

Council Study Session

October 5, 2020

Agenda Item	TAP Master Plan Update	
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Item Type	Requested by Council <input checked="" type="checkbox"/> Update <input type="checkbox"/> Request for Direction <input type="checkbox"/> Presentation <input checked="" type="checkbox"/>	

SUMMARY

Before the Council is a presentation regarding the major outcomes from the Talent-Ashland-Phoenix (TAP) Intertie System Master Plan project. The TAP intertie provides the Ashland Community with a redundant treated water supply delivered by the Medford Water Commission (MWC) through Phoenix and Talent to the City of Ashland. The City formally connected to the TAP system in 2014 with a new transmission line and pump station.

POLICIES, PLANS & GOALS SUPPORTED

City Council Goals:

Essential Services – Drinking Water System (Water)

Value Services – Higher Priority: Emergency Preparedness and Address Climate Change

Climate Energy Action Plan:

Natural Systems: Air, water, and ecosystem health, including opportunities to reduce emissions and prepare for climate change through improved resource conservation and ecosystem management.

Strategy NS-2: Manage and conserve community water resources

Department Goals:

- Maintain existing infrastructure to meet regulatory requirements and minimize life-cycle costs
- Deliver timely life cycle capital improvement projects
- Maintain and improve infrastructure that enhances the economic vitality of the community
- Evaluate all city infrastructure regarding planning management and financial resources

BACKGROUND AND ADDITIONAL INFORMATION

At the September 3, 2019 Business Meeting, the Council approved entering into an Intergovernmental Agreement (IGA) with the cities of Talent and Phoenix to develop a TAP System Master Plan. In addition, the Council authorized a special procurement for professional services with RH2 Engineering to develop the TAP Master Plan ([Minutes](#), [Staff Report IGA](#), [Staff Report-Special Procurement](#)). Previously there has been no major consolidated planning work between Talent/Ashland/Phoenix regarding the operation, maintenance and improvement of the TAP system. The three communities have operated together based on original and amended TAP IGAs. These IGAs have defined roles and responsibilities for the three communities. After Ashland connected to the system it became apparent that updating the current operating IGAs and developing a TAP Master Plan would be extremely beneficial to the partner cities as the TAP system it is an essential supply for all three communities.

The formal TAP Master Plan process begin with a kickoff meeting between the partner cities in late September 2019. Since that time the consultant and partner cities have meet numerous times to review information developed during the planning process that address the goals of the Master Plan.

Goals:

- Documents the existing TAP system facility information;
- Confirms future supply demands for the next 40-year planning horizon;
- Assesses the condition and capacity of the existing system for future planning;
- Identifies operational constraints and recommends operational adjustments for improved efficiency;
- Develops options for meeting or revising the MWC Purchase Agreements to achieve compliance;
- Develops a Capital Improvement Plan (CIP) to meet future demands and major facility replacements;
- Assesses the financial impacts of the proposed CIP on each TAP Partner city;
- Provides recommendations to formalize the TAP system financing to guide the allocation of operational, maintenance, and capital costs between the TAP Partner cities; and
- Provides recommendations for developing a new TAP IGA between the TAP Partner cities including formalizing the TAP system financing.

The Master Plan is broken down into the following chapters:

- The **Executive Summary** provides a brief summary of the key elements of this WMP.
- **Chapter 1** presents the water service area and describes the existing water system.
- **Chapter 2** identifies existing water demands and projected future demands.
- **Chapter 3** describes the hydraulic model development and operational analysis.
- **Chapter 4** describes the system capacity evaluation.
- **Chapter 5** discusses the water supply analysis.
- **Chapter 6** presents proposed improvements, estimated costs, and implementation Schedule in the Capital Improvement Plan.
- **Appendix 6A** evaluates the financial impacts of the TAP CIP on each Partner City and discusses financing options.

Existing System:

The existing system chapter provides a comprehensive review of the TAP system facilities, including; categorizing the TAP agreements, providing original cost and capacity allocation information; documenting the TAP specific system piping, reservoirs and booster pump station facilities, system meter types and locations; defines asset remaining useful life; describes how the system is operated and managed.

TAP System Demands:

Each partner City recently went through a formal water master planning process in which the existing and future demands were vetted. Per the latest wholesale water agreement with the Medford Water Commission, delivery of potable water to the City is capped at 3 MGD. The current delivery capacity for Ashland is 2.13 MGD and within the next ten-year planning period it is the City's goal to expand to 3 MGD to meet supply redundancy goals outlined in the City's Water Master Plan. Additional Systems Development Charge (SDC) payments would be required by MWC in order to move forward with the capacity increase. The City of Ashland's current average day demand (ADD) and max day demand (MDD) per the adopted Master Plan are 2.91 MGD and 5.55 MGD respectively and forecasted to be 3.28 MGD and 6.56 MGD by 2040 (without the 20 percent conservation goal).

Model Development and Operation Analysis:

Hydraulic models were previously created and calibrated by RH2 as part of each City's master planning process. In order to model delivery of water to each community through the TAP system the water models of Talent and Phoenix were combined and calibrated. The modeling analysis helped to develop an understanding of how the system operates under normal conditions when only Talent and Phoenix are

utilizing the TAP source and the implications for the system when the City of Ashland begins to draw water from the TAP source.

TAP operations staff detailed three system operational challenges to evaluate and mitigate as part of the modeling alternative development. These challenges include drawing down the Talent storage reservoirs when Ashland is using the source, exceeding MWC defined maximum flow rates per the existing agreements and the need for Phoenix to pump water twice. A major component of modeling was to analyze different operational alternatives for the system to resolve these operational challenges and identify recommendations to improve efficiencies. These recommendations, detailed in chapter three, include pump operation changes, improvements to the telemetry system for enhanced operational communication between the partner cities and managing Ashland's draw during peak times until piping and storage improvements are constructed.

System Capacity Evaluation:

The capacity evaluation chapter evaluated the ability of the TAP system with established criteria to meet current and future capacity requirements. Based on the accepted operational changes from the hydraulic modeling analysis the system capacity was modeled for MDD through the 2070 planning period and system deficiencies were identified. The deficiencies are both in piping sizes and booster pump station capacities and are addressed as part of capital improvements for the TAP system. Several previously unknown deficiencies were identified for the near term, leading to capital improvement recommendations that require significant funding in the next twenty years. The TAP Pump Station is currently undersized to meet Talent's MDD and Ashland's 2.13 MGD at the same time and requires upsizing to meet this criterion and meet Ashland's future 3.0 MGD supply goals. Additionally, the TAP system will require a second connection to MWC to provide adequate capacity for all TAP Partner cities in approximately ten years. Coordination and development of this second connection with MWC is recommended to begin soon.

Water Supply Analysis:

The supply chapter details each partner cities' existing water rights and associated allocations along with the specific details for the existing water wholesale agreements with MWC. Appendix 5B provides recommendations for future Wholesale Water Purchase Agreements with MWC.

Capital Improvement Recommendations:

The capital improvement chapter is built from all the previous chapter's information and recommendations. The CIP chapter also includes a financial analysis and associated cost allocations for each partner City based on recommended CIP projects and maintenance activities. The CIP represents projects and associated costs not previously known until completion of this Plan.

Development of the CIP provided groundwork for two different options for supplying water to Ashland through the TAP system. The first option would be to construct a new pump station in Talent with an associated transmission line to the City's current connection point at Creel Road. This would be a dedicated City of Ashland facility and operated by Public Works. The second option would be to assist and cost share improvements to the existing Talent booster pump station along with construction of transmission mains. Either of these two options eliminate the pressure created on Talent's reservoir storage system when Ashland utilizes the TAP connection. A decision between these two options will require continuing work between the cities of Ashland and Talent.

Another major recommendation in the CIP is a second supply connection to MWC in North Phoenix Road to provide adequate capacity and supply redundancy to the TAP system. The City of Phoenix included this connection in their Water Master Plan. The cost burden of this secondary connection falls on the cities of Ashland and Phoenix, as Talent has already invested in their full capacity needs in the existing TAP infrastructure.

Other recommended projects include Ashland non-peak supply piping improvements for Talent and Phoenix, telemetry improvements, seismic resiliency improvements, and stand by power improvements.

IGA Update:

One of the goals of the Master Plan was to capture and develop critical infrastructure information to assist in developing a new operating IGA between the partner cities. The Master Plan contains recommendations regarding the structure and components for inclusion in a new IGA addressing management, maintenance, and cost sharing. Once the Master Plan is formally adopted by all the partner cities, staff expects to begin formal discussions for development of a new operating IGA.

Historic Background:

The City of Ashland has long since been involved in the planning and construction of TAP facilities as part of the intertie system. There has never been a formal Master Plan developed jointly between the partner cities of Talent, Ashland and Phoenix until now.

In the late 1990s, the cities of Talent, Ashland, and Phoenix (TAP Partner cities) collaborated in the development of a new water supply transmission project (TAP) to provide domestic water from the Medford Water Commission (MWC) to their communities. The City of Talent needed to replace its aging source of supply (water treatment facility on Bear Creek); the City of Phoenix needed to supplement its current supply from MWC; and the City of Ashland wanted access to a secondary emergency source of supply. In 2000, the TAP Partner cities entered an Intergovernmental Agreement (IGA) to construct the TAP supply system from the MWC to the City of Talent. The system initially only supplied water to the cities of Phoenix and Talent until 2014, when the City of Ashland installed additional transmission facilities to provide an emergency source of supply for its community.

Major milestones for Ashland:

1. 1998 Comprehensive Water Master Plan
2. Purchase of 1,000 acre-feet water right in Lost Creek
3. Initial investment into engineering/construction of intertie system
4. 2012 Comprehensive Water Master Plan-TAP Emergency Connection
5. TAP Intertie Pipeline and Pump Station Construction in 2014
6. 2020 Water Master Plan Update
7. 2020 TAP Master Plan

FISCAL IMPACTS

The total contract amount with RH2 for development of the TAP Master Plan is \$140,476. This total amount is split equally between Talent, Ashland and Phoenix (\$46,825/each). To date RH2 has billed for \$113,272. The remaining amount available will be utilized for Council presentations and finalizing the document.

Additional expenses associated with TAP maintenance and infrastructure improvements will be placed in the 2/6/20 year CIP document that is approved by Council each biennium along with requests for appropriations during the 2021-2023 Biennium budget process.

DISCUSSION QUESTIONS

Does the Council have any general questions regarding the TAP system or Master Plan document?

SUGGESTED NEXT STEPS

Suggested next steps include proceeding forward with the adoption process for the TAP Master Plan. The Councils for Talent and Phoenix will also receive presentations on the plan at some point in the future and after all final comments are addressed staff will bring back the Master Plan for adoption.

Also as specified in the document the cities of Talent, Ashland and Phoenix will begin negotiations for a new Intergovernmental Agreement (IGA) that details ownership, maintenance and cost sharing responsibilities for the system. This IGA will be brought before Council by staff at a date to be determined for discussion and approval.

REFERENCES & ATTACHMENTS

[TAP Master Plan](#)