



## 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.)

*The tasks described below will apply to the study of all three potential storage projects, in the order of their respective importance (according to the amount of water each could produce):*

*(a) small storage ponds to hold groundwater pumped from the orchard's low-yielding wells on a year-around schedule; (b) a storage pond to hold water from a spring that has been detected at the site; and, (c) a bioswale to reclaim storm-water runoff that is being discharged onto the site by a drain from a neighboring subdivision, and a storage pond for the reclaimed water.*

- *Task #1: Sign the contract for engineering services with the engineering firm.*
- *Task #2: Site visit by the engineers and the applicant.*
- *Task #3: Work conducted by the engineering firm, in collaboration with the applicant, based on site-visit notes, aerial photographs, a detailed topographical map, and other data (e.g., volumes of storm-water runoff tracked by City of Dallas).*
- *Task #4: Specific surveying and measurements will be conducted to determine the best possible locations for potential storage ponds, and test pits will be excavated to evaluate the suitability of various sites for the storage ponds.*
- *Task #5: Other test pits will be excavated, monitored, and logged to analyze intercepted water location, elevation, and flow rate of the spring.*
- *Task #6: Measurements will be made of the volumes of storm-water being discharged by the subdivision's drain. Data will be obtained from the City of Dallas.*
- *Task #7: Samples of the storm-water runoff will be taken around the first flush, and will be tested by Alexin Analytical Labs (Tigard) for pollutants according to standard DEQ methodology: total suspended solids, pH, fat oils & greases, copper, lead, and zinc.*
- *Task #8: The engineering firm will research the potential for a bioswale (or any other filtering solution) to treat the storm-water to make it clean enough to be used for irrigation of the fruit and nut parts of the orchard. Input from DEQ will be obtained.*
- *Task #9: All measurements and data will be compiled by the applicant and provided to the engineering firm for the preparation of the final report.*
- *Task #10: The final report will analyze the best technical solutions, best cost/benefit ratios, and best environmental benefits for the storage of at least 350,000 gallons of usable water for irrigation; the report will include drawings, maps and photographs.*
- *All tasks can be undertaken in the 3rd and 4th quarters 2012 (some measurements will be taken in 4th quarter 2011 and 1st and 2nd quarters 2012, so as to have a longer record to analyze). The final task (final report) will be done in 1st quarter 2013.*

- b. When the planning study could begin.

*As early as May or June 2012 (immediately after funding is confirmed). All matching funds are already secured. Applicant and engineers are ready to begin as soon as funding is confirmed.*

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.

*HBH Consulting Engineers, Inc. will play a key role in performing the planning study. HBH has been providing civil engineering services to clients throughout Oregon since 1997. Despite a small size, HBH's engineers have experience that can rival the largest firms. Specific to this project, HBH has extensive experience in water resources engineering, including the storage and treatment of surface and groundwater. HBH has recently completed an Oregon Water Resources Department (hereafter "OWRD") grant project for the City of Rockaway Beach for the design of an off-stream storage reservoir for the City's water supply. The applicant therefore expects HBH to be proficient at meeting the standards and requirements of the OWRD for the planning study.*

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

*No permitting requirements are anticipated for the planning study to be conducted. Evaluation and measurements can be conducted based on small test pits excavated on the site, for which no permitting is necessary. The test pits will however respect the Polk County setback requirements for any construction, even though the test pits are not considered construction. The locations on the property that are considered for test pits are not in any sensitive areas with respect to streams, soils, or wildlife.*

*The local office of the U.S. Department of Agriculture/Natural Resources Conservation Service ("USDA/NRCS") has previously determined (within the framework of an EQIP grant given to La Creole Orchards) that there are no sensitive areas or any threatened/endangered species on the property.*

*The final report of the planning study will contain detailed information about the permitting requirements or issues for the project implementation. For a discussion of those permitting requirements and issues as posed by the implementation of the project, see page 9 of this application (point 6 of the Unique Criteria section of this application).*

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 governmental approvals are required for the planning study.*

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 store approximately 350,000 gallons of actual usable water in several storage reservoirs, available to irrigate the entire orchard when it reaches full maturity in 2014-2015. At that time, the 50-acre property will contain an orchard of 10,000 trees (currently, 1,500 trees have been planted on about 10 acres at the site). The 10,000 trees will require approximately 400,000 gallons to irrigate based on 60 consecutive days with no precipitation in the dry season.*

*The low-yielding wells at the site produce a combined 1,000 gallons of groundwater per day - therefore, they could produce 60,000 gallons at best during the 60 days when irrigation is needed. Only a portion (15%) of the full orchard could be irrigated based on what the wells can produce on the go. It is therefore imperative to find storage solutions.*

*For a small investment from this grant program, the planning study will identify the most technically feasible and site-appropriate storage option, with enough detail to be able to implement the project shortly after.*

*The planning study will answer crucial technical questions and show: which solution offers the highest potential for storage and water availability during the dry months; which solution has the best cost/benefit ratio; which solution will best manage the aquifer, decrease the potential for impact on other groundwater users, and have good ecological values.*

*The applicant has a clear sustainable agricultural vision that has already been implemented:*

- *the current 10-acre orchard (planted in 2010 and 2011) is being irrigated via a highly efficient drip system;*
- *the well pumps are powered directly by solar panels, engineered to run the pumps at very low speeds, in order to match as closely as possible the low flow of the wells (~1GPM), which is good for the sustainability of the aquifer and the decreased potential for impact on nearby groundwater users;*
- *invasive, non-native species such as Himalayan blackberry and Scotch broom have been controlled (in part thanks to a small grant from OWEB), without any chemicals on 10 acres. (This work has also reduced the consumption of water in the orchard.)*

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

*The planning study will focus on the following technical aspects:*

*(a) determine the best locations and design ideas for storage ponds into which to pump groundwater in the wet-season: pumping in the wet-season and storing groundwater will reduce (or even eliminate) the need to pump groundwater during the dry season, thus relieving stress on the aquifer;*

*(b) determine the best way to develop the spring and store its water: such storage will add to the storage of groundwater, reducing the need to pump from that low-yielding aquifer;*

*(c) determine the best way to reclaim polluted runoff and store it: such storage will further reduce the need to pump groundwater.*

*Calculations (through analysis of slopes, test pits, hydrology, pond lining materials and covers, water reclamation methods, etc.) will be consistent with engineering best practices.*

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 Executive Director for Yamhill Soil & Water Conservation District ("SWCD"), Tim Stieber, has issued a letter of support (see attached) for the study of solutions to irrigation needs in areas with low-yielding wells, which plague the hills in Yamhill County as much as similar formations in Polk County.*

*The District Conservationist for NRCS in Polk County, Tom Finegan, has issued an email of support (see attached) for the study of solutions to low-water availability applicable to other farmers in Polk County or in the wider Willamette Valley.*

*The Director of Polk County Community Development, Austin McGuigan, has sent an email of support (see attached) for the study of ways to reduce the impact of storm-water on the waterways in Polk County.*

*In discussions with the applicant, officials from the Oregon Department of Agriculture ("ODA") Jim Johnson and Stephanie Page have indicated a willingness to show support (in a letter to be sent directly to OWRD) for the study of on-farm solutions to irrigation needs that will be applicable to other farms, orchards, and vineyards in the Willamette Valley.*

*The Bridlewood Homeowners Association (the subdivision that is the source of the storm-water runoff discharged onto the site) has issued a letter of support (see attached) for the study of a solution to reclaim the runoff. In personal discussions with applicant, individual neighbors from the Bridlewood subdivision and from other sites in the vicinity have indicated very strong support for the good stewardship and care for ecological values shown by applicant.*

*Active collaboration in the collection of data is expected from the City of Dallas, based on preliminary conversations with City engineers; the City's Public Works department has already shared its GIS resources with the applicant (see attached topographical map). The City and the subdivision will benefit from their involvement in the reduction of the amount of polluted runoff discharged from its streets.*

*A previous letter of support from E. Timothy Wallin, Water Rights Program Manager at OWRD (in support of an application for a grant from the USDA for the implementation of a solar-power system to run the well pumps at the site) is attached; the letter clearly indicates the challenges La Creole Orchards is facing in terms of water available for irrigation, and the applicant's good stewardship:*

*"The system you propose is ideal for that particular geologic context in that it will allow continuous pumping at especially low rates, which is good both for the sustainability of the aquifer and the decreased potential for impact on nearby groundwater users."*

*The planning study for: (a) the storage of water continuously pumped year-around, particularly in the rainy season; (b) the careful development of the spring; and, (c) the natural treatment (via a bioswale) of polluted runoff from the subdivision, shows the same care for ecological values and good stewardship by the applicant.*

## 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.
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.
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).
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.)
  - b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.
  - c. Environmental flow needs and water quality requirements of supply source water bodies and water bodies downstream of associated and/or affected return flows.
  - d. Reliance on return flows by downstream water right holders.
6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

**Above-Ground Storage**

Please answer the following three questions **BEFORE** proceeding:

- Will the project divert greater than 500 acre-feet of surface water annually?  Yes  No
- Will the project impound surface water on a perennial stream?  Yes  No
- Will the project divert water from a stream that supports sensitive, threatened or endangered species?  Yes  No

*If you answered “Yes” to any one of these questions, by signature on this application, you are committing to include the following required elements in your planning study.*

**Describe how you intend to address the required elements in your planning study:**

- a) Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows.**
  
- b) Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives.**
  
- c) Analyses of environmental harm or impacts from the proposed storage project.**
  
- d) Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.**

**Is the proposed storage project for municipal use?**

- Yes  No

**If you answered “Yes,” then describe how you intend to address the following required element in your planning study:**

- e) For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project’s relationship to existing and planned water supply projects.**

**Proceed in answering the following questions:**

1. Describe when and to what extent the project associated with the planning study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values.

*Applicant has shown care for ecological values by implementing clean, renewable energy to power the well pumps at the site, and by showing special care to pump groundwater in a way (very slowly) that is good both for the sustainability of the aquifer and the decreased potential for impact on nearby groundwater users. The pumping and storage of groundwater on a year-around schedule will reduce the need to pump during the dry months: this will be an ecological benefit for the aquifer when it is under most stress (during the dry-season). Reclaiming polluted storm-water runoff (currently discharged onto a corner of the orchard from the nearby subdivision) will also be an ecological benefit to the local environment.*

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

*When the orchard reaches full maturity in 2014-2015, there will be 10,000 trees that will require 400,000 gallons of water each season during the 60 dry days in July and August. Since the low-yielding wells on the property produce only a combined 1,000 gallons of groundwater per day, pumping on the go can only meet 15% of the irrigation needs of the orchard: water storage is an absolute necessity. Supporting documentation such as well logs and very accurate data from flow meters installed in 2011 are available upon request to OWRD staff.*

3. 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).

*Storage of 350,000 gallons of usable water is a necessity. The balance to 400,000 gallons can be met by pumping during the 60 dry days if necessary (which will yield about 1,000 gallons of groundwater per day). The storage project(s) associated with the planning study are expected to meet at least 87.5% of the orchard's water supply needs. Applicant has already researched and priced the cost of lining and covering the storage ponds in order to conserve as much of the stored water as possible and have a firm water supply (the planning study will further explore these points).*

4. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

*There are no other achievable alternatives (reasonable or not) to meet the applicant's water supply needs. The orchard must be irrigated in order to obtain commercial production of truffles. Dry farming of a truffle orchard can be done, but not commercially, because it is precisely in July and August that the truffle body grows and needs most water. With irrigation, production increases by a factor of 10 to 20. Numerous books and scientific papers have been presented at truffle symposiums around the world (most of the scientific literature is in French and Italian). Since the wells at the site are very low yielding and cannot produce enough water on the go, only storage can meet the water supply needs of the orchard. A small investment from this grant program will help solve a most critical aspect for the applicant: finding a source of water (and the best approach to storing it).*

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.)

*Willamette basin. Polk County. Township 8S, range 5W, section 6 (tax lot 1800).*

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

*n/a*

- c. Whether the project will be off-channel or on-channel.

*Off-channel.*

- d. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)

*It is estimated that storage of groundwater pumped year-around will secure about 200,000 to 300,000 gallons (to be confirmed by the planning study). The storage of water from the spring will secure about 50,000 to 100,000 gallons (to be determined by the planning study). The storage of reclaimed storm-water runoff will secure an additional amount (also to be determined by the planning study). The storage projects associated with the planning study are expected to meet at least 87.5% of the orchard's water supply needs.*

- e. Proposed purposes and uses of stored water.

*The stored water will be used to irrigate the 50-acre truffle, fruit, and nut orchard. Delivery has been (in zones already planted) and will be via highly efficient drip and mini-sprinkler irrigation, with groundwater continuously pumped at low speeds by solar-powered pumps already installed.*

- f. Environmental flow needs and water quality requirements of supply source water bodies.

*Pumping groundwater in the wet-season and slow-speed pumping thanks to the solar-powered system that was specifically designed to run the pumps at low speeds will put a lot less pressure on the aquifer (an aquifer that is expected to be the main source of water for storage because groundwater has the highest quality, necessary for the irrigation of the truffle orchard). Slow pumping was noted as an environmental benefit in the letter of support from E. Timothy Wallin, Water Rights Program Manager at OWRD (see attached).*

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

*The implementation of groundwater storage will require permitting from OWRD in certain situations that will be evaluated by the planning study (e.g., depending on the design of the storage ponds). Applicant has already secured groundwater rights from OWRD (Permit G-16630 issued June 25, 2009). However, this permit will need to be amended or replaced, in order to extend the period of use from May 15 - October 31 to year-around and to make sure that groundwater can be stored in storage ponds for extended periods. Applicant has also already secured OWRD permits for two ponds at the site, which will be useful if the planning study determines that the location and design of storage ponds correspond to those of the ponds already permitted. Otherwise, new OWRD permits for storage ponds will be obtained. The construction of a bioswale to reclaim runoff from the subdivision will certainly trigger the need for permitting from OWRD, as it would involve the storage and use of surface water. A permit from the Oregon DEQ will also be necessary to deal with polluted runoff. Permits from the Polk County Planning Division will be required for certain aspects of project implementation. No other local, state, or federal permits are believed to be required.*

**Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]**

Please answer the following three questions **BEFORE** proceeding:

- Will the project divert greater than 500 acre-feet of surface water annually?  Yes  No
- Will the project impound surface water on a perennial stream?  Yes  No
- Will the project divert water from a stream that supports sensitive, threatened or endangered species?  Yes  No

*If you answered “Yes” to any one of these questions, by signature on this application, you are committing to include the following required elements in your planning study.*

**Describe how you intend to address the required elements in your planning study:**

- a) **Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows.**
  
- b) **Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives.**
  
- c) **Analyses of environmental harm or impacts from the proposed storage project.**
  
- d) **Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.**

**Is the proposed storage project for municipal use?**

- Yes  No

**If you answered “Yes,” then describe how you intend to address the following required element in your planning study:**

- e) **For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project’s relationship to existing and planned water supply projects.**

**Proceed in answering the following questions:**

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.
  
3. 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).

4. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.
  
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.)
  
  - b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.
  
  - c. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)
  
  - d. Proposed purposes and uses of stored water.
  
  - e. Environmental flow needs and water quality requirements of source water.
  
  - f. Water quality, storage capacity, and geologic aspects of the associated aquifer(s) and/or recharge zones.
  
6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning 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, 2011. Resources expended prior to July 1, 2011 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"> <li>The value of in-kind labor, equipment rental and materials essential to the planning study provided by the applicant or partner*.</li> </ul>	<ul style="list-style-type: none"> <li>Secured funding commitments from other sources.</li> </ul>
<ul style="list-style-type: none"> <li>Cash is direct expenditures made in support of the planning study by the applicant.</li> </ul>	<ul style="list-style-type: none"> <li>Associated and documented expenditures for the planning study from non-program sources incurred on or after July 1, 2011.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>

\*"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 ( <input checked="" type="checkbox"/> One)	Status ( <input checked="" type="checkbox"/> One)	Amount/ Dollar Value	Date Match Funds Available (Month/Year)
<i>Coordinate work with engineering firm; lead site visits; rent equipment; prepare test pits; undertake measurements; obtain storm-water data from City of Dallas; log and compile all data; review draft report with engineers.</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending	\$4,750	November 2011
<i>Equipment rental fees</i>	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending	\$782	November 2011
<i>Equipment rental fees and operator time (expended)</i>	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input checked="" type="checkbox"/> expended <input type="checkbox"/> pending	\$506	August 2011
<i>Rented equipment; supervised excavation; monitored, measured, and logged water levels (expended)</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in kind	<input type="checkbox"/> secured <input checked="" type="checkbox"/> expended <input type="checkbox"/> pending	\$700	August - November 2011
	<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		
	<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: June 2012 to March 2013

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)	2012		2013			
	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr
<i>Retain engineering firm</i>	X					
<i>First site visit with engineers</i>	X					
<i>Engineering review of site notes, aerial photos, topo map</i>	X					
<i>Measurements, excavation, soils tests, hydrology tests</i>	X	X				
<i>Data logging (wells, test pits, spring)</i>	X	X				
<i>Data logging and samples (subdivision runoff drain)</i>		X				
<i>Lab analysis of storm-water runoff and spring water</i>		X				
<i>Engineering research and review (bioswale)</i>		X				
<i>Compile all data obtained</i>		X				
<i>Final report (including schema, drawings, maps, photos)</i>		X	X			

## VII. Project Planning Study Budget

### Section A

Please provide an estimated line item budget for the project planning study. An example would include: labor, materials, equipment, contractual services and administrative costs.

Line Items <i>Note: Administrative costs may not exceed 10% of the total funding requested by the Department.</i>	Unit * Number (e.g. # of hours)	Unit Cost (e.g. hourly rate)	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
<i>Engineering firm fees</i>	<i>56 hours</i>	<i>\$100</i>			<i>\$5,600</i>	<i>\$5,600</i>
<i>Coordinate work with engineering firm; lead site visits; rent equipment; prepare test pits; undertake measurements; obtain storm-water data from City of Dallas; compile data; log and compile all data; review draft report and discuss with engineers.</i>	<i>95 hours</i>	<i>\$50</i>	<i>\$4,750</i>			<i>\$4,750</i>
<i>Equipment rental fees</i>	<i>2 days</i>	<i>\$391</i>		<i>\$782</i>		<i>\$782</i>
<i>Laboratory fees (water analysis)</i>	<i>4 tests</i>	<i>\$150</i>			<i>\$600</i>	<i>\$600</i>
<i>Already expended cash expenditures (rental fees)</i>	<i>1 day</i>	<i>\$356</i>		<i>\$356</i>		<i>\$356</i>
<i>Already expended cash expenditures (operator time)</i>	<i>3 hours</i>	<i>\$50</i>		<i>\$150</i>		<i>\$150</i>
<i>Already expended in-kind match (supervise excavation, monitor spring water levels)</i>	<i>14 hours</i>	<i>\$50</i>	<i>\$700</i>			
Administrative Costs	<i>n/a</i>	<i>n/a</i>				<i>n/a</i>
<b>Total for Section A</b>			<b>\$5,450</b>	<b>\$1,288</b>	<b>\$6,200</b>	<b>\$12,938</b>
<b>Percentage for Section A</b>			<b>42%</b>	<b>10%</b>	<b>48%</b>	<b>100%</b>

\* Note: The "Unit" should be per "hour" or "day" – not per "project" or "contract."

### Section B

If Grant amount requested is \$50,000 or greater, you **MUST** complete Section B. Elements (key tasks) in Section B should be the same as the elements (key tasks) in Section VI (Project Planning Study Schedule).



## APPLICATION CHECKLIST

**Instructions:** Use this form as an important cross-check to ensure that your application is complete. An incomplete application will jeopardize your application's review. **This form does not need to be included in your application packet.**

### General

If submitting electronically the preferred format is either a Microsoft word or Adobe pdf

- Only one application is included with the packet (other applications must be sent separately).

### Paper submissions only

- The application and attachments are on 8 ½" x 11" paper.
- The application and attachments are single sided.
- The application and attachments are not stapled or bound.

### Section I – Grant Information

- All questions in this section have been answered.
- The Grant Dollars Requested and the Total Project Cost mirror the totals shown in Section VII.

### Section II – Applicant Information

- All contact information – for the applicant(s) and fiscal officer – is complete and current.
- The certification is signed by an authorized signer.

### Section III – Planning Study Summary

- A brief summary, of no more than 150 words, is complete.

### Section IV – Grant Specifics

- All questions in Section A have been answered.
- If the type of planning study is Water Conservation, Reuse or Storage Other Than Above-Ground, a Request to be added to the Oregon Water Resources Department's Inventory of Potential Conservation Opportunities has been completed. (Form is located at the end of this document.)
- All applicable questions for the type of grant requested have been answered.

### Section V – Match Funding Information

- Applicant has identified that at least 50% match has been sought, secured or expended.
- Letters of support are included for "secured" match funding sources.
- Documentation is included for "expended" match funds.
- Documentation is included for "pending" match funds.

### Section VI – Project Planning Study Schedule

- Estimated project duration dates have been supplied.
- All elements (key tasks) of the project are listed.

### Section VII – Project Planning Study Budget

- Section A is complete.
- Administration costs do not exceed 10% of the requested OWRD Grant Funds.
- If grant amount requested is \$50,000 or greater, Section B has been completed.
- All elements (key tasks) listed in Section B mirror the elements listed in Section VI.

*Request to be added to the Oregon Water Resources Department's*  
**Inventory of Potential Conservation Opportunities**

The purpose of this inventory is to catalogue potential conservation projects that water users themselves have identified but not yet pursued because of financial, institutional, or other barriers. For the purpose of this application, water storage other than above-ground are included as conservation opportunities and are most likely capital conservation projects.

As a water provider or user, you know your water demands and water conservation opportunities better than anyone. We would appreciate your assistance with this important data collection effort by completing this survey. Your participation will help provide the building blocks we need to begin to identify and achieve potential future water supplies. Please answer the questions as completely as possible, to the best of your ability. We appreciate your help with this important effort.

This inventory of already-identified, potential conservation projects includes both capital and programmatic projects. Capital projects are defined as one-time, large investments resulting in water savings. Examples include reclaimed water plants, reservoir covering, transmission line upgrades reducing leaks, or industrial engineering modifications to re-use process water. Programmatic projects are defined as ongoing investments resulting in water savings. Examples include facilitating upgrades to more efficient water using devices (e.g., distributing free showerheads, toilet rebates) and distribution system leak detection programs. The conservation inventory is primarily intended to include “planned” projects rather than projects that are currently being implemented. However, currently active programmatic projects may be listed if they will continue or expand in future years. The inventory of projects submitted will be compiled by county or basin.

Examples are provided below.

	<b>Example Capital Conservation Project</b>	<b>Example Programmatic Conservation Project</b>
<b>Project Description</b> Provide brief sentence	Line 3 miles of unlined ditch.	Toilet rebate program for residential customers
<b>Estimated Future Savings</b> Provide brief sentence, including information regarding savings seasonality.	20 acre feet of water per year	If we spend our full budget each year, we estimate 50,000 gallons of water save per year
<b>Seasonality</b> Indicate what part of the year savings are generated (e.g. year-round; summer only; etc.).	Peak (irrigation) season savings.	Savings should occur throughout the year.
<b>Estimated Future Costs</b> Provide brief sentence.	\$500,000 total project costs.	\$40,000 a year.
<b>Implementation Schedule</b> Provide brief sentence.	Not set. Have conducted cost and savings estimate, but still seeking funding.	We started the program in 2005 and plan to implement until 2015.
<b>Project Funded?</b> Designate either “yes”, “no”, or provide brief sentence if necessary	No. Pursuing grant funding.	Yes. IN our CIP through the next 5 years.

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

This is a <input checked="" type="checkbox"/> Capital Conservation Project <input type="checkbox"/> Programmatic Conservation Project	
<b>Project #/Name</b>	<b>Efficient water storage at La Creole Orchards, Dallas, Oregon</b>
Project Description	Implement water storage solutions for groundwater pumped in the wet-season, and for spring water and reclaimed storm-water runoff. Storage reservoirs (small ponds holding 50,000 to 100,000 gallons each, or a large pond holding 350,000 gallons) to be lined & covered reservoirs to have a firm water supply.
Estimated Future Savings	Designing a number of small ponds with small footprints and deeper profiles, enhanced by landscaping around the ponds could reduce evaporation and save an estimated 50,000 gallons. Lining the small ponds could save the bulk of the water stored (350,000) because it would eliminate seepage. Covers could save 100,000 gallons by nearly eliminating evaporation.
Seasonality	Water will be stored during the wet-season, therefore less (or no) water will be pumped during the dry months, which is good for the sustainability of the aquifer and the decreased potential for impact on other groundwater users. By designing ponds in such a way to reduce or eliminate seepage and evaporation, stored water will be available, with little or no losses, when needed in July and August.
Estimated Future Costs	Implementing storage of at least 350,000 gallons of usable water (net of estimated evaporation) is estimated at a cost of \$20,000 to \$25,000. Lining would add \$15,000 to \$20,000 to the project, but would ensure a much firmer water supply. Covers would add another \$15,000 to \$20,000 to the project, but would greatly reduce evaporation. Permitting fees might require \$5,000 to \$10,000. Overall, the total project costs are estimated at up to \$75,000.
Implementation Schedule	A planning study in 3Q & 4Q 2012, with a final report in 1Q 2013 will greatly advance this project. Implementation could take place in 2013-2014.
What are the barriers to implementation, e.g. funding?	The high cost of storage solutions, therefore, funding.
This is a <input checked="" type="checkbox"/> Capital Conservation Project <input type="checkbox"/> Programmatic Conservation Project	
<b>Project #/Name</b>	<b>Efficient water use at La Creole Orchards, Dallas, Oregon</b>
Project Description	Delivery of irrigation water into the orchard via highly efficient drip and micro sprays.
Estimated Future Savings	Efficient delivery of irrigation water could save up to 50,000 to 70,000 gallons.
Seasonality	Peak (irrigation) season savings, concentrated in July and August.
Estimated Future Costs	The cost of a highly efficient irrigation system for the entire orchard when it reaches full maturity in 2014-2015 is estimated at \$50,000 to \$70,000.
Implementation Schedule	The irrigation system is being implemented as the orchard expands. Currently, the orchard is at 15% of its projected size (in terms of number of trees). The bulk of the irrigation system will be installed in 2012-2015.
What are the barriers to implementation, e.g. funding?	The high cost of drip and micro spray irrigation systems, therefore, funding. Also the lack of water supply sources, therefore it is necessary to implement storage solutions for at least 350,000 gallons.

**- Include this form with your application -**



La Creole Orchards: French truffle orchard, with secondary zone of fruit & nut trees



Stormwater runoff from drain ->

<- Bioswale here?

Possible locations for small ponds: trees missing in several rows in this area ->

Orchard zone C (to be planted)

<- Store reclaimed runoff in this area?

Orchard zone A (planted 2010)

<- Spring found here

Orchard zone D (nut trees to be added)

<- Store water from spring in this area?

Orchard zone B (planted 2011)

Orchard zones E & F (to be planted)

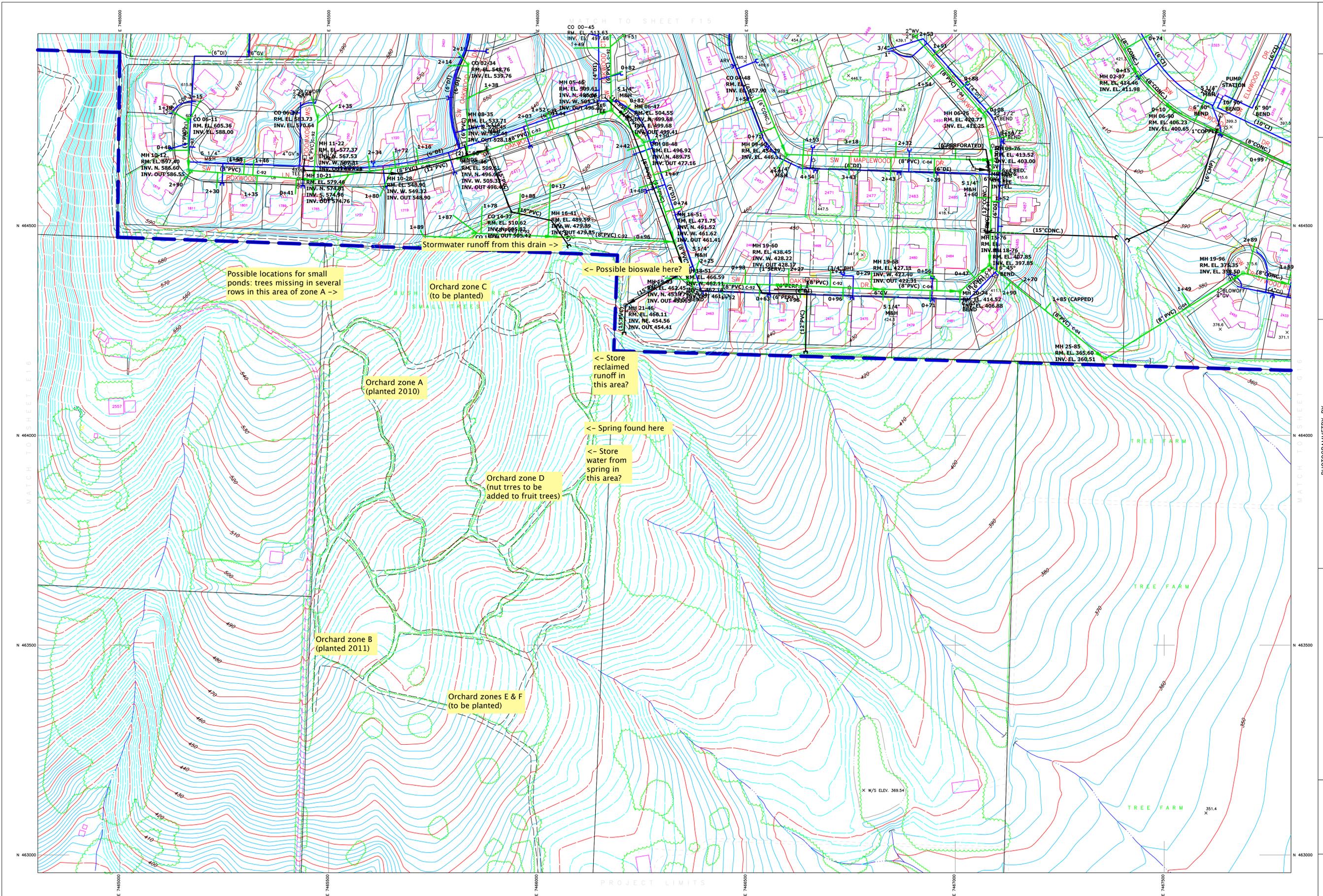
La Creole Orchards: French truffle orchard, with secondary zone of fruit & nut trees  
(Bridlewood subdivision of City of Dallas shown just north of the orchard)



SCALE : 1" = 100'  
CONTOUR INTERVAL 2'

PHOTOGRAMMETRY BY  
EUGENE, OR (541)343-8877  
THIS MAP MEETS NATIONAL MAP ACCURACY STANDARDS AT 1" = 100'  
WITH 2-DIGIT CONTOURS/PUBLICATION OR USE AT ANY OTHER SCALE.  
SURVEY CONTROL IS BASED ON THE POLK CO. SUPERNET  
HORIZONTAL DATUM NAD 83 91  
VERTICAL DATUM NGVD 29  
PHOTO DATE: DEC. 18, 1996

CITY OF DALLAS  
PUBLIC WORKS DEPARTMENT  
MAPPING/GIS SERVICES



MATCH TO SHEET E16

MATCH TO SHEET G16

PROJECT LIMITS



Bogdan Caceu &lt;bcaceu@gmail.com&gt;

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## request for letter of support

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Finegan, Tom - NRCS, Dallas, OR &lt;Tom.Finegan@or.usda.gov&gt;

Fri, Dec 2, 2011 at 4:48 PM

To: Bogdan Caceu &lt;bcaceu@gmail.com&gt;

Bogdan,

Over the past couple of years, we have discussed many options to make your property more productive and to meet your goals of agricultural production on the site. Your ideas as listed below are very good alternatives to evaluate the feasibility of and the information has significant opportunity to be utilized in future projects of a similar nature. I fully support this project.

Tom Finegan, District Conservationist  
USDA-NRCS Dallas Service Center

-----Original Message-----

From: Bogdan Caceu [mailto:[bcaceu@gmail.com](mailto:bcaceu@gmail.com)]

Sent: Monday, November 14, 2011 2:52 PM

To: Finegan, Tom - NRCS, Dallas, OR

Subject: request for letter of support

Dear Tom,

I am preparing an application for a grant from the Oregon Dept. of Water Resources. I would very much appreciate a Letter of Support from you for this study. The study, undertaken with help from an experienced engineer, will look at the following three questions:

### 1. Feasibility of city storm-water treatment and storage:

1.1 How to best filter storm-water released onto my property by a 15" PVC storm drain from a nearby subdivision of the City of Dallas?

1.2 How/where to best design the storage of the treated water (to be used for irrigation of the orchard)?

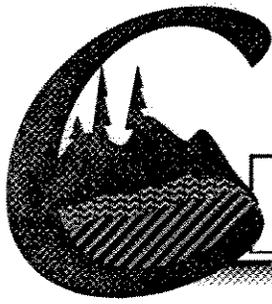
### 2. Feasibility of the development of a spring and storage:

2.1 How to best develop a spring, with particular attention that the spring does not affect the ground-water in the wells?

2.2 How/where to best design the storage of the spring water and its filtering (for irrigation)?

### 3. Feasibility of the development of one or several holding reservoirs:

3.1 How/where to best design several holding reservoirs of 50-100K gallons (or one of 300K gallons), to store ground-water pumped in the off-season (for irrigation).



**Yamhill  
Soil & Water**

**Conservation District**

*Providing Natural  
Resource Leadership*

2200 SW 2<sup>nd</sup> Street

McMinnville, OR 97128

(503) 472-6403

November 29, 2011

Bogdan Caceu  
La Creole Orchards  
6722 SE Reed College Place  
Portland, OR 97202

Dear Bogdan,

Yamhill Soil and Water Conservation District supports your efforts to secure funds from the Water Conservation, Reuse and Storage Grant Program through Oregon Water Resources Department for the upcoming 2011-2013 grant cycle.

There are many opportunities to make beneficial use of storm water runoff from roads and subdivisions in the state but actually getting this completed is challenging with water laws and the engineering required. If excess winter runoff can be stored for summer irrigation the feasibility study should determine how much water could be collected and stored. In addition the second option of pumping groundwater outside the summer pumping season should also be investigated to determine how it could allow irrigation to occur during the summer months.

We support your efforts to make your land productive while having minimum impacts on water resources.

Sincerely,

Tim Stieber  
Executive Director