

Monday, May 6, 2024 4:00 p.m.

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- 1. Call to order and roll call
- 2. Business from the public
- 3. Water Master Plan Ryan Beathe [Pages 2-26] *Discussion*
- 4. Thurston and Jefferson vacation right-of-way Aaron Hiemstra and Matthew Ruettgers [Pages 27-29] Direction
- 5. Recreational immunity Kim Lyddane [Pages 30-31] *Discussion*
- 6. Goldfish Farm Road right-of-way acquisition update Staci Belcastro [Pages 32-34] Information
- 7. Business from the council
- 8. City manager report
- 9. Adjournment

This meeting is accessible to the public via video connection. The location for in-person attendance is accessible to people with disabilities. If you have a disability that requires accommodation, please notify city staff at least 48 hours in advance of the meeting at: cityclerk@albanyoregon.gov.

Testimony provided at the meeting is part of the public record. Meetings are recorded, capturing both inperson and virtual participation, and are posted on the City website.



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	TO: VIA:	Albany City Council Peter Troedsson, City Manager
	FROM:	Ryan Beathe, P.E., Civil Engineer III
	DATE:	April 26, 2024, for the May 6, 2024, City Council Work Session

SUBJECT: Water Master Plan

Action Requested:

Staff requests City Council review the new proposed Water Master Plan (WMP) (Attachment 1) and consider adoption at a future meeting.

Discussion:

The last comprehensive water infrastructure analysis was part of the 2004 WMP. Since adoption of the 2004 plan, the City constructed the Albany-Millersburg (A-M) Water Treatment Plant (WTP), the population grew from about 44,000 to 58,000, and numerous improvements over the span of nearly 20 years have been completed. Due to ever changing conditions, new regulations, and evolving approaches for more efficient water system management, a comprehensive reevaluation of the City's water infrastructure was needed.

The 2024 WMP is the updated evaluation of the City's water system. The plan incorporates the traditional features of a water system such as the water treatment plants, reservoirs, pump stations, water mains, and other minor system assets. Additionally, it also incorporates assessments of the Santiam-Albany Canal (Canal) and the City's hydroelectric plant as the operation and maintenance of these features compete for water rate revenue.

The overall goal of the WMP is to identify deficiencies under existing or projected future demand conditions and provide recommendations for improvements to assure the City can meet the existing or projected future water needs of its citizens. The WMP provides a recommended Capital Improvement Program to help provide guidance with the prioritizing and planning of improvements. The plan focuses on the next 20-year horizon but also includes projects identified for complete build-out of the Urban Growth Boundary.

Also incorporated into the WMP are new State requirements of the Oregon Resilience Plan (ORP). The ORP sets target states of recovery for water systems after a major earthquake. These represent long term goals (50 year planning horizon) for water system readiness and resilience to a magnitude 9.0 Cascadia Subduction Zone (CSZ) earthquake.

This updated WMP will provide the foundation for the development of an updated water system financial plan. Staff is recommending council direct staff to pursue adoption of the updated Water Master Plan.

Budget Impact:

Adoption of the new Water Master Plan will not have any budget impacts.

RB:kc Attachment



FINAL REPORT | APRIL 2024

Water Master Plan

PREPARED FOR

City of Albany



PREPARED BY



Water Master Plan

Prepared for

City of Albany

Project No. 519-50-22-21



STEPED PROFESS 99388PE 99388PE PD08035med by: Sector V JAF V JAF EXPIRES: 6/30/2025

Project Manager: Mel Damewood III

Project Engineer: Ian Jaffee



FINAL REPORT | APRIL 2024

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
μg/L	Micrograms Per Liter
2004 WFP	2004 Water Facilities Plan
AACE	Association of the Advancement of Cost Engineering
AC	Asbestos Cement
ACH	Aluminum Chlorohydrate
ADD	Average Day Demand
ADU	Accessory Dwelling Unit
ALA	American Lifeline Alliance
AM	Albany Millersburg
AM WTP	Albany Millersburg Water Treatment Plant
AMP	Adaptive Management Plan
ASCE	American Society Civil Engineers
AWOP	Oregon Area Wide Optimization Program
AWWA	American Water Works Association
BLM	Bureau of Land Management
Canal	Santiam-Albany Canal
CCL	Contaminant Candidate List
CCT	Corrosion Control Treatment
CEB	Chemical Enhanced Backwash
CFE	Combined Filter Effluent

cfs	Cubic Feet Per Second
CI	Cast Iron
CIP	Capital Improvement Program
City	City of Albany, Oregon
COF	Consequence of Failure
CSZ	Cascadia Subduction Zone
CWS	Community Water System
DBP	Disinfection By-Product
DBPR	Disinfection By-products Rule
DEQ	Department of Environmental Quality
DI	Ductile Iron
DOGAMI	Department of Geology and Mineral Industries
DWS	Drinking Water Services
EC	E. Coli
ENR CCI	Engineering News Record Construction Cost Index
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
EPS	Extended Period Simulation
EWSP	Emergency Water Supply Plan
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
fps	Feet Per Second
ft	Feet
GHPS	Gibson Hill Pump Station
GI	Galvanized Iron
GIS	Geographic Information System
gpcd	Gallons Per Capita Per Day
gpd	Gallons Per Day
gpm/ft ²	Gallon Per Minute Per Square Foot
GWUDI	Groundwater Under the Direct Influence of Surface Water
HAA5	Haloacetic Acids
HALs	Health Advisory Level
HB	House Bill
HDPE	High Density Polyethylene
HGL	Hydraulic Grade Line
HPU	Hydraulic Power Unit
IDSE	Initial Distribution System Evaluation
IESWTR	Interim Enhanced Surface Water Treatment Rules
IOCs	Inorganic Contaminants
IOCs IRIS	Inorganic Contaminants Integrated Risk Information System

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kWh	Kilowatt Hours
LCR	Lead and Copper Rule
LCRI	Lead and Copper Rule Improvements
LCRR	Lead and Copper Rule Revision
LF	Linear Feet
LFCS	Lebanon Flow Control Structure
LOS	Level of Service
LRAA	Locational Running Annual Average
LSL	Lead Service Line
LSLR	Lead Service Line Replacement
Μ	Magnitude
MCL	Maximum Contaminant Level
MCLG	MCL Goal
MDD	Maximum Day Demand
MG	Million Gallons
mg/L	Million Gallons Per Liter
mgd	Million Gallons Per Day
MMD	Minimum Monthly Demand
MRDLs	Maximum Residual Disinfectant Levels
MRL	Method Reporting Limits
NACSD	North Albany County Service District
NAPS	North Albany Pump Station
ng/L	Nanograms Per Liter
NTNCWS	Non-Transient Non-Community Water System
NTU	Nephelometric Turbidity Unit
0&M	Operations And Maintenance
OAR	Oregon Administrative Rule
ODDW	Outside Diameter Dipped and Wrapped Steel
ODOT	Oregon Department of Transportation
OFC	Oregon Fire Code
OHA	Oregon Health Authority
ORP	Oregon Resilience Plan
ORS	Oregon Revised Statute
OWRD	Oregon Water Resources Department
PET	Potential evapotranspiration
PFAS	Per- and polyfluoroalkyl substances
PFBS	Perfluorobutanesulfonic Acid
PFHpA	Perfluoroheptanoic Acid
PFHxS	Perfluorohexanesulfonic Acid
PFNA	Perfluorononanoic Acid
PFOA	Perfluorooctanoic Acid

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PGD	Permanent Ground Deformations
PGV	Peak Ground Velocity
POD	Point of Distribution
POF	Probability of Failure
PPC	Public Protection Classification
ppm	Parts Per Million
PRC	Population Research Center
PRV	Pressure Reducing Valve
PS	Pump Station
PSU	Portland State University
PVC	Polyvinyl Chloride
PWS	Public Water Systems
RAA	Running Annual Average
RR	Repair Rates
RS	River Station
RUL	Remaining Useful Life
RWPS	Raw Water Pump Station
SAL	State Action Level
SCADA	Supervisory Control and Data Acquisition
SDC	Systems Development Charges
SDWA	Safe Drinking Water Act
SOCs	Synthetic Organic Contaminants
SOCs STL	Synthetic Organic Contaminants Steel
SOCs STL SWTR	Synthetic Organic Contaminants Steel Surface Water Treatment Rules
SOCs STL SWTR TC	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform
SOCs STL SWTR TC TCR	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule
SOCs STL SWTR TC TCR TM	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum
SOCs STL SWTR TC TCR TM TOC	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon
SOCs STL SWTR TC TCR TM TOC TTHM	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Trihalomethanes
SOCs STL SWTR TC TCR TM TOC TTHM UBC	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Trihalomethanes Uniform Building Code
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR UGB	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR UGB USGS	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR UGB USGS VFD	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCS	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCs WERF	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants Water Environment Research Foundation
SOCs STL SWTR TC TCR TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCs WERF WFP	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants Water Environment Research Foundation Water Facilities Plan
SOCs STL SWTR TC TCR TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCs WERF WFP WI	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants Water Environment Research Foundation Water Facilities Plan Wrought Iron
SOCs STL SWTR TC TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCs WERF WFP WI	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants Water Environment Research Foundation Water Facilities Plan Wrought Iron Water Master Plan
SOCs STL SWTR TC TCR TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCs WERF WFP WI WMP WQP	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants Water Environment Research Foundation Water Facilities Plan Wrought Iron Water Master Plan Water Quality Parameters
SOCs STL SWTR TC TCR TCR TM TOC TTHM UBC UCMR UGB USGS VFD VOCs WERF WFP WI WMP WQP WRD	Synthetic Organic Contaminants Steel Surface Water Treatment Rules Total Coliform Total Coliform Rule Technical Memorandum Total Organic Carbon Total Organic Carbon Total Trihalomethanes Uniform Building Code Unregulated Contaminant Monitoring Rule Urban Growth Boundary U.S. Geological Survey Variable Frequency Drive Volatile Organic Contaminants Water Environment Research Foundation Water Facilities Plan Wrought Iron Water Master Plan Water Quality Parameters Water Resource Department

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INTRODUCTION

The City of Albany, Oregon (City) provides municipal water service to the City of Albany, the City of Millersburg, and additional customers inside and outside the Urban Growth Boundary (UGB). An overview of the City's Water System is shown in Figure ES-1.

This Water Master Plan (WMP) is an updated evaluation of the City's existing water system including the water treatment plants, reservoirs, pump stations, distribution system, and other assets within the water system. Also, the WMP includes evaluations of the Santiam-Albany Canal (Canal), and the City's hydroelectric plant at Vine Street. The purpose is to identify deficiencies under existing or future demand conditions and provide recommended water system improvements.

The following sections summarize the different chapters within the WMP and the key takeaways.

EXISTING WATER SYSTEM (CHAPTER 2)

The cities of Albany and Millersburg receive drinking water from one of two water treatment plants (WTPs):

- The Vine Street WTP, constructed in 1912, receives raw water from the Santiam-Albany Canal, supplied by the South Santiam River via a diversion dam located near Lebanon. Vine Street WTP has an observed 16 MGD capacity.
- The Albany-Millersburg (AM) WTP, constructed in 2005, receives raw water directly downstream of the confluence of the North and South Santiam Rivers. The AM WTP currently has a 13.9 MGD capacity.

The City of Albany distribution system facilities include 272 miles of both distribution and transmission piping, 4 pressure zones, 6 pumping stations, 9 storage reservoirs, and other appurtenances such as system valves and flushing stations.

POPULATION AND WATER DEMANDS (CHAPTER 3)

Reliable water demand projections are foundational to developing an effective water master plan. The City's historical water demands were used to project future water demands from 2023 to build out of the UGB (approximately 2070), although the WMP primarily focuses on the next 20-year horizon to 2045. Projections were based on population growth, land use, water loss, water conservation, and climate change. Using data from 2008 to 2022, the historic average day demand (ADD) and the maximum day demand (MDD) are presented in Chapter 3. Chapter 3 also presents three projected future demand scenarios: Low Demand, Medium Demand, and High Demand based on different assumptions. The City chose to use the Medium Demand Scenario which includes projected values for the 2045 ADD and 2045 MDD.

ATTACHMENT 1

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Figure ES-1. Water System Map

PLANNING CRITERIA (CHAPTER 4)

Chapter 4 presents the water system design and performance criteria used for development of the WMP. Another term for performance criteria is the expected level of service (LOS) that regulators, customers, stakeholders, and the City expect under normal, emergency, and disaster conditions. The LOS goals are key to assessing the performance of the existing water system, measuring the expected future performance, and identifying potential capital improvements to assure the adequacy of the water system to meet the City's mission. LOS criteria were established for water supply, pipes, pump stations, and reservoir storage. In addition, the Oregon Resilience Plan (ORP) sets goals for a water system recovery after a major earthquake using a magnitude 9.0 Cascadia Subduction Zone earthquake planning scenario. A summary of the planning criteria identified is provided in Table ES-1.

Table ES-1. Summary of Planning Criteria			
Pipe Criteria			
	Criterion Value		
Minimum Diameter			8-inch (6-Inch may be allowable if fire flow demands are met and it is approved by the City Engineer)
	Minimum Opera	ting	40 psi
Pressure	Maximum Opera	ting	80 psi
Minimum During a Fire 20 psi		20 psi	
Maximum	Distribution pipes (≥8 inch and <16 inch)		Existing: 10 fps New: 5 fps
velocity	Transmission pipes (≥		5 fps
Maximum	Distribution pipes (≥8 inch and <16 inch) Transmission pipes (≥ 16 inch)		10 feet or 4 psi / 1000 feet
Headloss			3 feet or 1 psi / 1000 feet
Transmission pi		pes	Redundant supply lines to hydraulically isolated areas wherever feasible
	Distribution pip	es	Looping wherever feasible
Pump Station Criteria			
Criterion			Value
Pump Station Firm Capacity		Enough capacity to supply the peak demand with the largest pump out of service	
Firm Capacity Required Serving Zone with Reservoir StorageFirm capacity ≥ MDD		≥ MDD	
Firm Capacity Required Serving Zone without Reservoir StorageFirm capacity is the greater of MDD + largest fire flow demand, or peak hour demand		is the greater of MDD + largest fire flow demand, or nand	





Table ES-1. Summary of Planning Criteria				
		Storage Capacity	r Criteria ^(a)	
Criterion Value/Description			ı	
Equalization Storage Calculated using Approximately percent of the of the equalization Volume season		using a system-wide seasonal diurnal demand pattern. tely 16 percent of the daily demand in the winter, 12 the daily demand in the summer. Figure 4-2 shows how ation storage is calculated from the diurnal pattern. asonally adjusted for water quality purposes.		
Fire Storage Largest fire flo (OAR 333-061		Largest fire flow reservoir. See Ta (OAR 333-061-0	gest fire flow/duration in the zone supplied from the storage ervoir. See Table 4-4 for requirements by land use type. AR 333-061-0050)	
Emergency Storage		Volume equal to 1 day of demand, seasonally adjusted for water quality purposes. One day of average summer demands for summer months, one day of average winter demands for winter months.		
Fire Flow and Storage Criteria				
Land Use Type	Fire Flow Demand, gpm		Duration, hours	Fire Storage Volume, gal
Residential – Low Density	1,500		2	180,000
Residential – Medium Density	2,500		2	300,000
Residential – High Density Commercial Mixed Use Institutional Industrial Schools	3,500		3	630,000
(a) Storage volume can be shared between zones if emergency power is available.				

WATER SYSTEM REGULATORY REVIEW (CHAPTER 5)

The United States Environmental Protection Agency (EPA) develops and implements drinking water regulations under the Safe Drinking Water Act (SDWA) of 1974 and subsequent 1986 and 1996 amendments which regulate public drinking water systems. In some cases, states develop more stringent requirements. Oregon rules specific to drinking water are codified as Oregon Administrative Rules (OAR) 333-061. The following regulations were evaluated for the City:

- Surface Water Treatment Rules (SWTR)
- Chemical Contaminant Rule
- Stage 1 and 2 Disinfection By-Product (DBP) Rules
- Lead and Copper Rule (LCR) and Lead and Copper Rule Revision (LCRR)
- Total Coliform Rule (TCR)
- Filter Backwash Recycling Rule
- Proposed PFAS Rule
- Additional State-Specific Regulations

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The City has taken proper steps to reduce water quality concerns and remain within the water quality constituent limits. There are no recommendations of changes to operation to improve water quality.

EXISTING SYSTEM EVALUATION (CHAPTER 6)

Chapter 6 evaluates the capacity of each facility in the City's water system including WTPs, pump stations, storage reservoirs, and the distribution system. Each category of facility is discussed further below:

- Water Treatment Plants: The Vine Street WTP has an existing capacity of 16 mgd and the Albany-Millersburg WTP has an existing capacity of 13.9 mgd with the ability to expand to 16.5 mgd. The current MDD of 12 mgd can be met by either WTP individually, but the 2045 MDD of 20 mgd requires both WTPs to be operating. If one WTP were compromised in an emergency, the other WTP could not meet the demand for 2045 MDD. To prepare for the future, it is recommended to increase the AM WTP to its maximum capacity by adding a fifth filter cell and increasing the number of membranes in each cell. At Vine Street WTP, due to many factors, it is recommended to conduct a viability study to determine the preferred alternative for the future of the Vine Street WTP and associated facilities.
- Storage Reservoirs: The City currently has 16.9 MG of storage volume available for use by the distribution system. Comparing the storage available to the projected demand indicates that there is sufficient existing storage volume to meet the demands within the 20-year horizon to 2045. By buildout, it is expected that there will be a 0.8 MG deficit in the summer and a surplus in the winter. New storage is mostly needed in the upper zone. There is no room at the Valley View site, but there is room at the Wildwood and Broadway sites, with the Wildwood site being preferred because it serves Zone 2. Additional storage capacity should be in place 2 to 3 years before required, approximately 2063. In the next WMP update, it is recommended to review the timing of new storage in the upper zone. Also, as the City considers alternatives for the Vine Street WTP, there could be an opportunity to consolidate some of the Zone 1 storage into a single location by decommissioning the Maple, Queen, and 34th reservoirs and constructing an equivalent volume at a new WTP site. The option to consolidate Zone 1 storage is recommended for further hydraulic evaluation and viability analysis as part of the Vine Street viability study.
- **Pump Stations:** The pump station capacity evaluations show that North Albany and Gibson Hill pump stations are near capacity and will need to be replaced. North Albany Pump Station (PS) is recommended for replacement in the next 1-2 years and Gibson Hill PS is recommended for replacement in the next 5-10 years. If a new WTP is built with equivalent storage and pumping, Maple, Queen, and 34th Pump Stations could be decommissioned and replaced by a new pump station. In addition to simplifying maintenance, this would result in more efficient pumping and lower energy consumption as the Queen and 34th pump stations do not supply the system but are used instead to move water around Zone 1. The option to consolidate Zone 1 pumping is recommended for further hydraulic evaluation and viability analysis as part of the Vine Street viability study.
- **Distribution System:** The City's transmission and distribution pipes were evaluated under existing and buildout conditions, for both MDD (including PHD) and MDD plus fire flow. Model results were compared to evaluation criteria to identify pressure and velocity issues, as well as the ability to supply the required fire flow from a single hydrant. In some cases, the required fire flow can be provided by using multiple nearby hydrants. For improvements to the distribution system, 21 fire flow and 10 development driven projects were identified for pipeline improvements.

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CONDITION ASSESSMENT (CHAPTER 7)

A condition assessment of the City's water system assets was conducted as part of the master plan. The condition assessment was split into three categories: the canal, hydropower, and treated water facilities. A fourth assessment of the distribution system condition was done through a review of pipeline data and the City's pipeline replacement program.

Canal

The City owns the 18.2-mile-long Santiam-Albany Canal, which has a history of channel bed degradation and exhibits a significant number of bank failures along its entire length. As a part of this master plan, an assessment of the entire canal condition was performed, identifying 177 sites recommended for repair. The high priority sites were recommended for repair over the next 20 years and the medium and low priority sites were recommended for repair in the buildout-term. Other project recommendations include repair of the retaining walls and dredging for the canal within the main City blocks between Queen Avenue and 4th Street. In addition, it is recommended to perform further geotechnical evaluation at Cheadle Lake Berm, and to provide some fencing and safety features at a handful of canal sites.

As the City evaluates the future of the Vine Street site through the viability study, the decisions made for the Vine Street WTP and Hydroelectric facility may significantly impact flow through the entire canal. For example, if the viability study concludes that the preferred alternative is construction of a new WTP located south of the Vine Street WTP and if the Hydroelectric facility is decommissioned, then the required flow through the entire canal could be reduced significantly and different solutions to bank stabilization may be possible. The viability study should consider the impacts to the canal flow and associated canal costs for each alternative considered.

Hydropower

The City's hydroelectric turbine, in operation for 13 years, was inspected to evaluate its performance and provide recommendations. The evaluation revealed that the turbine is not performing to its expected level, with the main issue being the corrosion of the wicket gate system. To perform repairs or replacement of the wicket gates and bearings, the turbine must be disassembled and reassembled which allows opportunity to perform other recommended repairs including installing a spiral case cleanout, and inspecting, blasting and recoating of the interior of the turbine. In addition, possible improvements to other areas of the turbine system include the trash rack, flow meter, and hydraulic power unit (HPU). With the already identified turbine improvements, it is estimated that the energy generation may be able to increase anywhere from 4.3 to 26.5 percent. However, as discussed in Chapter 9, the estimated revenue projections for the hydropower are significantly less than the estimated cost of repairs suggesting that the investment is not economical for the City. The generator was not evaluated as part of the turbine recommendation, which could require more improvements. Thus, it is recommended to first perform, an evaluation of the generator to determine the cost and magnitude of any other not yet identified improvements. Ultimately, it is recommended that the City explore future options for the Hydroelectric facility including decommissioning as part of the Vine Street viability study. The viability study should evaluate the costs of different alternatives, a return-on-investment analysis, and the impact of the city's non-consumptive water rights for the hydroelectric facility.

Treated Water Facilities

The treated water facility condition assessment covered the City's water treatment plants, pump stations, reservoirs, and their individual components. 588 individual assets were identified and assessed

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and scored for condition on a scale from 1 to 5 with 1 being Excellent and 5 needing Immediate Attention. Table ES-2 summarizes the distribution of scores showing that, overall, most of the City's assets are in fair to good condition.

Table ES-2. Condition Score Summary			
Grading Definition	Score	Condition Count	Condition Percentage
Excellent	1	11	2
Good	2	328	55
Fair	3	125	21
Poor	4	115	20
Immediate Attention	5	9	1

Other factors considered during the condition assessment were typical useful life of assets, redundancy, and a risk assessment including review of the probability of failure and consequence of failure/criticality. The condition assessment included review from multiple disciplines including civil, structural, mechanical, and electrical as well as a performance assessment. The evaluation resulted in specific capital improvement program (CIP) project recommendations which are detailed in Chapter 7. The structural recommendations for the replacement of multiple Vine Street WTP buildings are among other recommendations that are described further in Chapter 8 and result in the main recommendations to begin studying alternatives at Vine Street. The civil and electrical recommendations identified for the water system were classified by the City as operations and maintenance projects. The mechanical recommendations mainly include measuring pipe thickness at Vine Street WTP site and using the results to determine if replacement or recoating is needed. Also, it was recommended to recoat other corroded items in the water system. Finally, the performance recommendations include replacement of the North Albany Pump Station, expansion of the 5th cell at the AM WTP, and adding a clean-in-place pump at AM WTP, among other improvements.

In light of the condition assessment and analysis done at the Vine Street WTP, it is recommended that the City perform a viability study of all of the Vine Street water infrastructure including the Vine Street WTP, the Hydroelectric Facility, and the canal. The viability study should evaluate options for the Vine Street WTP including alternatives for decommissioning the existing Vine St WTP and hydroelectric facility and constructing a new water treatment plant at a different sites.

Pipeline Replacement Program

The purpose of the pipeline replacement program was to identify water main prioritization for replacement (i.e., high risk, expiring useful life, etc.) and combine assets into a 20-year replacement forecast. The replacement program looks at the replacement cycle by quantifying the cost to replace all water mains divided by the existing CIP budget to determine the replacement cycle in years. At \$615,000,000 to replace all of the City's mains, divided by the existing City's annual pipeline replacement budget of \$1,200,000, the replacement cycle is 513 years. Compared to the typical useful life of 90 to 95 years for a pipe, it is clear that the existing investment is not enough to replace pipes in a timely manner. Additionally, the water loss is a good indicator of the health of the water system. The water loss rate is 9.0 to 10.4 percent between 2018 and 2022, while the American Water Works Association recommends that agencies aim for a maximum water loss of 10 percent. High water loss corresponds to reactive maintenance practices and underinvestment in the water system, whereas low water loss is associated

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with preventative maintenance practices and adequate investment. Next, 8 different pipeline replacement categories were developed and used to forecast a recommended 20-year pipeline replacement budget. The forecast indicated that an annual average of \$3,250,000 is recommended over the next 20-years.

SEISMIC RISK AND MITIGATION PLAN (CHAPTER 8)

Seismic hazards associated with a magnitude 9.0 Cascadia Subduction Zone (CSZ) earthquake event within the City's water service area were evaluated to identify potential water system impacts. The City is following recommendations for water systems outlined in the 2013 ORP. The results of the analyses indicate that pipe damage due to ground shaking is low. However, pipelines located in areas of moderate liquefaction and medium lateral spreading displacement will suffer more damage. This includes areas near the Willamette River and in some small creek areas. Damage to specific sites depends on the location of the site and the condition of the structures. Sites with a seismic performance expectation classified as Immediate Attention are multiple Vine Street WTP buildings including the raw water pump station, hydroelectric building, soda ash building, filters 1-6 and filters 7-10, and the North Albany Pump Station. The classification of Immediate Attention means that the structure will likely collapse during the CSZ event. To address seismic concerns for the City's water system facilities, recommendations include replacement of the Vine Street WTP and North Albany Pump Station. Multiple reservoir and pump station sites are recommended for seismic improvements including Maple Street, 34th Street, Queen Avenue, Gibson Hill, and Valley View. If a new WTP is built with equivalent storage and pumping, Maple, Queen, and 34th reservoirs and pump stations could potentially be decommissioned and replaced by a new reservoir and pump station. It is also recommended to add seismic straps to chemical tanks at both WTPs and add seismic valves at the critical reservoirs.

RECOMMENDED CAPITAL IMPROVEMENTS PROGRAM (CHAPTER 9)

Chapter 9 includes all of the Capital Improvement Project recommendations and cost estimates for the WMP. The projects are split into four planning horizons including the "near-term" horizon which extends from 0 to 5 years, the "medium-term" horizon which extends from 5 to 10 years, the "long-term" horizon which extends from 20 years, the "long-term" horizon which extends from 20 years to the current UGB buildout (approximately 2070). Projects recommended to be completed beyond the 20 year horizon should be reevaluated during the next water master plan update.

All of the recommended CIP project costs for the canal, hydropower, and water system are summarized in Table ES-3. Overall, the total 20-Year Capital Cost is estimated to be \$164,000,000 which correlates to an annual budget of \$8,200,000.





TO:	Albany City Council
VIA:	Peter Troedsson, City Manager Chris Bailey, Public Works Director $C\beta$ Matthew Ruettgers, Community Development Director \Re
FROM:	Staci Belcastro, P.E., City Engineer &
DATE:	April 23, 2024, for the May 6, 2024, City Council Work Session

SUBJECT: Undeveloped Right-of-Way Vacation: Thurston Street NE and Jefferson Street NE

Relates to Strategic Plan theme | Relates to: Great Neighborhoods, Effective Government

Action Requested:

Staff recommends that the City Council initiate street vacation proceedings and direct staff to prepare a street vacation application for the portion of Thurston Street NE and Jefferson Street NE lying north of Water Avenue NE and south of the Willamette River.

Discussion:

Thurston Street NE and Jefferson Street NE north of Water Avenue are short, unimproved right-of-way segments that terminate at the Willamette River (Attachment A). Burlington Northern Railroad owns railroad tracks that are located on the north side of the Water Avenue right-of-way. The tracks are operated by Portland & Western Railroad. Currently, the only public improvements contained within the undeveloped portion of these rights-of-way are underground utilities.

The Waterfront Project includes improvements to at-grade rail crossings along the Water Avenue corridor between Calapooia Street and Hill Street complying with a crossing order issued by the Oregon Department of Transportation (ODOT) Rail Division. ODOT Rail Division is the regulatory agency responsible for the safety of all at-grade rail crossings in the state. The at-grade rail crossing at Thurston Street was improved and ancillary improvements at the Water Avenue intersection were made, while the at-grade rail crossing at Jefferson Street was permanently closed in accordance with the ODOT Rail crossing order for the Water Avenue corridor. The City does not have planned improvements for the undeveloped portions of the Thurston Street and Jefferson Street rights-of-way between the rail line and Willamette River due to limited access, the lack of right-of-way for a proper turnaround at the end of the street, and an increased maintenance burden.

State law provides two methods to vacate streets: the applicant may file a petition to vacate the street or the city council may initiate vacation proceedings. Under both methods, a public hearing before the city council is required. A key difference between the two methods is that if the applicant submits the street vacation application, state law requires them to obtain "...the consent of the owners of all abutting property and of not less than two-thirds in area of the real property affected thereby." (ORS 271.080) Alternatively, "The city governing body may initiate vacation proceedings authorized by ORS 271.080 and make such vacation without a petition or consent of property owners." (ORS 271.130).

John Bock Trustee, Glorietta Bay LLC, ORE Tex Investments and the City of Albany own properties adjacent to these rights-of-way. If vacated, the ownership of the undeveloped right-of-way would revert to the adjoining properties by order of law. Public access and utility easements would be retained over the vacated right-of-way to maintain existing access rights and maintenance capabilities.

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ALBANY CITY COUNCIL AGENDA April 23, 2024, for the May 6, 2024, City Council Work Session

Staff recommends that the city council initiate street vacation proceedings for the undeveloped Thurston Street NE and Jefferson Street NE rights-of-way north of Water Avenue and direct staff to prepare the street vacation application. By vacating the rights-of-way, the City will not be burdened with future maintenance of these street segments that would only serve adjacent properties between the railroad and the Willamette River. These vacations would also add developable land to the adjoining properties, who support initiation of the vacation.

Budget Impact:

There would not be a significant budget impact; although, staff time would be used to develop the street vacation application.

AH:kc Attachment c: David Martineau, Planning Supervisor (via email)



Attachment A





TO:	Albany City Council
VIA:	Peter Troedsson, City Manager
FROM:	Kim Lyddane, Parks and Recreation Director
DATE:	April 24, 2024, for the May 6, City Council Work Session and May 8, City Council Meeting

SUBJECT: Discussion on recreational immunity.

Action Requested:

Staff requests that the City Council adopt a resolution to opt into recreational immunity from certain personal injury or property damage claims described in ORS 105.665, as amended by Senate Bill 1576.

Discussion:

Recently the Oregon Senate passed Bill 1576 to adjust ORS 105.668 which outlines Oregon's recreational immunity law that protects public and private landowners from lawsuits if someone is injured while recreating. The new bill provides a legal definition of "recreation" to include walking, running, and bicycling. This change comes after several years of trials resulting from an individual suing the City of Newport, Oregon, because she injured herself walking on a bridge but did not consider the walk for recreational purposes. Initially a circuit court judge ruled with the City, but later the Oregon Court of Appeals sided with the plaintiff. This decision sparked concern and action from parties all across the state, as without recreational immunity, many trails, paths, and amenities would close, as the liability would be too much to bear.

ORS 105.668 applies automatically to cities with a population of 500,000 or more and allows cities with lesser population to opt in to limit liability in the manner established by the law. Staff recommend that the Council pass the attached resolution to opt into the recreational immunity outlined in ORS 05.665, as amended by Senate Bill 1576.

Budget Impact:

Adopting the resolution will limit future lawsuits and trials.

KL

Attachment: resolution





A RESOLUTION OPTING INTO RECREATIONAL IMMUNITY FROM CERTAIN PERSONAL INJURY OR PROPERTY DAMAGE CLAIMS DESCRIBED IN ORS 105.668, AS AMENDED BY SENATE BILL 1576.

WHEREAS, the Oregon Legislature enacted Senate Bill 1576 in its 2024 Regular Session; and

WHEREAS, ORS 105.668, as amended by Senate Bill 1576, limits private claims or rights of action based on negligence for personal injury or property damage resulting from "use of a trail that is in a public easement or in an unimproved right of way, or from use of structures in the public easement or unimproved right of way, by a suer on foot, on a horse or on a bicycle or other nonmotorized vehicle or conveyance" (ORS 105.668); and

WHEREAS, ORS 105.668 applies automatically to cities with a population of 500,000 or more and allows cities with a lesser population to opt to limit liability in the manner established by law; and

WHEREAS, the City of Albany has several trails located in both easements and unimproved right-of-ways including the Takena Landing Trail, portions of the Dave Clark Trail, Oak Creek Trail, and the trails around Simpson Park; and

WHEREAS, the Council finds that the City of Albany will limit its liability from certain claims by opting into the recreational immunity provided for in ORS 105.668.

NOW, THEREFORE, BE IT RESOLVED BY THE ALBANY CITY COUNCIL as follows:

Pursuant to ORS 105.668(3)(a) and (b), the City of Albany, on behalf of itself and its officers, employees and agents, hereby opts to limit liability in the manner established by ORS 105.668(2) with respect to personal injury or property damage resulting from use of a trail that is in a public easement or in an unimproved right of way, or from use of structures in the public easement or unimproved right of way, with respect to claimants who may be users on foot, on a horse or on a bicycle or other nonmotorized vehicle or conveyance. This resolution shall take effect immediately upon its adoption by the city council and execution by the mayor.

DATED AND EFFECTIVE THIS 8TH DAY OF MAY 2024.

Mayor

ATTEST:

City Clerk



TO:	Albany City Council
VIA:	Peter Troedsson, City Manager Chris Bailey, Public Works Director $C\beta$
FROM:	Staci Belcastro, P.E., City Engineer 🕉
DATE:	April 24, 2024, for the May 6, 2024, City Council Work Session

SUBJECT: Goldfish Farm Road Right-of-Way Acquisition

Action Requested:

No action requested. Memo provided for information and discussion.

Discussion:

Goldfish Farm Road is classified as an Arterial Street between Highway 20 and Knox Butte Road. A portion of the road, located north of Dogwood Avenue, has been improved to City standards and is under the jurisdiction of the City. Goldfish Farm Road, south of Dogwood Avenue, is under the jurisdiction of Linn County and has been constructed to county standards with roadside ditches and noticeably no curb, gutter, or sidewalk. Attachment 1 is provided as a vicinity map.

The split jurisdiction on Goldfish Farm Road can be confusing to adjacent property owners who are not sure who to contact to address issues that can arise on roads. Transferring full jurisdiction of Goldfish Farm Road from the County to the City benefits both agencies. The City has control over roads located within the city limits and Urban Growth Boundary and can more efficiently review and approve development proposals or other capital projects. Linn County is not responsible for the costs of long-term operations and maintenance.

Staff discussed an opportunity with the council to partner with Linn County to improve Goldfish Farm Road at the October 21, 2019, work session to facilitate a jurisdictional transfer. Linn County agreed to design and construct improvements to Goldfish Farm Road, from Highway 20 to Dogwood Avenue, to City standard including construction of new pavement, curb and gutter, piped storm drain, and sidewalk. The City agreed to provide funds to Linn County to purchase right-of-way (ROW) needed to construct the road to City standards. The City's adopted Transportation System Development Charge (TSDC) methodology identifies ROW acquisition for Goldfish Farm Road as an eligible expense. Council approved use of TSDC funds for ROW acquisition to allow construction of a street section meeting City standards at the January 8, 2020, council meeting.

County engineers and City staff have been in regular communication during design development. The County has provided City staff plans to review and comment on during design. The County anticipates construction of improvements to Goldfish Farm Road will take place during the summer 2025, contingent on their acquiring the necessary ROW. Right-of-way is needed from 24 properties. To date, the County has purchased ROW from 16 properties at a cost of \$159,800.59, leaving five properties that the County is still in negotiations with.



Budget Impact:

ROW acquisition costs will be funded from the TSDC Fund (25040255). Linn County will cover all costs associated with constructing improvements to Goldfish Farm Road to a City standard.

SB:kc

Attachment

c: Kristin Preston, Operations Manager Robb Romeo, Transportation Manager Jeff Babbitt, Public Works Business Manager

