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10. Implementation

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10. Implementation

This Water Comprehensive Plan (Plan) has been developed as a road map to guide the District into the future and ensure that it can continue to provide high-quality and reliable water service to its customers. The preceding chapters have documented in detail the facilities and operation of the water system, identified system deficiencies, described improvements necessary to maintain a fully functioning system that is compliant with regulatory requirements and industry standards, and confirmed that the District can continue operating under a financial framework that maintains affordable costs to customers.

Environmental review is required of water comprehensive plans for purveyors serving more than 1,000 connections by the State Environmental Policy Act (SEPA). A SEPA checklist was completed for this Plan and a Determination of Non-Significance was issued by the District in February, 2019. Copies of both documents can be found in Appendix U. The Plan identifies a Capital Plan (CP) to cover a 20-year planning period; details regarding specific components of the CP are not available at this time. Therefore, the SEPA checklist discusses the CP at a programmatic level, and is addressed as a non-project action. Each component of the CP will undergo future project site-specific SEPA review as components begin design for implementation. Any site specific environmental issues or concerns will be identified and addressed for each component of the CP during that future project site-specific SEPA review.

Throughout the Plan, objectives, policies, and program approaches relating to various elements of system management are discussed. A summary list of such items that contain key implementation considerations regarding the future direction of the District is provided below, organized by Plan chapter and identified by “filled dot” bullets. Where appropriate, a measurement method has been provided, and identified by “open dot” bullets.

10.1 Chapter 1: Description of Water System

The District water system description describes the physical components of the system and also the areal extent of the existing District service area, and requirements for provision of water service. The future service area extent was initially defined in conjunction with adjacent purveyors starting with the East King County Coordinated Water Service Plan. Service area expansion is accomplished through annexations. Annexations currently in progress are described, and others identified for action in the near future are noted. The requirements for provision of District service are described, as developed to meet regulations and modified through experience as the District has grown to provide a high level of service.

10.1.1 Implementation Considerations (Chapter 1)

Regulations
- Comply with regulations from local, state and federal agencies.
Maintain a Green Operating Permit.
Initiate discussions with land use agencies for potential franchises.

Service Area
Complete withdrawal of territory from the District’s existing Corporate Boundary where service is provided by the City of Issaquah, including approval from Cascade Water Alliance, if required.
Pursue annexation of territory for expanded service area when requested by property owners that would be changing water service boundaries between water purveyors.
Obtain approval for expanded service area from Cascade Water Alliance in conjunction with the annexation action.
Complete the M-Brooke transfer of service area from Ames Lake Water Association and annexation to the District in 2019.
Prioritize completion of annexations where the District is currently providing service.

Service Provision
Require new water service connections to be from water mains located adjacent to the property, or where approved by the District, to a main not adjacent to the property under a Non-Standard Service Line Agreement.
Provide processes for the extension of water facilities to provide for direct service through Developer Extension Agreements, Utility Local Improvement Districts, or in certain cases by a District Capital Improvement Project.
Consider consolidation of existing Group A or Group B water systems to the District on a case-by-case basis.
Require any new house or development within the District’s future water service area, where water service from the District is not feasible, to execute an Agreement for Future Connection for Water Service from the District per requirements of land agency codes.
Provide a process for development of new Group B systems for situations where direct connection to the District’s system is not possible; including execution of an Agreement for Future Connection for Water Service from the District, and use of a private Water System Operator when operating as a Group B system.
Require backflow prevention devices to be installed, certified and tested prior to provision of service.
Require any auxiliary water service to a property be separated from District service by an air gap and appropriate cross-connection control devices.
Collect connection charges prior to provision of service.

10.2 Chapter 2: Basic Planning Data and Water Demand Forecast
Development of water demand forecasts is based on the number and type of customers expected including the population residing in the District, as well as commercial, industrial and public-institutional customers. The future forecast builds on existing customers and projected additions from development proposals and land use jurisdiction zoning and growth forecasts. Existing water use factors are adjusted for potential conservation. The demand forecasts feed the future system analysis and the
10.2.1 Implementation Considerations (Chapter 2)

- Track District water use
  - Annually track and compare District water production and purchases with water use data and include results in the annual Water Use Efficiency Report.
  - Annually track water use demands by customer type.
  - As Automatic Meter Infrastructure (AMI) data collection and analysis is refined, track water use demands by customer type seasonally and/or monthly.

- Keep District demand forecasts up-to-date
  - Annually update near-term ERU forecast based on current development proposals with the District.
  - Track the City of Sammamish implementation of the Town Center Plan by meeting with City of Sammamish personnel as development proposals are received and when Town Center planning is further developed and/or modified.
  - At least every five years, update the long-term ERU forecast based upon current land-use planning data and updated analysis of undeveloped or under-developed property ERU buildout capacity.

10.3 Chapter 3: System Analysis

The District’s physical water system is analyzed to see whether it meets operational parameters for both existing and future conditions. The analysis identifies existing deficiencies and future requirements. The results are used to develop the Capital Plan.

10.3.1 Implementation Considerations (Chapter 3)

- Meet DOH guidelines for source adequacy and storage capacity.
- Update water system model as new assets and demands are added.
  - Implement a process for quarterly updates to the model, in coordination with the addition of new facilities to the District’s facility mapping.
- Complete development of an Extended Period Simulation (EPS) hydraulic model in 2019.
- Verify water model calibration with regular retesting and adjustment.
  - Water department maintenance program to include calibration measurements at least once per year, in conjunction with regularly scheduled flow tests or flushing where possible.
- Develop an integration between AMI data and the hydraulic model
- Evaluate the feasibility of conversion of the 550 Pressure Zone to the blended supply area by 2022.
- Evaluate new Capital Improvement Projects not included in the modeling done for this Comprehensive Plan with review through the hydraulic model.

10.4 Chapter 4: Conservation Program, Supply Analysis, Water Rights, System Reliability and Interties
The District water supply is provided through a combination of groundwater, regional surface water and by limiting demand through the conservation program. The District’s strategy has been to utilize the groundwater source to the extent possible and limit use of the regional surface water to reduce overall cost.

### 10.4.1 Implementation Considerations (Chapter 4)

#### Conservation Program
- Distribute annual report per the Municipal Water Law Water Use Efficiency Rule.
  - Annual distribution of the Water Use Efficiency Report.
- Participate in implementation of the Cascade Conservation Program to meet the Cascade adopted 2019 conservation goal to save 0.6 million gallons per day (MGD) on an annual basis and 1.0 MGD on a peak season basis by 2020. (Goals are aggregate for all seven Cascade members.)
  - Coordinate implementation of the District Conservation Program with the Cascade Water Conservation Program.
  - Maintain a presence on the Cascade Conservation Committee.
  - Obtain and track metrics for Cascade measures implemented within the District.
  - Partner with Cascade on events within the District’s service area, providing District staff resources to improve communication of the District-specific information.
  - Confer with Cascade to ensure the Cascade Conservation Program design recognizes the unique opportunities within the District.
- Implement District’s independent Water Conservation measures.
  - Roll out the new customer service portal in 2019 to provide customers with the ability to track their water use from AMI data, including high water consumption alerts, leak alerts and general water use.
  - Develop outreach to customers on the use of AMI data
  - Using AMI data, identify segments of the customer base, where targeted conservation efforts may have the greatest impact.
  - Contact all customers using the Irrigation Audit program by the end of 2019 to provide them direction on how to track their irrigation water use using the AMI data through the Customer Service Portal.
- Review the District rate model’s orientation toward encouraging conservation and water efficiency.

- Apply a supply strategy using multiple sources including groundwater supply, an aquifer storage and recovery program, regional supplies and conservation to provide flexibility and reliability, while considering the least cost of water production and agreements with Cascade Water Alliance and adjacent purveyors.
  - Work with Cascade Water Alliance membership to provide consideration of independent supply water rights in membership responsibilities.
- Operate the District’s system to generally utilize the groundwater source first, but keep demands for regional water supply at a relatively constant rate over the course of a week.
Review water supply source records on a monthly basis, compare actual supply source against the supply strategy, and adjust supply sources as necessary to reflect demand and the current source conditions.

- Pursue additional points of withdrawal applications when necessary to allow full utilization of existing water rights.
  - Complete permanent additional point of withdrawal application for Well 7 and 8 water rights to Well 9 in 2019.
- Investigate potential transfer of water rights from water systems within the District's service area as they are identified.
- Initiate investigation for potential expansion of water rights available for use, through cooperative arrangements with adjacent purveyors by 2025. Include potential seasonal use in this investigation.
- Evaluate ongoing implementation of ASR based on water recovery right.

### 10.5 Chapter 5: Source Water Protection

The Wellhead Protection Program is required by federal and state law, to help protect the groundwater sources from contamination. The program is focused on education of persons that may come in contact with materials that could be deleterious to the groundwater supply.

#### 10.5.1 Implementation Considerations (Chapter 5)

- Periodically update the contaminant source inventory within the Wellhead Protection Area (WHPA) Boundaries annually.
  - Complete a windshield survey for additional potential contaminant sources.
  - Notify all owners/operators of potential sources of contamination within the WHPA boundaries.
  - Send letters to all owners/operators of potential contaminant sources by September 1 each year.
  - Notify emergency responders of the potential contamination sources within the WHPA boundaries by providing the updated potential contaminant sources list to Eastside Fire & Rescue and Fire District #34 by September 1st each year.
- Request City of Sammamish to implement a Groundwater Quality Protection inspection program for on-site storage of hazardous materials in identified WHPA. (Similar to the City of Issaquah program included in the Issaquah Municipal Code (IMC 13.29).)
- Advocate for Land Use Agency stormwater management regulations that preclude stormwater injection (UIC) or other related risks to the groundwater.
- Provide the land use jurisdictions with refined WHPA boundaries for the District wells and ensure they are included as part of the jurisdictions’ Critical Areas mapping (CARA Class 1 and 2).
  - Review any updates to the CARA for Issaquah, Sammamish and King County to ensure they are in agreement with Wellhead Protection boundaries developed for each District source.
- Monitor land use proposals to identify potential discharges into the District’s identified WHPA (CARA Class 1 and 2) that could impact District groundwater supplies.
o Provide formal responses to any that require additional study prior to approval of such discharges.
• Participate in the Department of Ecology update to CARA Guidance.
• Work with land use jurisdictions to require abandonment of private wells when water service is provided by the District.

10.6 Chapter 6: Operations and Maintenance Program

The Operations and Maintenance program outlines the daily functions required to operate the water system smoothly and efficiently. The water system operation program elements range from employee training and safety considerations, through administrative requirements for records and reports, meeting water quality requirements, operating and managing the source, supply, storage, pumping stations and distribution system under normal and peak operating conditions, maintenance and emergency conditions, to responding to customer questions and complaints.

10.6.1 Implementation Considerations (Chapter 6)

Training and Management
• Manage the water system in a safe and professional manner, implementing the routine operation tasks and preventative maintenance activities.
  o Maintain a Green Operating Permit.
• Provide each field crew member with training opportunities so they can obtain the knowledge and experience necessary to maximize their potential to participate in the operation of the water system. Ensure that the water system continues to be under the control of certified operators.
  o Each District staff member that aspires to or has a water worker certification provide an annual request to their manager for the classes and training required to maintain or advance their certification.
  o Continue in-house training to ensure staff understands system dynamics, including emergency planning.
• Implement Reliability Centered Maintenance (RCM) to optimize maintenance schedules and maximize the life of water assets.
  o Within 2 years apply RCM to all facility types (e.g. wells, booster pumps) and distribution system appurtenances.
• Provide initial response within one hour to customer complaints received and logged during office hours and follow through with appropriate responses to complaints.
  o Annually review work order and service order history for logging of calls received and resolution of the situation for those including a field response.
  o Include a tracking process in any new Computerized Maintenance Management System (CMMS).
• Improve the efficiency of the District recordkeeping through development and implementation of a formal electronic storage and retrieval system.
  o This effort may continue use of the DOCUWARE system or other program that integrates between different enterprise systems.
  o Review the current organization of historic field crew records and coordinate a
• Continue to identify and investigate additional smart utility platforms for implementation of the District’s Enterprise Action Plan to develop a more efficient and robust District operation.

**Water Quality Requirements**

• Complete tasks necessary to meet regulatory requirements of the Safe Drinking Water Act for source water.
  o Retain the District’s current compliance with the Surface Water Treatment Rule with a focus on maintaining a chlorine residual in the portion of the system receiving supply from the regional water system.
  o Continue to execute and monitor the District’s Groundwater Rule Plan into the future by developing a map to visually track quarterly chlorine residual results and creating a long and short-term plan to maintain a stable free-chlorine residual in the District’s system.
  o Complete new sanitary survey with the Department of Health when required.
  o Continue taking water samples for tests as required by the Synthetic Organic and Inorganic Chemicals Phases I, II and V Rules, and maintain waivers where possible.
  o Remain in compliance with the Arsenic Rule by continuing to monitor for arsenic at District sources on a quarterly basis, or as required by DOH, to demonstrate that treatment remains effective in reducing arsenic below the MCL. In cases where blending of multiple sources is needed to reduce the finished water arsenic to below the MCL, ensure that source operation includes the appropriate controls and interlocks to achieve the requisite blend ratios.
  o Remain in compliance with the Radionuclides Rule by monitoring District sources as required by DOH, and requesting waivers from additional monitoring when reasonable.
  o Remain in compliance with sampling and testing for UCMRs and maintain waivers where possible, including the addition of required sampling and testing required under UCMR4 in 2019.
  o Develop an in-house process to track monitoring requirements for the Source Water and Treatment regulatory requirements of the Safe Drinking Water Act.

• Continue added monitoring of Per- and Polyfluoroalkyl Substances (PFAS) concentrations in the Lower Issaquah Valley Aquifer, and update groundwater model calibration.
  o Evaluate cost-effectiveness of implementing treatment compared to regional water purchase to mitigate PFAS.
  o Conduct appropriate 2-way outreach with customers on issues of water quality, to keep customers informed, evaluate public sentiments and willingness to fund treatment improvements.

• Complete tasks necessary to meet regulatory requirements of the Safe Drinking Water Act for distribution systems.
  o Take the total coliform samples throughout the distribution system each month as required by the Total Coliform Rule (TCR) and Revised TCR/Distribution System Rule. Follow-up with repeat sampling and additional testing for any samples that
indicate total coliform and/or E. coli are present.

- Remain in compliance with the Disinfection/Disinfection By-Products (DBP) Rules by continued sampling and testing per the Stage 2 DBP monitoring plan.
- Collect samples once every three years from taps in homes as required for evaluation under the Lead and Copper Rule, current testing is for 30 homes. And comply with any changes to the Lead and Copper Rule, when issued.
- Monitor potential requirements for lead and copper testing in schools and work with the school districts to communicate and share testing requirements and results.

- Supply an annual Consumer Confidence Report (CCR) to all District customers, per the CCR Rule, providing a report of the District’s water quality and any violations. In addition, provide more immediate notification of any water quality violations that have the potential for serious adverse effect, per the Public Notification Rule.
  - Complete annual distribution of the CCR.
  - Increase distribution frequency of the CCR in accordance with the requirements contained in the American Water Infrastructure Act (AWIA) of 2018.

- Maintain compliance with operator certification requirements.
- Monitor the development of future rules and modifications
- Notify the Washington State Department of Health of any District failure to comply with primary water quality standards, monitoring requirements or a violation of a primary maximum contaminant level.

Emergency Response, Safety and Cross-Connection Control Programs

- Regularly update the Emergency Plan to incorporate changes to the District system and operations, and to better incorporate the Incident Command System (ICS) and the National Incident Management System (NIMS).
  - Hold monthly Emergency Response Committee meetings including a standing item for examining proposals and adding any improvements to the Emergency Response Plan.
- Respond to incidents with strategies based on priorities to 1) maintain life safety, 2) stabilize the incident to minimize the effect of the incident on surrounding areas while using resources efficiently, and 3) conserve property.
  - Prepare After Action Reports to review District responses to incidents.
- Train District staff in compliance with the NIMS.
  - Provide a minimum of ICS 100 and IS 700 to all District staff, ICS 200, ICS 300, ICS 400 and IS 800 to Managers and Superintendents and personnel identified for lead positions as part of a response based on the ICS structure under the NIMS framework.
- Prepare Risk & Resiliency Assessment by December 31, 2020 in accordance with AWIA of 2018.
- Complete the Continuity of Operations Plan by July 2021, in conjunction with the Emergency Response Plan update as required by the AWIA of 2018.
- Provide regular safety training to District staff.
  - Schedule periodic staff safety meetings and additional specialized safety training as necessary.
• Implement a Reliability Centered Maintenance approach to all safety equipment, including personal protective equipment, by 2021.
• Continue development, review and updates of the District’s Accident Prevention Program Hazard Specific Safety Programs.
• Continue implementation of the District’s Cross-Connection Control Program to all customer classes.
  o Add newly identified potential Cross Connection sites to the District’s Cross-Connection Control database. Obtain annual certification of testing of all identified backflow prevention devices.
  o Implement new backflow prevention software program in 2019.
  o Actively monitor and respond appropriately on all AMI system backflow alerts.

10.7 Chapter 7: Distribution Facilities Design and Construction Standards

The design and construction standards are developed to make sure the system is constructed to endure and to maintain efficiency of system operation by requiring consistent material and equipment use per District standards.

10.7.1 Implementation Considerations (Chapter 7)

• Regularly review and update District design and construction standards to incorporate new technology and products to ensure the installation of high-quality, resilient and efficient facilities.
  o Hold at least four Design-Review Committee meetings each year.
• Require water system looping where reasonable and practical to provide redundancy in service during maintenance and repair activities, and better water quality overall by avoiding stagnation in dead-ends.

10.8 Chapter 8: Capital Plan

The Capital Plan (CP) is developed to address deficiencies identified during system analysis, to improve operational and maintenance efficiency, meet regulatory requirements and to provide for growth related requirements. The CP considers those projects projected for a 20-year implementation schedule, with primary focus on the 10-year planning horizon. Each project is identified with an estimated implementation schedule and funding source.

10.8.1 Implementation Considerations (Chapter 8)

• Continue refinement and use of the Asset Management program to help direct when capital replacement projects should occur, and to provide a basis for the reserve funding strategy.
• Further consider and implement supply projects including projects associated with individual well improvements, and a potential project for significant treatment addition in response to continued monitoring of water quality in the Lower Issaquah Valley Aquifer.
• Implement Storage Tank projects for seismic retrofit at the 7 MG Tank, and also at the 2 MG Tank as part of a project that will also address circulation and coating improvements. Implement a series of projects for coating projects at most tanks.
• Implement Booster Pump projects to address improvements for growth, but also to replace and improve the existing SE 43rd Booster Pump Station.
• Implement Water Distribution System projects including projects for
  o Fire flow improvements
  o Projects to improve redundancy of the District’s system
  o New transmission mains for capacity
  o Extension projects to provide for additional services and to loop the water system. Note that the Sammamish Town Center will require substantial new water main facilities, and these extensions have been identified for installation by others, most likely through the Developer Extension Agreement process.
  o Projects required by other entities’ improvements
  o Replacement of existing mains, over time
• Implement Water Maintenance and Operation projects including additional expansion of District Headquarters Site facilities, safety improvements, and addresses vehicles and equipment needs. The next update of the Water Comprehensive Plan is also included.

10.9 Chapter 9: Finance Plan

The financial plan reviews the revenues and expenses for the District’s water system to verify that the operating and capital needs identified within this Plan and the District’s budgets are attainable and affordable. The Financial Plan reflects the District’s overall shift in focus from growth to maintenance, still requiring additional new capital investment but having a heavy component of repair and rehabilitation of existing facilities.

10.9.1 Implementation Considerations (Chapter 9)

Rates
• Fund capital reserves consistent with asset management plan
• Complete a comprehensive rate study in 2019/2020.
• Review the proposed capital improvement project schedule to balance project fund requirements and rate increases to result in level rate increases.
• Adopt annual budgets, conduct annual rate review, and adjust rates appropriately
• Align rate review, budget and Capital and Comprehensive Plans.

General Facility Charge
• Charge new customers their fair share of the facility costs needed to provide them service.
• Implement fair and equitable GFC rates to mitigate the burden on existing customers.
• Annually review the GFC rate to keep pace with construction cost increases.

Funding Capital Improvement Projects
• Evaluate issuing long term debt to fund future capital improvement projects designed
to minimize the cost of funds, ensure equity over time among ratepayers, and provide for a timely completion of capital facilities.

- Align debt with the proper funding source, to manage debt and minimize volatility in rate requirements.
- Allow borrowing between funds with Board approval – these loans will ensure that customer classes will not subsidize one another, and loan repayment will be structured to be repaid in a timely manner.
- Fund future capital extension of assets through the collection of water and sewer General Facility and Local Facility connections charges. These connections fees will be segregated into separate funds, and not comingled.
- Monitor opportunities to obtain external sources of funds.
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