

RESOLUTION NO. 1481

A RESOLUTION APPROVING CITY OF WILSONVILLE CONTRIBUTIONS TOWARDS THE COST OF A PRELIMINARY ENGINEERING AND IMPLEMENTATION PLAN FOR THE WILLAMETTE RIVER WATER SUPPLY SYSTEM; WHICH PLAN IS BEING COORDINATED BY THE CITY OF TIGARD WITH A TOTAL COST OF \$671,500; WITH THE CITY OF WILSONVILLE'S SHARE AT \$79,756

WHEREAS, the Department of Corrections, the Tualatin Valley Water District and the City of Wilsonville tentatively agreed to the "deal points" which would form the basis for an Intergovernmental Agreement between the aforementioned governmental entities for the payment for and provision of water to a women's prison and intake center at the Dammasch site; copy of deal points attached as Exhibit A; and

WHEREAS, deal point #4-C provides that in the event the City and the Willamette Water Supply Agency, which presently includes Tigard and Tualatin Valley Water District as active members, construct a regional water plant; the Department of Corrections shall contribute \$6.4 million to the Willamette Water Supply Agency and \$3.6 million to the City of Wilsonville as their contributions towards the cost of the construction of the water treatment plant; and

WHEREAS, deal point #4-D provides that the City of Wilsonville and the Willamette Water Supply Agency shall commit towards a written agreement by March 1998 to (1) plan for the development and operation of a multi-barrier regional plant, and (2) contribute their share of preliminary design, preliminary engineering, permitting and other fees as necessary; funds may be used from each party's share of the Department of Corrections escrow funds; and

WHEREAS, deal point #4-I provides that in the event that either the Willamette Water Supply Agency or the City of Wilsonville does not participate in the construction of a water treatment plant, that the City of Wilsonville will receive its share of the preliminary costs as described in deal point #4-D; and

WHEREAS, the Department of Corrections is considering construction of the women's prison and intake center at the Day Road site; and

WHEREAS, the preliminary coordination for construction of the prison at the Day Road site includes the same basic framework for provisions of water as was described in the deal points outlined and attached as Exhibit A; and

WHEREAS, the City of Tigard acting on behalf of the Willamette Water Supply Agency has developed an Engineering Service Agreement with the firm of Murray, Smith & Associates to provide consulting engineering services; and

WHEREAS, the firm of Murray, Smith & Associates has developed a scope of services attached as Exhibit B to provide the consulting services for the preliminary engineering and implementation plan for the Willamette River Water Supply System; and

WHEREAS, the total cost to complete the scope of services including preliminary engineering, raw water monitoring and public information totals \$671,500; and

WHEREAS, the City of Wilsonville does not participate in the public information portion of the agreement; and

WHEREAS, the City of Wilsonville's share of the cost is \$79,756 including \$73,418 for preliminary engineering and \$6,338 for raw water monitoring per attached Exhibit C; and

WHEREAS, Murray, Smith & Associates has retained the consulting engineering firm of Montgomery Watson & Associates to complete the water treatment plan design; and

WHEREAS, Montgomery Watson & Associates has provided consulting engineering services to the City of Wilsonville to analyze and to provide preliminary siting information and cost estimates for both a regional water treatment plant and a City of Wilsonville water treatment plant on the Willamette River; and

WHEREAS, the scope of services developed by Murray, Smith & Associates is designed to build on the previous work which was paid for by the City of Wilsonville; and

WHEREAS, the firm of Murray, Smith & Associates has been previously retained by the City of Tigard to develop proposed pipeline routings and other information for construction of a regional treatment plant; and

WHEREAS, the scope of services will build on the previous work that was accomplished by Murray, Smith & Associates; and

WHEREAS, the Tualatin Valley Water District with support from the City of Wilsonville, has paid for substantial raw water monitoring and pilot plan testing on the Willamette River using grant funds and Tualatin Valley Water District funds; and

WHEREAS, all three governmental entities desire to forgo any billing to other government agencies for the previous work which was accomplished and to start sharing costs using this scope of services; and

WHEREAS, the information which will be provided as a result of completion of preliminary engineering and implementation plan will be of significant benefit to future plant design and is necessary to evaluate final project costs; and

WHEREAS, TVWD continues to search for an alternate site; and

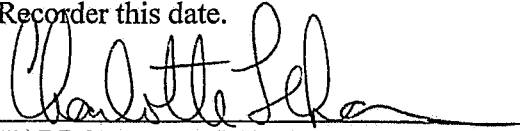
WHEREAS, this continued searching may delay development of preliminary engineering costs so that the information may be of minimal use to the City of Wilsonville; and

WHEREAS, the City is authorized to enter into such joint cost sharing cooperative agreements for water under its Charter powers, ORS Chapter 190 et seq., and ORS 225.050.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

1. The City Council concurs with the scope of services attached as Exhibit B for the preliminary engineering and implementation plan for the Willamette River Water Supply System as developed by Murray, Smith & Associates and as approved by the City Council of the City of Tigard, with a City of Wilsonville share of the total scope of services totaling \$79,756.
2. The City Engineer is authorized to approve minor amendments to this scope of services with a total City participation not to exceed \$90,000.
3. The Community Development Director is authorized to renegotiate cost sharing and participation in this project if continued delays minimize the benefit of part of the preliminary engineering and implementation plan to the City of Wilsonville.
4. Funding for the City of Wilsonville's share of this project is included in the FY98-99 proposed budget with a budgeted amount of \$500,000 in account 530-49130-5000-322.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 1st day of June 1998, and filed with the Wilsonville City Recorder this date.


CHARLOTTE LEHAN, Mayor

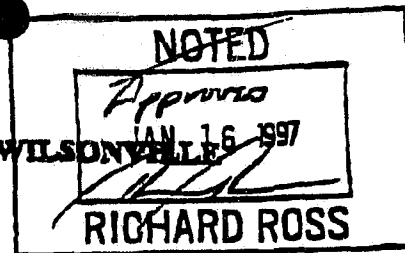
ATTEST:


SANDRA C. KING, CMC, City Recorder

SUMMARY of Votes:

Mayor Lehan	Yes
Councilor Kirk	Yes
Councilor Helser	Yes
Councilor Barton	Yes
Councilor Luper	Yes

Exhibit A

OREGON DEPARTMENT OF CORRECTIONS / CITY OF WILSONVILLE
Infrastructure Agreements#1 STREET IMPROVEMENTS

- A. *RR 8.99* The DOC shall be responsible for the construction and bear all costs related to the design, construction, permitting, right-of-way acquisition and easements for the Boeckman Road extension from the vicinity of 95th Avenue to 110th Avenue. These improvements shall consist of two travel lanes and two on-street bike lanes per Westech Option #4. The City Engineer shall retain technical review approval. Sewer line construction is not required.
- B. *RR 8.99* The DOC shall construct a left-turn lane at the prison entrance on 110th Avenue.
- C. *RR 8.99* The DOC shall install an 18" water line in the Boeckman extension and a 16" water line in 110th Avenue from Tooze Road to Camelot Street.
- D. *RR 8.99* If Boeckman cannot be constructed due to federal or environmental restrictions, unused amount of funding shall be diverted to other road improvements to be negotiated between the City and the DOC.
- E. *RR 8.99* The City shall allow a sign to be placed on Boeckman Road recognizing the DOC's contribution to this project. The City shall have no responsibility to install, maintain, or replace the sign.
- F. *RR 8.99* The DOC shall overlay 110th Avenue from Camelot Street to Tooze Road after the prison construction is completed.
- G. *RR 8.99* The City shall contribute \$360,000 from supplemental street SDCs towards the Boeckman extension. Payments to be made semi-annually as collected by the City.
- H. *RR 8.99* The DOC shall be required to improve 110th Avenue to a half street urban collector standard if or when the prison's capacity exceeds 1,475 inmates.
- I. *RR 8.99* The City shall refund to the DOC the funds collected from developers of adjacent properties to tie to water lines along 110th Avenue and the Boeckman extension under a buy-in/payback agreement between the City and the DOC.

J. *RR 8/9* The City shall provide a credit against street and supplemental street SDCs for the Boeckman extension.

K. *RR 8/9* The DOC will support the City in its effort to solve state highway problems with a potential negative impact on the prison and the City.

#2 SEWER

A. *RR 8/9* The DOC shall discharge unequalized wastewater flows to Seely ditch connection. Current study verifies capacity is available.

B. *RR 8/9* The DOC shall use existing City easements, right-of-way, and line capacity.

C. *RR 8/9* The DOC shall oversize sewer lines if required by the City, and the City shall give the difference in construction costs, not to exceed total SDC charges, to the DOC as an SDC credit.

D. *RR 8/9* The DOC shall pay SDCs on 600 BOD/TSS, then challenge for evaluation on flow rate and BOD/TSS.

E. *RR 8/9* The City shall use 350 BOD/TSS as a minimum figure. The challenged amount could not be spent by the City until resolved. Escrowed funds shall be returned to the DOC if the results of the evaluation demonstrate strengths below 600 BOD/TSS.

F. *RR 8/9* The City shall consider appropriate SDC credits for sewer line construction by Mental Health if oversizing is a demonstrated benefit to the City.

G. *RR 8/9* The DOC shall pay the same utility rates as paid by other customers with similar usage.

H. *RR 8/9* The DOC agrees that under no circumstances shall an equalization basin be installed.

13. STORMWATER

- A. *RL 8/29* The DOC shall limit post-construction run off into Corral/Mill Creek to preconstruction conditions by providing detention for a 50-year developed storm event and control release rate for a 10-year undeveloped storm event (Wetland Option 2-ST 5).
- B. *RL 8/29* DOC shall only pay stormwater SDC's for construction on that part of the project that either drains or formerly drained into Coffin Lake Creek or the wetland near Wood Middle School before the out-of-basin transfer into the unnamed creek flowing into Corral/Mill Creek.
- C. *RL 8/29* The DOC shall pay stormwater utility fees at similar rates to other users if the City is required by DEQ to provide monitoring services.
- D. *RL 8/29* The DOC shall provide sufficient funds to fully mitigate the impact of prison construction on stormwater discharge. The DOC shall provide funding to mitigate peer State of Oregon out-of-basin negative stormwater impacts from the Donnanish site. Further, there will be no negative impact to Coffin Lake or the wetlands behind Wood Middle School. The project will be developed cooperatively through the City and the DOC.
- E. *RL 8/29* DOC shall on request by the City provide additional water from a point on the stormwater diversion line to enhance the wetlands behind Wood Middle School.

14. WATER (short-term up to the end of the year 2003; long-term from the end of the year 2003 forward)

DOMESTIC:

- A. *KH RL 8/29* The DOC shall pay \$10 million into a mutually-agreed upon escrow or other approved holding account to provide funding for the short and long-term water solution for the prison.
- B. *KH RL 8/29* If on-site storage is needed at the prison site, \$0.5 million would be reduced from the \$10 million allocation. If the Donnanish Road water line cannot be completed prior to opening of the prison, the DOC and the City will evaluate the temporary use of existing on-site reservoirs for fire suppression pending water line construction.
- C. *KH RL 8/29* In the event the City and the WWEA construct a regional water treatment plant, then the DOC shall contribute \$6.6 million to the WWEA and \$3.6 million to the City.

Exhibit to Arlene Leble letter dated 1/16/98
File #44-207-0000-0000

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mlr/rlr/rlg

million to the City as their contribution toward the cost of the construction of the water treatment plant.

D. KH *[Handwritten initials]*

The City and the WWA shall execute through a written agreement by March 1998, to plan for the development and operation of a multi-barrier regional water treatment plant and:

- (1) Participate in necessary planning sessions;
- (2) Contribute their proportional share of preliminary design, preliminary engineering, permitting, and other fees as necessary (funds may be used from each parties' share of the DOC escrow funds);
- (3) Participate in individual public information efforts targeted at their respective cities with the understanding that efforts will not intentionally conflict with or damage the others' efforts.

E. KH *[Handwritten initials]*

The final design and construction of the plant will accommodate the potential for future expansion stages to allow other participants to be involved at a later date.

F. KH *[Handwritten initials]*

The WWA and the City shall have until January 1, 1999 (unless extended by mutual agreement) to commit to the construction of a regional water treatment plant. If, thereafter, either party is prepared to proceed without the other, then the remaining amount of the \$10 million in escrowed funds shall be distributed in accordance with paragraph "T" below.

G. KH *[Handwritten initials]*

If by January 1, 2001 neither the WWA nor the City is prepared to proceed with the construction of a water treatment plant, then the balance of the escrowed funds shall be paid to the TVWD in accordance with paragraph "T" below to construct a water treatment plant of sufficient capacity to serve the prison.

H. KH *[Handwritten initials]*

In any event, the TVWD shall be paid \$1 million from the \$6.4 million in escrowed funds as consideration for guaranteeing the DOC sufficient water to serve the domestic needs of the prison.

I. KH *[Handwritten initials]*

In the event that either the WWA or the City does not participate in the construction of a water treatment plant, the escrowed amount of \$10 million is to be distributed as follows:

- (1) of the \$6.4 million allocated to the WWA, the WWA shall be paid for:

- costs of the Wilsonville/Tualatin inter-tie and any related improvements to the Tualatin transmission system
- proportional share of land costs
- preliminary costs as described in paragraph "D" above

(2) of the \$3.6 million allocated to the City of Wilsonville, the City shall be paid:

- proportional share of land costs
- Systems Development Charges for storage and transmission provided the City stores and delivery water to the prison
- preliminary costs as described in paragraph "D" above

(3) If either the WWSA or the City proceeds with the construction of a water treatment plant, the remainder of the \$10 million not previously allocated to the WWSA, the TVWD, or the City of Wilsonville shall be used by the agency that actually builds the treatment plant.

(4) If neither the WWSA nor the City proceed with plant construction, the TVWD shall use the remainder of the \$10 million not previously allocated to the WWSA, the TVWD, or the City to construct a water treatment plant with sufficient capacity to serve the prison.

J. KH *[Signature]* In the event that the WWSA builds a water treatment plant with or without the participation of the City of Wilsonville, the TVWD shall pay their proportional share to update the intake facility and raw water line to serve an 80 mgd plant and to pay their proportional share of a 66" diameter transmission line. TVWD's commitment will be pending approval of its Board by March, 1998. KH *[Signature]*

K. KH *[Signature]* In the event that the City of Wilsonville builds a water treatment plant without the participation of the WWSA, then the TVWD is only obligated to pay their proportional share of an 80 mgd plant intake facility and raw water line. TVWD's commitment will be pending approval of its Board by March, 1998. KH *[Signature]*

L. KH *[Signature]* Through the year 2005, the TVWD shall provide the City with 2 mgd through the Tualatin/Wilsonville inter-tie. The City agrees to provide water service from this source using the City's infrastructure. The DGC shall pay the City's appropriate costs.

Water service through the Tualatin/Wilsonville intertie shall be subject to the following:

- (1) Evaluation of City well water and Bull Run surface water compatibility and any modifications to the City water distribution systems to control trihalomethane or other compatibility problems will be accomplished by the City and paid from the \$6.4 million allocated to WWEA to provide short-term water.
- (2) If after a detailed investigation there is no method of insuring water compatibility, the DOC will bypass the Wilsonville transmission and storage system to obtain water for the prison at no expense to the city of Wilsonville.
- (3) If the hydrology study currently being conducted does not verify the availability of 2 million gallons per day through the Tualatin/Wilsonville intertie the appropriate terms of this agreement shall be re-negotiated.

M. KH AK 5/30 After the year 2005, the TVWD agrees to provide 280,000 gallons per day for the DOC through the Tualatin/Wilsonville intertie until such time as a treatment plant of sufficient capacity to serve the prison is constructed.

N. KH AK 5/30 The City shall not be obligated to provide any water in excess of that received through the future Tualatin/Wilsonville intertie until or unless the City and/or the WWEA constructs a water treatment plant with sufficient capacity to serve the DOC facility.

O. KH AK 5/30 Under no circumstances shall the DOC present a demand letter to the City that could cause cancellation of approved Stage II development approvals.

P. KH AK 5/30 The City shall give the DOC full credit on water RDCs if applicable.

Q. KH AK 5/30 The DOC shall install water lines on Bosselman Road and 110th Avenue as part of road improvements.

IRRIGATION / FIRE SUPPRESSION:

R. KH RW 5/30 The DOC may use on-site wells and reservoirs for irrigation purposes through the year 2005 provided the DOC can demonstrate to the City's satisfaction sufficient quality and quantity to insure survival of the landscaping improvements. The City will reserve 330,000 gallons per day from the Tualatin/Wilsonville intertie for prison irrigation until adequate supply from prison wells is assured.

- S. KH *[Signature]* The DOC shall abandon all claim to use existing wells for domestic purposes except for emergency back-up as may be required.
- T. KH *[Signature]* The City and the DOC would enter into an agreement to allow wells to be used for emergency back-up only after short-term supply is no longer needed.
- U. KH *[Signature]* Over and above the \$10,000,000 for domestic water included in paragraph "A" above the DOC shall set aside \$1 million or whatever is necessary to provide an alternate flow wells for long-term irrigation (From the year 2005 forward).

Exhibit to Arlene Lohs letter dated 1/16/98
From 66/Arh/lohs@agway.com

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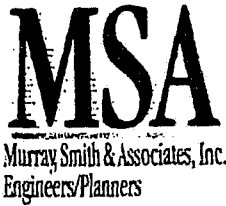
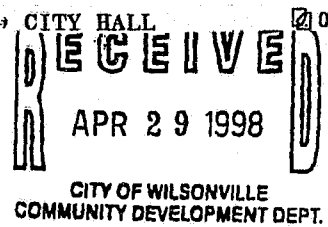


Exhibit B



121 S.W. Salmon, Suite 1020 Portland, Oregon 97204 PHONE 503-225-9010 FAX 503-225-9022

LETTER OF TRANSMITTAL

To: City of Wilsonville **Date:** November 14, 1997
30000 SW Town Center Loop E **Job No.** 94-0310.410
Wilsonville, OR 97070 **Re:** Willamette River Water Supply

Attn.: Mr. Eldon Johansen
Community Development Director

- WE ARE SENDING YOU:**
- Attached
 - Under separate cover
 - Shop Drawings
 - Prints
 - Plans
 - Samples
 - Specifications
 - Copy of letter
 - Change Order
 - _____

Copies	Date	Description
1	4/28/98	Revised Scope of Services

THESE ARE TRANSMITTED as checked below:

- For approval
- For your use
- As requested
- For review/comment
- Approved as submitted
- Approved as noted
- Returned for corrections
- Resubmit_copies for approval
- Submit_copies for distribution
- Return_corrected prints
- _____

REMARKS: ELDON - PLEASE LET ME KNOW IF YOU HAVE ANY COMMENTS ON THIS REVISED SCOPE. THE MOST SIGNIFICANT REVISIONS ARE TO SUBTASK 5.2. THANKS!

COPY TO: _____ SIGNED: Chris H. Uber
 Chris H. Uber, P.E.

**EXHIBIT A
SCOPE OF WORK
PRELIMINARY ENGINEERING AND IMPLEMENTATION PLAN
WILLAMETTE RIVER WATER SUPPLY SYSTEM
CITY OF TIGARD**

GENERAL

The Preliminary Engineering and Implementation Plan for the Willamette River Water Supply System will be organized by the following major work phases and tasks:

PHASE 1 - PARTICIPANT COORDINATION AND COMMITMENTS

Task 1 - Presentations and Meetings to Secure Participant Commitments

Task 2 - Participants' Water Requirements

Task 3 - Conceptual Level Project Cost Estimates

Task 4 - Participant Cost Sharing

Task 5 - Participant Partnering Program

Task 6 - Summary Report

PHASE 2 - PRELIMINARY ENGINEERING AND IMPLEMENTATION PLAN

Task 1 - Project Management and Meetings

Task 2 - Information Compilation and Review

Task 3 - Summary of Prior Work

Task 4 - Project Capacity Requirements

Task 5 - Proposed Project Facilities

Task 6 - Project Cost Estimates

Task 7 - Project Schedule

Task 8 - Financial Evaluation and Analysis**Task 9 - Institutional and Governance Evaluation****Task 10 - Report Preparation and Presentations****Task 11 - Other Project Services**

Detailed descriptions of the individual work tasks and subtasks are presented as follows:

PHASE 1 - PARTICIPANT COORDINATION AND COMMITMENTS**Task 1 - Presentations and Meetings to Secure Participant Commitments**

Under this task, the Engineer will assist the City staff to prepare and make presentations and attend meetings regarding the project. Presentations and meetings are anticipated to be with the staffs and Councils or governing bodies of potential participants with the goal of securing commitments from others to participate in the project. It is anticipated that the Engineer will prepare for such meetings by preparation of graphics, handouts and other project information and will attend up to 10 meetings.

Task 2 - Participants' Water Requirements

Under this task, the Engineer will assist the City staff in consulting with prospective participants regarding their water needs both present and in the future. Information to be obtained will include water demands and schedules for those demands, desires for equity participation in the project versus purchase of surplus water only, points of water delivery, and the potential interest and possible level of participation in oversizing of facilities for future demands. The results of this task will be the development of a project capacity requirements schedule showing initial capacity, future expansion phases and ultimate water production capacity.

Task 3 - Conceptual Level Project Cost Estimates

Under this task, previously developed conceptual level project cost estimates will be updated to reflect the anticipated commitments of the prospective participants to the project. Current conceptual level estimates of project cost for each prospective participant will be developed. An estimate of the cost of water production (operation and maintenance cost) will be made based upon cost data from similar systems. The result of this task will be a summary of conceptual first costs and operation and maintenance costs for each participant based upon the current project concepts.

Task 4 - Participant Cost Sharing

Under this task, the Engineer will assist the City staff with development of an arrangement for the project participants to share in the cost of the preliminary engineering for the project. The Engineer will also assist in providing technical data to support intergovernmental agreements with the participants for the cost sharing and other project participation details.

Task 5 - Participant Partnering Program

Under this task, the Engineer will assist the City staff, provide technical input and support for, and attend a project partnering session with the project participants and other project stakeholders. It is anticipated that this partnering session will be up to two days in length. The fees and expenses of the partnering consultant will be paid by the City.

Task 6 - Summary Report

Under this task, a summary report will be prepared of the work under this project phase. The report will include a recommended project management structure. The report will be presented to the City staff and Council and will also be distributed to the project participants.

PHASE 2 - PRELIMINARY ENGINEERING

Task 1 - Project Management and Meetings

Work under this task includes in-house reviews and task coordination, quality control, coordination with subconsultants, City and project participant staffs, and other agencies, preparation of monthly progress reports, tracking of project costs, updating of project schedules and preparation for, and attendance at various project related meetings not identified otherwise in other work tasks. Work effort is based on the following assumed meetings:

- Initial kick-off meeting
- Monthly participant meetings
- 30% Progress Meeting
- 60% Progress Meeting
- 90% Progress Meeting
- Draft Report Review Meeting
- Final Report Review Meeting
- Final Presentation to City Council
- Final Presentation to Participant Representatives' Meeting

Task 2 - Information Compilation and Review

Work under this task includes the compilation and review of various existing available data and information relating to the project. This information will be compiled from the City, project participants and other agencies and is anticipated to include: prior studies, reports, tests, investigations, plans, maps, surveys, record drawings and documents, water rights applications and permits, land acquisition data, intergovernmental agreements, topographic and bathymetric mapping, aerial photography, applicable regulations, and any other information relevant to the work.

Task 3 - Summary of Prior Work

Under this task, prior work related to the project will be identified and described. Such prior work will consist of regional and sub-regional water studies, intergovernmental agreements and other cooperative efforts of water providers and others, individual participant work related to this project, and other information related to the project.

Task 4 - Project Capacity Requirements

Under this task, the Phase 1 work of establishing project capacity requirements will be documented as will the project capacity needs by participant, for the initial project, future expansions to the system and the ultimate capacity.

Task 5 - Proposed Project Facilities

Subtask 5.1 - River Intake and Raw Water Pump Station

Under this subtask, work will be undertaken to identify alternative sites for a river intake on the north bank of the Willamette River in the vicinity of the City of Wilsonville. The area of investigation will generally be from the Interstate 5 bridge crossing the Willamette River in Wilsonville to a point approximately 2.0 miles upstream. The Riverfront property (Young property) in Wilsonville has been identified as a leading intake site and will be included as one of the alternative sites. The alternative sites will be evaluated and a recommended site identified for this facility based on the results of this work effort. Alternative intake and raw water pump station configurations will be developed and evaluated. Work under this subtask is intended to build on previously completed conceptual studies of proposed intake facilities at the Riverfront property. The preliminary design of the recommended alternative will be developed in further detail. The specific work tasks are as follows:

5.1.1 - Hydraulic Analyses of Willamette River at Recommended Intake Site

- A. Data collection - Obtain from Corps of Engineers, FEMA, the U.S. Geological Survey and others data related to hydrographic surveys, streamflow data, HEC-2 model, dredging and/or disposal records, and aerial photographs. Copies of representative photos and surveys (if they exist) will be obtained.
- B. Hydraulics and geomorphology
- Bank Stability and Geomorphology - The survey information and aerial photographs will be overlaid to compare historic changes in bathymetry and topography. Dredging (if applicable) and hydrologic information will be reduced and applied to periods of time between surveys. The objective of this task is to determine the relative stability or instability of the bankline reaches based on historic records.
 - River Velocity and Stage - Apply the existing HEC-2 model for river stage and current over the range of conditions of interest for this project. This analysis will include representative flood flows such as 2 year, 10 year, 100 year, and 500 year events. The model will also be used to assess low flow conditions when the sweeping velocity past the intake structure and screens may become a critical issue. Existing studies in published journals will be used to estimate the variation in river current within a given cross section of the river at the proposed intake location.
 - Floodway Assessment - Use the HEC-2 model to test up to three different river intake design configurations for floodway impact. Testing proposed structures for a floodway impact includes creating new cross sections in the existing HEC-2 model, running the model to establish the existing condition with the new cross sections, and comparing this existing condition with a model run which includes the proposed structure. For up to three river intake alternative configurations, recommend alternatives for mitigation if the structure produces a measurable floodway impact.
 - Sedimentation - Use Willamette River hydraulics based on the existing HEC-2 model and existing surveys to qualitatively assess sediment transport tendencies. For this conceptual level assessment, no field measurements such as surveying and/or sediment samples will be taken. The results of this assessment will provide an overview rather than a

predicted sediment quantity or rate. Sediment transport is not an exact science and at best, even with extensive field work and modeling, only order of magnitude predictions can be developed.

- C. Navigation issues - Contact and interview local navigators in the area of the proposed intake and research existing navigation channels and practices. Review implications of navigation issues as they may affect intake permitting.

5.1.2 - Topographic and Hydrographic Surveys

Assuming that the hydraulic analyses confirm that the recommended site is suitable for an intake, a topographic and hydrographic survey will be conducted on up to 400 feet of the recommended site fronting the Willamette River. The surveys will extend from approximately top of bank to approximately 150 feet into the river. A topographic and hydrographic map of the surveyed area will be prepared.

5.1.3 - Regulatory and Permit Requirements

Contact the regulatory agencies having interest in the project and determine their anticipated requirements for the project. Depending upon the recommended location of the intake, these agencies are anticipated to include the Oregon Division of State Lands, the Corps of Engineers, the Oregon State Department of Fish and Wildlife, the National Marine Fisheries Service, the Oregon State Marine Board, the U.S. Department of Fish and Wildlife, the City of Wilsonville and Clackamas County.

5.1.4 - Alternative River Intake and Raw Water Pump Station Concepts

Based upon the site conditions, previously completed conceptual work, anticipated regulatory requirements and constraints, and initial and ultimate pumping requirements, develop up to three alternative intake and pump station concepts that could potentially be implemented at the recommended site. Prepare to-scale plan, elevation and section sketches of the alternatives. Develop conceptual level estimates of cost for each alternative. Prepare an analysis of the alternatives based upon costs and non-cost factors. Recommend the best alternative for which a preliminary design will be developed.

5.1.5 - Geotechnical Investigation

In addition to the geotechnical reconnaissance work to be performed under Task 5.4.7, which includes the recommended river intake and raw water pump station facility site, perform subsurface explorations at the recommended intake site. The work will consist of a single boring at the river bank at the approximate recommended

site of the facility. The boring depth is estimated to be approximately 60 feet. A report documenting the existing conditions encountered will be prepared.

5.1.6 - Preliminary Design

Develop the preliminary design for the recommended river intake and raw water pump station alternative. Prepare plan, elevation and section drawings to approximately the 10% level of design completion for the facility. Prepare a description of the facility including the fish protection screens, screen cleaning system, pumping system, electrical power supply system, piping and valves, surge control system, architectural concepts, instrumentation and control, access provisions to the facility and site, security provisions, and appurtenant systems and facilities.

5.1.7 - Facility Oversizing

In the development of the recommended river intake and raw water pump station alternative, consider oversizing the facility beyond its initial required capacity. Oversizing may be desired by some or all of the project participants and may be the most economical approach to avoid costly future work in the river and the need to obtain permits for the project again at some future date. Recommend the oversizing to be included in the project considering the above, the desires of the participants, the cost of oversizing and other factors.

5.1.8 - Property Acquisition, Permits, and Approvals

Identify the property acquisition requirements for the river intake and raw water pump station at the recommended site. The anticipated permits and approvals required to allow for construction of the facility will be identified and the known or anticipated requirements summarized. Particular attention will be paid to requirements which limit the time of construction within the river.

5.1.9 - Project Cost Estimates

Develop an estimate of the project cost for the proposed river intake and raw water pump station facility and identify the portion of those costs that are attributable to oversizing of the facility for future capacity. Prepare estimates of operations and maintenance costs over a 20-year period.

5.1.10 - Technical Memorandum

A technical memorandum will be prepared summarizing the results of this subtask.

Subtask 5.2 - Water Treatment Plant

Work under this subtask focuses on providing additional information to reduce uncertainties associated with previous conceptual designs and provide a further defined water treatment plant cost estimate. Work will be based on the assumption that the treatment plant will be constructed on the Riverfront site for which preliminary site survey, geotechnical, environmental and layout work has been conducted. Additional investigations of survey, preliminary geotechnical, preliminary environmental work and preliminary layouts must be conducted if an alternative treatment plant location is selected.

5.2.1 - Update Prior Water Quality Studies

Previous pilot testing, water quality monitoring and facilities studies will be reviewed and the conditions and recommendations updated based on newly available information. This information includes the US EPA's November 1997 proposal for disinfection byproducts and microbial regulations and the USGS's 1996 report on water quality monitoring in the Willamette Basin. Previous recommendations will be reviewed to assure continued adequacy of the proposed treatment process in light of this new information.

5.2.2 - Design Criteria

Based on the review conducted in subtask 5.2.1, proposed design criteria for the water treatment plant will be summarized. These criteria include filtration flow rates, ozone dosage rates, GAC regeneration frequency, flocculator energy input and other parameters needed to define the scope and cost of the treatment process.

5.2.3 - Design and Operational Issue Review

Issues which have not previously been resolved in conceptual designs of the treatment plant and which could impact project costs will be reviewed, analyzed and resolved with the project team. These include:

- Decisions on the four different concepts of how to use the Riverfront site and its transition from initial to ultimate plant capacity.
- Clearwell size.
- Relationship of raw and finished water pumping location. Can they be located in one building on top of the clearwell?
- Electrical service issues such as source of primary power, source of standby power and the need for an onsite power substation.
- How will plant overflows be handled.

- Sewer and storm drainage requirements.
- How will the administration/operations building function and look considering size, usage, office space requirements, lab space, maintenance and shop space needs.
- Will lagoons be acceptable for solids handling?
- What will be required in the way of site improvements including landscaping, roads, fencing, aesthetics and nature trails.
- SCADA and I&C issues.
- Plant operation philosophy.

5.2.4 - Cost Estimate

Based on subtasks 5.2.2 and 5.2.3, an updated cost estimate for the water treatment plant will be prepared. The estimate will include capital, operating and maintenance costs. Costs will be apportioned to contributing project participants based on their proportional share of facilities.

5.2.5 - Proposed Water Treatment Plant Description

A technical memorandum will be prepared summarizing the results of this subtask.

Subtask 5.3 - High Service Pump Station

Under this subtask, the high service pump station configuration will be developed. The specific work tasks will be as follows:

5.3.1 - Hydraulic Modeling

Develop a computerized hydraulic model of the high service pump station and finished water transmission system. The model will be utilized to determine the initial and future pumping parameters including flows and pressures considering variables such as pipeline diameters, pipeline lengths, terminal storage facilities, points of delivery, flows at these points of delivery, and additional future transmission capacity. A computerized surge analysis will be performed to establish hydraulic transients that can be anticipated in the pumping and transmission system. The modeling will be coordinated with Subtask 5.4 to establish recommended pipeline capacities and diameters.

5.3.2 - Preliminary Design

Develop the preliminary design for the high service pump station. Prepare plan, elevation and section drawings to approximately the 10% level of design completion for the facility. Prepare a written description of the facility including the pumps

(type, approximate capacity and horsepower), piping and valves, surge control system, electrical power supply system, architectural concepts, instrumentation and control, and appurtenant systems and facilities.

5.3.3 - Facility Oversizing

Consider oversizing the facility beyond its initial capacity. Recommend the oversizing to be included in the project considering the cost and the desires of the participants.

5.3.4 - Project Cost Estimates

Develop an estimate of the project cost for the high service pump station and identify the portion of those costs that are attributable to oversizing of the facility for future capacity. Prepare estimates of operations and maintenance costs over a 20-year period.

5.3.5 - Technical Memorandum

A technical memorandum will be prepared summarizing the results of this subtask.

Subtask 5.4 - Raw and Finished Water Transmission Mains

Under this task, various potential routing alternatives for the raw and finished water transmission mains will be identified and analyzed. Final routing candidates will be screened to three primary alternatives, from which a single preferred route will be identified which best balances the various needs, goals and interests of the project. Recommendations will be made with respect to main sizing for both initial and future capacity needs. Hydraulic analyses will be conducted to optimize sizing of the raw and finished water transmission mains.

Anticipated subtasks are outlined as follows:

5.4.1 - Information Gathering and Review

Compile, inventory and review available pertinent information relative to the project. The information to be collected will include:

- Recent aerial photography of pipeline corridors
- USGS topographical quadrangle mapping
- Clackamas and Washington Counties assessors tax lot maps and ownership data
- U.S. Department of Interior National Wetlands Inventory mapping

- City street maps, comprehensive land use plan and zoning maps, and city utility maps and master plans and City transportation system plans
- Maps from other utilities including fiber optic cable, high pressure natural gas and petroleum pipelines
- Other

5.4.2 - Route Evaluation Work Sheets and Conceptual Maps

Develop composite work maps overlaying topographic base mapping with existing utility, wetlands, environmental and land ownership information, noting various locations of existing railroads, major waterways and other significant features. Develop composite working map from existing aerial topography and correlate with topographic composite base to aid in preliminary identification of routing alternatives.

5.4.3 - Interties, End Connections and Appurtenances

Develop concepts for end connections, isolation valves, air/vacuum relief valves, drains and other appurtenances and interties to existing and future facilities.

5.4.4 - Identification and Preliminary Screening of Routing Alternatives

Using mapping worksheets prepared in previous tasks, routing alternatives will be identified. Routing alternatives will generally follow existing roadway corridors. Cross country routes and identified future roadway corridors will also be considered. Any apparent "fatal flaws" will be noted and investigated. Routes containing apparent "fatal flaws" based on map reviews, preliminary environmental and permitting reviews and/or preliminary reconnaissance will be preliminarily screened from further consideration. Apparent sound alignments will be illustrated on composite mapping for review with project staff.

5.4.5 - Preliminary Hydraulic Evaluation

A hydraulic analysis will be made for the screened routes to establish the appropriate pipeline sizing for the respective route length and associated hydraulic conditions. Final route alignment recommendations will include the identification of needed minimum pipe sizes to accommodate the required initial capacity requirements as well as oversizing capacity requirements. This work will be coordinated with the hydraulic modeling to be performed under Subtask 5.3.

The hydraulic analysis will consider the system's long range supply capacity projection of approximately 120 million gallons per day (mgd), anticipating that such ultimate capacity will be provided through the initial pipeline and another pipeline or pipelines in the future. The analysis will consider the initial terminal storage being Tigard's 10 million gallon (MG) reservoir as well as other present or future storage

facilities. The analysis will consider the anticipated present and future points of water delivery.

5.4.6 - Preliminary Environmental/Permitting Evaluation

A comprehensive approach will be taken to integrate environmental and land use factors into the selection of alternative pipeline routes in order to provide the best assurance that the route selected can be successfully permitted.

Generally, the approach of integrating environmental factors into the pipeline alternatives selection includes conducting an environmental sensitivity analysis for each alternative identified. This will identify the environmental issues that will need to be addressed for each alternative. Based on the sensitivity analysis, the costs and benefits related to environmental impacts and required mitigation can be incorporated into the overall cost/benefit analysis for comparison of each pipeline alternative. This approach will also allow for reconfiguration of the pipeline alternatives to avoid or reduce potential project impacts on the environment prior to conducting the comparison of alternatives for purposes of selecting a route. The environmental sensitivity analysis is proposed to be conducted by addressing the following environmental issues:

- Archeological resources
- Flood plains
- Fish resources
- Land use
- Historical resources
- Mineral and aggregate resources
- Sensitive, threatened and endangered species
- Wetlands

5.4.7 - Geotechnical Reconnaissance

A geotechnical reconnaissance will be conducted for the entire project including the alternative intake and water treatment plant sites. The reconnaissance will include characterization of soil conditions based on available information, visual assessment of site materials, coordination and interpretation with design engineers, and presentation of results in report format. Work tasks are described below:

Research of Available Information - Examine existing literature available. Including the following:

- Previous soils reports in the area,
- Published geological maps and reports concerning the area,

- Soil conservation service maps,
- Seismic maps,
- Topographic maps,
- Other data as available.

Visual Assessment - A brief reconnaissance of key sites related to the project will be conducted. These sites include the intake area along the Willamette River as well as the potential treatment plant and stream river crossing areas. Site materials and land forms will be evaluated by on-site visual interpretations performed by technical personnel familiar with the region and construction activities similar to those proposed for this project. Erosion scarps and cut slopes along existing facilities throughout the proposed alignments will be evaluated for soil conditions, excavation characteristics, and general factors regarding construction issues. Observation notes will be recorded on appropriate plans or aerial topographic maps.

Reconnaissance Report - The soil characterizations and related information obtained will be presented in a report. The focus of the report will be the comparative construction factors of potential alignments, and pertinent geotechnical aspects of the sites for the proposed facilities.

5.4.8 - Review of Preliminary Alternatives

Review of preliminary alignment alternatives will be made with project staff.

5.4.9 - Preliminary Evaluation of Alternatives

With project staff comments on preliminary alignments, further evaluation will be made to establish the apparent best three route alternatives. The final three alternatives will be established based on evaluation and assessment of the apparent best balance with respect to all the various key issues, concerns and project goals.

5.4.10 - Pipeline Materials Evaluation

An evaluation will be made of alternative pipeline materials for the project and recommendations will be made for pipeline materials for the project.

5.4.11 - Traffic impacts

Preliminary evaluations of traffic impacts and roadway conditions associated with each of the routing finalists will be made. General reviews will be made with Clackamas and Washington Counties and the impacted city jurisdictions to establish anticipated constraints.

5.4.12 - Corrosion Potential Review

Based on available soils mapping and other utility information, identify areas where special pipeline corrosion protection measures may be required either due to existing corrosive ("hot") soils, or stray currents induced by active cathodic protection systems on other utilities or by power substation grounding systems. Incorporate relevant findings into relative cost evaluations for respective alternatives.

5.4.13 - Land Parcel Mapping/Easement Assessments

County tax lot mapping to identify potential easement requirements for selected route finalists will be compiled. Assuming routing through existing roadway rights-of-way, easement requirements may be minimal. Cross country routes will require substantial easement acquisition. Rough estimates of potential cost for easement acquisition to aid in comparative alternative evaluations will also be developed.

5.4.14 - Cost/Benefit Analysis

A relative cost/benefit analysis will be performed for the three finalist route alternative candidates. The analysis will consider, among other potential factors, the following:

- Length of pipe
- Backfill requirements
- Surface restoration requirements
- Length of confined corridor (translating to higher unit construction costs)
- Number of potential utility, highway and railroad crossings
- Number of potential creek and river crossings
- Number of private property easements required and total length of potential easements
- Potential environmental mitigation measures
- Potential utility relocation requirements
- Traffic control requirements
- Appurtenances (number and type)
- Interties
- Potential corrosion protection requirements
- Potential special seismic related design features
- Potential rock excavation
- Potential crop damage costs
- Potential protective measures to existing utilities
- Potential construction length through sensitive lands
- Special costs anticipated for permit compliance

- Potential corrosion protection requirements
- Other potential special circumstances which may influence relative costs

5.4.15 - Schedule Evaluation

Each of the three final route alternatives will be evaluated with respect to anticipated project schedules, considering engineering and designs required for the production of final construction documents, anticipated time frames for permit and easement acquisitions and construction.

5.4.16 - Routing and Conduit Alternatives Summary

The routing alternatives, the issues considered, analysis methodologies, and selection criteria will be presented and discussed. The various routing alternatives will be illustrated on a map of the area, showing roadway names, key geographical features, known sensitive, environmental and archeological areas and other key information associated with the proposed pipeline routing. The previously noted regulatory requirements and other applicable standards having a bearing on the routing analysis work will be summarized.

5.4.17 - Selection of Preferred Alternative

Of the three alternative route finalists, a single route will be recommended to the project staff as the preferred alignment.

5.4.18 - Project Cost Estimates

Develop an estimate of the project costs for the raw and finished water transmission mains and identify the portion of those costs that are attributable to oversizing of the facility for future capacity. Prepare estimates operations and maintenance costs over a 20-year period.

5.4.19 - Technical Memorandum

A technical memorandum will be prepared summarizing the results of this subtask.

Subtask 5.5 - System Operations and Control Facilities

Under this subtask, the facilities recommended for system operations and control will be identified. These facilities will include a SCADA (system control and data acquisition system) system and metering facilities. Estimates of the project costs for these facilities will be prepared. Prepare estimates operations and maintenance costs over a 20-year period.

Subtask 5.6 - Permits, Approvals and Land Acquisition

Under this subtask, a summary of the permits, approvals and land acquisition requirements for the various elements for the project will be prepared.

Subtask 5.7 - Oversizing of Facilities

Under this subtask, a summary of the oversizing of the various elements of the project and their respective project costs will be prepared.

Subtask 5.8 - Interim Short Term Water Service to the City of Wilsonville and State Prison Facility.

A system has been proposed and is presently being discussed by members of the Willamette Water Supply Agency and the State of Oregon Department of Corrections to provide for interim short term water supply to the City of Wilsonville and to the proposed State Corrections Facility in Wilsonville. Under this subtask, the system will be described and included within the finished water pipeline routing analysis and other work in Subtask 5.4. Project cost estimates will be prepared on the interim system and the interim facilities will be addressed in the schedule, procurement and financial elements of this study.

Subtask 5.9 - Construction Contract Organization

Under this subtask, recommendations for facility construction contract organization will be made. These recommendations will consider the types of construction, the capabilities of the construction contractors in the region, the project schedule requirements, materials and equipment acquisition lead times, and other factors. Recommendations for project construction organization will be made based upon the above considerations. The recommended organization will be identified in the project schedule.

Task 6 - Project Cost Estimates***Subtask 6.1 - Capital***

Under this subtask, the estimates of cost for the project facilities will be summarized. These estimates will include construction costs and appropriate allowances for engineering, administration, contingencies and inflation to adjust to the estimated time of construction. Allowances for other project costs such as property acquisition will also be included. Costs to oversize facilities for future capacity will also be included.

Subtask 6.2 - Operation and Maintenance

Under this subtask, estimates of operations and maintenance costs for the system will be summarized based upon forecasts of actual water production from the system from initial operation to 20 years of operation.

Task 7 - Project Schedule

Under this task, a detailed project schedule will be developed from completion of the preliminary engineering work to the completion of construction and facility startup.

Task 8 - Financial Evaluation and Analysis

The development of a regional water supply system requires a concurrent financial and institutional structure to manage, construct, and operate the regional facilities. The financial approach to the project, in terms of funding mechanisms, rates and charges, and impacts on participants is closely tied to the institutional structure selected, which then must consider Oregon's statutory, and State and Federal taxation parameters. For example, the legal form of a regional agency managing and/or owning the project may facilitate or eliminate certain capital financing options or approaches to rates and charges. Similarly, the desire or intent to use a particular funding mechanism, such as central issuance of tax-exempt bonded debt, may preclude certain institutional models from further consideration. Then there might be the option to form a 501 (c) non-profit corporation which can be formed in a way to be eligible to sell tax-exempt bonds, and also can build projects without prevailing wage constraints (thus less costly).

The focus on financial options will address capital funding mechanisms, allocation of costs, cost recovery mechanisms, and resulting impacts on participants within the selected institutional or governance approach, or options. The cost recovery mechanisms considered would include the use of system development charges (SDC's) and wholesale rates or service charges. In each case, these could be developed and applied at a local or regional level. In addition, the evaluation will also examine necessary financial elements of the relationship among parties, in terms of access to capacity, capacity commitments, and transfers of capacity.

The following subtasks outline the elements of the financial evaluation and analysis.

Subtask 8.1 - Financial Policy Evaluation

The policy issues related to project funding include:

- *Method of Financing* - Is the project to be funded through central (regional) borrowing or through funding by participants? If by participants, are shares linked to current or future capacity requirements, or established by external factors such as ability to pay?
- *Nature of Participation* - Do participants own explicit shares of the project, or is capacity generally available as growth occurs? Are there mechanisms for transferring capacity in the future, and if so under what form of compensation?
- *Financial Administration* - Will there be a financial center (e.g. separate agency or enterprise fund) for the regional facility? What are the financial objectives for the regional enterprise? For example, will fiscal policies address working capital, operating and emergency capital reserves, and perhaps full funding of annual depreciation for system rehabilitation and replacement?
- *Cost Recovery Alternatives* - Will SDC's be established at a regional or local level, and if privatization or a non-profit corporation is formed, what will be the form of capital recovery from new development? Will regional wholesale charges include capital components? What rate structure is appropriate and equitable? How will future capital needs, including replacements, be funded?
- *Consistency with Institutional Structure* - Is the desired financial approach consistent with the institutional approach being undertaken?

To address these and other financial issues which will arise, a policy review process will be conducted that will focus around the development of issue papers. Meetings will be held to review key financial issues and develop an agenda of issue papers to be written. After initial drafts of these issue papers have been developed, meetings or workshops will be held with a policy committee to evaluate the issues and alternatives, and then develop a recommendation. Typically, the issue papers evolve through this process, culminating in a well-defined and documented policy decision. This process is described below.

- *Identify and Evaluate Key Policy Issues* - Develop an initial list of policy issues, and draft a sample issue paper. Conduct an initial meeting to discuss general issues and concerns, resulting in an agenda of issue papers to be developed.
- *Develop and Review Issue Papers* - Develop initial issue papers with consultant recommendations. Conduct up to three meetings to review policy issues and alternatives, and develop group recommendations or decisions. Develop additional issue papers as topics are raised or identified.

- *Document Policy Decisions in Final Issue Papers* - Finalize issue papers to incorporate evaluation and decisions of the committee.

Subtask 8.2 - Capital Funding Evaluation

The capital funding evaluation is intended to assist the participants in evaluating financing options available to them as individuals and as a regional enterprise. Since the participants have their respective financial advisors and bond counsel who will address the feasibility and cost of various financial arrangements, we will focus on the implications on costs to participants and the ability to use various cost recovery mechanisms. We will specifically develop an analysis of SDC's (related solely to this project) from both a regional and local perspective, and a comparison of debt service and capital related revenue requirements for centralized and localized funding responsibility.

The following subtask work elements will be completed:

- *Identify Project Costs and Funding Requirements* - Establish projected capital costs, operating and administrative costs, and project schedule. Identify potential financing approaches and determine costs and security requirements for each.
- *Develop Regional and Agency SDC's* - Based on project costs and capacity, develop an SDC for the regional supply project. Develop comparable local SDC's for participants based on participation shares, if different. Develop an issue paper addressing potential impact of the regional SDC on existing local water system SDC's.
- *Evaluate Financing Alternatives* - Develop a forecast of project revenue requirements under alternative funding scenarios. Identify related issues such as risk-sharing, security provisions, and default contingencies. Review financial and related findings with the policy committee.
- *Certificate of Participation Funding* - Evaluate State of Oregon Certificate of Participation (COP) funding option that is potentially available through the Department of Corrections. Identify potential advantages and disadvantages and make recommendations on further action with respect to this funding approach.

Subtask 8.3 - Evaluation of Impacts on Agencies

The ultimate financial impact of the project on participating agencies will depend on the financial and institutional arrangements chosen. In particular, the method of financing and basis for allocating costs to participants are critical to the resulting cost-

sharing arrangements. This task will focus on determining impacts on participants, in terms of initial and projected revenue requirements. In general, it will not evaluate rate impacts at the local level, but will identify the revenue stream which would be required from each agency. Up to three alternative funding arrangements will be analyzed. The work will include the following:

- *Identify Project Cost Allocations* - Identify the basis for allocating project capital costs and operating costs among participants for each scenario to be analyzed.
- *Allocate Revenue Requirements* - For each scenario, identify total revenue requirements and allocated shares for each utility. Develop summary indicators (e.g. \$/100 cubic feet (ccf) or \$/mgd) to describe the net impacts on participants.

Task 9 - Institutional and Governance Evaluation

Institutional and governance issues are very germane to the long-term working relationship, costs of capital and service, and relative owner/provider control for any regional water facility. In tandem with the Financial Evaluation and Analysis task for the Willamette River Water Supply System, the form of governance and institutional options will be evaluated. The purpose of this task is to provide the prospective owner(s) and provider(s) with options to ownership and operations, which might have both institutional and cost benefits that need to be considered before a final intergovernmental agreement is reached between the parties. The types of institutional options proposed to be evaluated include:

- Owner - provider organization
- Intergovernmental partnership
- Joint operating agency
- 501 (c) non-profit corporation
- Design, build, operate (DBO) - private owner and operator

The research and evaluation will focus on the following issues:

- Statutory authority (no legal opinion, just ORS research findings)
- Voting, membership and control
- Asset ownership, and operations and maintenance
- Financial risk sharing
- Capital financing options

- Other tangible benefits or weaknesses, such as cost of capital impacts.

Where appropriate, implementation considerations will be evaluated. For example, the DBO and 501 (c) non-profit corporation options are not government agency options, so there are issues of government control versus potential construction and operating cost savings.

The following task plan outlines the elements of the institutional and governance evaluation.

Subtask 9.1 - Research and Documentation

Each of the agreed upon institutional options listed will be researched in terms the primary issues noted above. The research will include contacting agency bond counsels and financial advisors to obtain relevant information that they can provide, but also an independent and objective research of the issues from statutory, financial and governance perspectives will be conducted.

Part of this analysis may create added financing scenarios for inclusion in the financial evaluation and analysis tasks. The objective however, will be to document the differences between the institutional scenarios in order for the respective agencies to have enough information to determine how they want to work together under some form of long-term arrangement. Since there are anticipated to be at least three and up to five participants in the regional water supply system, the issues of ownership, governance/decision making, and economic benefit need to be understood by all parties.

Subtask 9.2 - Matrix Preparation and Presentation

The research and documentation will be summarized into a matrix and supplemented with narrative discussion on key benefits and weaknesses of each institutional or ownership option. The findings and conclusions will be presented to the agencies in a workshop forum for review and discussion. The objective of the workshop, which may take more than one meeting, will be to determine if there are any institutional options with potential governance and cost or economic benefits which should be added to the scope and should be incorporated into the capital funding and agency impact analysis.

Subtask 9.3 - Revision and Issue Paper Preparation

A final issue paper with each of the institutional options, added research as needed, and the documentation, cost and economic impact findings will be prepared for

inclusion in the overall study report. It is anticipated that the scenario which the agencies support for implementation will be determined at this point, in order that the financial planning options evaluation can be completed.

Task 10 - Report Preparation and Presentations

Subtask 10.1 - Technical Report

Under this subtask, a technical report summarizing all of the previous work tasks will be prepared. This report will include drawings, maps, preliminary plans, and other graphics to support the written text. Up to 10 copies of the draft technical report will be prepared for City review and comments. Up to 25 copies of the final technical report will be prepared and submitted to the City.

Subtask 10.2 - Executive Summary

Under this subtask, an executive summary will be prepared. This document will provide a summary of the findings of the technical report and will include appropriate illustrations from the technical report that are appropriate for the summary document. Up to 20 copies of the draft executive summary will be prepared for City review and comments. Up to 50 copies of the final executive summary will be prepared and submitted to the City.

Subtask 10.3 - Presentations

Under this subtask, the Engineer will prepare for and make presentations on the final report. Presentations are anticipated to be with the staffs and Councils or governing bodies of the project participants. It is anticipated that the Engineer will make up to 5 presentations.

Task 11 - Other Project Services

The Engineer will provide engineering support to the City, the project participants and the Willamette Water Supply Agency on other elements of the project as requested. This work may include the following described subtasks:

Subtask 11.1 - Partnering Participation

The Engineer will participate as requested in any partnering process regarding the project. A budget of \$3,000 is suggested for this subtask.

Subtask 11.2 - Public Information Program Support

The Engineer will assist as requested with support for the public information program for the project. The scope of this work cannot be defined at this time. A budget of \$7,500 is suggested for this subtask at this time. As further scope details are confirmed, this budget can be adjusted accordingly.

Subtask 11.3 - Pilot/Demonstration Water Treatment Plant

A pilot/demonstration water treatment plant may be utilized to assist with and support the public information program. The concept is to demonstrate the effectiveness of treatment of the Willamette River water. An existing pilot plant facility, owned by the Portland Water Bureau and currently located at Lusted Hill, could be prepared for operation and demonstration at the Willamette River. This assumes that the Portland Water Bureau will provide the pilot plant facility for the project. The trailer housing the plant would be located on the Willamette River site off of Boones Ferry Road that was previously used for a pilot study. No budget is assigned to this subtask. If the project participants determine that this work is of benefit to the project, a detailed scope and budget will be established for this work.

Subtask 11.4 - Raw Water Quality Monitoring Program

Monitoring of the raw water quality in the Willamette River was conducted for some time by the Tualatin Valley Water District. That monitoring was discontinued. The project participants may desire to reestablish this program. The Engineer will provide the support to accomplish this work. No budget is assigned to this subtask. If the project participants determine that this work is of benefit to the project, a detailed scope and budget will be established for this work.

Subtask 11.5 - Resolution of Pre-1909 Water Rights Claims Support

Implementation of this project is anticipated to require some resolution of pre-1909 water claims by the Portland General Electric Co. and possibly others at Willamette Falls downstream of the proposed water diversion near Wilsonville. The Engineer will provide engineering support to the participants and the Willamette Water Supply Agency to assist its legal counsel in resolution of this matter. A budget of \$2,500 is suggested for this subtask at this time. As further scope details are confirmed, this budget can be adjusted accordingly.

Subtask 11.6 - Willamette Water Supply Agency Support

The Engineer will provide engineering support to the Willamette Water Supply Agency if such services are desired. These services may include engineering support to the Agency and its legal counsel in the development of intergovernmental agreements between the project participants as necessary to accomplish the project. No budget is assigned to this subtask. If the project participants and the Agency determine that this work is of benefit to the project, a detailed scope and budget will be established for this work.

Subtask 11.7 - Property Acquisition Support

The Engineer will provide engineering support to the project as necessary for the acquisition of real property. No budget is assigned to this subtask. If the project participants determine that this work is of benefit to the project, a detailed scope and budget will be established for this work.

Exhibit C

Wilson

ORIGINAL

I. PROPOSED WWSA 1998-99 Work Program and Budget (WWSA Member Share Allocations)

Canby Utility Board	3.526%	\$ 6,417
Clackamas River Water	17.128%	\$ 31,173
Gladstone	1.363%	\$ 2,481
Sherwood	5.133%	\$ 9,342
Tigard	11.360%	\$ 20,675
Tualatin	5.311%	\$ 9,666
Tualatin Valley Water Dist.	56.179%	\$102,246

II. WATER TREATMENT PLANT PROJECT COST ALLOCATIONS (Project Participants Only)

Agency	Capacity Share (mgd)	Cost Allocation	Prelim Eng	Raw Water Monitoring	Public Info Cost Allocation	Public Information	Total*
Tigard	20	42%	158,883	13,715	52.5%	98,175	270,773
Wilsonville	10	20%	73,418	6,338	0	0	79,756
Tualatin	5	11%	42,168	3,640	13.75%	25,713	71,521
Sherwood	5	11%	42,168	3,640	13.75%	25,713	71,521
TVWD	0	16%**	59,864	5,168	20%	37,400	102,432
WWSA			7,500 #	32,500 #		35,500 #	75,500
Total			384,000	65,000		222,500	671,500

* Total does not include the agency's share of the costs included in the WWSA budget.

** Based on allocation of costs of oversizing intake and transmission lines.

These amounts from the Murray Smith preliminary engineering contract, the Montgomery Watson water quality monitoring, and the Rocky Bowler public information contracts are allocated among all WWSA members. See WWSA budget.

III. TOTAL COST TO WWSA MEMBERS & PROJECT PARTICIPANTS (I + II)

Share of	WWSA Budget	WTP Project	Total
Tigard	20,675	270,773	291,448
Tualatin	9,666	71,521	81,187
Sherwood	9,342	71,521	80,863
TVWD	102,246	102,432	204,678
Gladstone	2,481	0	2,481
Canby Utility Bd.	6,417	0	6,417
CRW	31,173	0	31,173
Wilsonville	0	79,756	79,756

I. **PROPOSED WWSA 1998-99 Work Program and Budget**
ALTERNATE #1 (WWSA Member Share Allocations)
(Detail attached)

Reduced

Canby Utility Board	3.526%	5,712
Clackamas River Water	17.128%	27,747
Gladstone	1.363%	2,208
Sherwood	5.133%	8,315
Tigard	11.360%	18,403
Tualatin	5.311%	8,604
Tualatin Valley Water Dist.	56.179%	91,010

II. **WATER TREATMENT PLANT PROJECT COST ALLOCATIONS**
(Project Participants Only)

No Change

Agency	WTP Share (mgd)	Cost Allocation	Prelim Eng	Raw Water Monitoring	Public Info Cost Allocation	Public Info	Total*
Tigard	20	42%	158,883	13,715	52.5%	98,175	270,773
Wilsonville	10	20%	73,418	6,338	0	0	79,756
Tualatin	5	11%	42,168	3,640	13.75%	25,713	71,521
Sherwood	5	11%	42,168	3,640	13.75%	25,713	71,521
TVWD	0	16%**	59,864	5,168	20%	37,400	102,432
WWSA			7,500#	32,500#		35,500#	75,000
Total			384,000	65,000		222,500	671,000

* Total does not include the agency's share of the costs included in the WWSA budget.

** Based on allocation of costs of oversizing intake and transmission lines.

These amounts from the Murray Smith preliminary engineering contract, the Montgomery Watson water quality monitoring, the Rockey Bowler public information, and the WWSA Executive Director contracts are allocated among all WWSA members. See WWSA budget.

III. **TOTAL COST TO WWSA MEMBERS & PROJECT PARTICIPANTS (I + II)**

Share of	WWSA Budget	WTP Project	Total
Tigard	18,403	270,773	289,176
Tualatin	8,604	71,521	80,124
Sherwood	8,315	71,521	79,836
TVWD	91,010	102,432	193,442
Gladstone	2,208	0	2,208
Canby Utility Bd	5,712	0	5,712
CRW	27,747	0	27,747
Wilsonville	0	79,756	79,756

I. PROPOSED WWSA 1998-99 Work Program and Budget
ALT. #2
 (WWSA Member Share Allocations) (Detail attached)

Reduced

Canby Utility Board	3.526%	\$ 4,302
Clackamas River Water	17.128%	\$ 20,896
Gladstone	1.363%	\$ 1,663
Sherwood	5.133%	\$ 6,262
Tigard	11.360%	\$ 13,859
Tualatin	5.311%	\$ 6,479
Tualatin Valley Water Dist.	56.179%	\$68,538

II. WATER TREATMENT PLANT PROJECT COST ALLOCATIONS
 (Project Participants Only)

Column added

Increase

Agency	WTP Share (mgd)	Cost Allocation	Prelim Eng	Raw Water Monitoring	Public Info Cost Allocation	Public Info	Exec. Director	Total*
Tigard	20	42%	158,883	13,715	52.5%	98,175	21,000	291,773
Wilsonville	10	20%	73,418	6,338	0	0	0	79,756
Tualatin	5	11%	42,168	3,640	13.75%	25,713	5,500	77,021
Sherwood	5	11%	42,168	3,640	13.75%	25,713	5,500	77,021
TVWD	0	16%**	59,864	5,168	20%	37,400	8,000	110,432
WWSA			7,500#	32,500#		35,500#	40,000#	115,500
Total			384,000	65,000		222,500	80,000	751,500

* Total does not include the agency's share of the costs included in the WWSA budget.

** Based on allocation of costs of oversizing intake and transmission lines.

These amounts from the Murray Smith preliminary engineering contract, the Montgomery Watson water quality monitoring, the Rocky Bowler public information, and the WWSA Executive Director contracts are allocated among all WWSA members. See WWSA budget.

III. TOTAL COST TO WWSA MEMBERS & PROJECT PARTICIPANTS (I + II)

Share of	WWSA Budget	WTP Project	Total
Tigard	13,859	291,773	305,632
Tualatin	6,479	77,021	83,500
Sherwood	6,262	77,021	83,283
TVWD	68,538	110,432	178,970
Gladstone	1,663	0	1,663
Canby Utility Bd.	4,302	0	4,302
CRW	20,896	0	20,896
Wilsonville	0	79,756	79,756