



MEMORANDUM

Date: January 15, 2013

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Siting of the Southeast Area Subregional Wastewater Reclamation Facility**

Regional Wastewater Reclamation Department staff have been engaged in a siting study to identify the ideal location for a future 6 million gallon per day (gpd) wastewater reclamation facility. The siting study has been ongoing since 2011, and 10 different areas were examined.

An area along the southeast interceptor sewer, known as Property 7 at 5280 E. Valencia Road, has been identified as the ideal location for such a facility. This site is already owned by the County and provides the lowest overall total cost for development of the facility. A description of the property and the characteristics that make its location the most favorable is attached.

This property, adjacent to Valencia Road and the Julian Wash, was recently annexed by the City of Tucson. I have notified the City of our plans to construct a 6 million gpd wastewater reclamation facility on this property.

CHH/dph

Attachment

c: John Bernal, Deputy County Administrator for Public Works
Jackson Jenkins, Director, Regional Wastewater Reclamation
Eric Wieduwilt, Deputy Director Planning and Engineering, Regional Wastewater
Reclamation Department



MEMORANDUM

Public Works Administration



DATE: January 10, 2013

TO: C. H. Huckelberry
County Administrator

FROM:  John M. Bernal
Deputy County Administrator

RE: Southeast Area Sub-regional Wastewater Reclamation Facility – Preferred Location

Attached is a January 8, 2013 memorandum from Jackson Jenkins, Director, Regional Wastewater Reclamation Department pertaining to the further evaluation of a location for a southeast area sub-regional wastewater reclamation facility.

As noted in the report attached to this memorandum, the location of Pima County-owned property identified as Siting area 1, Property 7, at 5280 E. Valencia Road is a site of approximately 15.14 acres that is a desirable location for a future wastewater reclamation facility. As noted in this report, the institutional and community criteria together with accessibility for infrastructure have all been evaluated for the various location options and this particular property is identified as the preferred location for a future wastewater reclamation facility.

Given that this property has recently been annexed into the City of Tucson, I believe the next step would be to advise the City of Tucson of our intention to proceed with the further planning and development of a project to implement this future wastewater reclamation facility.

If you have any questions regarding this matter, please do not hesitate to contact me.

JMB:jgs

Attachment

Cc: Jackson Jenkins, Director, RWRD



PIMA COUNTY
REGIONAL WASTEWATER RECLAMATION DEPARTMENT
201 NORTH STONE AVENUE
TUCSON, ARIZONA 85701-1207

JACKSON JENKINS
DIRECTOR

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January 8, 2013

TO: John M. Bernal, P.E., Deputy County Administrator – Public Works
FROM: Jackson Jenkins, Director - RWRD 
SUBJECT: **Evaluation of 5280 E. Valencia – Addendum to the Southeast Area Sub-Regional Wastewater Reclamation Facility Study (Malcolm Pirnie, Aug. 2011)**

Staff has completed an evaluation of the property identified as 5280 E. Valencia for its suitability as a sub-regional wastewater reclamation facility (*see attached*). The site has access off of Valencia Road, is close to the Southeast Interceptor sewer (SEI), and is large enough to cover the footprint of a hypothetical 6 MGD treatment facility.

Because the site is further downstream along the SEI than most of the other locations evaluated, it has the ability to treat more wastewater from the interceptor. This location is also close to a possible future reclaimed water system alignment along Valencia Road, which would allow for a short connection to the future reclaimed water system heading to the east, towards the planned SHARP recharge facility.

The two major site constraints are that the site overlaps the 100-year and 500-year flood plain boundaries and the SEI is on the opposite side of the Julian Wash. Imported fill can mitigate the flood plain elevation issue, and a pump station and force main would be required on property next to the SEI to pump the wastewater under the Julian Wash to this location.

As with all locations evaluated, the ultimate use of the treated water generated by this type of facility should be developed before finalizing site selection. The two leading options are to develop a local recharge/recovery facility or directly pump the water into the reclaimed water system. Both options require evaluation of additional land and infrastructure needs above those for the reclamation facility.

Given all factors associated with selecting a potential site for a future reclamation facility, this location has some of the most favorable characteristics and should be considered for additional analysis of treated water management.

Attachment

c: Eric Wieduwilt – Deputy Director Planning and Engineering
Ed Curley – Consultant

Addendum 1

Siting Area 1, Property 7: 5280 East Valencia

Siting Area 1 – Wilmot Road / I-10 Area

The Siting Area 1 is described within section 3.2, page 3-2 of the Southeast Area Sub-Regional Wastewater Reclamation Facility Study, completed by Malcolm Pirnie, Inc. in August 2011.

Property No. 7: 5280 East Valencia Road

Property No. 7, shown in Figure 1 is bounded by Valencia Road to the west, the Union Pacific Railroad tracks to the north, a drainage way to the east, and Julian Wash to the south. The subject parcel is made up of five parcels that comprise 15.14 acres. The five parcels are vacant; approximately 50% of the land area is designated as FEMA Zone A (100-year), with the remaining land area being designated as Zone X (500-year). The property is located within the City of Tucson limits with a mixture of I-1 (Industrial) and R-1 (Urban Residential) zoning. The only vehicular access to the site is from Valencia Road, which is limited due the Valencia Road overpass. Figure 2 shows the available footprint for a 6 MGD facility leaving the site in compliance with the 350-foot setback. The 350-foot setback is met with the inclusion of the Valencia Road R.O.W., Julian Wash, and the Union Pacific Railroad tracks. The area within the buildable portion of the site comprises 8.5 acres. The topography is flat and is located adjacent to the SEI.

Qualitative Evaluation

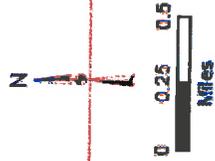
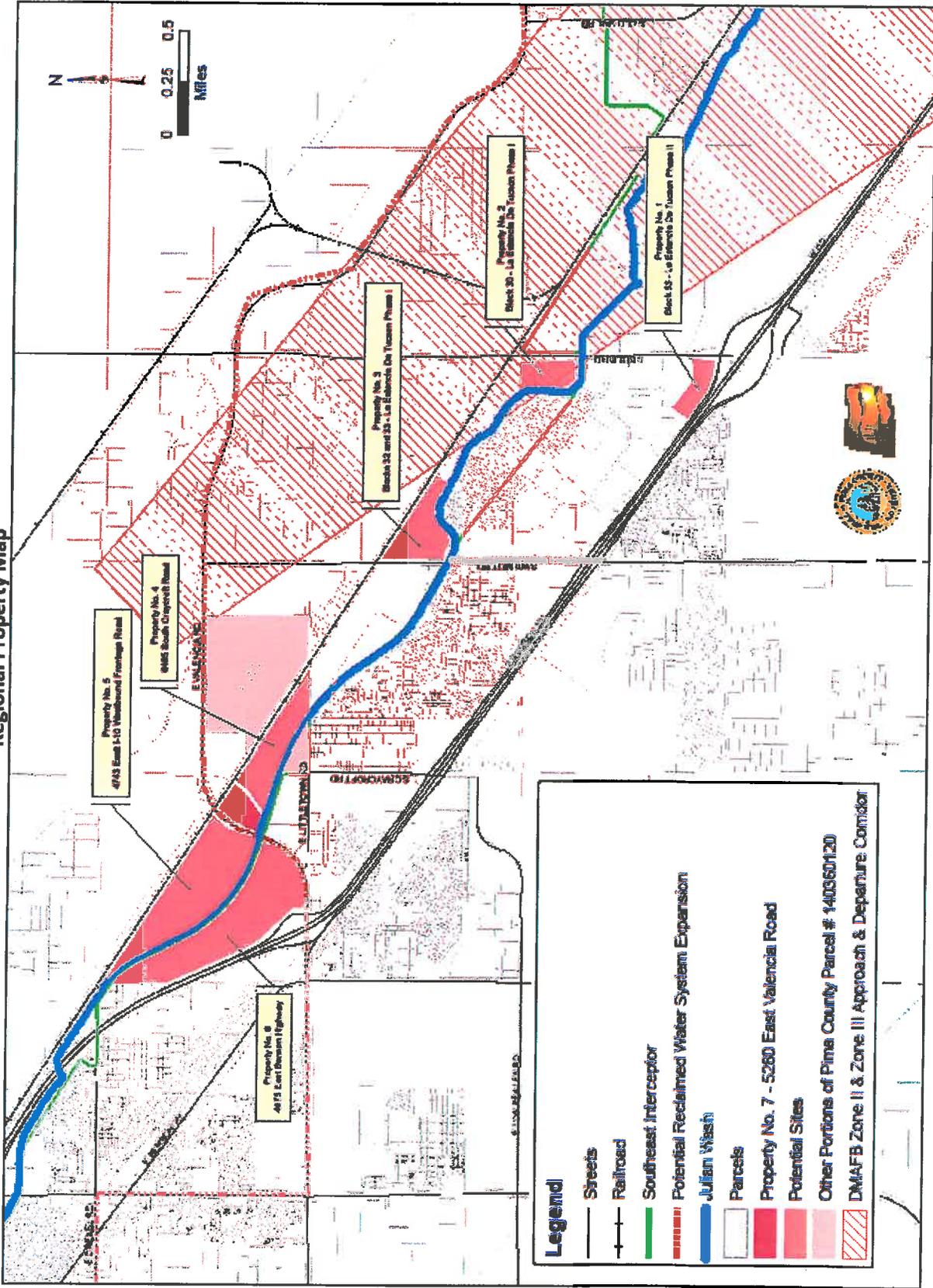
Institutional & Community Criteria Table

Siting Area	Property No.	Description	Adequate Space for 350-foot Buffer	Environmental / Cultural			Airspace	
				Floodplain	Endangered Species	Riparian Habitat	Cultural Resources	FAA Guidance
1	7	5280 E. Valencia Road	✓	✓	✓	✓		✓

Criteria for Accessibility to Infrastructure Table

Siting Area	Property No.	Description	Interceptor is Accessible (SEI or PTI)	Reclaimed System is Accessible	SHARP is Accessible	Potential Reuse Sites are Accessible	Convenient Vehicle Access	Electrical Power Service is Accessible
1	7	5280 E. Valencia Road	✓	✓			✓	✓

Regional Property Map



Property No. 5
4742 East 1-10 Unimproved Frontage Road

Property No. 4
4841 South Clayville Road

Property No. 8
4815 East Division Highway

Property No. 3
Block 32 and 33 - La Estrella De Tucson Phase I

Property No. 2
Block 30 - La Estrella De Tucson Phase I

Property No. 1
Block 35 - La Estrella De Tucson Phase II

Legend

- Streets
- +— Railroad
- Southeast Interceptor
- Potential Reclaimed Water System Expansion
- Julian Wash
- ▭ Parcels
- ▭ Property No. 7 - 5260 East Valencia Road
- ▭ Potential Sites
- ▭ Other Portions of Pima County Parcel # 140360120
- ▭ DMABF Zone II & Zone III Approach & Departure Corridor



Site Issues Criteria Table

Siting Area	Property No.	Description	Accommodate 6 MGD Sequencing Batch Reactor	Accommodate 6 MGD Membrane Bioreactor	Integrated Lift Station Site	Access to Maximum Future Flow	Has Significant Existing Flow	On-site Setback/Buffers	Adjacent Residential Neighborhoods
1	7	5280 E. Valencia Road	✓	✓	✓	✓	✓		

Cost Evaluation

Property-specific Cost Opinions – Siting area 1, property 7

Property 7 is comprised of five parcels that are currently owned by Pima County. Sufficient land exists to construct and operate a WRF on this site and maintain the necessary 350-foot setbacks. The site can fit either the 6 MGD SBR or 6 MGD MBR facility. A raw water lift station and force main will be required to convey flows from the SEI, under the Julian Wash to the site.

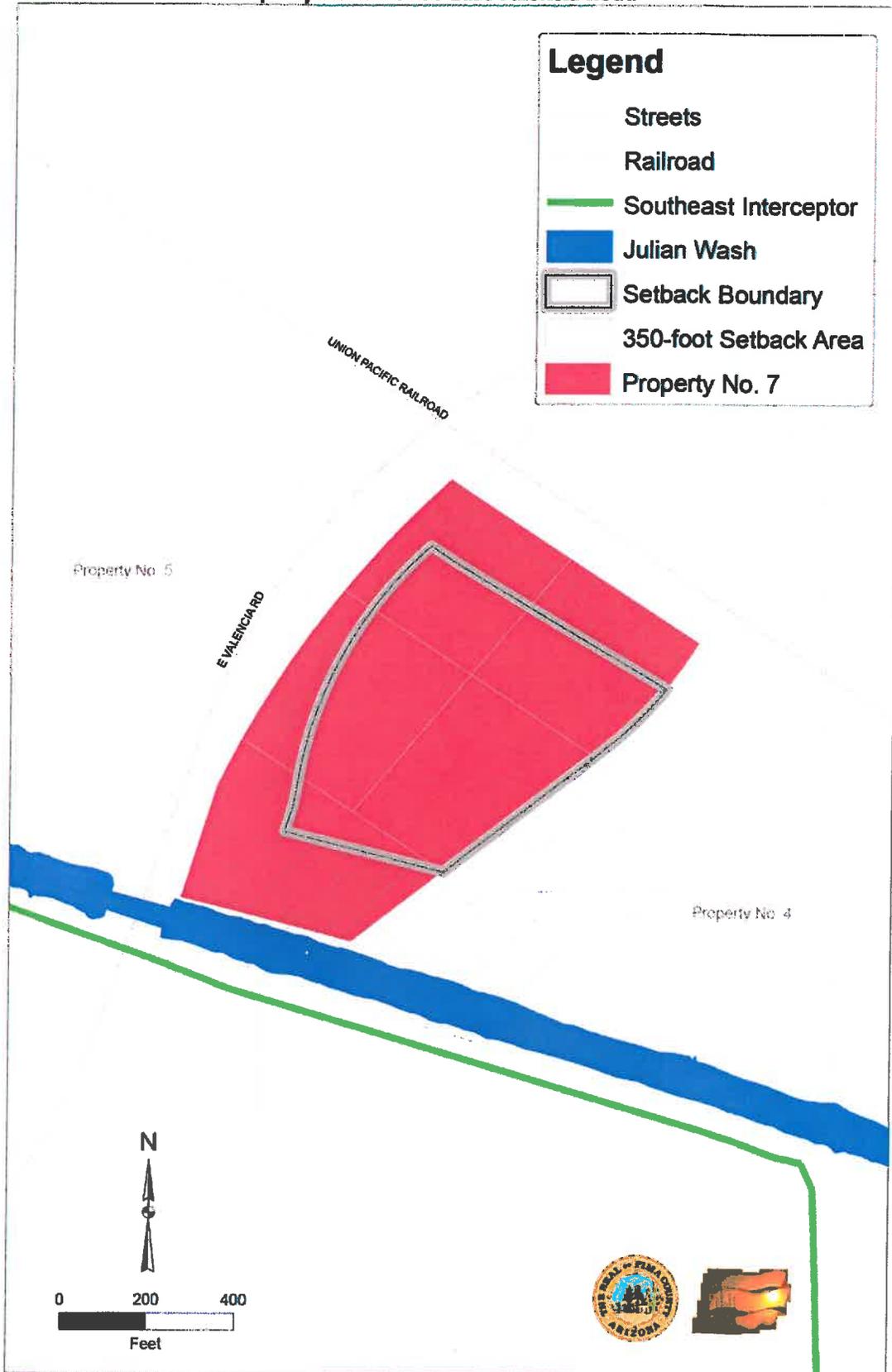
Conceptual Cost Table – Siting area 1, property 7

Capital Cost	
WRF Capital Cost (6 MGD SBR)	\$ 66,130,000
6 MGD Raw Wastewater Lift Station and Force Main	\$ 1,556,000
6 MGD Reclaimed Water Forebay, Pump Station and Pipeline	\$ 8,155,000
Total Capital Cost	\$ 75,841,000
Annual Operations and Maintenance Costs	
WRF O&M Cost (6 MGD SBR)	\$ 2,650,000
Raw Wastewater Lift Station O&M Cost (6 MGD)	\$ 12,100
Reclaimed Water Pump Station O&M Cost (6 MGD)	\$ 51,100
Total O&M Cost	\$ 2,713,200
Annualized Costs	
Annualized Capital Cost (15 Years @ 5 percent)	\$ 7,307,000
Total O&M Cost	\$ 2,713,000
Total Annualized Cost	\$ 10,020,000

Property No. 7 – 5280 East Valencia Road

Legend

- Streets
- Railroad
-  Southeast Interceptor
-  Julian Wash
-  Setback Boundary
-  350-foot Setback Area
-  Property No. 7



Cost Evaluation Summary Table

	Capital Cost	Annual O&M Cost	15-year Present Worth
Siting Area 1, Property 2 (6 MGD MBR)	\$ 89,688,000	\$ 3,246,000	\$ 123,383,000
Siting Area 1, Property 3	\$ 77,180,000	\$ 2,710,000	\$ 105,313,000
Siting Area 1, Property 4	\$ 75,841,000	\$ 2,713,000	\$ 104,005,000
Siting Area 1, Property 5	\$ 75,343,000	\$ 2,717,000	\$ 103,548,000
Siting Area 1, Property 6	\$ 74,855,000	\$ 2,717,000	\$ 103,060,000
Siting Area 1, Property 7	\$ 75,841,000	\$ 2,713,000	\$ 104,005,000
Siting Area 2, Property 1	\$ 78,866,000	\$ 2,833,000	\$ 108,281,000
Siting Area 2, Property 2	\$ 78,866,000	\$ 2,833,000	\$ 108,281,000
Siting Area 2, Property 3 (6 MGD MBR)	\$ 91,634,000	\$ 3,257,000	\$ 125,449,000
Siting Area 3, Property 3	\$ 70,606,000	\$ 2,716,000	\$ 98,804,000

Site Data Sheet

Siting Area	1	
Property	7	
Description		Pima County Property
Current Owner		Pima County Property
Area (acres)		15.14 (approximately 8.5 acres is available for construction)
Maximum WRF Capacity Footprint Supported (MGD)		
Membrane Bioreactor	6	
Squenching Batch Reactor	6	
Interceptor Served		Southeast Interceptor
Distance to Interceptor (miles)	0	
Distance to Existing Reclaimed System (miles)	5.4	
Distance to SHARP (miles)	9.1	
Distance to Future Reclaimed System (miles)	0.8	
Vehicle Access		South - None North - None East - None West - Valencia Road
Summary of Pros and Cons of Site:		
Pros:		<p>Property is adjacent to the Southeast Interceptor</p> <p>Site is large enough to accommodate 6.0 MGD facility</p> <p>Adjacent to the Union Pacific Rail Road tracks, Julian Wash, and a County Park (Thomas Jay), providing a buffer from residential areas</p> <p>Pima County owns the property</p> <p>Down-gradient location serves more existing sewer flows than up-gradient sites</p> <p>Easy access from Valencia Road and Interstate 10</p> <p>There are no adjacent residential properties</p> <p>Further from Houghton reclaimed water reservoir and SHARP site</p> <p>Craycroft Elementary and Lauffer Middle School are located south of the site</p>
Cons:		