Council Business Meeting

September 20, 2022

Agenda Item	Adoption of the Talent-Ashland-Phoenix Intertie Master Plan	
From	Scott Fleury P.E.	Public Works Director
Contact	Scott.fleury@ashland.or.us	541-552-2412

SUMMARY

Before the Council is the 2020 Talent Ashland Phoenix (TAP) Master Plan prepared by RH2 Engineering. Staff is requesting the Council adopt the final 2020 TAP Master Plan as the official planning document. The TAP Master Plan provides a first of its kind planning tool directly related to the TAP system and was developed by a partnership between all three TAP communities. The TAP Master Plan has been adopted now by the City of Phoenix and Talent in its current state. The Talent City Council has also weighed in on a critical capital construction alternative developed in the master plan and that information is presented below.

POLICIES, PLANS & GOALS SUPPORTED

City Council Goals:

- Essential Service-Drinking Water System
- Emergency Preparedness
- Address Climate Change
- Continue to leverage resources to develop and/or enhance Value Services

CEAP Goals:

- 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

PREVIOUS COUNCIL ACTION

The City Council previously approved an Intergovernmental Agreement (IGA) between Talent, Ashland and Phoenix for development of a TAP system specific master plan at the September 3, 2019 Business Meeting (Minutes, Staff Report) . The Council also approved a special procurement contract with RH2 Engineers to perform the scope of services necessary to develop a TAP System Master Plan at the same meeting (Staff Report). The outcomes of the TAP Master Plan were presented before Council at the October 5, 2020 Study Session (Staff Report).

BACKGROUND AND ADDITIONAL INFORMATION

Public Works has previously recommended to Council that major infrastructure master plans be updated on a regular schedule depending on need, typically between 7-10 years. 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.

Ashland's 1998 Water Master Plan projected daily peak water demand would exceed the treatment plant's capacity by 2016. At that time, the preferred solution was connecting into the Medford Water Commission (MWC) drinking water supply through an interagency agreement called TAP. The City entered into TAP with an agreement, invested $2.6 million to upsize transmission piping from Medford to Talent and purchased Lost Creek water rights as an initial investment for the TAP system. Following the City Council's decision in 2008 to delay the TAP project, the City began the process of evaluating different options to solve projected peak demand issues. The City adopted an updated Water Master Plan in 2012, which identified the need for a redundant water source during droughts, algae blooms, earthquakes, fire in the watershed, and other water quality issues that could restrict our limited water supply. The TAP project was included in the master plan for such emergencies. The project was originally scheduled for construction in 2015 through the Capital Improvement Program, but significantly diminished snow fall and winter drought conditions led Council to approve the TAP transmission line and pump station be constructed through an emergency procurement process in 2014. The TAP transmission line and temporary pump station were constructed in the summer of 2014 that provided the community with an emergency source of water. The permanent pump station was constructed and finalized in October 2016. In addition, the City negotiated payment of MWC System Development Charges (SDC) necessary for creating the actual connection to the TAP system.

The City has made a significant investment in the TAP system over the past two decades to provide the community with a redundant source of water. Such an investment requires collaboration and a formal master plan the cities of Talent, Ashland and Phoenix can use moving forward. The TAP System Master Plan has established a guiding document with maintenance and improvements put in place that are agreed upon by the three communities.

The goal of completing a TAP Master Plan included:

- 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;
- 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 and 6.56 by 2040 (without conservation goal-20%).

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 3 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.

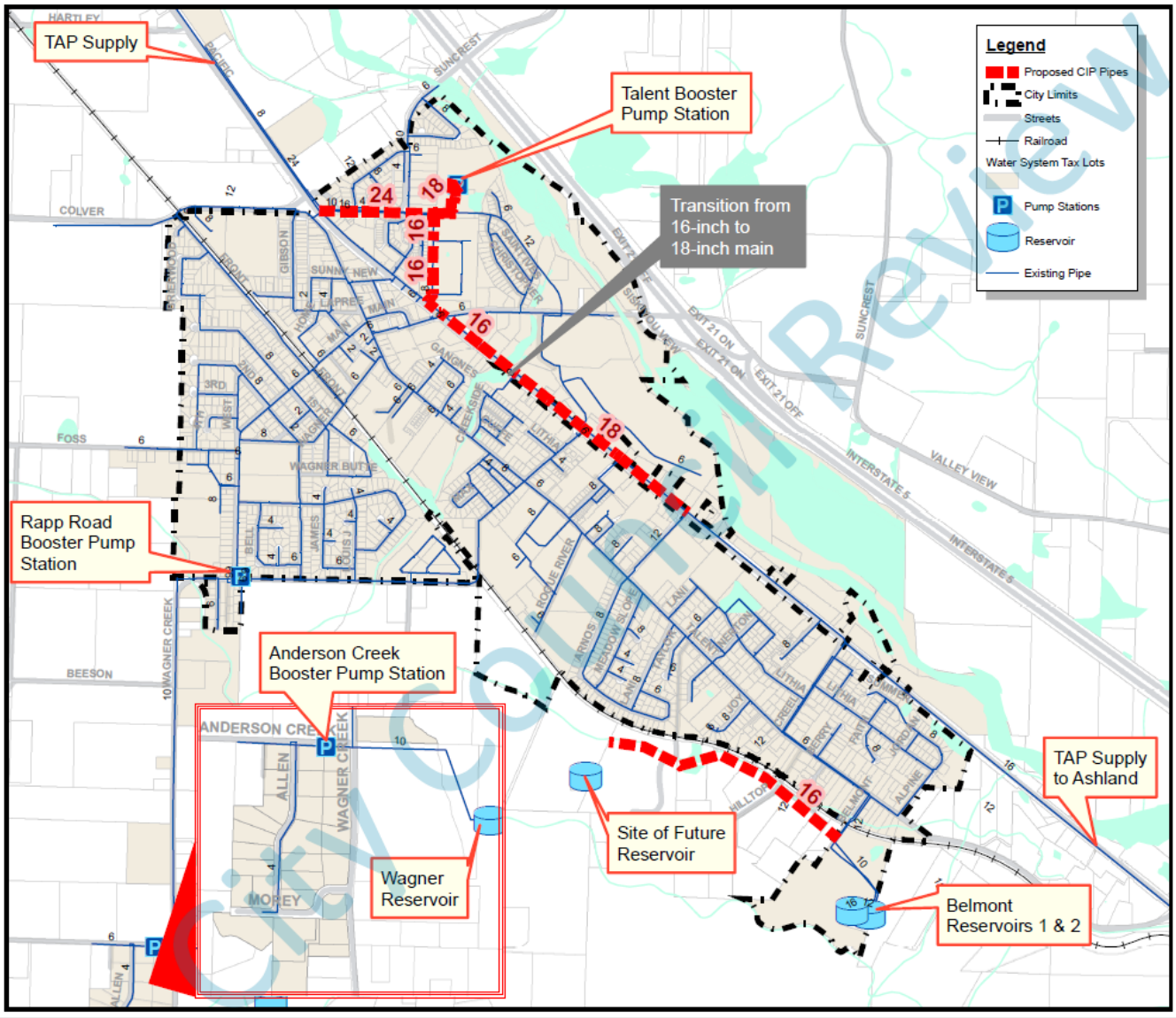
Another major recommendation in the CIP is a second supply connection to MWC in North Phoenix Road to provide adequate capacity and supply redundancy to the TAP system. The City of Phoenix has already included this connection in their Water Master Plan. The cost burden of this secondary connection falls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

Another critical improvement defined in the master plan is an emergency & non-peak source connection from Ashland to Talent and Phoenix. The system currently does not allow the delivery of a significant amount of water via gravity flow from Ashland to Talent and Phoenix. The non-peak connection would allow Ashland to provide Talent and Phoenix with non-peak water (approximately November through May) and water for emergencies. The gravity connection for non-peak would eliminate the Regional TAP system pump station operational time in this period, thus reducing greenhouse gas emissions from the TAP system and also provide an additional revenue source to the City via a wholesale water agreement.

Ashland-Talent Capital Improvement Options:
One critical capital improvement recommendation that required a resolution is in reference to how the City's of Talent and Ashland interact between two different improvement options. The Talent City Council has weighed on the alternative capital improvement options referenced below and their preference is to move forward with option #1. Options are detailed below.

Option #1: This option includes improvements to the Talent booster pump station and distribution piping, see figure 1 below. The estimated cost for this improvement is $2.61 million for improvements to the Talent booster station and associated pipelines (Ashland share).

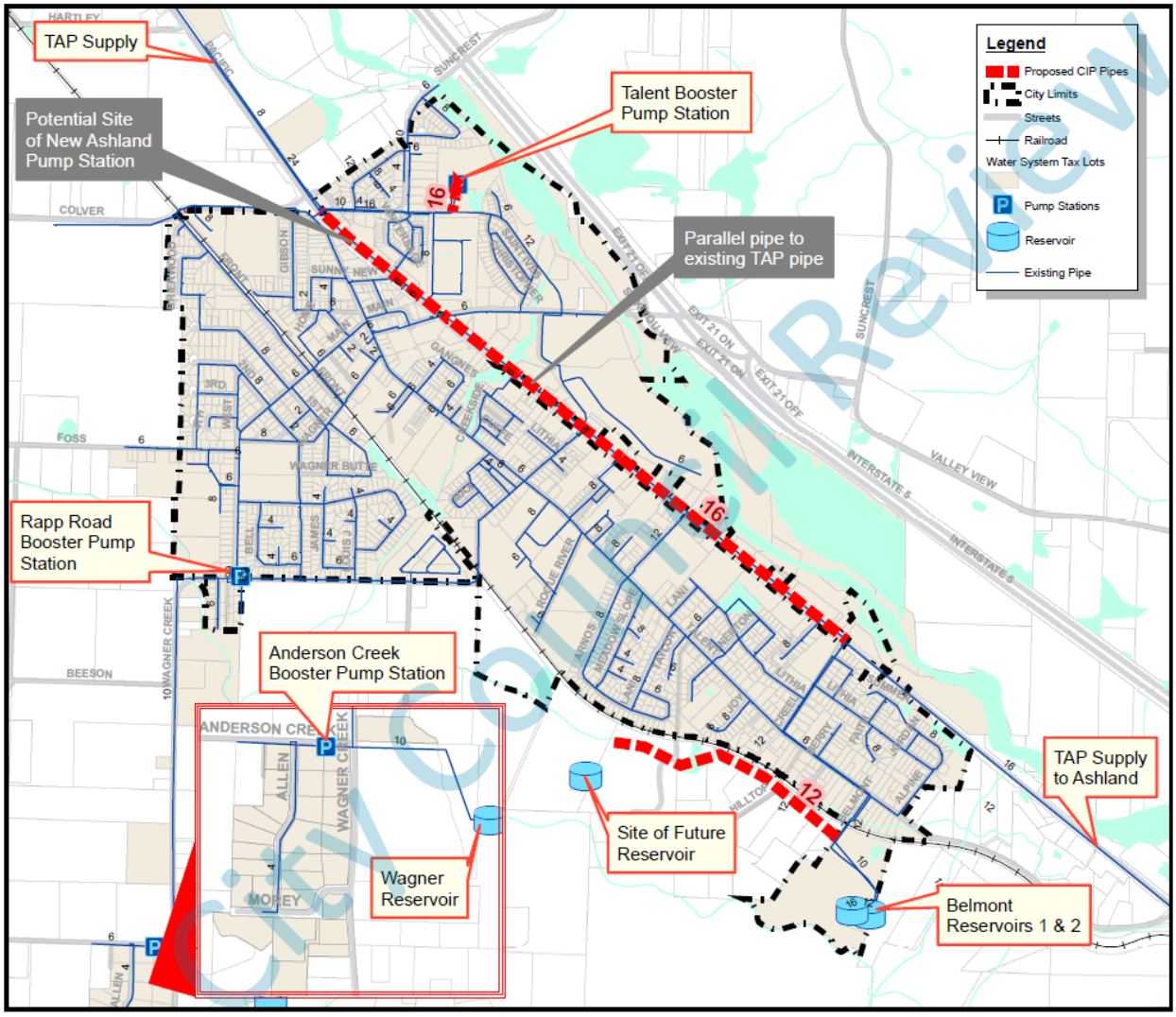
Figure 1: Option #1 TAP System Improvements



CITY OF ASHLAND

Options #2: This option includes construction of a stand-alone booster pump station in Talent along with additional transmission mainline connecting to the City's current transmission main along highway 99. This improvement would eliminate any connection to Talent's system and be fully owned and operated by the City of Ashland. The estimated cost for this improvement is $5.19 million for the pump station and associated piping (Ashland share only).

Figure 2: Option #2 TAP System Improvements



American Rescue Plan Act (ARPA) Funds:
The TAP Communities have received a $3 million dollar grant to engineer and construct numerous redundancy and resiliency projects defined in the TAP Master Plan. These projects include:

1. Non-peak/Emergency supply connection from Ashland to Talent and Phoenix.
    a. Pipeline and Pressure Reducing Valve connection around Ashland's TAP booster station to provide non-peak and emergency supply from Ashland to Talent and Phoenix
2. Backup power generator – Talent booster pump station
    a. Upsized generator for the Talent booster station to provide backup power needs to meet fire flow and max day demand for Talent and Ashland
3. Backup power generator – Ashland booster pump station

    a. New generator to provide backup power to the Ashland station
4. Booster pump upgrades to the regional pump station
    a. Upsize existing pumps to meet fire and max day demand needs into the future
5. Booster pump upgrades to the Talent booster pump station
    a. Upsize existing pumps to meet fire and max day demand needs for Talent and Ashland
6. Seismic retrofit of the Talent booster pump station
    a. Seismic resilience improvements to the facility to protect delivery of potable water to Talent and Ashland
7. Pipeline seismic enhancements
    a. Seismic enhancements to a critical transmission main
8. Booster pump station programming improvements (Telemetry)
    a. Coordinate SCADA improvements in the TAP system to ensure that booster stations and reservoirs are property coordinated

The Climate Policy Commission has reviewed the draft master plan and elements of the master plan have been designed to align with each city's conservation and climate goals. Talent, Ashland, and Phoenix all operate with a Water Management and Conservation Plan and water conservation is a focus for each community.

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. Staff from Talent-Ashland-Phoenix are currently coordinating the creation of a new IGA through a consultant lead process. Staff will update Council on the operating IGA update when appropriate as the TAP cities move through the process.

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 (Ashland):
1. 1998 Comprehensive Water Master Plan
2. Purchase of 1000 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 (2014)
6. 2020 Water Master Plan Update
7. 2020 TAP Master Plan

FISCAL IMPACTS

The TAP Master Plan final contract expense was $128,826 split equally among the communities creating Ashland's share of $42,942. The original total fee developed by RH2 Engineering for the TAP Master Plan is $140,476.

ACTIONS, OPTIONS & POTENTIAL MOTIONS

I move to adopt the 2020 TAP Master Plan.

I move to request changes to the 2020 TAP Master Plan (insert recommendation).

REFERENCES & ATTACHMENTS

Attachment #1: TAP Master Plan (Link)