ENVIRONMENTAL SERVICES
CITY OF PORTLAND

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CITY OF LAKE OSWEGO
OREGON

Final Report

Tryon Creek Wastewater Treatment Plant

Facilities Plan

CH2MHILL

June 2014

Report

Tryon Creek Wastewater Treatment Plant Facilities Plan

Prepared for

City of Portland Bureau of Environmental Services and City of Lake Oswego

June 2014

CH2MHILL®

in Association with GreenWorks, MEC Engineering, New Water ReSources, Shur Architects, ESA Vigil Agrimis, and Winterbrook Planning

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Contents

Section **Page**

Acronyms and Abbreviations ..... **ix**

Executive Summary ..... **xiii**
Introduction xiii
Approach xiii
Development and Evaluation of Alternatives xiii
Recommended Plan xiv
Implementation Plan xiv
Land Use Strategy xxvii

1 Introduction **1-1**
1.1 Introduction 1-1
1.2 Facilities Planning Approach 1-2
1.3 Background and Coordination 1-2
1.4 Intended Readers 1-3
1.5 Organization of this Document 1-3

2 Study Area Characteristics **2-1**
2.1 Study Area 2-1
2.2 Physical Environment 2-1
2.2.1 Climate 2-1
2.2.2 Topography and Soils 2-3
2.2.3 Geologic Hazards 2-4
2.2.4 Public Health Hazards 2-4
2.2.5 Energy Production and Consumption 2-4
2.2.6 Water Resources 2-4
2.2.7 Flora and Fauna 2-4
2.2.8 Natural Resources 2-5
2.2.9 Land Use Issues for Service Area 2-6
2.3 Population 2-6
2.3.1 Population 2-6
2.3.2 Population Growth Projections 2-6
2.4 Land Use Regulation for TCWTP 2-6
2.4.1 Foothills District Planning 2-7
2.5 City of Lake Oswego Permits 2-8
2.5.1 Land Use Reviews 2-9
2.5.2 Review Summaries 2-10
2.5.3 Development Standards 2-14
2.5.4 Air Quality, Noise, Lighting 2-17
2.5.5 Intergovernmental Agreements 2-17

3 Existing Wastewater Facilities **3-1**
3.1 Wastewater Conveyance System 3-1
3.1.1 Wastewater Collection System Overview 3-1
3.1.2 City of Portland Collection System 3-1
3.1.3 Lake Oswego Collection System 3-3
3.2 Wastewater Treatment Plant 3-8
3.2.1 Plant History 3-8
3.2.2 Plant Design 3-10
3.2.3 Unit Performance and Deficiencies 3-15

4 Wastewater Flows **4-1**
4.1 Introduction 4-1

4.2 Wastewater Volume 4-1
4.2.1 Historical Influent Wastewater Flows 4-1
4.2.2 Historical Flow Peaking Factors 4-2
4.2.3 Peak Flows associated with Infiltration and Inflow 4-2
4.2.4 Projected Wastewater Flows 4-6
4.3 Wastewater Composition 4-8
4.3.1 Historical Waste Load Characteristics 4-8
4.3.2 Historical Waste Load Peaking Factors 4-8
4.3.3 Historical Nutrient Loads 4-9
4.4 Projected Wastewater Characteristics 4-9
4.5 Key Flow and Load Projections 4-12

5 Basis of Planning 5-1
5.1 Basis for Design 5-1
5.1.1 Levels of Service 5-1
5.1.2 Regulatory Requirements 5-1
5.1.3 Effluent Quality 5-11
5.1.4 Treatment Effectiveness 5-11
5.1.5 Plant Reliability Criteria 5-12
5.1.6 Unit Process Design Considerations 5-14
5.1.7 Summary 5-14
5.2 Basis for Cost Estimate 5-15
5.2.1 Level of Accuracy 5-16
5.2.2 Planning Period 5-17
5.2.3 Project Cost Parameters 5-17
5.2.4 Annual Cost Parameters 5-18
5.2.5 Present-Worth (Life Cycle Cost) Analysis 5-18
5.3 Receiving Water 5-19
5.4 Design Capacity of Wastewater Treatment Plant 5-19

6 Development and Evaluation of Alternatives 6-1
6.1 Alternative Development 6-1
6.1.1 Brainstorming 6-1
6.1.2 Headworks 6-1
6.1.3 Primary Treatment 6-1
6.1.4 Secondary Treatment 6-1
6.1.5 Tertiary Treatment 6-2
6.1.6 Disinfection 6-2
6.1.7 Effluent Discharge 6-2
6.1.8 Sludge Thickening 6-2
6.1.9 Sludge Stabilization 6-2
6.1.10 Sludge Loadout 6-2
6.1.11 Accept and Treat 5-year Storm 6-3
6.1.12 Common Basis for Alternatives 6-3
6.1.13 Five Initial Alternatives 6-5
6.2 Screening of Alternatives 6-5
6.3 Development of Unit Process Components 6-5
6.3.1 Conveyance System Alternatives 6-6
6.3.2 Headworks 6-19
6.3.3 Primary Treatment 6-19
6.3.4 Secondary Treatment 6-20
6.3.5 Disinfection Alternatives 6-21
6.3.6 Effluent Disposal Alternatives 6-22
6.3.7 Biosolids Stabilization and Handling 6-23
6.3.8 Biosolids Ultimate Use and Disposal 6-24
6.4 Development and Evaluation of Complete Alternatives 6-24
6.4.1 Evaluation and Ranking of Alternatives 6-37

6.4.2 Development of a Preferred Alternative 6-38

7 Recommended Plan 7-1
7.1 Introduction 7-1
7.2 Projected Design Flows 7-1
7.3 Process Flow Diagram 7-1
7.4 Overall Site Plan 7-1
7.5 Liquids Treatment Unit Processes 7-1
7.5.1 Influent Modifications 7-2
7.5.2 Headworks 7-2
7.5.3 Primary Clarification 7-9
7.5.4 Secondary Treatment 7-10
7.5.5 Disinfection 7-11
7.5.6 Outfall/Discharge 7-12
7.6 Solids Treatment Unit Processes 7-12
7.6.1 Solids Thickening 7-13
7.6.2 Solids Storage 7-13
7.6.3 Solids Loadout 7-14
7.7 Support Systems Facilities 7-14
7.7.1 Non-potable Water System 7-14
7.7.2 Odor Control 7-14
7.7.3 Plant Drain Pump Station 7-15
7.7.4 Site Design, Security, and Circulation 7-15
7.7.5 Architecture, Landscape Architecture, and Site Aesthetics 7-16
7.7.6 Support Buildings 7-16
7.7.7 Electrical and Instrumentation and Controls 7-17
7.7.8 Rehabilitation, Repair, and Modification Program 7-17
7.8 Cost Estimate 7-17
7.8.1 Capital Cost Estimate 7-17
7.8.2 O&M Cost Estimate 7-18
7.9 Hydraulic Profile 7-19

8 Implementation Plan 8-1
8.1 Introduction 8-1
8.2 Process Triggers 8-1
8.3 Summary of Project Component Triggers 8-2
8.3.1 Project Components Necessary to Support Project Phasing 8-5
8.4 Project Packages 8-5
8.4.1 Headworks/Dry Weather Clarifier Project 8-5
8.4.2 Aeration Basin Optimization Project 8-6
8.4.3 Disinfection Project 8-13
8.4.4 Bankside Outfall Project 8-13
8.4.5 Secondary Improvements Project 8-13
8.4.6 Solids Facilities Project 8-13
8.4.7 Site Access, Buffering, and Security Project 8-14
8.4.8 Non-process Buildings Project 8-14
8.4.9 Future Projects 8-14
8.4.10 Rehabilitation, Repair, and Modifications Projects 8-14
8.5 Financial Analysis 8-16
8.5.1 Capital Improvement Program 8-16
8.5.2 Annual Operation and Maintenance Costs 8-19
8.6 Land Use Strategy 8-19
8.7 Further Evaluations/Opportunities 8-21
8.7.1 Electrical Systems Evaluation Plan 8-21
8.7.2 Instrumentation and Control Evaluation Plan 8-21
8.7.3 Solids Handling Evaluation 8-21
8.7.4 Renewable Energy and Reuse Opportunities 8-21

9 Public Involvement Process 9-1
9.1 Introduction 9-1
9.2 Selection Process for Citizen Advisory Committee Members 9-1
9.3 Appointment of the Citizens Advisory Committee 9-1
9.4 Facilities Planning Approach 9-2
9.5 Summary of CAC Public Meetings 9-4
9.6 Open Houses 9-5
9.7 Oversight Committee Meetings 9-5

10 References 10-1

Appendices

A BES Strategic Levels of Service, Vision and Guiding Principles, TCWTP Tactical Levels of Service, and 2010 CIP Criteria Scoring Considerations
B *Tryon Creek Wastewater Treatment Plant—Portland Design Flows*
C City of Portland and City of Lake Oswego Intergovernmental Agreement for Sewage Treatment and Disposal
D TCWTP Hydraulic Modeling
E TCWTP Process Modeling
F Screening Assessment of TCWTP Outfall Modification Concepts and Dilution Performance
G Structural Condition Assessment
H Mechanical Condition Assessment
I Architectural Condition Assessment
J Electrical Condition Assessment
K Instrumentation and Control Condition Assessment
L Underground Assets Condition Assessment
M E-Mail Correspondence Regarding Lake Oswego Collection System Information
N NPDES Permit
O Unit Process Fact Sheets
P Alternative Evaluation Process
Q Site and Civil Concepts of Recommended Plan Technical Memorandum
R Architecture, Landscape Architecture, and Site Aesthetics Technical Memorandum
S Electrical and Instrumentation and Control Technical Memorandum
T Hello LO Article

Tables

ES-1 Historic Projected Design Flows xiv
ES-2 Recommended Capital Improvement Program xxiii
2-1 Historical Climatic Data: Portland Airport Station 1971–2000 2-3
3-1 City of Lake Oswego Condition Assessment Results for Basin Trunks with Remaining Useful Life Less Than 10 Years 3-4
3-2 City of Lake Oswego Condition Assessment Pump Station Recommendations 3-5
3-3 City of Lake Oswego Pump Station Capacity Evaluation 3-7
3-4 Facility Component Age and Expected Life 3-9
3-5 Tryon Creek Wastewater Treatment Plant Inventory of Process Facilities and Equipment 3-12
3-6 Summary of Unit Process Deficiencies 3-21
3-7 Key Recommendations to Address Condition-Related Deficiencies 3-23
4-1 Typical Flow Rate and Mass-Loading Parameters Used for Design and Operation of Wastewater Treatment Facilities 4-1
4-2 Historical TCWTP Flows (mgd) 4-2
4-3 Summary of Historic Flow Peaking Factors Relative to Base Wastewater Flow 4-2
4-4 City of Portland Collection System Peak Flow Projections 4-3
4-5 Lake Oswego Peak Flow Projections 4-5
4-6 Composite TCWTP Flow Projections 4-6
4-7 Future Base Wastewater Flows 4-7

4-8 Projected Flows ... 4-7
4-9 Historical Loads ... 4-8
4-10 Summary of Historic Waste Load Peaking Factors Relative to Average Dry Weather Load ... 4-8
4-11 Nutrient Sampling Data, Typical and Recommended Planning Values ... 4-9
4-12 Projected BOD_5 and TSS Loads ... 4-9
4-13 Projected Nutrient Loads ... 4-11
4-14 Summary of Key Flow and Load Projections ... 4-12
5-1 TCWTP NPDES Discharge Requirements ... 5-2
5-2 Sampling Requirements for EPA 40 CFR 503 Sludge Regulations[a] ... 5-3
5-3 New Federal Regulations (40 CFR 503) for Heavy Metals ... 5-4
5-4 EPA Recommendations for Bacteria Criteria ... 5-4
5-5 General Treatment and Monitoring Requirements for Use of Recycled Water ... 5-10
5-6 Allowable Uses for Recycled Water ... 5-11
5-7 Guidelines for Classifying Wastewater Works into Reliability Classes ... 5-12
5-8 EPA Requirements for Reliability ... 5-13
5-9 Assumed Treatment Requirements for Facilities Plan Alternatives Development ... 5-14
5-10 TCWTP Liquid Treatment Process Capacity Assessment ... 5-19
5-11 TCWTP Solids Process Capacity Assessment ... 5-20
6-1 Whole-Plant Alternatives (Prior to Initial Screening) ... 6-7
6-2 Headworks Alternatives Construction Cost Estimates ... 6-19
6-3 Primary Treatment Alternatives Construction Cost Estimates ... 6-20
6-4 Secondary Treatment Alternatives Construction Cost Estimates ... 6-21
6-5 Disinfection Alternatives Cost Estimates ... 6-22
6-6 Effluent Disposal Alternatives Construction Cost Estimates ... 6-23
6-7 Biosolids Stabilization and Handling Alternatives Construction Cost Estimates ... 6-24
6-8 Process Concepts Associated with Complete Alternatives ... 6-24
6-9 Whole-Plant Alternatives for Detailed Evaluation ... 6-25
6-10 Complete Alternative Capital Cost Estimates ... 6-35
6-11 Complete Alternative O&M Cost Estimates ... 6-36
6-12 Staff Scoring of Complete Alternatives ... 6-37
6-13 Comparative Program Cost Estimates ... 6-38
7-1 Projected Design Flows ... 7-1
7-2 Headworks Design Criteria ... 7-9
7-3 Primary Clarification Design Criteria ... 7-10
7-4 Secondary Treatment Design Criteria ... 7-11
7-5 Disinfection Design Criteria ... 7-12
7-6 Solids Production Projections ... 7-13
7-7 Solids Thickening Design Criteria ... 7-13
7-8 Odor Control Design Criteria ... 7-15
7-9 Program Cost Estimate ... 7-18
7-10 Annual Operation & Maintenance Cost Estimate ... 7-18
8-1 Project Component Triggers ... 8-3
8-2 Rehabilitation, Repair, and Modification Projects ... 8-15
8-3 Recommended Capital Improvement Program ... 8-17
8-4 Recommended Plan Annual Operation and Maintenance Cost Estimate ... 8-19
8-5 Applicable Comprehensive Plan Designations, Zoning Districts, and Overlay Zones ... 8-19
8-6 Summary of Land Use Strategy and Tasks ... 8-20

Figures

ES-1 Process Flow Diagram ... xv
ES-2 Recommended 30-Year Site Plan ... xvii
ES-3 Recommended 30-Year Site Plan Visualization ... xix
ES-4 Project Triggers Timing ... xxii
ES-5 Phased Site Plan ... xxv
1-1 Regulatory Criteria and Surrounding Development Conditions that Influence TCWTP Planning 1-1
1-1 Whole-Plant Alternative Development Process ... 1-2

2-1 Tryon Creek Wastewater Treatment Plant Service Area 2-2
2-2 Proposed Land Use Zoning Changes Neighborhood of TCWTP Site 2-8
2-3 Lake Oswego Land Use Zoning Map 2-11
2-4 Lake Oswego Flood Management Area 2-14
3-1 Facility Layout 3-11
3-2 Process Flow Diagram 3-13
3-3 Peak Wet Weather Hydraulic Capacities of Headworks, Primary Clarifiers, Primary Effluent Pump Station, and Secondary Process 3-16
3-4 Hydraulic Capacity of Outfall and Diffuser as a Function of River Water Surface Elevation 3-16
3-5 Process Capacities of Primary Clarifiers, Secondary Process, and Chlorine Contact Basins for Dry Weather or Wet Weather Flows 3-18
4-1 BES Peak Flow Projections with Varying Levels of I/I Reduction 4-4
4-2 Lake Oswego Peak Flow Projections 4-5
4-3 TCWTP Peak Flow Projections for I/I Flow Reduction Scenarios 4-6
5-1 Limits of 100-year Floodplain at TCWTP 5-14
5-2 Cost Estimate Accuracy as a Function of Design Detail 5-17
6-1 Outfall/Diffuser Capacity as a Function of River Flood Stage and Secondary Effluent Piping 6-4
6-2A Alternative 1 – Baseline 6-9
6-2B Alternative 1 – Baseline 6-10
6-3A Alternative 2 – Improved HGL, Simplicity 6-11
6-3B Alternative 2 – Improved HGL, Simplicity 6-12
6-4A Alternative 3 – 5-Year Storm 6-13
6-4B Alternative 3 – 5-Year Storm 6-14
6-5A Alternative 4 – Split Flow 6-15
6-5B Alternative 4 – Split Flow 6-16
6-6A Alternative 5 – No Primary/No Solids 6-17
6-6B Alternative 5 – No Primary/No Solids 6-18
6-7A Alternative A – Baseline 6-27
6-7B Alternative A – Baseline 6-28
6-8A Alternative B – No Primary Treatment 6-29
6-8B Alternative B – No Primary Treatment 6-30
6-9A Alternative C – No Onsite Digestion 6-31
6-9B Alternative C – No Onsite Digestion 6-32
6-10A Alternative D – No Primary Treatment/Maintain PEPS 6-33
6-10B Alternative D – No Primary Treatment/Maintain PEPS 6-34
7-1 Process Flow Diagram 7-3
7-2 Recommended 30-Year Site Plan 7-5
7-3 Recommended 30-Year Site Plan Visualization 7-7
7-4 Hydraulic Profile 7-21
7-5 Yard Piping Plan 7-23
8-1 Project Triggers Timing 8-2
8-2 Phased Site Plan 8-7
8-3 Recommended 30-Year Site Plan 8-9
8-4 Recommended 30-Year Site Plan Visualization 8-11
9-1 Flowchart of the TWCTP CAC Engagement Process 9-3

Acronyms and Abbreviations

AACE	Association for the Advancement of Cost Engineering
AWQC	ambient water quality criteria
BES	Portland Bureau of Environmental Services
BOD	biochemical oxygen demand
BOD_5	5-day biochemical oxygen demand
BWF	base wastewater flow
°C	degrees Celsius
CAC	Citizen Advisory Committee
CBWTP	Columbia Boulevard Wastewater Treatment Plant
CCI	Construction Cost Index
CCTV	closed-circuit television
CDC	Community Development Code
CFR	Code of Federal Regulations
CFU	colony forming units
CIP	capital improvement program
CPES	CH2M HILL Parametric Cost Estimating System
dBA	decibels (A-weighted scale)
DEQ	Oregon Department of Environmental Quality
DFB	derived function block
DMR	Discharge Monitoring Report
DO	dissolved oxygen
DRC	Lake Oswego's Development Review Commission
EDC	endocrine disrupting compound
ENR	*Engineering News□Record*
EPA	U.S. Environmental Protection Agency
ETL	excess thermal load
GBT	gravity belt thickener
gpd/ft^2	gallons per day per square foot
gpm	gallons per minute
GT	gravity thickening
GT PS	Gravity Thickening Pump Station
HGL	hydraulic grade line
HMI	human-machine interface
hp	horsepower
I&C	instrumentation and control

I/I	infiltration and inflow
kcal	kilocalories
kV	kilovolt
kW	kilowatt
lf	linear feet
LOC	Lake Oswego Code
LOIS	Lake Oswego Interceptor Sewer
mgd	million gallons per day
mg/L	milligrams per liter
mL	milliliter
mL/g	milliliters per gram
msl	mean sea level
NACWA	National Association of Clean Water Agencies
NEC	National Electrical Code
NFAA	no feasible alternatives analysis
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
O&M	operation and maintenance
OAR	Oregon Administrative Rules
OSC	Oversight Committee
PEPS	Primary Effluent Pump Station
PF	Public Function land use zone
PGE	Portland General Electric
PhAC	pharmaceutically active compound
PLC	programmable logic controller
POTW	publicly owned treatment work
ppd	pounds per day
qPCR	quantitative polymerase chain reaction
RAS	return activated sludge
RAS/WAS PS	Return Activated Sludge/Waste Activated Sludge Pump Station
RDII	rainfall dependent infiltration and inflow
RPA	reasonable potential analysis
RR&M	Rehabilitation, Repair, and Modifications
RUL	remaining useful life
SCADA	supervisory control and data acquisition

SRT	solids retention time
SSO	sanitary sewer overflow
STEPs	septic tank effluent pumps
SVI	sludge volume index
TCI	Tryon Creek Interceptor
TCWTP	Tryon Creek Wastewater Treatment Plant
TKN	total Kjeldahl nitrogen
TMDL	total maximum daily load
TOrC	trace organic compound
TSS	total suspended solids
TWAS	thickened waste activated sludge
UV	ultraviolet light
WAS	waste activated sludge
WLA	waste load allocation