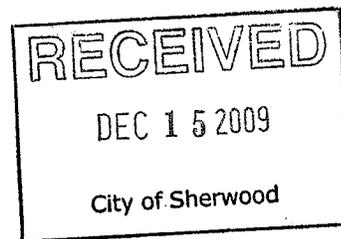


R. James Claus, Ph.D.
22211 SW Pacific Highway
Sherwood, Oregon 97140
503-625-5265



December 15, 2009

Sherwood City Council
Sherwood Planning Commission
c/o City of Sherwood
Sherwood, Oregon 97140

RE: Comments for the Record on Sherwood Cannery Square PUD
Sherwood Land Use Files 09-01, PA 09-05 and SUB 09-02
5.8 acres Old Cannery site, 220 SE Willamette Street, Sherwood
File 09-000783 Clean Water Services- Service Provider letter
Site ID #4624 Department of Environmental Quality

Dear City Council and Planning Commission Members:

Once in a while when I write a letter, my primary response is "please tell me it ain't so." Jim Patterson in an interview with the Oregonian through his staff apparently (it's in print) has told Mr. Brad Schmidt that cleaning up and putting the roads on the cannery site will cost \$5.4 million. I could not understand why we would be paying that kind of cost for a relatively small amount of roads and public infrastructure.

It appears we paid \$3 Million for the Cannery site. It does not include the demo of the building, preparatory clean up or staff time of the planning and any monies that may have been paid to Capstone and their consultants. My guess is if the truth is known we are in to that site close to \$8 Million and we are now going to add another \$5.4 Million to the tab. For the investment, we are going to get a \$10 Million vanilla 101 unit apartment project with a strange unit mix that is under parked. 20,000 sf of the Retail Commercial on 40,000 sf will be improved if only half of the RC parking ratio is required. Please tell me I am wrong.

The City Of Sherwood is going to spend \$14 Million for land, clean up, and infrastructure just to get Capstone to build back \$14 Million in assessed property values. Oh, did I forget that Sherwood will have a new "living room?" And if we add together Sherwood citizens' \$14 million (a gift to Capstone) and Capstone's possible, maybe \$14 Million in future improvements—we would have a \$28 Million urban project with only \$14 Million in assessed tax value.

We are not sure what we are going to have developed, but oh never mind, the staff will have a new project in which to "back bill" the Urban Renewal Agency for their wages and overhead. I have included

Exhibit V

information for a potential EPA Brownfield grant—maybe we can recoup up to \$200,000 to add a drop back into the bucket.

What troubled me when reading through the submitted information was the 2012 date for building—why the delay? I then looked at the DEQ report and the Service Provider letter from CWS and became alarmed. I hope I am completely wrong. If these figures are correct, I may be understating the cost for the city to acquire the land to build, just to give an excessive amount of dollars from the citizens to a developer.

The required soils plan and monitoring that was suggested/required by DEQ/EPA has not yet begun. This presents an interesting dilemma. Why is Capstone our hired guns? Why have we not hired a top notch environmental consulting firm? Perhaps Capstone has some environmental help that we can use to protect us from Patterson’s staff.

If this is a Brownfield site, and the DEQ report calls it that, the Urban Renewal Agency and Manager must come up with a remediation and clean up plan, monitor it for whatever time period DEQ and EPA requires, and give the entire site signed off by the DEQ/EPA folks. Auto repair cannot be cleaned it up in the same fashion than less “pollutive” uses. I am told by some competent attorneys that those types of clean up are tricky.

Let’s stop any further Land Use zoning proposals until the ENTIRE Cannery property is cleaned up. The cart doesn’t need to go before the horse and we definitely don’t need to “Ready, Fire, Aim.” I hope the documents are not a part of a “cover up” that they appear to be. Maybe we can just attribute it to **incompetence**—whopps, whopps, whopps—I mean **“inexperience.”**

This site drains toward City Well No. 3- our **most productive** well. That well produces almost 39% of the total gallons per minute from all Sherwood wells. Well No. 3 was constructed in 1946 and has 890 gallons per minute at a depth of approximately 319 ft. The casing diameter is 12 inches. (See page ES-3 of the Sherwood Water Master Plan August 2005.)

$$890 \text{ gpm} \times 60 \text{ minutes} \times 24 \text{ hours} = 1,281,600 \text{ gallons per day production}$$

=====

Not only do we appear to have a Brownfield property problem, we have the Brownfield property located next to and draining toward our MOST productive city well. I would not want my children drinking the contaminants listed in the DEQ report (See attached DEQ Full Summary Report). Our staff has been hired to promote and protect the health and safety of our citizens. Are we continuously testing for those contaminants to make sure our water supply is protected? That water is likely not being monitored for those contaminants because they are unexpected. Susceptible citizens with health issues are usually the ones who are impacted first by contaminants. I find this particularly ironic that recently our city manager talked about possible cancer clusters in some of our subdivisions. Is there any possibility that this site is contributing to the problems? What we don’t know can hurt us all.

Of course I am sure that City-County Insurance Services will pay for the clean up—to get our \$2,500 contribution and Jim Patterson will ask the sellers to pay for this clean up. Hopefully Schultz, Patterson and the city attorneys were experienced enough to get indemnifications for the city/citizens on the original purchase from the Cannery owners. The clean up already is \$3 to \$4 Million more than we paid

for it. Special legal counsel should be brought in to estimate our future legal expenses—obviously the present attorneys/staff have flubbed the dub. If this monitoring and scope were not known prior to the purchase we must look to the process and ask how this happened. This cannot be a situation where we lurch from one action to another. If you will excuse me, these are not plays or vignettes—the system is interconnected. If the City manager cannot direct the public works manager and associated departments to keep the containments away from our citizens, we need a different city manager—Now—not later.

I am assuming that there is nothing here that you are not surprised at hearing and that you are effectively handling this environmental disaster. Is this letter giving information that was not given to the planning commission as part of this proposed land use process? I am somewhat at a loss for words and draw this to your attention today because the window to add info to the record on the Cannery PUD ends today. We have been told the finances are none of our business. But, the situation goes far beyond mere questions of money. One of the blessings Sherwood has had it that we owned and operated water wells. Those wells must be protected for health and safety as well as financial reasons.

Mr. Patterson should share his Brownfield remediation plan and let us know that DEQ has accepted the same. Of course, this assumes the Mayor will allow an open and fair public hearing with accurate information. **Staff also must investigate the Machine Works Building and find out if that building and its history of uses will also be required to do separate DEQ and Brownfield clean up. CAN WE EVEN USE THAT BUILDING FOR OUR PERFORMING /VISUAL ARTS CENTER? Or will this be another one of those “1000 cuts” that will kill our hopes for our community Arts Center?**

I thank you in advance for your attention to this matter. I consider it significant enough to draw it to both the Council’s and the Commission’s attention. **Our children are our legacy.** It is this kind of issue that is can garner national scrutiny, (please see “Erin Brockovich” or “A Civil Action” movies).

Frank Wiley, one of the great water treatment experts in California, was adamant in saying that the moment a municipality loses water point source control there are health risks. Because we control our water system and now are in charge of maintenance , we have to maintain the highest standards in protecting our citizens and our water.

What is troubling is that there are only two kinds of people who fool around with environmental contamination—damn fools and gamblers. We need to get rid of both and get serious about protecting our town, our resources, and our future.

Sincerely,



Jim Claus

P.S. Of course, this potential environmental and health hazard may be much ado about nothing. Since Mayor Keith Mays has used an armed police officer to enforce his information control system. SURPAC, the Planning commission, and Finance Committees may know all about this situation and I was merely caught off base. There is also the possibility there may not be a clean up plan or even a monitoring

system. After all, the staff rules in Sherwood for Pattersonville and Mays will use police actions on citizens who ask questions.

P.S.S. Incidentally, why was the appraiser, Craig Zell, not informed about the Cannery sales price? The Urban Renewal Manager, Tom Nelson knew the information and willfully withheld it from Zell. (He has learned from Mays' actions of creating a world where pertinent information is rarely disclosed to the public.) Tom Nelson's behavior is outrageous.

Now that we know that the whole Cannery area is contaminated, Tom Nelson's Big talk on the record about selling the Machine Works Building if the Planning Commission doesn't pass this PUD proposal is little more than an empty threat—it is almost as vapid as his knowledge of managing Urban Renewal—unless we can find and corner a pigeon or two.

Enclosures

2005 Sherwood Water Plan Executive Summary, Murray Smith and Associates
File 09-000783 Clean Water Services- Service Provider letter
Site ID #4624 Department of Environmental Quality
EPA Brownfield Clean Up Grants- Interested in Applying for Funding?

Cc: Mr. Bob Cruz, Clean Water Services
Mr. Chuck Harmon, Department of Environmental Quality

EXECUTIVE SUMMARY

Authorization

In February 2004, the firm of Murray, Smith & Associates, Inc. (MSA) was authorized by the City of Sherwood to prepare this Water System Master Plan.

Purpose

The purpose of this study is to perform a comprehensive analysis of the City of Sherwood's water distribution system, to identify system deficiencies, to determine future water distribution system supply requirements, and to recommend water system facility improvements that correct existing deficiencies and that provide for future system expansion. The planning and analysis efforts include consideration of the ultimate integration of recommended distribution system improvements with the City's long-term water source and supply decision.

Planning Period

The planning period for this master plan is approximately 20 years. Certain planning and facility sizing efforts will use estimated water demands at saturation development. Saturation development occurs when all existing developable land within the planning area has been developed. The planning period for transmission and distribution facilities is to saturation development of the City's water system planning area. This assumption allows a determination of the ultimate size of facilities. Typically, if substantial improvements are required beyond the planning period in order to accommodate water demands at saturation development, staging is often recommended for certain facilities where incremental expansion is feasible and practical. Unless otherwise noted, recommended improvements identified in this plan are sized for saturation development within the water system planning area.

Background and Study Area

The City of Sherwood's current water service area includes all areas within the current City limits. The City provides potable water to approximately 15,172 people through approximately 4,967 residential, commercial and industrial service connections. The study area of this planning effort is the entire area within the urban growth boundary (UGB), which currently encompasses a total of approximately 2,994 Acres.

In October 2000, the City of Sherwood entered into an intergovernmental agreement with the Tualatin Valley Water District (TVWD). Under the terms of the agreement, included in Appendix B of this report, the TVWD will provide a water supply and manage the City's water system. The agreement ends in September 2005 and may be renewed for two terms of

five years each. The City and District recently approved renewal of the agreement for the first of the two additional five year terms provided for in the agreement.

Currently, the City's primary water supply is from four groundwater wells owned by the City and operated by TVWD. The City also supplements supply from the groundwater wells through a 24-inch diameter connection to the City of Tualatin's 36-inch diameter Tualatin-Portland supply main.

The City's water distribution system consists of three service zones supplied by two storage facilities and two pumping stations. One of the service zones is supplied through a continuous operation pump station.

Plate 1 of Appendix C illustrates the Sherwood water service area limits, supply connections, water system facilities, distribution system piping, and system interties. Plate 1 is also a digital representation of the computerized distribution system hydraulic model used for system analysis efforts.

Supply Sources

Groundwater Wells

Sherwood operates four groundwater wells within the City's water system service area limits. The wells are used year round and serve as the City's primary water supply. Well Nos. 3, 4, 5 and 6 have an existing combined production capacity of approximately 3.3 million gallons per day (mgd). The groundwater supplies are disinfected through the addition of sodium hypochlorite at each well. Table ES-1 lists the location, pump type, horsepower, year constructed, approximate depth, approximate production capacity and casing diameter for each of the City's groundwater wells. An evaluation of the hydrogeological conditions in the study area is included in Appendix D of this report.

The actual production capacity of the City's groundwater well supply system is limited to approximately 1.2 mgd due to aquifer and pumping limitations.

Portland Supply Connection

The City of Sherwood is supplied with water from the City of Portland via the City of Tualatin under an agreement with TVWD. This supply is transmitted through an approximately 4-mile long, 24-inch diameter City-owned transmission main from the City of Tualatin's system. This connection is located in the Tualatin Community Park where the Tualatin-Portland supply main connects to the City of Tualatin's distribution system. The amount of flow through the City's connection is regulated by a control valve operated by the City of Tualatin. The transmission main runs west along SW Tualatin Road and SW Herman Road and south on SW Cipole Road, SW Tualatin-Sherwood Road and SW Oregon Street to a connection to the City's distribution system at the intersection SW Oregon Street and SW

**Table ES-1
Groundwater Well Summary**

Well No.	Location	Pump Type	Hp	Year Constructed	Production Capacity (gpm)	Approx. Depth (feet)	Casing Dia. (inches)
1	Well Abandoned						
2	Well Abandoned						
3	Intersection of Pine and Willamette Street	Vertical Line Shaft Turbine	75	1946	890	319	12
4	17191 Smith Road	Vertical Line Shaft Turbine	60	1969	250	458	14
5	16491 Sunset Boulevard	Vertical Line Shaft Turbine	150	1984	600	800	16
6	1830 Roy Street	Vertical Line Shaft Turbine	75	1997	550 ¹	889	16
Total Production Capacity (gpm):					2,290		
(mgd):					3.29		

Notes: 1. Production capacity is limited by available water rights.

Murdock Street. A pressure reducing valve (PRV) at this connection reduces the hydraulic grade of the supply to approximately 385 feet above mean sea level (msl).

The City of Tualatin currently wheels, or transmits, up to 3 mgd of water from the City of Portland to Sherwood through its distribution system from the Tualatin-Portland supply line. This supply is a portion of the Washington County Supply Line capacity owned by the TVWD. The primary water source originates in the City of Portland's Bull Run Watershed and Columbia South Shore Wellfield. The water source is disinfected through the addition of chloramines, a combination of chlorine and ammonia, by the City of Portland. The City of Portland also adjusts the pH of its water supply. The water wheeling agreement between the City of Tualatin and TVWD is included as Appendix E. This supply is not a guaranteed, firm, supply for the City, but is existing unused capacity currently available in the Washington County Supply Line system. When the owners of the supply line system require additional supply capacity then the excess capacity currently delivered to the City is likely to be reduced or completely unavailable.

Existing Water System

The City of Sherwood's existing distribution system is divided into three major service levels, or pressure zones that are usually defined by ground topography and designated by overflow elevations of water storage facilities or outlet settings of pressure reducing facilities serving the zone. The City's water system contains two reservoirs with a total combined

storage capacity of approximately 5.0 million gallons (mg). The system also contains two pump stations.

The water service area water distribution system is composed of various pipe types in sizes up to 24 inches in diameter. The total length of piping in the service area is approximately 66.6 miles. The pipe types include cast iron, ductile iron, PVC, and copper. The majority of the piping in the system is cast and ductile iron piping. Table ES-2 presents a summary of pipe lengths by diameter.

**Table ES-2
Distribution System Pipe Summary**

Pipe Diameter	Estimated Length (miles)
4-inch or Less	1.4
6-inch	1.9
8-inch	34.8
10-inch	8.3
12-inch	13.8
14-inch	1.0
16-inch	0.3
18-inch	1.0
24-inch	4.1
Total Length	66.6

Existing Water Demands

Based on the most recent historical water usage patterns and historical population, the water service area's average daily demand is approximately 1.6 mgd with an average day per capita consumption ranging from approximately 100 to 120 gallons per capita per day (gpcd) since 1996. Recent maximum daily water demand usage has ranged from 2.0 times to 2.5 times the average day demand. This is equivalent to a maximum per capita usage ranging from 230 to 270 gpcd.

Water Demand Projections

Estimates of future water demands were developed from the City's present per capita water usage data, population forecasts and water demand forecasts prepared for the City through previous work. For the purposes of this plan, estimated average daily water usage is assumed to be approximately 120 gpcd. As conservation plays an increasing role in water usage

patterns, it is anticipated that Sherwood’s average daily per capita usage can ultimately be reduced to and maintained at 110 gpcd.

For the purposes of this study, current maximum daily per capita usage is estimated at approximately 250 gpcd. As conservation plays an increasing role in water usage patterns, it is anticipated that Sherwood’s maximum daily per capita use can ultimately be reduced to and maintained at approximately 240 gpcd, even in drought years. Estimated average and maximum daily water demands are developed by multiplying the estimated per capita water usage by the anticipated population for that year. To provide an estimate of peak hourly usage, a factor of approximately 1.5 was applied to estimated maximum day demands. This is consistent with water demand patterns of similar communities in the region. Population projections and anticipated water demand, in five year increments through 2025 and for saturation development, are summarized in Table ES-3.

**Table ES-3
Population Forecasts and
Estimated Water Demand Summary**

Year	Population	Water Demand (mgd)		
		Average Day Demand	Maximum Day Demand	Peak Hour Demand
2005	15,800	1.9	4.0	6.0
2010	18,970	2.2	4.7	7.0
2015	22,130	2.6	5.4	8.1
2020	25,290	2.9	6.2	9.3
2025	28,450	3.2	6.9	10.4
Saturation Development	37,940	4.2	9.1	13.7

Water Supply Source

As previously described, the City’s primary water supply is from City-owned groundwater wells. Based on the water demand estimates and the historical decline in aquifer levels the City’s existing supply sources will not be adequate to meet future water demands, so the City is exploring several long-term water supply alternatives. In order to be considered a feasible option for the City, a long-term water supply source must meet several criteria. The criteria were developed in coordination with City staff, integrating criteria being used by other communities in the region. The criteria that will be used to evaluate the supply source options are:

- Ability to meet all, or a substantial portion, of the City’s long-term water supply needs
- Potential for joint development with a partner or partners

- Ability to cost-effectively integrate source options into current distribution system
- Supply source development cost
- Estimated cost of water

Groundwater Supply Evaluation

The purpose of the hydrogeological evaluation is to assess the potential capacity and limitations of the City's groundwater supply source. Historical groundwater production rates and water level trend data were compiled and analyzed for each of the City's groundwater wells to evaluate the hydraulic response of the Columbia River Basalt Group aquifer underlying the City relative to historical and current groundwater pumping rates. From this evaluation it was observed that a distinct overall declining trend in water levels is occurring and increases in the rate of water level decline has occurred during periods of peak groundwater production by the City. From the analysis, it was determined that continued groundwater production at the current rate will soon require capital investment to maintain pumping rates and will likely result in significant loss of production capacity as groundwater levels continue to decline. Development of additional groundwater production facilities, such as the Spada well, is feasible, but additional groundwater production will result in an increased rate of water level decline and the ultimate loss of production capacity will occur sooner than under existing conditions. The rate of decline is dependant upon actual groundwater production. At the current rate of decline it is anticipated that without additional supplies the City will experience potential water shortages within the next five years. A technical memorandum documenting the complete groundwater supply evaluation is included in this report as Appendix D.

Supply Source Technical Analysis

Seven supply alternatives are considered for evaluation as long-term water supply sources for the City of Sherwood. The alternatives include the following:

1. Supply from the City's existing groundwater production facilities and the Spada well
2. Prospective use of Aquifer Storage and Recovery (ASR) using Sherwood's existing connection to the City of Tualatin that supplies City of Portland water to Sherwood
3. Supply from the City of Portland Bull Run Watershed and Columbia South Shore Wellfield (CSSWF) through the Washington County Supply Line and the City of Tualatin
4. Supply from the Joint Water Commission
5. Supply from the City of Newberg
6. Supply from the Clackamas River
7. Supply from the Willamette River Water Treatment Plant at Wilsonville.

A brief description of each supply alternative is presented below, including a discussion of existing supply facilities and capacities. Six planning level criteria were developed to evaluate the source of supply options. These criteria are:

- *Supply performance* – Water supply source options were evaluated based on their ability to provide a portion of the City’s long-term water supply needs. The City’s long-term water supply need is estimated to be 10 million gallons per day (mgd) for the purpose of this analysis.
- *Potential for joint development with a partner or partners* – Development of proposed water supply sources with local or regional partners may present significant opportunity for cost savings to the City. Each supply source was evaluated for potential opportunities for joint development.
- *Supply integration into existing distribution system* – Each supply source was evaluated for ability to integrate the supply option into current distribution system operations without the need for additional significant improvements.
- *Estimated cost for supply source development and cost of water* – Estimated capital costs of supply development were evaluated based on existing available information. Costs for development of new facilities and/or expansion of existing facilities were compiled and used to develop estimated cost for each supply source. Cost estimates were developed assuming that raw water, treatment and pumping facilities will be developed for 5 mgd capacity with provisions for expansion to 10 mgd capacity, and transmission facilities will be developed for 10 mgd capacity. Estimated cost of water data for each source was developed from existing available information, including current wholesale water rates and previous evaluations of proposed supply sources completed for the City and others. The cost of water estimates presented are for comparative uses only, that actual cost of water may vary and will depend on a number of factors outside the scope and control of this planning work.
- *Other Factors* – Supply option development may involve other factors that will directly impact the City’s ability to fully develop the option. These unique factors will be described as they apply to each option.

Supply Source Analysis Summary

Table ES-4 presents a summary of the analysis of the long-term water supply options available to the City that can meet the City’s long-term water supply needs. The City’s existing groundwater wells, ASR, and the City of Newberg supply option are not shown as these options cannot meet the City’s long-term needs. Based on the evaluation presented above, other options may also be removed from further consideration based on on-going evaluations.

**Table ES-4
Water Supply Source Option Summary**

Supply Source Options	Capacity (mgd)	Ability to Integrate into City's System	Cost Savings with Partners	Project Cost Range	Estimated Cost of Water (\$ per ccf)	Key Issues/Comments
City of Portland Water System	10	Yes	Yes	\$31 - 51 million	\$1.05	Size, scope and cost of long-term supply system improvement uncertain
Joint Water Commission	10	Yes	Yes	\$58.5 million	\$0.07 to 0.90	System reliability and certainty of supply for the City of Sherwood is uncertain
Clackamas River Water Supply System	10	Yes	Yes	\$29 - 31 million	\$0.55 to 0.65	System reliability and certainty of supply for the City of Sherwood is uncertain
Willamette River Water Supply System	10	Yes	Yes	\$24.5 - 21.6 million	\$0.64 to 1.00	Political and public perception key issue. Will require a vote of approval from City residents

Supply Source Development Strategy

The hydrogeologic evaluation found that the aquifers serving as the City's current supply source are experiencing a pattern of water level declines that appear to be correlated to the historic use of these aquifers for water supply purposes. The analysis also found that these aquifers do not have the capacity to serve the City's expanding water supply needs. It is anticipated that the City will need to develop a new long-term water supply within the next 3 to 5 years.

While a number of the City's long-term water supply options presented above offer the City a reliable long-term water supply source, it is anticipated that for the near term the City's existing groundwater wells will continue to supply water as the City selects, evaluates and develops other water supply options. This need for continued reliance on groundwater in the near term and the declining aquifer levels suggests the need to develop a water supply source strategy that allows for the ultimate transition to a new source while maximizing the use of the existing groundwater wells. Under current conditions it is anticipated that the City's existing groundwater wells can consistently produce a firm production capacity of approximately 1.2 mgd. With the anticipated addition of the Spada Well and the

implementation of certain water rights recommendations it is anticipated that this firm groundwater production capacity can be increased to approximately 2 mgd. Developing and maintaining this capacity will require capital investment in the City wells that may range from approximately \$3.0 to 5.0 million.

The current available supply capacity from Sherwood's City of Portland supply through the City of Tualatin is 3.0 mgd. The water supply agreement supporting this supply with the Tualatin Valley Water District is currently set to expire in the year 2010. The source development strategy anticipates that the supply from the City of Portland system, as supplied by the existing transmission and supply facilities will reach capacity by the year 2010 and that this supply will not be available to the City beyond the year 2010. It is therefore anticipated that a new supply, with an initial supply increment of 5 mgd will be brought on line by the year 2010. At this point the new supply source will be relied on to serve the City's average day needs throughout most of the year and the existing ground water wells will be used to provide peak supply during the summer months. Additional source supply increments are added in the year 2025 and 2035 to meet the City's additional water supply needs.

Aquifer storage and recovery (ASR) may provide the City additional flexibility and time to develop and implement a long-term water supply source, however, as currently understood ASR will not provide the City the needed long-term water supply capacity needed to meet all of its water supply needs.

Water Quality Review

As part of the system analysis process a water quality workshop was held with City staff, Tualatin Valley Water District staff and members of the master plan development team. The workshop focused on the water quality characteristics of the City's existing groundwater supplies and of all of the City's long-term water supply options. The City's current regulatory compliance process was reviewed as were anticipated upcoming near-term and long-term water quality regulations.

The City's long-term water supply options were also reviewed for their water quality characteristics. In light of the City Council's direction to narrow the long-term water supply options to the City of Portland Bull Run Watershed/CSSWF and the Willamette River at Wilsonville, water quality discussions will focus on these sources. A brief discussion of water quality characteristics of these two source options is presented below.

City of Portland Bull Run Watershed/CSSWF Supply Option

The City of Portland is supplied water from the Bull Run Watershed and the Columbia South Shore Wellfield. The Bull Run watershed is a protected watershed west of Mt. Hood the City of Portland has historically provided finished water that meets all drinking water quality standards. The Columbia South Shore Wellfield consists of multiple wells south of the

Columbia River near and adjacent to northeast Portland. A copy of the City's 2004 Water Quality Report is presented as Appendix K.

Willamette River Supply Option

The City of Wilsonville has been supplied treated Willamette River water since April 2002. The Willamette River watershed is the largest in the state and includes a mix of forest, agricultural and urban uses. Since the water treatment plant at Wilsonville began producing drinking water the finished water supply has met all drinking water standards. A copy of the City of Wilsonville's 2004 Water Quality Report is provided in Appendix L.

In May 2005 the Tualatin Valley Water District completed a water quality comparison of three of the region's water sources: the City of Portland supply, the Joint Water Commission supply and the Willamette River supply. The comparison tabulated a side by side comparison of all currently regulated water quality parameters and a number of currently unregulated parameters. A copy of this comparison is provided in Appendix M.

As part of the master planning work, a water quality workshop was conducted to review current water quality concerns of the City's existing wells and the long-term water supply options. An agenda and summary of this workshop session is presented in Appendix N.

Cost Estimating Data

An estimated project cost has been developed for each improvement project recommendation presented in this section. Itemized project cost estimate summaries are presented in Appendix H. This appendix also includes a cost data summary for recommended water main improvements developed on a unit cost basis. Project costs include construction costs and an allowance for administrative, engineering and other project related costs.

The estimated costs included in this plan are planning level budget estimates presented in 2005 dollars. Since construction costs change periodically, an indexing method to adjust present estimates in the future is useful. The Engineering News Record (ENR) Construction Cost Index (CCI) is a commonly used index for this purpose. For future reference, the January 2005 ENR CCI of 8,165 for the Seattle area construction market (the nearest market ENR monitors) was used for construction cost estimates in this report.

Recommended Improvements

General

Presented below are recommended water distribution system improvements for reservoirs, pump stations, distribution system water lines and other facilities. Also presented is a discussion of other recommended improvements and programs. Project cost estimates are presented for all recommended improvements and annual budgets are presented for

recommended programs. The recommendations are presented by project type and discussed in order of need. As presented late in this section the City's long-term water supply source options have been narrowed to two alternatives and the City is developing an independent process for the evaluation and selection of a final option. As such, the CIP program recommendations presented as part of this master plan will include distribution system facility only. Supply source development funding and capital needs will be determined outside of this master plan.

A summary of all the recommended improvements is presented in Table ES-5. The table provides for prioritized project sequencing by illustrating fiscal year (FY) project needs for each facility or improvement category. Those improvements recommended for construction beyond FY 2025 are indicated as such. It is recommended that the City's capital improvement program (CIP) be funded at approximately \$920,000 annually for storage, pumping and distribution system piping improvements. While the funding needs for certain water system improvements may exceed this amount, the proposed improvements listed in Table ES-5 are phased and sequenced so that the ultimate 20-year average annual capital requirement is approximately \$920,000.

Supply Source Improvements

The seven supply source options and improvement alternatives identified in Section 5 were reviewed with City staff, City of Sherwood Planning Commission and with City Council as part of a public works session on April 5, 2005. At the conclusion of this process the City Council directed that two options be carried forward for further consideration. A copy of the City Council presentation of April 5, 2005 is provided in Appendix O. Based on this direction it is recommended that the City of Portland supply option and the Willamette River supply option be evaluated outside the scope of this master plan as part of a comprehensive source evaluation and selection program. As part of this evaluation it is recommended that a wide range of information and data be compiled for consideration and review by City policy makers and the citizens of Sherwood. Included in this information should be water quality data cost data and a long-term financial analysis of comparative capital costs and cost of water estimates.

Financial Evaluation Overview

The purpose of the financial evaluation is to provide reasonable assurance that the City of Sherwood's Water Fund has and will have the financial ability to maintain and operate the water system on an ongoing basis, plus have the financial capacity to obtain sufficient funds to construct the water system improvements identified in Section 6.

As discussed in Section 5, the City has explored the feasibility of several long-term water supply alternatives to meet the City's future water demands. At this point, two water supply options have been selected for further evaluation:

- Supply from the City of Portland (four capital cost scenarios, with varying treatment processes, are under evaluation) – *Preliminary capital cost estimates range from \$31.0 to \$51.0 million, depending upon the ultimate use and selection of a treatment process and other factors.*
- Supply from the Willamette River Water Treatment Plant in the City of Wilsonville (two capital cost scenarios, with varying transmission routing alternatives, are under evaluation) – *Preliminary capital cost estimates range from \$21.6 to \$24.5 million, depending upon the transmission routing.*

The ultimate cost of capital and/or water costs under each supply alternative is not currently known, as additional project details and negotiations are ongoing. The cost of water to the City may also be impacted by how needed supply capacity improvements are funded and constructed. For purposes of providing a potential range of impacts within this Section, capital costs for each alternative are amortized over a 20-year period.

As part of this effort, the City planned to have a rate study conducted to include a revenue requirement analysis, cost of service analysis, rate design, and system development charge (SDC) analysis. Since the supply alternatives are currently under evaluation, the cost of service/rate design portions of the study have been deferred until after selection of the supply source. The revenue requirement and SDC analyses have been completed to include the impacts of current operations and the water distribution system improvements identified in Section 6. Potential cost impacts integrating the City's long-term water source and supply decision will be briefly discussed.

It is anticipated that rate increases will be needed as the City implements the selected long-term water supply option. The financial evaluation did find that the water fund for recommended distribution system capital improvements is adequate. The actual need for and extent of water rate increases will vary depending on the ultimate selection and timing of a long-term water supply source.

Study Recommendations

It is recommended that the City take following actions:

1. Formally adopt this study as the City of Sherwood's Water System Master Plan.
2. Adopt the prioritized recommended system improvements described in Section 6 and specifically listed on Table ES-5 as the capital improvement plan (CIP) for the water service area.

3. Proceed with the evaluation and selection of a long-term water supply option as recommended in Section 6 and follow the recommendations generated through this process.
4. Review and update this plan within five to seven years to accommodate changed or new conditions.

Summary

Sherwood continues to experience steady population and water demand growth. This water system master plan evaluated the City water system's ability to adequately meet existing and future water needs. The ultimate completion of recommended improvement to the distribution system will ensure that the water system has adequate storage, pumping and distribution system piping capacity to meet these needs well into the future. The City faces a major decision in the selection of its long-term water supply option. Both options recommended for further study as part of this master planning effort can ultimately be developed to adequately meet the City's long-term needs. The financial evaluation found that for the recommended distribution system improvement the City currently has adequate funding resources. This financial evaluation further found that the development and implementation of a long-term water supply option must include a financial planning and analysis element to determine the ultimate impact on City rate payers and to determine overall capital funding needs.

Oregon DEQ Facility Profiler 2.0

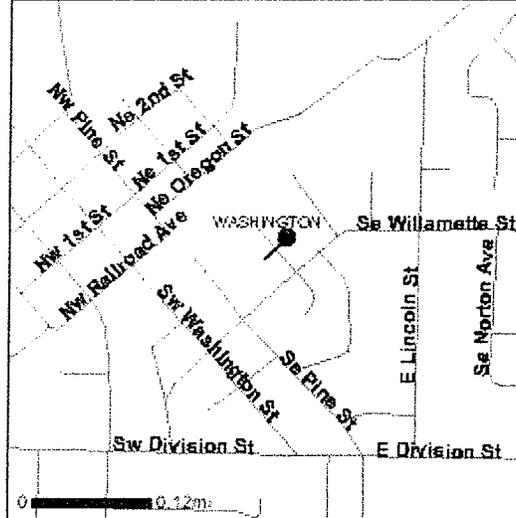
[Help] [Close Window]



Facility Summary Report

[Facility Profiler](#) [Print Report](#)

Maps



Facility / Site Information for Location 95186

Facility/Site Name:	OLD SHERWOOD CANNERY	Latitude:	45° 21' 21.6"
Address:	220 SE WILLAMETTE ST	Longitude:	-122° 50' 17.9"
City State Zip:	SHERWOOD OR 97140	Location Accuracy:	HIGH
		Last Updated:	7/21/2006 9:54:00 AM

Aliases

FORMER SHERWOOD CANNERY/REINHARDT TRUST	LUST	Graves Cannery	ECSI
Old Sherwood Cannery	ECSI		

Geographic Features

Township:	T2S-R1W-S32	Congress Dist:	1	Forest Type:	N/A
County:	WASHINGTON	OR Senate Dist:	13	Vegetation:	Urban and industrial
Watershed:	TUALATIN	OR House Dist:	26	Agricultural Land:	N/A
Drinking Water Source:	N/A				

Oregon DEQ Program Information

Leaking Underground Storage Tanks (LUST)

Log Number	Received	Cleanup Initiated	Cleanup Complete	Type	Heating Oil Tank	UST Facility ID	Status	Detail Information ¹
34-97-0179		03/10/1997		REGULATED		11690	CLEANUP_COMPLETED	LUST Site Report

Environmental Cleanup (ECSI)

Operation ID	Start Date	NFA Date	Permit Type	Permit SubType	Status	Detail Information ¹	EPA Number
4624	04/26/2006		Contaminated Site		Suspect site requiring further investigation	ECSI Site Report	

¹ Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.

² DEQ does not maintain air discharge permit information for Lane County.

Oregon DEQ Facility Profiler 2.0

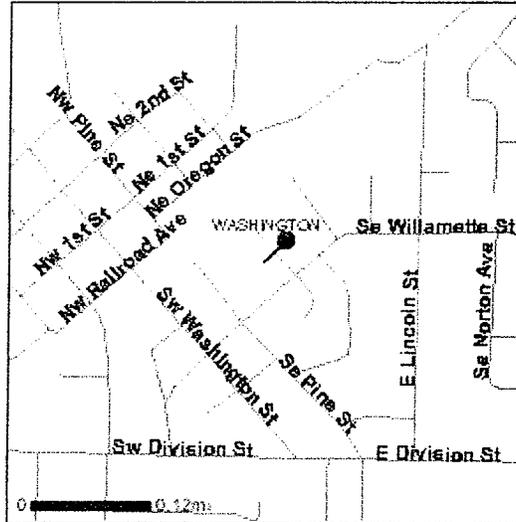
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More Information on this location

[Oregon DEQ Neighborhood Info \(by region/county\)](#)

[See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application](#)

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Land Quality

Environmental Cleanup

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Environmental Cleanup Site Information (ECSI) Database Site Summary Full Report - Details for Site ID 4624, Old Sherwood Cannery

This report shows data entered as of December 14, 2009 at 8:23:21 AM

This report contains site details, organized into the following sections: 1) Site Photos (appears only if the site has photos); 2) General Site Information; 3) Site Characteristics; 4) Substance Contamination Information; 5) Investigative, Remedial and Administrative Actions; and 6) Site Environmental Controls (i.e., institutional or engineering controls; appears only if DEQ has applied one or more such controls to the site). A key to certain acronyms and terms used in the report appears at the bottom of the page.

Go to DEQ's Facility Profiler to see a site map as well as information on what other DEQ programs may be active at this site.

General Site Information

Site ID: 4624	Site Name: Old Sherwood Cannery	CERCLIS No:
Address:	220 SE Willamette St. Sherwood 97140	
	County: Washington	Region: Northwest
Other location information:		
Investigation Status:	Suspect site requiring further investigation	
	Brownfield Site: Yes	NPL Site: No
		Orphan Site: No
Property:	Twtnshp/Range/Sect: 2S , 1W , 32	Tax Lots: 00100
	Latitude: 45.356 deg.	Longitude: -122.8383 deg.
Other Site Names:	Graves Cannery	

Site Characteristics

General Site Description: This is a flat, 5.85 acre site located just south of old town Sherwood, Oregon. The site is bordered to the north/northwest by a railroad grade, to the south and southeast by residential properties and the northeast by commercial/light industrial properties.

Site History: Former cannery (1918 to 1971) and other small warehousing. Brake parts business operated on the site for a brief period, nominally between late 1980s to late 1990s. Near building two area - Tualatin

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[DEQ Home](#) | [Divisions](#) | [Regions](#) | [Commission](#)**Land Quality****Environmental Cleanup**[DEQ Home](#) > [Land Quality](#) > [Environmental Cleanup](#) > [ECSI](#) > [Site Summary Full Report](#)**Environmental Cleanup Site Information (ECSI) Database
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Address:	220 SE Willamette St. Sherwood 97140	
	County: Washington	Region: Northwest
Other location information:		
Investigation Status:	Suspect site requiring further investigation	
	Brownfield Site: NPL Site: No	Orphan Site: Study Area:
	Yes	No No
Property:	Twtnshp/Range/Sect: 2S , 1W , 32	Tax Lots: 00100
	Latitude: Longitude:	Site Size: 5.85 acres
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Site History: Former cannery (1918 to 1971) and other small warehousing. Brake parts business operated on the site for a brief period, nominally between late 1980s to late 1990s. Near building two area - Tualatin

Electric Company Pump House and Sub-Station was present in 1929.

Contamination Information:

Manner and Time of Release:

One known release from former UST removal. Cleanup completed in September of 1997 (LUST log #34-97-0179), but a pocket of contamination was left in place so as not to disturb the building's foundation.

Hazardous Substances/Waste Types:

(10/11/06 CWH/SAP) The 2006 Site Specific Assessment (aka Targeted Brownfield Assessment) found concentrations of chlorinated pesticides (dieldrin, DDT, DDE) in sediments of moribund wastewater treatment system solids settling ponds (concrete) that pose an unacceptable risk to ecological receptors and potentially to humans.

Polychlorinated biphenyls (PCBs) were detected in one sample, in a location below a wooden floor board inside Building #3, at a concentration that is above risk-based protective criterion for human health exposure in a residential setting.

Some low levels of petroleum hydrocarbons were also measured, but not above any risk-based concentrations. Lead was detected in several shallow soil samples at concentrations above established background concentrations.

Pathways: Environmental/Health Threats:

Status of Investigative or Remedial Action:

(10/11/06 CWH/SAP) The 2006 Site Specific Assessment results show that there are unacceptable concentrations of legacy chlorinated pesticides (dieldrin, DDT, DDE) in sediments of moribund wastewater treatment system solids settling cells (concrete). These sediments will need to be removed and properly disposed.

DEQ has recommended that a soil management plan be developed to address several known areas of soil contamination and to plan for unanticipated discoveries of localized contamination during future site development.

Groundwater sampling showed non-detect for petroleum hydrocarbons.

Data Sources:

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded
No information is available			

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Lead Pgm
Site added to database	04/26/2006	04/26/2006	Aaron Dennis	
TARGETED BROWNFIELD ASSESSMENT	05/01/2006	09/29/2006	Charles Harman	
Remedial Action recommended (RA) (Primary Action)	10/11/2006	10/11/2006	Charles Harman	SAS

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Key to Certain Acronyms and Terms in this Report:

CERCLIS No.: The U.S. EPA's Hazardous Waste Site identification number, shown only if EPA has been involved at the site.

Region: DEQ divides the state into three regions, Eastern, Northwest, and Western; the regional office shown is responsible for site investigation/cleanup.

NPL Site: Is this site on EPA's National Priority List (i.e., a federal Superfund site)? (Y/N).

Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program uses state funds to clean up high-priority sites where owners and operators responsible for the contamination are absent, or are unable or unwilling to use their own resources for cleanup.

Study Area: Is this site a Study Area? (Y/N). Study Areas are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem. ECSI assigns unique Site ID numbers to both individual sites and to Study Areas.

Pathways: A description of human or environmental resources that site contamination could affect.

Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS or SAP = Site Assessment; VCS or VCP = Voluntary Cleanup; ICP = Independent Cleanup; SRS or SRP = Site Response (enforcement cleanup); ORP = Orphan Program.

You may be able to obtain more information about this site by contacting Charles Harman at the Northwest regional office or via email at harman.charles@deq.state.or.us. If this does not work, you may contact Gil Wistar at (503) 229-5512, or via email at wistar.gil@deq.state.or.us or contact the Northwest regional office.

[print version]

For more information about **ECSI** call Gil Wistar at 503-229-5512 or email.

For more information about **DEQ's Land Quality Division and its programs**, see the contact page.

Oregon Department of Environmental Quality

Headquarters: 811 Sixth Ave., Portland, OR 97204-1390

Phone: 503-229-5696 or toll free in Oregon 1-800-452-4011

Oregon Telecommunications Relay Service: 1-800-735-2900 FAX: 503-229-6124

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Service Provider Letter

CWS File Number
09-000783

This form and the attached conditions will serve as your Service Provider Letter in accordance with Clean Water Services Design and Construction Standards (R&O 07-20).

Jurisdiction:	<u>Sherwood</u>	Review Type:	<u>Tier 2 Alternative Analysis</u>
Site Address: / Location:	<u>15601 SW Willamette ST Sherwood, OR 97140</u>	SPL Issue Date:	<u>June 08, 2009</u>
		SPL Expiration Date:	<u>June 08, 2011</u>

Applicant Information:		Owner Information:	
Name	<u>SHERWOOD, CITY OF</u>	Name	<u>SHERWOOD, CITY OF</u>
Company		Company	
Address	<u>22560 SW PINE ST SHERWOOD OR 97140</u>	Address	<u>22560 SW PINE ST SHERWOOD OR 97140</u>
Phone/Fax	<u>503-925-2303</u>	Phone/Fax	<u>503-925-2303</u>
E-mail:		E-mail:	

Tax lot ID	Development Activity
<u>2S132BD00150, 00151, 00200, 00800, and 00900</u>	<u>Mixed-Use Development</u>

Pre-Development Site Conditions:	Post Development Site Conditions:
Sensitive Area Present: <input checked="" type="checkbox"/> On-Site <input checked="" type="checkbox"/> Off-Site	Sensitive Area Present: <input checked="" type="checkbox"/> On-Site <input checked="" type="checkbox"/> Off-Site
Vegetated Corridor Width: <u>Variable; 15-50 feet</u>	Vegetated Corridor Width: <u>Variable; 10-35 feet</u>
Vegetated Corridor Condition: <u>Marginal/Degraded</u>	

Enhancement of Remaining Vegetated Corridor Required: <input checked="" type="checkbox"/>	Square Footage to be enhanced: <u>8,009</u>
---	---

Encroachments into Pre-Development Vegetated Corridor:

Type and location of Encroachment:	Square Footage:
<u>ROW</u>	<u>704</u>
<u>South Building Parking</u>	<u>1,767</u>
<u>West Apartment Building and Parking</u>	<u>1,220</u>
Total	<u>3,691</u>

Mitigation Requirements:

Type/Location:	Sq. Ft./Ratio/Cost
<u>Off-site Mitigation (Tax lot 2S131DB01900)</u>	<u>4,614/ 1.25:1</u>

Conditions Attached Development Figures Attached (8) Planting Plan Attached Geotech Report Required

This Service Provider Letter does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property.



Service Provider Letter

CWS File Number
09-000783

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<u>SHERWOOD OR 97140</u>	<u>SHERWOOD OR 97140</u>
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Conditions Attached Development Figures Attached (8) Planting Plan Attached Geotech Report Required

This Service Provider Letter does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property.

In order to comply with Clean Water Services water quality protection requirements the project must comply with the following conditions:

1. No structures, development, construction activities, gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by Oregon Department of Environmental Quality, pet wastes, dumping of materials of any kind, or other activities shall be permitted within the sensitive area or Vegetated Corridor which may negatively impact water quality, except those allowed in R&O 07-20, Chapter 3.
2. Prior to any site clearing, grading or construction the Vegetated Corridor and water quality sensitive areas shall be surveyed, staked, and temporarily fenced per approved plan. During construction the Vegetated Corridor shall remain fenced and undisturbed except as allowed by R&O 07-20, Section 3.06.1 and per approved plans.
3. Prior to any activity within the sensitive area, the applicant shall gain authorization for the project from the Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE). The applicant shall provide Clean Water Services or its designee (appropriate city) with copies of all DSL and USACE project authorization permits. **No Activity Authorized.**
4. An approved Oregon Department of Forestry Notification is required for one or more trees harvested for sale, trade, or barter, on any non-federal lands within the State of Oregon.
5. Prior to ground disturbance an Erosion Control Permit through the City or Clean Water Services is required. Appropriate Best Management Practices (BMP's) for Erosion Control, in accordance with Clean Water Services' Erosion Prevention and Sediment Control Planning and Design Manual, shall be used prior to, during, and following earth disturbing activities.
6. Prior to construction, a Stormwater Connection Permit from Clean Water Services or its designee is required pursuant to Ordinance 27, Section 4.B.
7. Activities located within the 100-year floodplain shall comply with R&O 07-20, Section 5.10.
8. Removal of native, woody vegetation shall be limited to the greatest extent practicable.
9. The stormwater planters shall be planted with Clean Water Services approved plant species, and designed to blend into the natural surroundings.
10. **Should final development plans differ significantly from those submitted for review by Clean Water Services, the applicant shall provide updated drawings, and if necessary, obtain a revised Service Provider Letter.**

SPECIAL CONDITIONS

11. For Vegetated Corridors up to 50 feet wide, the applicant shall enhance the entire Vegetated Corridor to meet or exceed good corridor condition as defined in R&O 07-20, Section 3.14.2, Table 3-3.
12. Prior to any site clearing, grading or construction, the applicant shall provide Clean Water Services with a Vegetated Corridor enhancement/restoration plan. Enhancement/restoration of the Vegetated Corridor shall be provided in accordance with R&O 07-20, Appendix A, and shall include planting specifications for all Vegetated Corridor, including any cleared areas larger than 25 square feet in Vegetated Corridor rated "good." **A general enhancement/restoration plan has been provided for the on-site Vegetated Corridor and off-site Mitigation area. Please see SPL attachments 5 and 7, respectively for the locations of enhancement.**
13. Prior to installation of plant materials, all invasive vegetation within the Vegetated Corridor shall be removed per methods described in Clean Water Services' Integrated Vegetation and Animal Management Guidance, 2003. During removal of invasive vegetation care shall be taken to minimize impacts to existing native tree and shrub species.
14. Clean Water Services shall be notified 72 hours prior to the start and completion of enhancement/restoration activities. Enhancement/restoration activities shall comply with the guidelines provided in Landscape Requirements (R&O 07-20, Appendix A).
15. Maintenance and monitoring requirements for both the on-site Vegetated Corridor and off-site Vegetated Corridor Mitigation area shall comply with R&O 07-20, Section 2.11.2. If at any time

In order to comply with Clean Water Services water quality protection requirements the project must comply with the following conditions:

1. No structures, development, construction activities, gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by Oregon Department of Environmental Quality, pet wastes, dumping of materials of any kind, or other activities shall be permitted within the sensitive area or Vegetated Corridor which may negatively impact water quality, except those allowed in R&O 07-20, Chapter 3.
2. Prior to any site clearing, grading or construction the Vegetated Corridor and water quality sensitive areas shall be surveyed, staked, and temporarily fenced per approved plan. During construction the Vegetated Corridor shall remain fenced and undisturbed except as allowed by R&O 07-20, Section 3.06.1 and per approved plans.
3. Prior to any activity within the sensitive area, the applicant shall gain authorization for the project from the Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE). The applicant shall provide Clean Water Services or its designee (appropriate city) with copies of all DSL and USACE project authorization permits. **No Activity Authorized.**
4. An approved Oregon Department of Forestry Notification is required for one or more trees harvested for sale, trade, or barter, on any non-federal lands within the State of Oregon.
5. Prior to ground disturbance an Erosion Control Permit through the City or Clean Water Services is required. Appropriate Best Management Practices (BMP's) for Erosion Control, in accordance with Clean Water Services' Erosion Prevention and Sediment Control Planning and Design Manual, shall be used prior to, during, and following earth disturbing activities.
6. Prior to construction, a Stormwater Connection Permit from Clean Water Services or its designee is required pursuant to Ordinance 27, Section 4.B.
7. Activities located within the 100-year floodplain shall comply with R&O 07-20, Section 5.10.
8. Removal of native, woody vegetation shall be limited to the greatest extent practicable.
9. The stormwater planters shall be planted with Clean Water Services approved plant species, and designed to blend into the natural surroundings.
10. **Should final development plans differ significantly from those submitted for review by Clean Water Services, the applicant shall provide updated drawings, and if necessary, obtain a revised Service Provider Letter.**

SPECIAL CONDITIONS

11. For Vegetated Corridors up to 50 feet wide, the applicant shall enhance the entire Vegetated Corridor to meet or exceed good corridor condition as defined in R&O 07-20, Section 3.14.2, Table 3-3.
12. Prior to any site clearing, grading or construction, the applicant shall provide Clean Water Services with a Vegetated Corridor enhancement/restoration plan. Enhancement/restoration of the Vegetated Corridor shall be provided in accordance with R&O 07-20, Appendix A, and shall include planting specifications for all Vegetated Corridor, including any cleared areas larger than 25 square feet in Vegetated Corridor rated "good." **A general enhancement/restoration plan has been provided for the on-site Vegetated Corridor and off-site Mitigation area. Please see SPL attachments 5 and 7, respectively for the locations of enhancement.**
13. Prior to installation of plant materials, all invasive vegetation within the Vegetated Corridor shall be removed per methods described in Clean Water Services' Integrated Vegetation and Animal Management Guidance, 2003. During removal of invasive vegetation care shall be taken to minimize impacts to existing native tree and shrub species.
14. Clean Water Services shall be notified 72 hours prior to the start and completion of enhancement/restoration activities. Enhancement/restoration activities shall comply with the guidelines provided in Landscape Requirements (R&O 07-20, Appendix A).
15. Maintenance and monitoring requirements for both the on-site Vegetated Corridor and off-site Vegetated Corridor Mitigation area shall comply with R&O 07-20, Section 2.11.2. If at any time

during the warranty period the landscaping falls below the 80% survival level, the owner shall reinstall all deficient planting at the next appropriate planting opportunity and the two year maintenance period shall begin again from the date of replanting.

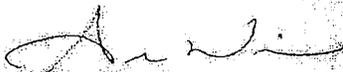
16. Performance assurances for the Vegetated Corridor shall comply with R&O 07-20, Section 2.06.2, Table 2-1 and Section 2.10, Table 2-2.
17. Clean Water Services shall require an easement over the on-site Vegetated Corridor and off-site Mitigation area conveying storm and surface water management to Clean Water Services that would prevent the owner of the Vegetated Corridor from activities and uses inconsistent with the purpose of the corridor and any easements therein.

FINAL PLANS

18. Final construction plans shall include landscape plans. In the details section of the plans, a description of the methods for removal and control of exotic species, location, distribution, condition and size of plantings, existing plants and trees to be preserved, and installation methods for plant materials is required. Plantings shall be tagged for dormant season identification and shall remain on plant material after planting for monitoring purposes.
19. A Maintenance Plan shall be included on final plans including methods, responsible party contact information, and dates (minimum two times per year, by June 1 and September 30).
20. Final construction plans shall clearly depict the location and dimensions of the sensitive area and the Vegetated Corridor (indicating good, marginal, or degraded condition). Sensitive area boundaries shall be marked in the field.
21. Protection of the Vegetated Corridors and associated sensitive areas shall be provided by the installation of permanent fencing and signage between the development and the outer limits of the Vegetated Corridors. Fencing and signage details to be included on final construction plans.

This Service Provider Letter is not valid unless CWS-approved site plan is attached.

Please call (503) 681-3653 with any questions.


Amber Wierck
Environmental Plan Review

Attachments (8)

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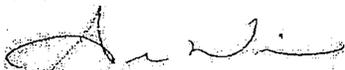
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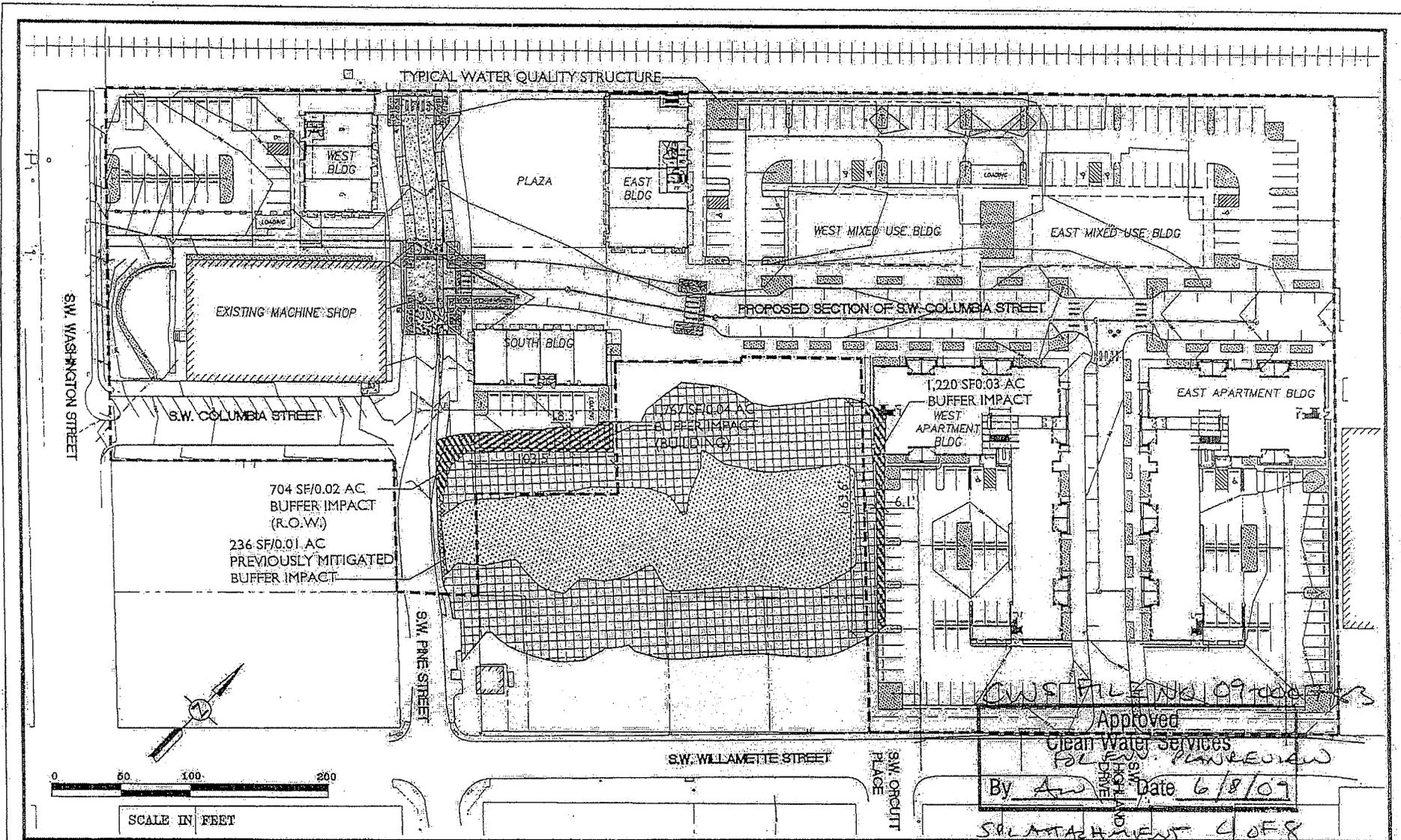


FIGURE
7

Site plan and proposed buffer impacts at the Cannery Site PUD in Sherwood, Washington County, 5/5/09 Oregon.

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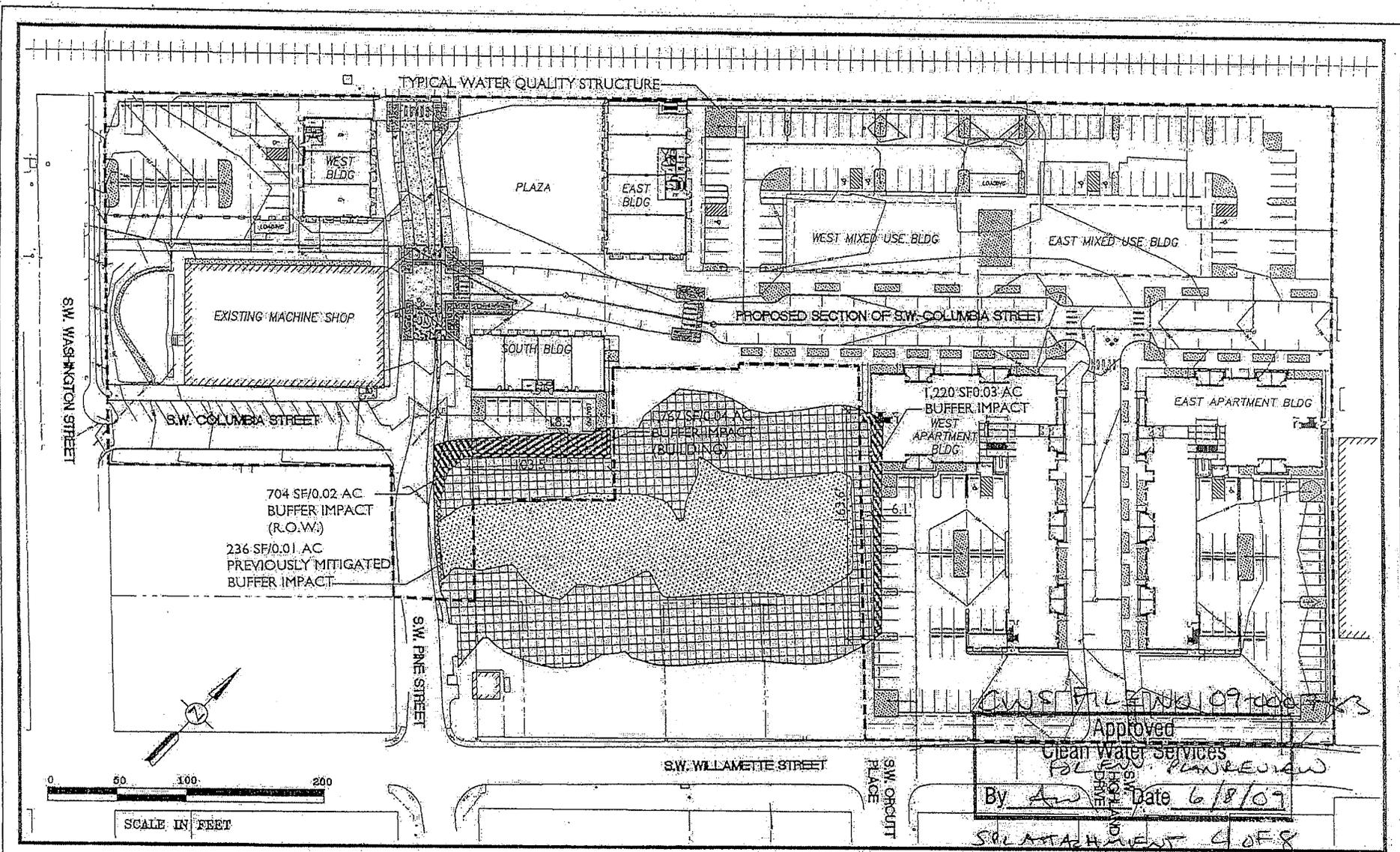


FIGURE
7

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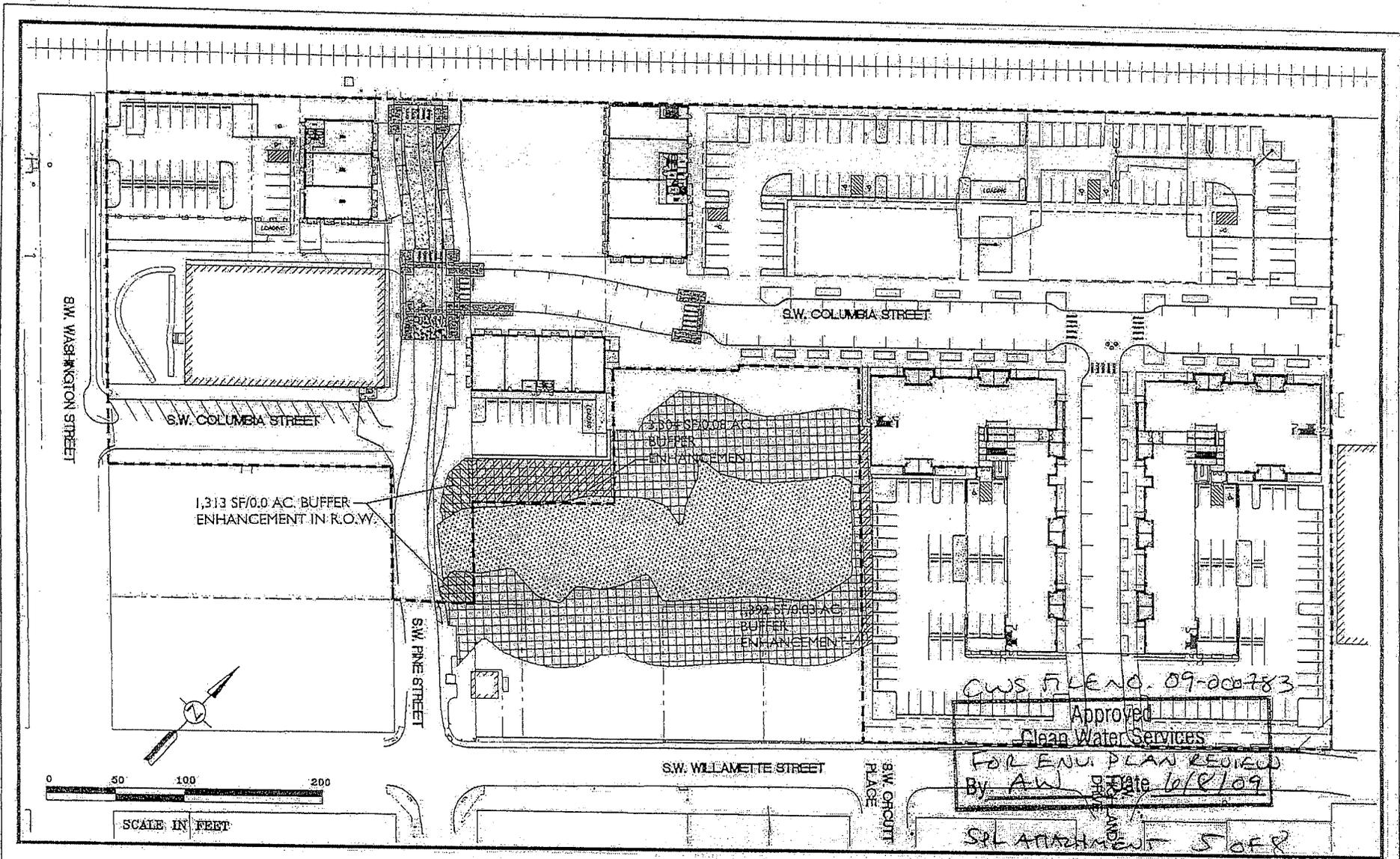


FIGURE
9

Proposed onsite buffer enhancement at the proposed Cannery Site PUD in Sherwood, Washington
County, Oregon.

4408
5/5/09

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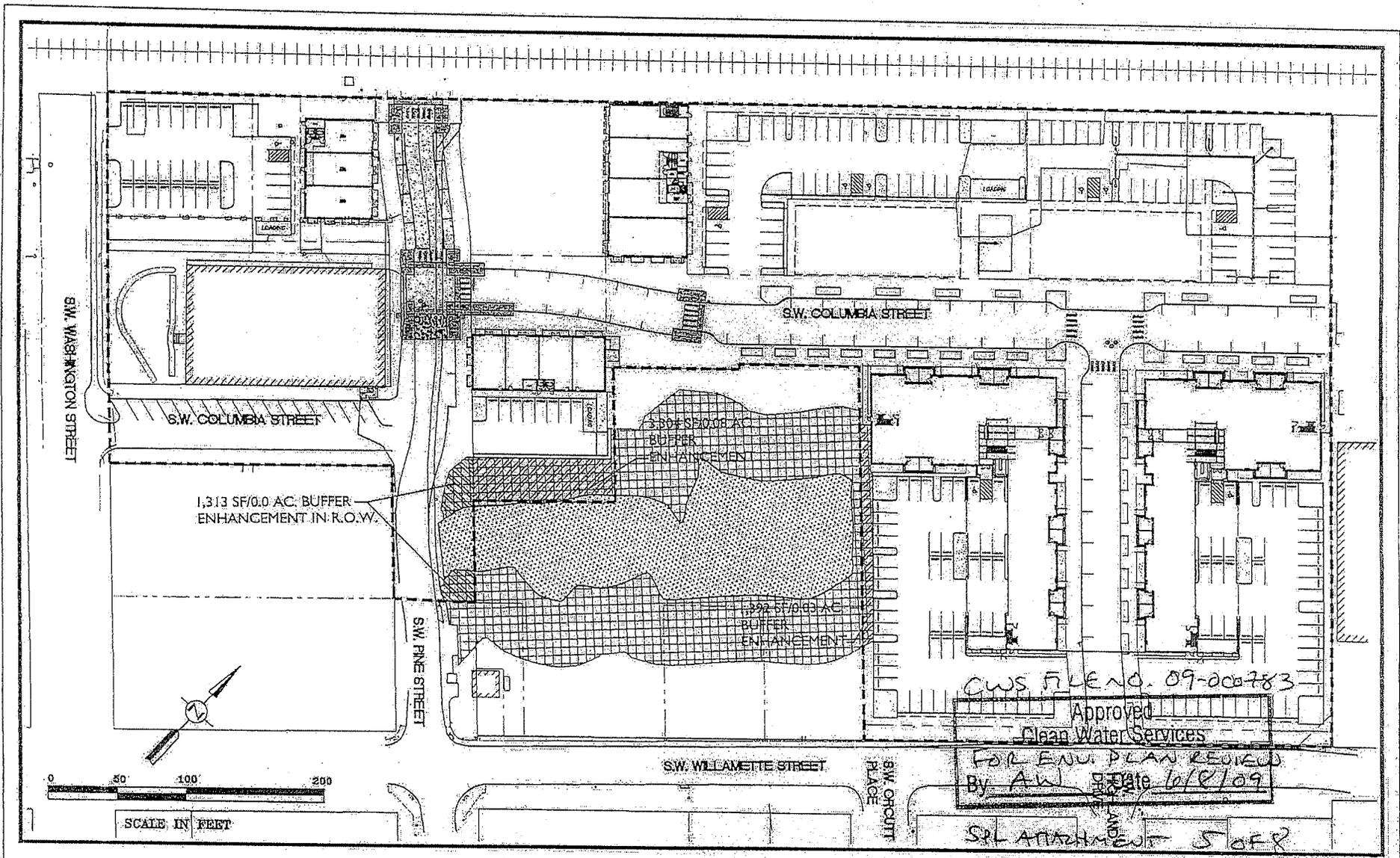


FIGURE
9

Proposed onsite buffer enhancement at the proposed Cannery Site PUD in Sherwood, Washington County, Oregon.

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5/5/09



CWS FILE NO. 09-000783

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FOR ENV. PLAN REVIEW
By AW Date 6/8/09

Native Plant Communities and Species Diversity

Function: Support of Characteristic Vegetation

The native plant community and species diversity rates low for the wetland and buffer. The wetland and buffer are dominated by non native and noxious plants. Support of characteristic vegetation functions will be improved by planting native trees and shrubs and removing the invasive Himalayan blackberry and non-native grasses in the buffer. SPL Att. ~~Author~~
6 of 8

5.5 On Site Vegetated Corridor Enhancement

The area of regulated on-site VC to be enhanced is 6,009 square feet/0.14 acre (Figure 9). The on-site VCs will be enhanced by removing noxious/invasive species and planting native trees, shrubs, herbaceous cover, and an herbaceous seed mix. The existing vegetation will need to be taken into consideration when preparing a landscape plan.

Table 5 lists native plants recommended for installation throughout the vegetated corridor. The plant species were chosen for their suitability to the soils and hydrology of the site, and their natural occurrence in the area.

Table 5. Suggested On Site VC Enhancement Plantings

Botanical Name	Common Name	Minimum rooting size
TREES		
(60 Total TREES Reg'd.)		
<i>Acer circinatum</i>	Vine maple	2 gallon
<i>Acer macrophyllum</i>	Big-leaf maple	2 gallon
<i>Crataegus douglasii</i>	Douglas hawthorn	2 gallon
SHRUBS		
300 Total Shrubs Reg'd.		
<i>Amelanchier alnifolia</i>	Western serviceberry	1 gallon
<i>Berberis aquifolium</i>	Tall Oregon grape	1 gallon
<i>Lonicera involucrata</i>	Black twinberry	1 gallon
<i>Oemleria cerasiformis</i>	Indian plum	1 gallon
<i>Polystichum munitum</i>	Sword fern	1 gallon
<i>Ribes sanguineum</i>	Red flowering current	1 gallon
<i>Rosa nutkana</i>	Nootka rose	1 gallon
<i>Symphoricarpos albus</i>	Snowberry	1 gallon
HERBACEOUS SEED MIX		
Application rate		
<i>Agrostis exarata</i>	Spike bentgrass	8 lbs per acre
<i>Bromus carinatus</i>	California brome	10 lbs per acre
<i>Elymus glaucus</i>	Blue wildrye	10 lbs per acre

Enhancement will be consistent with Clean Water Services' standards (R&O 07-20). The overall goal of the enhancement is to restore the corridor to 'Good' condition, as required.

5.6 Off Site Vegetated Corridor Mitigation

Mitigation for impacts to the VC are proposed at Woodhaven Park located approximately 1.2 miles southeast of the proposed project (Figure 1). The 7-acre park is owned and operated by the City of Sherwood located at 17375 Sunset Boulevard (Township 2 South, Range 1 West, Section 31 Tax lots 1800, 1900, 2000). The proposed mitigation site will be located on tax lot 1900 (Figures 10A and B). The mitigation site was selected because it is within park property

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SHRUBS		
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<i>Amelanchier alnifolia</i>	Western serviceberry	1 gallon
<i>Berberis aquifolium</i>	Tall Oregon grape	1 gallon
<i>Lonicera involucrata</i>	Black twinberry	1 gallon
<i>Oemleria cerasiformis</i>	Indian plum	1 gallon
<i>Polystichum munitum</i>	Sword fern	1 gallon
<i>Ribes sanguineum</i>	Red flowering current	1 gallon
<i>Rosa nutkana</i>	Nootka rose	1 gallon
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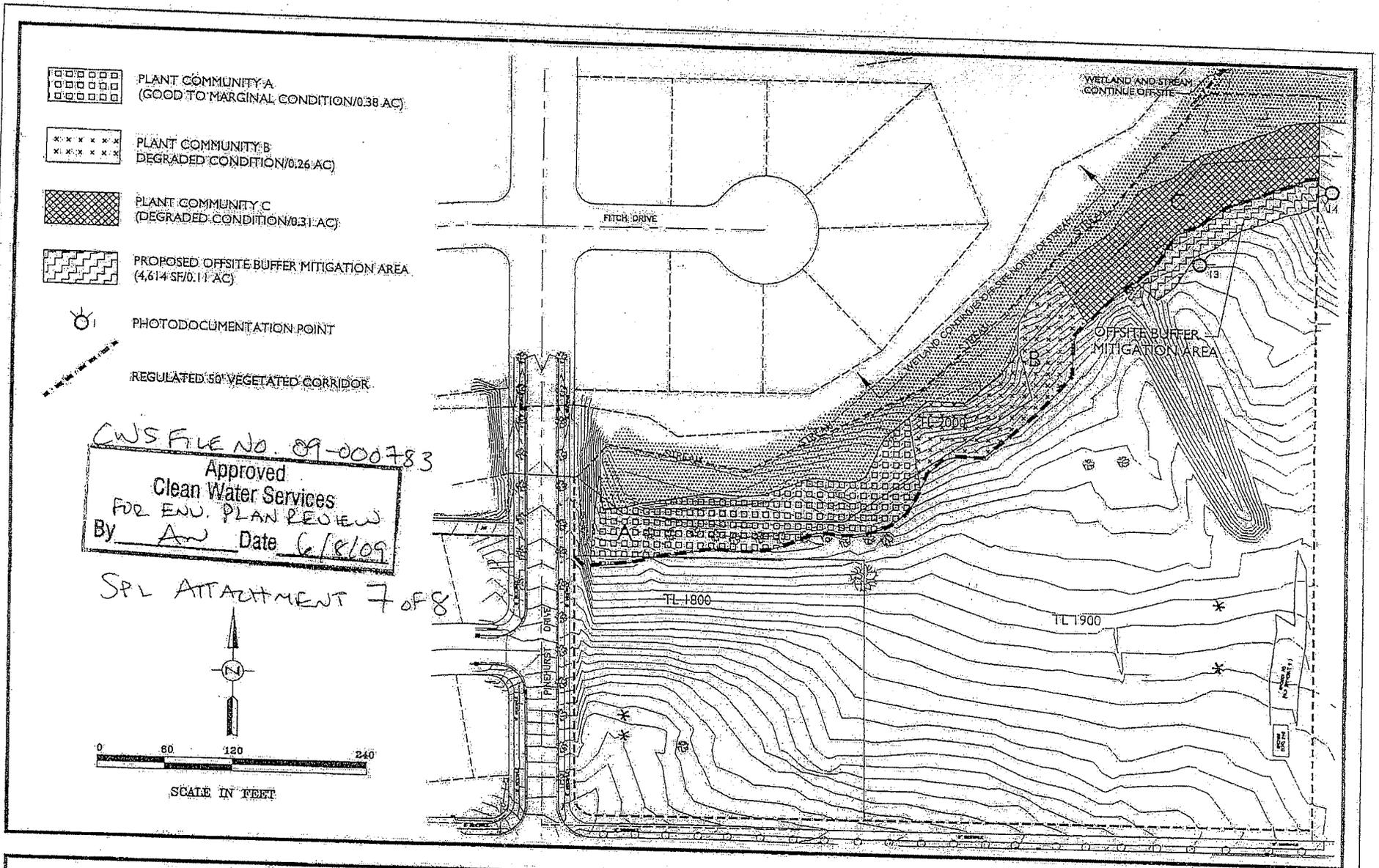


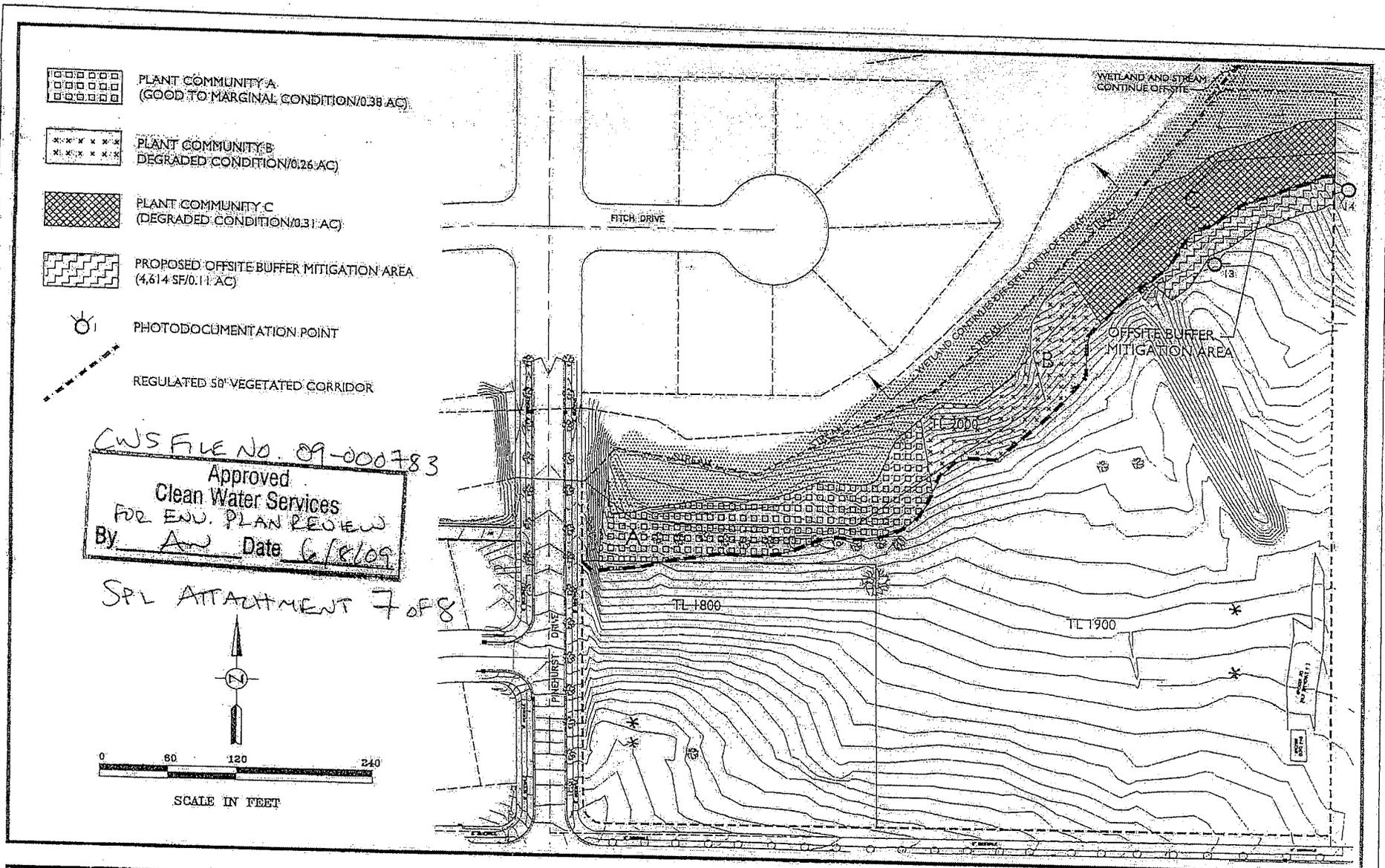
FIGURE
10A

Location of proposed offsite buffer mitigation area at Woodhaven Park in Sherwood, Oregon.
 Base map provided by Westlake Consultants, 2001.

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 5/5/09

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FIGURE

10A

Location of proposed offsite buffer mitigation area at Woodhaven Park in Sherwood, Oregon.
Base map provided by Westlake Consultants, 2001.

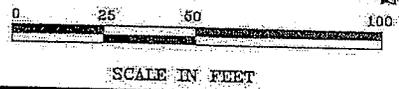
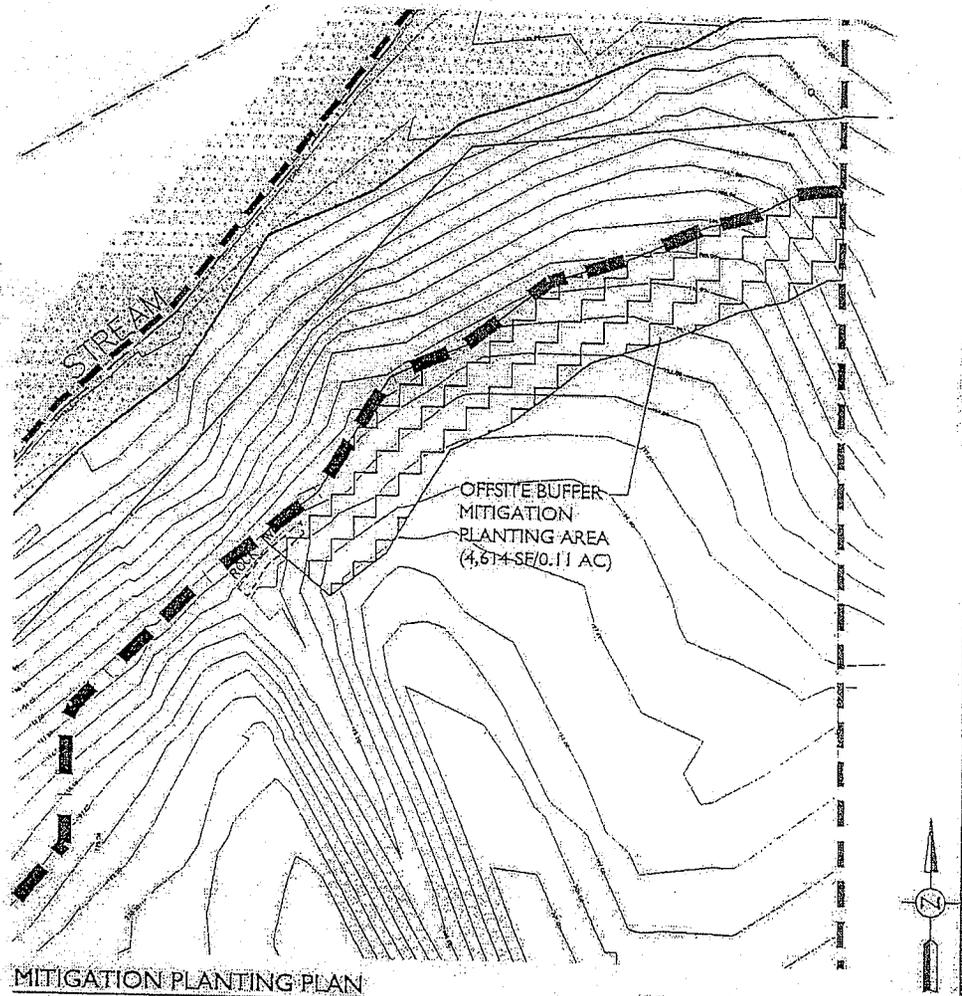
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PLANT LIST

Botanical Name	Common Name	Size	Quantity
TREES			
<i>Acer circinatum</i>	Vine maple	2 gallon	46
<i>Acer macrophyllum</i>	Big leaf maple	2 gallon	12
<i>Crataegus douglasii</i>	Douglas hawthorn	2 gallon	10
<i>Pseudotsuga menziesii</i>	Douglas fir	2 gallon	10
SHRUBS			
<i>Amelanchier alnifolia</i>	Western serviceberry	1 gallon	26
<i>Berberis aquifolium</i>	Tall Oregon grape	1 gallon	30
<i>Lonicera involucrata</i>	Black twinberry	1 gallon	30
<i>Oemleria carasiformis</i>	Indian plum	1 gallon	25
<i>Polystichum munitum</i>	Sword fern	1 gallon	30
<i>Ribes sanguineum</i>	Red flowering current	1 gallon	30
<i>Rosa nutkana</i>	Nootka rose	1 gallon	30
<i>Symphoricarpos albus</i>	Snowberry	1 gallon	30
SEED MIX			
		Rate:	
<i>Agrostis exarata</i>	Spike bentgrass	8 lbs per acre	0.14 lbs
<i>Bromus carinatus</i>	California brome	10 lbs per acre	0.11 lbs
<i>Elymus glaucus</i>	Blue-wildrye	10 lbs per acre	0.11 lbs



CWS FILE NO. 09-000783

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 FOR ENV. PLAN REVIEW
 By AW Date 6/8/09

SPL ATTACHMENT 8 OF 8

FIGURE
 10B

Proposed offsite buffer mitigation planting plan at Woodhaven Park in Sherwood, Oregon.
 Base map provided by Westlake Consultants, 2001.

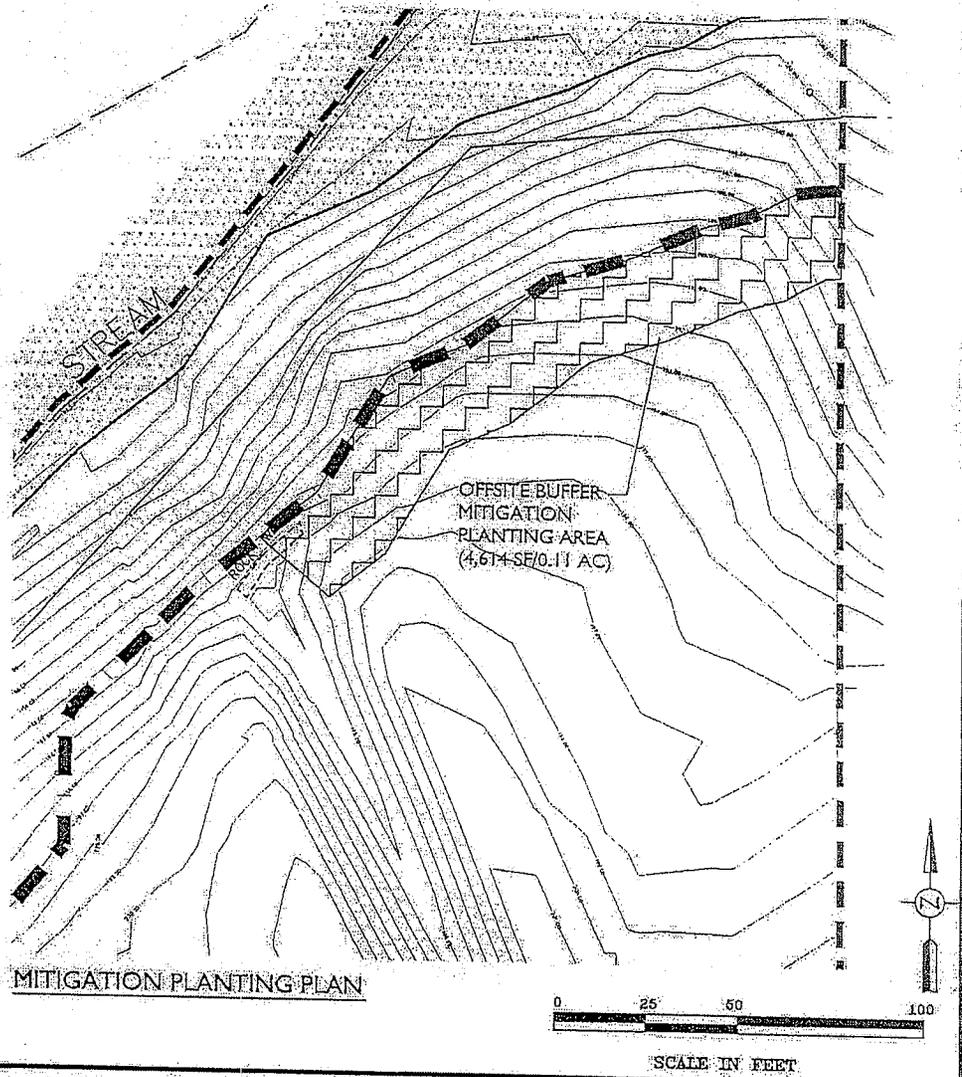
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<i>Oenothera cerasiformis</i>	Indian plum	1 gallon	25
<i>Polystichum munitum</i>	Sword fern	1 gallon	30
<i>Ribes sanguineum</i>	Red flowering currant	1 gallon	30
<i>Rosa nutkana</i>	Nootka rose	1 gallon	30
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SEED MIX			
		Rate	
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SPL ATTACHMENT 8 of 8

FIGURE
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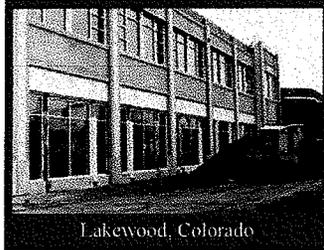
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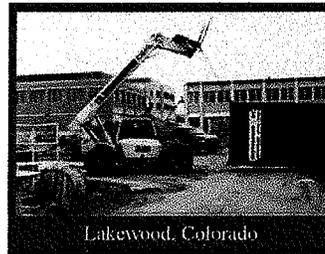
EPA Brownfields Cleanup Grants: Interested in Applying for Funding? *Here's what you need to know to get started...*

What is EPA's Brownfields Program?



Lakewood, Colorado

The U.S. Environmental Protection Agency's (EPA) Brownfields Program is designed to empower states, communities, and other stakeholders to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields. EPA provides technical and financial assistance for brownfields activities through an approach based on four main goals: protecting human health and the environment, sustaining reuse, promoting partnerships, and strengthening the marketplace. Brownfields grants serve as the foundation of the Brownfields Program and support revitalization efforts by funding environmental assessment, cleanup, and job training activities. Thousands of properties have been assessed and cleaned up through the Brownfields Program, clearing the way for their reuse.



Lakewood, Colorado

A brownfield is defined as: real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The 2002 Brownfields Law further defines the term to include a site that is: "contaminated by a controlled substance; contaminated by petroleum or a petroleum product excluded from the definition of 'hazardous substance'; or mine-scarred land."

What are the Four Grant Types?

- ✓ Assessment grants provide funding for brownfields inventories, planning, environmental assessments, and community outreach.
- ✓ Revolving Loan Fund grants provide funding to capitalize a revolving loan fund that provides subgrants to carry out assessment and/or cleanup activities at brownfields.

- ✓ Cleanup grants provide direct funding for cleanup activities at specific sites.
- ✓ Job Training grants provide environmental training for residents of brownfields communities.

What are Cleanup Grants?

Brownfields Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites. Funds may be used to address sites contaminated by petroleum and/or hazardous substances, pollutants, or contaminants (including hazardous substances commingled with petroleum).

For the complete discussion of Brownfields Program grant funding, refer to the EPA Proposal Guidelines for Brownfields Assessment, Revolving Loan Fund, and Cleanup grants at: <http://www.epa.gov/brownfields/applicat.htm>

How Do I Apply for a Cleanup Grant?

Applicants submit a proposal for each grant type that they are applying for (i.e., assessment, revolving loan fund, and/or cleanup). Each proposal must address the selection criteria outlined in the guidelines.

Grant proposals should be concise and well organized, and must provide the information requested in the guidelines. Applicants must demonstrate that they meet threshold criteria requirements and must respond to evaluation criteria. Factual information about your proposed project and community must be provided.

Proposals must include:

- ✓ Cover letter describing project
- ✓ Applicant information
- ✓ Applicable mandatory attachments (e.g., state letter)
- ✓ Responses to evaluation criteria

All applicants must refer to the Proposal Guidelines published by EPA.

Who is Eligible to Apply for a Cleanup Grant?

Eligible entities include: state, local, and tribal governments, with the exception of certain Indian tribes in Alaska; general purpose units of local government, land clearance authorities, or other quasi-governmental entities; regional council or redevelopment agencies; states or legislatures; or nonprofit organizations.

Some properties are excluded from the definition of a brownfield unless EPA makes a site-specific funding determination that allows grant funds to be used at that site.

In order to receive a Cleanup grant, the applicant must be the sole owner of the property that is the subject of its cleanup grant proposal by time of proposal submission. For the purposes of eligibility determinations in the guidelines only, the term "own" means fee simple title. A written ASTM or equivalent Phase I report must be completed and a minimum of an ASTM or equivalent Phase II site assessment must be underway or completed prior to proposal submission.

How Much Cleanup Grant Funding is Available?

- ✓ Up to \$200,000 per site – no entity may apply for funding cleanup activities at more than five sites.
- ✓ Cleanup Grants require a 20 percent cost share, which may be in the form of a contribution of money, labor, material, or services, and must be for eligible and allowable costs.

How Long is the Cleanup Grant Period?

The performance period for a cleanup grant is three years.

Where Do I Find the Proposal Guidelines?

Electronic copies of the Proposal Guidelines can be obtained from the EPA brownfields Web site at:
<http://www.epa.gov/brownfields/applicat.htm>

Additional information on grant programs may be found at: www.grants.gov

Is Pre-Application Assistance Available?

If resources permit, EPA Regions may conduct open meetings with potential applicants. Check with your regional office for date and location information. Your regional Brownfields Program contacts can be found at:
<http://www.epa.gov/brownfields/corcntct.htm>

EPA can respond to questions from applicants about threshold criteria, including site eligibility and ownership.

What is the Evaluation/Selection Process?

Brownfields grants are awarded on a competitive basis. Evaluation panels consisting of EPA staff and other federal agency representatives assess how well the proposals meet the threshold and ranking criteria outlined in the Proposal Guidelines for Brownfields Assessment, Revolving Loan Fund, and Cleanup grants. Final selections are made by EPA senior management after considering the ranking of proposals by the evaluation panels. Responses to threshold criteria are evaluated on a pass/fail basis. If the proposal does not meet the threshold criteria, the proposal will not be evaluated. In some circumstances, EPA may seek additional information.