



GR0031 09

OREGON WATER RESOURCE DEPARTMENT
WATER CONSERVATION, REUSE AND STORAGE
GRANT PROGRAM

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WATER RESOURCES DEPT
SALEM, OREGON

I. Grant Information

Project Name: East Damascus Regional Water Reuse and Wastewater Management Feasibility Study

Type of Grant Requested: Water Conservation Reuse Above Ground Storage
 Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]

Program Funding Dollars Requested: \$ \$75,000 Total cost of planning study: \$ \$150,000

Note: Request may not exceed \$500,000

II. Applicant Information

Applicant Name: <i>Anita Yap, Community Development Director</i>	Co-Applicant Name:
Organization: <i>City of Damascus</i>	Organization:
Address: <i>19920 SE Hwy 212 Damascus, OR, 97089</i>	Address:
Phone: <i>503-658-8545</i>	Phone:
Fax: <i>503-658-5768</i>	Fax:
Email: <i>ayap@ci.damascus.or.us</i>	Email:

Fiscal Officer Name: <i>Dan O'Dell, Finance Director</i>	Principle Contact: <i>Dave Green</i>
Organization: <i>City of Damascus</i>	Organization: <i>CH2M HILL</i>
Address: <i>19920 SE Hwy 212 Damascus, OR, 97089</i>	Address: <i>2020 SW 4th Ave Portland OR 97201</i>
Phone: <i>503-658-8545</i>	Phone: <i>503-872-4440</i>
Fax: <i>503-658-5786</i>	Fax: <i>503-223-1494</i>
Email: <i>dodell@ci.damascus.or.us</i>	Email: <i>Dave.Green1@ch2m.com</i>

Certification:

I certify that this application is a true and accurate representation of the proposed work for a project planning study and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department grant and are prepared to implement the project if awarded.

Applicant Signature: *Anita Yap / City of Damascus* Date: 8/29/2008

Print Name: Anita Yap Title: Community Development Director

III. Planning Study Summary

Please give a brief summary of the planning study using no more than 150 words.

The eastern side of the newly formed City of Damascus is semi-rural and far from existing water and wastewater infrastructure, but prime for development as Damascus formulates their first Comprehensive Plan. A regional cooperative wastewater/water reuse plan could provide reclaimed water and wastewater facilities for East Damascus while helping to meet a significant portion of the water supply needs for the surrounding communities. This feasibility study will investigate separate but related opportunities for Southeast as well as Northeast Damascus, evaluating reuse options and partnership opportunities as Damascus seeks to solve the wastewater collection and treatment issues in combination with reclaimed water solutions.

Wastewater solutions for Southeast Damascus include upgrades of the existing Clackamas County treatment facility in Boring, production of reclaimed water, partnerships with Sunrise Water Authority, and distribution back into Damascus. Solutions for Northeast Damascus include partnerships with Gresham and Troutdale, and possible satellite water reclamation facilities.

IV. Grant Specifics

Section A. Common Criteria

Instructions: Answer all questions in this section by typing the answer below the question. It is anticipated that completed applications will result in additional pages.

1. Describe how the planning study will be performed. Include:
 - a. A description of the planning schedule/timeline, which includes identifying all key tasks. (Section VI provides an opportunity for a “graphical” representation of the schedule.)

Following a project planning and chartering workshop involving all pertinent parties, the following tasks would be performed simultaneously over a period of three months:

- 1. Describe study area characteristics*
- 2. Describe existing water and wastewater management system*
- 3. Identify water quality standards, including preliminary discussions with DEQ about regulatory flexibility with regards to Deep Creek watershed*

After completion of the three tasks above, evaluation of reuse, treatment, conveyance, and distribution alternatives would proceed simultaneously over a period of three months.

Following identification and evaluation of alternatives, evaluation of project permitting and jurisdictional integration would begin and continue for two months. Cost estimating would occur simultaneously.

Following the cost estimating, development of the draft and final feasibility study would commence and continue for two months, including a comment and review period.

- b. When the planning study could begin.

The planning study could begin immediately upon receipt of grant funding in January 2009.

2. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the planning study. If the personnel have not been decided upon, include a description of the professional qualifications and/or experience of the person(s) you anticipate will play key roles in performing the planning study.

Anita Yap, Community Development Director, City of Damascus

Dave Rouse, Environmental Services Director, City of Gresham

Guy Graham, Wastewater Services Division Director, City of Gresham

John Thomas, General Manager, Sunrise Water Authority

Kim Anderson, Special Projects Coordinator, Sunrise Water Authority

Ted Kyle, Capacity Program Manager, Clackamas County Water Environment Services

Dave Green, Principal Project Manager, CH2M HILL and City Engineer, City of Damascus

Joe Broberg, Senior Project Engineer (Reclaimed Water), CH2M HILL

Bob Fuller, Senior Client Service Manager (Drinking Water), CH2M HILL

Lynne Chicoine, Senior Project Engineer (Wastewater), CH2M HILL

3. What local, state or federal project permitting requirements/issues do you anticipate in order for the planning study to be conducted?

The feasibility study will need to address issues involving NPDES permitting, Comprehensive Planning and Land Use Planning for the City of Damascus, as well the Endangered Species Act. One of the tasks proposed for the Feasibility Study will be to identify project permitting requirements.

4. Are permits/governmental approvals required for the planning study? If yes, indicate whether you have obtained the necessary permits/governmental approval. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them.

No permits or government approvals are required for the feasibility study. The study will define permits and government approvals that would need to be in place for the project to move forward.

5. Describe your goal (which must be based on evaluating the feasibility of developing a water conservation, reuse or storage project) and how this study helps to achieve the goal.

The goal is to develop a regional reuse and wastewater management master plan that benefits the Cities of Damascus, Gresham, Troutdale, Clackamas Water Environment Services, and Sunrise Water Authority by maximizing the value of water through efficient use and reuse. This feasibility study will engage these critical jurisdictions and agencies and identify viable alternatives which can then be elevated to the master planning level.

This project, if successful, will serve as model of total water management on a watershed scale, meeting the needs of various partners while protecting environmental integrity. Watersheds throughout Oregon are faced with increasingly strict regulations and growing populations. Water management is becoming increasingly challenging in the present-day era of supply uncertainty and global climate change. A thorough investigation of the feasibility of the project, including identification of regulatory and jurisdictional requirements, is the first major step in implementing this project. The intergovernmental agreements that will necessarily arise out of this project will set a state-wide precedent for jurisdictional cooperation.

6. Describe the technical aspects of the planning study and why your approaches are appropriate for accomplishing the goal of the planning study.

The technical aspects of the study include flow projections, evaluation of water quality impacts, evaluation of treatment options, identification of appropriate reuse opportunities, and evaluation of reclaimed water distribution system components.

Technical investigations will focus on two drainage basins in East Damascus: Southeast and Central East Damascus, and Northeast Damascus. Technical work will be done to test the feasibility of the scenarios outlined below:

Southeast and Central East Damascus:

Wastewater collected from new development in southeast Damascus could flow by gravity to the existing Clackamas County treatment facility in Boring. This facility could be upgraded to a Class A Water Reclamation Facility that would provide advanced treatment of the increased flows, producing high quality reuse water for nurseries, landscape, or even parallel 'purple pipe' systems back into Southeast Damascus.

Additional benefits can come from the mitigation of impacts to the Boring WWTP receiving water (North Fork Deep Creek, a tributary to the Clackamas River). Deep Creek (and the Clackamas River) are water-quality limited, with regulatory concerns related to both temperature and nutrients. The production of high quality reclaimed water from this facility could help to solve both of these issues through diversion of reclaimed water as well as discharge of higher quality water.

Northeast Damascus: The northeast corner of Damascus (what is known as the Sunshine Valley) is actually part of the Johnson Creek watershed, with streams flowing northeast through Damascus to Johnson Creek (which flows on through the City of Gresham). The proposed study would evaluate options for wastewater treatment through this Damascus drainage basin, again looking at opportunities to develop reclaimed water solutions in conjunction with solving the wastewater collection and treatment issues for this area of Damascus. Possible solutions for this Northeast area of Damascus include satellite treatment facilities that could 'scalp' wastewater from the collection system, treat that water to meet reclaimed water standards, and utilize that reclaimed water for landscaping, nurseries, orchards, and/or parallel 'purple pipe' systems that would serve residential and commercial areas in east Damascus.

Both of these study areas lend themselves to reclaimed water storage facilities in the central eastern area of Damascus, allowing reclaimed water storage systems to feed distribution systems to both the Northeast (Sunshine Valley) and Southeast (Noyer Creek) drainage basins in Damascus (and possibly Boring).

The technical work will lead to the best long-term water solution for East Damascus and neighboring jurisdictions by identifying the most efficient use of water resources while addressing stream temperature and water quality issues.

7. Describe the level of involvement, interest and/or commitment of different entities associated with the planning study (attach letters of support). Describe how these entities will benefit or be impacted by the planning study.

The proposed feasibility study builds on similar studies recently performed by the City of Gresham and Sunrise Water Authority. The desire for implementation of reclaimed water is strong in the region, as evidenced by the letters of support from Gresham, Sunrise Water Authority, and Clackamas Water Environment Services (WES), operators of the Boring wastewater treatment plant.

The expected benefits to be realized by each party are as follows:

City of Damascus: achieve sewerage and wastewater treatment for challenging service area at a lower cost than a unilateral alternative. Meet the Council's goals of sustainable and cost-effective solutions and partnerships that are environmentally positive for the community and the area.

City of Gresham: Potentially reduce O&M costs for existing pump stations that would be taken off-line and gain an additional group of water-efficient rate-payers in northeast Damascus.

City of Troutdale: increased revenue and efficiencies related to acceptance of Gresham flows.

Clackamas WES: increased ability to address regulatory concerns related to both temperature and nutrients. The production of high quality reclaimed water from this facility could help to solve both of these issues through diversion of reclaimed water as well as discharge of higher quality waterwater quality discharge limits by recycling water.

Sunrise Water Authority: fulfill 10-20% of identified reclaimed water demand and progress toward their vision of reclaimed water solutions for their service area.

An initial project chartering workshop would be held to air concerns and refine expectations. Each party has committed staff involvement for providing information related to their existing systems and reviewing the feasibility study.

Benefits and impacts to each party will be further evaluated as part of the selection of alternatives to be elevated to the master planning level.

Section B. Unique Criteria

Instructions: Answer the set of questions below that applies to the type of planning study that this grant will fund.

Water Conservation or **Reuse**

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application.
- I have filled out the application or I have not filled out the application.

2. Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.

Sunrise Water Authority (SWA) is the water service provider for the City of Damascus. The SWA Master Plan identified a need for 70 mgd to meet demands of the buildout population of the entire region. SWA estimated average daily demand for the Damascus/Boring area to grow from 1.9 mgd in 2010 to 24 mgd in 2025. Part of this need can be met with reclaimed water for non-potable uses. SWA quantified the demand for reclaimed water as 10 million gallons of per day at buildout conditions for the Damascus/Boring service area. These demands are documented in the Sunrise Water Authority Water Reuse Feasibility Study, March 2007.

3. Explain how the associated project will mitigate the need to develop new water supplies and/or use water more efficiently. Reference documentation and/or examples of the success of similar or comparable water conservation/reuse projects that would be available upon request.

By providing Class A reclaimed water, the project will preclude the use of potable water for landscape irrigation and therefore reduce potable demand that requires new water supplies. A second use of reclaimed water is inherently more efficient than a single use. Reusing water promotes overall water use efficiency by maximizing the benefits realized by each drop of twice-used water.

The amount of potable quality water saved through the use of reclaimed water is frequently simply a percentage of the total reclaimed water used. Presumably that is why the Oregon Department of Water Resources requires a consideration of reuse as a part of a jurisdiction's water conservation and management plan.

The issue of potable offsets is commonplace in California where many jurisdictions utilize reclaimed water for agricultural and landscape purposes to mitigate against the need for increased potable water supply. In the Pacific Northwest, listing of salmon as an endangered species has created the opportunity to reuse water to mitigate against the thermal impacts which threaten aquatic life. Many jurisdictions are exploring this technique as a benefit to aquatic life and are now recognizing that an ancillary benefit is the extension of potable water supplies by using water more than once.

In the City of Salem, the recycled water is used to enhance a wetland and to provide water to a golf course. The latter minimizes the need for potable water supplies for the golf course. Pendleton, Oregon also uses recycled water on a golf course as does Bend and Washington County, Oregon. Each of these cases extends the use of potable supplies. There are numerous cases of water reuse extending potable supplies in California, Arizona, Texas and Florida. In

Florida and California there are examples of food crops being irrigated by recycled water. In these states, without water reuse there would be a clash of interests between agriculture and municipal and industrial uses.

This project for East Damascus will draw on the 'lessons learned' from these other projects, and apply those lessons and techniques to the work in East Damascus.

4. Explain how the project associated with the planning study will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50% of your need will be met).

The buildout population of Damascus is approximately 60,000 people. Of this population, approximately 20,000 people might be expected to ultimately reside on the east side of Damascus (in the Sunshine and Noyer drainages). Using the rule-of-thumb value for wastewater generation of 100 gallons per person per day, 2 million gallons of reclaimed water could potentially be produced, 20% of the recycled water demand identified by Sunrise Water Authority.

5. Provide data and information on the associated project and the project's sources of water supply:
- a. The location of the associated project. (Include the basin, county, township, range and section.)

The overall regional project includes portions of both the Columbia River basin and the Clackamas River Basin, in Clackamas and Multnomah County, as shown in Figure 1. The City of Damascus includes the following townships, ranges, and sections:

T1S R3E Sections 30, 29, 28, 27, 26, 25, 31, 32, 33, 34, 35

T2S R2E Section 6, 5, 4, 3, 2,

T2S R2E Section 12, 7, 8, 9, 10

T2S R2E Section 13, 18, 16, 15

- b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.

This question is not applicable to the project.

- c. Environmental flow needs and water quality requirements of supply source water bodies and water bodies downstream of associated and/or affected return flows.

Current discharge to North Fork Deep Creek (tributary to Clackamas River) is minimal - estimated to be effluent from 60 residences. The feasibility study would investigate accommodating up to 10,000 new wastewater connections in the Noyer Creek/Deep Creek watershed with the intent of balancing water quality, temperature, and environmental flow needs.

Existing flows could be left in place during the summer months to provide continuity of existing in-stream conditions. However, if the Boring WWTP is upgraded to a Class A water reclamation facility, instream water quality could be improved from current conditions. Stream-flow could be augmented and improved in the winter when reclaimed water is not being used for irrigation.

- d. Reliance on return flows by downstream water right holders.

Given the minimal existing discharge from the Boring WWTP and the flows in Deep Creek, removing or reducing this discharge from the Boring WWTP is not expected to negatively impact downstream water rights holders. However, as discussed in the response to question B.5.c above,

existing return flows could be left in place to prevent hardship to fish and downstream water right holders. Reliance on return flows will be evaluated and addressed as part of the feasibility study.

V. Match Funding Information

Applicants must demonstrate a minimum dollar-for-dollar match based on the total funding request. The match may include a) secured resources, b) previously expended resources, and/or c) pending resources. For secured funding, you must attach a letter of support from the match funding source that specially mentions the dollar amount shown in the "Amount/Dollar Value" column. For pending resources, documentation showing a request for the matching funds must accompany the application. For resources that have been previously expended, the expenditure must have occurred on or after July 1, 2005. Resources expended prior to July 1, 2005 are not eligible for match purposes.

The Type of matching funds may include:	The Status of matching funds may include:
<ul style="list-style-type: none"> The value of in-kind labor, equipment rental and materials essential to the planning study provided by the applicant or partner*. 	<ul style="list-style-type: none"> Secured funding commitments from other sources.
<ul style="list-style-type: none"> Cash is direct expenditures made in support of the planning study by the applicant. 	<ul style="list-style-type: none"> Associated and documented expenditures for the planning study from non-program sources incurred on or after July 1, 2005.
	<ul style="list-style-type: none"> Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.

*"Partner" means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed planning study. OAR 690-600-0010.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	Type (✓ One)	Status (✓ One)	Amount/ Dollar Value	Date Match Funds Available (Month/Year)
<i>In-Kind: staff time, expenses</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending	\$25,000	August 08
<i>Cash: City Engineer Contract</i>	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending	\$50,000	August 08
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
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	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		

VI. Project Planning Study Schedule

Estimated Project Duration: January 1, 2009 to September 30, 2009

Place an "X" in the appropriate column to indicate when each element (key task) of the project will take place.

Project Planning Study Element (Key Tasks)	2009				2010				2011 & Beyond
	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
<i>Project Planning/Chartering</i>	X								
<i>Describe Study Area characteristics</i>	X								
<i>Describe existing water and wastewater management system</i>	X								
<i>Identify water quality standards</i>	X								
<i>Reuse Alternatives Evaluation (including storage and distribution)</i>		X							
<i>Treatment Alternatives Evaluation</i>		X							
<i>Conveyance Alternatives</i>		X							
<i>Project Permitting Requirements Evaluation</i>			X						
<i>Jurisdictional Integration</i>			X						
<i>Cost Estimating</i>			X						
<i>Development of draft and final report</i>			X						

To add a project to the inventory of potential conservation opportunities, please provide the following information for each conservation project.

This is a <input type="checkbox"/> Capital Conservation Project <input checked="" type="checkbox"/> Programmatic Conservation Project	
Project #/Name	East Damascus Regional Water Reuse and Wastewater Management Feasibility Study
Project Description	Investigation of the feasibility of a in inter-jurisdictional regional agreement to meet wastewater management and water supply needs by developing reclaimed water sources.
Estimated Future Savings	At buildout, 10 mgd of reclaimed water will provide up to 20% of the total demand for the Sunrise Water Authority service area.
Seasonality	Savings will take place primarily in the summer; however, non-irrigation reuses will take place year round.
Estimated Future Costs	Follow-on Master Planning (\$250K), Design (\$1.5M), and Construction (\$150M). Costs will be incurred whether reclaimed water is implemented or not since the water supply will be needed for this growing service area.
Implementation Schedule	Feasibility study will be complete in the 3 rd quarter of 2009; master planning will follow, with construction complete before 2015.
What are the barriers to implementation, e.g. funding?	Funding and complexity of jurisdictional and regulatory requirements.
This is a <input type="checkbox"/> Capital Conservation Project <input type="checkbox"/> Programmatic Conservation Project	
Project #/Name	
Project Description	
Estimated Future Savings	
Seasonality	
Estimated Future Costs	
Implementation Schedule	
What are the barriers to implementation, e.g. funding?	

- Include this form with your application -



WATER
ENVIRONMENT
SERVICES

Beyond clean water.

Water Quality Protection
Surface Water Management
Wastewater Collection & Treatment

Michael S. Kuenzi, P.E.
Director

September 2, 2008

Anita Yap
Community Development Director
City of Damascus
19920 SE Highway 212
Damascus, OR 97089

Dear Ms. Yap:

Subject: Water Conservation, Reuse, and Storage Grant Program

Water Environment Services, a department of Clackamas County, currently operates a small wastewater treatment facility in Boring, Oregon, southeast of Damascus for Clackamas County Service District No. 1. Treated effluent from the plant is discharged to Deep Creek, a tributary to the Clackamas River.

Increasingly stringent regulatory limits are on the horizon. Meeting future discharge limits will likely require significant treatment upgrades that are extremely costly, especially when the population served by the Boring plant is so small.

Increasing the service area to include southeast Damascus in the Boring service area could bring increased revenue to the plant, facilitating expansion and treatment upgrades. The prospect of water reuse is especially supported, as this measure could reduce temperature and nutrient impacts to the creek and make meeting regulatory limits much easier. A treatment plant that produces Class A or Class B recycled water would be able to meet regulatory limits, even with increased flows.

WES supports further investigation of the regional water reuse plan proposed by Damascus and will be a willing partner throughout the feasibility study.

Sincerely,

Theodore S. Kyle, P.E.
Wastewater Treatment Capacity Program Manager



10602 S.E. 129TH AVENUE
PORTLAND, OR • 97236-6271
PHONE: (503) 761-0220
FAX: (503) 761-7406

August 29, 2008

Bob Rice
Oregon Water Resources Dept.
725 Summer Street NE, Suite A
Salem, OR 97301

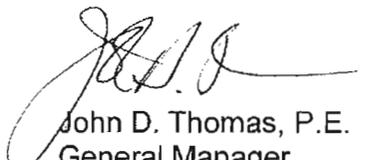
Dear Mr. Rice:

Sunrise Water Authority currently serves approximately 40,000 customers in the north Clackamas County area, including service to a significant portion of Damascus. In December 2002, the Metro Council expanded the Urban Growth Boundary (UGB) to include approximately 12,000 acres in the Damascus/Boring area. This area is expected to become one of the fastest growing regions in Oregon. The 2004 revision of the Sunrise Water Authority Master Plan was developed in response to these factors to assure that the availability of water supply and infrastructure would never be a factor that impedes planned growth.

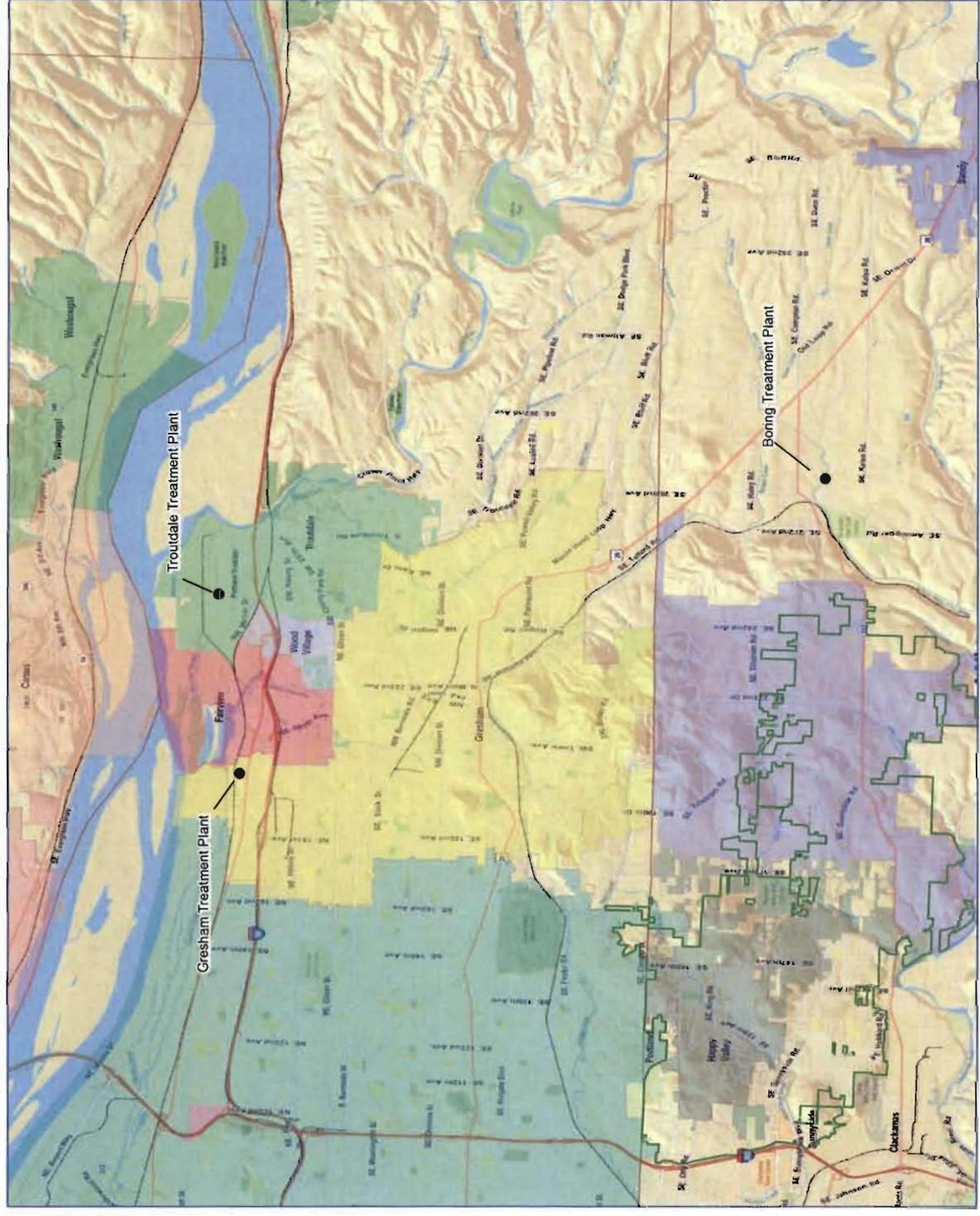
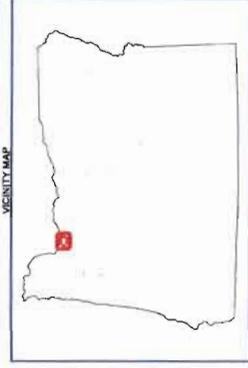
Sunrise Water Authority has been an extremely strong and vocal proponent for the inclusion of reclaimed water in water supply planning at the local and state level for a number of years. At the utility level, a Reuse Feasibility Study conducted by SWA in 2004 demonstrated that of the water supply demand at buildout identified in the Master Plan, approximately 10 mgd could be met with recycled water.

This proposed study represents another step in the process of developing and constructing a community in which the concepts of sustainability and total water management are components of the water infrastructure and supply planning. Sunrise Water Authority welcomes the opportunity to be an active participant in the proposed Wastewater and Water Reuse Feasibility Study and strongly supports this application.

Regards,



John D. Thomas, P.E.
General Manager
Sunrise Water Authority



- LEGEND**
- Sunrise Water Authority
 - City Boundary
 - City name**
 - Camas
 - Damascus
 - Fairview
 - Gladstone
 - Gresham
 - Happy Valley
 - Johnson City
 - Maywood Park
 - Portland
 - Sandy
 - Troutdale
 - Vancouver
 - Washougal
 - Wood Village

Notes:
 1. Source: Metro RUS 2008 GIS Data

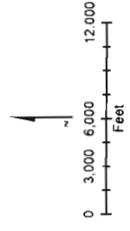


FIGURE X
 East Damascus Vicinity Map
 City of Damascus