



CITY OF REDMOND

Community Development Department

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www.redmondoregon.gov

REDMOND URBAN AREA PLANNING COMMISSION

411 SW 9th Street-COUNCIL CHAMBERS Redmond, OR 97756

Wednesday, February 15, 2023 5:00 pm

Oral comments can be provided in-person or virtually. For those who plan to provide oral comments virtually during the hearing, pre-register at planredmond@redmondoregon.gov (must pre-register before 3:00 p.m. on February 15th)

Stream the meeting live at: <https://www.redmondoregon.gov/government/city-council/council-meeting-info/meeting-agendas-minutes-and-video>

Agenda

UAPC Members

Norman
Schultz, Chair

Ben
Schimmoller,
Vice-Chair

Heather DeWolf

Joseph
Zampko

Mercedes
Cook-Bostick

Michael Rogers

Wanda Wai
Lyian Toe

Ex-Officio
Vacancy

I. CALL TO ORDER / INTRODUCTIONS

II. CITIZEN COMMENTS FOR ITEMS NOT ON THE AGENDA

III. PUBLIC HEARING

- a. Redmond Comprehensive Plan Amendment (711-23-000005-TA) to Adopt and Incorporate the 2023 Wastewater Facility Plan Amendment into the Public Facilities Plan and as a Supporting Plan to the Comprehensive Plan

IV. PLANNING FOR THE WEST REDMOND AREA PLAN (WRAP)

V. Next Meeting – March 1, 2023

VI. COMMISSION MEMBER COMMENTS

VII. ADJOURN

Please note that these documents are also available on the City's website www.redmondoregon.gov; click on City Government, hover on Commissions and Committees, click on Urban Area Planning Commission. You may also request a copy from City Records Office 923-7751 or email kelly.morse@redmondoregon.gov

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FINDINGS FOR AN AMENDMENT TO THE REDMOND COMPREHENSIVE PLAN: ADOPT AND INCORPORATE THE 2023 WASTEWATER FACILITY PLAN AMENDMENT INTO THE PUBLIC FACILITIES PLAN AND AS A SUPPORTING PLAN TO THE COMPREHENSIVE PLAN

HEARING DATE: February 15, 2023, 5:00 PM, Redmond City Hall Council Chambers and via digital conference (GoTo Meeting)

HEARINGS BODY: Redmond Urban Area Planning Commission

FILE NUMBER: 711-23-000005-TA

FILE NAME: Redmond Comprehensive Plan Amendment

REQUEST: A Legislative Amendment to the Redmond Comprehensive Plan to Adopt and Incorporate the 2023 Wastewater Facility Plan Amendment into the Public Facilities Plan and as a Supporting Plan to the Comprehensive Plan

APPLICANT: City of Redmond

REVIEWING STAFF: Kyle Roberts, AICP, Planning Director
Through John Roberts, AICP, Deputy City Manager

I. BACKGROUND

Summary:

Redmond's Comprehensive Plan 2040 is the blueprint for the City's future development over the next 20 years. The Comprehensive Plan serves as the primary land use planning document, establishing a series of goals and policies that guide future growth and development. City leaders use the Comprehensive Plan to manage expected population and employment growth, coordinate public investments and make decisions about new and existing businesses, housing and neighborhoods, transportation, parks and trails, infrastructure, and more.

A major supporting plan to the Comprehensive Plan is the Public Facilities Plan (PFP). The PFP identifies the major public infrastructure needed during the next twenty years to support the City of Redmond's Comprehensive Plan. The PFP contains the Capital Improvement Plans (CIP) for Transportation, Water, Wastewater, and Parks. Individual master plans for Transportation, Water, Wastewater, and Parks provide background, analysis, and justification for the CIPs imbedded in the PFP. Naturally, as growth occurs, frequent updates are made to the master plans, pertinent reports, and documents that ultimately support and implement the Redmond Comprehensive Plan.

The City's 2018 Wastewater Facility Plan and 2020 Wastewater Facility Plan Amendment were recently adopted in December 2022 and acknowledged by the Department of Land Conservation and Development (DLCD) in January 2023. As a result, they were incorporated as part of the PFP and as a supporting plan to the Comprehensive Plan.

The 2020 Wastewater Facility Plan Amendment evaluated an alternative to relocate the City's wastewater treatment facility, currently situated inside city limits near a residential area at the north end of Dry Canyon, outside city limits where the City currently repurposes and discharges all of Redmond's treated wastewater effluent and biosolids. The alternative considered constructing a new wastewater treatment facility with a more sustainable and cost-effective lagoon and wetland treatment system, the Redmond Wetlands Complex.

The City has chosen to pursue the wetland alternative; however, the 2018 Wastewater Facility Plan and 2020 Wastewater Facility Plan Amendment did not include a capacity analysis on the existing effluent

pipelines that would be converted to interceptor pipelines to convey wastewater to the wetlands alternative site. A capacity analysis was performed in 2021, during the preliminary design process. The preliminary design analysis determined the existing pipelines would be unable to accommodate forecasted flows through the planning period and that one of the pipelines would need to be expanded. The Wastewater Facility Plan requires a second amendment to include the evaluation of the pipelines.

This proposed amendment to the Comprehensive Plan – to incorporate the 2023 Wastewater Facility Plan Amendment – Interceptor Pipeline – was initiated legislatively by the City. The findings and supporting materials, demonstrate that incorporating this amendment is consistent with the Statewide Planning Goals, the Comprehensive Plan, and Development Code Section 8.0760. The four criteria set forth in Section 8.0760 are addressed herein, as well as applicable state laws and requirements.

Proposal:

The request is for a legislative amendment to adopt and incorporate the 2023 Wastewater Facility Plan Amendment – Interceptor Pipeline document into the PFP and as a supporting plan to the Redmond Comprehensive Plan.

Incorporating this document will help assure that urban development in Redmond’s urban growth boundary is guided and supported by types and levels of urban facilities and services appropriate for the needs and requirements of the areas to be serviced, and that these facilities and services are provided in a timely, orderly, and efficient arrangement, as required by Goal 11 of the Statewide Planning Program.

Exhibits:

The following exhibits make up the record in this matter:

Exhibit A – Wastewater Facility Plan Amendment – Interceptor Pipeline, February 2023

Exhibit B – Wastewater Facility Plan Amendment, October 2020

Noticing:

Per ORS 197.610, a notice of proposed additions to the Comprehensive Plan was submitted to the Department of Land Conservation and Development (DLCD) on January 6, 2023. Per Section 8.1110 of the Redmond Development Code, a public hearing notice for the February 15th Planning Commission hearing was published in the *Bend Bulletin* on February 3, 2023.

Applicable Criteria:

The following are the applicable sections from the Oregon Revised Statutes, Oregon Administrative Rules, and the Redmond Development Code:

- Oregon Revised Statutes (ORS) – 197.610 and 197.797
- Oregon Administrative Rules (OAR), Chapter 660:
 - Division 11, Public Facilities Planning
 - Division 15, Statewide Planning Goals and Guidelines
- City of Redmond Development Code:
 - Article I – Zoning Standards
 - Section 8.0760: Criteria for Amendments

II. FINDINGS & CONCLUSIONS

Findings:

Redmond Development Code, Article I – Zoning Standards: Amendments: Sections 8.0750 through 8.0770 set forth the procedure and standards for an amendment to the Redmond Comprehensive Plan.

Specifically, Section 8.0760 sets forth the four review criteria that must be met when evaluating amendment requests. Findings for each criterion are presented below.

8.0760 Criteria for Amendments. The burden of proof is upon the applicant. The applicant shall show the proposed change is:

1. In conformity with all applicable State statutes;

FINDING: The following State statutes apply directly to this application:

ORS 197.610, *Submission of proposed comprehensive plan or land use regulation changes to Department of Land Conservation and Development;*

ORS 197.797, *Local quasi-judicial land use hearings; notice requirements; hearing procedures.*

ORS 197.610 requires local jurisdictions to submit proposed comprehensive plan or land use regulation changes to Department of Land Conservation and Development (DLCD). Notice of the proposed adoptions and additions to the Redmond Comprehensive Plan has been provided to DLCD more than 35 days in advance of the first evidentiary hearing concerning the amendment.

ORS 197.797 sets forth noticing requirements. The applicable RDC standards that address amendment and legislative procedures and noticing requirements (i.e., Sections 8.0750-8.0770 and 8.1100-8.1125) were developed in compliance with the applicable State statute regarding noticing and public hearings. The relevant findings, incorporated by reference herein, show compliance with the aforementioned statutes.

Notice of the proposed Comprehensive Plan amendment has been advertised in the local newspaper (public notice) as required by the RDC and State statute. Regarding statutory public hearing requirements, this proposal is legislative and not quasi-judicial. Sections 8.1100 through 8.1125 of the RDC implement the quasi-judicial statutory requirements in similar fashion and have been met. The Redmond Urban Area Planning Commission and City Council's public hearing and review processes meet the statutory requirements for the purpose of the review.

Based on the above discussion and finding, staff concludes that the proposed amendments comply with criterion #1.

2. In conformity with the State-wide planning goals whenever they are determined to be applicable;

FINDING: The following State-wide planning goals have been determined to apply directly to this application:

Goal 1 – Citizen Involvement - calls for the opportunity for citizens to be involved in all phases of the planning process. The Redmond Urban Area Planning Commission serves as the City's formal citizen advisory commission to fulfill Goal 1 and is made up of Redmond area residents.

A public notice and agenda for the Planning Commission meeting where and when the proposed amendments will be discussed was provided in accordance with law. All documents

were available for public review. The public notice advertising the February 15th public hearing was published in the *Bend Bulletin*.

Goal 2 – Land Use Planning – requires establishing a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions. Through the course of review of the amendments, input was received from City staff, and input will be received from the Planning Commission through the public hearing process. Additional input will be received from City Council and residents of the community through the public hearing process.

Goal 3 – Agricultural Lands – is not applicable because there are no agricultural lands in the city limits.

Goal 4 – Forest Lands – is not applicable because there are no forest lands in the city limits.

Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Spaces – is not applicable because the proposed Comprehensive Plan amendment does not affect any regulation that implements Goal 5 and the City's acknowledged regulations implementing Goal 5 remain in effect with no change in applicability.

Goal 6 – Air, Water, and Land Resources Quality – requires that all waste and process discharges from future development, when combined with such discharges from existing developments shall not threaten to violate, or violate applicable state or federal environmental quality statutes, rules, and standards. The wastewater facility plan will ensure compliance with applicable state and federal environmental quality statutes, rules, and standards.

Goal 7 – Areas Subject to Natural Hazards – is not applicable because the City's acknowledged regulations implementing Goal 7 remain in effect with no change in applicability.

Goal 8 – Recreational Needs – requires the City to satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts. This goal is not applicable as the wastewater facility plan amendment has no effect on the availability of or access to recreational opportunities.

Goal 9 – Economic Development – requires the City to plan and zone enough land to meet the community's projected commercial and industrial needs. The City adopted an Economic Opportunities Analysis (EOA) in 2020. This document serves as the City's compliance document under Goal 9, OAR 660-009-0015, ORS 197.712, and provides the basis for commercial and industrial development policies established in the Comprehensive Plan. An updated wastewater facility plan will help the City plan for and implement said policies, for example, determining which lands/areas are serviceable with public facilities.

Goal 10 – Housing – provides for the housing needs of citizens of the state. The City adopted a Housing Needs Analysis (HNA) in 2019. This document serves as the City's compliance document under Goal 10, OAR Chapter 660 Division 008, and ORS 197.296(3). This report concludes that Redmond should plan to accommodate development of 6,963 new dwelling units over the next 20 years in order to house the projected population growth. Planning for public facilities is a vital component in planning for the development of future housing. An updated wastewater facility plan will help the City plan for infrastructure needed to accommodate the development of the community's demand for housing.

Goal 11 – Public Facilities and Services – requires cities to plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban development. As mentioned earlier, as growth occurs, frequent updates are made to the master plans, pertinent reports, and documents. Information and data from the wastewater facility plan amendment will be used to inform the basis for CIPs imbedded into the PFP. The CIPs provide for the budgeting and scheduling of identified needed infrastructure projects.

Goal 12 – Transportation – requires the City to provide and encourage a safe and convenient and economic transportation system. Per OAR 660-012-0060, the proposed Comprehensive Plan amendment will not significantly affect an existing or planned transportation facility. Therefore, compliance with Goal 12 is maintained.

Goal 13 – Energy Conservation – is not applicable because the City’s acknowledged regulations implementing Goal 13 remain in effect with no change in applicability.

Goal 14 – Urbanization – requires the City to provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities. Updated information and data contained in the wastewater facility plan is used to help plan for infrastructure needed to accommodate growth and the estimated buildout of the Urban Growth Boundary as defined in the Comprehensive Plan.

Goal 15 – Willamette River Greenway – is not applicable to the city of Redmond.

Goal 16 – Estuarine Resources – is not applicable to the city of Redmond.

Goal 17 – Coastal Shorelands – is not applicable to the city of Redmond.

Goal 18 – Beaches and Dunes – is not applicable to the city of Redmond.

Goal 19 – Ocean Resources – is not applicable to the city of Redmond.

Based on the above discussion and finding, the proposed Comprehensive Plan amendment is consistent with the statewide planning goals and therefore complies with criterion #2.

3. In conformity with the Redmond Comprehensive Plan, land use requirements and policies; and

FINDING: The following Comprehensive Plan chapters and policies have been determined to apply directly to this application:

Chapter 1 of the Comprehensive Plan identifies goals and policies that address citizen involvement. Goal 1 speaks to engagement and the opportunity for the community to be informed and involved in all phases of the planning process. The Urban Area Planning Commission serves as the City’s formal citizen advisory committee (as required by State Administrative Rule) and is made up of Redmond area residents. The Planning Commission is formally recognized through City Code and was appointed by the City Council. Thus, the Planning Commission is the appropriate public review and recommendation body to the City to meet this Comprehensive Plan policy.

Chapter 2 of the Comprehensive Plan identifies goals and policies that pertain to land use planning and procedures. Specifically, it speaks to establishing a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Most relevant to the proposed Comprehensive Plan amendment, Goal 3 of the chapter addresses implementation tools of the Comprehensive Plan. Policy 2-3-3 identifies the need to “Adopt updates to system plans, as required by state law or necessary to address changing community needs and incorporate these plans by reference in the Comprehensive Plan.” Incorporating the wastewater facility plan amendment into the PFP and adding it as a supporting plan to the Comprehensive Plan will support the implementation of the Comprehensive Plan, primarily Chapter 11.

Chapter 9 of the Comprehensive Plan identifies goals and policies that address economic development in Redmond. Goal 3 of the chapter identifies policies related to infrastructure planning. Policy 9-3-2 states that “The City will ensure that infrastructure planning is cost-effective, supports economic development, is consistent with the City’s master plans for new area development, and supports cohesive development patterns across the City.”

To ensure the planning of public infrastructure is consistent with the City’s infrastructure master plans, said plans must be incorporated into the City’s PFP and identified as ancillary plans to the Comprehensive Plan. In order to incorporate these plans and subsequent amendments, they must be formally adopted by the local governing body and acknowledged by DLCD.

Chapter 10 of the Comprehensive Plan identifies goals and policies related to housing in Redmond. Policy 10-4-1 of Goal 4, Infrastructure Planning, states the need to “Coordinate land use planning with the Capital Improvement Plan to ensure that infrastructure is available to support residential development...” As mentioned earlier, new data and information from the wastewater facility plan amendment will be incorporated into the PFP, which contains the CIPs.

Chapter 11 of the Comprehensive Plan addresses public facilities and services. The chapter describes existing public and private facilities and services and known present and future needs based on projected growth. It does not present specific public improvements which may be needed. That information is contained in the City’s adopted PFP. The PFP is a support document to the Comprehensive Plan, which describes in detail the water, sewer, transportation, and park facilities needed to accommodate anticipated development and includes cost estimates of facility improvements.

The proposed amendment to incorporate the 2023 Wastewater Facility Plan Amendment into the PFP and Comprehensive Plan directly addresses all three of the goals outlined in Chapter 11 and many of the goals’ policies.

Based on the above discussion and finding, staff concludes that the proposed Comprehensive Plan amendment is consistent with the applicable Redmond Comprehensive Plan goals and policies.

4. That there is a change of circumstances, further studies justifying the amendment or mistake in the original zoning.

FINDING: Justification for the proposed amendment to the Wastewater Facility Plan is described in sufficient detail in the amendment document itself (Exhibit A). This proposed amendment is needed, and is in response to the capacity analysis of pipelines performed during the preliminary design analysis of the proposed Redmond Wetlands Complex.

Based on the above finding, staff concludes that the proposed Comprehensive Plan amendment complies with criterion #4.

WASTEWATER FACILITY PLAN AMENDMENT - INTERCEPTOR PIPELINE

FEBRUARY 2023



Prepared for the
City of Redmond, Oregon

**WASTEWATER FACILITY PLAN AMENDMENT - INTERCEPTOR PIPELINE
FOR
CITY OF REDMOND, OREGON**

FEBRUARY 2023



02/07/2023 9:16 AM

RENEWS 06-30-24

ANDERSON PERRY & ASSOCIATES, INC.

La Grande, Redmond, Hermiston, and Enterprise, Oregon
Walla Walla, Washington

The City of Redmond currently owns and operates a Water Pollution Control Facility (WPCF) located on the north end of Dry Canyon within the city limits. Treated wastewater effluent is conveyed from the WPCF's disinfection chamber through two sewer pipelines to the City's recycle and disposal facilities located outside the city limits to the northwest. The sewer pipelines consist of one 24-inch polyvinyl chloride (PVC) pipeline with restrained fittings designed to operate under pressure and one 24-inch reinforced concrete pipe with manholes at changes in grade and direction designed to operate as a traditional gravity sewer line. The sewer pipelines have significant lengths at a nearly flat grade of 0.001 feet per foot (ft/ft).

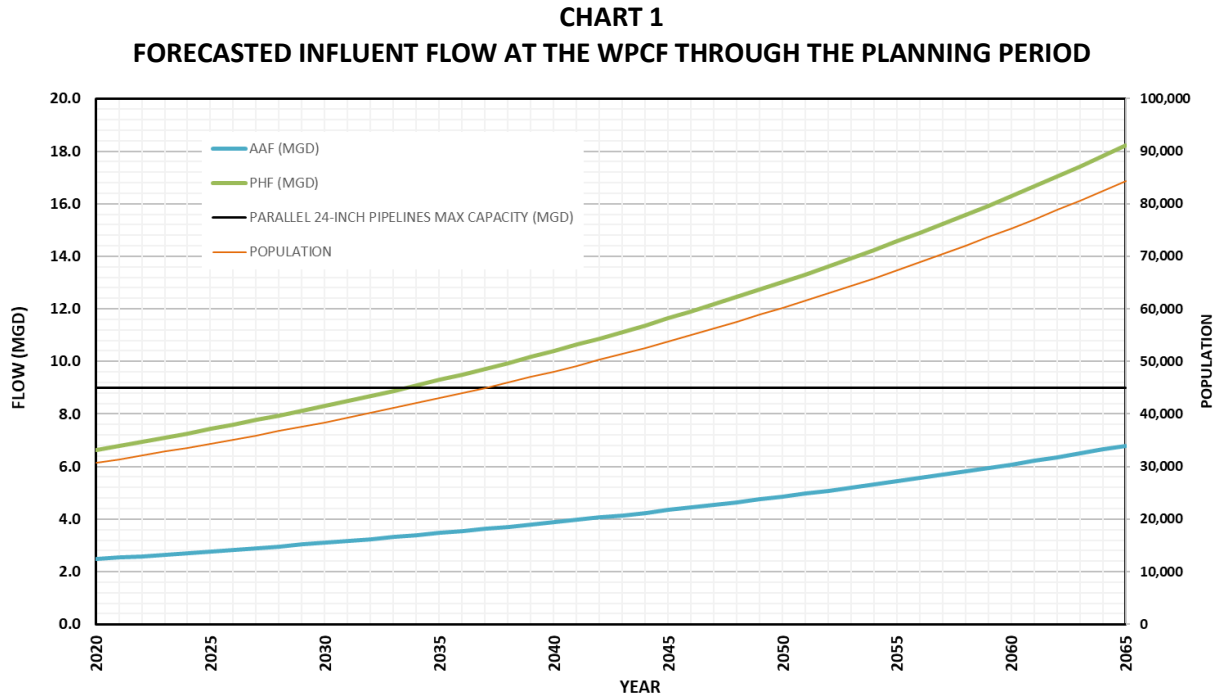
A Wastewater Facility Plan Update (Plan) prepared by Stantec in 2018 evaluated the existing WPCF's ability to treat wastewater associated with existing conditions and forecasted growth through a 20-year planning period. The Plan found the WPCF's existing secondary treatment facilities were nearing capacity and would need to be expanded or replaced to accommodate forecasted growth. The Plan also stated that, according to WPCF operators, the sewer pipelines used to convey treated wastewater to the recycle and disposal areas could meet current peak flow conditions with one pipeline out of service. However, no flow calculations were discussed or provided, nor was an evaluation of the sewer pipeline's ability to accommodate flow associated with forecasted population growth. In addition, measured historic flows used in the 2018 Plan were later determined to be lower than actual conditions.

In 2020, Anderson Perry & Associates, Inc. (AP) prepared a Wastewater Facility Plan Amendment that evaluated an alternative to expanding the existing WPCF. The alternative considered constructing a new wastewater treatment facility with a more natural treatment system located at the site of the existing recycle and disposal facilities. This alternative would require conveying raw sewage, instead of treated wastewater effluent, from the existing WPCF to the new site. The Plan Amendment did not evaluate the capacity of the existing sewer pipelines to convey raw sewage through the planning period to year 2045. The distance from the headworks of the existing WPCF to the new site is approximately 14,500 linear feet.

To determine the capacity of the existing sewer pipelines and evaluate its ability to convey the updated forecasted flows through the planning period, base flows were calculated using historical WPCF influent flow data, and forecasted flows were projected using average annual population growth rates published by Portland State University's Population Research Center. The analysis estimated year 2022 and 2045 peak hourly flow rates of 6.94 and 11.63 million gallons per day (MGD), respectively.

Conveying raw sewage requires access to the pipeline at manholes to clean, inspect, maintain, and dislodge blockages. Therefore, the existing PVC pipeline, if converted to convey raw sewage, could no longer operate as a pressure pipe and manholes would need to be installed to convert it into a gravity line.

Nominal diameter 24-inch pipes with a slope of 0.001 ft/ft conveying raw sewage under traditional gravity applications have a capacity of approximately 4.5 MGD assuming a flow depth of 0.8 times the nominal pipe diameter. Under these conditions, the existing pipelines (assuming conversion of the pressure pipe to gravity) would have a maximum capacity of approximately 9.0 MGD. With this result, it was determined the pipelines would be unable to accommodate forecasted flows through the planning period. Chart 1 shows the City's forecasted WPCF wastewater influent flow rates through the planning period.



AAAF = average annual flow

PHF = peak hourly flow

Chart 1 indicates that the capacity of the existing sewer pipelines would be exceeded in approximately 2034, or when the population reaches approximately 45,000. At that time, pipeline capacity would need to be increased. Two alternatives were considered to increase pipeline capacity:

- Install a third pipe in a new alignment
- Install a new larger pipe in the existing concrete pipe alignment

After analyzing costs, right-of-way, and private property impacts, installing a new 48-inch diameter interceptor in place of the existing 24-inch concrete pipeline is recommended. The 24-inch PVC pressure line would remain in place for other future uses such as a recycled water return line. The anticipated useful life of gravity sewer pipelines typically ranges from 60 to more than 100 years. Installing a pipe with capacity to serve an extended planning period is recommended as there is a nominal cost increase going to a larger diameter. A 48-inch pipe at a grade of 0.001 ft/ft has a design capacity of approximately 29 MGD. This 48-inch pipe would serve a population of approximately 135,000.

This Wastewater Facility Plan Amendment is intended to supplement the 2020 Plan Amendment completed by AP. The reader is encouraged to consult the 2020 Plan Amendment and this 2023 Plan Amendment for the complete analysis of the City's wastewater treatment system and recommended improvements to meet water quality goals through the planning period and beyond.

WASTEWATER FACILITY PLAN AMENDMENT - 2020



Prepared for the
City of Redmond, Oregon

**WASTEWATER FACILITY PLAN AMENDMENT
FOR
CITY OF REDMOND, OREGON**

2020



ANDERSON PERRY & ASSOCIATES, INC.

La Grande, Redmond, and Hermiston, Oregon
Walla Walla, Washington

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Preface

The City of Redmond, Oregon, contracted Anderson Perry & Associates, Inc., to conduct a Lagoon and Wetland Treatment and Disposal Feasibility Evaluation (Evaluation), completed in July 2020 for wastewater treatment alternatives and, subsequently, this Wastewater Facility Plan Amendment (Amendment) to their 2019 Update of the Wastewater Facility Plan (WWFP). This Amendment summarizes the results of the Evaluation and is intended to supplement and not replace the WWFP. Therefore, this Amendment will closely follow the outline of the WWFP to best synchronize the contents of each document. Detailed background on the City of Redmond's physical environment, planning and service area, and existing infrastructure can be found in the WWFP.

Sections that are not addressed in this Amendment can be referred to in the original WWFP.

A1.0 Basis of Planning

A1.1 Introduction and Need for the Project

The City recently completed a WWFP Update in November 2019. The WWFP established a basis of planning, existing facilities evaluation, regulatory requirements, alternatives analysis, and recommended improvements. Several alternatives were evaluated as seen in Section 4.0 of the WWFP; however, all considered alternatives included expanding the existing mechanical treatment plant at its current location. The City wished to also consider abandoning the constrained site of the existing mechanical treatment plant and evaluate the option of lagoon and wetland treatment and disposal. The purpose of this Amendment is to update the design criteria to the year 2045 and add an alternative for a lagoon treatment system with a constructed wetland treatment and disposal system to meet the City's needs.

A1.5 Existing and Future Population, Flows, and Loads

Remaining consistent with the WWFP, this Amendment uses the Portland State University: Oregon Population Forecast Program to estimate future population data. The data suggest the population in Redmond may increase to approximately 54,000 by the end of 2045.

Historic flow data used for this Amendment differ from that used in the WWFP due to a correction in data collected by the City. In October 2019, the City discovered the influent flowmeter was not reading correctly. This provided flows that were less than actual; therefore, the design criteria used in the WWFP were not accurate. The flowmeter has been recalibrated, and the following corrections have been made, along with clarifications:

- **Population - 53,800.** As used in the WWFP.
- **Average Annual Flow - 4.34 million gallons per day (MGD).** A review of the influent flows between January 2015 and October 2019 showed the average per capita flow to be 65.2 gallons per capita per day (gpcd). This flow is a little lower than what would normally be expected. After the flowmeter was reset, the flows between November 2019 and June 2020 were 80.8 gpcd, which provided an increase of 15.6 gpcd. This is in the range normally seen for communities in this region. This increase was added to the flow records before October 2019 to obtain a more accurate indication of historic influent flows. The per

capita flow was then used with the design population to determine the average annual design flows.

- **Maximum Month Flow - 4.51 MGD.** The adjusted per capita flows noted above were used for the highest flow month of each year. These were then averaged and multiplied by the design population.
- **Average Annual Five-day Biochemical Oxygen Demand (BOD₅) - 501 milligrams per liter (mg/L), 18,134 pounds per day (ppd).** The average annual concentration was used with the design flows to determine loadings.
- **Maximum Month BOD₅** - A review of the historic data show the maximum flow months produce less BOD₅ loading than the average. For this reason, the average annual loading should be used.
- **Average Annual Total Suspended Solids (TSS) - 353 mg/L, 12,777 ppd.** The historic average concentration was used with the design flow.
- **Maximum Month TSS - 357 mg/L, 13,428 ppd.** The historic average concentrations from each of the annual maximum months were used with the design maximum month flow to obtain the loading.
- **Average Annual Total Kjeldahl Nitrogen (TKN) - 65 mg/L, 2,353 ppd.** The design concentration from the WWFP Update was used with the flow above.
- **Maximum Month TKN - 75 mg/L, 2,821 ppd.** The design concentration from the WWFP Update was used with the flow above.
- **Peak Hour Flow - 11.63 MGD.** The WWFP Update indicated the peak hour flow can be calculated using a peaking factor of 2.68 with the average annual flow.

A1.6 Summary

The updated projected flows and loads used in this Amendment compared to those used in the WWFP can be seen on Tables 1-1 and 1-2. The projections presented on Table 1-2 are used in the following sections.

**TABLE 1-1
PROJECT FLOWS AND LOADS FROM THE WASTEWATER FACILITY PLAN**

Year	Population	Average Annual Flow, MGD	Maximum Month BOD ₅ Load, ppd	Maximum Month TSS Load, ppd	Maximum Month TKN Load, ppd
2017	28,800	1.90	9,800	7,000	1,200
2020	30,700	2.00	10,800	8,200	1,400
2025	34,400	2.20	12,100	9,200	1,500
2030	38,600	2.50	13,600	10,300	1,700
2035	43,200	2.80	15,200	11,600	2,000
2040	48,400	3.10	17,100	13,000	2,200
2045	53,800	3.50	19,000	14,400	2,400

TABLE 1-2
UPDATED PROJECT FLOWS AND LOADS

Year	Population	Average Annual Flow, MGD	Max Month BOD5 Load, ppd	Max Month TSS Load, ppd	Max Month TKN Load, ppd
2017	28,800	2.33	10,088	7,188	1,510
2020	30,700	2.48	10,753	7,662	1,610
2025	34,400	2.78	12,049	8,586	1,804
2030	38,600	3.12	13,520	9,634	2,024
2035	43,200	3.49	15,131	10,782	2,265
2040	48,400	3.91	16,953	12,080	2,538
2045	53,800	4.34	18,134	13,428	2,821

A3.0 Regulatory Requirements

Section 3 of the WWFP outlines the current water quality standards under the Water Pollution Control Facilities (WPCF) Permit that the City must comply with, as well as potential future regulatory considerations. As this Amendment is focused on evaluating the alternative of lagoon and wetland treatment and disposal, regulatory considerations surrounding this alternative will be outlined.

The City's current WPCF Permit for the existing mechanical treatment plant would be abandoned with the construction of an entirely new treatment system. The existing mechanical treatment plant provides secondary treatment through the use of an activated sludge process with discharge to groundwater via an infiltration gallery. The system proposed in this Amendment would utilize aerated lagoons for secondary treatment, lined constructed wetlands for tertiary treatment, and unlined disposal wetlands with the existing infiltration basins for effluent disposal. The added wetland treatment and disposal areas will enhance water quality using more natural processes but will be completely different than the existing facilities. The new treatment system will require that a new WPCF Permit be obtained. For this reason, an initial meeting was held with Oregon Department of Environmental Quality (DEQ) staff to discuss this treatment and disposal alternative with respect to a new permit. Generally, the DEQ is supportive of this option and feels that it can be permitted.

Since a new permit will be required but not yet obtained, the existing groundwater protection (Oregon Administrative Rules [OAR] 340-040) and effluent reuse rules (OAR 340-055) will be used for guidance in the evaluation of the lagoon and wetland alternative. The contaminate of specific note for groundwater protection from the proposed facility is a Nitrate - N limit of 10 mg/L. No other contaminants shown on OAR 340-040 Tables 1, 2, and 3 are anticipated to be at levels of concern in the treated effluent.

Effluent reuse is governed by OAR 340-055 and an approved Reclaimed Water Use Plan. Currently, the City irrigates crops not for human consumption using Class C effluent. This type of reuse only requires Class D or non-disinfected effluent based on the OARs. The existing WPCF Permit requires Class D effluent for discharge to the infiltration beds. The proposed treatment system would disinfect secondary effluent prior to discharging to treatment wetlands, then disposal wetlands, and ultimately an infiltration gallery. It is proposed that the wetland area be accessible to the public for non-contact use of adjacent walking paths for wildlife viewing and exercise. The area will be posted to prevent human contact with wetland water. For this use, disinfecting the effluent to a Class D level prior to discharging to the treatment wetland is proposed. The natural wetland system and wildlife use would make disinfection limits after the treatment wetland unpredictable.

A4.0 Alternatives Analysis

The City conducted an extensive alternatives analysis as seen in Section 4.0 of the WWFP. Along with the preferred mechanical treatment plant expansion alternative, the City can consider two additional alternatives: using lagoons and wetlands to provide the treatment capacity needed for the future and continue using the headworks and office space at the existing facility, or moving the entire treatment system, offices, and shops to a new location. These three options will be compared considering capital cost, life cycle cost, land and future expandability, and community benefits.

A4.1 Lagoon Treatment

Lagoon treatment can be provided with a facultative lagoon, partially aerated lagoon, or aerated lagoon.

A4.1.1 Facultative

A facultative lagoon provides oxygen for waste decomposition from an air/water interface area and algae photosynthesis. This system would be a minimum two-stage system operating between 3 and 7 feet in depth, with a minimum detention time of approximately 100 days. For this evaluation, an operating depth between 4 and 5 feet was assumed, and the detention time would be well in excess of 100 days due to the area needed for oxygen transfer. The first stage would need to be 290 acres and the second stage would need to be 190 acres, for a total lagoon size of 480 acres. For construction purposes, it is suggested to divide these lagoon cells into maximum 40-acre units. Then, there would be approximately 12 40-acre lagoons.

Solids handling would not be required for this option. Lagoon solids would be anticipated to be removed approximately once every 40 years, once the lagoons reach their design BOD₅ loading. A multi-cell lagoon system would allow a lagoon cell to be taken offline and solids to dry in the bottom of the lagoon for easy and cost-effective removal.

This lagoon type can reduce total nitrogen 40 to 95 percent. A removal efficiency of approximately 85 percent is needed to meet existing WPCF Permit limits. For this reason, adding a treatment wetland for effluent polishing would be recommended.

A4.1.2 Partially Aerated

A partially aerated lagoon would provide some of the oxygen requirements through an aeration system. For purposes of this evaluation, it was assumed that the oxygen for the first stage of the facultative lagoon system would be provided through mechanical aeration. Approximately 2 pounds of oxygen per pound of BOD₅ removed is used in this evaluation to include both BOD₅ and nitrogen reduction, and approximately 2 pounds of oxygen per horsepower (Hp) per hour can be assumed for an aeration system. The first-stage aeration system would mainly be used to increase the dissolved oxygen in the wastewater so it is available for microbial use and provide oxygen that would be consumed during the time water is in this cell. The detention time in this lagoon would be approximately three days. This first stage of the lagoon would then be approximately 10 feet deep to provide for aeration. Approximately 360 Hp of aeration would be needed. This would require a first-stage lagoon of approximately 3.5 acres. The second stage would then be approximately 190 acres and constructed mainly as a facultative system to provide both aerobic and anoxic microbial colonies, but this area would not provide enough

oxygen for the BOD₅ loading, so approximately 240 Hp of additional aeration would still be needed in the second stage.

As with the facultative lagoons, solids handling would not be proposed for this system. Solids reduction would occur naturally in the second-stage lagoons, but solids removal from the lagoons may still be needed approximately every 30 years.

This lagoon type can reduce total nitrogen 40 to 95 percent. A removal efficiency of approximately 85 percent is needed to meet existing WPCF Permit limits. For this reason, it is recommended a treatment wetland be added for effluent polishing.

A4.1.3 Aerated

An aerated lagoon would provide sufficient oxygen through aeration systems. A partially mixed, aerated lagoon would consist of five cells with a total detention time of 20 days. The 20-day detention time is on the longer end of what would normally be anticipated, but it provides a factor of safety and capacity to realize increased reduction in total nitrogen. A total requirement of approximately 750 Hp is needed to provide the required oxygen. The depth of the lagoon cells would be approximately 11 feet. The total wet area needed would be approximately 25 acres.

Solids handling would not be anticipated for this option, as solids reduction would occur in the lagoon cells. Solids removal is still anticipated to be needed approximately once every 20 years, once the flows and loadings reach design levels.

This lagoon type can reduce total nitrogen 60 to 95 percent. A removal efficiency of approximately 85 percent is needed to meet existing WPCF Permit limits. For this reason, a treatment wetland would be recommended to be added for effluent polishing.

A4.1.4 Aerated Lagoon with Orbal Aeration

This alternative utilizes the existing capital investment in the Orbal aeration system to provide pre-aeration and reduce the total capital and operation and maintenance (O&M) requirements at the new lagoon site. The Orbal aeration system capacity would provide enough oxygen to reduce the anticipated BOD₅ loads on the proposed lagoon treatment system to approximately 9,000 ppd. This alternative would abandon the existing mechanical treatment plant facilities except for the headworks, two Orbal units, and one clarifier and associated sludge pump. The clarifier would harvest biosolids (microorganisms) from the ditch effluent and send it back to the ditch. The effluent from the ditches and clarifier would then be combined with any raw wastewater not sent to the ditch. The combined flows would then be sent to the aerated lagoons. This would reduce the total required at the aerated lagoon to approximately 375 Hp, the required detention time to 15 days, and the lagoon size from 23 to 17 acres.

Solids handling and nitrogen reduction would be similar to the aerated lagoon option.

Table 4-1 shows a summary of costs for these treatment alternatives.

**TABLE 4-1
SUMMARY OF LAGOON ALTERNATIVES**

	FACULTATIVE LAGOON	PARTIALLY AERATED LAGOON	AERATED LAGOON	ORBAL PLUS AERATED LAGOON
Mobilization/Demobilization (5% of Construction Cost)	\$1,020,000	\$800,000	\$430,000	\$250,000
Earthwork	1,750,000	860,000	678,000	564,000
Rock Removal	9,680,000	3,876,000	1,920,000	486,000
Liner	21,000,000	8,712,000	1,089,000	828,000
Control Structures	180,000	75,000	60,000	60,000
Piping	336,000	216,000	120,000	120,000
Gravel	162,000	76,000	28,000	22,000
Diffusers	0	1,200,000	1,500,000	900,000
Blowers	0	650,000	800,000	480,000
Blower Building	0	240,000	360,000	240,000
Electrical and Controls	0	500,000	600,000	500,000
Fencing	126,000	60,000	30,000	30,000
Site Work	50,000	50,000	50,000	50,000
Sum of Estimated Construction Cost	\$34,304,000	\$17,315,000	\$7,665,000	\$4,530,000
Construction Contingency (15%)	5,146,000	2,597,000	1,150,000	680,000
Subtotal Estimated Construction Cost	39,450,000	19,912,000	8,815,000	5,210,000
Administration, Legal, and Engineering (10% to 20%)	3,945,000	3,982,000	1,763,000	1,042,000
Total Capital Costs	43,395,000	23,894,000	10,578,000	6,252,000
20-year Estimated O&M Cost	3,029,000	7,976,000	8,923,000	8,462,000
Total Estimated 20-year Life Cycle Cost (2020 Dollars)	\$46,424,000	\$31,870,000	\$19,501,000	\$14,714,000

As seen on Table 4-1, the option of using a facultative or partially aerated lagoon is cost prohibitive due to the overall size and amount of liner required. Further examination of the aerated lagoon and using the City's existing Orbal system plus an aerated lagoon is analyzed considering operational impacts, long-term maintenance, location, odor concerns, future flexibility, energy efficiency, and community benefits. This analysis indicates the aerated lagoon alternative should be pursued by the City. Results of the comparison are included in Section A4.5.

A4.2 Wetlands

Wetlands are a natural treatment system that provide an environment for the healthy growth of microbial colonies that decompose organic materials and return them to their basic molecular structures. For example, complex hydrocarbons found in organic materials are consumed by microbes for their stored energy and turned into carbon dioxide, water, nitrogen gas, and phosphorus. In general, wetlands provide food and shelter for a wide variety of microbes, macro-invertebrates, insects, amphibians, waterfowl, upland birds, mammals, and all forms of life in a complex ecosystem.

A4.2.1 Treatment Wetlands

After biologic stabilization of the waste is provided in the lagoon system, the lagoon effluent should be further “polished” in treatment wetlands to provide a more natural environment to further reduce pathogens and nutrients. The wetlands would provide a shallow surface flow system for increased exposure to light and encourage vegetation growth. The vegetation in the wetlands would provide a substrate for attached growth microbial colonies that would provide for nitrification of any remaining ammonia. Denitrification would then be provided in the bottom anoxic layers of the wetlands and in deeper sections built into the environment. The treatment wetlands would be sized for a six-day detention time at an average depth of 12 inches. The treatment wetland would have a liner installed under 12 inches of native material in which vegetation would grow. The wetland would be seeded and planted. This would require a wetland complex with approximately 70 wet acres. Additional nitrogen reduction would be provided in the wetlands, but nitrogen reduction would be improved when multiple wetland cells constructed in series are provided. See Table 4-2 for a preliminary estimated project cost for these improvements.

TABLE 4-2
TREATMENT WETLAND COST ESTIMATE

Mobilization/Demobilization (5% of Construction Cost)	\$400,000
Earthwork	402,000
Rock Removal	1,944,000
Liner	3,050,000
Control Structures	90,000
Piping	240,000
Gravel	42,000
Topsoil Removal and Replacement	904,000
Seeding and Planting	20,000
Fencing	42,000
Sum of Estimated Construction Cost	\$7,134,000
Construction Contingency (15%)	1,070,000
Subtotal Estimated Construction Cost	8,204,000
Administration, Legal, and Engineering (20%)	1,640,000
TOTAL ESTIMATED PROJECT COST (2020 DOLLARS)	\$9,844,000

A4.2.2 Disposal Wetlands

The existing disposal system utilized by the City is through irrigation and seepage. The area proposed for facility construction contains a concrete sealed irrigation storage pond that holds water and a seepage area that leaks at a high rate. The size of disposal wetlands would depend on their seepage rate. Due to the function of the seepage area and the standing water from the irrigation ditch return water, it is assumed that the natural ground could provide very high infiltration rates or low infiltration rates. The existing seepage area has multiple cells with only one cell operating at a time. Based on current operation, the seepage area appears to have sufficient capacity to serve the City in the future. For this reason, the disposal wetlands are not necessarily needed, but there is an opportunity to beneficially use the effluent in a wetland

environment that could be accessible to the public. This would provide a natural wildlife and park area. It is suggested to set aside approximately \$4,000,000 for construction of publicly accessible wetland and wildlife park features as disposal wetlands between the treatment wetlands and the existing seepage area.

A4.3 Disinfection

After the wastewater is treated in the lagoon system, it would be disinfected. The alternatives for wastewater disinfection that would normally be considered include chlorine, ultraviolet (UV), and ozone. Using lagoon treatment prior to disinfection would make UV and ozone somewhat unreliable due to uncontrolled interferences with disinfection efficiency that come from the lagoon treatment system. For this reason, chlorine disinfection is recommended.

The disinfected lagoon effluent would then flow to the existing irrigation storage pond or into a 70-acre treatment wetland complex before entering a disposal wetland and infiltration basin area for evaporation and seepage into groundwater. The total project cost for this system is summarized on Table 4-3.

**TABLE 4-3
DISINFECTION SYSTEM ESTIMATED PROJECT COST**

Mobilization/Demobilization (5% of Construction Cost)	\$66,000
Building	200,000
Chlorination Equipment	40,000
Chlorine Contact Basin	280,000
Electrical and Controls	100,000
Piping	12,000
Rock Removal	60,000
Gravel	2,000
Steel Building over Basin	500,000
Sum of Estimated Construction Cost	\$1,260,000
Construction Contingency (15%)	189,000
Subtotal Estimated Construction Cost	1,449,000
Administration, Legal, and Engineering (20%)	290,000
TOTAL ESTIMATED PROJECT COST (2020 DOLLARS)	\$1,739,000

A4.4 Support Facilities

Additional support facilities are necessary for all three alternatives. As shown in the WWFP, recommended support facilities upgrades total \$7,100,000. Similar facilities are needed for both the Orbal plus Aerated Lagoon and Lagoon systems. However, continued use of the Orbal system would not require a new headworks, grit chamber, or septage dump. Support facility costs for the lagoon options are shown on Table 4-4.

**TABLE 4-4
SUPPORT FACILITIES COST ESTIMATE**

Mobilization/Demobilization (5% of Construction Cost)	\$600,500
Main Division Building	2,187,500
Maintenance Building	2,100,000
Generator Building	64,000
Roads and Parking	352,000
Operations Building (Motor Control Centers, Control Room, Lab)	750,000
Lift Station	400,000
Vacuum Truck/Septage Dump	90,000*
Sludge Drying Beds	2,250,000
Domestic Water	400,000
Fencing/Site Work	100,000
Headworks	400,000*
Rock Removal	12,000
Electrical and Controls	700,000
Site Piping	240,000
Grit Chamber	300,000*
Rock Processing	250,000
Sum of Estimated Construction Cost	\$11,196,000
Construction Contingency (15%)	1,679,000
Subtotal Estimated Construction Cost	12,875,000
Administration, Legal, and Engineering (20%)	2,575,000
TOTAL ESTIMATED PROJECT COST (2020 DOLLARS)	\$15,450,000

**Not included in the Orbal plus Aerated Lagoon option.*

A4.5 Ranking

The aerated lagoon, existing Orbal aeration system plus aerated lagoon, and recommended expansion of the existing mechanical treatment plant from the WWFP are considered the viable alternatives to be ranked for comparison purposes. The selection of a preferred alternative from a variety of viable alternatives should consider several factors. The factors could include capital cost, total life cycle cost, ease of operation, maintenance, construction risk, odor concerns, future flexibility, energy efficiency, community benefits, and location. Each of these factors does not bear the same level of importance, so a weight factor is also added to assign more value to the more important factors. The factors, their ranks, and the weighted rankings are shown on Table 4-5 below.

**TABLE 4-5
ALTERNATIVE RANKINGS**

Criterion (Weight)	Ranking (Weighted Ranking)		
	Aerated Lagoon	Orbal Plus Aerated Lagoon	Expand Existing Mechanical Treatment Plant
Capital Cost (2)	\$41.6 million 2 (4)	\$38.5 million 3 (6)	\$47.7 million 1 (2)
Life Cycle Cost (3)	\$53.9 million 2 (6)	\$52.8 million 2 (6)	\$62.0 million 1 (3)
Ease of Operation (1)	3 (3)	1 (1)	2 (2)
Maintenance (2)	3 (6)	2 (4)	1 (2)
Construction Risk (2)	1 (2)	1 (2)	2 (4)
Odors (2)	3 (6)	2 (4)	1 (2)
Future Flexibility (1)	2 (2)	2 (2)	1 (1)
Expandability (3)	3 (9)	3 (9)	1 (3)
Energy Efficiency (1)	3 (3)	2 (2)	1 (1)
Community Benefit (2)	3 (6)	2 (4)	1 (2)
Regulatory Flexibility (3)	3 (9)	2 (6)	1 (3)
Location (2)	3 (6)	2 (4)	1 (2)
Total (Weighted Total)	31 (62)	24 (50)	14 (27)

Notes:

1. Highest Ranking = 3, Intermediate Ranking = 2, Lowest Ranking = 1. Weighted ranking is obtained by multiplying the ranking by the weight.
2. Costs for expand mechanical treatment plant are taken from the WWFP and inflated 2 years at 3.5 percent.

A5.0 Recommended Improvements

Based on the analysis above, the alternative to move the entire treatment system, offices, and shops to a new location is proposed. The improvements would include an aerated lagoon system for secondary treatment with a lined treatment wetland for effluent polishing. Disposal would be through reuse in an unlined wetland and the existing infiltration gallery. Primary treatment would be provided with screening and grit removal. Figure 1 shows the proposed treatment process flow schematic and the following details describe each process. Figures 2 and 3 show a conceptual layout on the proposed site. These figures show some of the improvements on property not owned by the City, yet the layout could be modified to utilize City-owned property for everything but the disposal wetlands and infiltration gallery (seepage beds).

A5.1 Headworks (Primary Treatment)

The headworks consists of a screening system to remove rags and debris in wastewater. The headworks would have two rotary drum screens sized for the peak hour flow. Moving the existing screens to the new location is proposed.

After screening, wastewater will flow through a grit chamber where grit would be settled and pumped to a grit classifier for dewatering and disposal in a landfill. An aerated grit chamber could be used since air should be available from the lagoon blowers. The aerated grit chamber would provide approximately three minutes of detention time at peak flow and be dual chambered with approximately 1,620 cubic feet in volume in each chamber. The basins would each be approximately

6 feet deep, 10 feet wide, and 30 feet long. Approximately 300 cubic feet per minute of air would be needed to run the chambers. A vortex pump would remove the settled grit from a sump in the bottom of the chamber and pump it to a dewatering system.

A lift station would be added to pump the screened and de-gritted wastewater to the aerated lagoons. This lift station would meet Level 2 reliability with approximately four submersible pumps each rated at 2,020 gallons per minute.

A5.2 Aerated Lagoon (Secondary Treatment)

A partially mixed, aerated lagoon would consist of five cells with a total detention time of 20 days. A total requirement of approximately 750 Hp would be needed to provide the required oxygen. The operating depth of the lagoon cells would be approximately 11 feet. The total wet area needed would be approximately 25 acres.

The five-cell aerated lagoon system would include a final settling cell area that is a minimum of 2 acres in size to provide adequate solids settling. To avoid needing to clean all ponds at one time, the City could install a small drying bed area with dredge piping from the lagoon cells to the drying beds. City crews could then operate a dredge to pump solids from the bottom of the lagoons to the drying beds on a regular maintenance interval. Even with these improvements, it is anticipated it will take several years before there is enough accumulated biosolids in the bottom of the lagoons to be removed with a dredge.

A treatment wetland for effluent polishing would be recommended. To provide added operator flexibility, improvements could be completed that would allow for a future low head recycle pump to be easily added to recycle nitrified effluent to the first aerated lagoon for denitrification and added total nitrogen reduction.

A5.3 Treatment Wetlands

After biologic stabilization of the waste is provided in the lagoon system, the lagoon effluent should be further “polished” in lined treatment wetlands to provide a more natural environment to further reduce pathogens and nutrients. The wetland would be seeded and planted. This would require a wetland complex with approximately 70 wet acres.

A5.4 Disposal Wetlands and Infiltration Gallery

The existing disposal system utilized by the City is through irrigation and seepage. The area proposed for facility construction contains a concrete sealed irrigation storage pond that holds water and an infiltration gallery that leaks at a high rate. The proposed construction site also contains two irrigation tailwater ponds that hold water. The size of disposal wetlands would depend on the seepage rate of the wetlands. Due to the function of the seepage area, it is assumed that the natural ground could provide high infiltration rates, but the tailwater ponds indicate there are areas that could hold water. The existing seepage area has four cells with only one or two cells operated at a time. Based on current operation, the seepage area appears to have sufficient capacity to serve the City in the future.

A5.5 Capital Cost and Life Cycle Cost

The total estimated capital and life cycle cost for moving the treatment plant is summarized on Table 5-1.

**TABLE 5-1
NEW LAGOON AND WETLAND TREATMENT PLANT
WITH SUPPORT FACILITIES AT NEW SITE**

Item	Estimated Capital Cost	Estimated 20-year Life Cycle Cost
Aerated Lagoon	\$10.6 million	\$19.5 million
Disinfection System	1.7 million	2.4 million
Treatment Wetlands	9.8 million	10.4 million
Disposal Wetlands	4.0 million	4.1 million
Headworks and Support Facilities	15.5 million	17.5 million
Total	\$41.6 million	\$53.9 million

A5.6 Other Beneficial Uses

Although these recommended improvements focus on constructing new wastewater treatment and disposal facilities, considerations could be given to developing other beneficial uses with reclaimed water from the wastewater treatment plant.

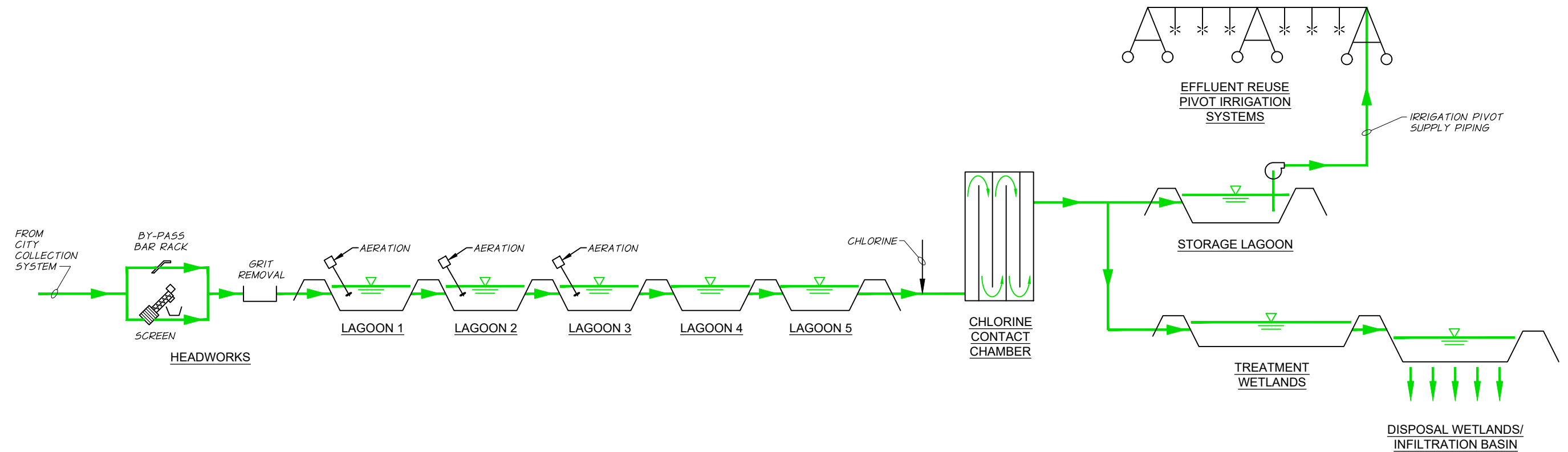
The City could construct public trails, viewing areas, and parking for public access to the wetland areas that will be home to a variety of birds and other wildlife. This trail system through the wetland areas could also be tied to a City-wide trails system as an extension to Dry Canyon. The reuse of the reclaimed water in this manner provides an ancillary benefit to the City that is otherwise not realized.

The City could also utilize treated effluent for additional beneficial uses such as irrigating turf grass for new sports fields in the area. Some added effluent polishing may be needed, depending on the proposed beneficial use. At this time, the City is not planning on changing the current irrigation practices.

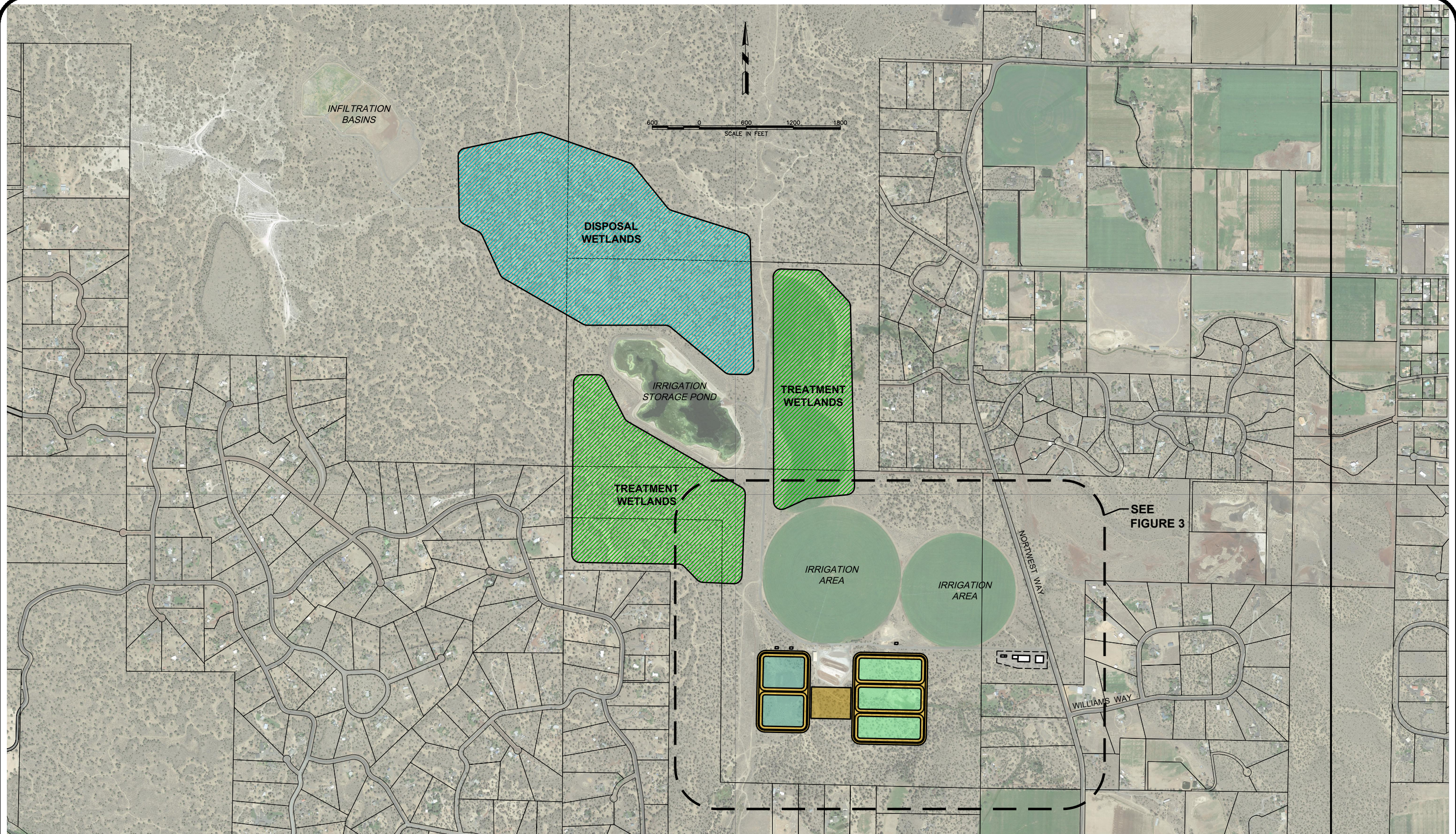
As improvements are pursued for implementation, these other beneficial uses could be considered.

FIGURES

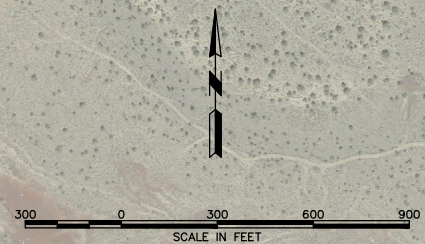
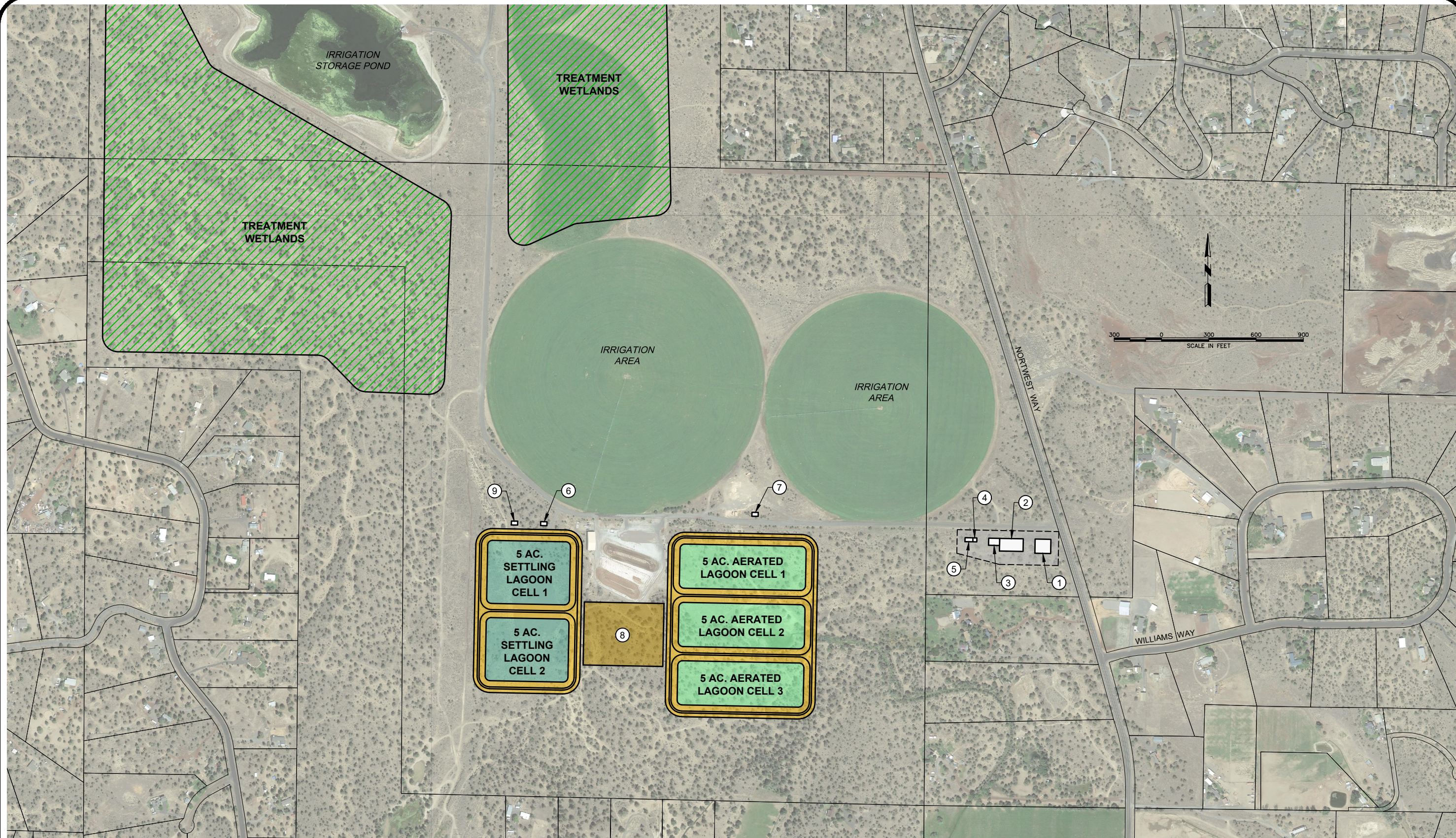
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IMPROVEMENTS SCHEDULE

- | | |
|--|-----------------------------|
| ① MAIN DIVISION BUILDING (8,750 SQ. FT.) | ⑥ DISINFECTION BUILDING |
| ② MAINTENANCE BUILDING (12,000 SQ. FT.) | ⑦ BLOWER BUILDING |
| ③ OPERATIONS BUILDING (3,000 SQ. FT.) | ⑧ FUTURE SLUDGE DRYING BEDS |
| ④ VAC-TRUCK/SEPTAGE DUMP | ⑨ CHLORINE CONTACT BASIN |
| ⑤ HEADWORKS (SCREENS AND LIFT STATION) | |



CITY OF
REDMOND, OREGON
RECLAIMED WATER WETLAND REUSE FEASIBILITY EVALUATION

IMPROVEMENTS DETAIL PLAN

FIGURE

3



CITY OF REDMOND
Community Development Department

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DATE: Prepared for February 15, 2023 Planning Commission Meeting
TO: Redmond Urban Area Planning Commission (Planning Commission)
FROM: Morgan Snyder, Long-Range Planner
THROUGH: Kyle Roberts, Planning Director
SUBJECT: Staff Memo – Planning for the West Redmond Area Plan (WRAP)

I. Introduction

The City is prepared to begin the development of the West Redmond Area Plan (WRAP). An area plan is used to set the best possible comprehensive plan designations for a particular area within the urban growth boundary (UGB) down to the individual property level based on identified land needs. These land needs were determined through the previous UGB expansion process and other supporting studies, such as the buildable lands inventory.

An area plan is processed as a comprehensive plan amendment and becomes effective when it is adopted by City Council and acknowledged by the Department of Land Conservation and Development (DLCD). The goal for any given area plan, of which the City has already completed three, is to holistically examine the particular and often interconnected needs of that area, and provide clarity on its future urbanization (i.e., infrastructure, connectivity, and zoning upon annexation) in a way that allows property owners, developers, city staff, and other stakeholders to make informed decisions.

The WRAP was first identified in 2006 as part of the Urban Area Framework Plan, which was utilized to execute the City's largest UGB expansion. Simply speaking, the Urban Area Framework Plan contains findings that identified the gap between the lands the City would need for the next 20 years (2006 through 2026) and the lands already available within the existing UGB and City Limits at the time. Of the West Redmond area, the Framework plan describes the potential for a neighborhood center that serves as the West entrance into the City and contains neighborhood commercial, high density residential, and other mixed uses. This was reasoned primarily due to this area's proximity to a large amount of existing residential development, an east-west arterial access in the form of Highway 126, and the fact that less infrastructure would be required to be installed than in other parts of the UGB. Developing an area plan is an extensive process that provides an excellent opportunity to involve and listen to the public and other stakeholders by utilizing various community engagement strategies.

II. Draft Workplan

- 1) Staff Task: Schedule TAC (Technical Advisory Committee) Meeting #1 and Open House #1. Develop materials for and begin outreach campaign for Open House #1.
- 2) TAC Meeting #1
- 3) Staff Task: Schedule Open House #2 and Community Conversations Time Period
- 4) Open House #1, Seek Community Conversation Participants

- 5) Staff Task: Develop conceptual designs, goals, policies for the WRAP based on feedback received so far.
- 6) TAC Meeting #2
- 7) Staff Task: Develop materials for and begin outreach campaign for Open House #2. Conduct Community Conversations. Once finished, draft WRAP.
- 8) TAC Meeting #3
- 9) Planning Commission Meeting to introduce draft
- 10) Open House #2
- 11) Staff Task: Provide Public Hearing Notice to DLCD, finalize WRAP document
- 12) Planning Commission Public Hearing
- 13) City Council Public Hearing & Adoption
- 14) Staff Task: Send adopted WRAP to DLCD for acknowledgement

The draft WRAP workplan was put together by Staff and is intended to provide guidance on how to accomplish this comprehensive plan amendment within the calendar year 2023, while still providing for as much coordination between stakeholders as possible. Additionally, this workplan was developed to ensure that the WRAP process will be compliant with as many of the relevant Goal 1 *Citizen Involvement* and Goal 2 *Land Use Planning and Procedures* policies of the Redmond Comprehensive Plan as possible. The workplan contains references to the TAC, Open House, Community Conversation.

- The TAC, or Technical Advisory Committee, is a group of individuals who represent the stakeholders with a certain amount of jurisdiction or responsibility within the West Redmond area (e.g., the County, RAPRD, ODOT, and many others). The TAC meetings will allow for these individuals to converse in one place and provide their expertise regarding limiting factors and conditions of the area. With this guidance, Staff can be informed as to what type of development is possible as we coordinate with other members of the community and draft a plan.
- An Open House is a public forum event that is open to all who would like to attend. Staff will coordinate with the City's Communications Director to conduct outreach and increase attendance and provide a chance to participate to those unable to attend. The Open House will incorporate various community engagement strategies in attempt to facilitate genuine discussion and ideas. Planning Commission members will be encouraged to attend.
- Community Conversations is a method used to directly engage with stakeholders that are not already part of the Technical Advisory Committee. These conversations will be in the form of meetings held virtually, at City Hall, or at a venue the stakeholder typically uses (e.g., a Community Conversation with the Redmond Chamber of Commerce may be held at the Chamber). These Community Conversations are intended to be an opportunity for an open, yet focused, dialogue between Staff and targeted to those who represent groups, or who need a smaller, more direct space to voice their ideas than what an Open House type event could offer. Community Conversations were utilized to great effect during the most recent Comprehensive Plan update.