



MEMORANDUM

TO: Mayor and Council Members

FROM: Greg Meszaros, Director, Austin Water Utility

DATE: February 12, 2010

SUBJECT: Water Treatment Plant 4 Update – Transmission Main

The purpose of this memorandum is to provide an update on the Jollyville Transmission Main ("Jollyville TM") from Water Treatment Plant 4 ("WTP4") project as a preface to the Recommendation for Council Action for professional engineering design services on the February 25, 2010 Council agenda.

Background

On September 25, 2008, Council authorized negotiation and execution of a professional services agreement with Black & Veatch Corporation, Austin, TX, for preliminary engineering and environmental investigations for the Jollyville TM. Official Notice to Proceed for this phase of the project was issued February 26, 2009.

The objective of Jollyville TM project is to design and construct approximately 7 miles of 84-inch diameter water transmission main from WTP4 to the existing Jollyville Reservoir and Pump Station ("Jollyville PS") by spring 2014. The main purpose of the preliminary engineering phase was to perform a detailed evaluation of feasible routes between WTP4 and the Jollyville PS, culminating with the submittal of a draft Preliminary Engineering Report (PER.) Figure 1 (attached) shows a map of four route alternatives that were considered.

The evaluation was based equally on four (4) main criteria: Community Impacts, Constructability, Cost, and Environmental Impacts. A decision support model was used to score each route alternative.

Community Impacts

Community outreach has been an ongoing effort since the start of the preliminary engineering. Outreach activities included:

- Updates on the Jollyville TM in the quarterly WTP4 newsletters and WTP4 website
- Timely answers to inquiries from the public on the Jollyville TM
- An open house targeting stakeholders in the neighborhoods and commercial areas surrounding the Jollyville TM on August 11, 2009 at Concordia University

With a two-way dialogue established with the neighboring community, decision support modeling was again utilized to identify the routes with the least potential community impacts, this included qualitative and quantitative analyses of:

- **Public Safety:** Public safety criteria included truck traffic through neighborhoods, emergency access restrictions, and proximity to schools/daycares.
- **Public Nuisance:** Public nuisance criteria included hours of operation, noise, dust and exhaust emissions, and number of residents and businesses impacted.

Constructability

Factors considered under constructability included tunnel shaft site constraints, future accessibility for operating and maintaining the transmission main, need for utility relocations, and needs within right-of-way.

Tunnel shaft locations are being evaluated based on environmental, real estate/cost, and schedule impacts, and will be finalized during design phase. One tunnel shaft location being evaluated would utilize property owned by the Parks and Recreation Department and would therefore require a Chapter 26 hearing. This property is currently unimproved and unnamed.

Cost

The preliminary cost estimate for the Jollyville TM resulting from the Preliminary Engineering study is 4% higher than the original estimate done in September 2008. This 4% difference is well within the budget parameters given the uncertainties and assumptions necessary at this point in the design process. The small increase is primarily due to the selection of the recommended route alternative that is entirely tunneled. The original budgetary estimate was based on a route that is one-third open cut construction, and two-thirds tunnel construction. The cost estimate from the Preliminary Engineering Study includes a 25% contingency to account for unknowns that arise as the final design progresses. As evidenced by the low bids received for the Downtown Tunnel project, the current bidding environment for tunnel projects is still very competitive. It is critical that the Jollyville TM project remain on schedule to take advantage of this market. In addition, the City plans to fully utilize the Construction Manager at Risk delivery method which has the potential to provide cost savings by preordering material to take advantage of current pricing and bundle design packages to accelerate the start of construction. Accordingly, the Jollyville TM is expected to be constructed at or below our current budget.

Environmental Impacts

Protection of groundwater and the Jollyville Plateau Salamander (JPS) has been a key focus of the WTP4 program and is one of the primary reasons the project includes an Environmental Commissioning (EC) component. The public has also expressed concern about possible impacts to groundwater in the Bull Creek watershed and to the JPS. In addition, the U.S. Fish and Wildlife Service (FWS) issued a finding in December 2007 listing the JPS as threatened or endangered under the Endangered Species Act as "warranted but precluded."

With these perspectives in mind, the goal of the Jollyville TM Project (and the EC process in particular) is to minimize and/or eliminate risks to the groundwater, JPS, and other endangered species and species of interest in the BCP and its surrounding areas. Potential project risks have been addressed as follows:

1. **Location of the Plant:** Potential risks to the JPS and Bull Creek were drastically reduced when the plant was moved from the Bull Creek Macrosite to the current Bullick Hollow site.

2. **Selection of the Least Environmentally Sensitive Route:** The focus on risk minimization/elimination has continued during the preliminary design phase of the Jollyville TM. The Project Team and the EC Team performed a limited analysis of possible shaft locations and tunnel routes to identify potential environmental impacts. This work was done by City and consulting geologists with extensive expertise in the geology and groundwater characteristics of this area. The evaluation included qualitative and quantitative analyses of:

- Groundwater/Geology: 5 criteria
- Surface Water: 3 criteria
- Flora/Fauna: 4 criteria
- Environmental Permitting: 3 criteria

Decision support modeling utilized the results of these analyses to identify the routes with the least environmental impact.

3. **Additional Groundwater Analyses:** The preliminary engineering and environmental investigations developed and utilized a technical dataset that facilitated the route selection process. Subsequent to this preliminary engineering phase, the City has begun work on a detailed assessment of groundwater in the vicinity of the WTP4 water transmission mains in order to supplement the data already collected. The results of this assessment will be incorporated into the final transmission main design so that potential impacts to groundwater, Bull Creek, and the JPS can be minimized or avoided.

The groundwater assessment will incorporate historical groundwater data that has been collected in the area over several decades. This historical data will be supplemented by information from recently installed groundwater wells and wells to be installed this spring. In addition to groundwater data, the assessment will incorporate extensive flow data from Bull Creek and area springs.

The groundwater, surface water, and geological information will be entered into a computer model to describe groundwater flow paths and volumes that may be encountered during construction of the Jollyville TM tunnels and access shafts. The model results will be used in the final design of the shafts and tunnels to avoid and minimize impacts to groundwater, and thus to the JPS and Bull Creek.

The results of the groundwater assessment and any mitigation efforts that result from the assessment will be shared with FWS staff. Staff will work with FWS to ensure that the JPS and its habitat are adequately protected.

We believe that this continuous focus on avoidance or minimization of risk, combined with inclusion of the best experts in Edwards Aquifer groundwater/geology and JPS biology on the Project Team, will protect groundwater quality, quantity, and the JPS during construction and operation of the Jollyville TM.

Based on the results of the evaluation, a preferred route was selected. The project team determined the selected route will minimize community and environmental impacts and be constructed within our current budget. The evaluation process and preferred alignment for the Jollyville TM was presented to the Water and Wastewater Commission on February 10, 2010.

For further information, please contact either myself or Stacie Long, Project Manager at 974-7172.



Greg Meszaros, Director
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cc: Marc A. Ott, City Manager
Rudy Garza, Assistant City Manager
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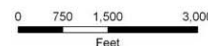
**JOLLYVILLE
PUMP STATION**

FM 620 RDN

A map of the Bull Creek area. The creek is shown as a blue line flowing through a green landscape. The text "Bull Creek" is written in blue at the top of the map.

WTP4 FINISHED WATER
ACCESS SHAFT

FM 2222 RD


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 Building a world of difference.®

Legend

	Tunnel		Major Roads
	Open Cut		Parcels
	Alternative 1		Water
	Alternative 2		Creeks
	Alternative 3		City of Austin Parks
	Alternative 4		BCP
	Pump Station		Potential Future BCP
	Reservoir and WTP 4		
	Old WTP 4 Site		

FIGURE 1