



## City of Phoenix

WATER SERVICES DEPARTMENT

July 17, 2014

Andy Goh, P.E.  
City of Tempe  
Public Works Department  
Engineering Division  
31 E. 5th Street  
Tempe, AZ 85281

**Subject: Val Vista Water Transmission Main Rehabilitation – Rural Road to River Drive City of Phoenix - Project No. WS85500424**

Dear Andy Goh:

The City of Phoenix (Phoenix) is in the process of rehabilitating a large diameter water transmission main that runs through the City of Tempe (Tempe). This letter serves to describe the need for the project, improvements involved, project location, reason for timing and sequence of construction.

### Description and Importance Waterline

The existing Val Vista Water Transmission Main (VVTM) is approximately 15 miles long and varies in diameter between 108 and 72 inches. It is the sole water supply from the Val Vista Water Treatment Plant (WTP) in Mesa to the Rio Salado Booster Pump Station on the Tempe border. The pipeline conveys water to Mesa and Phoenix and provides an emergency water service connection to Tempe.

### Project Purpose

The pipeline was constructed in 1975 of prestressed concrete cylinder pipe (PCCP). After catastrophic failures of this type of pipe in other areas of the county, it was discovered that relaxed design and manufacturing standards of PCCP during the time frame the pipeline was produced (1970 to 1985) and pressure transients within the system can lead to the advanced deterioration of the PCCP. Since 2004, Phoenix has been closely monitoring, accessing the condition, and rehabbing segments of PCCP pipelines. The VVTM Rehabilitation projects seek to restore the structural integrity of this critical pipeline by installing steel pipe liners within the existing pipeline. This project serves to rehabilitate the last segments of the waterline that runs through Tempe.

### Project Location

Three access pits/portals (Portals 4, 5, and 7) will be excavated in order to install liners into the existing pipeline. The existing pipe can be lined approximately 1,800 linear feet either direction from an access pit. The VVTM to be rehabbed as part of this project is located within the Rio Salado Parkway alignment, from River Drive (about a quarter mile west of Loop 101) west to Rural Road. See attached Figure 1 for an aerial showing the sections of the waterline to be rehabbed and the access pit locations.

### Project Schedule

Because the VVTM is a critical transmission main that serves many residents, the pipeline can only be offline during low water demands, typically mid-November to mid-March, and in order to

rehabilitate the pipeline, the entire VVTM has to be down. Unfortunately, this does not provide a lot of flexibility in the project schedule. Below are the tentative construction dates:

- Portal 7 – September 12, 2014 to January 21, 2015
- Portal 4 – January 5, 2015 to May 1, 2015
- Portal 5 – January 9, 2015 to May 7, 2015

There is a known utility conflict with Portal 7. Please note the work to relocate this will begin August 19, 2014 in order to keep the construction on schedule for this portal. The Contractor is currently potholing each portal location to validate that there are no additional potential conflicts.

#### Timing of Construction of Portal 7

Portal 7 is scheduled to be finished first because there is a pump station downstream of Portal 7. As soon as Portal 7 is finished, the VVTM upstream of Portal 7 can be brought back online, and water can be conveyed to Phoenix customers while Portals 4 and 5 are under construction. In addition, the Super Bowl is being hosted in the valley in early February 2015. This national event is posing a security situation which is requiring Portal 7 and the VVTM upstream of Portal 7 to be back online by mid-January.

#### Timing of Construction of Portal 4

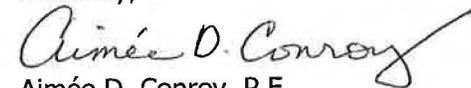
In working with the Arizona State University (ASU), the construction of Portal 4 is scheduled to start within ASU's Lot 59 just after the 2014 college football season ends. The construction of Portal 5 starts two weeks after Portal 4 is started. The entire VVTM must be back online by the end of April to meet all of Phoenix's water demands.

#### Impacts to Tempe Marketplace during Shopping Season

Of the 50+ events held in the Tempe area, the only major impact we have identified is the construction of Portal 7 is to holiday shoppers and traffic near Tempe Marketplace's south access roads. Concessions were discussed with the Tempe that part of the median between Perry Lane and Smith Road will have to be temporarily removed and paved in order to maintain traffic flow with minimal queue time. This would provide 3 traffic lanes on Rio Salado Pkwy through the area during construction of Portal 7, see attachment. Keeping traffic on the north side of the median will provide the most safe conditions to both commuters and construction workers while construction of Portal 7 occupies the lanes south of the median and continues serve as local access to the couple of directly affected properties. This traffic plan mimics that of the previous project that was built at Rio Salado Drive and River Road, immediately east of Tempe Marketplace. See attached collage of pictures of previously built access pits with traffic control. With Tempe's approval we will approach Tempe Marketplace with the traffic plan.

If you have any questions or need additional information, please contact myself at 602-534-2976 or Mario Brown at 602-262-7947.

Sincerely,



Aimée D. Conroy, P.E.

Deputy Water Services Director

Water Engineering Design & Construction Management

Enclosures

c: Project File



**WILSON**  
ENGINEERS

CITY OF PHOENIX  
WATER SERVICES DEPARTMENT  
VAL VISTA TRANSMISSION MAIN REHABILITATION

OVERALL PROJECT AERIAL

DATE: MAY 2014

AUTHOR: GL



City of Phoenix

FILE: FIGURE 1



**Two West Bound Traffic Lanes  
With Access To Lot**

- ← West Bound Traffic
- East Bound Traffic
- - - Traffic Control
- ▨ Area To Be Removed
- ↔ K-Rail

Median Removed

K-Rail  
(Maintains access  
to gate)

Median Removed

E Rio Salado Pkwy

S Smith Rd

S Pery Ln