

ARIZONA STATE LAND DEPARTMENT
URBAN PLANNING PERMIT: 47-111563
TASK I-B-4
ASSESS REGIONAL
WATER AND WASTEWATER ISSUES
FOR
HOUGHTON ROAD CORRIDOR

(11,835 ± Acres; Sections 1, 2, 11-14, 23-25, 33-36, T15S, R15E;
Sections 7, 18-19, 29-32, T15S, R16E;
Sections 1-4, 10-12, T16S, R15E;
Sections 5-8, T16S, R16E)

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WP# 073154

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EXPIRES 9/9/09

EXECUTIVE SUMMARY

This report represents a Preliminary Regional Water and Wastewater Assessment, prepared by Wood, Patel & Associates, Inc. (Wood/Patel), under contract to Westcor for a parcel of land ("Site") located in southeast Tucson, Arizona that is currently owned by the Arizona State Land Department (ASLD).

This assessment provides a referenced summary of existing infrastructure within and adjacent to the proposed development area for potable water, wastewater, and reclaimed water as outlined below:

- The Site is within the Tucson Water service area.
- The Site is located within sewer drainage basins under service by the Pima County Regional Wastewater Reclamation Department (PCRWRD).
- Estimations of water and wastewater demands for the Houghton Road Corridor (HRC) Site presented in this report include a combination of estimates and adherence to standards relevant to the site.
- Water infrastructure within and adjacent to the Site serves predominantly residential developments including Rita Ranch and Civano.
- Wastewater infrastructure within and adjacent to the Site serves predominantly residential developments including Rita Ranch and Civano.
- Reclaimed water infrastructure is located within the northern portion of the Site and serves the Civano residential development.

This assessment also includes anticipated infrastructure requirements to serve the development area and planned capital improvements impacting the development area as outlined below:

- Land use similar to that presented in the Houghton Area Master Plan (HAMP) analysis prepared by the City of Tucson was assumed for demand estimates within this report.
- Onsite water infrastructure improvements for full Site buildout include two additional reservoirs.
- A water source that provides adequate capacity at full buildout for the Site has not been specifically identified, nor is there a clear funding mechanism for these improvements.
- Further analysis, utilizing a land plan, and working collaboratively with Tucson Water is required to determine the water system's available capacity to serve an initial phase of development.

Per land use projections, an over-sizing of the wastewater lines flowing to the Pantano Sewer Interceptor (PTI) is anticipated in order to serve development areas to the east upon full Site buildout.

PROJECT INTRODUCTION

Site Description

This report represents a Preliminary Regional Water and Wastewater Assessment prepared by Wood, Patel & Associates, Inc. (Wood/Patel) under contract to Westcor for a particular parcel of land currently owned by the Arizona State Land Department (ASLD).

The ASLD parcel of interest consists of approximately 11,835 acres and is located in southeast Tucson, Arizona. The potential development area includes an approximately 8,049 acre area known regionally as the Houghton Area Master Plan (HAMP) area and an approximately 3,786 acre area located south of the Union Pacific Railroad (UPRR) line. Within this report, the area south of the UPRR will be referred to as the Southern Area. Collectively the HAMP and Southern Area will be referred to as the Site.

This assessment provides a summary of existing infrastructure within and adjacent to the proposed development area for potable water, wastewater, and reclaimed water. Also included are anticipated infrastructure requirements to serve the development area and planned capital improvements impacting the development area. Major opportunities and constraints to the development of the area, based on the need to expand existing or provide new water and/or wastewater facilities, are presented.

Relevant Reports

Previous studies relevant to water and wastewater within the project vicinity were provided for use in the preparation of this assessment. These studies, in addition to meetings with Tucson Water, Pima County, and ASLD, as well as supplemental information gathered from these agencies, were utilized in preparation of this document. The following documents are referenced throughout this report:

- *HAMP Wastewater Conceptual Plan (Final)*, by Malcolm-Pirnie for PCRWRD, February 2008. (Referred to in this document as HAMP Wastewater Report.)
- *HAMP Potable and Reclaimed Water Conceptual Plan (Draft)*, by Malcolm-Pirnie for Tucson Water, July 2007. (Referred to in this document as HAMP Water Report.)

- *2006 Metropolitan Area Facility Plan Update*, by Brown and Caldwell for PCWMD. (Referred to in this document as Facility Plan Update.)
- *Houghton Corridor – Phased Disposition Scenarios Report*, by URS for ASLD, June 2006. (Referred to in this document as Scenarios Report.)
- *HRC Wastewater Master Report*, by URS for ASLD, April 2005.
- *HRC Water Master Report*, by URS for ASLD, April 2005.

This report is primarily based on information communicated or furnished by others, and the professional opinions presented herein are based on that information. While Wood/Patel believes all presented information to be true, no warranties are provided or offered.

CONCLUSIONS AND RECOMMENDATIONS

WATER

- Need to determine the remaining capacity in the existing water system to potentially serve an initial phase of development. This will require further analysis utilizing a land plan and working collaboratively with Tucson Water. Water supply may be available from the 24" Houghton Road transmission line and/or the Rita Ranch wells.
- A water source that provides adequate capacity at full buildout for the Site has not been specifically identified. The HAMP Water Study identified three alternatives for providing sufficient capacity for the projected demands for not only the HAMP area, but also for the related areas of Rita Ranch and Santa Rita Bel Air. Alternative 1 was the lowest cost on a system wide basis relative to both capital and operations and maintenance. Offsite costs for this alternative are a combined \$144.9 million for transmission mains and boosters. This is in addition to the onsite transmission mains and booster costs of \$30.1 million. Tucson Water has indicated a 6 to 9 year postponement of these Capital Improvement Program (CIP) improvements.

A funding mechanism for these improvements in advance of the CIP is unclear. If 8,000 acres of the Site is developed residential with a density of 3 du/acre, this would result in a per lot water infrastructure burden of \$7,292. The System Equity Fee per 1-inch meter could account for \$3,820 of this cost while the remaining \$3,472 would require an alternative funding mechanism, for example, a per lot special assessment fee. Water source and related funding should be further investigated as a collaborate effort between the relevant agencies and the applicant.

It is unknown if Tucson Water will allow the service of Zone F1 to be supplied through the proposed Zone G reservoir utilizing a pressure reducing valve. Future efforts need to coordinate with Tucson Water to determine if this option is allowable with the potable water system.

WASTEWATER

- Utilize the remaining capacity in the existing sewer system to potentially serve an initial phase of development. This will require further analysis utilizing a land plan and working collaboratively with PCRWRD to determine upgrades to the sewer interceptors as described in the HAMP Wastewater Report.

- Ensure current wastewater treatment planning takes into account the development of the Southern Area. This portion of the Site is located south of the Union Pacific Railroad and includes an area sewer basin referred to as the Southlands. Similar to the Houghton Road Corridor, the Southern Area and the Southlands sewer basin are primarily undeveloped and have been identified as an area of growth for Tucson. In order to prepare for this growth, PCRWRD is currently conducting a study that would identify potential locations and anticipated service area for a new wastewater treatment facility.

- The existing 18" sewer line within Valencia Road could serve initial developments without a significant investment in infrastructure. An initial development would be located within the area beginning one mile south of Valencia Road to approximately one-half mile north of Valencia Road, between Harrison Road and Houghton Road.

- Route wastewater flows to better utilize the Pantano sewer interceptor (PTI) capacity by adjusting the sewer sub-basins, per the recommendations within the Regional Water and Wastewater Assessment.

- It is not anticipated that the two (2) 10-inch sewer lines within the Mesquite Ranch development, located at the north boundary of the site, will have capacity to convey wastewater flows from the Site. Further coordination with Pima County will be required to verify pipe capacity limitations.

- Further wastewater investigation will be required for the Southern Area. The *HAMP Wastewater Report*, *HRC Wastewater Master Plan*, and the *2006 Facility Plan Update* do not identify wastewater flows from the Southern Area, due to limited scope and the TAZ populations in that area being zero. Once a land plan is developed, it will be critical to identify wastewater flows from this area to determine if upgrades to the SEI and/or wastewater treatment plants will be required. Coordination with PCRWRD is important in planning for wastewater service to this area.

RECLAIMED WATER

- Existing reclaimed water infrastructure is located within the northern portion of the Site and currently serves the Civano residential development. Once a land plan is developed, reclaimed water demand within the HRC development can be determined. The source for reclaimed water to the Site will be dependent on level of demand and availability from existing sources and potential future wastewater treatment facilities in the vicinity.