



State of Oregon
Department of
Environmental
Quality

Water Pollution Control Facilities Permit Fact Sheet City of Dufur

Permittee	City of Dufur PO Box 145 Dufur, OR 97021
Existing Permit Information	File Number: 25491 Permit Number: 103306 Expiration Date: 3-31-2034
Permittee Contact	Brandon Beachamp Public Works Manager (541) 467-2349 PO Box 145 Dufur, OR 97021
Facility Name & Location	Facility Name: City of Dufur Address: East of City Park at 200 Park Loop Rd. Dufur, OR 97021 Lat: 45.450344, Long: -121.124133 County: Wasco
LLID:	LLID: 1211264456185
Receiving Stream/Basin:	Nearest stream: Fifteenmile Creek (RM 29.73) Sub Basin Name: Miles Creeks WRD Basin Name: Hood
Proposed Action:	New Permit Issuance Application Number: 950048 Date Application Received: November 30, 2020, updated December 15, 2021
Source Category:	Domestic
Sources Covered:	Domestic Wastewater and Recycled Water
Permit Type:	WPCF-Dom-E
Permit Writer	Justin Sterger (541) 633-2016 Date Prepared: February 15 th , 2024

WPCF Permit Fact Sheet City of Dufur

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WPCF Permit Fact Sheet

City of Dufur

1. Introduction

As required by Oregon Administrative Rule 340-045-0037, this fact sheet describes the basis and methodology used in developing the permit. The permit is divided into several sections:

- Schedule A – Waste discharge limitations
- Schedule B – Minimum monitoring and report requirements
- Schedule C – Compliance conditions and schedules
- Schedule D – Special conditions
- Schedule F – General conditions

The City of Dufur operates a wastewater treatment facility under a National Pollutant Discharge Elimination System (NPDES) permit that serves residents inside the City limits. The City's current population is approximately 615 and is served by a wastewater treatment plant constructed in 1963.

The City is undergoing a project for improvements to approximately 3,400 feet of collection system, installation of a new headworks and lift station, sludge removal, piping improvements, expanded lagoon storage capacity with aerated and relined lagoons, and an expansion of the irrigation system and land application area. The project will allow for lagoon storage of wastewater in the winter and irrigation of Class D recycled water under a recycled water use plan in the crop growing season to two land application areas. The discharge to Fifteenmile creek will cease and the NPDES permit will be terminated upon request from the permittee in accordance with MAO No. WQ/M/ER-2007-0083. The City has historically had issues in meeting surface water limits imposed by the NPDES permit and a mutual agreement and order. The cessation of surface water discharge is the City's selected alternative in-lieu of upgrades to meet surface water discharge limits.

This is a new proposed permit action for assignment of a new Water Pollution Control Facilities (WPCF) permit.

2. Facility Description

2.1 Wastewater Facility

The City of Dufur's wastewater treatment facility receives raw sewage flow from residential and commercial sources. The average annual design flow for the upgraded facility is 0.077 MGD. The City will operate a four-cell lagoon system which consists of two 0.43 acre aerated treatment cells operating in series (Cells 1A and 1B), a 3.8 acre storage cell (Cell 2) immediately east of the treatment cells, and a 2.05 acre storage cell (Cell 3) by the irrigation sites.

Raw wastewater will be screened via the new influent headworks and metered by Parshall flume with level sensor before pumping to treatment cells 1A and 1B. Wastewater flows to Cell 2 by gravity and is pumped to the Cell 3 irrigation storage lagoon. Chlorine solution will be injected at the lift station prior to pumping to the irrigation storage pond in order to meet Class D recycled water standards. The chlorine contact pipe will consist of a 30-inch HDPE pipe to provide approximately 60 minutes of disinfection contact time. A sampling point for compliance with recycled water limits will be located after the disinfection pipe.

Wastewater solids are collected and stored in the lagoon system for periodic removal. The facility is managing wastewater solids by drying and landfilling during the lagoon upgrade project. After the upgrades, it is not expected that lagoon solids will be required to be removed for several years and the new permit allows for land application of biosolids only in accordance with a DEQ-approved biosolids management plan.

The City does not currently accept septage or other hauled wastes into the system. Should the facility propose to accept such materials into the wastewater treatment system, a hauled waste management plan is required in accordance with the stipulations of this permit. The system design criteria are listed below:

DESIGN CRITERIA	
Current Population (July 1, 2019, estimate)	625
20-year estimated population, 2040	747
20-year estimated flows:	
• Estimated average annual flow	0.077 MGD
• Estimated base flow	0.047 MGD
Wastewater Lagoon:	
• Current estimated BOD, loading	112 pounds BOD per day
• 20-year estimated BOD, loading	139 pounds BOD per day
Contact Basin:	
• Maximum volume	15,000 gallons
• Detention time at 250 gpm	60 minutes
Existing Center Pivot Irrigation:	
• Typical pumping rate	120 gpm
• Maximum rated pumping rate	130 gpm
• Number of pumps	1
• Irrigated area	12.1 acres
Proposed Center Pivot Irrigation:	
• Typical pumping rate	50 gpm
• Maximum rated pumping rate	75 gpm
• Number of pumps	1
• Irrigated area	7.7 acres

BOD = biochemical oxygen demand
gpm = gallons per minute

The facility will produce Class D wastewater as defined in OAR 340-055 and will be irrigated on two city-owned sites during the months of May through October in accordance with a DEQ-

approved recycled water use plan. An alfalfa hay crop is proposed for both the existing current site (12.1 acres) and the new site (7.7 acres) and will be irrigated by center pivot irrigation systems.

Figure 2-1: City of Dufur Pre-Construction Treatment and Recycled Water Land Application Site Map

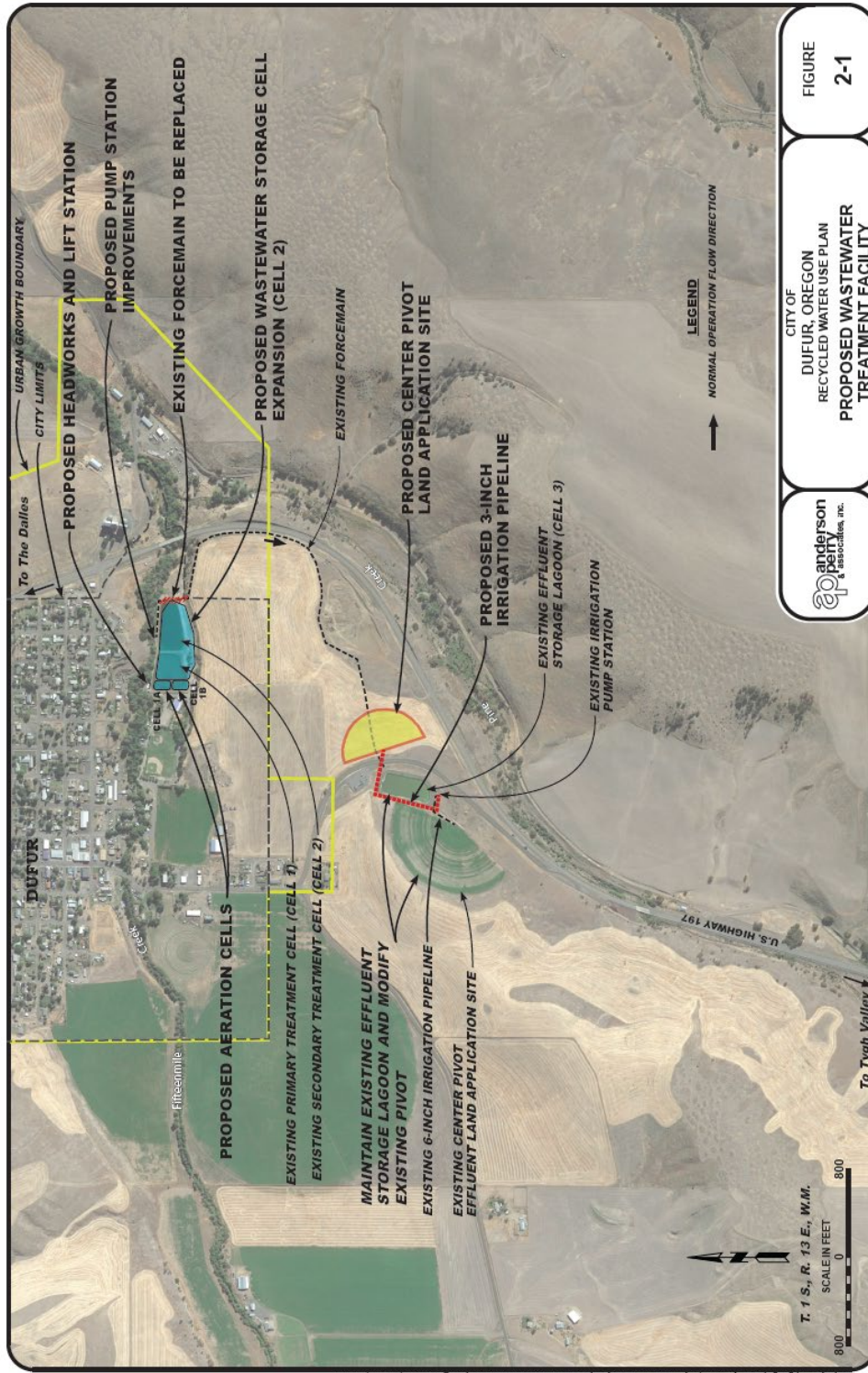


Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long	Design Flow¹	Existing Flow²
001	Domestic Wastewater	45.450344 / - 121.124133	0.077 MGD	0.068 MGD
002	Recycled Water	As specified in Recycled Water Use Plan	N/A	~13.9 MG/year
003	Biosolids	As specified in Biosolids Management Plan	N/A	N/A

1. Design Flow = average dry weather design flow, new facility
 2. Existing Flow Domestic Wastewater = existing average monthly flow based on 2018 Facility Plan and 2019 Facility Plan Amendment. Recycled water output based on updated RWUP.

2.2 Compliance History

The last compliance inspection of the City of Dufur NPDES permit was completed on June 18th, 2019. As a result of the inspection and file review, the city was issued a Pre-Enforcement Notice for failure to submit DMRs, failure to submit required annual reports, failure to retain records, failure to monitor in accordance with the permit, exceedance of permit limits for biochemical oxygen demand (BOD₅), Total Suspended Solids (TSS), and *E. coli*, failure to document proper calibration of equipment, and exceedance of the interim MAO limit for ammonia. These issues were resolved under DEQ Case no. WQ/M-ER-2019-158.

On October 2nd, 2020, DEQ issued a Penalty Demand Notice to the city for stipulated penalty under the MAO for two violations of the ammonia-nitrogen interim limit (February and March 2020).

On January 26th, 2021, DEQ issued the city a Warning Letter (2021-WL-6055) for failing to monitor BOD/TSS in August 2020.

On October 27th, 2021, DEQ issued a Penalty Demand Notice to the city for stipulated penalty under the MAO for three violations of the interim effluent limit for BOD₅, and one violation of the interim effluent limit for ammonia-nitrogen that occurred in January – March 2021.

On June 2nd, 2022, DEQ issued the facility a Warning Letter with Opportunity to Correct (2022-WLOTC-7316) for effluent violations of TSS and *E. coli* limits of the assigned permit.

In May and November of 2022, DEQ issued the facility penalty demand notices for violations of the interim limits provided by the MAO.

Cleanout of lagoon wastewater solids in 2023 has assisted the facility in reduction in discharge occurrences and reduced violations.

The assignment of a WPCF permit and termination of the MAO will address concerns for the ability of the City to meet effluent discharge limits to Fifteenmile creek.

2.3 Biosolids

The term wastewater solids includes sewage sludge and biosolids. Sewage sludge refers to solids from primary, secondary, or advanced treatment of domestic wastewater that have not been treated or determined to be suitable for land application as fertilizer or soil amendment. The term biosolids refers to domestic wastewater treatment facility solids that have undergone adequate treatment and are suitable for application to the land as a fertilizer or soil amendment. Land application of biosolids must be performed in accordance with a DEQ-approved biosolids management plan (BSMP) and site authorization letter. Alternatively, a BSMP and site authorization are not required for disposal of wastewater solids in a landfill. The City of Dufur has determined landfill of wastewater solids to be the preferred alternative during the upgrade project. Should the facility propose to land apply solids in the future, a BSMP will be required to be approved by DEQ, and provisions are included in the WPCF permit.

2.4 Groundwater

The City of Dufur is undergoing the project to re-line the treatment lagoons with synthetic liner and discharge to an HDPE lined irrigation storage pond. The facility also proposes to land apply recycled water within agronomic rates for uptake of nutrients and water. DEQ may evaluate the need for a full assessment of the facility's impact on groundwater quality if there is any evidence of an adverse impact resulting from the facilities operation or the facility fails to operate in accordance with permit conditions. Schedule A of the proposed permit includes a condition prohibiting adverse impacts to groundwater.

2.5 Recycled Water

The permit holder currently operates a recycled water program and has provided an updated recycled water use plan proposing to land apply Class D recycled water at two land application sites. The plan has been reviewed by DEQ in accordance with OAR 340-055 and was included for public comment with this permit action. The plan is enforceable under the conditions of the WPCF permit. Land application of recycled water is not permitted under this permit without a DEQ-approved recycled water use plan.

2.6 Wastewater Classification

OAR 340-049 requires all permitted municipal wastewater collection and treatment facilities receive a classification based on the size and complexity of the systems. DEQ evaluated the classifications for the treatment and collection system, which are publicly available at: <https://www.deq.state.or.us/wq/opcert/Docs/OpcertReport.pdf>.

3. Schedule A: Effluent Limit Development

No discharge to state waters is permitted by this permit. Any surface water discharge is authorized only by the assigned NPDES Permit #102478 and must be managed in accordance with the permit until terminated. All wastewater is to be treated in aerated lagoons and must be irrigated only on DEQ-approved land application sites in accordance with a recycled water use plan. Prior to land application, recycled water must be treated by disinfection to at least Class D standards for beneficial use as defined in OAR 340-055.

All activities concerning recycled water must conform to a recycled water use plan approved by DEQ. Specific crops, application rates and buffers are included in the required recycled water use plan. All recycled water must be distributed on land, for dissipation by evapotranspiration and controlled seepage by following sound irrigation practices so as to prevent:

- a. Prolonged ponding of treated recycled water on the ground surface;
- b. Surface runoff or subsurface drainage through drainage tile;
- c. The creation of odors, fly and mosquito breeding, or other nuisance conditions;
- d. The overloading of land with nutrients, organics, or other pollutant parameters; and
- e. Until otherwise approved by DEQ via a revised recycled water use plan, treated effluent must only be reused as Class D for beneficial uses.
- f. Treated effluent must only be applied at site and crop specific agronomic loading rates.

3.1 Groundwater

DEQ may evaluate the need for a full assessment of the facility's impact on groundwater quality if there is any evidence of an adverse impact resulting from the facilities operation or the facility fails to operate in accordance with permit conditions. Schedule A of the proposed permit includes a condition prohibiting adverse impacts to groundwater.

3.2 Recycled Water

Schedule A of the permit requires the permittee to apply recycled water according to a recycled water use plan. Schedule A also restricts the application of recycled water to prevent the following:

- Irrigating above agronomic rates,
- Adverse impact to groundwater,
- Offsite surface runoff or subsurface drainage through drainage tile,
- Creation of odors, fly and mosquito breeding, or other nuisance conditions

3.3 Biosolids

Schedule A of the permit requires the facility to apply biosolids according to a DEQ-approved biosolids management plan. In addition, Schedule A requires the following:

- Apply at or below agronomic rates

- The permittee must have written site authorization for each location from DEQ before land applying and abide by the restrictions for each site.
- Prior to application, the permittee must ensure that biosolids meet one of the pathogen reduction standards under 40 CFR 503.32.
- The permittee must not apply biosolids containing pollutants in excess of the ceiling concentrations for the nine metals shown in Schedule A of the permit.

4. Schedule B: Monitoring and Reporting Requirements

Schedule B of the permit describes the minimum monitoring and reporting necessary to demonstrate compliance with the proposed effluent limits. Detailed monitoring frequency and reporting requirements are in Schedule B of the proposed permit. The required monitoring, reporting and frequency for many of the parameters are based on DEQ's monitoring and reporting matrix guidelines, permit writer judgment, reporting requirements for similar facilities of this type and size and to ensure the needed data is available for the next permit renewal.

Monitoring data provide DEQ with information to evaluate the performance of the wastewater treatment facility for influent, the lagoons, and effluent recycled water use. The authority to require periodic reporting by permittees is found at ORS 468.065(5).

Monitoring requirements for influent flow, pH, BOD₅ (5-day biochemical oxygen demand), and total suspended solids (TSS) are included in the permit for the City of Dufur to track influent loading to the system and as monitoring for performance of the treatment system. Similarly, the amount of septage received is required to be monitored to track loading to the system.

Lagoon monitoring is required, per DEQ's monitoring and reporting matrix guidelines, and includes perimeter inspections, lagoon depths, and lagoon solids accumulation. In order to determine appropriate maintenance requirements (dredging, etc.) of the lagoons, monitoring of solids levels in the lagoons is required at least once over the next permit cycle.

Effluent parameters are required when irrigating with recycled water at an approved land application site. The City proposes to utilize Class D recycled water for land application and may only do so in accordance with a DEQ-approved recycled water use plan. Requirements for flow monitoring, irrigation volume, *E. coli* bacteria, total chlorine residual, fertilizer, and nutrient monitoring are included in Table B4. Nutrients must be evaluated and reported on by the permittee to ensure overloading of the field above agronomic uptake rate proposed in the recycled water use plan for the planted crops does not occur. The permittee must track and report any supplemental irrigation water, crop yields, crop crude protein at harvest(s), and additional nutrient loading applied to the site. These requirements are in place to ensure groundwater and public health are adequately protected by the land application activity.

5. Schedule C: Compliance Schedule

There are no Schedule C compliance requirements in this permit.

6. Schedule D: Special Conditions

The proposed permit contains the following special conditions. The conditions include the following:

6.1 Inflow and Infiltration

A requirement to submit an updated inflow and infiltration plan in order to reduce groundwater and stormwater from entering the collection system.

6.2 Emergency Response and Public Notification Plan

A requirement to develop and submit an emergency and spill response plan or ensure the plan is current per General Condition B.8 in Schedule F.

6.3 Recycled Water Use Plan

A condition requiring the permit holder to develop and maintain a recycled water use plan that meet the requirements in OAR 340-055-0025. The plan must also include location-specific information describing where and how recycled water is managed to protect public health and the environment.

6.4 Exempt Wastewater Reuse at the Treatment System

A condition that exempts the permit holder from the recycled water requirements in OAR 340-055, when recycled water is used for landscape irrigation at the treatment facility or for in-plant processes, such as in plant maintenance activities.

6.5 Wastewater Solids and Biosolids Annual Report

This condition requires the permittee to submit a Wastewater Solids and Biosolids Annual Report each year documenting removal of wastewater solids from the facility during the previous calendar year.

6.6 Wastewater Solids Transfers

A condition that allows the facility to transfer treated or untreated wastewater solids to other in-state or out-of-state facilities that are permitted to accept the wastewater solids.

6.7 Biosolids Management Plan

A requirement to manage all biosolids in accordance with a DEQ-approved biosolids management plan and land application plan. The biosolids management plan and the land application plan must meet the requirements in OAR 340-050-0031 and describe where and how the land application of biosolids is managed to protect public health and the environment.

6.8 Hauled Waste Control Plan

A condition that allows the acceptance of hauled waste according to a DEQ-approved hauled waste plan. The hauled waste plan ensures waste is not accepted that could negatively impact the treatment capabilities of the facility.

6.9 Lagoon Solids

A condition requiring the permittee to submit a sludge depth survey report to ensure lagoon solids are maintained within design standards and accumulations do not negatively affect treatment capabilities.

6.10 Operator Certification

The permit holder is required to have a certified operator consistent with the size and type of treatment plant covered by the permit per OAR 340-049-0005. This special condition describes the requirements relating to operator certification.

6.11 Industrial User Survey

This condition requires the permittee to conduct or update an industrial user survey. The purpose of the survey is to identify whether there are any categorical industrial users discharging to the POTW, and ensure regulatory oversight of these discharges.

6.12 Re-opener Clause

A condition authorizing DEQ to modify the permit if necessary.

7. Schedule F: WPCF General Conditions

This schedule includes conditions and definitions that are applicable to all WPCF domestic permits in Oregon of this type.

8. Next Steps

The City of Dufur has submitted a complete WPCF permit application for a new permit. DEQ sent the draft permit documents to the applicant for review and comment, and then proceeded with a Category III permitting action for public notification as per OAR 340-045-0027. DEQ has approved issuance of the permit via OAR 340-045.

Appendix A: 2024 Recycled Water Use Plan Water Balance

CITY OF DUFUR, OREGON RECYCLED WATER USE PLAN IRRIGATION WATER BALANCE EXISTING INFLUENT FLOWS

Month	Influent ¹ (MG)	Precipitation ²		Evaporation ³		Seepage ⁴ (MG)	Irrigation		Creek Discharge (MG) ⁵	Storage Volume (+/-) (MG)	Year 1 Cumulative Storage Volume (MG) ⁶	Year 2 Cumulative Storage Volume (MG) ⁶
		(in)	(MG)	(in)	(MG)		Crop Acreage (in)	Alfalfa Hay 14.6 (MG)				
January	2.67	2.01	0.37	0.00	0.00	0.00	-	0.00	0.00	3.04	3.04	7.37
February	1.83	1.40	0.26	0.00	0.00	0.00	-	0.00	0.00	2.08	5.12	9.45
March	1.14	1.09	0.20	2.07	0.38	0.00	-	0.00	0.00	0.96	6.08	10.42
April	0.77	0.81	0.15	3.58	0.66	0.00	-	0.00	0.00	0.26	6.35	10.68
May	1.28	0.86	0.16	5.42	0.99	0.00	5.36	2.13	0.00	-1.68	4.66	9.00
June	1.47	0.68	0.12	6.72	1.23	0.00	7.38	2.92	0.00	-2.56	2.10	6.43
July	2.18	0.24	0.04	8.64	1.58	0.00	9.87	3.91	0.00	-3.27	0.00	3.16
August	2.31	0.29	0.05	7.83	1.43	0.00	7.54	2.99	0.00	-2.06	0.00	1.10
September	1.29	0.59	0.11	5.01	0.92	0.00	4.05	1.60	0.00	-1.12	0.00	0.00
October	1.37	0.91	0.17	2.49	0.46	0.00	1.04	0.41	0.00	0.67	0.67	0.67
November	1.49	1.82	0.33	0.00	0.00	0.00	-	0.00	0.00	1.83	2.50	2.50
December	1.45	2.08	0.38	0.00	0.00	0.00	-	0.00	0.00	1.83	4.33	4.33
TOTALS	19.25	12.78	2.34	41.76	7.65	0.00	35.24	13.97	0.00			

Crop Usage Data - Alfalfa hay

Cell No.	Acres	Square Feet	MG	Month	Precip. (in)	Evapotran. ⁷ (in)	Net Irrigation Req'd. (in)	85 Percent Efficiency (in)
Cell No. 1A	0.43	18,751	0.72	May	0.86	5.42	4.56	5.36
Cell No. 1B	0.43	18,751	0.72	Jun	0.68	6.95	6.27	7.38
Cell No. 2	3.84	167,071	10.90	Jul	0.24	8.63	8.39	9.87
Cell No. 3	2.05	89,202	6.00	Aug	0.29	6.70	6.41	7.54
				Sep	0.59	4.03	3.44	4.05
				Oct	0.91	1.79	0.88	1.04
Total	6.74	293,775	18.34		3.57	33.52	29.95	35.24

Notes:

- ¹ Influent. Influent flows are based on average monthly flow from March 2020 to January 2022. Data obtained from Discharge Monitoring Reports for the City of Dufur.
- ² Precipitation. Utilized precipitation on record with the Western Regional Climate Center (WRCC) for the Dufur, Oregon, weather station from 1904 to 2014. Mean rainfall used for each year.
- ³ Evaporation. Utilized pan evaporation data obtained from the WRCC for the Moro, Oregon, station with a pan coefficient of 0.70.
- ⁴ Seepage. Existing lagoon seepage assumed to be 0 MG.
- ⁵ Discharge. The City will be eliminating discharge to Fifteenmile Creek under a new Water Pollution Control Facilities Permit.
- ⁶ Total storage available in the proposed storage lagoon (Cell No. 2) and the existing storage lagoon (Cell No. 3) is estimated to be 16 MG.
- ⁷ Evapotranspiration. Based on data from AgriMet at the Dee Flats station.

in = inches
MG = million gallons



CITY OF
DUFUR, OREGON
RECYCLED WATER USE PLAN
IRRIGATION WATER BALANCE

FIGURE
8-2

Appendix B: Facility Flow Diagram

