



COUNCIL SUBCOMMITTEE ON WATER ISSUES MEETING

REGULAR SUBCOMMITTEE MEETING AGENDA

TUESDAY, JUNE 7, 2022, 9:30 AM

201 S Cortez Street
Prescott, AZ 86303
Council Chambers

Mayor Pro Tem Rusing - Chairperson

Councilman Montoya - Member

Councilman Sischka - Member

The following Agenda will be considered by the Prescott Council Subcommittee on Water Issues at Regular Subcommittee Meeting pursuant to the Prescott City Charter, Article II, Section 13. Notice of the meeting is given pursuant to Arizona Revised Statutes, Section 38-431.02. One or more members of the Council may be attending the meeting through the use of a technological device.

Viewing & Participation

This meeting may be viewed on Channel 64, Facebook Live or on the City's Website: [Live City of Prescott Videos](#)

Or via Zoom by registering in advance: [Zoom Registration Link](#)

Comments from the public may be submitted through the City website: [Public Comment Form](#)

1. CALL TO ORDER

2. ROLL CALL

3. PUBLIC COMMENT

Public comment will be accepted following each agenda item and are limited to three (3) minutes. Please complete a comment card and return it to the City Clerk, speakers will be called in the order received.

4. DISCUSSION & ACTION ITEMS

A. Approval of the April 5, 2022 Meeting Minutes.

Recommended Action: MOVE to approve the April 5, 2022 minutes as presented

B. Recommendation for Approval of a Revision to Prescott City Code 3-10-8: Water

Conservation Code, Incentive Program, to Add an Additional Rebate Tier for a Hot Water Recirculation System.

Recommended Action: MOVE to recommend approval/denial of the revision to City Code 3-10-8.

C. Focus Topic: Water Resources Management Model.

Recommended Action: This item is for discussion only. No formal action will be taken.

5. GENERAL ANNOUNCEMENTS FROM STAFF

6. ADJOURNMENT

EXECUTIVE SESSION

Upon a public majority vote of a quorum of the City Council, the Council may hold an executive session, which will not be open to the public, regarding any item listed on the agenda but only for the following purposes:

- (1) Discussion or consideration of personnel matters (A.R.S. §38-431.03(A)(1));
- (2) Discussion or consideration of records exempt by law (A.R.S. §38-431.03(A)(2));
- (3) Discussion or consultation for legal advice with the city's attorneys (A.R.S. §38-431.03(A)(3));
- (4) Discussion or consultation with the city's attorneys regarding the city's position regarding contracts that are the subject of negotiations, in pending or contemplated litigation, or in settlement discussions conducted in order to avoid litigation (A.R.S. § 38-431.03(A)(4));
- (5) Discussion or consultation with designated representatives of the city to consider its position and instruct its representatives regarding negotiations with employee organizations (A.R.S. §38-431.03(A)(5));
- (6) Discussion, consultation or consideration for negotiations by the city or its designated representatives with members of a tribal council, or its designated representatives, of an Indian reservation located within or adjacent to the city (A.R.S. §38-431.03(A)(6));
- (7) Discussion or consultation with designated representatives of the city to consider its position and instruct its representatives regarding negotiations for the purchase, sale or lease of real property (A.R.S. §38-431.03(A)(7)).

THE CITY OF PRESCOTT ENDEAVORS TO MAKE ALL PUBLIC MEETINGS ACCESSIBLE TO PERSONS WITH DISABILITIES. With 72 hours advanced notice, special assistance can be provided for sight and/or hearing-impaired persons at this meeting. Reasonable accommodations will be made upon request for persons with disabilities or non-English speaking residents. Please call the City Clerk (928) 777-1272 to request an accommodation to participate in this public meeting. Prescott TDD number is (928) 445-6811. Additionally, free public relay service is available from Arizona Relay Service at 1-800-367-8939 and more information at www.azrelay.org

Confidentiality

Arizona statute precludes any person receiving executive session information from disclosing that information except as allowed by law. A.R.S. §38-431.03(F). Each violation of this statute is subject to a civil penalty not to exceed \$500, plus court costs and attorneys' fees. This penalty is assessed against the person who violates this statute or who knowingly aids, agrees to aid or attempts to aid another person in violating this article. The city is precluded from expending any public monies to employ or retain legal counsel to provide legal services or representation to the public body or any of its officers in any legal action commenced for violation of the statute unless City Council takes a legal action at a properly noticed open meeting to approve of such expenditures prior to incurring any such obligation or indebtedness. A.R.S. §38-431.07(A)(B).

CERTIFICATION OF POSTING OF NOTICE

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at Prescott City Hall on _____ at _____ m. in accordance with the statement filed by the Prescott City Council with the City Clerk



Sarah M. Siep, City Clerk

**COUNCIL AGENDA MEMO**

MEETING TYPE/DATE: **REGULAR SUBCOMMITTEE MEETING** **06- 7-22**

DEPARTMENT: **City Clerk**

AGENDA ITEM: Approval of the April 5, 2022 Meeting Minutes.

ITEM SUMMARY

Attached for approval are the Council Subcommittee on Water Issues minutes for the April 5, 2022 meeting.

BACKGROUND

None

FINANCIAL IMPACT

None

Recommended Action: MOVE to approve the April 5, 2022 minutes as presented

ATTACHMENTS

1. [April 5, 2022 Meeting Minutes.docx](#)



COUNCIL SUBCOMMITTEE ON WATER ISSUES MEETING

REGULAR SUBCOMMITTEE MEETING MINUTES

TUESDAY, APRIL 5, 2022, 9:30 a.m.

201 S Cortez Street

Prescott, AZ 86303

Council Chambers

Cathey Rusing, Mayor Pro Tem - Chairperson

Brandon Montoya, Councilman – Member Steve Sischka, Councilman - Member

MINUTES OF THE REGULAR SUBCOMMITTEE MEETING OF THE PRESCOTT COUNCIL SUBCOMMITTEE ON WATER ISSUES HELD ON APRIL 5, 2022 IN THE 201 S CORTEZ STREET PRESCOTT, AZ 86303 COUNCIL CHAMBERS.

1. CALL TO ORDER

Chairperson Rusing called the meeting to order at 9:30 a.m.

2. ROLL CALL

Cathey Rusing	Chairperson
Brandon Montoya	Member
Steve Sischka	Member - Excused

3. PUBLIC COMMENT

Public comment will be accepted following each agenda item and are limited to three (3) minutes. Please complete a comment card and return it to the City Clerk, speakers will be called in the order received.

4. DISCUSSION & ACTION ITEMS

A. Approval of the March 1, 2022, Subcommittee on Water Issues Meeting Minutes

MOTION BY MEMBER MONTOYA TO APPROVE THE FEBRUARY 1, 2022 MEETING MINUTES; SECONDED BY CHAIRPERSON RUSING: PASSED [2 – 0].

- B. Water Service Application No. WSA21-024, Submitted by Cactus Mobile Ranch Home Community Association, LLC, Prescott. Location: APN 114-06-104H, Comprising 6.37 Acres, in Township 14 North, Range 02 West, Section 34, SE1/4, NE1/4, SE1/4.

Water Resource Project Manager Kay Sydow provided a presentation to the Subcommittee regarding WSA21-024. The mobile home park, located at 202 N. Cactus Dr., was constructed in 1968 and has one single family residence (SFR) for the manager that was constructed in 1943. The mobile home park has been on city sewer since December 1, 2017. The annexation request was brought to Planning and Zoning Commission on February 24, 2022 and passed unanimously. The mobile home park has a water demand analysis of 6.36 acre-feet (AF) per year.

Member Montoya asked for confirmation that the applicant is seeking water through annexation and if they are required to abandon their wells if approved.

Ms. Sydow confirmed, adding that the city will receive approximately 20 AF of water through the annexation.

Member Montoya asked about the zoning capacity.

Ms. Sydow responded that the zoning was changed at the February 24th Planning and Zoning Commission meeting.

Planning Manager George Worley added that the parcel was rezoned to multi-family high density as part of the request.

Member Montoya asked if the applicant would have to resubmit an application for water if they decided to add more housing or change the type of housing.

Mr. Worley stated that he believes that is correct, adding that they would also have to submit a revised site plan and go through the site plan process.

Chairperson Rusing commented that this appears to be an up zoning and asked why it was not zoned multi-family medium density.

Mr. Worley responded that when the city re-zones property it is bound by the general plan and the land development code. Had the property been brought in as it was zoned in the County, it would have been in non-conformance thus violating the land development code and the general plan's guidance. The land development code states that the first compatible use where they are allowed by right is multi-family high density. The limitation on the use of the property is still controlled by the zoning and the site plan review process and this applicant or any future applicant will have to follow the rules, including water allocation, site plan approval and rezoning rules.

Chairperson Rusing asked if the city has mobile home park zoning.

Mr. Worley responded that there is an overlay for mobile homes on individual lots but does not allow parks.

Chairperson Rusing asked for confirmation that, because of the re-zoning, the current owner could sell the property and that the new owner could put in an apartment complex that would require more water. Asked if the city would be legally obliged to provide the water.

Interim City Attorney, Matt Podracky, stated that the property has not been re-zoned yet, it still must go before Council. At that time, the rezoning can be tied to the site plan which will ease the concern about property flipping.

Mr. Worley restated that anyone wanting to put in anything other than a mobile home park would be required to re-submit a site plan, go through the process of a review by the Planning Commission and City Council, and submit a new request for water.

Member Montoya asked for clarification that a new owner would not be assured by right to be approved.

Mr. Worley confirmed.

Mr. Podracky added that the next purchaser would be bound by the site plan that exists.

Chairperson Rusing asked if this request needs a development agreement (DA).

Mr. Podracky responded that it does not as a DA is only necessary when the city is willing to do something for the applicant.

Member Montoya commented that from a water perspective, this represents a net positive for the city.

Mr. Worley added that it also provides an affordable type of housing that Prescott is short of and has a demand for.

Chairperson Rusing commented that she looks at this as a public health issue because the septic, which is uphill from Watson Lake, will drain into the lake. She also noted that water has to be hauled to this park which is also a public safety issue.

Mr. Worley responded that as part of safety and infrastructure requirements, fire hydrants will be installed as well as water infrastructure.

Chairperson Rusing stated that she sees this as a benefit to the city, however she would like the applicant to agree to tying it to a site plan.

Mr. Podracky responded that can happen when Council considers the rezoning on April 26th.

Applicant Murray Sharkey addressed the Subcommittee stating that there is substantial water usage data from the well records, each individually metered unit, and the pumps that take the wastewater back to the city which indicates that the 54-unit park uses approximately 5,400 gallons of water per day. He added that he has been working with city utilities on how to tie into a water line and that this park provides affordable housing for the working class.

Member Montoya asked if there is any indication that the company who owns the park will have reservations about tying into the site plan and asked if there is a water resource management model (WRMM) analysis for the mobile home park.

Mr. Sharky responded not at all.

Ms. Rowitsch responded that there is currently no WRMM data however there will be once it is on city services.

MOTION BY MEMBER MONTOYA TO FORWARD ITEM 4.B. TO COUNCIL FOR APPROVAL; SECONDED BY CHAIRPERSON RUSING: PASSED [2 – 0].

C. Approval of Annual Payment to the Arizona Department of Water Resources (ADWR) for 2021 Withdrawal and Use Fee of \$9,198.48.

Ms. Sydow provided a presentation to the Subcommittee regarding the annual payment to the ADWR. State statute requires that an annual withdrawal and use report as well as supporting documents such as the recovery well reports, underground storage reports, conservation efforts and water quality lab results be sent to ADWR. These were sent by the city in mid-March and the total fee due is \$9,198.48.

Ms. Sydow provided an overview of the 2021 Annual Water Withdrawal and Use Report:

- Total water pumped was 7,305 AF, includes potable and non-potable supply, metered and non-metered
- Total water used by customers was 6,730 AF, residential use is the primary factor, commercial use is secondary
- Total water re-charged was 4,331 AF; 1,581 AF was surface water, 2,696 AF was effluent, additional permanent recharge (Prop 400) was 53.93 AF
- Total water recovered for use was 2,917 AF; 1,569.38 was surface water, 1,136.23 was reclaimed supplies (effluent)
- Reclaimed supplies not recovered were placed back into long-term storage account no. 70-421123.

Chairperson Rusing commented that 2,161 AF is all the city has for future and committed growth until the Decision and Order (D&O) comes out, adding that the number may be decreased by the D&O.

Ms. Rowitsch responded that the total water pumped is not only based on the groundwater allowance; there are other supplies the city relies on which gives the city over 16,000 AF.

Member Montoya commented that regarding total recovered use, there is a difference of 211 AF and asked if this is due to evaporation.

Ms. Sydow responded that there is no correlation between the total water recharged and the total water recovered for use.

Member Montoya asked if the amount of recharge is increasing annually.

Ms. Sydow responded that it varies with precipitation, adding that in 2020 there was much more precipitation than in 2021.

Member Montoya asked if the 2020 ground water per capita per day (GPCD) for populations numbers are an average. Wants to know how the city is doing relative to other communities as well as learn what practices the cities with a lower GPCD are utilizing.

Ms. Sydow stated that the City of Prescott is doing well at 112 GPCD, is the fourth lowest in comparison to other cities and communities and will reach out to those cities with a lower GPCD.

Chairperson Rusing referred to the groundwater pumping and population served graph and asked if the population includes Chino Valley, the Mountain Club, areas in the county, and apartments.

Ms. Rowitsch replied that the information refers to the population served within the city's water service area.

Chairperson Rusing asked if water usage for apartments is an estimation, and if non-residential use is included.

Ms. Rowitsch responded that staff uses zoning and densities under the Land Development Code to determine that number and population does not include non-residential uses.

Chairperson Rusing asked if there is a tiered water policy for non-residential users.

Ms. Rowitsch replied that there are tiered water rates for commercial uses and are included in the total water consumption.

MOTION BY MEMBER MONTOYA TO APPROVE ITEM 4.C.; SECONDED BY CHAIRPERSON RUSING: PASSED [2 – 0].

D. Infrastructure Topic – Static Water Level Measurements at City Water Production Wells.

Water Resource Project Manager Leslie Graser provided a presentation to the Subcommittee regarding water levels at city production wells and explained that a static water level is achieved once a well's pump has been halted for eight hours or more.

Chairperson Rusing asked how the measurements are taken.

Ms. Graser responded that the city predominantly uses a tape down to measure.

Chino Well Field:

- There are five (5) production wells in this portion of the subbasin
- Well depths range from 535' to 690'
- Pumping capacity ranges from 850 to 3,100 gallons per minute (GPM)
- Static water levels in 2020 range from 170' to 250' below land surface

Airport Well Field:

- There are three (3) production wells in this portion of the subbasin
- Well depths range from 895' to 950'
- Pumping capacity ranges from 640 to 1,600 GPM
- Static water levels in 2020 range from 430' to 480' below land surface

Chairperson Rusing asked if the Chino Valley wells are shallower than the Airport wells.

Ms. Graser responded that it is based on the geology of the area.

Member Montoya asked about Airport Well #6 in terms of supply.

Ms. Graser replied that it will be comparable to #5, but she will get more information.

Chairperson Rusing asked if the water treatment plant discharges Class "A" treated water into the wash to percolate.

Ms. Graser responded that nothing gets recharged into the wash and will show the pathways and how recharge works at another time.

Ms. Graser continued with a review of the ADWR Statewide Groundwater Level Changes in Arizona, focusing on the Little Chino and Agua Fria subbasins. ADWR will be conducting a basin sweep, measuring every well they can and requesting that the wells are taken offline so that they can take a static level water measurement.

Chairperson Rusing asked for confirmation that Prescott Valley pumps from the Little Chino and recharges into the Agua Fria.

Ms. Graser confirmed.

This item was for discussion only, no formal action was taken.

E. Discussion Regarding the Second Draft of the 2022 Water Management Policy.

Ms. Rowitsch provided a review of the second draft of the 2022 Water Management Policy, focusing on the high points and what to expect to see at the Council Voting meeting on April 26th.

Draft 2 – Water Management Policy

- Site Plan or Plat shall accompany all new water requests over 1 AF that are not in an existing contract
- Administrative approvals required for:
 - multi-family residential (MFR) with up to 8 dwelling units
 - single family residential (SFR) with up to 4 dwelling units that have not triggered a subdivision requirement
 - any commercial project that is less than 1 AF/year
- Water use estimates will be updated annually in January for SFR, MFR and Landscape
- Using WRMM for new development water use estimates, then demand analysis
- Redevelopment tracked administratively if uses less water
- Existing contracts tracked administratively, reviewed bi-annually (January and July)
- New development must connect to sewer and return 75% of water sold as wastewater
- Water budgets set bi-annually (December and June) for commercial and residential
- Requests cannot exceed 50% of budget or file an appeal
- Existing contracts cannot increase existing lots or the volume of water

Member Montoya asked if the appeals process has been determined and how it would work.

Ms. Rowitsch responded that staff would require a written request which will be evaluated. Staff would discuss the budget period with the applicant and determine if the applicant prefers to wait until the next budget period or seek an appeal.

Chairperson Rusing asked about policies twelve and thirteen, wondering why the 25 AF/year for residential were not included.

Ms. Rowitsch responded that after the policy is adopted, there will be a second motion to set the water budget amounts for the current six-month period. Staff is tracking all water requests that have come in since January and will report how much water has been allocated at the April 26th Voting Meeting.

Member Montoya asked if 25 AF is a reasonable mark for residential and commercial use based on what has been tracked.

Ms. Rowitsch confirmed adding that Pre-Application conferences will assist in setting budgets for future fiscal years.

Chairperson Rusing asked if the 25 AF/year could be included in the policy.

Ms. Rowitsch replied that it can be placed in the staff memo, however the policy would have to be amended if placed in it.

Member Montoya asked about the order of operations in Policy 11 and wonders if the informative part should come before the allocation or adjustment part of the budget, it seems out of sequence.

Ms. Rowitsch stated that would be difficult given staff will not know how much water is given until the end of the period, but staff will review his question.

Draft 2 – Water Management Policy - continued

- Contracts outside city limits must contain performance criteria and are limited to city code 2-1-8 with two exceptions
 - Federal, state, county, local government, schools, and fire districts
 - SFR that abuts to a water main, connects to sewer, and if there a well it is abandoned back to the city

Member Montoya asked if the SFR can connect to sewer if it abuts a water main and has a well to abandon but are not connected to sewer, and if this exception would satisfy most requests for water outside of the city limits.

Ms. Rowitsch replied that to fall under the exception they would have to connect to sewer and based on the requests received from the permit center she believes the exception would satisfy most requests for water outside of the city limits.

Chairperson Rusing added that it might help get fire hydrants to the underserved areas for public safety.

- New development shall use water sense fixtures and low water plants
- Existing wells shall be abandoned in order to receive water service
- The city may accept extinguishment credits if they are needed to meet water demands

Member Montoya asked staff if the water policy as presented is an improvement to the existing water policy.

Ms. Rowitsch replied that it provides better clarity to the staff and citizens.

Chairperson Rusing commented that the maps provided are hard to read and have some incorrect information. She would like the maps of the water service area to include section 33 and Stringfield Ranch. Would also like to see subdivisions and the airport included on the maps, a larger font, and future annexations removed.

Ms. Rowitsch stated that future annexations change quickly and over time, so those maps can be updated annually, adding that it is important to know where future annexations areas might be because most of them lie within the water service area.

Member of the public, Leslie Hoy addressed the Subcommittee stating that she believes that this is a great water policy and asked about Policy 10 which states new non-residential development projects shall return no less than 75% of the water. She wonders why residential is not included and why it states that 75% is sold as wastewater.

Ms. Rowitsch responded that residential was removed because the current building code states that they must use water sense fixtures and low water plants. Staff is confident that new residential construction meets the 75% return of water for potable water use within the dwelling unit and that

the language most clearly indicates that the city is seeking a 75% return of wastewater from the water sold.

Member Montoya asked if there is information in the WRMM that shows commercial users that do not return 75% of the water and asked Community Development Director, Bryn Stotler, if she feels the building code addresses the issue.

Ms. Rowitsch responded she does not have that information.

Ms. Stotler confirmed that the building code addresses residential.

Ms. Rowitsch commented that the changes to City Code 2-1-8 and the second draft of the water policy are on the city website and that comments can be submitted through April 12th on both documents. The tentative plan is to take the policy to Council for adoption on April 26th.

This item was for discussion only, no formal action was taken.

5. General Announcements from Staff

Ms. Sydow addressed the Subcommittee with the following general announcements:

- April is water awareness month
- There is a rainwater harvesting exhibit at the library for the entire month of April
- Granite Creek cleanup, hosted by Prescott Creeks, is scheduled for April 23rd
- Earth Day, sponsored by Greater Prescott Outdoors is scheduled for April 23rd
- Highland Centers Spring Grow native online plant sale begins April 5th through May 5th
- Highland Centers is also having a water awareness festival on April 30th from 9 a.m. to 12 p.m.
- The Yavapai County Contractors Association will have its Home and Garden Show on April 29th, 30th and May 1st
- Water Smart decals have been placed on all water and wastewater operations trucks and there is a contest on Facebook for those who spot them
- AZDWR's website new.azwater.gov is where you can find activities including classes to participate in

Ms. Rowitsch introduced the new Public Works Director, Ashley Couch.

6. ADJOURNMENT

There being no further business to discuss, Chairperson Rusing adjourned the meeting at 11:22 a.m.

Cathey Rusing, Chairperson

ATTEST:

Jennifer Wiita, Deputy City Clerk

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Regular Subcommittee Meeting of the Council Subcommittee on Water Issues of the City of Prescott, Arizona held on April 5, 2022. I further certify the meeting was duly called and held and that a quorum was present.

Dated this _____ day of _____, 2022.

AFFIX
CITY
SEAL

Jennifer Wiita, Deputy City Clerk

**COUNCIL AGENDA MEMO**

MEETING TYPE/DATE: **REGULAR SUBCOMMITTEE MEETING** **06- 7-22**

DEPARTMENT: **Water Resources**

AGENDA ITEM: Recommendation for Approval of a Revision to Prescott City Code 3-10-8: Water Conservation Code, Incentive Program, to Add an Additional Rebate Tier for a Hot Water Recirculation System.

ITEM SUMMARY

This item is for consideration of a revision to Prescott City Code 3-10-8: Water Conservation Code, Incentive Program, to add an additional rebate tier for a Hot Water Recirculation System.

BACKGROUND

The goal of the incentive program is to encourage residents and businesses to conserve water. To meet this goal staff looks for other water saving devices that can be utilized to improve conservation efforts. The addition of a hot water recirculation system was recently evaluated by staff for Council's consideration for inclusion to the rebate incentive program. Adding this device to the program may save as much as 10,000 gallons of water per year, per installation, based on average water usage by a family of four.

On February 28, 2006, the City Council adopted Ordinance No. 4527 to provide a rebate for a hot water recirculation system in the amount of \$50. This rebate was discontinued on August 31, 2010, by Ordinance 4759-1110 because it was rarely used.

Research provided by other communities within the state revealed that at one time the City of Scottsdale did have a water rebate for a hot water recirculating system. An email dated April 26, 2022, from Elisa Klein, Water Conservation Program Supervisor for Scottsdale stated, "The water saving for this rebate was not statistically significant, so it made sense to put more effort into other conservation programs."

In a subsequent phone call, Ms. Klein noted that most of the homes that utilized the hot water recirculating pumps were in the high-end homes in North Scottsdale, and that many of the residents there were part-time, leaving their summer homes for cooler climates. In addition, the low-water-use shower heads also slowed the volume of hot water reaching the intended target. For these reasons the

City of Scottsdale no longer give out rebates for hot water recirculating systems. No other communities in Arizona were found that use rebates for hot water recirculating systems.

A fact sheet with the pros and cons of the Hot Water Recirculation System is attached, including costs for the device as well as other associated cost for the installation of a hot water recirculating system. Should the Subcommittee and Council choose to move forward to adopt a hot water recirculation rebate, staff is recommending a rebate amount of \$150.

FINANCIAL IMPACT

The FY23 budgets for the conservation rebate incentive program is \$40,000.

Recommended Action: MOVE to recommend approval/denial of the revision to City Code 3-10-8.

ATTACHMENTS

- 1.[Pros_and_Cons_Hot_Water_Recirculation_System.docx](#)
- 2.[PCC_3-10-8__F__1-27-21__2.docx](#)

HOT WATER RECIRCULATION SYSTEM PROS and CONS

The system requires a hot water recirculation pump that attaches to the outflow of the hot water heater. In addition, a sensor valve must be installed under the sink farthest away from the hot water heater. The sensor valve “senses” when the temperature drops 90 degrees below Fahrenheit. A timer is recommended to turn on 30^{+/-} minutes ahead of schedule to accommodate either the morning or evening showerer.

PROS:

1. No more waiting for hot water
 - Can save 1 to 3 minutes waiting for hot water
 - Water may be lukewarm the first few seconds
2. Can save water
 - Average person wastes 1- 3 gallons of cold water waiting for hot water
 - The “average” home can save 10,000 gallons of water a year (“average” is not defined, but generally understood to be a family of four)
3. Can save a small amount of money
 - Dollars saved isn’t huge, but can save some money over the long term

CONS:

1. Initial Cost
 - Hot water pumps at Home Depot range from:
Watts model for \$199, plus \$83 for the sensor valve kit;
Grundfos \$297, plus \$77 for the sensor valve kit;
Rheem \$585 with sensor kit
Taco Comfort \$723, plus Taco smart plug, \$145
 - Hot water pumps at Lowes range from
Watts \$219, sensor valve not included
Eastman \$269, sensor valve not included
AquaMotion, \$536, under sink pump (entire unit is under the sink, not at the hot water heater)
AquaMotion, \$374, also entirely under the sink
 - Hire a plumber, and it could be an additional \$500 - \$1000
2. Lukewarm water
 - If the hot water pump doesn’t have a dedicated return line for the hot water (which it probably won’t), water will be lukewarm to start
3. Changing the sensor valve

- Some homeowners report having to change the sensor valve every two years. That's fairly easy to do, but requires an additional cost: (\$77 - \$83?)
- If the sensor valve is inside the pump, then the entire pump may need to be replaced.

4. Needs an outlet for the unit

- A 120- volt outlet will work if there is one nearby. However, it may require installing a new outlet. The new outlet must be within 30 inches of the pump; the pump cord may not be long enough, *and...*
- Using an extension cord is not recommended
- Ryan Greene, Chief Building Official, said if there is more than 50 feet between the area where the water line enters the house and the water heater, then a hot water recirculating pump is required. Otherwise, there is no requirement.

5. Damage to Units after a Water Outage

- Should the City incur a water outage, these units are easily damaged when water pressure is restored. This can result in claims for damage filed against the City.

3-10: WATER CONSERVATION CODE

3-10-8 INCENTIVE PROGRAM:

(F) Incentives shall be administered by Water Resource Management staff, in accordance with the following incentive awards list:

Incentive awards list and qualifying criteria:

INCENTIVE AWARDS LIST	
Water Efficiency Improvement Incentive	Incentive Award Amount
Rainwater cistern (active rainwater harvesting) ¹	\$0.50 per gallon of storage \$500.00 maximum award
Rain garden (passive) ²	\$3.00 per square foot \$500.00 maximum award
Turf removal on site and in adjacent public right-of-way ³	\$0.50 per square foot
Toilet: 1.0 gallon per single flush or 1.28 gallons per dual flush	\$100.00
Toilet: 1.28 gallons per single flush	\$75.00
Water customer on septic system, toilet incentive	\$50.00
Commercial urinals (replacement alternative flushless design, flush once at a specified interval, or 1 quart/flush)	\$50.00
WaterSense-labeled smart irrigation timer ⁴	\$75.00
Clothes washing machine replacement ⁵	\$200.00
Water customer on septic system, additional washing machine replacement incentive	\$50.00
Hot water recirculating system	\$150

**COUNCIL AGENDA MEMO**

MEETING TYPE/DATE: **REGULAR SUBCOMMITTEE MEETING** **06- 7-22**

DEPARTMENT: **Public Works**

AGENDA ITEM: Focus Topic: Water Resources Management Model.

ITEM SUMMARY

Staff will review the Water Resource Management Model information pamphlet.

BACKGROUND

The Water Resource Management Model (WRMM) is a long-term water resource planning tool. It builds on prior work as well as on the City's water and wastewater infrastructure model (by Carollo), but differs in its focus and intent. The Carollo model was prepared primarily to predict the need and timing for water and wastewater infrastructure improvements. The WRMM is primarily for planning purposes to predict the buildup of demand for potable and non-potable water and then match that demand with available water resources. The WRMM has the capability of varying numerous inputs which allows the City to look at a wide range of “what if” water management scenarios. The WRMM’s excel data is then converted into GIS shapefiles for use in ArcMap with other data layers, to visualize, evaluate, and convey complex or data intensive topics. This work was completed under City Contract Nos. 2015-008 and 2019-080.

FINANCIAL IMPACT

None

Recommended Action: This item is for discussion only. No formal action will be taken.

ATTACHMENTS

1. [WRMM Pamphlet_05 04 2022.pdf](#)



WATER RESOURCE MANAGEMENT MODEL (WRMM)

UPDATED: MAY 4, 2022

INTRODUCTION

The Water Resource Management Model (WRMM) is a long-term water resource planning tool. It builds on prior work and on the Carollo water and wastewater infrastructure model, but differs in its focus and intent. The Carollo model was prepared primarily to predict the need and timing for water and wastewater infrastructure. The WRMM is primarily for planning purposes to predict the buildup of demand for potable and non-potable water and then match that demand with available water resources.

The WRMM has the capability of varying numerous inputs which allows the City to look at a wide range of “what if” water management scenarios. The WRMM’s

excel data is then converted into GIS shapefiles for use in ArcMap with other data layers, to visualize, evaluate, and convey complex or data intensive topics. This work was completed under City Contract Nos. 2015-008, and 2019-080.



INTENDED USES

- *Track water customer usage and available supplies for long-term planning.*
- *House data to support the City’s next and future ADWR Decision and Order of Assured Water Supply.*
- *Discuss water usage and planning needs with elected body, and public in a GIS format.*

WRMM OPERATION AND MAINTENANCE

The construction and operation of the WRMM is available in the “Documentation of the Update Water Budget Model” prepared by Herb Dishlip, P.E., dated August 23, 2019. The WRMM will require annual and in some cases more frequent updates. A maintenance document has been updated and is being

tested by City staff. Updates will need to be in coordination with the City’s GIS Department. The City’s utility (water and sewer) billing information is used to update both the model and its associated GIS products. *See GIS section for additional information.*



THE WATER BUDGET MODEL AND DATABASE (EXCEL)

Microsoft Excel was used to develop the water budget model for a variety of reasons. Excel interfaces well with ARCGIS. ARCGIS tables can readily be exported to Excel and also can be edited in Excel. Excel is almost universally available. The software allows for linkages between worksheets, so data can reside on one worksheet and be used to perform calculations on a different worksheet. Additionally, any scenario run through the model can be preserved by using the "Save As" command and giving the file a unique name.

The water budget model includes several worksheets that are critical for data manipulation and several that display results. The following discussion provides a brief explanation.

Data – The *Data worksheet* provides information on annual water use for over 25,000 existing accounts. The data used in this table was derived from the City's Utility Billing system.

Analysis – The *Analysis worksheet* uses the data in the *Data worksheet* to provide useful information about the mix of uses in the City's service area. For example, the mix generally looks like 91% residential and 9% non-residential.

City Limits and Max Area (Database Worksheets) –The City Limits worksheet applies to the initial basemap study, and the Max Area worksheet applies to the General Plan area or second basemap area.

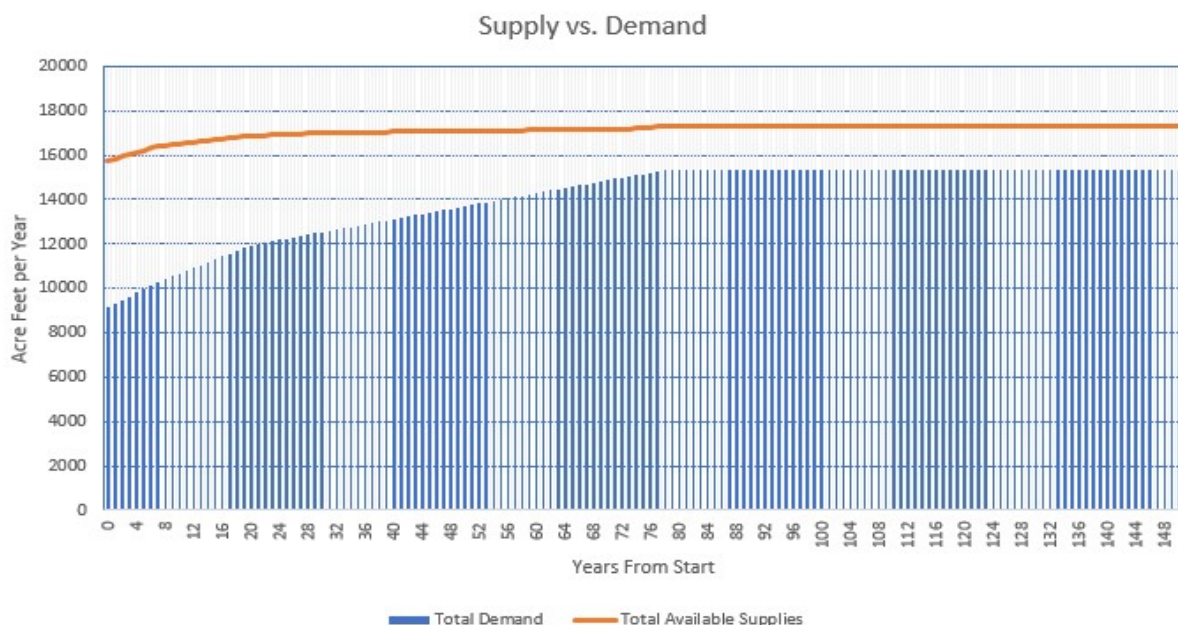
Existing Only – A subset of the previously described database worksheets. This worksheet contains the data for all existing water accounts. This worksheet will require an annual update.

Subdivisions – The *Subdivisions Worksheet* pulls the unique value subdivision names from the *Database Worksheet*, summarizing information about water uses within them. The key values in this worksheet are the average use by lots using water.

Other worksheets are used in the operation of the model. For more information contact the City of Prescott.

Over the years, three (3) versions have been created:

1. General Plan
2. Water Service Area
3. Decision and Order of Assured Water Supply



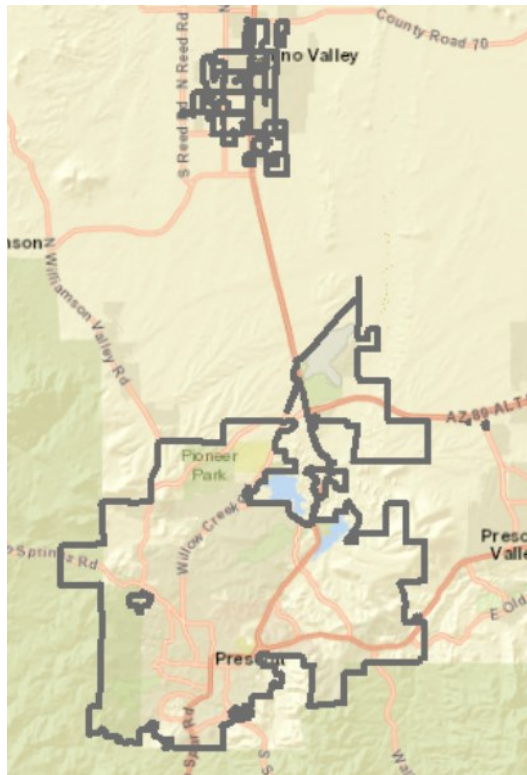
GEOGRAPHIC DATABASE (GIS)

A geographic database for the City's current and future water service area were constructed using ESRI ARCGIS software. Initially, two distinct basemaps were developed, service area and general plan area. In 2020, a third area was defined to meet the requirements of the City's Decision and Order of Assured Water Supply modification. The initial basemap, Current Service Area depicts the current City limits and the areas outside the City limits where the City either is currently providing water service or has a contractual commitment to provide water service upon request of the landowner. The General Plan basemap includes all of the area within the initial basemap as well as areas outside of the City limits and water service area that are within the area described in the City's General Plan. Dependent on growth and development policies and procedures, the City may expand water service to these areas sometime in the future.

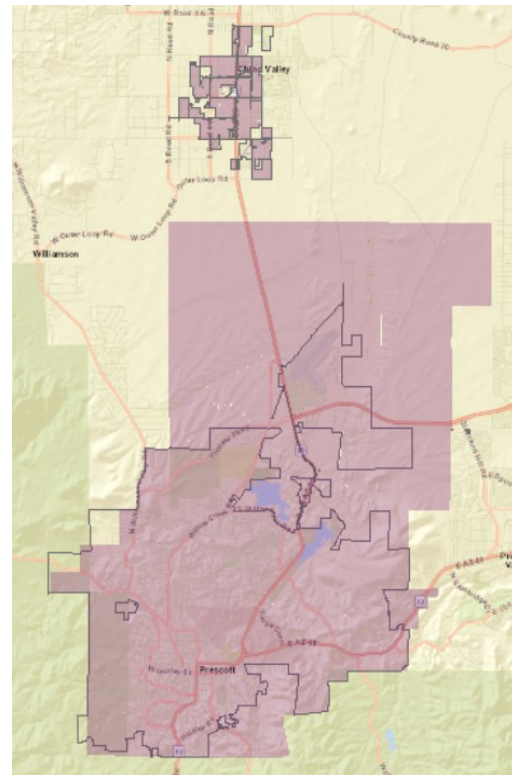
The City provided numerous layers of critical information which were used to build the updated model. The layers that were used prominently included:

- City limits
- General plan boundaries
- Annexations
- Yavapai County parcels
- Updated zoning
- Updated land use planning
- Subdivisions
- Chino Valley Irrigation District and Town of Chino Valley lands
- Portions of the service area which are not connected to the City's sewer system
- Areas with contracts for alternative water supplies
- Water utility account locations for 2012 and updated locations for 2018
- Yavapai-Prescott Indian Reservation

Current Service Area (circa 2014)



General Plan (circa 2014)





Public Works Department
433 N. Virginia St.
Prescott, AZ 86303

928-777-1130

CITY WEBSITE

WWW.PRESCOTT-AZ.GOV

The City manages its water resources to ensure sufficiency for current and planned future demands. A team of professionals operates infrastructure (wells, pipes, storage tanks), monitors physical resources (groundwater, surface water, and reclaimed water), and integrates supplies with State and City water management requirements (e.g., Decision and Orders of Assured Water Supply, and City codes).

Meet all state requirements of Arizona Revised Statutes

Uphold the City's Decision and Order of Assured Water Supply

Continue to evaluate and address the community's water supplies within the City's General Plan

Continue to assess the community's water supplies to provide education and tools to assist home and business owners with basic and advanced conservation methods.

PRESCOTT ACTIVE MANAGEMENT AREA (PRAMA)

The City is located within the Prescott Active Management Area (PrAMA), as defined in Arizona State law (Title 45), and must adhere to the requirements therein. Through a series of management plans administered by ADWR, the 1980 Groundwater Code established water management strategies that emphasize conservation, replacement of existing groundwater use with renewable supplies, recharge, and water quality management by all users within the AMA, to help achieve the goal of aquifer safe-yield by 2025. Since 1999, the City has held a State of Arizona Decision and Order of Assured Water Supply (AWS) continuing the City's commitment to provide a secure water supply, now and into the future.

