 1 Resource Sequences–High Demand

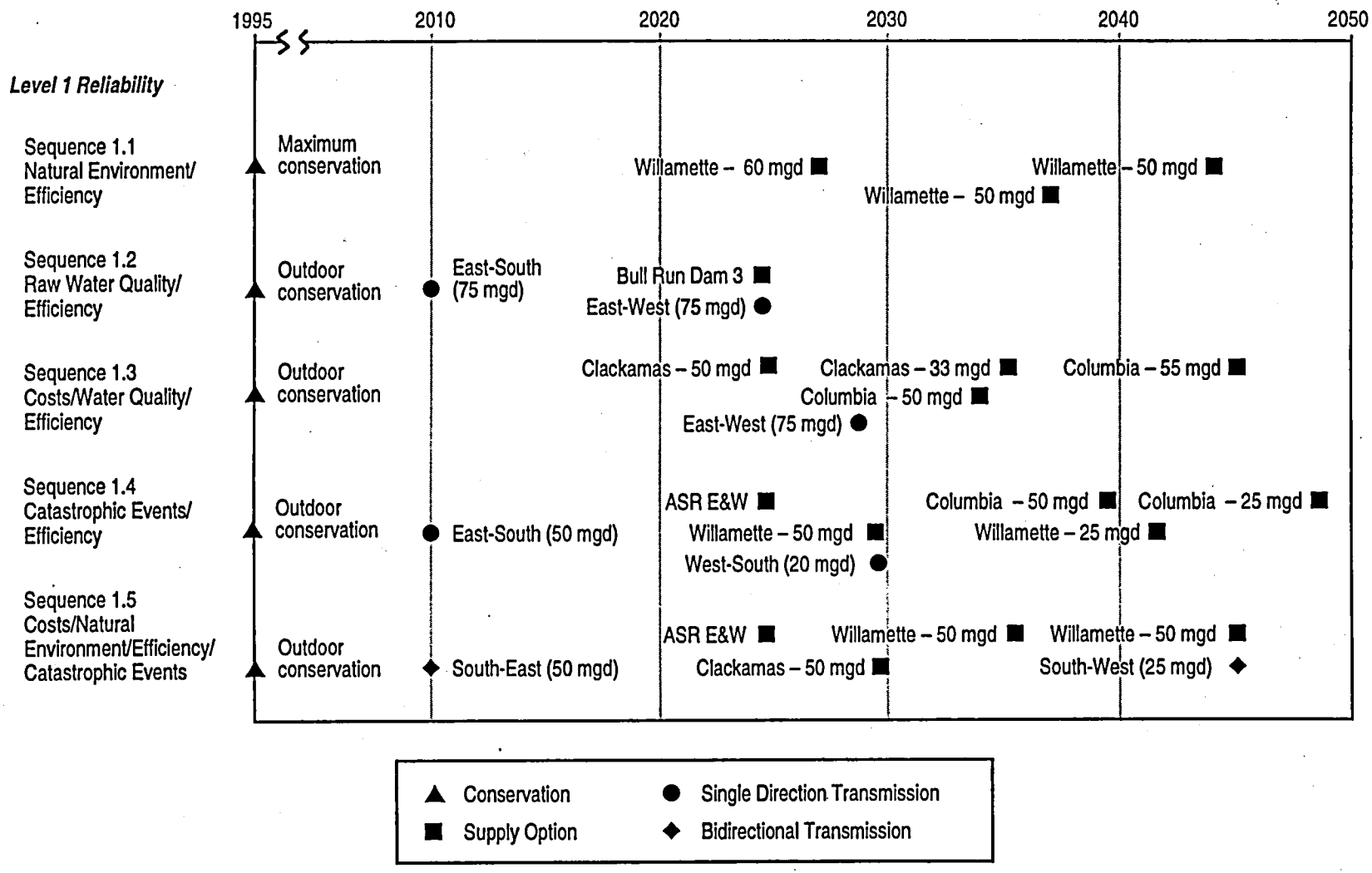

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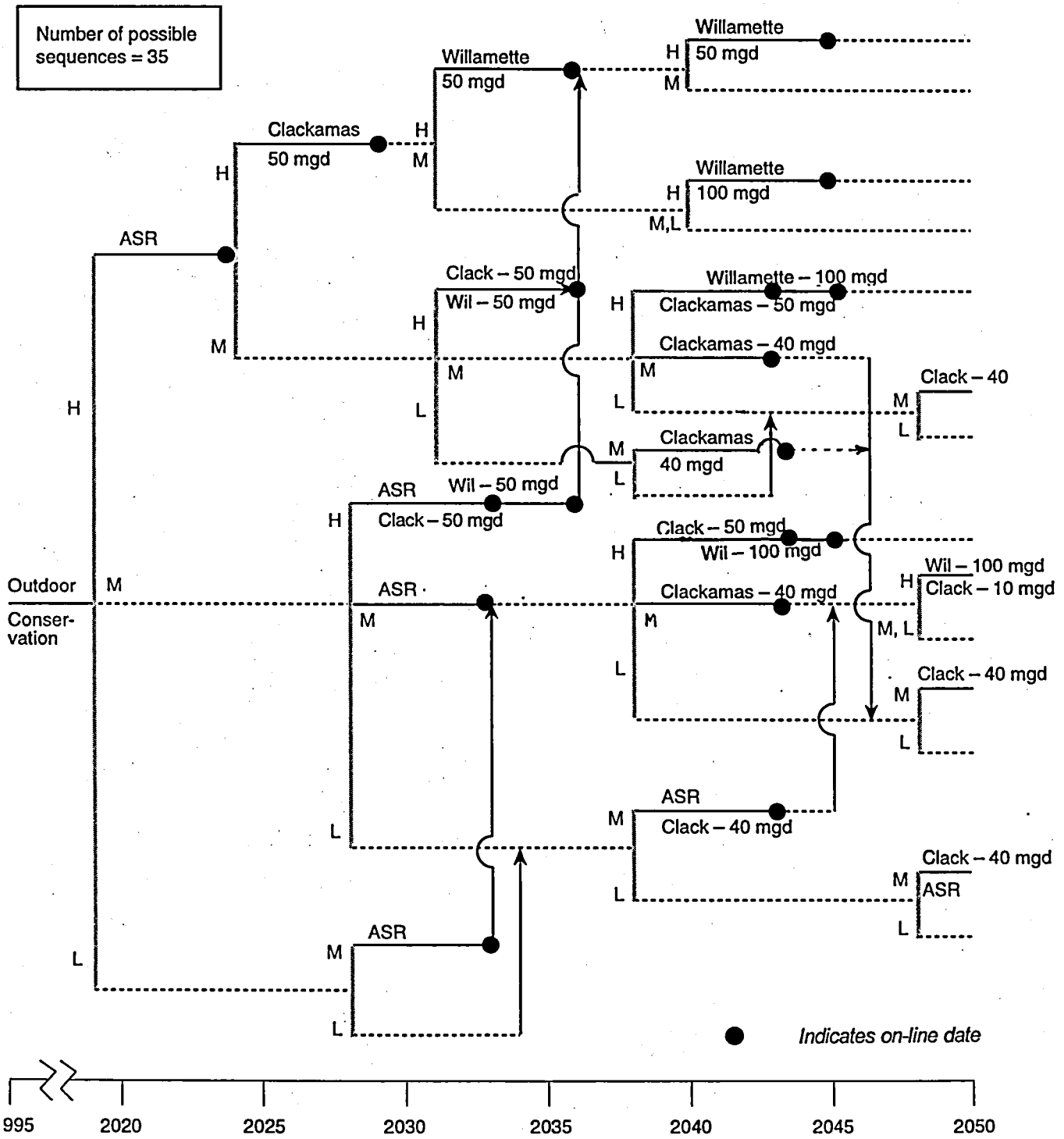
Figure ES-3

Level 1 Reliability – Strategy 1.5



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This does *not* mean the region can afford to defer a decision on which resource strategy will be pursued. As discussed below, the region faces many challenges in the short-term that will require action to ensure the needs of individual providers will be met. Policymakers' adoption of a long-term resource strategy will provide important direction to water providers, guiding near-term actions such as regional conservation program implementation and additions to the region's transmission system.

Resource Strategies that Achieve Level 2 or 3 Reliability

It is important to understand the implications of the region choosing less-than-perfect reliability, particularly in terms of costs. To illustrate, Level 2 and 3 strategies were developed that correspond to Level 1 strategies 1.2 and 1.5. Table ES-10 contains the mean values of key evaluation indices for these four new resource strategies. Their expected costs are significantly less than for their Level 1 counterparts. This key tradeoff between costs and reliability is one of many such tradeoffs that the region must make.

Table ES-10
EXPECTED VALUES OF KEY EVALUATION CRITERIA FOR LEVEL 2 AND 3 STRATEGIES*

Strategy	Costs		Natural Environment**	Water Quality**		Flexibility**
	Present Value Societal ($million)	Present Value Utility ($million)		Raw Water Quality**	Watershed Protection**	
2.2 Raw Water Quality/Efficiency	517.2	537.2	3.7	1.1	1.3	5
2.5 Costs/Natural Environment/ Efficiency/Catastrophic Events	494.1	487.8	1.8	2.0	1.5	3
3.2 Raw Water Quality/Efficiency	481.9	490.9	3.7	1.1	1.3	5
3.5 Costs/Natural Environment/ Efficiency/Catastrophic Events	476.2	462.9	1.7	2.2	1.4	5

*Probability-weighted averages across all possible resource development paths.
** Scale ranging from 1–5 with 1 as the most favorable rating and 5 as the least favorable rating.

CONCLUSIONS AND RECOMMENDATIONS

A regional dialogue regarding the appropriate future level of water supply reliability should be undertaken. Yet, that decision does not have to be made before going forward with required near-term actions since the major impact of lesser reliability levels is to put off necessary resource additions even further. At the appropriate time, the region's decision makers must determine the desirable level of reliability for the region.

While long-term system reliability does not influence near-term actions, many of the near-term actions the region must pursue *will* be affected by resource choices pursued over the long-term. Thus, it is critical for the region to consider the five strategies presented for Reliability Level ,1 and to select one of these or develop an alternative.

Based on the evaluation of Strategies 1.1 through 1.5, the regional providers suggest a ranking based upon how well each strategy meets the entire range of policy objectives. Table ES-11 shows the ranking of the five strategies recommended by the regional providers.

Table ES-11
RANKING OF LEVEL 1 RESOURCE STRATEGIES

			Emphasized Policy Objectives				
Water Provider Ranking	**Strategy Number**	**Resource Additions**	**Natural Environment**	**Water Use Efficiency**	**Raw Water Quality**	**Costs**	**Catastrophic Events**
1	1.5	Outdoor Conservation, ASR, Clackamas, Willamette	✓	✓		✓	✓
2	1.3	Outdoor Conservation, Clackamas, Columbia		✓	✓	✓	
3	1.4	Outdoor Conservation, ASR, Willamette, Columbia		✓			✓
4	1.2	Outdoor Conservation, Bull Run Dam 3		✓	✓		
5	1.1	Maximum Conservation, Willamette	✓	✓			

Thus, based on the RWSP analysis conducted to date, water provider participants recommend Strategy 1.5 for consideration during preliminary RWSP review because it seems to best meet the broadest array of policy objectives identified through the planning process. This strategy focuses on the following major future resource additions:

- Outdoor water conservation;
- Aquifer Storage and Recovery;
- The Clackamas River; and
- The Willamette River

The advantages of Strategy 1.5 include:

- Relatively low costs;
- Relatively low environmental impacts;
- An emphasis on the efficient use of water;
- Relatively low vulnerability to catastrophic events; and
- Flexibility to deal with future uncertainty.

The overall raw water quality rating for Strategy 1.5 is comparable to Strategies 1.1 and 1.4. It is not as good as Strategies 1.2 or 1.3. The RWSP's raw water quality analysis has revealed that the quality of all the surface supply options is high when compared to most other municipal sources nationwide. The conservative treatment approaches recommended for the river sources will provide multiple-barrier protection against current and future contaminants and will yield good-tasting water. Moreover, the Willamette and ASR will both be used primarily as peaking sources. For the vast majority of any year, the region will be served by the Bull Run, the Trask/Tualatin system, and existing local supplies (primarily groundwater). In addition, the likely injection source for ASR will be the Bull Run.

The region's water providers are committed to an open and fair discussion about the merits of the alternative water futures available to the region. The public's response concerning the resource strategies presented and how these meet the region's needs is important. The providers fully recognize that no one "right answer" exists that perfectly meets all of the public's values. This is why several strategies are presented for consideration. Strategies 1.1 through 1.4 are also fully capable of meeting the region's water supply needs. They address some of the same policy objectives and, in many cases, do a better job at meeting particular objectives than Strategy 1.5. Nevertheless, none of the other alternatives seems to meet so many important objectives.

WHERE DOES THE REGION GO FROM HERE?

Regardless of the strategy adopted by the regional providers, a range of issues must be addressed in the near term. Providers have already expressed their commitment to establishing an ongoing regional organization to meet the region's water supply needs following RWSP completion. The exact form and functions of this organization will be discussed over the next few months prior to adopting the final RWSP. However, a key overall role will be to ensure that the needs of all water customers throughout the region are met within the context set by the adopted Regional Water Supply Plan. It will also consider possible long-term changes to the current institutional and financial arrangements under which water service is delivered in the region.

Not only must the ongoing relationships among the providers be defined, but so also must the critical role of Metro. Metro has the authority and responsibility to adopt and enforce the region's urban growth management strategy, including the adoption and revision of the Urban Growth Boundary (UGB). Thus, there is a direct relationship between Metro's role and the job of the regional providers to serve the water needs of the growing metropolitan region.

In addition, the Metro Charter requires Metro to adopt an Urban Water Supply and Storage Element in its Regional Framework Plan. As a RWSP participant, Metro itself will provide input on the preliminary and final RWSP documents. It will adopt the final RWSP by resolution. The relationship between the region's water providers and Metro requires further discussion as the region moves toward final adoption of a RWSP.

Specific near-term actions that must be undertaken by the region include:

- Adoption of a long-term regional resource strategy.
- Continued maintenance, upgrades, and remediation of the Columbia Southshore Wellfield.
- Expeditious completion of the Barney Reservoir and Joint Water Commission treatment plant and transmission expansions.
- Timely development of the additional committed capacity on the Clackamas River.
- Development of transmission and interconnection facilities to serve the short-term and medium-term needs of individual providers. It is critical

that these facilities be developed within the context of the adopted long-term regional strategy.

- Planning and implementation of an appropriate mix of conservation programs.

- Expanded coordination with the region's wastewater management agencies regarding the potential use of stormwater and treated effluent as non-potable water resources.

- Actions necessary to maintain the viability of all source options considered in the RWSP.

This last point deserves particular attention. Over the last two decades, events have shown that competing demands, coupled with increased regulatory requirements, will make securing water sources more difficult for the future. Contingencies must be considered if particular choices later become unavailable. The water providers should continue to protect their ability to utilize the water sources considered in the RWSP. This will require a variety of activities for each source option.

In short, completion of the RWSP project signals the region's water providers to continue and redouble the collaborative and visionary efforts that they have begun. Among the benefits of the RWSP effort has been an increase in trust and understanding among the providers that has allowed a truly regional plan to be developed. It is critical that the providers capitalize on this trust and understanding to immediately begin to undertake the near-term actions that will lead to effective plan implementation and will meet the needs of the region's water customers.

Questions to ask Councils and Commissions to Answer in their October hearings

1) In the preliminary Regional Water Supply Plan (RWSP) prepared by the water provider staff there are a number of long term supply resource strategies which are presented. The providers have recommended one of these long term strategies based on an equal balance between the various key policy values which were identified during the project. The choices presented in the plan, however, allow decision makers to select other alteratives based on different policy value emphasis. Which of these key policy values are most important to you in meeting your future water needs?

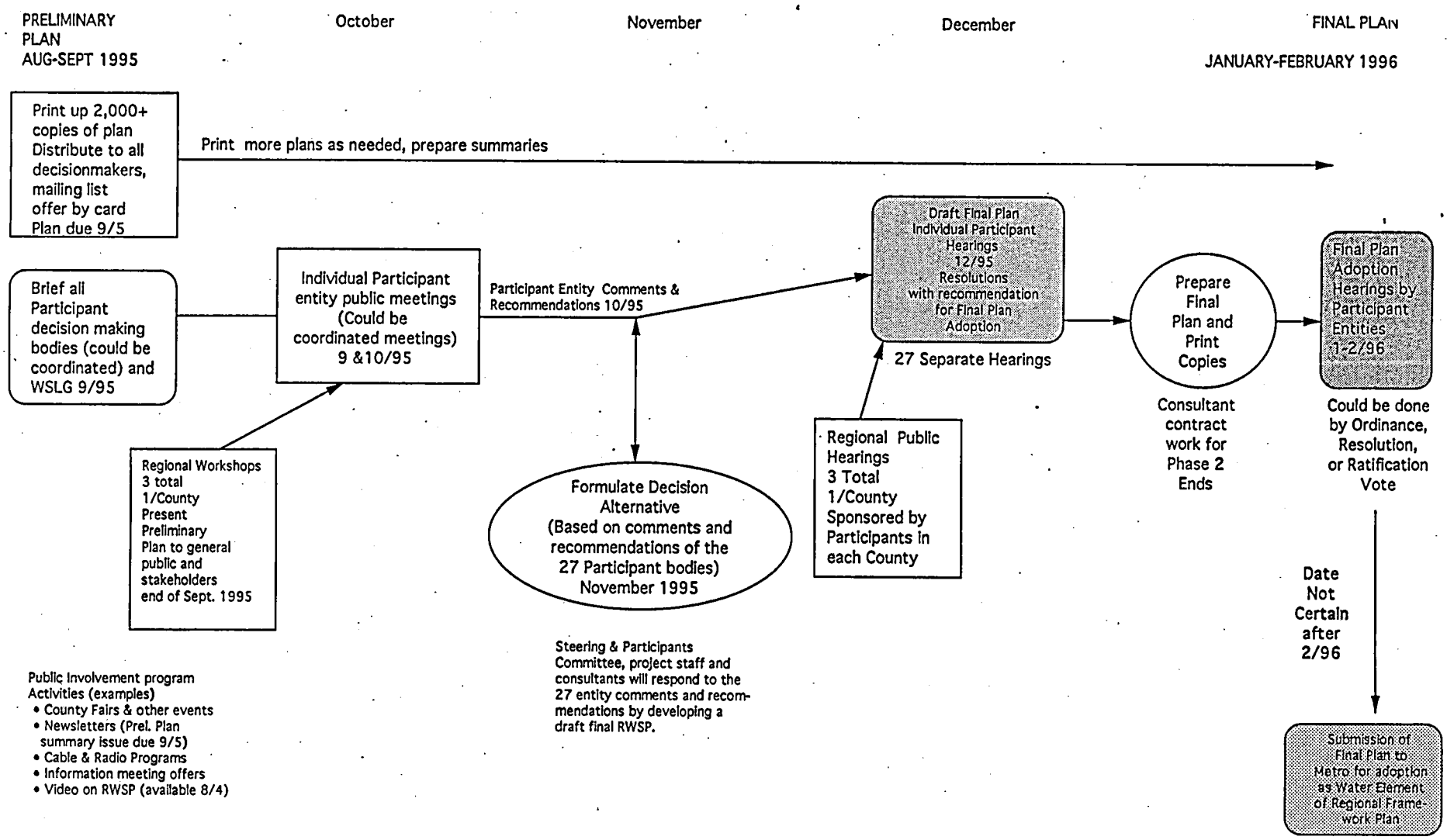
Costs
The efficient use of water
Environmental impacts
System reliability
Diversity of sources
Quality of the water sources (including factors of raw water quality, treatment levels required, and protectability of the upstream watershed)

Are there other policy values that are equally or more important to you, if so what are they?

2) Do you agree with the recommended strategies contained in the Preliminary Regional Water Supply Plan? If so, why? What strategies specifically do you not support and why?

3) What changes would you recommend for consideration in the final RWSP? Why?

4) Do you support the concept of forming a formal consortium of water providers through the adoption of an intergovernmental agreement when the final RWSP is adopted? What types of funtions do you think the region's water provider should carry out in a cooperative approach? If you do not support a formal organization how would you recommend that these functions be carried out?


PRELIMINARY PLAN
AUG-SEPT 1995
October
November
December
FINAL PLAN
JANUARY-FEBRUARY 1996
Print up 2,000+ copies of plan Distribute to all decisionmakers, mailing list offer by card Plan due 9/5
Print more plans as needed, prepare summaries
Brief all Participant decision making bodies (could be coordinated) and WSLG 9/95
Individual Participant entity public meetings (Could be coordinated meetings) 9 &10/95
Participant Entity Comments & Recommendations 10/95
Draft Final Plan Individual Participant Hearings 12/95 Resolutions with recommendation for Final Plan Adoption
27 Separate Hearings
Prepare Final Plan and Print Copies
Consultant contract work for Phase 2 Ends
Final Plan Adoption Hearings by Participant Entities 1-2/96
Could be done by Ordinance, Resolution, or Ratification Vote
Regional Workshops 3 total 1/County Present Preliminary Plan to general public and stakeholders end of Sept. 1995
Formulate Decision Alternative (Based on comments and recommendations of the 27 Participant bodies) November 1995
Regional Public Hearings 3 Total 1/County Sponsored by Participants in each County
Date Not Certain after 2/96
Public Involvement program Activities (examples)
• County Fairs & other events
• Newsletters (Prel. Plan summary issue due 9/5)
• Cable & Radio Programs
• Information meeting offers
• Video on RWSP (available 8/4)
Steering & Participants Committee, project staff and consultants will respond to the 27 entity comments and recommendations by developing a draft final RWSP.
Submission of Final Plan to Metro for adoption as Water Element of Regional Framework Plan

DRAFT

Commonly Asked Questions and Answers about the Regional Water Supply Plan - Preliminary Report

August, 1995

prepared by the Region's Water Providers and Metro

Q: What is the Preliminary Regional Water Supply Plan?

A: Twenty-six of the region's water providers and Metro have prepared a Preliminary Regional Water Supply Plan (Preliminary Plan). The Preliminary Plan provides information, strategy choices, and recommendations for how the Portland metropolitan region could meet future water needs to the year 2050.

- The strategy choices in the plan include different mixes of conservation measures, transmission links, and supply source options.

- The strategy choices were designed to meet different key values held by citizens and stakeholders (e.g., cost, reliablity, water quality, environmental protection, conservation). This approach demonstrates the tradeoffs associated with the different alternatives.

- The recommendations contained in the plan reflect the region's water providers' attempt to identify those solutions that appear to meet the most key values and objectives.

- There is no "right answer." No decisions have been made.

- The region's providers are sponsoring a six-month public review period for the Plan. Citizens, stakeholders and decision-makers are encourage to provide their feedback. The providers will revise the Preliminary Plan and submit a proposed final plan to local elected officials for adoption in February 1996.

Q: Why did the region's water provider staff select the recommended resource strategy over the others?

A: Based on extensive technical analysis and citizen input on important concerns, one of the strategies (# 1.5) appears to meet more key objectives than the others. It includes:

- Region-wide commitment to aggressive outdoor water conservation programs
- Transmission between Multnomah and Clackamas Counties (50 mgd, bi-directional, @ 2010)
- Aquifer storage and recovery (ASR, 20 mgd east-side, 20 mgd west-side, @ 2024)
- Expanded intake/treatment on the Clackamas River (50 mgd, @ 2029)
- Intake/treatment on the Willamette River - representative site upstream at Wilsonville (50 mgd, @ 2035)
- Transmission between Clackamas and Washington counties (25 mgd, @ 2045)
- Expansion of intake/treatment on the Willamette River (50 mgd, @ 2045)

(Note: On-line dates reflect high demand forecast and 100 percent system reliability. Dates vary if assumptions vary.)

Strategy 1.5 involves relatively low costs and low environmental impacts, and it embodies aggressive outdoor conservation, high system reliability and high resilience against disruption from catastrophic events.

It gets a fair rating in terms of raw (untreated water quality), however each of the supply sources under consideration can be treated to meet or surpass all state and federal drinking water standards.

The providers have not attempted to rank or weight the range of objectives against each other. The other strategies included in the plan would meet future water demand in the region but would meet different objectives to different extents. Regional public dialogue will shed additional light on how citizens and decision makers will choose among the tradeoffs.

Q: How will 27 different water provider agencies adopt one Regional Water Supply Plan?

A: The Preliminary Regional Water Supply Plan is currently being circulated throughout the region for review and comment on the information, choices and recommendations contained within the draft report.

- The public review process will include a number of opportunities for citizens, stakeholders, and decision makers to express their thoughts and feelings about the plan.

- Late in the year, project consultants and staff will collect and analyze the input, and will develop a proposed final set of recommendations for consideration by elected officials. After additional discussions with elected officials, a final plan will be prepared and submitted for adoption (February 1996).

- It is our hope that through this process citizens and decision makers will first assess the tradeoffs and then select strategies that meet future water needs *and* can be endorsed region-wide and then implemented in a timely fashion.

- To achieve this goal, we have proposed a public review process designed to facilitate information sharing, debate, negotiation, and hopefully informed consent on the parts of citizens and stakeholders region-wide.

Q: How are the water demand forecasts generated?

A: Developing water demand forecasts has been a key aspect of the Regional Water Supply Plan project.

- The forecasting methodology estimates the relationships between water demand and key variables like population and economic growth, and weather.

- The forecasting approach involves Metro's high, medium and low projections for increases households and employment (developed as part of the Region 2040 project).

- Separate demand forecasting models were developed for individual providers or groups of providers. They reflect substantial differences in per account water use, peak season demand patterns, and end-use mixes.

- The demand forecasts reflect water use 15 % to 22 % reductions associated with low-flow plumbing fixtures in new construction, remodels, and as old fixtures reach the end of their useful lives and need to be replaced. The larger reduction is observed during non-peak season since the adjustment applies to indoor water savings.

- The demand forecasts were further adjusted to reflect the estimated sensitivity of water use to future increases in price (above the rate of inflation). The "price net" forecasts reflect a range of hypothetical real price increases. Demands are adjusted downward in accordance with national-level information on water demand price elasticity.

- Multiple factors influence how water demand changes over time. The water providers analyzed scenarios that include demand from proposed high-tech industries. High-tech water use of 12 mgd by 2010 does not appear to cause near-term problems in terms of meeting demand. (12 mgd < 3 % of high 2010 peak-day demand.) Actual changes in demand over time need to be monitored and the plan revisited on a timely basis.

Q: What are the specific conservation programs being considered in the Preliminary Regional Water Supply Plan?

A: The Regional Water Supply Plan has involved extensive evaluation of indoor and outdoor conservation options for all customer classes. Conservation measures include both voluntary and mandatory approaches.

- The process included screening an initial list of more than 130 conservation measures. The qualitative and economic screenings used inclusive approaches to avoid premature disqualification of conservation measures.

- Technology profiles and program concepts prepared for conservation measures that passed the screenings provide information on costs, water savings, participation rates, and program delivery mechanisms.

- The Preliminary Regional Water Supply Plan contains nine separate strategies, each containing substantial water savings from future indoor ("naturally occuring") and outdoor conservation (a total of about 166 million gallons per day in 2050).

- Water supply is generally constrained during peak season (summer) when demands can be 2 to 3 times the demand during the non-peak season. The value of summer water savings for every dollar spent is much higher than for non-peak season savings. The total 2050 peak day savings associated with outdoor conservation programs is estimated to be about 94 million gallons per day which would delay the need for major new water supply increments for over a decade.

- The Plan will not dictate exactly which conservation programs the region or individual water providers should implement, or how they would be implemented. The goal is to agree on the the level of water savings to be pursued in the long-term, and to provide a commitment of resources to achieve the savings.

Q: How are water reuse, recycling, and non-potable sources factored into the plan?

A: The Regional Water Supply Plan project has involved examination of several non-potable source options as part of the conservation analysis.

- Stormwater capture, graywater systems, cisterns and water recycling for industrial heating, ventilation, and air cooling systems (HVAC) were identified as potential options and subjected to qualitative and economic screens. Of these, only the HVAC conservation measures were found to be technically and economic viable.

- The project also included a brief analysis of existing information on potential reuse of treated effluent for non-potable purposes. Some reuse of treated effluent is already occurring in the region and there may be substantial future uses for treated effluent. Rough cost estimates appear to range from relatively competetive to prohibitively high. At this point there is insufficient information on potential markets and costs to delineate a future role for this resource.

- Previous studies indicate that using untreated groundwater and surface water for non-potable purposes could be a cost effective alternative (e.g., Port of Portland system). More information is needed on the potential uses and constraints. For purposes of the plan, the demand forecasts reflect past use levels in the region without presuming that the proportion of demand met by raw water will change.

- The Preliminary Regional Water Supply Plan highlights that non-potable sources could have a key role in meeting future water demand and warrant additional analysis. The region's water providers recommend that additional research, pilot studies, and coordination among water and wastewater service providers be part of the plan implementation process.

- Through future plan revisions, non-potable sources could offset the need to develop new sources over time.

Q: Will there be summer supply shortages under this plan?

A: Water system reliability and the ability to prevent and manage shortages are key objectives for the region's providers and citizens as well (as cited in public attitude and contingent valuation surveys and focus groups).

- The region's providers are asking how reliable our water systems should be. One hundred percent reliability (i.e., no summer shortages) is an easy answer if reliability is the only value at stake. However, obtaining and maintaining perfect or high level reliability is not free of costs and impacts.

- Water supply strategies contained in the Preliminary Regional Water Supply Plan were designed to meet three different levels of reliability to assess the tradeoffs associated with the choices.

- Level 1 reliability would prevent virtually all seasonal shortages over the entire planning horizon. Levels 2 and 3 reliability would involve some temporary supply shortages of up to 20 percent and 30 percent, respectively, on very hot, dry summer days or sequences of hot dry summer days (called "peak day events).

- These shortages would not last through a peak season (e.g., 1992). Rather, they would be instantaneous shortages in treatment or transmission delivery capacity which would require immediate use reductions for up to about five days.

- Accepting peak day related shortages would lower the cost of meeting future demand significantly, and would delay or reduce the environmental effects of developing water supplies.

- Current supplies (augmented by near-term planned system enhancements) will meet future water demand until about 2017. The region need not choose a long term level of reliability at this point in time. Making this choice can be deferred until long-term supply decisions are more imminent and current information can be factored into the decision.

Q: Why shouldn't we just simply build a third dam in the Bull Run Watershed (the primary current source of water supply for the Portland metropolitan region)? Were resources other than those considered in the Preliminary Plan evaluated?

A: There is nothing "simple" about the prospect of a third dam or the development of any major water facility. The dam, along with the other options would require a myriad of permits prior to development of the source. Key permits under the Clean Water Act require environmental impact assessment and analysis of alternatives (including conservation). A major project in the Bull Run would require a Special Use Permit from the Forest Service as well.

- Obtaining permits can be very time consuming, costly, and sometimes unsuccessful (e.g., Denver's Two Forks Dam). Neither a third dam in the Bull Run nor development of any major source would be immune from controversy or the need to conduct alternatives analysis. Before spending millions of dollars to pursue source options, the region's water providers chose to evaluate alternatives at a planning level.

- Each of the resource options and strategies has its own costs, benefits, impacts, and risks. The Bull Run Dam 3 option poses the most significant and complex environmental issues of the sources under consideration. Key are potential impacts on the northern spotted owl (and its habitat), wetlands, and downstream flows in the Lower Bull Run and Sandy Rivers.

Given today's economic, environmental, and political climate, combined with the rapid growth occurring in the region, the cost for Phases 1 and 2 is money well spent. We have learned that planned system enhancements and conservation can stretch existing sources for two to three decades. Several water sources are available to meet additional demands over the long-term. By learning these things we can save the region millions of dollars if we take the appropriate steps.

Question: How can we seriously consider water sources like the Willamette and Columbia Rivers as future water sources.

A: The Willamette, the largest river in the state, bisects the region. The Columbia, the second longest and the 10 largest river system in the U.S. creates the region's northern boundary. Both sources provide potable water supply to upstream cities. The availability of water from smaller Oregon rivers and streams, along with our aquifers, are increasing constrained.

- The results of Phases 1 and 2 of the Regional Water Supply Planning effort confirm that there are relative benefits associated with these sources including:
  1) proximity to regional demand centers;
  2) water availability,
  3) existing water rights (on the Willamette):
  4) larger flows which can reduce impacts of municipal water diversions on fish and aquatic ecosystems;
  5) increasing resilience against catastrophic events as sources new to the region; and,
  6) allowing development in phases which can reduce costs and/or increase affordability.

- Water quality analyses and pilot treatment studies indicate that raw water quality in the Willamette and Columbia rivers is good relative to sources nationwide. The water can be treated readily to meet or surpass drinking water standards. Treatment processes would provide state-of-the-art, multiple barriers against biological and organic contaminants.

- A taste test using trained tasters showed that none of the potential water supply sources exhibited high intensity tastes or odors. The results indicate that the sources are similar in quality and generally acceptable to potential consumers.

- Continued work is needed to understand, improve and protect water quality on these rivers. Identification of municipal water supply for the Portland metro region should be a rallying cry in support of continued efforts.

Q: Can other sources not considered during the Phase 2 Regional Water Supply Planning process be added as we move through the adoption process?

A: A number of resource options have been evaluated over the course of the Phase 1 and Phase 2 studies. Being able to narrow down the choices has allowed water providers to target scarce public funds toward evaluating those which seem, based on broad criteria, to offer the most promise for the region.

- The Preliminary Plan lays out nine strategy choices which embody different combinations of resources. Each of the strategy choices would meet future water needs in different ways, and has different strengths and drawbacks.

- Adding additional resources not evaluated in Phase 2 to the mix at this point in time would require considerable additional time and money. Based on the results of Phase 1 and Phase 2 studies the water providers believe that the choices on the table provide considerable promise relative to options which have been screened out of the latest evaluation process.

- Full discussion of these choices is warranted, however, if these options were to become unavailable or new information emerges, it might be reasonable to revisit additional options.

- Because there are uncertainties, the Preliminary Plan includes recommendations that steps be taken to maintain the viability of all potential sources over time.

- The plan will be a "living document," flexible enough to accommodate changing conditions. The plan will need to be revisited on a timely basis, and refined over time. New (and old) ideas will be considered along the way into the future.

Q: How much will plan implementation cost? How will the plan implementation (e.g., development of resources programs, projects) be financed and managed)?

A: The region's water providers identified cost and financial equity as key policy issues. These are key issues for citizens, stakeholders and decision makers as well. Policy statements and criteria were developed that focus on minimizing economic costs and ensuring that costs are allocated equitably among beneficiaries.

- Capital and operating costs were estimated for individual source options and conservation programs, as well as for the integrated resource strategies. Costs for individual sources can be found in project interim reports and fact sheets.

- Costs for the resource strategies range from $476 million to $864 million in present value dollars. The recommended strategy is estimated to cost about $540 million. To frame it another way, if, hypothetically, these costs were spread evenly among all customers throughout the region, nominal value increase in monthly bills would range from $8 to $17 by 2050.

- No specific financing strategies have been evaluated to date. The region's providers envision this discussion as an appropriate follow-up to adoption of a final plan. The discussion will be productive when agreed upon resource strategy for meeting future demand has been selected.

- The use of long-term bonds, system development charges and differential rate structures are tools that can be used to ensure that those neding the increased water supplies pay for them by buying into an already built system or paying in advance for system improvements that will be created by increased demand.

- In this manner, the entities needing the new supplies, those benefiting from upgrading systems and system maintenance can together select the most equitable finance methods and institutional arrangements.

Q: How does the Preliminary Regional Water Supply Plan address institutional issues?

A: The preliminary plan contains recommendations that this consortium of regional water providers continue working together to oversee implementation of the plan and other related regional issues. Potential functions a more formalized group might include:

- representing the region's providers in regional, state, and federal arenas
- coordinating development of regional, sub-regional, and local transmission additions
- housing and maintaining the regional water demand forecasting and/or IRP model
- coordinating regional water conservation efforts
- exploring/coordinating rate structure development
- investigating non-potable water source options and opportunities
- ensuring that appropriate actions are undertaken to protect, maintain, or develop new sources
- attempting to resolve conflicts or inconsistencies between individual providers or groups of providers' interests, and the region's long-term interests
- preserving options
- coordinating the development and implementation of public information, education, and marketing strategies, and developing proposals for institutional changes as necessary
- monitoring plan implementation/revisiting the plan

Implicit in this list is the need to develop financing strategies that would be consistent with policies to keep costs down and finance plan implementation in an equitable manner.

Q: Which resources are projected to meet demands in which parts of the region? Under the recommended strategy? Under the other strategies?

A: The Regional Water Supply Plan project is a planning level analysis that provides information and choices for how the region, as a whole, could meet its future water needs.

- The alternative water supply strategies contained in the Preliminary Regional Water Supply Plan (RWSP) were developed and evaluated with the assistance of a integrated resources planning computer model.

- The model is designed to simulate scenarios involving combinations of conservation programs, transmission, and water source options.

- The model user can assess and compare how well different resource combinations meet the range of policy objectives identified for the project (e.g., system reliability, cost, water quality, environmental impacts, etc.).

- The model allocates resources efficiently from an economic perspective. For example, it would be more cost-effective to supply Bull Run water by gravity to many parts of the region during the winter (when there is a surplus) and utilize systems that require pumping and filtration treatment (e.g., the Willamette) to meet peak season demands. However, the economics of the situation is only one of many factors to assess in making systems operations decisions. Others include cost, water quality, environment, operational feasibility, etc.

- The Preliminary Plan does not propose operational strategies nor earmark certain water sources or conservation programs to particular parts of the region. These decisions need to be evaluated at an operations level of detail, recognizing not only supply, conservation and transmission, but also existing and future distribution system issues. Discussion will need to occur in conjunction with institutional and financing arrangements during plan implementation.

Q: Why not control growth by restricting the amount of water we are willing to provide?

A: Projected population growth and associated implications is a growing concern for many citizens in the Portland metropolitan region. Some people are concerned about whether there is sufficient water supply to meet the needs of future growth. Some have suggested that water supply limitations be used as a tool to constrain growth.

- In terms of land use and growth management, the region's water providers look to those agencies authorized to manage these issues (e.g., local governments and Metro).

- The providers role is to identify and evaluate alternatives for meeting the water demand associated with adopted or potential land use and growth management objectives. This involves assessing the costs and impacts associated with meeting those demands, and presenting this information to growth management agencies for use in their own planning efforts.

- During in the Regional Water Supply Plan (RWSP) process, the region's water providers developed proposed policy objectives to guide the planning effort. One objective is to be consistent with the land use and growth management efforts of Metro and the region's local governments.

- The providers used Metro's projections for increases in households and employment as a basis for the regional water demand forecasts. In addition, the providers and Metro have coordinated closely regarding growth management issues including examination of Urban Reserve Study Areas.

- The Preliminary plan (and supporting documents) provide a great deal of information on water availability, and the costs and impacts associated with meeting the regino's future water needs. This information should be useful to Metro, cities, and counties as they evaluate the pros and cons of future land use and growth management decisions.

Technical Summary

MONTGOMERY WATSON

TECHNICAL SUMMARY

The Tualatin Valley Water District (District) provides drinking water to approximately 130,000 people in portions of Washington County and the cities of Beaverton, Hillsboro, and Tigard. The District currently purchases the majority of its supply from the City of Portland and receives the water through the Washington County supply line. Concerns about the short-term and long-term water supply needs of its growing service area population led to the District's interest in obtaining additional information about the feasibility of the Willamette River as a potential source of drinking water. The District currently holds water rights on the Willamette River in the amount of 150 mgd.

The District contracted with Montgomery Watson to perform the Willamette River Water Treatment Pilot Study (WRWTPS). For this five-month study, various treatment processes were evaluated with respect to their ability to treat Willamette River water and produce potable water that surpasses current and anticipated future drinking water regulations and is of high aesthetic quality. This Draft Project Report was prepared to summarize the WRWTPS with the following objectives:

- to present an overview of the pilot plant equipment and testing methods;
- to present a summary of the raw water quality encountered during the pilot testing period; and
- to discuss the results and findings of the pilot study.

The recommendation of a treatment train for a full-scale Willamette River water treatment plant (WTP) can be accomplished in a Preliminary Facilities Plan, along with the development of preliminary cost estimates.

EQUIPMENT AND METHODS

The equipment and methods employed for the WRWTPS are summarized in Section 2 of this report. The project was conducted using a mobile pilot plant provided by the City of Portland Bureau of Water Works (Bureau) and located along the Willamette River near the City of Wilsonville at river mile 41 (41 miles upstream from the mouth of the river). The pilot plant was operated to provide conventional treatment (coagulation, flocculation, sedimentation, and filtration) throughout the study. Routine laboratory analyses were conducted on-site, while specialized analyses were conducted by the Bureau Laboratory and Montgomery Laboratories.

TESTING OBJECTIVES

The treatment and operational goals that were established for the WRWTPS are summarized in Table TS-1. These goals were established to allow the identification of a treatment process to produce filtered water that surpasses current and anticipated state and federal regulations and is of high aesthetic quality. The operating goals were chosen to assure an efficient, cost-effective treatment process. The goals summarized in Table TS-1 were used as criteria to quantitatively assess treatment performance throughout the project.

TABLE TS-1

PILOT STUDY TREATMENT GOALS

Parameter	Goal
Water Quality Goals:	
Filtered Water Turbidity	≤ 0.1 NTU
Particle Removals	
• 4 to 7 µm (*Cryptosporidium* size range)	≥ 3.5 logs
• 5 to 15 µm (*Giardia* size range)	≥ 3.5 logs
• filtered water particles (1 to 120 µm)	≤ 50 particles/ml
TOC Removal	
• raw water TOC ≥ 2.0 mg/L	≥ 40 percent
• raw water TOC < 2.0 mg/L	< 2.0 mg/L
Disinfection By-Products	
Trihalomethanes	≤ 0.032 mg/L
Haloacetic Acids	≤ 0.024 mg/L
Finished Water HPC (SWTR recommendation)	≤ 10 colonies/ml
Aluminum and Iron	≤ 0.05 mg/L
Operational Goals:	
Unit Filter Run Volume (UFRV)	≥ 5,000 gal/sf
Filter Run Length	≥ 24 hours
Turbidity Maturation & Breakthrough Level	0.2 NTU
Terminal Headloss	10.0 feet (includes clean media and underdrain losses)
Filter Maturation Volume	≤ 150 gal/sf

The overall objectives of the WRWTPS were to:

- provide information on the quality of Willamette River water;
- provide information on the treatability of Willamette River water; and
- provide information to be used in the development of preliminary design criteria, facilities planning, and development of planning-level cost estimates for a future Willamette River WTP.

Figure TS-1 summarizes the major tasks that were completed for the project, as well as the testing chronology. The pilot testing included the evaluation of:

- coagulation processes;
- pre-oxidation and intermediate ozonation;
- filter media configurations and filtration rates;
- the formation of disinfection by-products;
- taste and odor control; and
- the presence and removal of synthetic organic chemicals.

WILLAMETTE RIVER WATER QUALITY

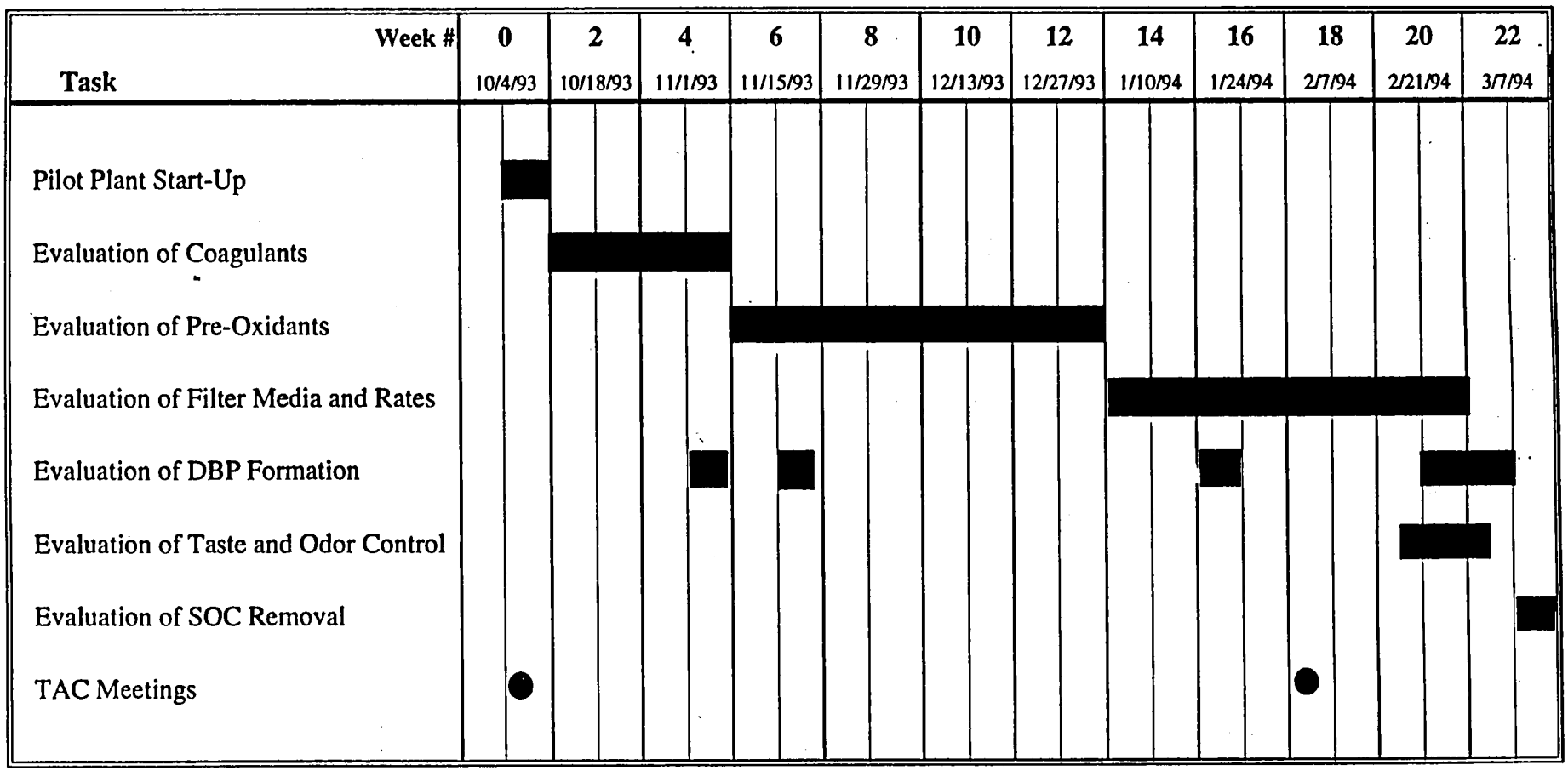
The WRWTPS was conducted to coincide with worst-case water quality conditions for the Willamette River. Pilot testing was conducted over five months and included testing during periods with high turbidity, low temperature, low alkalinity, and high total organic carbon (TOC) concentrations in the river water. Table TS-2 presents a summary of the minimum, maximum, and mean values over the pilot testing period for the water quality parameters that were monitored. From these data and from historical data from the Oregon Department of Environmental Quality (ODEQ), the water quality encountered during pilot testing was typical for the Willamette River. Additional water quality data will be generated as part of the District's ongoing Raw Water Monitoring Program. This program will provide the most comprehensive picture of Willamette River water quality generated to date, and includes routine analyses for 160 organic chemicals in water and sediment.

PILOT TESTING RESULTS

The results of the pilot-scale evaluations of coagulants, pre-oxidants, filter media and filtration rates, formation of disinfection by-products (DBPs), taste and odor control, and the presence and removal of synthetic organic chemicals (SOCs) are presented in the following sections.

Evaluation of Coagulants

The first major task for the WRWTPS was the evaluation of coagulants. Ferric chloride and aluminum sulfate (alum) were evaluated in jar tests and in flow-through pilot



CHRONOLOGY OF PILOT TESTING

FIGURE TS-1

TABLE TS-2

SUMMARY OF RAW WATER QUALITY DURING PILOT TESTING PERIOD

October 4, 1993 through March 10, 1994

Parameter	Unit	Average		Minimum	Maximum	Number of Analyses
Turbidity	NTU	9.0		1.6	52.0	123
Temperature	°C	9.1		4.6	18.0	120
pH	-	7.34		7.0	7.6	112
Alkalinity	mg/L as CaCO3	23.3		12.3	30.7	84
Hardness	mg/L as CaCO3	27.1		21.0	33.0	28
Total Number of Particles (4-7 µm)	number/ml	11,123	*	2,267	113,108	84
Total Number of Particles (5-15 µm)	number/ml	10,670	*	1,942	101,608	84
Total Number of Particles (1-120 µm)	number/ml	203,171	*	51,719	2,173,442	84
UV-254 Absorbance	cm-1	0.141		0.054	0.532	114
Filtered UV-254 Absorbance	cm-1	0.041		0.030	0.059	34
Total Organic Carbon	mg/L	2.19		1.50	4.35	45
Dissolved Organic Carbon	mg/L	2.31	(a)	1.45	3.70	24
Color	ACU	39		15	100	20
Heterotrophic Plate Count	number/ml	406	*	86	3,000	35 (b)
Total Coliform	number/100 ml	18	*	1	272	35 (b)
Total Aluminum	mg/L	0.71		0.09	7.30	35
Dissolved Aluminum	mg/L	0.28		0.04	0.81	22
Total Iron	mg/L	0.51		0.11	3.50	35
Dissolved Iron	mg/L	0.27		0.07	0.58	22

* indicates the average value shown is a geometric mean. All other average values are arithmetic means.

(a) sampling period different from sampling period for TOC.

(b) 35 microbial samples include 7 total coliform and 23 heterotrophic plate count samples with the result "too numerous to count".

experiments, both alone and in combination with various cationic polymers. At the pilot-scale, coagulation chemicals were compared in terms of filter performance as measured by filtered water production and filtered water turbidity. The evaluation of coagulants resulted in the following findings:

- Jar tests with chemical combinations including either ferric chloride or alum reduced the turbidity of settled water to 0.3 NTU or less. The most effective chemical doses from the jar tests were subsequently employed in flow-through pilot-scale evaluations of coagulants.

- The addition of various cationic polymers improved filter performance with either ferric chloride or alum. The coagulant combination of ferric chloride and Nalco 8105 cationic polymer was recommended as the optimum ferric chloride chemical combination. The coagulant combination of alum and Cat-Floc L cationic polymer was recommended as the optimum alum chemical combination.

- Subsequent pilot testing was conducted with colder raw water and the optimized chemical combinations of both ferric chloride and alum. With alum/Cat-Floc L coagulation, the settled water turbidity was not reduced to less than 2.6 NTU and filter runs failed to meet the project goal for filtered water production on a consistent basis. Filter runs with ferric chloride/Nalco 8105 coagulation regularly exceeded the project goal for filtered water production and produced filtered water with lower turbidity and fewer particles compared to alum/Cat-Floc L coagulation. Based on these results, ferric chloride/Nalco 8105 coagulation was employed in all subsequent pilot testing for the project.

- During the remainder of the project, ferric chloride/Nalco 8105 coagulation was employed, and the most effective doses ranged from 15 to 25 mg/L of ferric chloride and from 0.5 to 2.0 mg/L of Nalco 8105.

- Sensitivity to the exact chemical doses increased when the alkalinity of the raw water decreased. During part of the year, the addition of caustic soda or lime may be necessary to supplement the naturally-occurring alkalinity and promote floc formation.

- At the pilot-scale, coagulation, flocculation, and sedimentation with ferric chloride/Nalco 8105 resulted in the consistent removal of more than 40 percent of the raw water TOC. From these results, a Willamette River WTP would comply with the requirements for enhanced coagulation described in the anticipated Disinfectant/Disinfection By-Product (D/DBP) Rule.

Evaluation of Pre-Oxidants

The second major task for the WRWTPS was an evaluation of pre-oxidants. Bench and pilot-scale experiments were conducted to characterize the chlorine and ozone demand of Willamette River water. Pre-ozonation (upstream of coagulant addition), pre-chlorination, and intermediate ozonation (downstream of sedimentation) were evaluated in conjunction with the optimized coagulation chemical combination. From these experiments, the following conclusions were apparent:

- The ozone demand of the raw Willamette River water was approximately 0.5 to 1.0 mg/L during the pilot testing period. The ozone demand is expected to increase with temperature. During the pilot tests, an ozone dose of 0.6 to 0.9

mg/L typically resulted in a detectable ozone residual of less than 0.1 mg/L after five minutes of contact time.

- Pre-ozonation, within the range of doses shown above, resulted in improved filtered water quality as measured by the turbidity and number of particles in the filter effluent, compared to filter runs with no oxidation. Figure TS-2 presents the number of particles and turbidity of the filtered water for filter runs with no oxidation and filter runs with pre-ozonation. As shown, the filtered water from pre-ozonation filter runs typically contained less than 50 total (1 to 120 µm) particles and had turbidity less than 0.05 NTU. Particle removals with pre-ozonation were as much as one log higher than particle removals with no oxidation for particles from 4 to 7 and 5 to 15 µm, the size ranges of *Cryptosporidium* and *Giardia*, respectively. As shown in Figure TS-3, pre-ozonation also appeared to extend filter runs and increase filtered water production.

- Pre-chlorination filter runs were conducted with alum/Cat-Floc L coagulation. When pre-chlorination was practiced in combination with filter aid addition, it appeared to lower filtered water turbidity and particle counts without shortening the filter run length, compared to filter runs with no oxidation.

- The majority of the filter runs with intermediate ozonation were unable to meet the project goal for filtered water production. Thus, it appeared that ozonation of the settled water shortened filter runs compared to filter runs with no oxidation or with pre-ozonation. Intermediate ozonation appeared to improve filtered water quality by producing lower filter effluent turbidity and particle counts, compared to filter runs with no oxidation.

Pre-ozonation, at a dose of less than 1.0 mg/L, was incorporated into the treatment train for pilot testing for subsequent tasks.

Evaluation of Filter Media and Filtration Rates

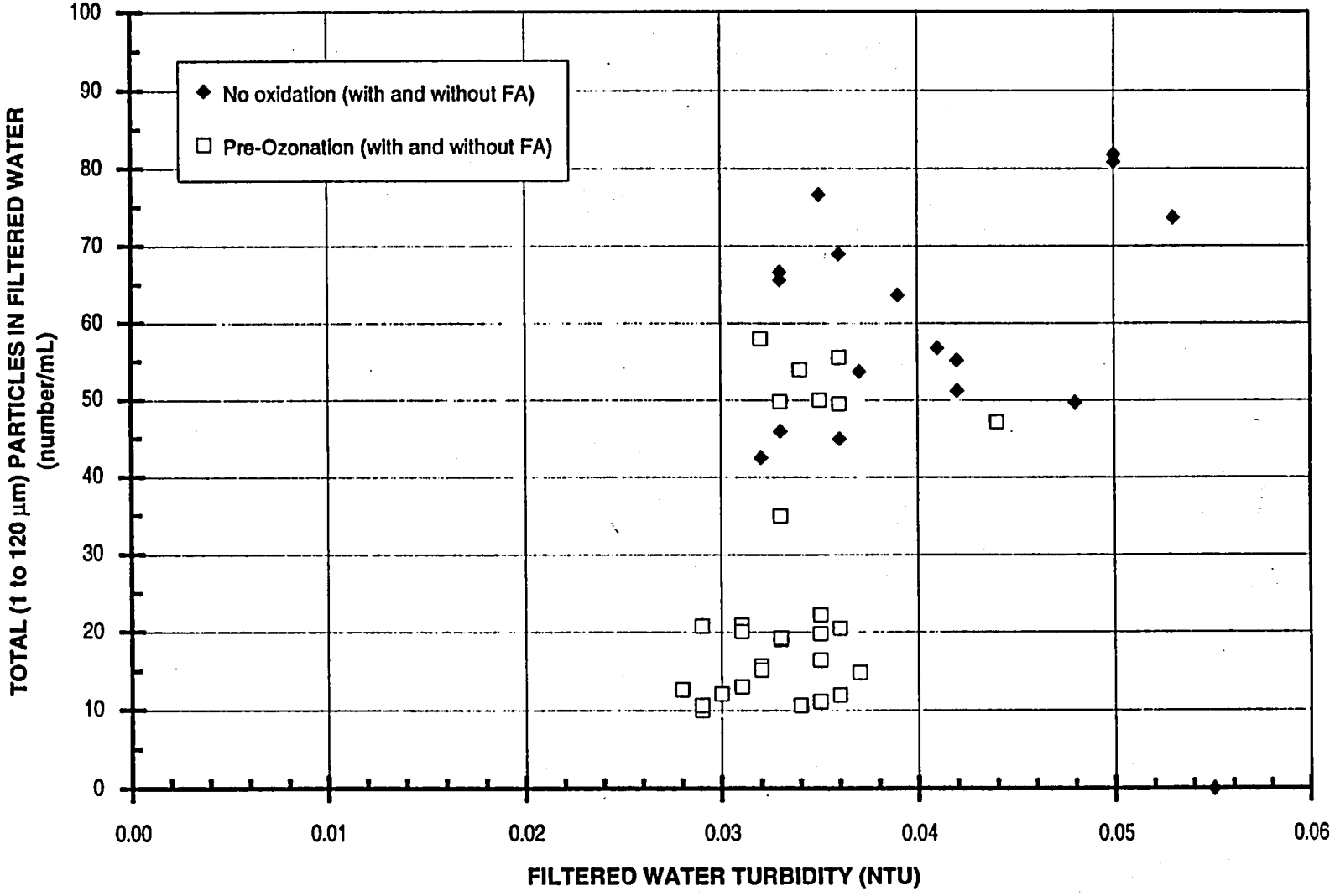
Another major task for the WRWTPS was the evaluation of different filter media configurations and filtration rates. Preliminary results indicated that granular activated carbon (GAC)/sand dual media filters provided consistently better particle removal than a GAC monomedia filter for the three particle size ranges of interest (4 to 7, 5 to 15, and 1 to 120 µm).

Four filter media designs were selected for the last month of pilot testing, including two deep bed GAC/sand designs (60 inches of 1.0 mm effective size (ES) GAC over 10 inches of 0.5 mm ES sand and 52 inches of 1.3 mm ES GAC over 10 inches of 0.5 mm ES sand) and an anthracite/sand dual media design.

The following conclusions are based on the results of filter runs conducted with the final filter media configurations.

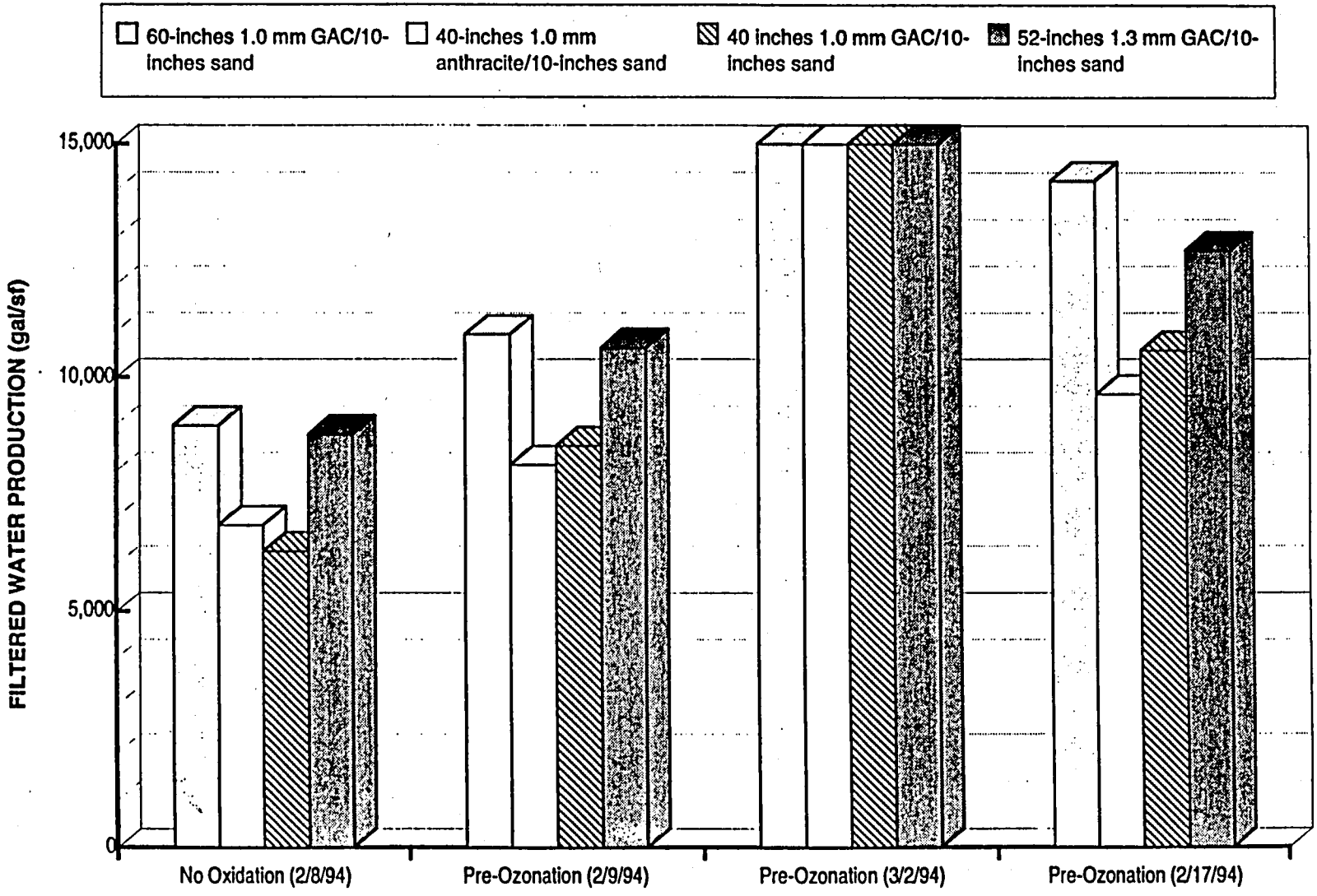
- Filter runs with pre-ozonation met all of the operational and filtered water quality goals for the project, even at raw water turbidities up to 50 NTU.

- As shown in Figure TS-3, the volume of filtered water produced by the two deepest GAC/sand filters were consistently higher than with the other filter media designs.



FILTERED WATER QUALITY FROM FILTER RUNS WITH NO OXIDATION AND WITH PRE-OZONATION

FIGURE TS-2



FILTERED WATER PRODUCTION WITH FINAL FILTER MEDIA CONFIGURATIONS

FIGURE TS-3

- None of the four dual media filter designs produced filtered water with consistently lower turbidity or fewer particles than the others.

Based on these results, a filter media design consisting of 60 inches of 1.0 mm ES GAC over 10 inches of 0.5 mm sand was selected as the optimized filter media design for the subsequent experiments. This media design was selected because it provided the longest operational period of stable effluent turbidity and the lowest levels of organics in the filtered water. GAC was also selected to provide an additional barrier for the removal of taste and odor-causing chemicals, synthetic organic chemicals, and naturally-occurring organic material which forms disinfection by-products.

The results of filter runs with the final filter media configurations also led to the following conclusions:

- From filter runs conducted at filtration rates from 6 to 10 gpm/sf, the period of stable effluent turbidity was significantly reduced at a filtration rate of 10 gpm/sf. Thus, filtration rates of 6 and 8 gpm/sf provided the best results; no differences were noted in filtered water production and filtered water quality between these two filtration rates.

- The addition of filter aid polymer was not necessary to meet the water quality or operational goals for the project. However, when raw and settled water quality conditions are such that filter runs terminate because of turbidity breakthrough, an optimized dose of filter aid polymer would be expected to increase filter run lengths, filtered water production, and headloss rates.

Evaluation of DBP Formation

The WRWTPS also included simulated distribution system (SDS) experiments conducted to evaluate the formation of DBPs in chlorinated raw and filtered water. SDS experiments can be used to predict levels of DBPs that may occur in the distribution system following treatment. For these experiments, treatment variables were examined for their role in the formation of DBPs. The following conclusions are based on the results from these experiments:

- Input from the District was used to select conditions representative of a simulated distribution system. These conditions consisted of an incubation time of 48 to 72 hours (maximum expected detention time in the distribution system, worst-case for DBP formation), a water temperature of 18 °C (maximum expected temperature in the distribution system, worst-case for DBP formation), and a pH of 8 (typical value of pH for corrosion control in a distribution system).

- Chlorinated raw Willamette River water exceeded the existing maximum contaminant level (MCL) for TTHMs and the expected Phase I MCL for THAAs. Raw Willamette River water dosed with 4.0 mg/L of chlorine contained 145 µg/L of total trihalomethanes (TTHMs) after 72 hours. Raw water dosed with 3.0 mg/L of chlorine contained 62 µg/L of total haloacetic acids (THAAs) after 48 hours and raw water dosed with 4.0 mg/L of chlorine contained 102 µg/L of THAAs after 72 hours.

- Raw water samples were chlorinated and incubated according to the SDS protocol on three occasions: November 15, 1993, January 18, 1994, and February 21, 1994. The highest measured levels of DBPs in the chlorinated raw water corresponded to the poorest water quality (high turbidity, high TOC).

- Filtered water met the project goals for TTHMs and THAAs on every occasion that experiments were conducted. The project goals (32 µg/L of TTHMs and 24 µg/L of THAAs) were equivalent to 80 percent of the anticipated Phase II MCLs. At pH 8, chlorinated filtered water from an anthracite/sand dual media filter contained from 13.5 to 20.7 µg/L of TTHMs and from 8 to 14 µg/L of THAAs after 72 hours. Chlorine doses from 1.5 to 2.0 mg/L were applied to each sample; these doses are typical of full-scale operation.

- The addition of chloramines resulted in DBP concentrations significantly lower than the concentrations produced with free chlorine. At pH 8, filtered water from an anthracite/sand dual media filter dosed with chloramines (chlorine to ammonia ratio of 4:1) contained 1.1 µg/L of TTHMs and 5 µg/L of THAAs after 72 hours.

- Concentrations of TTHMs in effluent from the GAC/sand dual media filter were 40 to 50 percent lower than the TTHM concentrations in effluent from the anthracite/sand dual media with a similar L/D ratio (ratio of media depth to media size). At pH 8, chlorinated filtered water from the GAC/sand dual media filter contained from 7.4 to 11.3 µg/L of TTHMs after 72 hours. THAAs were not detected above 5 µg/L in the samples from the GAC/sand dual media filter. The GAC/sand dual media filter contained fresh (less than eight weeks of use) GAC and provided an empty bed contact time (EBCT) of 4.2 minutes. Over time, the levels of DBPs in the effluent from the GAC/sand media would be expected to approach the levels in the anthracite/sand effluent as the carbon's capacity to adsorb natural organic material becomes exhausted.

- Aldehydes were detected in the effluent from the ozone contact column, but not in the filtered water when pre-ozonation was employed. Bromate was not detected in the effluent from the ozone contact column, and the analysis had a detection limit equal to half the expected MCL.

Thus, the optimized coagulation/flocculation/sedimentation process was very effective at removing DBP precursors and led to concentrations of DBPs well below the project goals in the filtered water. Over time, the levels of DBPs in the chlorinated GAC/sand filter effluent will increase and approach the levels in the chlorinated effluent from the anthracite/sand media. Even when that happens, the concentrations of DBPs in the filtered water are expected to meet all of the current regulatory limits, as well as the anticipated regulatory limits for the year 2000.

Evaluation of Taste and Odor Removal

The WRWTPS addressed the ability of ozone and GAC filter media, separately and together in the conventional treatment process train, to reduce naturally-occurring tastes and odors in raw Willamette River water. Flavor profile analyses were also conducted on raw Willamette River water during these experiments. The following conclusions are evident from the evaluation of taste and odor removal:

- Data from the City of Corvallis have established the presence of blue-green algae and its metabolite geosmin, a potent taste and odor-causing chemical, in Willamette River water. Algae levels at warm water temperatures are responsible for objectionable levels of earthy/musty tastes and odors in Corvallis' water supply.

- Earthy odors were detected by flavor profile analysis in raw Willamette River water at the pilot plant intake, even with cold water temperatures. It is expected that these odors will intensify during summer months.

- Pre-ozonation was effective at reducing or eliminating weak earthy odors. Pre-ozonation may also change the character of the raw water by creating new odors or unmasking previously undetectable odors.

- GAC filtration with fresh GAC media was observed to be effective for the control of taste and odor, at EBCTs as low as three minutes. The GAC media used in these trials had been in place for a maximum of eight weeks; its adsorptive capacity for taste and odor-causing compounds had not yet been exhausted. The ability of GAC to control tastes and odors at full-scale will be a function of EBCT and service life of the media.

- More information is needed on the taste and odor characteristics of Willamette River water, particularly during the warm summer months. The District's Raw Water Monitoring Program will establish these characteristics over a two-year period by the performance of monthly flavor profile analyses.

Evaluation of SOC Contamination and Removal

This WRWTPS included analyses conducted to estimate the background concentrations of dioxin (a by-product of the Kraft pulp bleaching process) and atrazine (a commonly-used herbicide in the Willamette River Basin) in raw Willamette River water. In addition, a spiking experiment was conducted with atrazine. The following conclusions are based on these analyses:

- The existing information on concentrations of SOCs in the vicinity of the pilot plant is extremely limited. Dioxin and atrazine were selected for a more detailed evaluation. Conservative assumptions based on occurrence data in other parts of the Willamette River Basin indicate that the likelihood of dioxin and atrazine chronically exceeding their MCLs in the raw water is remote.

- More information is needed on the occurrence of SOCs in the vicinity of a future drinking water intake. The Raw Water Monitoring Program will provide additional data to verify the above information.

- The atrazine spiking experiment conducted as part of the pilot study resulted in the removal of approximately 30 percent of the atrazine present in the spiked raw water by inert-media filtration. With filtration through relatively fresh (approximately nine weeks of use) GAC/sand dual media at a rate of 6 gpm/sf and an EBCT of six minutes, more than 99 percent of the atrazine was removed. The results of the pilot spiking experiment are consistent with literature values.

- GAC filtration is specified by the EPA as the best available technology for the removal of SOCs, and ozone will provide additional removal. If a chemical spill or other discrete event were to occur, the reduction in SOC concentrations that could be achieved would depend on the specific chemicals and their concentrations, as well as the adsorptive capacity of the GAC media.

Executive Summary

MONTGOMERY WATSON

EXECUTIVE SUMMARY

This report presents the findings of a five month conventional filtration pilot study for the Willamette River, conducted for the Tualatin Valley Water District (District). Pilot testing was conducted at Wilsonville, Oregon, approximately 40 miles upstream from the mouth of the Willamette River.

PROJECT BACKGROUND

This pilot study was conducted in the context of a larger regional water supply planning effort currently underway in the Portland metropolitan area. As a participant in regional supply planning, the District undertook the pilot study in order to develop cost and treatability information on this potential new source of drinking water. Concerns about immediate and long-term water supply needs in the District's rapidly growing service area provided the primary motivation for an evaluation of the Willamette River as a future source of supply.

PROJECT OBJECTIVES

The primary objective of the Willamette River Water Treatment Pilot Study (WRWTPS) was to identify an appropriate filtration process for Willamette River water. In order to evaluate the numerous treatment processes and conditions tested during the pilot study, stringent water quality and operational goals were developed before beginning pilot plant operations. The pilot study treatment goals were selected to:

- meet all current federal and state drinking water regulations;
- produce water of high aesthetic quality with desirable taste, odor, and color characteristics;
- meet levels of regulated disinfection by-products anticipated in the year 2000;
- meet enhanced coagulation requirements under the anticipated Disinfectant/ Disinfection By-Product Rule, scheduled for promulgation in 1996;
- achieve greater than 3.5 logs (99.97 percent) of particle removal in the *Giardia* and *Cryptosporidium* size ranges, in anticipation of Enhanced Surface Water Treatment Rule requirements, scheduled for promulgation in 1996;
- assure an efficient, cost-effective treatment process by meeting operating goals for filter run length and filtered water production.

The treated water quality goals for this project were rigorous, in anticipation of more complex and stringent federal drinking water regulations to come. Other considerations, such as the following, prompted the use of conservative treatment goals for this project:

- The Willamette River Basin supports multiple human activities including agriculture, forestry, industry and urban land use; the potential for contamination of the River must be recognized;

- Where the Willamette has been used as a drinking water source, taste and odor episodes have been recorded;

- Extensive water quality data on the Willamette River are lacking;

- The District's consumers are accustomed to drinking water of high quality. To be acceptable to the consumer, treatment of the Willamette River must produce drinking water of equally high aesthetic quality. Treatment designed to meet but not surpass existing standards may be perceived as unacceptable by District customers.

For all of these reasons, a conservative treatment philosophy was adopted for the pilot study, on the assumption that the goal was excellence, not adequacy.

PROJECT APPROACH

A state-of-the-art treatment approach was selected for this project, capable of producing water of the highest possible quality, while also being cost effective in comparison to other treatment approaches. This treatment philosophy can be described as a "multiple-barrier approach". To ensure the highest quality treated water, the following multiple barriers to chemical, physical, and microbiological contaminants were included as part of the treatment process:

- Pre-oxidation with ozone was evaluated in the pilot study because of its powerful oxidation and disinfection abilities. Ozone has been demonstrated to be effective for the control of pathogens, disinfection by-products, tastes and odors, pesticides and metals. More than 40 ozone plants have been built in the United States (U.S.) since the 1970's, and an estimated 2,000 ozone plants are in operation world-wide (primarily in Europe). Ozone is increasingly being applied in the U.S. as utilities respond to changing drinking water regulations and public demands for safe, pure water (Tate, 1991).

- Following pre-oxidation, the coagulation/flocculation/sedimentation process was tested for removal of dissolved and particulate contaminants. This series of processes is fundamental to conventional water treatment and has been in use for decades. The sedimentation process is effective for the removal of naturally-occurring organic matter and suspended silts and clays. It also assists in the removal of contaminants such as heavy metals, pesticides, cysts, and viruses (Montgomery, 1985).

- Filtration using granular activated carbon (GAC) filter media was evaluated in the pilot study. GAC media is commonly used in the U.S. for the removal of taste and odor causing chemicals, synthetic organic chemicals, and naturally-occurring organic material which forms disinfection by-products. The filtration step is also the final barrier for the removal of microbial contaminants and dissolved and particulate material that affect water clarity and color.

In practice, the final barrier in the multiple barrier approach is the use of a secondary, or distribution system residual disinfectant such as chlorine or chloramines. Secondary disinfection was not evaluated as part of the pilot study, although it would be practiced in any full-scale application.

PROJECT RESULTS

Five months of pilot testing were conducted to evaluate the ability of the processes described above to meet the project's water quality and operational goals. A successful treatment process was developed which includes pre-ozonation, coagulation/ flocculation/sedimentation using ferric chloride and cationic polymer, followed by filtration at a rate of 6 gallons per minute per square foot (gpm/sf) through a deep-bed GAC/sand dual media. The optimized process produced excellent filtered water quality and filter run lengths which met operating goals. Levels of disinfection by-products in chlorinated filtered water were well below the regulatory limits anticipated in the year 2000. This treatment process was observed to be effective for the control of naturally-occurring earthy/musty odors in Willamette River water. Should herbicides and pesticides ever be present, this treatment process will also provide barriers to the passage of these chemicals through the treatment plant through the combined action of oxidation, sedimentation and filtration.

The major conclusions of the pilot study can be summarized as follows:

- Historical water quality records, as well as data collected during the pilot study indicate that the Willamette River is a high-quality source water. This water has lower levels of organic material than most surface water sources in the U.S. (as measured by total organic carbon). Ten years of water quality data, collected by the Oregon Department of Environmental Quality (ODEQ) from 1982 to 1993, indicate that the Willamette could be classified as an unfiltered surface water supply for six months out of the year based on raw water turbidity.

- A multiple-barrier treatment process can successfully treat Willamette River water to meet stringent water quality and operational goals. The technology used to treat this water is commonly available in the U.S. and can produce drinking water at costs comparable to other U.S. facilities.

- Human activities in the Willamette River basin and the potential introduction of synthetic organic chemicals into the river was a recognized issue in this study. Available water quality data do not indicate detectable levels of pesticides or herbicides in the Willamette River mainstem. A worst-case analysis of the presence of dioxin (a by-product of the Kraft pulp bleaching process) and atrazine (a commonly-used herbicide in the Willamette Basin) was conducted using the highest levels of these chemicals which had ever been found in water or sediment anywhere in the Willamette Basin, along with a host of conservative assumptions (see Section 10). The analysis shows that worst-case, chronically-occurring concentrations in the raw water would be expected to meet existing drinking water standards for dioxin and atrazine *without* filtration treatment. In addition, pilot testing demonstrated the ability of the multiple-barrier process to remove the spiked herbicide atrazine. The ability of ozone and GAC filtration to remove organic contaminants is well-documented.

Pilot testing and worst-case analyses have demonstrated the ability of the multiple-barrier treatment process to provide drinking water of excellent quality. All available information suggests that this process will meet treatment goals over a wide range of water quality conditions. This conclusion can be assured by collecting more information on Willamette River water quality, particularly with respect to concentrations of previously-undetected synthetic organic chemicals. To this end, the District is undertaking a two-year Willamette River Raw Water Monitoring Program. This program will provide the most comprehensive picture of Willamette River water quality generated to date, and includes routine analysis for 160 organic chemicals in water and sediment, along with a host of other inorganic and microbiological indicators commonly used in drinking water treatment. If raw water monitoring detects the presence of specific chemicals or other water quality parameters at unacceptable levels, then the treatment process must be evaluated to assure its ability to remove them to safe levels.

This pilot study indicates that further consideration of the Willamette River as a future drinking water source would be consistent with the Tualatin Valley Water District's and the region's goals and expectations with regard to public health, cost, and aesthetics.

M E M O R A N D U M

METRO

DATE: September 21, 1995

TO: Metro Council

FROM: Jay Harris

RE: FYI

During today's councilor communications, Councilor Washington will request the council hold an executive session to consider the purchase of the Clear Creek property proposed in Resolution No. 95-2207.

Although this resolution was previously considered in an executive session at the September 12 meeting of the Regional Facilities Committee, the committee inadvertently took no action. However, this property meets the criteria for an early acquisition opportunity and it is essential that the purchase process move ahead quickly.

After today's executive session, Councilor Washington will make a motion to suspend the rules to remove Resolution No. 95-2207 from the Regional Facilities Committee and place it on today's agenda for adoption.

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AUTHORIZING THE EXECUTIVE OFFICER TO EXECUTE AND EXERCISE AN OPTION TO PURCHASE PROPERTY IN CLEAR CREEK	RESOLUTION NO. 95-2207 Introduced by Mike Burton, Executive Officer

WHEREAS, In July 1992, Metro Council adopted the Metropolitan Greenspaces Plan, which identified a regional system of natural areas interconnected with greenways and trails; and,

WHEREAS, Open Space, Parks, and Streams Ballot Measure 26-26, passed by voters in May, 1995, authorized the sale of bonds from which proceeds would be used for the protection of open spaces in the region; and,

WHEREAS, Acquisition of natural areas from willing sellers is a primary strategy for protection of natural areas; and,

WHEREAS, Clear Creek Target Area was specifically identified as a regional target area for acquiring open spaces with Measure 26-26 bond proceeds; and,

WHEREAS, The property owned by Anna B. Alford, the estate of Robert A. Alford, Diane L. Goheen and Richard Goheen, and The Halton Company, known as "Clear Creek Ranch", as identified in Exhibit A, are in the Clear Creek Target Area; and,

WHEREAS, Protection of the subject properties through acquisition conforms with the strategies and guideline of the Metropolitan Greenspaces Plan; now, therefore,

WHEREAS, The sellers are willing to enter into an option for the sale of the properties; and,

WHEREAS, If due diligence, which includes environmental, title, and appraisal reviews, demonstrates that the asking price is appropriate, then Metro should purchase the property; now, therefore;

BE IT RESOLVED,

That the Metro Council authorizes the Executive Officer to execute an option for purchase of property known as "Clear Creek Ranch," as outlined in Exhibit A, within the Clear Creek Target Area and to purchase the property, subject to certain conditions being fulfilled.

ADOPTED by Metro Council this 7th day of September, 1995.

J. Ruth McFarland, Presiding Officer

STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 95-2207, FOR THE PURPOSE OF AUTHORIZING THE EXECUTIVE OFFICER TO EXECUTE AND EXERCISE AN OPTION TO PURCHASE PROPERTY IN CLEAR CREEK TARGET AREA

Date: September 12, 1995 Presented by: Nancy Chase

PROPOSED ACTION

Resolution No. 95-2207 authorizes the Executive Officer to enter into an option agreement with Anna B. Alford, the estate of Robert A. Alford, Diane L. Goheen and Richard Goheen, and The Halton Company to purchase property known as "Clear Creek Ranch." The option agreement gives Metro an exclusive right to purchase the subject property depending upon the outcome of the due diligence process (i.e. title search, environmental review). The Resolution authorizes the Executive Officer to exercise the option to purchase the property subject to fulfillment of certain conditions, including those outlined in the option agreement and satisfactory conclusion of the due diligence process.

BACKGROUND AND ANALYSIS

After passage of Ballot Measure 26-26, which provided funds through the sale of bonds for acquiring open spaces in the Metro region, Metro staff has been developing an acquisition strategy and a work program for implementing the bond measure. Recognizing that there may be lost opportunities to acquire key land parcels during the period of this plan program development, a process for evaluating early acquisition opportunities was developed. An early acquisition opportunity exists where:

(1) a specific land parcel(s) have unique attributes and is imminently threatened;

(2) the Executive Officer and Council determine the property should be purchased prior to the refinement process.

The 346-acre Clear Creek Ranch lies entirely with the Clear Creek Target Area in Clackamas County. Acquiring the subject property from its current owner, Halton Tractor Company, would exceed the acquisition goal of 342 acres set for the target area while spending only 65% of the total funds allocated for that target area. Based on staff review of the property's features (Attachment A), the subject property has unique features that qualifies it as an early acquisition opportunity and clearly meets all acquisition parameters. In the best professional judgment of staff, a refinement process in Clear Creek Target Area would certainly identify the subject property as an essential acquisition.

BUDGET IMPACT

Acquisition costs associated with Clear Creek Ranch are approximately 65% of the total amount allocated for acquiring property within the Clear Creek Target Area while meeting the target goal. With the sale of $64 million Series A bonds in early September, 1995, bond proceeds are available for acquisition of regional target areas by mid-September, 1995.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends that the Council adopted Resolution 95-2207.

ATTACHMENT A
OPENSPACE ACQUISITION PORTFOLIO
CLEAR CREEK RANCH

Target Area: **Clear Creek** Target Area Goal: 342 acres Allocation: $4.1 million

Site: **Clear Creek Ranch**

Owner: Alford, Goheen, Halton Co. Total Area: 346 acres

Estimated Cost: $2.7 million ($7850/acre)

Current Land Use: Zoned agricultural. Currently, meadows are grazed by less than 25 head of cattle, the remaining meadows lay fallow. Buildings include 2-level ranch caretaker's residence (about 30 yrs. old), storage shed, large functional barn; fences maintained throughout property.

Habitat Quality: Approximately 151 acres open meadow (grazed by cattle Considerable portion of lower meadows are wetlands (est. 32 acres) that were converted to agricultural use. Forested area, 163 acres, is relatively good quality, mostly second growth maple, fir, and alder. Understory growth mostly native vegetation; a few old cedars remain. Clear Creek has excellent water quality, supporting a significant anadromous fishery. Stream bed and stable banks indicate a relatively stable hydrology (i.e. no dramatic changes in watershed runoff patterns). The large size and habitat variability can provide habitat range and quality for a highly diverse wildlife population.

Rare and Endangered: No known species on site. Clear Creek supports an anadramous fishery, including a healthy steelhead run. However, one of the anadramous fish species may be listed in the near future.

Unique Features: Clear Creek is a very high quality stream with an outstanding cold water fishery that will, most likely, remain a viable fishery well into the future, given no downstream dams and the relatively high water quality of the Clackamas River. Within the target area, the subject property:

(1) is the largest parcel area under one ownership in the target area;
(2) has a combination of open meadow, upland and riparian forest, and aquatic habitats;
(3) has the largest amount of creek frontage than any other parcel;
(4) acquisition of this property enhance protection of stream riparian zone on opposite bank (Due to steepness of opposite bank, access is limited to subject property.).

Recreational Potential: A major portion of the site could be developed for various levels of recreation, including a golf course or a regional park with trails and camping. A mix of recreational uses with conservation of the natural resources may be accomplished. A conditional use permit has been granted for a golf course.

Connectivity: The intact riparian corridor is partially broken from the Clackamas River to the parcel boundary, but remains intact throughout the property and upstream for many miles. Much of the watershed's wildlife habitat is along the creek.

Water Quality Benefit: Protection of this high quality stream will be greatly enhanced by this acquisition of the two miles of stream corridor within the property.

Scenic Value: A minor portion of the site is visible from a secondary road. The creek canyon is inaccessible and not visible from public access points; great views of the Cascades from the site.

Accessibility & Proximity to Population: The property entrance is a 30-minute drive from downtown Portland; 20-minute drive from Portland International Airport; 10 minute from Clackamas Town Center.

Target Area Goal Attainment: *Goal: 342 acres at $4.1 million for protection of salmon, steelhead and other cold-water fishery through acquisition of canyon area.* With 195 acres of this site within the canyon's critical riparian area, 57% of target goal is acquired with 65% of allocated funds. The remaining 151 acres has higher resale value per/acre after partitioning, offering an opportunity for producing more funds for additional target area acquisition.

Reason for Imminent Action: Impending sale.

Additional Supporting Facts:

1. Willing seller.
2. Critical linkage to other parcels within the canyon corridor.
3. Minimal stabilization and land banking costs.
4. Numerous management options for end use of property.
5. Support letters from Clackamas County and Friends of Clear Creek.
6. Provides opportunity for public access where none exists.
7. Cost will be at or below fair market value, based on appraisal, as agreed upon by the landowner.

Staff Recommendation: In-fee purchase of total acreage.

A G E N D A

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METRO

MEETING: METRO COUNCIL REGULAR MEETING
DATE: NOVEMBER 2, 1995
DAY: Thursday
TIME: 2:00 p.m.
PLACE: Council Chamber

Approx. Time *			Presenter
2:00 PM		**CALL TO ORDER AND ROLL CALL**	
(5 min.)	1.	**INTRODUCTIONS**	
(5 min.)	2.	**CITIZEN COMMUNICATIONS**	
(5 min.)	3.	**EXECUTIVE OFFICER COMMUNICATIONS**	
	4.	**CONSENT AGENDA**	
2:15 PM (5 min.)	4.1	Consideration of Minutes for the October 12, 1995 and October 26, 1995 Metro Council Meeting.	
	5.	**INFORMATIONAL ITEMS**	
2:20 PM (20 min.)	5.1	Report by the Auditor, Alexis Dow: Regional Parks and Greenspaces; Glendoveer Cellular Site Lease.	Dow
2:40 PM (45 min.)	5.2	Regional Urban Growth Goals and Objectives **PUBLIC HEARING**	McLain
	6.	**ORDINANCES - SECOND READINGS**	
3:25 PM (5 min.)	6.1	**Ordinance No. 95-618A**, Amending the FY 1995-96 Budget and Appropriations Schedule to Recognize Grant Funds, Transfer $5,000 From the Regional Parks and Expo Fund Contingency, and Authorize the Expenditure of Said Funds to Pay for Emergency Dredging at the M. James Gleason Boat Ramp; And Declaring An Emergency	Morissette

For assistance/Services per the Americans with Disabilities Act (ADA), dial TDD 797-1804 or 797-1540 (Council Office)

* All times listed on the agenda are approximate; items may not be considered in the exact order listed.

Approx. Time *			Presenter
3:30 PM (5 min.)	6.2	**Ordinance No 95-620**, Amending the FY 1995-96 Budget and Appropriations Schedule Transferring $15,000 From Contingency and $23,500 From Capital Outlay to Materials and Services in the Regional Parks and Greenspaces Department to Provide Funding for a Roof Replacement at Blue Lake Park's Curry Maintenance Building; And Declaring An Emergency	Monroe
3:35 PM (5 min.)	6.3	**Ordinance No. 95-619**, Amending the FY 1995-96 Budget and Appropriations Schedule to Implement the Open Spaces Work Program, Adding 7.63 FTE in Various Funds, Transferring $87,180 From the General Fund to The Regional Parks and Expo Fund, and Transferring Appropriations Within the Support Services and Open Spaces Fund; And Declaring an Emergency.	Washington
	7.	**RESOLUTIONS**	
3:40 PM (5 min.)	7.1	**Resolution No. 95-2224**, For the Purpose of Amending the FY 95-96 Unified Work Program to Include Development of Regional Framework Plan Elements for Transit Supportive Land Uses in Light Rail Station Areas and Corridors.	Monroe
3:45 PM (5 min.)	7.2	**Resolution No. 95-2233**, For the Purpose of Providing Comments on the Preliminary Regional Water Supply Plan.	McLain
3:50 PM (5 min.)	7.3	**Resolution No. 95-2227**, Authorizing the Executive Officer to Execute Contract No. 904542 in the Amount of $20,000 With the Wetlands Conservancy for Technical Assistant Services to the greenspaces Restoration Grant Program.	Washington
3:55 PM (5 min.)	7.4	**Resolution No. 95-2228A**, For the Purpose of Authorizing the Executive Officer to Purchase Property Within Accepted Acquisition Guideline as Outlined in the Open space Implementation Work Plan.	McCaig
4:00 PM (5 min.)	7.5	**Resolution No. 95-2221**, For the Purpose of Authorizing Issuance of a Request for Proposals for Bond Counsel Services For the Period January 1, 1996 to December 31, 1998.	McCaig
4:05 PM (5 min.)	7.6	**Resolution No. 95-2229**, For the Purpose of Authorizing Issuance of a Request for Proposals for Financial Advisory Services for the Period January 1, 1996, to December 31, 1998	McLain
4:10 PM (5 min.)	7.7	**Resolution No. 95-2230**, For the Purpose of Authorizing Issuance of a Request for Proposals for Arbitrage/Rebate Management Services for the Period January 1, 1996, to December 31, 1998	McLain
	8.	**CONTRACT REVIEW BOARD**	
4:15 PM (5 min.)	8.1	**Resolution No. 95-2223**, Exempting the Procurement of the Chimpanzee Climbing Structures at the Metro Washington Park Zoo From Sealed Bids	McLain
4:20PM (10 Min.)	9.	**COUNCILOR COMMUNICATIONS**	

* All times listed on the agenda are approximate; items may not be considered in the exact order listed.

Approx. Time *		Presenter
4:30 PM	**ADJOURN**	

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Price Summary of Proposals Received for the
Disposal and/or Transport of Waste fro the
Forest Grove Transfer Station
(e.g. 9-21-95)

Firm	Alternate Proposed	Unit Price	% CPI	Total Cost
Oregon Waste Systems	#1 - No Compaction	$25/ton	75%	$10,072,483
Oregon Waste Systems	#2 - Compaction	$640/load	75%	$10,014,926
Sanifill	#1 - No Compaction	$25.25/ton	85%	$10,257,416
Regional Disposal Co.	#2 - Compation	$775.04/load	85%	$$12,057,035