

## Executive Summary

### Project Planning

This Process Facilities Plan (PFP), prepared by the Metropolitan Wastewater Management Commission (MWMC), is the result of a thorough evaluation of the regional wastewater treatment facilities serving the Eugene-Springfield metropolitan area. Regional wastewater facilities include the Eugene-Springfield Water Pollution Control Facility (WPCF), major pump stations and interceptors, the Biosolids Management Facility (BMF), the Biocycle Farm, and the Beneficial Reuse Site (BRS) (formerly known as the Seasonal Industrial Waste Facility). This plan is intended to identify facility improvements and expansions that are needed to serve the community's wastewater needs through 2045.

The PFP reviews and evaluates current capacity constraints, new regulatory requirements, anticipated changes to these requirements, future capacity and performance requirements, new treatment technologies available to cost-effectively improve the capacity and performance of existing assets, and existing facility operational issues. The resulting plan accounts for the most probable outcomes in the years ahead. The recommended solutions are intended to provide for planned community growth that meets current regulations and anticipates future environmental regulatory requirements.

The selected alternatives should meet both short-term and long-term objectives. This plan provides solutions that address the full range of dry- and wet-weather liquids treatment and biosolids issues and operational health and safety concerns. The PFP also provides detailed descriptions and plans for recommended project implementation. It is a comprehensive strategic roadmap for implementing the most cost-effective solutions to address a full range of regional wastewater needs over the next 20 years.

The information developed in this plan is intended to provide a technical basis for planning decisions as MWMC approaches renewal of the WPCF's National Pollutant Discharge Elimination System (NPDES) permit in 2027.

The goals of the PFP are to build on the previous planning efforts and develop a practical and cost-effective set of capital improvements necessary to meet community needs and environmental standards for all MWMC facilities for the next 20 years. This plan presents comprehensive identification and evaluation of available capital improvement strategy alternatives and recommendations that do the following:

- Accommodate projected growth in Eugene-Springfield through 2045.
- Maximize the WPCF's existing investment in assets by incorporating performance and capacity-improving retrofits where possible instead of new facilities.
- Meet environmental standards and regulations.
- Provide regulatory certainty and protection from liabilities associated with noncompliance with requirements.
- Improve structural integrity of concrete structures and increase facility resilience.
- Provide treatment process improvements, including increasing biosolids processing capacity.

This strategic PFP will monitor and address future trends in the industry so that recommended improvements can be implemented with sufficient flexibility to meet anticipated future regulatory requirements.

### Study Area Characteristics

Study area characteristics including climate, soils, cultural resources, geologic hazards, potential public health hazards, water/energy/waste audits, water resources, and flora and fauna were reviewed and updated so that impacts on the surrounding environment from facility modifications or operations can be quantified relative to the base characteristics.

## Socioeconomic Environment

Socioeconomic conditions and trends that could affect the PFP were reviewed including information about service area demographics, local industries, employment, median household income level, vulnerable populations, and poverty levels.

Population and employment projections provide the basis for collection system planning and future flow projections. Current population projections are greater than projections from the MWMC 2014 Partial Facilities Plan Update and less than projections from the MWMC 2004 Facilities Plan. Projections were reviewed by the planning departments for Eugene and Springfield for consistency with each city's comprehensive planning. Population and employment projections included unincorporated areas within the urban growth boundary for both Eugene and Springfield.

## Land Use Regulations

Modifications to the MWMC collection system and major treatment facilities should be consistent with the overall policy framework and planning and land use designations set forth in the 2024 update of the Metro Plan (the basic guiding land use policy document for regional land use planning). These were reviewed as to how they relate to MWMC facilities inside and outside the urban growth boundary. Facility zoning designations were reviewed, and a land use planning strategy was developed for capital planning.

## Existing Wastewater Facilities

Existing wastewater facilities were reviewed including existing processes, selected equipment, and established fundamental design criteria. This information serves as a basis for evaluation of current and future process requirements and for development and evaluation of alternatives.

Additionally, the structural conditions of selected concrete structures and existing infrastructure were assessed at the WPCF and BMF in conjunction with the resiliency planning project study (finalized in 2020). These assessments were used to develop the recommended capital improvement projects for the structures, buildings, and pump stations to extend infrastructure life.

## Wastewater Flow and Load Characteristics Update

The facilities planning team evaluated existing wastewater flows and projected future flows with a detailed evaluation and forecast of future rainfall-derived infiltration and inflow (RDI/I). The continuation of the existing RDI/I programs for both the City of Eugene and the City of Springfield will assist in reducing wet-weather flow conveyed to the WPCF. The flow projections were compared to the existing WPCF capacity of 277 million gallons per day (mgd) to assist with future planning and project implementation. Based on the flow projections, the treatment facility has adequate wet-weather flow capacity for the medium future RDI/I rates to 2070 and high future RDI/I rates to 2055. This indicates that a continued RDI/I program is beneficial to the cities of Eugene and Springfield and that it can be implemented gradually over time as sewer infrastructure conditions are failing or local and regional conveyance capacities become limiting.

The facilities planning team analyzed historical seasonal loading and projected future load characteristics regarding carbonaceous 5-day biochemical oxygen demand, total suspended solids, nitrogen, and phosphorus. Wastewater loads were projected for every 5 years starting from 2025 to 2045.

Regarding thermal loads, MWMC will continue to employ its excess thermal load compliance strategy, which consists of implementing a water quality trading credit program. The 2022 NPDES permit includes the more stringent of either the pre-total maximum daily load (TMDL) or TMDL thermal load limits, depending on season and river flow. That results in a complex menu of applicable limits and equations with which the WPCF's thermal load would be calculated.

The compliance schedule allows 15 years to meet these final limits. In the interim, the MWMC must meet the interim limits based on the 2022 NPDES permit limits. The compliance schedule requires a mitigation of 200 million

kilocalories per day by November 2027 to be accomplished through the water quality credit trading program. MWMC is on target to meet the compliance schedule via its riparian shade restoration contract with The Freshwater Trust.

## **Basis of Planning**

The basis of planning was developed to address the comprehensive guidance provided by the Oregon Department of Environmental Quality (DEQ) to examine the entire existing wastewater collection, treatment, and disposal systems and to identify all operational and performance problems therein.

The priorities were as follows:

- Health/sanitation, safety, and environmental stewardship
- Enhancement of community services and responsiveness
- New and/or anticipated regulatory requirements, including emerging contaminants
- Operational costs and inefficiencies
- Program reliability, resiliency, redundancy, energy efficiency, and security
- Performance constraints, integrity of aging infrastructure; end of service life or major repairs
- Capacity constraints and reasonable projections of growth

Planning considerations included the following:

- Storm events
- Population projections
- Historical and projected influent flows and loads
- Water quality compliance standards for the WPCF
- Emerging issues such as thermal load management, biosolids quality, and recycled water use
- Criteria for evaluating the collection system
- Criteria for evaluating the treatment system

Planning was aligned with pertinent regulatory drivers, operational considerations, and long-term planning objectives, providing a comprehensive foundation for facility upgrades and future permitting.

In addition, a cost estimating approach was established for consistent evaluation, selection, and implementation planning of alternatives. This included standards for development of the following:

- Indirect construction cost markups
- Project delivery cost estimating assumptions
- Capital project costs (incorporating construction costs and project delivery costs including engineering, legal, and administrative, contingency, and construction management costs)
- Operations and maintenance and net present value costs

The construction cost estimates were developed as Class 5 budget estimates, as defined by the Association for the Advancement of Cost Engineering (AACE) International. This class of estimate is used for conceptual screening and assumes project definition maturity level below 2 percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate.

## **System Capacity Assessment**

The collection/conveyance components of the MWMC system were evaluated for their performance in meeting the basis of planning criteria under existing 2025, future 2045, and future 2070 conditions.

In addition to the MWMC system-wide flow projections, local collection systems models were provided by City of Eugene and City of Springfield (May 2023) to evaluate capacity and RDI/I in the collection system, specifically

downstream impacts on MWMC-owned and operated interceptors and pump stations. The individual models for each local city were provided in the DHI MIKE+ model software and combined into a single MWMC model. Each of the models included several scenarios representing existing and future conditions to estimate capacity constraints in the collection system

The treatment capacities of the existing major unit processes at the WPCF and BMF were assessed. Hydraulic capacities and solids handling capacities were evaluated against the flow and load projections developed for this facilities planning effort.

Unit process capacities were screened against DEQ/U.S. Environmental Protection Agency (EPA) reliability criteria as well as existing process capacity design criteria.

In addition, assessments were conducted regarding the following support systems and facilities:

- Building storage at WPCF and BMF
- Energy management
- WPCF distributed control systems
- Conveyance pump station control systems
- WPCF site security
- Cybersecurity

## **Alternatives Analyses and Recommended Improvements**

The facilities planning team developed and analyzed alternatives for the collection/conveyance system and the treatment system. The benefits and drawbacks of proposed alternatives were itemized, and Class 5 cost estimates were developed for viable alternatives for comparison. In addition to these alternatives analyses, several recommended improvements were identified that did not require evaluation of multiple options, such as structural rehabilitation, equipment replacements, minor upgrades, and reliability-driven enhancements. These improvements are included in the overall facilities planning framework to support system performance and regulatory compliance.

The conveyance alternatives considered were coordinated with both the City of Springfield Wastewater Master Plan (2024) and the City of Eugene Wastewater Master Plan (2020). No capacity improvements are required for the existing MWMC-owned collection system during the planning period. Based on the existing capacity, a repair and replacement program was recommended by both cities to ensure continued operations and maintenance (O&M) for the existing gravity system. No capacity improvements are required for the existing MWMC-owned pump stations including the Willakenzie Pump Station and Irvington Pump Station, during the planning period. The existing Glenwood Pump Station capacity project will implement upgrades to meet DEQ wastewater pump station design requirements and is implemented in the existing MWMC Capital Improvement Plan (CIP).

The existing force mains were selectively investigated, and no defects were noted based on the limited inspection scope. Based on the selected testing, additional condition assessment should be completed to evaluate existing conditions and determine if there are any defects that could pose a risk to MWMC.

Based on the alternatives analyses, a set of recommended improvements was identified to address projected regulatory requirements and facility needs. Table ES-1 outlines these recommended improvements scheduled over the 20-year planning period. Multiple recommended improvements were combined into larger projects to efficiently use capital funds to implement repairs, improvements, and studies. The recommended improvements identified in this table were used to assemble the various projects in the proposed 20-year project list.

**Table ES-1. Summary of Recommended Improvements Through 2045**

System	Recommended Improvements
Conveyance	• East Bank Interceptor Investigation and Evaluation
	• East Bank Interceptor Repair and Rehabilitations
	• Force Main Condition Assessment and Evaluation Program
Liquids Process	• Structural Concrete Repair of Pretreatment Basins
	• Pre-Aeration Chamber Elimination with FRP Piping
	• Screw Pump MCC Relocation
	• Installation of Generator Plugs for Increased Redundancy
	• Structural Concrete Repair of Primary Clarifiers
	• Structural Concrete Repair of Aeration Basins and Mixed Liquor Channel
	• Structural Concrete Repair of Secondary Clarifiers
	• Structural Concrete Repair of Secondary Effluent Conduit
	• Structural Concrete Repair of T-Channel
	• Structural Concrete Repair of Chlorine Contact Basins
	• Structural Concrete Repair of Final Treatment Effluent Channel
	• Installation of an Additional W2 Pump
	• Bulk Hypochlorite Storage Tank Replacement
• Structural Concrete Repair of the Outfall Structure	
Solids Management	• Biosolids Management Plan
	• Thermal Process
	• Air-Drying Bed Expansion
	• Lagoon Expansion
	• Improve Primary Sludge Thickening Pump Efficiency
	• Co-Thickening Improvements by Replacing Gravity Belt Thickeners with Rotary Drum Thickeners
	• WPCF Boiler Improvements
	• FOG Receiving Station
• Mobile Waste Hauler/Septage Receiving Station Relocation	
Support Facilities	• Asphalt Rehabilitation at the BMF, WPCF, and Pump Stations
	• WPCF Outdoor Storage Improvements
	• Improve Storage in the Existing Maintenance Building
	• DCS Master Plan
	• Complete DCS Replacement
	• Cell Tower Condition Assessment
	• Equipment Dry Storage Building Expansion at the BMF

DCS = distributed control system; FOG = fats-oils-grease; MCC = motor control center; W2 = non-potable reuse plant water.

## Proposed Projects

The proposed capital projects are summarized in Table ES-2 in order of proposed implementation. The scheduling of individual capital improvement projects was developed to align with long-term regional wastewater treatment objectives and anticipated regulatory requirements.

**Table ES-2. Proposed Capital Projects, Year of Start-Up, and Description**

Capital Projects	Project Start	Project Description
Repair Clarifiers and Final Treatment	FY 25-26	<p>Repair the existing concrete within the primary clarifiers and final treatment including spot repair of missing and large aggregate, rebar corrosion, and coating in selected areas of the facility. Includes process piping and dewatering sump coating removal and replacement. Final treatment requires repairing damaged concrete surfaces with repair mortar or protective coatings and will require abrasive blasting or high-pressure water washing of the concrete surfaces. Any reinforcing exposed during this procedure should be observed by a qualified structural and/or corrosion engineer to determine the purpose of the reinforcing and the extent of the damage. The repairs will likely need to expose the reinforcing, which would need to be cleaned, replaced or added to as necessary, and repair mortar applied to the original wall thickness. Additionally, expansion joint material needs to be replaced in the effluent channel. The T-channel is excluded from this work.</p>
Biosolids Improvement Study	FY 25-26	<p>Three-part study to support long-term biosolids management planning and determine whether updates to the DEQ-approved Biosolids Management Plan are needed.</p> <ul style="list-style-type: none"> <li>• Part 1: Analyze FSL liquid characteristics and solids generation to establish current and projected loading rates.</li> <li>• Part 2: Evaluate biosolids processing, management, and end use options to identify operational, regulatory, and cost efficiency improvements.</li> <li>• Part 3: Develop prioritized project sequencing and recommendations for targeted management strategies and facility upgrades.</li> </ul> <p>The study will address flow metering and monitoring needs, FSL lagoon improvement or expansion, airdrying bed improvement or expansion, dewatering optimization, thermal or gasification technologies, landfill disposal feasibility, pathways to Class A equivalency, land application program opportunities, and operation constraints.</p>
WPCF Boiler Upgrades	FY 26-27	<p>Review the existing heating plant study results and design and replace the engine generator (EG) with an additional boiler capable of 100% redundancy for meeting WPCF peak heating demand.</p>
Thickening Improvements Study and Process Improvement Implementation	FY 26-27	<p>Complete study and hydraulic modeling to improve primary sludge thickening pumps. An additional study will be completed to evaluate WAS thickening improvements including co-thickening with primary sludge and WAS with RDTs, or</p>

**Table ES-2. Proposed Capital Projects, Year of Start-Up, and Description**

Capital Projects	Project Start	Project Description
		replacement of existing GBTs to reduce hydraulic requirement for an additional digester within the planning period.
Pretreatment Screw Pump MCC Relocation	FY 27-28	Relocation of the screw pump MCC to less corrosive environment.
Mobile Waste Hauler/ Septage Receiving Station, Phase 1 - Evaluation and Study	FY 27-28	Study to evaluate concepts and predesign of mobile waste hauler/septage receiving station. Study will evaluate feasibility of relocating offsite to reduce traffic impact at the WPCF site.
East Bank Interceptor, Phase 1 - Condition Assessment and Investigation	FY 27-28	Perform condition assessment (PACP) review of 72- to 78-inch-diameter pipeline, ~30,000 feet
WPCF Storage Improvements	FY 28-29	Expand covered outdoor areas to create additional dry storage capacity and improve indoor storage functionality, increasing equipment and material storage availability across the site.
Asphalt Repair (WPCF, BMF, and MWMC-Owned Pump Stations)	FY 28-29	Rehabilitation of the existing pavement surfaces at the BMF, WPCF, Glenwood, and Willakenzie pump stations.
Emergency Generator Plug Installation	FY 28-29	Add additional generator plugs and new switchgear at the WPCF Pretreatment facility. Add generator plugs at WPCF Aeration/Blowers facility and Willakenzie Pump Station to provide resiliency and maintain treatment processes during a power outage.
Cell Tower Condition Assessment	FY 28-29	Study to evaluate seismic resilience an MWMC-owned cell tower near the west end of the WPCF due to the proximity of the Admin Building constructed as part of the Admin Building Improvements Project (P80104).
BMF Equipment Dry Storage Expansion	FY 29-30	Expansion of the existing storage building at the BMF for equipment and materials. The current building is currently full and in need of additional storage space including insulating for better wet weather working area.
FOG Receiving Station, Phase 1 - Evaluation and Study	FY 29-30	Study to develop predesign concept and process impacts and benefits of the addition of FOG receiving station at the WPCF.
East Bank Interceptor, Phase 2 - Repair and Rehabilitation	FY 29-30	Assumes 15 to 20 percent of the 30,000 feet requires repair or lining.
Aeration Basins, Secondary Clarifiers, Outfall Control Structure Repairs	FY 30-31	Repair the existing concrete structure including coating exposed rebar, repair of full wall thickness cracks, replacement of existing expansion joint material, spot repair of spalled material and rebar corrosion, spalled material and cracking between the launder and

**Table ES-2. Proposed Capital Projects, Year of Start-Up, and Description**

Capital Projects	Project Start	Project Description
		clarifier wall. Construction estimate includes full bypass to perform reinforcement and expansion joint material in the mixed liquor channel and some process appurtenance replacements such as various piping and gates.
Force Main Condition Assessment and Evaluation	FY 31-32	Condition Assessment program to evaluate the existing condition of MWMC force mains. Investigation could include desktop evaluation and risk assessment, semi-invasive investigation such as soil sampling or ultrasonic thickness testing to evaluate corrosion and invasive investigation including dye testing, smart probes, and/or smart pigging.
Sodium Hypochlorite Storage Tank Replacement with Onsite Generation Study	FY 32-33	This project anticipates replacement of existing FRP tanks with three new FRP tanks for bulk sodium hypochlorite storage and includes replacement of existing four hypochlorite metering pumps with 300 gph pumps. At the time of this project, the design team shall complete a study to compare continuation of existing bulk purchase to implementation of onsite generation.
W2 Pump Station (BMF Additional Pump)	FY 32-33	Installation of an additional pump dedicated to BMF at the existing W2 pump station.
Secondary Effluent Conduit and T-Channel Dive Inspection, Evaluation, and Repair	FY 32-33	Repair of expansion joint material in T-channel and secondary effluent conduit called out during diving inspections. Complete structural inspection of rarely dewatered conduits during the temporary bypass required to facilitate repairs.
Mobile Waste Hauler/Septage Receiving Station, Phase 2 - Design and Construction	FY 32-33	Relocation of mobile waste hauler receiving station and vector truck pit near the aeration basins. Pump station and yard piping are required to convey material to pretreatment facilities. Upgrading to larger capacity system and relocating to improve vehicular traffic pattern within the facility and provide easier maintenance. This project is budgeted but not currently required given regulations or anticipated flow and load increases. This project will be implemented if deemed necessary in the study above and includes some cost for possible land purchase for offsite station installation.
Pretreatment Facilities and Pre-aeration Chamber Repair and Pipe Upgrade	FY 34-35	Repair the existing WPCF pretreatment facility including spot repair of large missing aggregate, surface coating and rebar corrosion within the existing concrete structure. Includes minor process piping improvements and coating on chain and flight supports. Additionally, this project proposes to eliminate the pre-aeration channel by installing a new pipeline within the channel to reduce energy usage with removal of aeration blower system.
FOG Receiving Station, Phase 2 - Design and Construction	FY 34-35	Installation of FOG receiving station and associated yard piping to convey material to increase organic loading within digesters. This project is budgeted but not currently required given regulations or anticipated flow and load increases. This project will be implemented if deemed necessary in the study above.

**Table ES-2. Proposed Capital Projects, Year of Start-Up, and Description**

Capital Projects	Project Start	Project Description
Control System Improvement, Phase 1 - Study and Evaluation	FY 36-37	Study to evaluate the existing control system and complete predesign concepts for capital implementation.
Control System Improvement, Phase 2 - Design and Construction	FY 37-38	Placeholder for control system improvements based on the study listed above.
Consultant On-Call Engineering Support (Facilities Plan and NPDES Updates)	Ongoing	On-Call engineering support for NPDES and other permit updates, facilities plan updates and amendments, and structural inspections as recommended by Jacobs Task 4.1 technical memorandums. Additional budget allocated to this line item for conditional land use permit updates.

FRP = fiberglass reinforced plastic; FY = fiscal year; PFAS = per- and polyfluoroalkyl substances; GBT = gravity belt thickener; gph = gallon(s) per hour; MCC = motor control center; NPDES = National Pollutant Discharge Elimination System; PACP = Pipeline Assessment Certification Program; RDT = rotary drum thickener; WAS = waste activated sludge.

Table ES-3 presents capital cost estimates for the proposed capital projects outlined in Table ES-2. These estimates are organized by system to provide a clear overview of investment distribution. Figures ES-1 and ES-2 provide overall site plans for the WPCF and BMF with the proposed CIP.

**Table ES-3. Cost Estimates of Proposed Capital Projects**

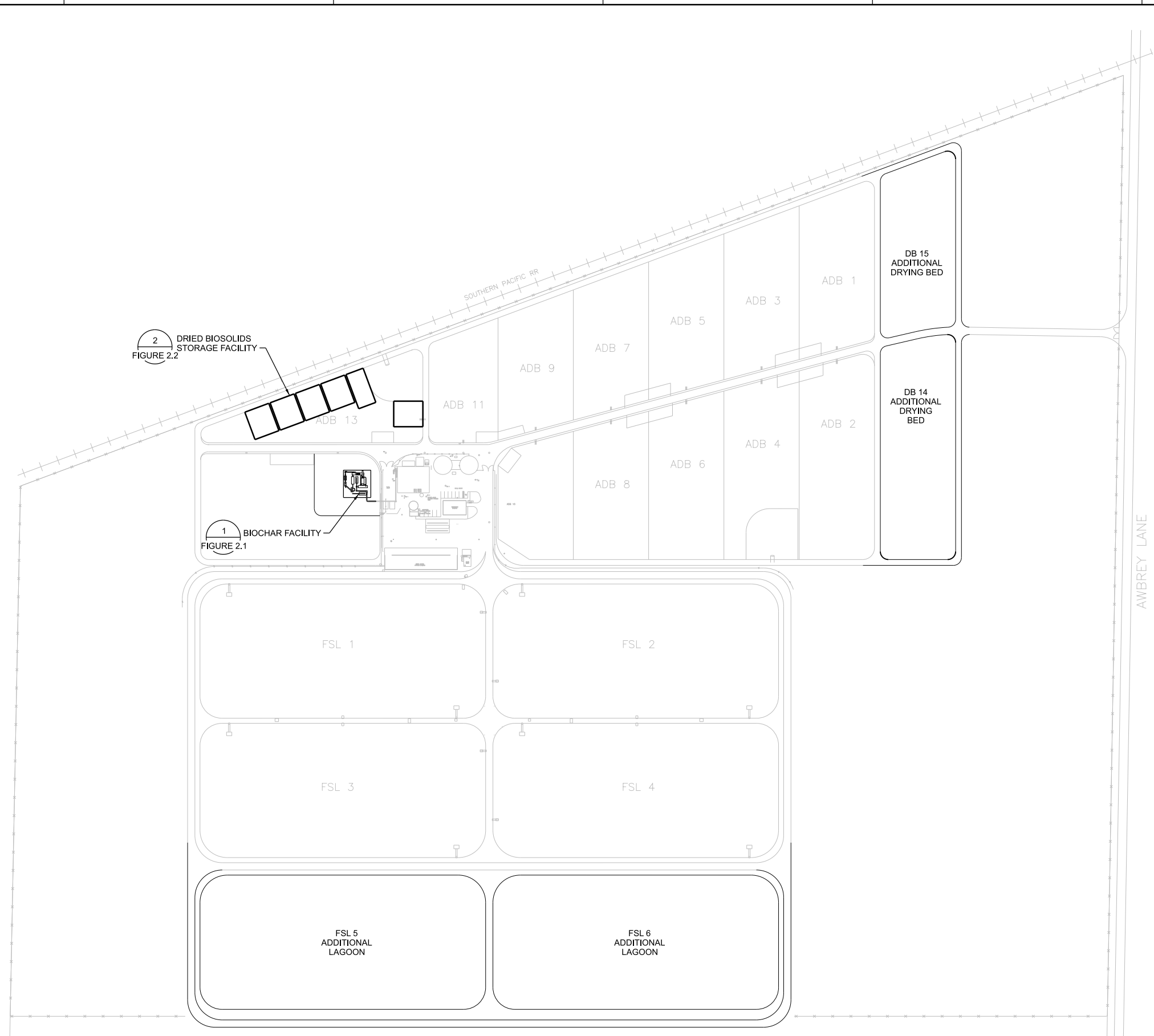
Capital Project Name	Capital Delivery Cost	Capital Construction Cost	Capital Cost*
East Bank Interceptor, Phase 1 - Condition Assessment and Investigation	\$349,000	\$1,394,000	\$1,750,000
East Bank Interceptor, Phase 2 - Repair and Rehabilitation	\$1,317,000	\$5,267,000	\$6,590,000
Force Main Condition Assessment and Evaluation	\$838,000	\$3,350,000	\$4,190,000
<b>Conveyance Subtotal</b>			<b>\$12,530,000</b>
Repair Clarifiers and Final Treatment	\$7,747,000	\$30,985,000	\$38,740,000
Pretreatment Screw Pump MCC Relocation	\$139,000	\$462,000	\$610,000
Emergency Generator Plug Installation	\$45,000	\$179,000	\$230,000
Aeration Basins, Secondary Clarifiers, Outfall Control Structure Repairs	\$973,000	\$3,891,000	\$4,870,000
Sodium Hypochlorite Storage Tank Replacement with Onsite Generation Study	\$641,000	\$1,963,000	\$2,610,000
W2 Pump Station (BMF Additional Pump)	\$412,000	\$1,372,000	\$1,790,000
Secondary Effluent Conduit and T-Channel Dive Inspection, Evaluation, and Repair	\$359,000	\$897,000	\$1,260,000
Pretreatment Facilities and Pre-Aeration Chamber Repair and Pipe Upgrade	\$1,117,000	\$4,466,000	\$5,590,000
<b>Liquids Process Subtotal</b>			<b>\$55,700,000</b>

**Table ES-3. Cost Estimates of Proposed Capital Projects**

<b>Capital Project Name</b>	<b>Capital Delivery Cost</b>	<b>Capital Construction Cost</b>	<b>Capital Cost*</b>
Biosolids Improvement Study	\$18,460,000	\$72,432,000	\$90,900,000
WPCF Boiler Upgrades	\$510,000	\$2,037,000	\$2,550,000
Thickening Improvements Study and Process Improvement Implementation	\$2,223,000	\$5,057,000	\$7,280,000
Mobile Waste Hauler/Septage Receiving Station, Phase 1 - Evaluation and Study	\$200,000	\$0	\$200,000
FOG Receiving Station, Phase 1 - Evaluation and Study	\$400,000	\$0	\$400,000
Mobile Waste Hauler/Septage Receiving Station, Phase 2 - Design and Construction	\$1,751,000	\$7,002,000	\$8,760,000
FOG Receiving Station, Phase 2 - Design and Construction	\$2,575,000	\$7,357,000	\$9,940,000
<b>Solids Management Subtotal</b>			<b>\$120,030,000</b>
WPCF Storage Improvements	\$1,146,000	\$4,583,000	\$5,730,000
BMF Equipment Dry Storage Expansion	\$788,000	\$3,150,000	\$3,940,000
Asphalt Repair (WPCF, BMF, and MWMC Owned Pump Stations)	\$1,067,000	\$4,267,000	\$5,340,000
Cell Tower Condition Assessment	\$90,000	\$0	\$90,000
Control System Improvement, Phase 1 - Study and Evaluation	\$200,000	\$0	\$200,000
Control System Improvement, Phase 2 - Design and Construction	\$2,495,000	\$6,236,000	\$8,740,000
Consultant On-Call Engineering Support (Facilities Plan and NPDES Updates)	\$6,150,000	\$0	\$6,150,000
<b>Support Facilities Subtotal</b>			<b>\$30,190,000</b>
<b>Proposed Capital Project Total</b>			<b>\$218,450,000</b>

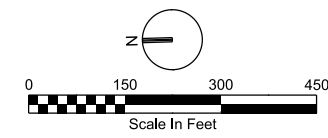
\* Class 5 estimates expected accuracy range of -20 to -50%/+30 to +100%; totals are rounded to the nearest \$10,000. The construction costs are indexed to the December 2024 Engineering News-Record (ENR) Construction Cost Index (CCI) for the City of Seattle (7864).





**1 OVERALL PLAN**  
1" = 150'

**Figure ES-2. Proposed Site Plan at the BMF based on the Recommended CIP**



		BIOSOLIDS MANAGEMENT FACILITY METROPOLITAN WASTEWATER MANAGEMENT COMMISSION 410 RIVER AVENUE EUGENE OREGON	
		FIGURE 2.0 <b>BMF SITE LAYOUT OF RECOMMENDED IMPROVEMENTS ALTERNATE - 1</b>	
NTS			
VERIFY SCALE			
BAR IS ONE INCH ON ORIGINAL DRAWING. 			
JANUARY 2025			
D3710201			

A phased implementation strategy was applied to select projects to provide operational flexibility and maintain regulatory compliance. For example, biosolids management improvements are proposed to follow a multi-phase approach, beginning with an analysis of the BMF lagoons liquid composition and investigation to determine the total volume of solids held, followed by a comprehensive end-use evaluation incorporating potential process improvements, including pyrolysis. This strategy is designed to proactively address emerging regulatory drivers such as PFAS contamination, optimize capital budget allocations, and allow for adaptive integration of future treatment technologies.

The recommended implementation schedule focused on completing projects with reasonable year-to-year capital budgets without compromising facility needs and implementing new projects in sequence with the existing CIP projects. Project sequencing is based on a series of assumptions, including regulatory requirements (current and projected in the future), forecasted influent flows and loads, existing structural conditions of facilities, and redundancy. Projects have been prioritized to address structural risks identified during inspections and meet regulatory requirements, namely PFAS impacts for biosolids land application.

MWMC will need access to funding for over 55 percent of the costs for recommended projects within the first 5 years of this 20-year PFP. As part of this plan, MWMC has evaluated outside sources beyond revenue generated from wastewater rates and system development charges. This funding strategy limits consideration to sources qualified as loans rather than grants. Despite that, several proposed projects are likely to meet eligibility criteria for state or federal grants, as loan sources are more reliably accessed.

MWMC maintains good overall financial management, strong liquidity levels to support a pay-as-you-go approach to funding ongoing repair and replacement projects, and overall good operational management with sufficient technical, managerial, and financial capability and capacity.

The funding strategy for the implementation of the projects identified in the MWMC PFP 20-Year Project List will require the supplementation of cash on hand with funding resources that include low-interest debt instruments like the Clean Water State Revolving Fund (CWSRF), Business Oregon Loan Program, and Water Infrastructure and Finance Innovation Act, as well as revenue bonds.

MWMC is in a good position to qualify for and successfully manage the debt service required to fill any gaps in funding that may exist between project design and construction costs and available revenues. With a strong enterprise risk profile, moderate debt service coverage ratio (1.24), a stable and primarily residential customer base, and a strong AA bond rating, MWMC is well positioned to implement this financing plan to efficiently and affordably fulfill the planning, design, and construction needs to keep its regional wastewater treatment facilities operating optimally.

## **Environmental Review**

MWMC capital project recommendations went through an alternatives analysis that considered a range of solutions that meet the growing community's wastewater needs through 2045. Aside from capacity considerations, MWMC must meet health, sanitation, security, and environmental regulation requirements. MWMC must manage infrastructure aging and adequacy—all while maintaining the working order and financial viability of the organization.

DEQ's CWSRF requires an environmental review to comply with the National Environmental Policy Act (NEPA) or the CWSRF's State Environmental Review Process (DEQ, 2018; DEQ, 2022). This PFP is not intended to meet the standards of NEPA or cross-cutting federal environmental standards. Rather, it summarizes environmental resources and considerations at MWMC sites that contributed to the selection of the proposed capital projects. Capital projects would advance in design before these reviews are formally conducted.

Early compliance with state and federal environmental standards starts by defining the purpose and need for each capital project. Each capital project in this PFP addresses one or more of the following needs, beyond alignment with MWMC’s Strategic Plan:

- Capacity constraints and reasonable projections of growth
- Performance constraints, integrity of aging infrastructure, end of service life or major repairs
- New and/or anticipated regulatory requirements, including emerging contaminants
- Operational cost and inefficiencies; health, sanitation, safety, and environmental stewardship
- Enhance community services and responsiveness
- Program reliability, resiliency, redundancy, energy efficiency, and security

Solutions/alternatives that met the purpose and need were analyzed and ultimately chosen if they optimized one or more of the following criteria:

- Minimizes social and/or environmental impacts
- Buildability, i.e., permittable, physically fits, and available technology
- Addresses secondary concerns, i.e., operability/effectiveness, reliability, resiliency, redundancy, energy efficiency, and security

Lastly, solutions/alternatives were chosen if they met long-term economic feasibility standards.

## Conclusions and Recommendations

### Conclusions

The recommended plan aims to support projected community growth while providing resilience to meet current and anticipated environmental regulations. The recommended projects in the CIP were selected to meet both short-term and long-term objectives, addressing a full range of dry- and wet-weather liquids treatment and biosolids issues, as well as structural deficiencies. Detailed descriptions and summaries for the recommended projects are included, forming a comprehensive strategic roadmap for the next 20 years. The 35 projects (including existing projects), estimated at a capital cost of \$349 million, as summarized above, seek to implement the most cost-effective solutions for regional wastewater needs. These strategies are designed to ensure long-term resilience, regulatory compliance, and financial prudence for ratepayers.

MWMC has developed a forward-looking PFP to guide capital improvements over the next 20 years. This plan ensures that infrastructure investments are practical, cost-effective, and aligned with community growth, environmental stewardship, and regulatory compliance. Table ES-4 summarizes the proposed capital projects that directly support the project goals and objectives.

**Table ES-4. Project Goals and Capital Projects to Meet Goal**

Project Goal and Objective	Supporting Capital Improvement Projects
Accommodate projected growth in Eugene-Springfield through 2045	Mobile Waste Hauler/Septage Receiving Station, Phase 1 - Evaluation and Study FOG Receiving Station, Phase 1 - Evaluation and Study Mobile Waste Hauler/Septage Receiving Station, Phase 2 - Design and Construction FOG Receiving Station, Phase 2 - Design and Construction WPCF Outdoor Storage Improvements BMF Equipment Dry Storage Expansion Administration Building Improvements (P80104) Glenwood Pump Station Upgrade (P80064)

**Table ES-4. Project Goals and Capital Projects to Meet Goal**

Project Goal and Objective	Supporting Capital Improvement Projects
Maximize the WPCF’s existing investment in assets by incorporating performance and capacity-improving retrofits where possible instead of new facilities	East Bank Interceptor Phase 1 - Condition Assessment and Investigation East Bank Interceptor Phase 2 - Repair and Rehabilitation Force Main Condition Assessment and Evaluation Asphalt Repair (WPCF, BMF, and MWMC-Owned Pump Stations)
Meet environmental standards and regulations	Consultant On-Call Engineering Support (Facilities Plan and NPDES Updates) Comprehensive Facilities Plan Update (P80101, P80103, and other work) Facility Plan Engineering Services (P80110 and other work) WPCF Stormwater Infrastructure (P80111 and WPCF construction permits) Water Quality Trading Program (P80112 and other work)
Provide regulatory certainty and protection from liabilities associated with noncompliance with requirements	Biosolids Study and Process Improvement Implementation Sodium Hypochlorite Storage Tank Replacement with Onsite Generation Study
Improve structural integrity of concrete structures and increase facility resilience	Repair Clarifiers and Final Treatment (P80118) Aeration Basins, Secondary Clarifiers, Outfall Control Structure Repairs Secondary Effluent Conduit and T-Channel Dive Inspection, Evaluation, and Repair Pretreatment Facilities and Pre-Aeration Chamber Repair and Pipe Upgrade Owosso Bridge Seismic Upgrades (P80116) Resiliency Follow Up (MWMC related projects after P80096 list of topics) Electrical Switchgear and Transformer Replacement (P80115) Pretreatment Screw Pump MCC Relocation Emergency Generator Plug Installation
Provide treatment process improvements, including increasing biosolids processing capacity	Thickening Improvements Study and Process Improvement Implementation Aeration System Upgrades (P80113) WPCF Additional Boiler for Increased Heat Capacity W2 Pump Station (BMF Additional Pump)
Plan for future trends and flexibility	Control System Improvement, Phase 1 - Study and Evaluation Control System Improvement, Phase 2 - Design and Construction Cell Tower Condition Assessment

**Recommended Plan of Action**

As a strategic planning document, the PFP also serves as a roadmap for MWMC’s preparation for the 2027 renewal of the MWMC NPDES permit. A key outcome of this planning effort is the identification of numerous actionable items, which are essential for maintaining compliance and operational efficiency. These items have not yet been incorporated into the proposed CIP; however, they represent activities to be stewarded by engineering, operations, and maintenance teams through the course of normal work processes.

These recommendations span across MWMC facilities and are categorized by facilities plan tasks. They address both immediate needs and long-term planning objectives, ensuring the system remains resilient and adaptable to future regulatory and operational demands. Key findings are organized by task, and an overview is summarized as follows:

- **PFP Task 1: Project Management and Coordination**
  - **Focus:** Regulatory Compliance
  - **Key Themes:**
    - Maintain regulatory compliance with DEQ and determine critical dilution for water quality criteria compliance under future NPDES permit renewals.
    - Updated mixing zone study within the next 5 to 10 years as effluent flows increase beyond the projected flows.
  - **Follow Up:** Multiple studies, not yet implemented into CIP.
- **PFP Task 2: Early Analysis Recommendations**
  - **Focus:** Monitoring, data collection, and regulatory preparedness.
  - **Key Themes:**
    - Improve influent/effluent monitoring (for example, initiate or increase frequency of monitoring of NH<sub>3</sub>-N, phosphorus, chemical oxygen demand, PFAS).
    - Address discrepancies in sampling and flow data.
    - Prepare for future regulatory changes (for example, thermal plume analysis, ammonia reasonable potential analyses, PFAS).
    - Enhance pretreatment program compliance and documentation.
  - **Follow Up:** Recurring PFP updates, additional studies; not yet implemented into CIP.
- **PFP Task 3: Permit and Land Use Recommendations**
  - **Focus:** Compliance with NPDES, new Conditional Use Permit (CUP) at WPCF, Air Contaminant Discharge Permit (ACDP) renewal and other regulatory permits and processes.
  - **Key Themes:**
    - Comply with extensive annual and periodic monitoring, sampling, and reporting requirements (for example, toxics, effluent, stormwater, biosolids).
    - Complete emergency response planning and on-going staff/operator training. Ensure biosolids and recycled water use compliance in light of future regulations.
    - Establish comprehensive site plan for new WPCF CUP.
  - **Follow Up:** Programmatic changes; not CIP-related update ACDP permit, and CIP project implementation.
- **PFP Task 4: Condition Assessment Recommendations**
  - **Focus:** Structural repairs and maintenance across treatment facilities.
  - **Key Themes:**
    - Complete high-priority repairs to concrete structures, coatings, and mechanical components.
    - Conduct routine reassessments and inspections (for example, every 2 to 10 years).
    - Ensure most recommendations are implemented into CIP projects.
  - **Follow Up:** Various CIP projects and maintenance and repair projects.
- **PFP Task 5: Conveyance System Recommendations**
  - **Focus:** Collection system capacity and condition.
  - **Key Themes:**
    - Continue RDI/I abatement and repair programs in Eugene, Springfield, and MWMC systems.
    - Conduct closed-circuit television inspections and prioritize repairs using industry-standard Pipeline Assessment Certification Program ratings.
  - **Follow Up:** Mix of program changes and CIP implementation.

- **PFP Task 6: Infrastructure Analysis Recommendations**

- **Focus:** Liquids, solids, odor, equipment, storage, biosolids, and energy systems.
- **Key Themes:**
  - Complete MCC relocation, boiler capacity, and cogeneration system improvements.
  - Optimize storage space and make structural upgrades.
  - Implement biosolids study, thickening, struvite management, and digester cleaning strategies.
  - Identify heating water system inefficiencies and heating, ventilation, and airconditioning inconsistencies.
  - Conduct odor control system maintenance and upgrades.
- **Follow Up:** Mix of CIP, maintenance, and further study.

Together, these recommendations form a robust foundation for MWMC’s future planning and investment decisions, ensuring continued service reliability and environmental stewardship.

In summary, this PFP provides MWMC with a clear, actionable, and forward-looking strategy to guide infrastructure investments over the planning period. By aligning capital improvements with regulatory requirements, community growth, and operational priorities, the plan ensures that MWMC remains a resilient, compliant, and fiscally responsible utility. The integration of both immediate and long-term recommendations—spanning structural repairs, system upgrades, and regulatory preparedness—positions MWMC to proactively address future challenges while continuing to deliver reliable and environmentally sound wastewater services to the Eugene-Springfield and Lane County region.

DRAFT