CITIZENS' WATER ADVISORY COMMITTEE (CWAC)

Technical/Planning and Policy Subcommittee

Wednesday, April 22, 2015, 12:00 p.m.
Director's Conference Room
Tucson Water, 3rd Floor
310 W. Alameda Street, Tucson, Arizona

Legal Action Report

1. Roll Call/Call to Order

The meeting was called to order by Subcommittee Chair, Mark Murphy, at 12:07 p.m. Those present and absent were:

Present:

Mark Murphy	Chairperson-Representative, Mayor
Chuck Freitas	Representative, City Manager
Brian Wong	Representative, City Manager
Placido dos Santos	Representative, City Manager
Kelly Lee	Representative, Ward 6

Absent:

Mitch Basefsky	Representative, City Manager
Alan Tonelson	Representative, Ward 1

Tucson Water Staff Present:

Melodee Loyer	Water Administrator
Andrew Greenhill	Intergovernmental Affairs Manager
Fernando Molina	Water Program Supervisor
Kris LaFleur	Staff Assistant
Johanna Hernandez	Staff Assistant

Others Present:

Chris Avery	City of Tucson, Attorney's Office
Tamara Prime	City of Tucson, Ward 3

2. Announcements – No action taken.

3. Call to Audience – No action taken.

4. Review & Approval of March 25, 2015 Legal Action Report and Meeting Minutes – Member Freitas motioned to approve the Legal Action Report and Meeting Minutes of March 25, 2015. Member Wong seconded. Motion passed unanimously by a voice vote of 5-0.

5. Water Service Area Policy Review/Water Checkbook Update – Tucson Water staff member Melodee Loyer provided a PowerPoint presentation on the Water Checkbook and the Water Service Area Policy. The Water Checkbook numbers are still being calculated, and will be finalized by the May CWAC meeting. Preliminary numbers reflect total potable supplies of 161,130 AF, long term storage credits of 236,005 AF,

and total effluent supplies of 25,731 AF. Potable use is down 2.3% a year, while population is up about 1%. The increase in effluent supplies is due to increased water quality. A brief background on the Water Service Area Policy, Water Assurance Letters and Nine Refinements was provided. Ms. Loyer reviewed and delineated (by month, customer type and jurisdiction) the 2014 water service requests (167), approvals (122) and denials (45). Common reasons for denial were discussed (outside of service area, does not meet water service area policy) with a brief review of terms for approval. Four denials were appealed to WSARB, each denial was reviewed as to location, circumstance and reason for denial.

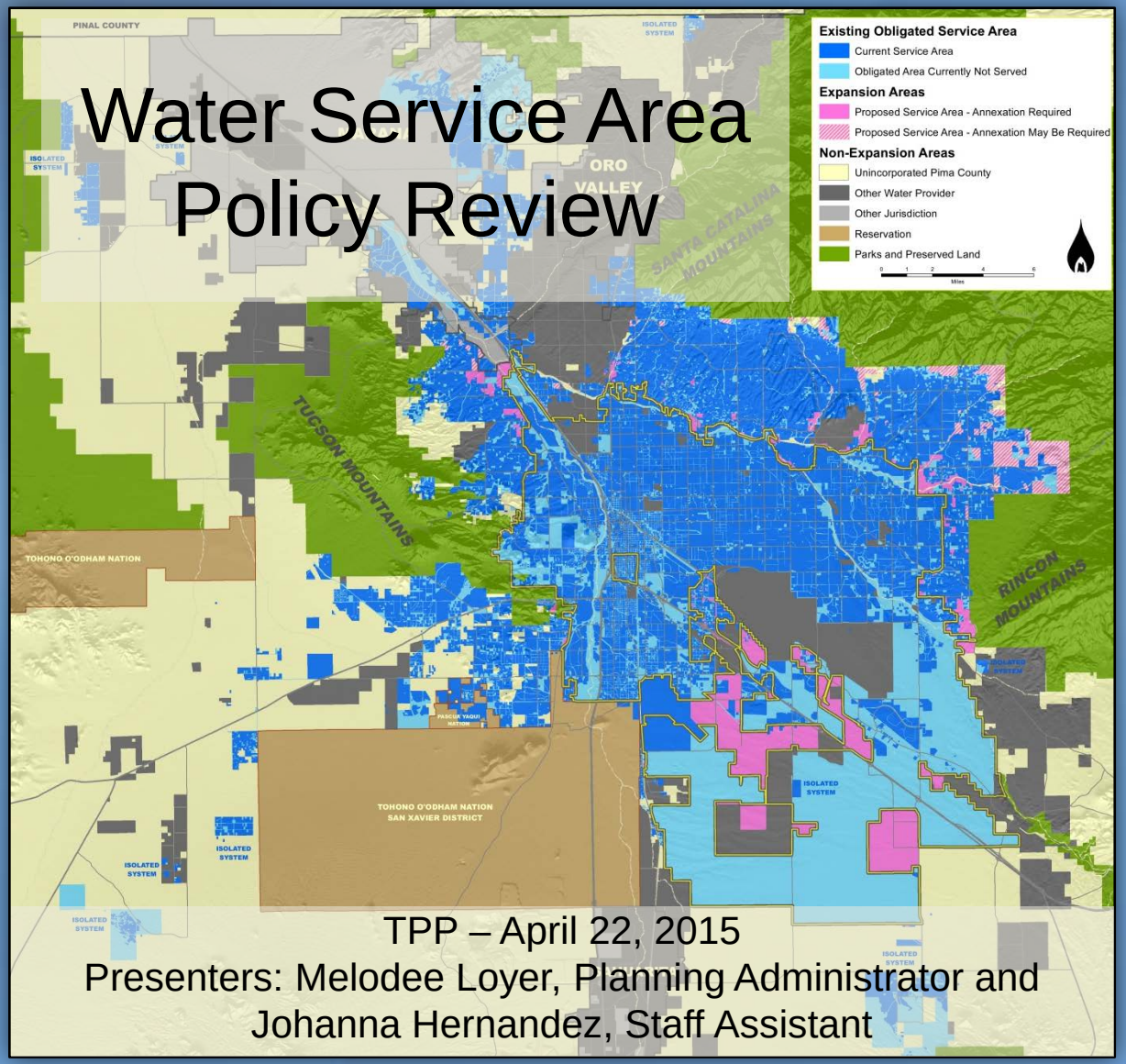
Tucson Water staff member Johanna Hernandez reviewed the proposed administrative changes to the WSARB process, including the addition of deadlines within which appellants must file, the designation of support staff, and the process for appeal to Mayor and Council. Ms. Loyer reviewed the substantive proposed change regarding the requirement to have three sides eligible for Tucson Water service. It is being proposed that, after establishing one side of eligible Tucson Water service the remainder of required sides can be made up of undevelopable property. Three examples were provided reflecting undevelopable land, and brief discussion was held.

6. **Review of Tucson Water Response re Water Quality Questions –** Tucson Water staff member Johanna Hernandez followed up with the Subcommittee on two water quality questions that were raised at previous meetings of the TPP. Specifically, the presence of an ameba known as *Naegleria fowleri (N. fowleri)* in the water supply, and the presence of Hexavalent Chromium in water treated at the Advanced Oxidation Process (AOP). It was discussed that Tucson Water's disinfection practices are effective at controlling any possible *N. fowleri* that may be present, and clarified that treatment of water at the AOP was not intended to, and does not, affect the levels of Hexavalent Chromium present in the water. A formal response was provided, along with some supporting materials.

7. **Future Meetings/Agenda Items –** See projected agenda for further information.

8. **Adjournment –** Meeting adjourned at 1:00 p.m.

Water Service Area Policy Review



TPP – April 22, 2015

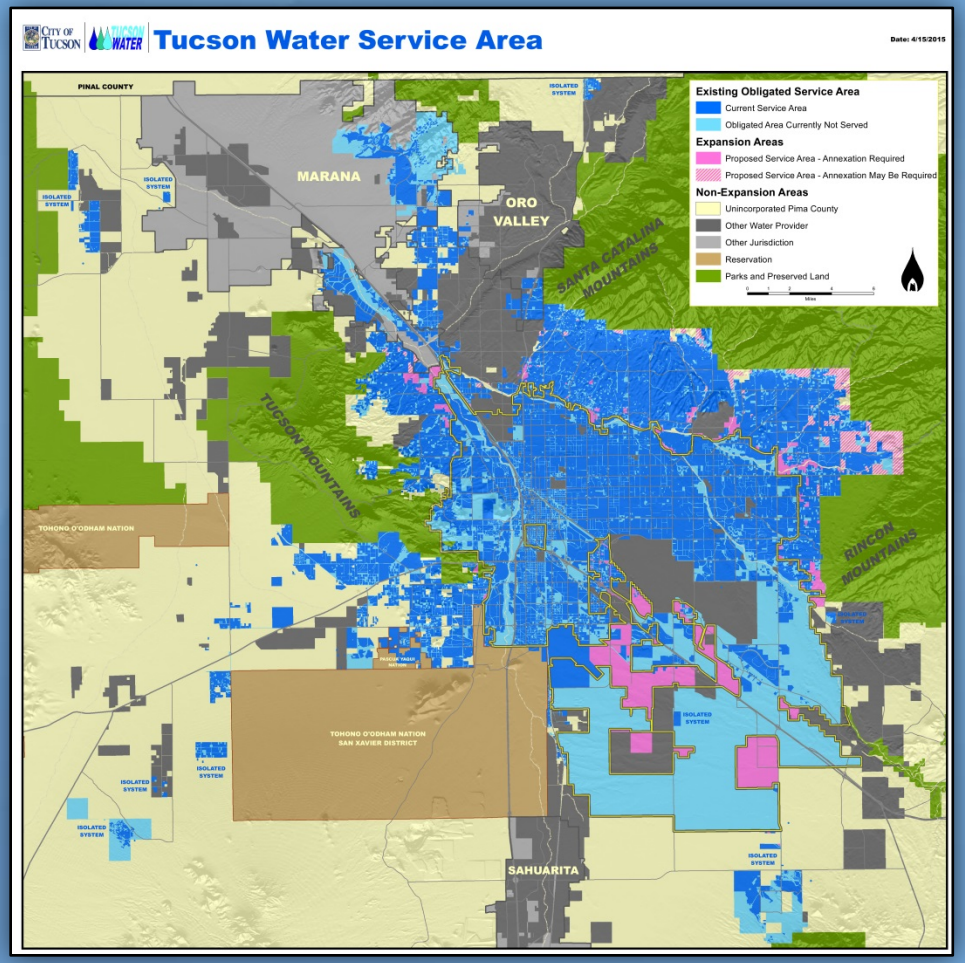
Presenters: Melodee Loyer, Planning Administrator and Johanna Hernandez, Staff Assistant

CITY OF TUCSON

Tucson Water

Agenda

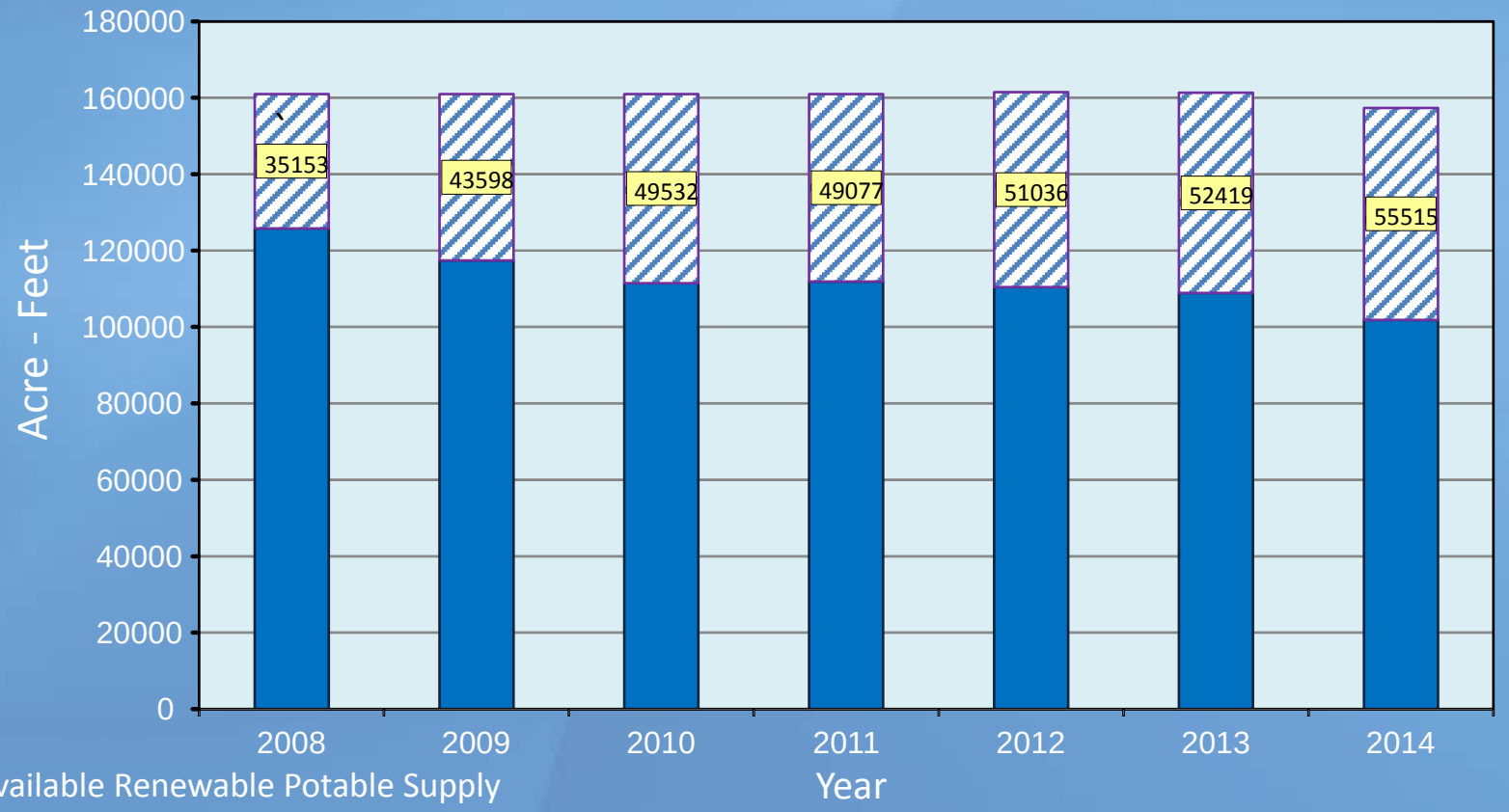
- Water Checkbook
- Background
- Approvals/Denials
- Appeals



CITY OF TUCSON

Tucson Water

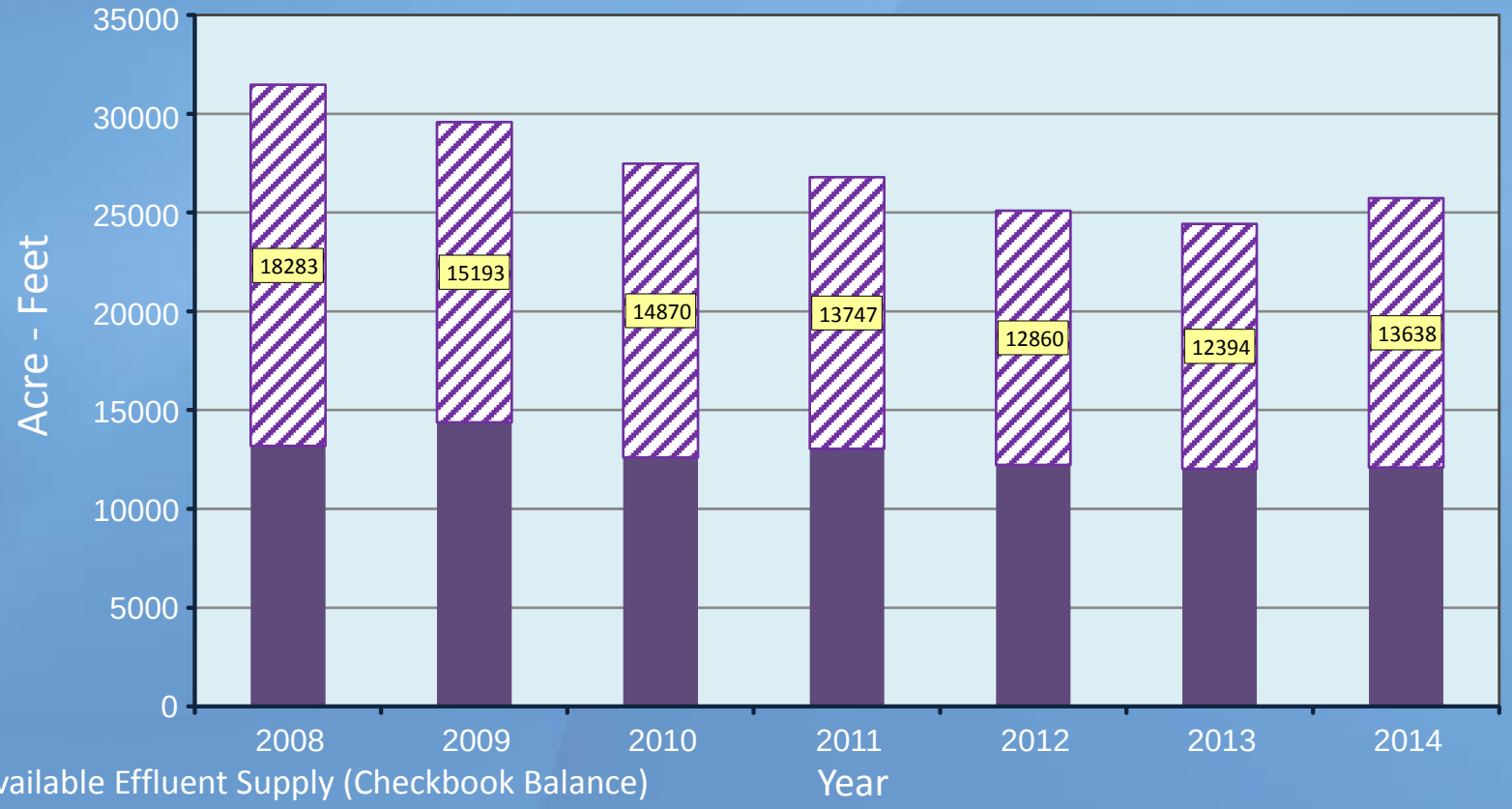
Tucson's Available Renewable Potable Supply (Acre-Feet) Calendar Year 2014



CITY OF TUCSON

Tucson Water

Tucson's Available Effluent Supply & Long Term Storage Credits (Acre – Feet) Calendar Year 2014

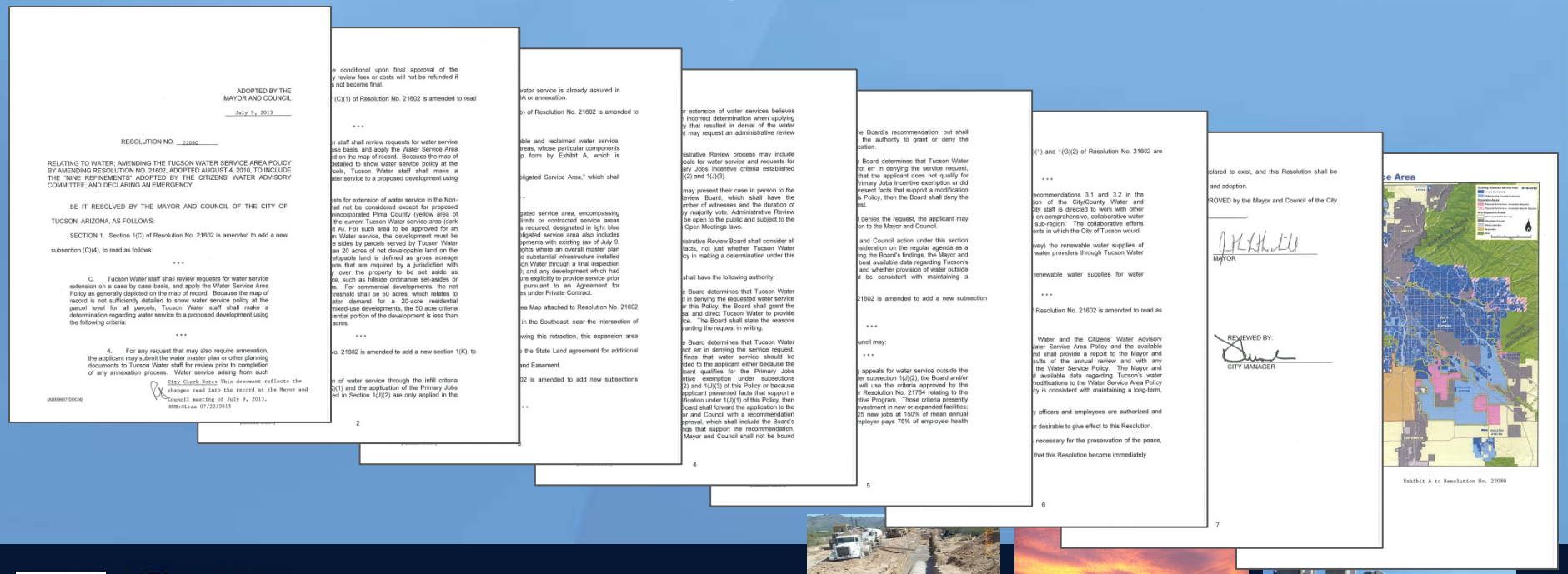


CITY OF TUCSON

Tucson Water

WSA Background

- WSA Policy Approved – August 4, 2010
- WSA Approval Extension – August 9, 2013
- “Nine Refinements” – July 9, 2013


ADOPTED BY THE
MAYOR AND COUNCIL
July 9, 2013

RESOLUTION NO. 22080

RELATING TO WATER; AMENDING THE TUCSON WATER SERVICE AREA POLICY BY AMENDING RESOLUTION NO. 21602, ADOPTED AUGUST 4, 2010, TO INCLUDE THE "NINE REFINEMENTS" ADOPTED BY THE CITIZENS' WATER ADVISORY COMMITTEE; AND DECLARING AN EMERGENCY.

BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. Section 1(C) of Resolution No. 21602 is amended to add a new subsection (C)(4), to read as follows:

* * *

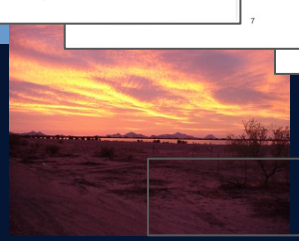
C. Tucson Water staff shall review requests for water service extension on a case by case basis, and apply the Water Service Area Policy as generally depicted on the map of record. Because the map of record is not sufficiently detailed to show water service policy at the parcel level for all parcels, Tucson Water staff shall make a determination regarding water service to a proposed development using the following criteria:

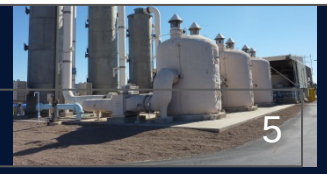
* * *

4. For any request that may also require annexation, the applicant may submit the water master plan or other planning documents to Tucson Water staff for review prior to completion of any annexation process. Water service arising from such

City Clerk Note: This document reflects the changes read into the record at the Mayor and Council meeting of July 9, 2013.
BWR:SL:aa 07/22/2013

(A0059837.DOC4)





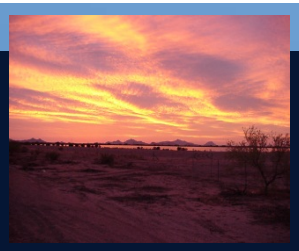
Approvals & Denials

2014

Month	Total Received	Approved		Denied		PADA
		Residential	Commercial	Residential	Commercial	
January	15	6	3	6	0	1
February	9	6	1	2	0	0
March	17	8	3	6	0	3
April	15	6	7	2	0	1
May	15	5	7	3	0	1
June	11	9	2	0	0	0
July	16	11	1	3	1	2
August	12	4	4	3	1	2
September	12	3	3	5	1	1
October	16	10	4	2	0	1
November	16	5	4	5	2	3
December	13	7	3	3	0	1
Annual Totals:	167	80	42	40	5	16
			122		45	
					167	

Jurisdiction	Approvals	Denials
City of Tucson	53	1
Unincorporated	59	39
Marana	9	5
Oro Valley	1	0
	122	45

167



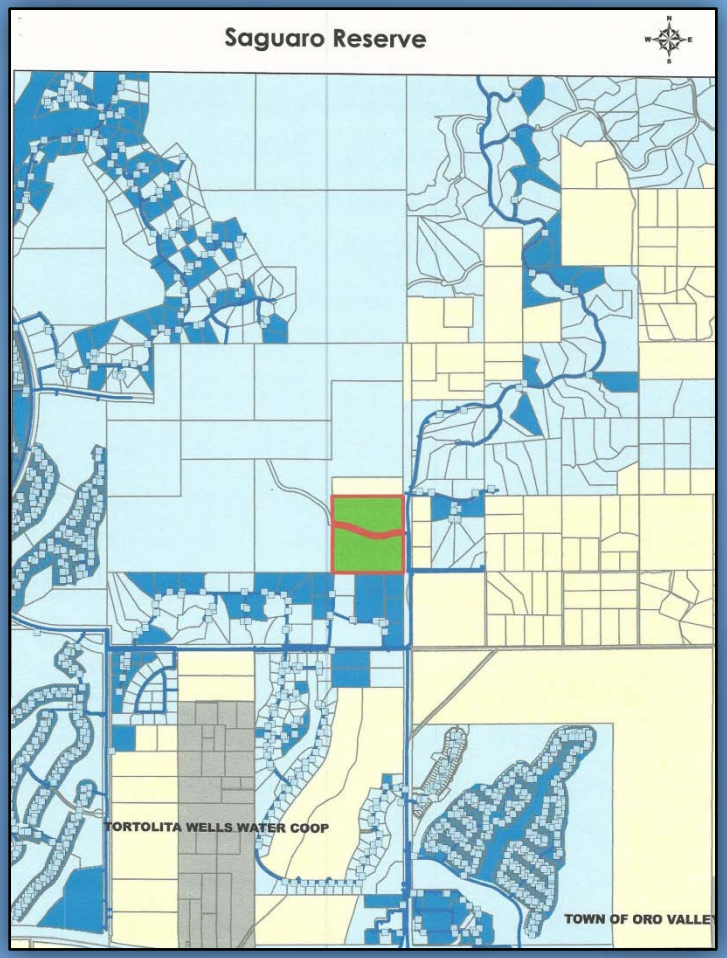
Common Reasons for Denials

- Outside Service Area
- Does not meet WSA Policy
  - Infill
  - 3 sides
- In service area of another municipality
- In service area of another water provider

Appeals

- 4 appeals
  - #1 North Marana (Large development surrounded by Tucson Water)
  - #2 Unincorporated Pima County (Abutting Town of Marana)
  - #3 Unincorporated Pima County (Abutting Lazy C WSA)
  - #4 Unincorporated Pima County

Appeal #1



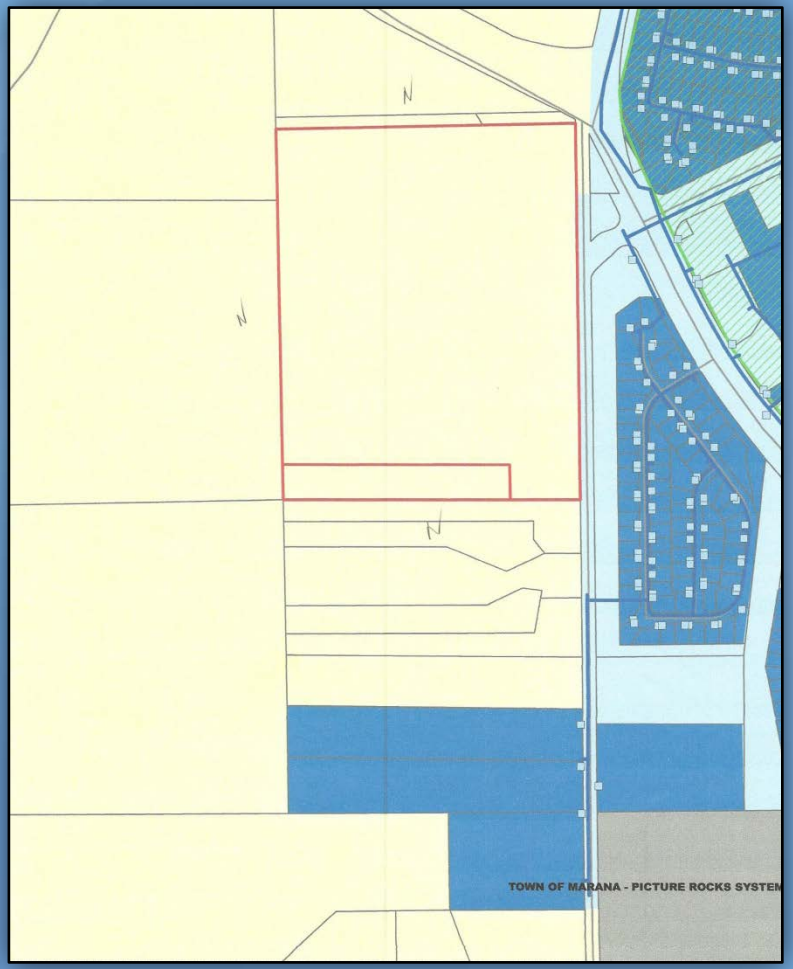
- Residential development
- Agreements pre-date WSA policy
- Property did not “buy – into” T2 agreement
- Property in Town of Marana
- Marana can “wheel” water to property through Tucson Water distribution system

CITY OF TUCSON

Tucson Water

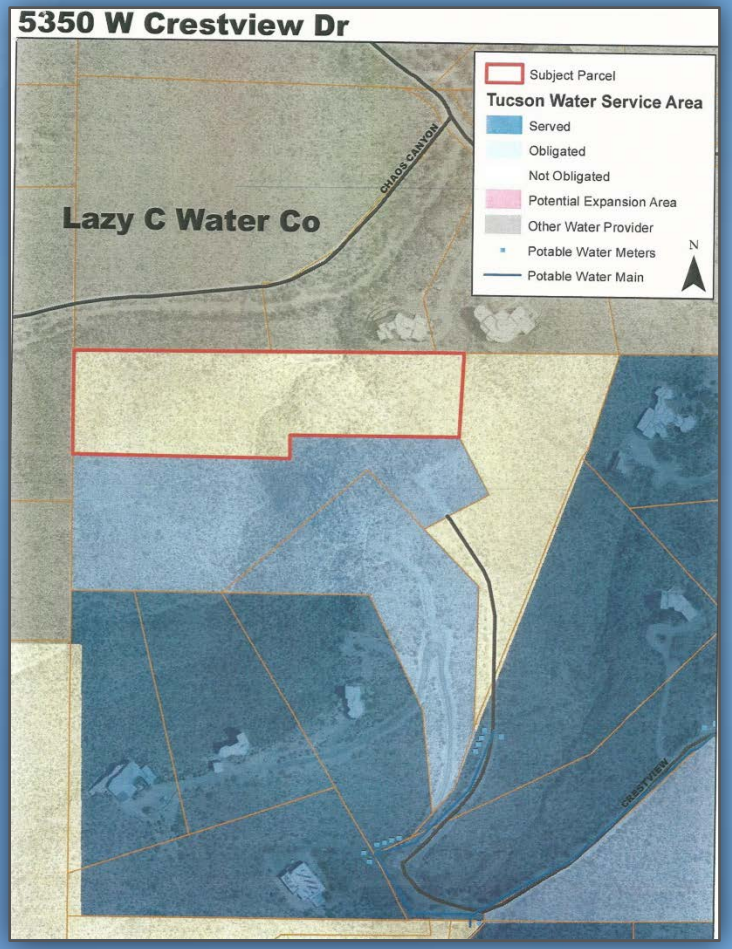
Appeal #2

- Outside service area
- Well going dry
- Other wells in area already dry
- Has ability to annex into town of Marana
- Marana could “wheel” water to property through Tucson Water distribution system
- Allowing service to this property would have set precedence for others with possible “domino” effect

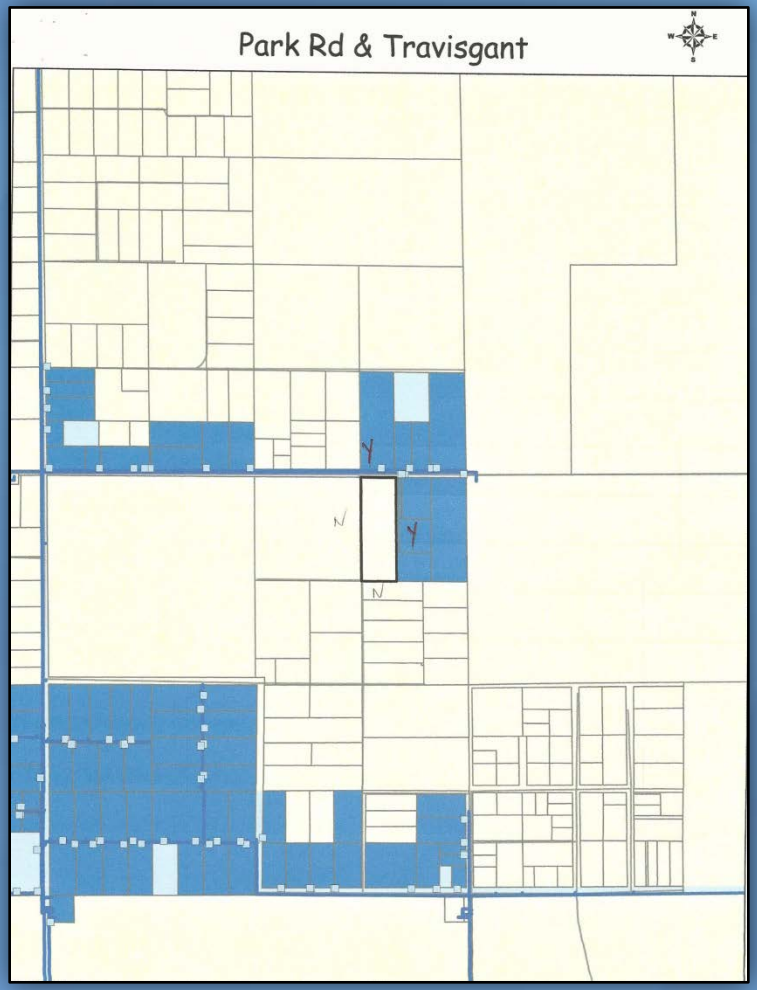


Appeal #3

- Outside service area
- Does not meet WSA policy
  - Does not have “3 sides”
- Adjacent to Lazy C water co. WSA
- No premises on property (owner wants water assurance for more lucrative property sale)



Appeal #4



- Outside service area
- Does not meet WSA Policy – “3 sides”’
- Owner wants water service to sell property at higher cost

Proposed Administrative Changes to WSA Policy and WSARB Process

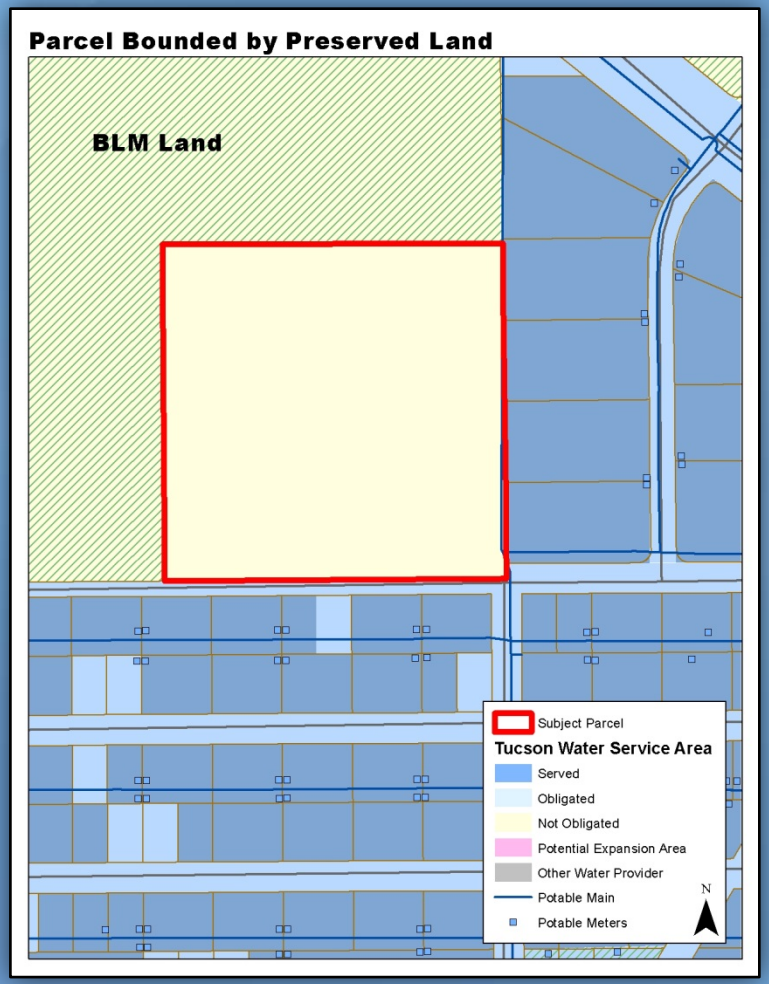
- Timeframes in which to file
- Support staff for WSARB
- Process for appeal to M&C

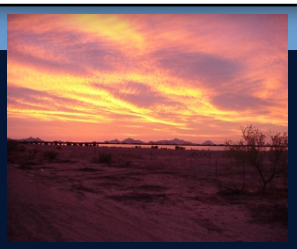
Modifications To “3 Side Rule”

- Parcels require three (3) adjacent sides to be eligible for Tucson Water service.
- Proposed modifications to follow.

Example #1

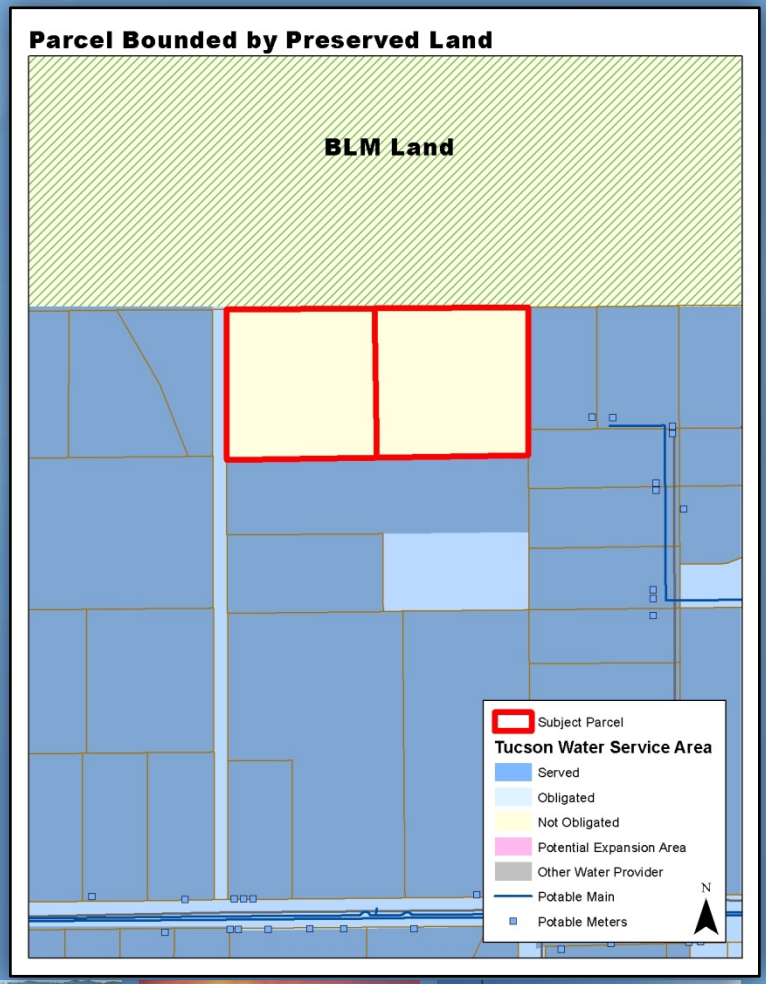
- Subject parcel with two (2) adjacent sides consisting of parcels eligible to be served by Tucson Water.
- The two (2) remaining sides are undevelopable.
- Either of the two adjacent undevelopable sides will count as the third side to grant water service.

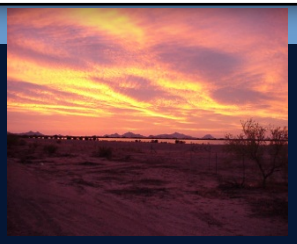




Example #2

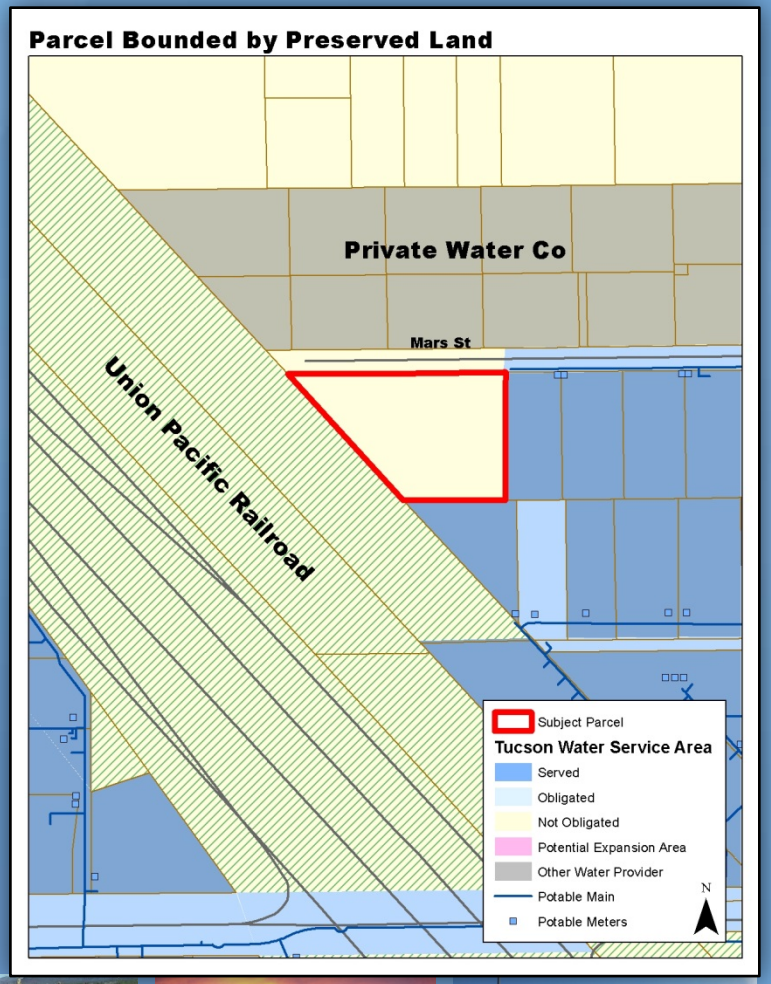
- Two (2) subject parcels, each with two (2) adjacent sides consisting of parcels eligible to be served by Tucson Water.
- The third side of each subject parcel consists of undevelopable land.
- In this case the undevelopable side would count as the third side and water service would be granted.
- If the two (2) subject parcels were combined as one (1), the resulting parcel would have three (3) adjacent sides being served.

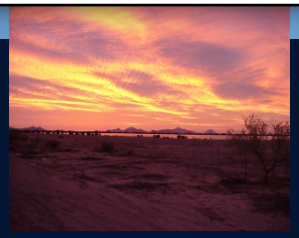




Example #3

- Subject parcel with two (2) adjacent sides consisting of parcels eligible to be served by Tucson Water.
- The Union Pacific Railroad property to the west is undevelopable, but would count as the third side and water service will be granted.
- If the triangular parcel south of the subject parcel became undevelopable the subject parcel would only have one (1) adjacent side being served.
- In this case the two (2) undevelopable sides and the one (1) served side will count as three (3) sides and water service will be granted.





Water Service Area Policy Review

Questions

TPP – April 22, 2015

Presenters: Melodee Loyer, Planning Administrator and Johanna Hernandez, Staff Assistant

CITY OF TUCSON

Tucson Water

MEMORANDUM

DATE: April 22, 2015

TO: Technical Planning and Policy Subcommittee

FROM: Alan Forrest, P.E.
Director, Tucson Water

SUBJECT: Questions Regarding Water Quality Presentations

At the March 25th Technical Planning and Policy (TPP) Subcommittee meeting two questions were posed to Tucson Water staff, regarding the of presence of an ameba known as *Naegleria fowleri (N. fowleri)* in the water supply, as well as that of the presence of Hexavalent Chromium (chrome-6) in water treated at the Advanced Oxidation Process (AOP) treatment facility. We would like to take this opportunity to respond to these concerns.

The CDC reports that *N. fowleri* is an ameba that is most frequently found in warm or hot freshwater such as lakes, rivers and hot springs. *N. fowleri* infections are rare, 34 cases in a 10 year period in the United States, and can only be transmitted through exposure to the nasal cavities. Infections **cannot** be transmitted through drinking contaminated water. The infectious form of *N. fowleri* is sensitive to chlorine disinfection, and a chlorine concentration of 1 ppm will reduce the number of viable ameba by 99.99%, while a chlorine residual of .5 mg/l is known to control the ameba. Of the 34 cases, 30 were related to recreational water use and 3 were related to under-chlorinated tap water.

A recent presentation to TPP reported on the positive occurrence of *N. fowleri* in recreational water sites in Arizona (12.6%), non-chlorinated well water in Arizona (10.6%), and the Tucson Water potable distribution system (1%). As expected, samples from recreational water sites and unchlorinated water were more frequently positive for *N. fowleri*. Tucson Water maintains a concentration range of .8-1 ppm chlorine in its main potable water system and 1-1.2 ppm in its isolated systems. This level of concentration is known to effectively control the presence of *N. fowleri.*

According to the EPA, Chrome-6 occurs naturally in the environment from the erosion of natural chromium deposits but it can also be produced by industrial processes. There are demonstrated instances of chromium being released to the environment by leakage, poor storage, or inadequate industrial waste disposal practices. The EPA has an enforceable drinking water standard of 0.1 milligrams per liter (mg/L) for total chromium, which includes chromium-6 and chromium-3.

A recent discussion during a presentation at a TPP meeting suggested that the treatment process at the AOP may result in the creation of chrome-6. In response to this discussion, Tucson Water had special influent and effluent samples of AOP treated water taken. These samples were independently tested, and results were reviewed by Tucson Water's lab manager. Chrome-6 and total chromium influent and effluent levels indicate that the treatment process does not affect the level of chrome-6 or total chromium present in the treated water. The AOP facility was neither designed nor intended to treat chrome-6 or total chromium, the pre and post treatment levels of chrome-6 and total chromium reflect that chrome-6 and total chromium are **not** created by the treatment process.

Tucson Water is vigilant in monitoring our water quality and takes all concerns regarding water quality very seriously. Our disinfection and monitoring methods ensure compliance with all water quality standards and result in the highest water quality for our customers.

Facts About Naegleria fowleri and Primary Amebic Meningoencephalitis

Naegleria fowleri is found around the world, often in warm or hot freshwater (lakes, rivers, and hot springs).

Naegleria fowleri infections are rare and devastating. From 2004 to 2013, 34 infections were reported in the U.S. All but two were fatal.

- Naegleria fowleri is a warm water-loving ameba found around the world, often in warm or hot freshwater (lakes, rivers, and hot springs).
- Naegleria fowleri ameba can travel up the nose and into the brain. This causes the disease primary amebic meningoencephalitis (PAM), which destroys brain tissue and causes brain swelling and death.
- Of 132 people known to be infected in the U.S. since 1962, only three people survived.

Symptoms

Symptoms can be mild at first, but they worsen quickly.

- Usually start about 5 days after infection (but can range from 1–7 days)
- Can include headache, fever, nausea, or vomiting
- Later symptoms can include stiff neck, confusion, lack of attention to people and surroundings, loss of balance, seizures, and hallucinations
- After symptoms start, the disease causes death within about 5 days (but can range from 1–12 days)

You cannot be infected with Naegleria fowleri by drinking contaminated water, and the infection cannot spread from one person to another.

Spread

Infections are spread through the nose.

People are infected when water containing the ameba enters the body through the nose. Recreational water-associated infection most often occurs when people go swimming or diving during the summer in warm freshwater places, like lakes and rivers. Sometimes infections occur after people put their head under water in hot springs.

Infection has also happened when people use contaminated drinking water to cleanse their nasal passages during religious practices, use a neti pot or other device to rinse their sinuses through the nose, or get the contaminated water up their nose during recreational play.

National Center for Emerging and Zoonotic Infectious Diseases
Division of Foodborne Waterborne, and Environmental Diseases

CS248901_A

People and Places

Naegleria fowleri infections are more common in young boys and after use of warm lakes, rivers, and hot springs.

Young boys are most at risk for Naegleria fowleri infection. While the reasons are unclear, young boys might participate in more water activities like diving and playing in the sediment at the bottom of lakes and rivers.

Naegleria fowleri is not found in salt water, like the ocean.

In the U.S., most infections have come from freshwater lakes, rivers, and hot springs located in southern-tier states. Recently people have become infected in northern states following periods of very warm temperatures.

The ameba can be found in:

- Bodies of warm freshwater, like lakes and rivers
- Geothermal (naturally hot) water, like hot springs, and drinking water sources (from water going up the nose)
- Warm water discharge from industrial plants

Recreational water-associated infections occur most often in July, August, and September, when temperatures are high for prolonged periods of time, causing water temperatures to rise and water levels to decrease.

Protect Yourself

Lower your risk when swimming and rinsing your sinuses.

We do not know how to lower natural Naegleria fowleri levels in lakes and rivers. People should assume that there is always a low level of risk of Naegleria fowleri infection whenever they enter warm freshwater lakes, rivers, and hot springs, especially in southern-tier states.

The only certain way to prevent an infection when swimming is to avoid water-related activities in warm freshwater.

If you choose to swim, limit the amount of water going up the nose, and avoid water where Naegleria fowleri might live.

- Hold your nose shut, use nose clips, or keep your head above water when taking part in water-related activities in bodies of warm freshwater, including activities in warm water discharged from industrial plants.
- Avoid putting your head under water in hot springs and other untreated geothermal waters.
- Avoid water-related activities in warm freshwater during periods of high water temperatures and low water levels.
- Avoid digging in, or stirring up, the sediment while taking part in water-related activities in shallow, warm freshwater areas.

Rinsing sinuses, including with neti pots

When making a solution for irrigating, flushing, or rinsing your sinuses (for example, when using a neti pot, sinus rinse bottle, or other irrigation device, or performing ritual nasal rinsing), use safe water to protect yourself.

Take at least one of these actions to lower your risk of becoming infected:

- Boil: Use water that has been previously boiled for 1 minute and left to cool.
  - » At elevations above 6,500 feet, boil for 3 minutes.
- Filter: Use a filter designed to remove some water-loving germs.
  - » The label may read "NSF 53" or "NSF 58."
  - » Filter labels that read "absolute pore size of 1 micron or smaller" are also effective.
- Buy: Use water with a label specifying that it contains distilled or sterile water.
- Disinfect: Learn how to disinfect your water to ensure it is safe from Naegleria fowleri.
  - » Chlorine bleach used at the right level and time will work as a disinfectant against this germ.

Rinse the irrigation device after each use with safe water, and leave the device open to air dry completely.

www.cdc.gov/naegleria