



**OREGON WATER RESOURCE DEPARTMENT
WATER CONSERVATION, REUSE AND STORAGE
FEASIBILITY STUDY GRANT PROGRAM**

I. Grant Information

Study Name: Water Reuse Plan

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

Program Funding Dollars Requested: \$ \$10,000
Note: Request may not exceed \$500,000

Total Cost of Feasibility Study: \$ \$20,000

II. Applicant Information

Applicant Name: <u>City of Yoncalla</u>	Co-Applicant Name:
Address: <u>PO Box 508</u> <u>Yoncalla OR 97499</u>	Address:
Phone: <u>541-849-2152</u>	Phone:
Fax: <u>541-849-2552</u>	Fax:
Email: <u>kathy@cityofyoncalla.com</u>	Email:

Principle Contact: <u>Kathleen Finley</u>
Address: <u>same as above</u>
Phone:
Fax:
Email:

Certification:

I certify that this application is a true and accurate representation of the proposed work for a project feasibility study and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department grant, have read and agree to all conditions within the sample grant agreement and are prepared to conduct the feasibility study if awarded.

Applicant Signature: *Kathleen Finley* Date: 01/26/16

Print Name: Kathleen Finley Title: Administrator

III. Feasibility Study Summary

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

The feasibility study will provide the city with plan to construct a water reuse system from the wastewater lagoons

IV. Grant Specifics

Section A. Common Criteria

Instructions: Please answer all questions contained in this section. It is anticipated that completed applications will result in additional pages.

1. Describe your goal and how this study helps to achieve the goal.

Due to the undersized storage volume of the existing wastewater lagoons, the City must determine options for effluent disposal. The Wastewater Facilities Plan (developed in March of 2013) suggests three options: (1) no action. Not an option, as the storage lagoon is in non-compliance with DEQ standards and is inadequately sized to handle flow (2) Expand lagoons which would require acquisition of additional property which is located in a flood plain fringe and has wetlands. Due to constraints of available additional property, The Council choose option (3) to develop a recycled water system. A reuse Plan will afford the city the guidance and necessary information to move forward with a plan for effluent disposal to meet NPDES requirements.

2. Describe the water supply need(s) that the proposed project addresses. Identify any critical local, regional, or statewide water supply needs that implementation of the project associated with the feasibility study will address. **Responses should rely upon solid water availability and needs data/analysis.** For examples of water supply needs see "Criteria and Evaluation Guidance Document."

Availability of water for irrigation is a challenge for local ranchers, farmers, etc. See data analysis Exhibit A which illustrates precipitation in the summer months and need for water for more productive hay production

3. Explain how the proposed project 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 percent of your need will be met).

We will be able to provide irrigation in the summer months on a 45 acre parcel to start with and expect that could increase as this water becomes available to neighboring property owners

4. Describe the technical aspects of the feasibility study and why your approach is appropriate for accomplishing the specific study goals and objectives.

The plan will require data and gathering of information that will determine the appropriate direction of what type of reuse system would work to reduce effluent into the stream and provide water for agriculture.

5. Describe how the feasibility study will be performed. Include:

- a. General summary statement that describes the study progression.
- b. When the feasibility study will begin.
- c. Listing of key tasks to be accomplished with each task having:
 - i. Title
 - ii. Timeline for completion
 - iii. Description of the activities to be performed in this key task
 - iv. Description of the resources necessary for accomplishing the key task

Example:

- (i) Streamflow measurement;
- (ii) September-April;

- (iii) Weekly streamflow measurements will be performed to gather hydrographic data for the hydrologic analysis to take place in May;
- (iv) A technician will be hired to perform the streamflow measurements.

(Key tasks listed here are to be placed in Section VI. Project Feasibility Study Schedule for a quick reference “graphical” representation of the schedule.)

i City will contract with engineering firm to develop the Reuse Water Plan Once funding is secured

ii Project Planning and data gathering July 2016 through December 2016

iii Plan development based on data gathered July 2016 through June 2017

iiii NPDES Permit modifications (working with Oregon Department of Environmental Quality July 2016 through December)

6. Please provide the following data and information for the proposed project and the project’s sources of water supply:

- a. The location of the proposed project. Include the basin, county, township, range and section. Attach a **map** that identifies the project’s implementation area to this application.

Umpqua Basin, Douglas County 220303400600,01000, 02200

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

na

- c. Whether the project will be off-channel or on-channel (for above-ground storage only).

na

- d. Water availability to meet project storage. For above-ground storage the Department typically evaluates availability using a 50 percent exceedance water availability analysis.

na

- e. Proposed purposes and/or uses of conserved or stored water.

na

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

na

7. What local, state or federal project permitting requirements/issues/approvals do you anticipate in order for the feasibility study to be conducted? If approvals are required, indicate whether you have obtained them. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them. If no permits are needed, please provide explanation.

This project, if awarded the grant, will begin with negotiations with DEQ for a NPDES modification, at which time we will discover other requirements before implementing the project

8. Describe the level of involvement, interest and/or commitment of local entities associated with the feasibility study. Describe how the feasibility study and/or proposed project will benefit/impact these entities. Attach letters of support if available.

Advised by DEQ that the current policy prohibits letters of support from their agency for projects that DEQ will be approving.

9. Identify when matching funds will be secured, from whom, and the dates of matching funds availability.

The City Council adopted Resolution 2016-01 in January of 2016 to commit \$10,000.00 for the match

10. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the feasibility 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 feasibility study.

We will be working with our engineers of 15 years, The Dyer Partnership. This group has extensive experience with developing water reuse plans, and have also developed water and wastewater facilities plans for us.

11. If the project concept is ultimately deemed feasible, describe how the project will be implemented. Response should include a tentative funding plan for project implementation (e.g. other state or federally sponsored grant or loan programs) and the project proponent's track record in implementing similar projects.

The project will be implemented through the Oregon DEQ, IFA Community Development Grant and the City of Yoncalla upon contracting with Dyer Partnership. The City partnered with Dyer and has successfully completed a Water Treatment plant project , facilities plans for Water and Wastewater through IFA Community Development Block grants and is currently working on a wastewater lift station after a successful grant award of 2.5 million from IFA.

Section B. Unique Criteria

Instructions: Address the set of items below that applies to the type of feasibility study that this grant will fund.

Water Conservation or Reuse

1. Water Conservation or Reuse projects that are identified by the Department in a statewide water assessment and inventory receive a preference in the scoring process. Contact the Department's Grant Specialist to include your project on the inventory.

unknown

2. Explain how the associated project will either: (a) mitigate the need to develop new water supplies and/or (b) 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.

With a reuse system the City will be better able to use water that would otherwise be discharged into the receiving stream which has been deemed a fish stream. Our neighboring City of Drain implemented a similar system several years ago with success.

3. Provide a description of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area. If permitting or other approvals are not needed please indicate and provide an explanation.

(a)The implementation will require approval of DEQ to meet water treatment standards and soil testing of available land

(b) Will enter into an agreement with the property owner to accept the effluent when standards are established.

Above-Ground Storage

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

- Will the project divert more 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 of these questions, by signature on this application, you are committing to include the following required elements in your feasibility study.

Describe how you intend to address the required elements in your feasibility 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 instream 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 “Yes,” then please describe how you intend to address the following required element in your feasibility study:

- c) 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 addressing the following items:

1. Describe to what extent the project associated with the feasibility study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values. Projects that include the above provisions receive preference in the scoring process.

2. Provide a review of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area.

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

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

- | | | |
|--|------------------------------|--|
| Will the project divert more than 500 acre-feet of surface water annually? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Will the project impound surface water on a perennial stream? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Will the project divert water from a stream that supports sensitive, threatened or endangered species? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

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

Describe how you intend to address the required elements in your feasibility 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 instream 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 “Yes,” then please describe how you intend to address the following required element in your feasibility 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 addressing the following items:

1. Underground storage projects that are identified by the Department in a statewide water assessment and inventory receive a preference in the scoring process. Contact the Department’s Grant Specialist to include your project on the inventory.

2. Provide a review of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area.

VI. Feasibility Study Schedule

Estimated Study Duration: June 1, 2016 to July 2017

Place an "X" in the appropriate column to indicate when each Key Task of the project will take place.

Feasibility Study Key Tasks	2016			2017				2018 & Beyond
	2 nd Qtr	3 rd Qtr	4 th Qtr	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
<i>Project Planning and Data Gathering</i>		X	X					
<i>Recycled Water Use Plan Development</i>		X	X	X	X			
<i>NPDES Permit Modification</i>		X	X					

- **Please Note:** Successful grantees must include all invoices and identify which key tasks are associated with each invoice when requesting financial reimbursement.

VII. Feasibility Study Budget

Section A

Please provide an estimated line item budget for the proposed feasibility study. Examples would include: labor, materials, equipment, contractual services and administrative costs.

Line Items	Number of Units* <i>(e.g. # of Hours)</i>	Unit Cost <i>(e.g. hourly rate)</i>	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
Staff Salary/Benefits						
Contractual/Consulting	206	\$135.52		\$9,850	\$9,850	\$19,700
Equipment (must be approved)						
Supplies						
<i>Other: travel per diem</i>	300			\$150	\$150	\$300
Administrative Costs**						
Total for Section A				\$10,000	\$10,000	\$20,000
Percentage for Section A				50	50	100%

* Note: The "Unit" should be per "hour" or "day" – not per "project" or "contract." $Units \times Unit\ Costs = Total\ Cost$

** Administrative Costs may not exceed 10 percent of the total funding requested from the Department

Section B

If grant amount requested is \$50,000 or greater, you **MUST** complete Section B. Key Tasks in Section B should be the same as the Key Tasks in Section VI (Feasibility Study Schedule).

Feasibility Study Key Tasks	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
Total for Section B				

Totals in Section B must match the totals in Section A

Table E-1. Yoncalla area of potential evapotranspiration (PET), pasture grasses

Month	inches						PET ⁷	
	p ¹	Temp. ²	f ³	kc ⁴	kt ⁵	k ⁶		
J	6.55	48.6	3.18	0.5	0.48	0.24	0.76	
F	6.61	53.3	3.52	0.63	0.52	0.33	1.15	
M	8.30	58.1	4.82	0.8	0.52	0.42	2.01	
A	9.02	62.8	5.66	0.88	0.53	0.47	2.64	
M	10.19	69.1	7.04	0.9	0.6	0.54	3.80	
J	10.31	75.1	7.74	0.92	0.67	0.62	4.77	
J	10.42	82.5	8.60	0.92	0.72	0.66	5.69	
A	9.66	83.1	8.03	0.9	0.74	0.67	5.35	
S	8.40	78.5	6.59	0.85	0.71	0.60	3.98	
O	7.67	67.2	5.15	0.73	0.64	0.47	2.41	
N	6.56	54.1	3.55	0.63	0.55	0.35	1.23	
D	6.31	47.8	3.02	0.5	0.5	0.25	0.75	
MEAN:		65.02					TOTAL:	34.55

¹ Monthly % daylight hours, from USDA SCS Part 623 National Engineering Handbook, Table 2A-1, Latitude N 43 degrees

www.irrigationtoolbox.com/NEH/Part623_Irrigation/H_210_623_02.pdf

² Mean daily temperature, degrees F; Yoncalla (Drain), 1971-2000 averages.

Calculating by averaging the average high and average low for the month.

<https://www.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl>

³ Consumptive use factor, $f = (\text{Temp} \times p) / 100$.

⁴ Growth stage coefficient, from reference 1, Figure 2A-15.

⁵ Climatic coefficient, from reference 1, Table 2A-4,

⁶ Crop coefficient, $k = kt \times kc$.

⁷ Estimated potential evapotranspiration (PET) or crop consumptive use = kf , inches.

Table E-2. Yoncalla area normal irrigation requirement

Month	PET ¹	PPT ² Total	Net Applied	% ³ Effect.	Irr Req (net) ⁴	% ⁴ Effect.	Irr Req (gross) ⁵	Irr Req ⁵ AF
J	0.76	7.20	-6.44					
F	1.15	6.13	-4.98					
M	2.01	5.28	-3.27					
A	2.64	3.81	-1.17					
M	3.80	2.52	1.28					
J	4.77	1.30	3.47	70%	2.43	70%	3.47	13.0
J	5.69	0.46	5.23	70%	3.66	70%	5.23	19.6
A	5.35	0.87	4.48	70%	3.13	70%	4.48	16.8
S	3.98	1.38	2.60	70%	1.82	80%	2.27	8.5
O	2.41	3.25	-0.84					
N	1.23	7.79	-6.56					
D	0.75	7.87	-7.12					
Total	34.55	47.86	-13.31		11.05		15.46	57.97

¹ PET from Table 1.

² Precipitation (PPT) data from Yoncalla (Drain) 2., 1971-2000 averages.

<https://www.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl>

³ Net irrigation requirement assumes effective rainfall not to exceed 70%.

⁴ Gross irrigation requirement assumes 70% application efficiency in June, July and August; 80% for any other months.

⁵ Total irrigation needs for pasture based on: 45 acres

Table E-3. Irrigation water balance

Month	Plant Eff. ¹ MGD	Days	AF			million gallons		
			Av. Water ¹	Irr. Req. ²	+ or (-)	Av. Water	Irr. Req.	+ or (-)
M	0.13	31	12.36	0.0	12.4	4.0	0.0	4.0
J	0.13	30	11.97	13.0	-1.1	3.9	4.2	-0.3
J	0.13	31	12.36	19.6	-7.3	4.0	6.4	-2.4
A	0.13	31	12.36	16.8	-4.4	4.0	5.5	-1.4
S	0.13	30	11.97	8.5	3.4	3.9	2.8	1.1
O	0.13	30	11.97	0.0				
Total			72.99	58.0	3.1	19.9	18.9	1.0

¹ Available effluent water taken from "Table 2.1.1. of the 2015 PER,"

² Irrigation requirement taken from Table - E2
Yoncalla Area Normal Irrigation Requirement.

RESOLUTION 2016-01

A RESOLUTION COMMITTING MATCHING FUNDS FOR A FEASIBILITY GRANT FROM
OREGON WATER RESOURCES DEPARTMENT

BE IT RESOLVED:

Whereas, The City Of Yoncalla's Wastewater Facilities Plan Identifies A Major Problem With The System Being The Hydraulically Undersized Lagoons Which Prevent The City From Meeting Permit Requirements; And

Whereas, There Is a Funding Opportunity Through The State Department Of Water Resources For A Grant To Fund A Water Reuse Plan To Correct The Deficiency,

Therefore, The City Council Of The City Of Yoncalla Commits To A 50% Match (\$10,000) Of The \$20,000 Project Be Available To Implement the development of a Water Reuse Plan.

PASSED BY THE COMMON COUNCIL THIS 12TH DAY OF January 2016

APPROVED BY THE COUNCIL PRESIDENT THIS 12TH DAY OF JANUARY 2016



Council President Carl A Cox

ATTESTS:



Administrator Kathleen Finley

DRAFT

TASK ORDER Recycled Water Plan and Permitting

This Task Order, when executed, becomes a supplement to the Professional Services Agreement between the City of Yoncalla (OWNER) and The Dyer Partnership (ENGINEER). Services provided under this Task Order will be performed under the terms and conditions of that agreement and any current amendments effective on the date this Task Order is executed.

Project Description

Prepare a Recycled Water Use Plan and modify the existing NPDES permit to include a recycled water outfall. Summer time recycled water would be distributed on land, for dissipation by evapotranspiration and controlled seepage by following sound irrigation practices. Prior to land application, recycled water would receive at least Class C treatment.

The end product will be a Recycled Water Use Plan (RWUP) and modification to the NPDES permit to allow the use of recycled water for irrigation purposes.

Scope of Engineering Services

The work tasks itemized below describe the major tasks for the Wastewater Facilities Plan.

Task 1 – Project Planning & Data Gathering

Project meetings will be held so that all participants will become acquainted with the project and responsibilities. A site visit will be performed with DEQ to review Brinkerhoff Farm property and the City field to determine suitability for irrigation of recycled water. The City is to perform water quality testing of the summertime effluent. The Dyer Partnership will evaluate and determine requirements to process the effluent to Class C recycled water. Members of our project team will meet with City staff and Department of Environmental Quality (DEQ) staff to thoroughly understand the requirements for implantation of a Recycled Water Use Plan and recommend WWTP process improvements if required.

Task 2 – Recycled Water Plan

A Recycled Water Use Plan will be developed as required by the Oregon Administrative Rules (OAR 340-055-0025) and guidelines provided by DEQ. The report outline is as follows.

Introduction

Provide an introduction to the facility and the recycled water program. Include a brief description of the lines of authority and communication within the recycled water program, the recycled water user(s), and contact information of parties responsible for various aspects of environmental compliance.

Beneficial Purpose

Identify Beneficial Purposes in the RWUP. Develop a list or table of beneficial purposes, and Class water, quantity and frequency of land application.

Wastewater Treatment

The RWUP must describe original wastewater treatment operations at the treatment facility and the new facilities. Information must be included on the quantity and quality of both wastewater treated and recycled water produced.

The following information is pertinent to describing the wastewater treatment system:

- A general description of the treatment system and treatment efficiency capability.
- A brief description of the quantity (gpd), and origin of wastewaters processed in the treatment facility.
- The operating volumes of each component of the wastewater processing stream.
- A detailed, step-by-step description of the unit processes used to a specific class of recycled water.
- A summary of the quantity of recycled water produced. All testing will be provided by others.
- A summary of the recycled water quality supplied to each beneficial purpose. The exact data needed to characterize the recycled water may vary based on the specific end use(s), but may include the following common parameters: *E. coli*, total coliform, turbidity, BOD, TSS, TKN, NH₄-N, NO₃-N, total P, K, Ca, Mg, Na, pH, TDS, etc.

Monitoring and Sampling

The RWUP describe monitoring and sampling procedures. Monitoring and sampling applies to both recycled water quantity and quality. DEQ, Oregon Water Resources Department (WRD), or other agencies may specify monitoring requirements.

System Maintenance and Contingency Procedures

The RWUP includes a maintenance plan that describes how the wastewater treatment system equipment and facility processes will be maintained, as well as a description of contingency procedures.

Recycled Water Transmission, Storage and Distribution

The RWUP includes a description of the recycled water transmission, storage, and distributions systems.

Public Health and Environmental Controls

For each beneficial purpose, the RWUP will identify potential public health and environmental concerns as well as the measures taken to control adverse effects on public health and the environment. The RWUP includes a description of public and personnel notification procedures in the reuse area (when required).

Land Application Plan

When Class C effluent is used for irrigation, the RWUP will address various aspects of the land application program, including characterization of the land application site, the irrigation system, the soils and crops, site management practices, and public access control or notification.

Site Description

The RWUP must identify and describe the land application site(s), which should include the following information:

- Zoning of the irrigation site and neighboring properties.
- A site map with setbacks, location(s) of and distances to property boundaries, water supply sources, and the nearest developed property.
- Street address (if any) and legal descriptions (i.e., county, township, range, section, tax lot) of each site receiving recycled water.

- Location(s) of fields irrigated with recycled water.
- Map(s) identifying: field acreage, the location of any drinking water wells, agricultural dry wells, drainage ditches, surface water features, the locations of pump stations, storage lagoons, surge basins, and irrigation distribution system.

Site Characterization

The RWUP provides a site characterization, including a description of soils and crops (or vegetation) at the land application site. A full site characterization should include information on climate, topography, hydrology, geology, climate, and crops (or vegetation) grown on the land application site.

Irrigation System

The RWUP includes a description of the irrigation system which includes:

- A preliminary plot of the irrigation system layout and controls.
- Storage and distributions methods.
- Typical daily operations (i.e. draining distribution lines to minimize potential odors during startup on the following day).
- A description and plot of the drainage system layout and controls, including the locations of and connections to surface water features.
- An irrigation system maintenance plan.

Application Rates and Irrigation Scheduling

In order to protect groundwater and surface water, the land application plan needs to address the irrigation scheduling, including consideration for both water application and nutrient application:

- An estimated irrigation schedule, including monthly budget calculations.
- A summary of the recycled water quality before and after any blending delivered to the irrigation site, BOD, TSS, TKN NO₃-N, NH₄-N, total P, K, Ca, Mg, Na, SAR, pH TDS.
- The quantity of recycled water required to meet crop nutrient needs, including the methods (assumptions and equations) used to calculate the agronomic rate.
- Estimated monthly and annual water application rates that account for crop irrigation requirements, leaching fractions, and irrigation efficiency.
- A description of the average natural precipitation quantities in the specific area that the land application sites are located should be included.
- A description of supplemental fertilizer (commercial, chemical, manure, etc.) applications to the land application sites should include both quantity applied and fertilizer type (quality).

Site Monitoring Plan

The RWUP will include a description of water and nutrient loadings to the land application site.

The site monitoring plan may include information on:

- **Soil Sampling.** A description of any soil sampling and monitoring as needed as part of the nutrient balance and soil salinity tracking on land application sites regarding soil fertility and crop toxicity.
- **Soil Moisture Monitoring.** A description of a particular soil moisture sampling and monitoring protocol, as part of the hydraulic balance and prescribed leaching fraction tracking/monitoring on land application sites.
- **Biomass (Crop) Sampling.** A description of a particular biomass sampling and monitoring protocol, as part of the nutrient (nitrogen) balance and site-specific nutrient uptake tracking, and crop health on land application sites.

Records and Reports

RWUPs should contain information on the recycled water use program's record keeping and reporting requirements, including:

- A description of the types of records which will be maintained by the facility, such as: effluent quality monitoring, recycled water system performance, on-going system maintenance records, inspection reports, sources and quantities of supplemental water, quantity of recycled water generated, final use of recycled water generated, site monitoring records, irrigation records, etc.
- A description of the reporting procedures (i.e. annual report) such as: responsibility for reporting, report contents, date of report, etc.

Task 3 – NPDES Permit Modification

Under this Task Order The Dyer Partnership will facilitate the modification of the City's NPDES permit. This work will include providing the Owner and City support to submit an application to amend the existing permit, complete DEQ check list, and registration of a recycled water use site. Provided in this Task Order is the monitoring and processing for approval through DEQ.

Service Done by OTHERS

- Soil and/or water quality testing
- WWTP design modifications, if required.
- Irrigation system design.
- Permit fees.
- Soil scientist field investigations.

ESTIMATE OF MAN HOURS AND COSTS

DATE: 01-Oct-15 *PROJECT:* **Recycled Water Use Plan and NPDES Permit Modification** *PROJECT NO.:*

TASK	MAN HOURS							SURVEY	
	PRINC MNGR	PROJ MNGR	PROJ ENGR2	ENGR TECH	DSGN	DRFR	CREW	CLER	
1 Project Planning & Data Gathering									
A. Meetings and Start-up	4	16						8	
B. Develop RWUP Outline		4				4			
C. Information Gathering		8				20			
D. Land Selection / Evaluation		16				8			
Subtotal	4	44	0	0	0	32	0	8	
						Fee Sub-total:		\$9,100	
2 Recycled Water Use Plan									
A. Draft Report		8				18		4	
B. Figures and Maps		4				16			
C. Final Report		8				8		20	
Subtotal	0	20	0	0	0	42	0	24	
						Fee Sub-total:		\$7,200	
3 NPDES Permit Modificaiton									
A. Agency Meetings		8							
B. Application and Permit Forms		8				8			
C. Agency Processing		8							
Subtotal	0	24	0	0	0	8	0	0	
						Fee Sub-total:		\$3,700	
TOTAL EST HOURS	4	88	0	0	0	82	0	32	
						Total Fee		\$20,000	

Recycled Water Use Plan and NPDES Permit Modification

MATERIAL COSTS	DESCRIPTION OR UNIT	QUANTITY	UNIT COST	TOTAL COST
REPORT	Copies			
PHOTOGRAPHS	Each			
REPRODUCTION	Sets			
TOTAL MATERIAL COSTS-----				

TRAVEL AND PER DIEM	Per Diem	Mileage		TOTAL COST
MILEAGE	Task 1	200	\$0.58 116.00	100.00
	Task 2	200	\$0.58 116.00	100.00
	Task 3	200	\$0.58 116.00	100.00
TOTAL TRAVEL AND PER DIEM-----				\$300

OTHER SIGNIFICANT COSTS	DETAIL		TOTAL COST
	(Task 1)		1.1 0.00
	(Task 2)		1.1 0.00
	(Task 3)		1.1 0.00
TOTAL OTHER SIGNIFICANT COSTS-----			\$0.00

SUMMARY

BREAKDOWN OF PROPOSED FEE

<i>DATE</i>	01-Oct-15	<i>PROJECT:</i>	\$0	<i>PROJECT NO.:</i>	0.00
Recycled Water Use Plan and NPDES Permit Modification					
LABOR					
RATE					
	\$/HR.	Hours	Amount		
DIRECT LABOR COSTS:					
PRINCIPAL/MANAGER	135.00	4	540		
PROJECT MANAGER	125.00	88	11,000		
PROJECT ENGINEER 2	115.00	0	0		
ENGINEER TECH 2	95.00	0	0		
DESIGNER	85.00	0	0		
DRAFTER/CAD	80.00	82	6,560		
2-MAN SURVEY CREW	130.00	0	0		
CLERICAL 2	52.00	32	1,664		
TOTAL DIRECT LABOR COSTS:			19,800		
DIRECT PROJECT EXPENSES					
A. MATERIAL COSTS				0	
B. TRAVEL & PER DIEM				300	
C. OTHER SIGNIFICANT COSTS				0	
D. ADMINISTRATIVE FEE				0	
TOTAL OF: A THROUGH D				300	
TOTAL LABOR COSTS & PROJECT EXPENSES:				20,000	
Labor Cost & Project Expenses by Task Number					
1	Project Planning & Data Gathering			9,100	
2	Recycled Water Use Plan			7,200	
3	NPDES Permit Modificaiton			3,700	
	Total Labor Costs and Project Expenses:			20,000	