

Appendix Z-A

**Mt. Lemmon Service Area Watershed Study and Wastewater Management Plan
Public Meeting Summary
September 8, 2007 Public Meeting and Open House
Mount Lemmon Community Center
10am-2pm**

A public meeting was held on Sept. 8, 2007, at the Mt. Lemmon Community Center in Summerhaven, to present study findings to the community. The public meeting was publicized with an announcement in the August edition of The Mt. Lemmon Echoes, the Summerhaven community newsletter; a jurisdictional letter sent to local area government officials on August 22; a postcard invitation sent to Mt. Lemmon property owners, residents, stakeholders and other interested parties on August 23; a news release sent to area media outlets on August 24; newspaper advertisements on August 25 in the Arizona Daily Star and Tucson Citizen; and a notice circulated by e-mail to interested parties.

Based mainly on the sign-in sheets, 25 members of the public and 20 members of the study team (including Pima County, U.S. Forest Service (USFS) and consultant staff) attended the meeting. Attendees were asked to sign-in and were given a packet that included an agenda, comment form, a print-out of the PowerPoint presentation and handout regarding water reuse in Cloudcroft, NM. There were a few community members present who did not sign the sign-in sheet.

After Pima County's consultant (EEC) gave a presentation on the report, a panel of experts, including Pima County, USFS and consultant staff, addressed questions and comments from the public. The topics raised are reflected by the following community questions (CQ) and panel response (PR):

Environmental Quality

- CQ: What is the quality of effluent from septic versus WWTF?
PR: The quality of septic system effluent is generally not as good as the current WWTF.
- CQ: How is the sewage currently being treated?
PR: The current treatment plant uses a biological process to degrade the waste. The resulting effluent is disposed of in a spray field located in the San Pedro watershed. Biosolids created in the process are trucked off the mountain and further processed at the Ina Road WWTF. The wastewater is treated to secondary standards and the equivalent of B classification.
- CQ: Can B-quality effluent be used for fire-fighting?
PR: In cases of emergency, B quality effluent can be used for fire fighting.

Water Resources

- CQ: Have you looked at graywater systems?
PR: Individual graywater systems are currently allowed under ADEQ rules. Individual homeowners can install graywater systems on private property, however they still have to have an alternative, permitted method for treating the graywater. Greywater systems do not reduce the size of individual on-site treatment systems.
- CQ: If having a storage tank right away would help with fire and save water, how can we get it now? I want to support that. It is important.
PR: Pima County's first step upon receiving the consultant's report is to develop an implementation plan for improvements to the wastewater collection, treatment, and disposal system. The community's desire to have an effluent storage tank will be considered when Pima County develops the implementation plan. (A written comment was also received from a resident in attendance at the meeting requesting that Pima County make this a priority.)
- CQ: What is daily flow rate for potable water?
PR: Mike Stanley from Mt. Lemmon Water Improvement District answered this question.
- CQ: Is there enough water to reach the Wastewater Treatment Facility (WWTF) limit of 15,000 gallons per day (gpd)?
PR: Mt. Lemmon Water Improvement District has enough water rights to provide in excess of 15,000 GPD (35 acre feet per year), however Mt. Lemmon's water system is highly dependent on precipitation on the mountain. A hydrogeologic study was recommended by this study to assess the source of drinking water and better predict how much water is normally stored in natural subsurface formations and to estimate what would happen during a prolonged drought. Our study estimates that demand will approach water rights within the 20 year planning period but little data is available on which to plan. A comprehensive water resources assessment is needed.
- CQ: A 10-year water consumption study was recently done noting an average use of 50 gpd instead of 150 gpd per household. You should use that existing figure.

PR: As the County moves forward on this project in the implementation stage we will integrate this information.

Public Acceptability

- CQ: We need to know what needs to be done.

PR: No Response Required

Regulatory Compliance

- CQ: What is limitation of WWTF – where is the choke point? What exactly limits the discharge?

PR: As we illustrated in the slides, there are many choke points. The first choke point is the discharge limit on the sprayfields. There are several permit limits which apply – 12,500 gpd daily flow, 17,000 gpd peak flow and the rating of the current facility to treat 15,000 gpd. (diagram from presentation was used for reference)

CQ: If we have more sprayfields, can we dispose of more?

PR: Yes and no. It is possible to install more sprayfields if the USFS would permit them. The existing spray field in the San Pedro watershed was intended as an interim solution. The USFS prefers to see the effluent returned to the Sabino Creek watershed and the USFS have received input from stakeholders including the Santa Catalina Mountain Partnership regarding the current disposal practice which transfers water and wastewater from one watershed (the watershed of origin) to a different watershed.

- CQ: Can we modify the USFS permits?

PR: Possibly, however the USFS would prefer to see the effluent returned to the Sabino Creek watershed and stakeholders have voiced that the wastewater should be returned to the Sabino Creek watershed. So it is possible that this revision would not be accepted. There is also possibility of legal action over the current disposal practice.

- CQ: Are those located within 200 feet of the conveyance system required to hook up?

PR: PDEQ currently will allow waivers for property owners that can show that connecting to the existing conveyance system would be a financial hardship.

- CQ: Will people outside the Sewage Planning Area (SPA) be able to connect?

PR: People located outside the SPA will be allowed to connect, however Pima County does not consider these properties to be a priority for connection. These properties are generally larger, better suited for on-site systems, and further from Sabino Creek.

- CQ: We are relatively close to the mainline (just barely outside the limit) and want to connect. Can we? How do we go about doing that?

PR: Please contact Pima County Wastewater (Don Wilhoit) to explore this further. (Specific contact information was taken from this resident by Ed Curley and was provided to Gordley for inclusion in meeting materials and is presented as a comment at the end of the summary.)

Financial Viability

- CQ: Is the County spending \$7 million for only 77 lots? That's a big undertaking for so few people.

PR: \$7 million is a lot of money and that is why Pima County is studying this project and carefully proceeding with plans. Hopefully the resulting projects will benefit more than just the properties that connect to the wastewater treatment system. Some of the recommended steps such as effluent storage, reforestation, will benefit the entire Mt. Lemmon community as well as visitors to the area.

- CQ: A past letter from the County regarding Carter Canyon Improvement District connection cost per lot was \$13,000 in 2004, plus other costs. A Sewer Improvement District (SID) would cost each homeowner \$20,000, which is estimated to be \$210 per year.

Staff Response: Pima County does not impose sewer improvement districts on neighborhoods. If a sewer improvement district were to be established it would be voted in by the property owners.

- CQ: Who gets to vote for a SID?

PR: The people who own land within the designated SID would be able to vote to decide if they wanted a SID.

- CQ: What is the earliest best guess that we could connect to a conveyance system, and what would the cost be?
PR: The cost of any new sewer conveyance system will be highly dependant on the length and location of the sewer main. The earliest someone could hook up to a new sewer conveyance system could be five years or more.
- CQ: Who is going to pay for the sewer line and how much will it cost?
PR: The cost of any new sewer conveyance system will be highly dependant on the length and location of the sewer main and conditions. The conceptual plan presented is preliminary and roads are unimproved. If the County builds a sewer conveyance system, then sewer users will eventually pay for the construction. This cost may be offset by any grants or alternative funding. If a group of residents decides to create an improvement district and votes to create this and build conveyance lines, then the residents that live within the improvement district would pay for the sewer line.
- CQ: What will we be taxed for if we do not hook up to the system? Will we have to pay for a conveyance system even if we do not hook up?
PR: Currently, Pima County Wastewater receives operating funds from all County sewer connections. Rates throughout the County are the same regardless of where a property is located. Only property owners who are connected to the sewer system pay fees to Pima County Wastewater. We do not anticipate any change to this system.

Meeting Demand

- CQ: Advertise County septic visits in the Summerhaven newsletter, and visit monthly instead of quarterly. Are there engineers who can help us evaluate what systems are in the ground?
PR: PDEQ will review staff availability to determine if they can provide monthly visits. PDEQ staff can also help evaluate what systems are in the ground.
- CQ: Looks like you are paying attention to septic, too, which is good.
PR: No Response Required
- CQ: Help us understand what is available to those of us using septic tanks.
PR: That is part of PDEQ's mission and why PDEQ visits the area quarterly.

Pima County Representatives Present:

Charles "Matt" Matthewson, Project Manager, PCWMD

Ed Curley, PCWMD

Mary Hamilton, PCWMD

Don Wilhoit, PCWMD

John Munden, PCWMD

Frank Gall, PCWMD

Lorraine Simon, PCWMD

Laura Fairbanks, PCWMD

Mike Redmond, PDEQ

USFS Representative:

Steve Hensel, Coronado National Forest

Consulting Team Representatives Present:

Adam Bliven, EEC

Kristie Kilgore, EEC

Keith Dojaguez, EEC

Michael Mourreale, EEC

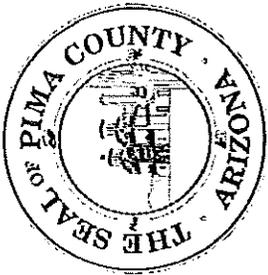
Anne Williams, EEC

Robert Forest, Sage

Angie Brown, Gordley Design

Jan Gordley, Gordley Design

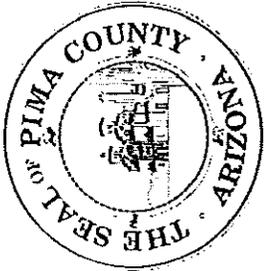
Barb Alley, Gordley Design



Sign-In Sheet
 Mt. Lemmon Service Area Watershed Study
 and Wastewater Management Plan
 Public Meeting
 Mt. Lemmon Community Center
 Saturday, Sept. 8, 2007

Completion of this sign-in sheet is completely voluntary, and helps the project team keep an accurate record of meeting attendees. Under state law, any identifying information provided below will become part of the public record, and as such, must be released to any individual upon request. Please print clearly.

Printed Name	Representing	Address and Zip	Phone	E-mail
Eric Hamilton	self			
CAROL Richard WESTERJEET	SELF	2701 W Lambert Lambert	297-2713	
Kurt Nancy Lindzey	Self	2352 S. Thomas St 7610	884-0126	kn.lindzey@cox.net
Mina Swoer Lynds	self	12935 Upper Lemmon Blvd 7610	576-9309	clynd5@nooo.edu
Roscoe Zimmerman	"	POB 1 Mt. Lemmon AZ 7610	576-1332	robzimm@nooo.com
TOM Thomas	11	POB 597 Mt. Lemmon 7610	576-1010	TOMRT-1MAB@NetScout.COM
Mike Redmond	P.C.D.F.R.	150 W. Congress	740-3358	
Henry Johnson	ICF	3032 N. Split Branch Trl	5574 7MT	HJohnsonMD@supplybits.net
Doreen Johnson	Self	3039 N Split Branch Trl	5574	7MT Teasyn AZ
Lindy Brighen	T4ML	12437 N Middle Stone Ln 7610	576-9020	lbrighen@nooo.com
Paul Cobb	SELF	12449 Johnson Parkway 1450 E Twin Hill Trail 7610	296-6107	



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Printed Name	Representing	Address and Zip	Phone	E-mail
John Jones	Self	62 S/M. Vista 85719	271-7224	jjohns@deltek.com
Mike Epping	Homeowner	12624 N. Ave	576-1467 299-2945	MikeEpping@comcast.net
Kenn Block	owner	1101 E. M. Ave	883-6050	WFF147@MSK.com
Karen Holmes	Lot Owner	7878 E. Cloud St B-20 Tempe AZ	850-211-1111	
D.H. JOHNSON	owner	12959 TEMPE AVE	575 1349	KENUBlock@aol.com
			850-477	johnson@msk.com
				goodman@msk.com



Comment Form
Mt. Lemmon Watershed Study
and Wastewater Management Plan
Public Meeting
Mt. Lemmon Community Center
Saturday, Sept. 8, 2007

Pima County Wastewater Management Department is interested in your comments regarding this project. Please leave your comment forms in the comment box, e-mail comments to angie@gordleydesign.com, fax to (520) 327-4687 or mail them to Angie Brown at Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716. Thank you for your participation.

General comments (please print clearly):

If storage tank right away would help w/ fire
and save water,
How can we get now? I want to
support that. It is important.

Optional:

Name: Linda Mulay Address: City: State: Zip:
Phone: E-mail:

(Taken down by Jan Gordley)



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General comments (please print clearly):

They are just outside the conveyance system and want to connect to WWTF.

Optional:

Name: Dorothy + Henry Johnson Address: City: State: Zip:

Phone: 760-3012 E-mail:

444-9918



Pima County Wastewater Management Department Public Meeting:

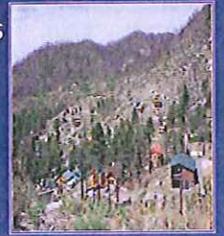
Mount Lemmon Watershed Study & Wastewater Management Plan

Saturday September 8, 2007
10:00am-Noon
Summerhaven Community Center
Mount Lemmon



Original Study Objectives

- ✦ Conduct a comprehensive study of potential service area
- Identify wastewater volumes, management issues, & discharge options
- Identify legal & regulatory issues
- Identify available financial arrangements & options
- Resolve watershed imbalance



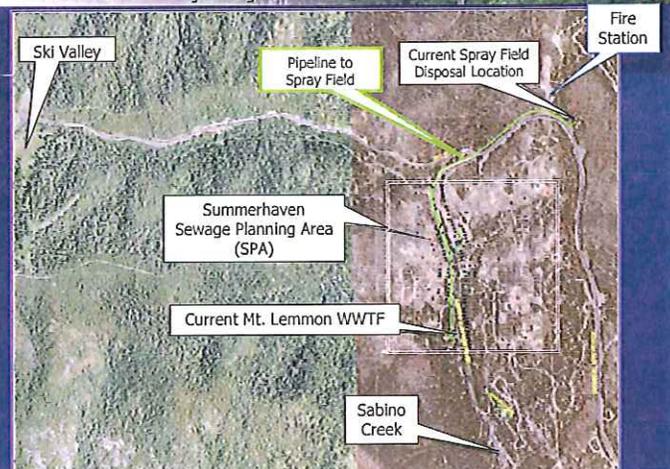
Public Workshop: February 10, 2007 Input

Workshop participants commented & identified 6 common goals that were important to them:

- Provide capacity to meet demand
 - Ability to provide service for those requesting it
- Regulatory compliance
 - Location of discharge, spray-field
- Financial viability
 - Identify sources & means of funding
- Environmental soundness
 - Enhance vegetation, maintain high standard of treatment, return flow to Sabino Creek
- Maximize availability of water resources
 - Investigate uses for treated effluent, including fire-fighting
- Public acceptability
 - Provide consistency in plan & policy
 - Provide greater capacity



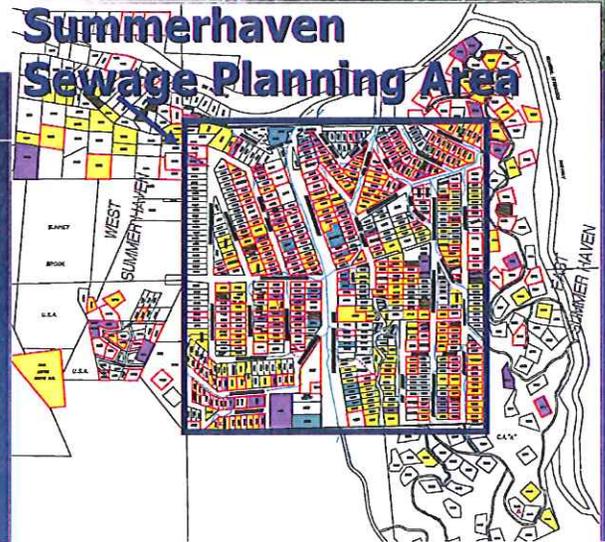
WWTF & Spray Field/Outfall Location



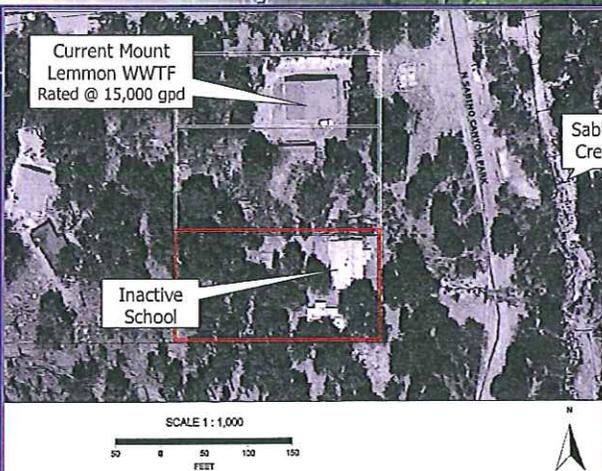
Pusch Ridge Wilderness Area



Summerhaven Sewage Planning Area



WWTF Lot Layout & Limitations

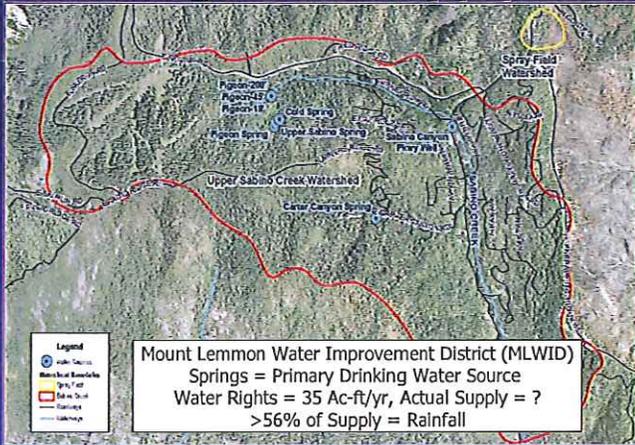


Watershed Delineation



Discharge of wastewater to Sabino Creek currently prohibited by ADEQ Rule (A.A.C.)R18-11-123(A)

Drinking water supply



Watershed Balancing Mechanisms

- Dropped**
 - Recharge/Injection – hydrologic limits
 - Snowmaking - stakeholder objections
 - Direct Reuse/Mixing for Consumption
 - State law prohibits human consumption
 - Public concern likely
- Carried Forward**
 - Beneficial Use/Reclaimed Use
 - Reforestation
 - Fire-fighting water supply storage tank
 - Discharge/Disposal to Sabino Creek

Direct Reuse - Is it in Your Future?: Diluting/Mixing Treated Wastewater for Human Consumption

Cloudcroft, New Mexico - Real Case Scenario

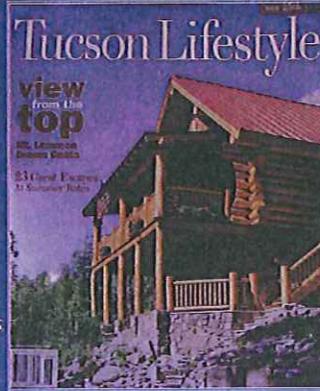
- Mountain top community
- Small watershed & rainfall dependent water supply
- Village was forced to haul water from an outside source during drought:
 - Expensive & Impractical
 - Short term solution to decreased water supply
- The new reuse system consists of:
 - Membrane Bioreactor (MBR) & Reverse Osmosis (RO)
 - 50/50 dilution of treated wastewater with drinking water
 - Final Treatment with Ultraviolet Filtration (UVF)
 - Meets drinking water standards
- Rather than disposing treated effluent into stream, treated water is added to the raw water source – spring & well water, and used as water supply

Septic Systems in Summerhaven: Planning & Water Quality Protection

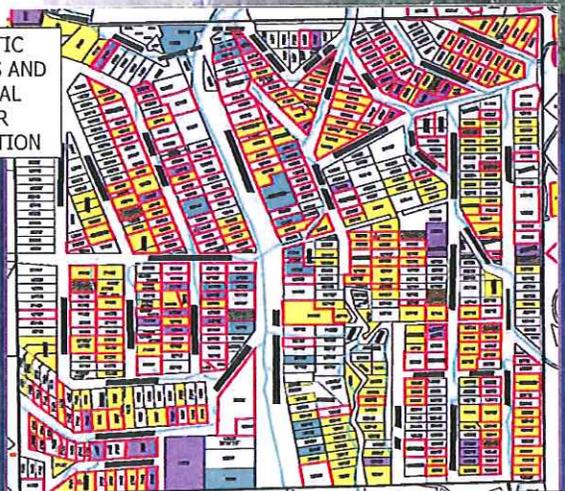
- PDEQ issues septic system re-certifications & on-site wastewater treatment system permits (on-site "General Permits")
- Post-fire re-certification practice for conventional septic systems
- New on-site wastewater treatment systems & limiting site conditions

Septics, On-sites & Wastewater Flow & Management

- Larger new homes –
 - higher flow than older pre-fire systems
 - >typ. Tucson household?
- Only limited conveyance system (collection main)
- No developer
- Threat to Sabino Creek Quality
 - unclosed septic systems (fire loss)
 - high density of septic/on-sites



SPA SEPTIC SYSTEMS AND POTENTIAL LOTS FOR CONNECTION



Since Fires

> ~68 septic permits issued in SPA compared to 19 active WWTF connections

Uniform Interagency Wastewater Management Approach Needed:

- Assessing Sabino Creek for septic impact (including unclosed systems)
- Recertification of conventional septics
- Permitting new on-site systems
- Development of collection/conveyance and treatment systems by PCWMD
- Community support

Wastewater Management: 20 Year Planning

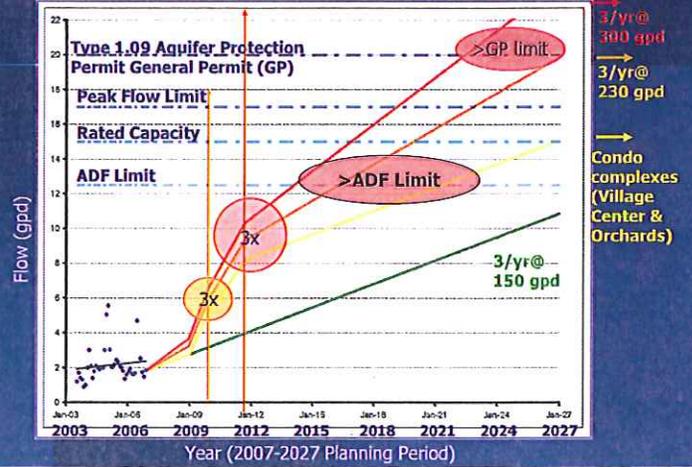
- Volume & Flow – Current Capacity vs. Demand
- WWTF Improvement Options Evaluated
 - Do nothing – offsite private flow equalization only
 - Upgrade or Replace – current location
 - Replace - new Location
- Evaluated Flow Potential
 - Lack of conveyance system
 - On-site and septic system permitting practices
- Discharge Options & Stakeholder Response
 - Irrigation/Reforestation
 - Discharge to Sabino Creek

Connection Potential(?):



- 678 lots in Sewage Planning Area (SPA)
- 287 lots/cabins destroyed in Aspen Fire in SPA
- 212 lots had "legal" septic systems before fire
 - 75 lot discrepancy (287 - 212 = 75 lots)
- Since Aspen fire
 - 68 systems re-certified or obtained on-site permits
- Short Term Flow Possibility - 12 lots w/lost structures
 - within the current 200' connection zone of sewer main
 - could connect immediately
- Long Term Flow Possibility
 - With a larger conveyance system up to 177 lots in SPA potentially could connect

Possible Flow Projection Range & Permit Limits: Peak Flow



Findings

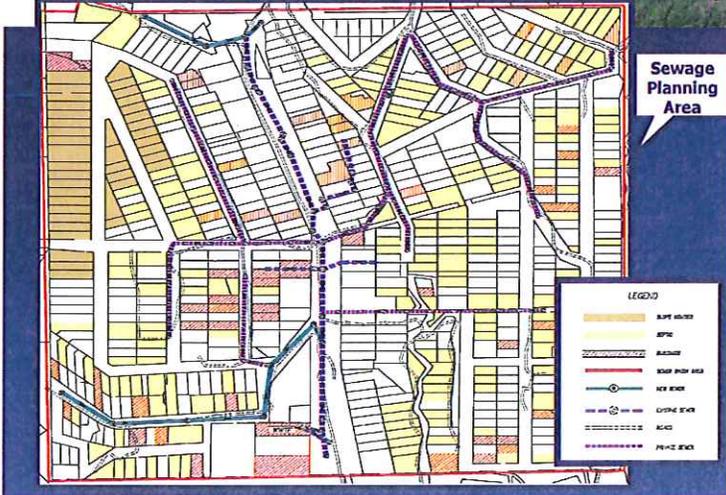
- Short-term – peak flows
 - Increased WWTF capacity needed OR
 - Flow equalization (EQ) needed to address peak flows (on or off-site options)
 - Storage tank for fire-fighting water supply (EQ)
- Long-term:
 - Slow growth – expansion needed by 2022
 - Faster growth @ higher flow – expansion may be needed ~ 2011 (or sooner)



WASTEWATER TREATMENT PLANT UPGRADE OPTIONS

COST(\$-)		\$1.1M+50%		\$3.4M+50%		\$3.5M+50%		\$3.0M+50%		
Criterion	Weight	Existing Plant & New Units – Improve to A+		SBR w/ Filter		MBR		Marana Package Plant		
		Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	
Range of Flows	5	3	15	5	30	5	25	5	25	
Quality of Effluent for Use	3	3	9	5	15	6	18	6	18	
Footprint Overall Size	4	3	12	1	4	2	8	2	8	
Capital Cost	3	3	9	1	3	1	3	2	6	
O & M Costs	4	3	12	6	24	2	8	2	8	
Constructability	4	3	12	1	4	2	8	2	8	
Operability/Reliability	5	3	15	6	30	5	25	5	25	
Solids Handling	4	3	12	6	24	4	16	4	16	
Community Acceptance	4	3	12	4	16	4	16	4	16	
Total Rating			108		150		127		130	
Score:		6 = best, 3 = neutral, 1 = lowest score								

Conceptual Conveyance System- \$3.2-\$4.7M



Conceptual Cost Projections:

Item	Low Cost	High Cost (+50%)
04 Bond Balance ~ \$6.85M		
Upgrade/Replace WWTF	\$1.75M (no flow increase)	\$5.1M
Storage Tank – Firefighting Supply	\$0.2M	\$0.3M
Conveyance System – Planning Area	\$3.2M	\$4.7M
Reforestation/Irrigation	\$0.7M	\$1.1M
Discharge to Sabino Creek	<u>\$1.1M*</u>	<u>\$1.7M*</u>
TOTAL Estimated Cost	~\$5.85M-\$6.95M	\$12.9M

*These costs would not be incurred until applicable laws are changed >2012

Next Steps:

PCWMD	Pima County
Develop & Initiate Implementation Plan	Address unclosed septic systems
Address WWTF Peak Flows & study actual flows for new homes	Study Creek for possible septic system impact
Replace/ Upgrade Plant to improve effluent Quality for Beneficial Use & Creek Discharge Options	Need for Uniform Inter-agency Wastewater Management Strategy (on-sites, septic, conveyance, etc)
Collect Baseline Data – Creek, Reforestation Sites & Weather Data	Consider Legislative Change – direct use/consumption for sustainable future (Cloudcroft, NM)
Select & Develop 100,000 gal storage tank site – fire fighting water supply	Consider Forming Improvement District
Initiate 208 Plan Amendment for Sabino Creek Discharge	Install Creek stream gauging station
Petition ADEQ - SWQS rule revision to lift Sabino Creek discharge prohibition	Study Water Resources & Develop Management Plan
Seek Funding as needed	Seek Funding as needed

Questions/Open House:

