

# AGENDA

**COUNCIL WATER ISSUES COMMITTEE  
NOTICE OF PUBLIC MEETING  
Tuesday, April 4, 2017  
9:00 a.m.**

**Prescott City Hall  
Lower Level Conference Room  
201 South Cortez St., Prescott, Arizona  
(928) 777-1100**

The following Agenda will be considered by the Council Water Issues Committee at its meeting on **Tuesday, April 4, 2017, at 9:00 a.m.** in the Lower Level Conference Room, 201 South Cortez Street, Prescott, Arizona. One or more members of the Council may be attending this meeting through the use of a technological device.

- A. Call to Order.
- B. Roll Call.

**COUNCIL WATER ISSUES COMMITTEE MEMBERS:**

Chairman Jim Lamerson  
Member Steve Blair  
Member Steve Sischka

- C. Approval of minutes of the March 7, 2017, Council Water Issues Committee meeting
- D. Alternative Water Portfolio Update
- E. Water Service Agreements
  - 1. Danny Padilla (WSA 17-007)
- F. Proposed revisions to unit allocations; public comment
- G. Adjournment

**CERTIFICATION OF POSTING OF NOTICE**

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at Prescott City Hall on 4/3/17 at 8:45a m. in accordance with the statement filed by the Prescott City Council with the City Clerk.

  
Dana R. DeLong, City Clerk

e.

COUNCIL WATER ISSUES  
COMMITTEE  
REGULAR MEETING  
TUESDAY, MARCH 7, 2017  
PRESCOTT, ARIZONA

MINUTES OF THE REGULAR MEETING OF THE COUNCIL WATER ISSUES COMMITTEE HELD ON MARCH 7, 2017, in the LOWER LEVEL CONFERENCE ROOM, located at CITY HALL, 201 SOUTH CORTEZ STREET, Prescott, Arizona.

A. Call to Order.

Chairman Lamerson called the meeting to order at 9:00 a.m.

B. Roll Call.

COUNCIL WATER ISSUES COMMITTEE MEMBERS:

Present:

- Chairman Jim Lamerson
- Member Steve Blair, (arrived at 9:04 am)
- Member Steve Sischka

Staff Present:

- Michael Lamar, City Manager
- Clyde Halstead, Assistant City Attorney
- Virginia Mefford, Deputy City Clerk
- Craig McConnell, Regional Programs Director
- Leslie Graser, Water Resources Manager

C. Approval of minutes of the February 7, 2017, Council Water Issues Committee meeting.

**COUNCILMAN SISCHKA MOVED TO APPROVE THE MINUTES OF THE FEBRUARY 7, 2017, WATER ISSUES COMMITTEE MEETING; SECONDED BY MAYOR PRO TEM LAMERSON; PASSED 2-0.**

D. Alternative Water Portfolio Update

Leslie Graser, Water Resources Manager, presented. She reviewed the Calendar Year 2017, quantities that were made available ("budgeted") by Council.

- 1. Residential      70 acre-feet
- 2. Commercial      100 acre-feet

Ms. Graser said as of February 27, 2017, of the 70 acre-feet residential budget, 31.7 acre-feet remained. Two applications had been received that met the requirements for administrative approval (3 units or less), but neither corresponding quantity had been placed into contract. Ms. Graser said the requests for alternative water associated with the projects on the agenda, if viewed favorably by the Council Water Issues Committee, would reduce the Calendar Year 2017 budget balances to:

1. Residential        28.20 acre-feet
2. Commercial       100.00 acre-feet

She noted that the preceding information was solely for tracking purposes, for Calendar Year 2017. An additional 100 acre-feet had been set aside for a specific contractual obligation (Lee/Bullwhacker).

Mayor Pro Tem Lamerson asked how the 28.20 acre-feet translated to units.

Craig McConnell, Regional Programs Director, said it would translate between 90 to 100 units.

No action was taken.

#### E. Water Service Agreements

1. Brian Wirick (WSA 17-004)

Councilman Blair asked if a RA-36 piece of property could be subdivided.

A discussion of residentially zoned properties ensued. Ms. Graser said that if part of a pre-1998 plat, a lot would have grandfathered groundwater. If further subdivided or split, the City would have to provide alternative water for any additional lots created. In the event the property was not subdivided pre-1998 and presently undeveloped, there is no grandfathered groundwater, and the property is not entitled to water, whether groundwater or alternative water.

Councilman Blair said he had an issue with this, and asked what if they thought they could split it when it was bought prior to 1998, but now could not. Could they bring a lawsuit?

Clyde Halstead, Assistant City Attorney, said that if there was no entitlement, nothing was taken away, and hence no grounds for a lawsuit.

Councilman Blair commented that he could have bought five acres in the expectation of splitting it, but without water would be unable to do that.

Mayor Pro Tem Lamerson said it was not the City's responsibility to assist someone in realizing their investment; that was their responsibility.

Councilman Blair mentioned Prescott Lakes as an example.

Ms. Graser said that Prescott Lakes was a different situation for which preliminary plats existed, are still in effect, and therefore comprise an entitlement to grandfathered groundwater.

Mr. McConnell stated that City water policy would be revised, to respond to what's happening in the marketplace; there is a policy question of whether the City should allocate its very limited remaining, unreserved alternative water in nickel-dime fashion, or look at the bigger picture.

Councilman Blair asked if they drill a well.

Clyde Halstead, Assistant City Attorney, said the short answer was generally no, but it might be possible under very specific conditions set forth state law.

Mayor Pro Lamerson said they could not take action in conflict with state law.

Councilman Sischka asked for clarification regarding whether the request could be administratively approved.

Ms. Graser replied that due to the re-plat in 2005, alternative water was required, and the request could be so approved, administratively.

Councilman Blair asked what information is given to real estate agents regarding land for sale that cannot or may not be able to be split.

Mr. McConnell responded that there is dialogue which includes a preliminary application conference (PAC). Typically, if a party wants to split a lot, they go to PAC before the transaction is finalized, and receive comments from the various City departments.

Ms. Graser said that she spends a lot of time on the telephone speaking with real estate agents and other persons who want to know about water availability, and she informs them accordingly, as to the specific circumstances applicable.

Councilman Sischka asked if this lot could be administratively approved.

Ms. Graser said yes.

Mayor Pro Tem Lamerson said when they go to purchase the property, they need to know whether or not they can hook up to the City's water and sewer.

There were no further remarks, and no action was taken.

2. Raymond Hickle (WSA 17-005)

Mayor Pro Tem Lamerson commented that the request looked to be in order. There were no further remarks, and no action was taken.

3. Pine Haven Apartments (WSA 17-006)

Ms. Graser continued with the Pine Haven Apartments (WSA 17-006) item. She said the project was to convert an existing mobile home park to a new forty-two (42) unit apartment complex consisting of seven (7) buildings, plus an office and parking lot. According to the City water allocation policy, expected water demand for the project was 42 multi-family dwelling units X 0.25 acre-foot (AF)/dwelling unit = 10.5 AF.

Councilman Blair asked if a portion of the water had already been allocated.

Ms. Graser said yes; the Legal Department had advised that the circumstances were similar to the Holiday Lodge redevelopment. They were taking an existing piece of developed property and seeking to redevelop it for apartments. The property has a quantity of grandfathered groundwater.

Ms. Graser said the property had been in existence as a mobile home park prior to 1998, therefore the water usage of record could be carried forward as long as no re-plat was involved. Historic water usage for the property was 7.5 acre-feet; allocation of the balance, 3.0 acre-feet, would be required from the alternative water General Pool.

Ms. Graser said in accordance with City policy, a water service agreement application was submitted with a Site Plan (SI 17-001). Placement of water into contract would be subject to Calendar Year 2017 available supplies, a Committee recommendation, and Council approval. The Site Plan would be placed on an upcoming Planning & Zoning Commission meeting.

The tentative water service agreement would require that a certificate of occupancy be obtained for the project within three (3) years. She noted that the Land Development Code defined an apartment as not less than 320 square feet; however, when a historic building was remodeled, the City Building Department applied the International Building Code, Chapter 3 – Use and Occupancy Classification. The original and current project was considered Residential Group R-2, no change in classification.

Mayor Pro Tem Lamerson said this seemed to be in line with the General Plan, and had no problem with the request moving forward.

No action was taken.

F. Analysis and recommendations for unit allocations of alternative water for residential development.

Mr. McConnell said this item was introduced to the Committee on February 7, 2017, for presentation of more detailed information and recommendations at today's meeting.

He said since 2000, the allocations of alternative water had been 0.35 acre-foot per new single-family dwelling unit, and 0.25 acre-foot per new multi-family unit. Each of the unit allocations included a 0.1 acre-foot markup for development of non-residential/support businesses anticipated to eventually serve the new residents.

The allocations were calculated from assumed occupancies for new development per dwelling type, and gallons per capita per day of water use (which had since markedly decreased, as shown by the GPCD graph provided in the agenda memo).

Mr. McConnell gave reasons for less water usage than the unit allocations:

- Conservation awareness by City water customers
- Water conserving plumbing codes
- Water Smart™ landscaping
- Conservation water rate structure

He said throughout the years, the City had continuously reviewed water management policies, and made adjustments. Based on the analyses of Attachment 1, additional revisions were justified, to assure the most effective and efficient use of this finite resource.

Councilman Blair was asked why there was a spike in water use in 2002. Mr. McConnell said that could be researched.

Leslie Hoy, in the audience, attributed it to drought; it was a very dry year for which outside water use was substantially higher than usual.

Councilman Sischka asked if they could determine what the support services and commercial were using. Mr. McConnell said he would like to get into that, and provide a breakdown to shed a little light on the topic.

Councilman Sischka asked if it was not readily evident. Mr. McConnell said no, but some conclusions could be drawn.

Mayor Pro Tem Lamerson said it could be the City demographics.

Councilman Sischka said the water for commercial was also being used by non-residents, those who shop and dine here, for example.

McConnell pointed out on the graph the breakdown of water actually used by residential customers based upon the actual usages. The following unit allocations for Water-

Efficient Residential Development, subject to certain conditions and requirements being met as outlined, and other actions, are recommended:

1. Revise the Unit Allocations for Water-Efficient Residential Development

- Single-family residential: 0.20 AF (65,170 gallons per dwelling unit per year)
- Multi-family residential: 0.12 AF (39,102 gallons per dwelling unit per year)

Mr. McConnell noted that all multi-family was deemed to be Water-Efficient Residential Development

2. Retain the Unit Allocation for other Single-Family Residential Development

- Single-family residential: 0.25 AF (81,463 gallons per dwelling unit per year)

3. Suspend the 0.1 AF markup, track the actual new demand (water supplied through new water meters set) for support businesses on an annual basis, and provide a summary to Council in conjunction with the Annual Water Report presented in March of each year, including recommendations for further policy adjustments, as applicable. Tracking and allocation of alternative water for nonresidential development will be more useful on an individual project basis, rather than the nominal markup of 0.1 acre-foot on each residential unit allocation, without knowing how this relates to actual demand for support services created by the new residential development.

Councilman Sischka asked if this would be reported to the Council in relation to the 0.1 AF. Mr. McConnell said yes, and Water Resource Management would come to Council with an annual analysis of use.

Councilman Sischka said residential units could go up, but commercial usage be relatively flat.

Mr. McConnell continued with the fourth point for further explanation.

4. Establish criteria for Water-Efficient Residential Development

- Applicable to new preliminary and final subdivision plats, and replats of master plan communities served by alternative water (but not lot splits, or individual units on existing lots or tracts)
- The development is Water Sense (best practices) certified
- All City water saving/conservation plumbing codes apply at the time of building permit issuance
- Applicable to all multi-family units, which may be individually or master-metered; and single-family units with 5/8" x 3/4" meters

Councilman Sischka asked why the 0.1 AF was still in the mix.

Mr. McConnell said that would be a policy question to be looked at later.

- Common areas, medians, and parkways xeriscaped in accordance with the Land Development Code and State requirements for Active Management Areas, and separately metered, with CC&Rs requiring the xeriscape to remain in place and be maintained by a property owners association, and all of the preceding included as a condition in the water service agreement
- A new Water-Efficient Development water rate will be recommended, applied to annual usage in excess of the unit allocation (a higher rate for the overage quantity, calculated on December 31st of each year, with the additional charge divided into three equal parts, and applied on the February, March, and April bills); the rate would be set in the utilities rates update scheduled to commence during 2017, with a January 2019 effective date

Mr. McConnell mentioned that Leslie Hoy brought up at the February meeting that conservation needed to be considered, i.e., that conservation savings not be used for additional growth. Mr. McConnell said that in combination, the factors driving lower water usage have created an estimated 410 acre-feet of current "headroom" (the difference between the overall volume of water allocated and the actual total being used) for projects that have been built and occupied, which could increase to a future total of 760 acre-feet if all approved but presently un-built projects are added. The revised unit allocations recommended were intended to be prospective; hence, the conservation savings and other lower usages accrued to date would remain in the City's water portfolio as a cushion, and not be "mined" for additional future development.

Implementation of the lower unit allocations arguably represented more efficient use of the finite resource; even so, additional headroom is anticipated to accrue from the difference between the new unit allocations and actual usages (0.20 AF for single-family vs. actual usage of 0.17 AF per dwelling unit; and 0.12 AF for multi-family vs. actual usage of 0.09 AF per dwelling unit).

Councilman Sischka asked if what he was saying was that the new unit allocations would not be applied retroactively. Mr. McConnell said that was correct.

Mr. Lamar confirmed that it would not be retroactive.

Councilman Sischka said that the 0.2 AF would be effective going forward for Water Efficient developments. Mr. Lamar commented that this is slightly above the 0.17 AF actual usage for single-family residential across the entire customer base.

Mr. McConnell said that was correct, there was some cushion. They were recommending that it remain unallocated.

Councilman Sischka asked about the time period for the 0.17 AF. Ms. Graser said from 2010 to now.

Councilman Sischka said it might be less than that going forward.

Councilman Blair asked how ADWR would view the proposed change. Mr. McConnell responded that the City could do what it wanted with its alternative water, as long as it was reasonable and defensible.

Ms. Graser added that this discussion pertained only to alternative water, not the City's entire water portfolio. The headroom was even higher, looking at groundwater too, because of the lower actual usage by residential customers.

Mr. McConnell outlined the recommended schedule further recommended that consideration be given to amending the City Water Management and Calendar Year 2017, Alternative Water Allocation Policy to implement the recommendations through the following public process:

- March 7, 2017 Water Issues Committee Meeting  
Presentation of analysis and recommendations;  
Committee discussion; public comment
- April 4, 2017 Water Issues Committee Meeting  
Committee action on proposed revisions to unit  
allocations; public comment
- April 25, 2017 City Council Study Session  
Presentation of background and recommendations;  
Council discussion and public comment
- May 9, 2017 City Council Voting Meeting  
Council discussion and public comment; Council  
adoption of a resolution amending the City Water  
Management and Calendar Year 2017 Alternative Water  
Allocation Policy

Councilman expressed an interest in seeing actual water use for specific subdivisions, and how it compares to the figures presented and recommendations being made.

Mr. McConnell said work on this has already been done, and will be provided.

Councilman Sischka complimented the work done on this item.

Mayor Pro Tem Lamerson asked the audience if there were any questions or comments.

Leslie Hoy said that she had several questions. Mr. McConnell suggested that Ms. Hoy could also send written questions on this topic to Water Resource Management, and they would be answered.

No action was taken on this item.

G. Adjournment

There being no further business to discuss, the Council Water Issues Committee adjourned the Public Meeting of March 7, 2017, at 10:29 a.m.

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JIM LAMERSON, Chairman

ATTEST:

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DANA R. DeLONG

<b>COUNCIL WATER ISSUES COMMITTEE AGENDA MEMO</b>	
<b>April 4, 2017</b>	
<b>DEPARTMENT:</b>	City Manager (Water Resource Management)
<b>AGENDA ITEM:</b>	Alternative Water Portfolio Update

<b>Approved By:</b>	<b>Date:</b>
<b>Water Resource Manager:</b> Leslie Graser	
<b>Regional Programs Director:</b> Craig McConnell	

**Summary**

For Calendar Year 2017 (January 1, 2017, through December 31, 2017), quantities were made available ("budgeted") by Council in two categories:

- 1. Residential        70 acre-feet
- 2. Commercial        100 acre-feet

According to policy, no single project is eligible for allocation of more than 50% of each of the preceding (residential and commercial) quantities, or the remaining balances of these quantities during the calendar year.

At year-end 2017, if the preceding quantities are fully allocated, 50 acre-feet would be the opening balance for Calendar Year 2018 according to the policy adopted December 13, 2016, which identified an annual transfer of 50 acre-feet from the vacant, residentially-zoned tract reservation (until that reservation is extinguished). The actual volume recommended for 2018 may be more that 50 AF, depending upon any unallocated 2017 year-end balance.

As of March 14, 2017, of the 70 acre-feet residential budget, 28.7 acre-feet remain. One application has been received that meet the requirements for administrative approval (3 units or less), but the corresponding quantity has yet been placed into contract.

Requests for alternative water associated with the projects on this (April 4, 2017) agenda, if viewed favorably by the Council Water Issues Committee or administratively approved, would reduce the Calendar Year 2017 budget balances to:

- 1. Residential        28.35 acre-feet
- 2. Commercial        100.00 acre-feet

<b>COUNCIL WATER ISSUES COMMITTEE AGENDA MEMO</b> <b>April 4, 2017</b>
<b>DEPARTMENT:</b> City Manager (Water Resource Management)
<b>AGENDA ITEM:</b> Water Service Agreement Application No. WSA 17-007 by Daniel Padilla, for the installation of two (2) manufactured homes, replacing one (1) existing unit on APN 113-05-062 at 803 Dameron Drive

<b>Approved By:</b>	<b>Date:</b>
<b>Water Resource Manager:</b> Leslie Graser	
<b>Regional Programs Director:</b> Craig McConnell	

**Summary**

On March 6, 2017, Water Service Agreement Application No. WSA 17-007 was submitted by Daniel Padilla, seeking an alternative water allocation for one (1) additional dwelling unit, a new manufactured home. The submittal is in accordance with the Water Management and Calendar Year 2017 Alternative Water Allocation Policy as the WSA was filed in association with Building Permit No. B1612-031.

**Background**

The subject parcel APN 113-05-062 is part of the Dameron Tract Subdivision, zoned Multi-Family Medium (MF-M). The property currently has one manufactured home; however, the property owner is seeking to remove that unit and install two new manufactured homes.

The City Manager has authority to administratively approve a water service agreement to enable placement of, and water service to, the second dwelling, subject to a performance requirement period of three (3) years.

**Attachments**

- 1) Location Map
- 2) Water Service Agreement Application No. WSA 17-007

<b>Committee Recommendation to Council:</b> For information of the Committee; no action necessary.
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Parcel Report for APN: **113-05-062**

Site Address: **803 DAMERON DR**

Owner:  
**PADILLA DANIEL C & STACY M RS**  
**PO BOX 2813**  
**CHINO VALLEY AZ 863232702**

Subdivision Name: **DAMERON TRACT**

Max. Lot Coverage: -  
 Max. Bldg Height: -  
 Setbacks:  
 Front: -  
 Side: -  
 Rear: -  
 Corner: -

Acres: **0.2 acres**  
 Square Ft: **sq.ft.**  
 TRS:

DOR Usage Code: **Mobile Home**  
 Description: **0813-MH HOOKUPS/IMPS,**  
**NO MH**

**Zoning Information**

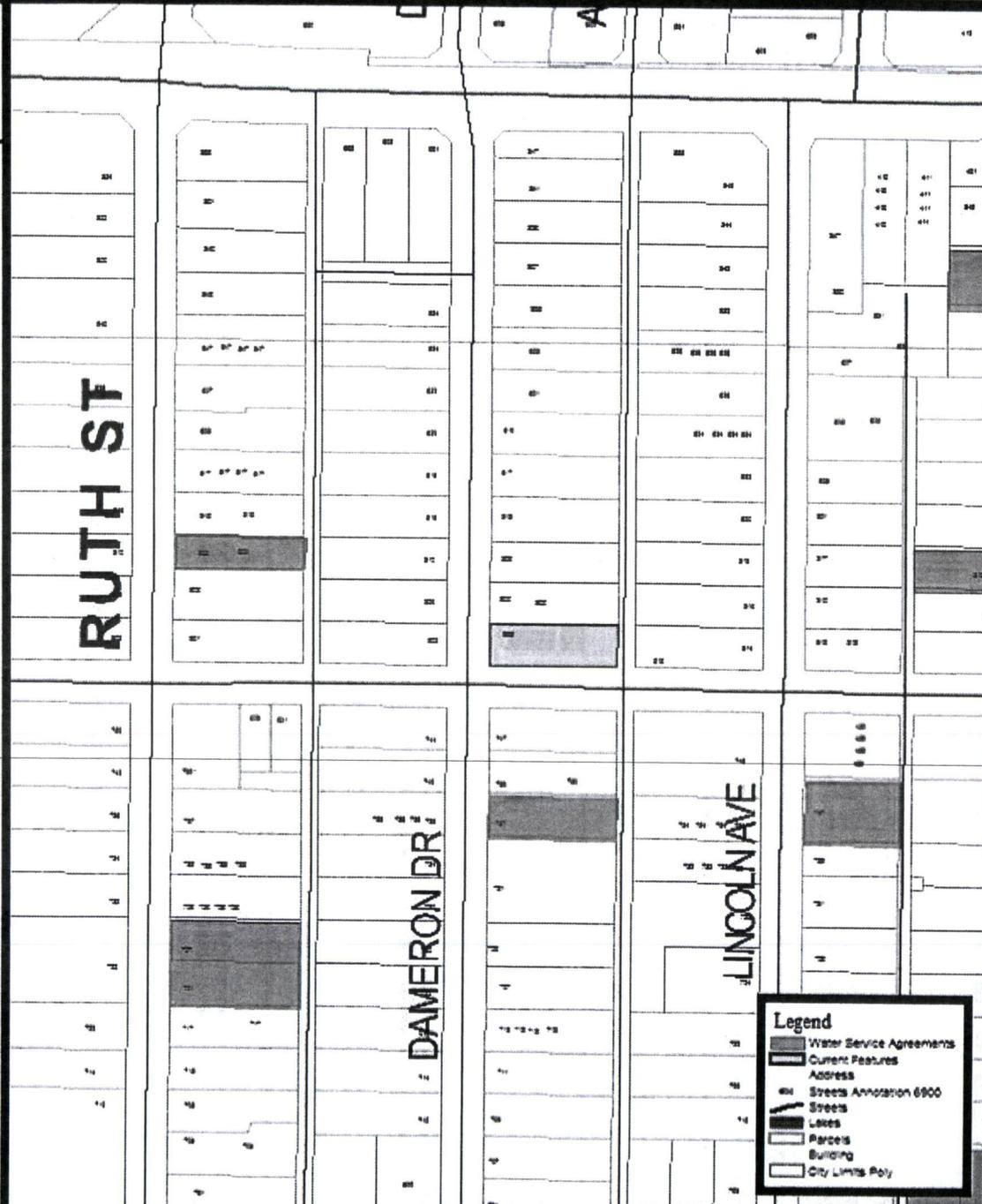
Zoning: **MF-M (MH)**

Flood Zone: **0.2 PCT CHANGE, X;**  
 FIRM Panel: **04026C2061G**

**Overlay District Information**

HPD District: **Outside**  
 NR District: **Outside**  
 Willow Creek District: **Outside**  
 Wipple-Zuma District: **Outside**  
 Hwy 89 District: **Outside**  
 Prescott East Area Plan: **Outside**  
 Prescott Enterprise: **Outside**  
 Airport Noise District: **Outside**  
 Wildlife Urban Interface: **Outside**

**Planner's Actions:**



803 DAMERON DR

**Legend**

- Water Service Agreements
- Current Features
- Address
- Streets Annotation 6900
- Streets
- Lakes
- Parcels
- Building
- City Limits Poly

This map is a product of  
 The City of Prescott



WSA 17-\_\_007



**WATER SERVICE AGREEMENT APPLICATION**

Water Resources: Annikki Chamberlain  
 201 S. Cortez St., Prescott, AZ 86303  
 (P) 928.777.1645 (F) 928.777.1255

Please complete the form and submit a legible legal description on a separate sheet of paper as well as a site plan of the subject property with proposed improvements. Submit all documents and the filing fee directly to the Community Development Department at 201 S. Cortez St, Prescott, AZ 86302.

**APPLICANT INFORMATION**

Applicant: Daniel Padilla Contact Person: Danny Padilla  
 Address: 803 Dameron DR City/State/Zip: Prescott AZ  
 Phone: 928-862-0216 Email: CasadePadilla@yahoo.com

**PROPERTY OWNER INFORMATION**

Owner: Daniel Padilla Contact Person: Danny Padilla  
 Address: 803 Dameron DR City/State/Zip: Prescott AZ 86301  
 Phone: 928-862-0216 Email: CasadePadilla@yahoo.com

**PROJECT SITE**

Address: 803 Dameron DR Prescott AZ 86301  
 Current Zoning: \_\_\_\_\_ Proposed Zoning: \_\_\_\_\_  
 Assessor's Parcel Number(s) of Existing Property  
113-05-06a  
 Existing Water Service (Y/N): YES Existing Sewer Service (Y/N): YES  
 Existing Well (Y/N): NO If Yes, Well Registry No.: NO

**PROJECT DESCRIPTION**

Is the project Residential or Commercial? Residential  
 Please provide brief description: Install 2 (New) manufactured homes  
on Property

# of Proposed Units: 2 # of Proposed Lots: 1

Has a Water Demand Analysis been completed (commercial)? NO  
 Has a building permit application been submitted? yes B1612-031  
 Has a Planning and Zoning Recommendation been made? yes

**FEES: Fees are subject to change.**

Single Family Residence	Multi-Family/Apartments	Residential Subdivision	Commercial Subdivision or Individual Commercial Project
<input checked="" type="checkbox"/> \$150	2-5 units <input type="checkbox"/> \$150 6-10 units <input type="checkbox"/> \$200	6-25 lots <input type="checkbox"/> \$300 26-100 lots <input type="checkbox"/> \$500	<2 acre feet <input type="checkbox"/> \$150 2-4.9 acre feet <input type="checkbox"/> \$200
<b>Existing Connection Change of Use</b>	11-50 units <input type="checkbox"/> \$300 51-99 units <input type="checkbox"/> \$400	100+ lots <input type="checkbox"/> \$700	5-10 acre feet <input type="checkbox"/> \$250 >10 acre feet <input type="checkbox"/> \$300
<input type="checkbox"/> \$150	100+ units <input type="checkbox"/> \$500		100+ units <input type="checkbox"/> \$500

Applicant Signature: Daniel Padilla Date: 3-6-17

F.

<b>COUNCIL WATER ISSUES COMMITTEE AGENDA MEMO</b> <b>April 4, 2017</b>
<b>DEPARTMENT:</b> City Manager (Water Resource Management)
<b>AGENDA ITEM:</b> Unit allocations of alternative water for residential development

<b>Approved By:</b>	<b>Date:</b>
<b>Water Resource Manager:</b> Leslie Graser	
<b>Regional Programs Director:</b> Craig McConnell	

**Summary**

This subject was introduced to the Committee on February 7, 2017, followed by presentation of detailed information and recommendations on March 7, 2017. At today's meeting, it is suggested that the Committee refer the recommended unit allocations and associated policy items to the full Council for discussion at their April 25, 2017, Study Session.

From 2000 to present, the allocations of alternative water have been 0.35 acre-foot per new single-family dwelling unit, and 0.25 acre-foot per new multi-family unit. Each of these allocations includes a 0.1 acre-foot markup for development of non-residential/ support businesses anticipated to eventually serve the new residents.

Analysis of actual residential water usage from Fiscal Years 2010 through 2015, identified the following:

- Single-family residences used an average of 0.17 acre-foot (AF), or 55,395 gallons, of water annually [about 2/3 of the use assumed by the standard 0.25 AF (81,463 gallons) unit allocation]
- Multi-family residences used an average of 0.09 AF, or 29,327 gallons, of water annually [also about 2/3 of the use assumed by the standard 0.15 AF (48,878 gallons) unit allocation]
- It is not clear how much of the 0.1 AF markup was actually used to provide support services for (net) new residents, the purpose for what it was created

Based upon the actual usages, the following unit allocations for *Water-Efficient Residential Development*, subject to certain conditions and requirements being met as outlined, and other actions, were recommended:

1. Revise the Unit Allocations for *Water-Efficient Residential Development*
  - Single-family residential: 0.20 AF (65,170 gallons per dwelling unit per year)
  - Multi-family residential: 0.12 AF (39,102 gallons per dwelling unit per year)

(Note: All multi-family projects of more than 10 dwelling units will be deemed to be *Water-Efficient Residential Development*)

**Agenda Item: Unit allocations of alternative water to residential development**

2. Retain the Unit Allocation for other Single-Family Residential Development
  - Single-family residential: 0.25 AF (81,463 gallons per dwelling unit per year)
3. Suspend the 0.1 AF markup, track the actual new demand (water supplied through new water meters set) for support businesses on an annual basis, and provide a summary to Council in conjunction with the Annual Water Report presented in March of each year, including recommendations for further policy adjustments, as applicable
4. Establish and assure criteria for *Water-Efficient Residential Development* are met for new projects approved at the revised unit allocations
  - Applicable to new preliminary and final subdivision plats, and replats of master plan communities served by alternative water (but not lot splits, or individual units on existing lots or tracts)
  - To achieve the goal of efficient residential water use, setting reasonable standards and simplifying implementation and administration of the revised unit allocations, it is recommended that the City adopt the EPA WaterSense® New Home Specification (7-14-14) for single-family homes and townhomes, applicable to indoor and outdoor (landscaping) improvements; an eligible project will require construction and certification of homes by a builder that is already, or chooses to become, a WaterSense Partner (see Attachments 1, 2, and 3)
  - Applicable to individually metered multi-family projects of more than ten (10) dwelling units (WaterSense specifications/builder not required), and single-family or townhouse dwelling units with 5/8" x 3/4" meters
  - Common areas, medians, and parkways xeriscaped in accordance with the Land Development Code and State requirements for Active Management Areas, and separately metered, with CC&Rs requiring the xeriscape to remain in place and be maintained by a property owners association, and all of the preceding included as a condition in the water service agreement
  - A new *Water-Efficient Development* water rate (higher tier) for use in excess of the revised unit allocation, billed to the individual customer, will be recommended in the next update of City utility rates

The Water Resources Division recommends that consideration be given to amending the City Water Management and Calendar Year 2017 Alternative Water Allocation Policy to implement the recommendations above, through the following public process:

March 7, 2017 (Completed)	Water Issues Committee Meeting Presentation of analysis and recommendations; Committee discussion; public comment
April 4, 2017 (This meeting)	Water Issues Committee Meeting Committee action on proposed revisions to unit allocations; public comment

## Agenda Item: Unit allocations of alternative water to residential development

- April 25, 2017 City Council Study Session  
Presentation of background and recommendations; Council discussion and public comment
- May 9, 2017 City Council Voting Meeting  
Council discussion and public comment; Council adoption of a resolution amending the City Water Management and Calendar Year 2017 Alternative Water Allocation Policy

### March 7, 2017, Committee Meeting

Detailed background for the recommendations was provided in the March 7, 2017, meeting packet, which is available on the City website for reference; key points included the following:

- Conservation savings and other lower usages accrued to date are proposed to remain in the City's water portfolio as a cushion, and not be "mined" for additional development.
- The cushion, or headroom (difference between the overall volume of water allocated and the actual total being used) for projects that have been built and occupied, is presently an estimated 410 acre-feet, which could increase to a future total of 760 acre-feet if all approved but presently unbuilt projects are added.
- Implementation of the lower unit allocations arguably represents more efficient use of the finite resource; additional headroom is anticipated to accrue at the new unit allocations.
- The lower unit allocations will help offset the shortfalls being experienced in surface water and treated wastewater effluent recharged and recovered for municipal use—the primary sources of physically available alternative water—attributable to climate and growth lower than projected, respectively.
- The new unit allocations will enable directing more of the City's limited remaining supply of unreserved alternative water toward nonresidential projects with economic development benefits

Several topics for further discussion were identified at the meeting, and are addressed below.

- Examples of actual water usage in several contemporary residential subdivisions – Water billing data for three subdivisions, Lakeside at Prescott Lakes, Pinon Oaks, and Timber Ridge, were reviewed to assess the subdivision's average yearly usage per developed lot. The range of water usage was determined to be 0.18 – 0.23 acre-feet per year per lot. (Attachment 4).
- WaterSense® standards and efficient outdoor water use – As stated above, it is recommended that the City adopt the EPA WaterSense® New Home Specification (7-14-14) for single-family homes and townhomes, applicable to indoor and outdoor (landscaping) improvements.
- Metering of multi-family dwelling units – Individual metering of multi-family units provides awareness of water usage, and promotes conservation. Accordingly, it is recommended that City Code amendments be considered to require individual metering and customer accounts; and to be fair and reasonable, calculation of

**Agenda Item: Unit allocations of alternative water to residential development**

the water system and resource impact fees be on the basis of an equivalent master meter size.

- Rainwater harvesting – *Water-Efficient Residential Development*, as described herein, relies upon EPA WaterSense® best practices, including outdoor (landscaping) improvements. No specific consideration is proposed for rainwater harvesting as a means of reducing potable outdoor water use; however, it should be noted that the City offers a conservation rebate for installing qualifying storage (<http://www.waterrebates.com/az-prescott>), and the homeowner will benefit from recurring savings on their water bill.

**Attachments**

1. WaterSense® New Home Specification (eff. July 24, 2014)
2. List of current WaterSense® Partners (builders) in Arizona
3. WaterSense® Labeled New Home Inspection Checklist
4. Actual water usage in the Lakeside at Prescott Lakes, Pinon Oaks, and Timber Ridge subdivisions

**Recommended Committee Action: MOVE** to refer the recommended revisions to the City Council for presentation and discussion at the April 25, 2017, Study Session.



**WaterSense<sup>®</sup> New Home Specification**

**Effective July 24, 2014**

## WATERSENSE® NEW HOME SPECIFICATION EFFECTIVE JULY 24, 2014

### 1.0 SCOPE AND OBJECTIVE

This specification establishes the criteria for water-efficient new homes under the U.S. Environmental Protection Agency's (EPA's) WaterSense® program. It is applicable to newly constructed homes that are:

- Single-family homes and townhomes.  
OR
- Residential units in multi-family buildings, three stories or less in size.  
OR
- Residential units in multi-family buildings, including mixed-use buildings that have independent heating, cooling, and hot water systems separate from other units.<sup>1</sup>

A new home must be built by a WaterSense builder partner and meet all of the relevant criteria to become a WaterSense labeled new home.

The intent of this specification is to reduce indoor and outdoor water usage in new residential homes, thereby lowering consumers' utility bills and encouraging water and wastewater infrastructure savings. EPA's goal is that WaterSense labeled new homes will use approximately 20 percent less water than a typical new home by using a combination of prescriptive and performance-based approaches identified in this specification.

This specification is not intended to contravene state or local codes and requirements. All homes, landscapes, and irrigation systems shall meet all applicable national, state, and local regulations. In addition, plumbing and irrigation installers shall meet all applicable state and local licensing requirements. Unless indicated, criteria for the individual components or products detailed in this specification do not constitute criteria to earn the WaterSense label for that component or product category. Individual component criteria are valid only in the context of this specification.

### 2.0 SUMMARY OF CRITERIA

New homes must meet criteria in three areas:

1. Indoor water use, including plumbing, plumbing fixtures and fittings, appliances, and other water-using equipment.
2. Outdoor water use, including landscape design. Irrigation systems are not required. Irrigation systems that are installed must meet the criteria in this specification.
3. Homeowner education.

For units in a multi-family building to be eligible for the WaterSense label, certain prerequisites must be met in all common-use areas and systems as described within the specification and summarized in Appendix D.

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<sup>1</sup> Units in buildings that utilize central hot water systems powered by alternative energies, such as solar or geothermal, for domestic hot water are allowed if the alternative energy source provides at least 50 percent of the hot water needs for the residential units.

### 3.0 INDOOR WATER EFFICIENCY CRITERIA

- 3.1 Leaks – There shall be no detected leaks from any water-using fixtures, appliances, or equipment. Compliance shall be verified through pressure-loss testing and visual inspection.
- 3.2 Service Pressure – The static service pressure shall be a maximum of 60 pounds per square inch (psi) (414 kilopascal [kPa]). Compliance for homes supplied by groundwater wells shall be achieved by use of a pressure tank. Compliance for single-family homes with publicly supplied water shall be achieved by one of the following methods:
- Use of a pressure-regulating valve (PRV) downstream of the point of connection. All fixture connections shall be downstream of the PRV.
  - Determination that the service pressure at the home is 60 psi or less at the time of inspection and documentation from the public water supplier that the service pressure is unlikely to regularly exceed 60 psi at the home on a daily or seasonal basis.

For units in multi-family buildings, the service pressure within each unit shall be at a maximum of 60 psi.

Piping for fire sprinkler systems is excluded from this requirement and should comply with state and local codes and regulations.

- 3.3 Hot Water Delivery System – To minimize water wasted while waiting for hot water, the hot water delivery system shall store no more than 0.5 gallons (1.9 liters) of water in any piping/manifold between the hot water source and any hot water fixture. To account for the additional water that must be removed from the system before hot water can be delivered, no more than 0.6 gallons (2.3 liters) of water shall be collected from the hot water fixture before hot water is delivered. Recirculation systems must be demand-initiated. Systems that are activated based solely on a timer and/or temperature sensor do not meet this requirement.

See Appendix B to determine the approximate volume of water in piping systems.

#### 3.4 Toilets and Flushing Urinals

- 3.4.1 Toilets – All toilets shall be WaterSense labeled tank-type toilets. A listing of labeled toilets can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).
- 3.4.2 Flushing urinals – All flushing urinals, if installed, shall be WaterSense labeled flushing urinals. A listing of labeled urinals can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

### 3.5 Bathroom and Kitchen Faucets

3.5.1 Bathroom sink faucets – All bathroom sink faucets shall be WaterSense labeled bathroom sink faucets or faucet accessories (e.g., aerators). A list of labeled faucets and accessories can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

3.5.2 Kitchen sink faucets – All kitchen sink faucets shall comply with federal standards for a maximum flow rate of 2.2 gallons per minute (gpm) (8.3 liters per minute [lpm]).

### 3.6 Showerheads and Shower Compartments

3.6.1 Showerheads – All showerheads shall be WaterSense labeled showerheads. This includes fixed showerheads that direct water onto a user (excluding body sprays) for bathing purposes and hand-held showers. A list of labeled showerheads can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html). In cases where more than one showerhead or hand-held shower is provided in combination with others in a single device intended to be connected to a single shower outlet, the entire device must meet the maximum flow requirement in all possible operating modes.

3.6.2 Shower compartments – The total allowable flow rate of water from all showerheads flowing at any given time, including rain systems, waterfalls, body sprays, and jets, shall be limited to 2.0 gpm per shower compartment, where the floor area of the shower compartment is less than or equal to 2,160 square inches (in<sup>2</sup>) (1.4 meters<sup>2</sup> [m<sup>2</sup>]). For each increment of 2,160 in<sup>2</sup> (1.4 m<sup>2</sup>) of floor area thereafter or part thereof, additional showerheads are allowed, provided the total flow rate of water from all flowing devices is equal to or less than 2.0 gpm per shower compartment, and the additional showerheads are operated by controls that are separate from the other showerheads in the compartment.

3.7 Appliances – If the following types of appliances are financed, installed, or sold as upgrades through the homebuilder, they shall meet these criteria:

3.7.1 Dishwashers – Dishwashers shall be ENERGY STAR® qualified. A listing of qualified dishwashers can be found at [www.energystar.gov/index.cfm?fuseaction=dishwash.search\\_dishwashers](http://www.energystar.gov/index.cfm?fuseaction=dishwash.search_dishwashers).

3.7.2 Clothes washers – Clothes washers, including those in common-use laundry rooms of multi-family buildings, shall be ENERGY STAR qualified with a water factor (WF) of less than or equal to 6.0 gallons of water per cycle per cubic foot of capacity. A listing of qualified residential clothes washers can be found at [www.energystar.gov/index.cfm?fuseaction=clotheswash.search\\_clotheswashers](http://www.energystar.gov/index.cfm?fuseaction=clotheswash.search_clotheswashers) and a listing of qualified commercial clothes washers can be found at

[www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=CCW](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW).

3.8 Other Equipment – If the following pieces of equipment are financed, installed, or sold as upgrades through the homebuilder, they shall meet these criteria:

3.8.1 Evaporative cooling systems – Individual evaporative cooling systems (i.e., swamp coolers) shall use a maximum of 3.5 gallons (13.3 liters) of water per ton-hour of cooling when adjusted to maximum water use. Blowdown shall be based on time of operation, not to exceed three times in a 24-hour period of operating (every 8 hours). Blowdown shall be mediated by conductivity or basin water temperature-based controllers. Once-through or single-pass cooling systems, systems with continuous blowdown/bleedoff, and systems with timer-only mediated blowdown management shall not be used to meet these criteria.

3.8.2 Water softeners – All self-regenerating water softeners shall be certified to meet NSF/ANSI 44 Residential Cation Exchange Water Softeners,<sup>2</sup> including the voluntary efficiency rating standards in Section 7 – *Mandatory testing for elective claims* for efficiency rated systems, which states that water softeners shall:

- Be a demand-initiated regeneration system (i.e., it must use a flow meter or water hardness sensor to initiate regeneration; devices that use time clock-initiated regeneration [fixed time schedule] do not qualify for the efficiency rating).
- Have a rated salt efficiency of not less than 3,350 grains of total hardness exchange per pound of salt, based on sodium chloride (NaCl) equivalency (477 grams of total hardness exchange per kilogram of salt).
- Not generate more than 5.0 gallons of water per 1,000 grains of hardness removed during the service cycle (18.9 liters per 64.8 grams of total hardness removed).

3.8.3 Drinking water treatment systems – Drinking water treatment systems must be certified to meet applicable NSF/ANSI standards, which are:

- NSF/ANSI 42 Drinking Water Treatment Units – Aesthetic Effects
- NSF/ANSI 53 Drinking Water Treatment Units – Health Effects
- NSF/ANSI 55 Ultraviolet Microbiological Water Treatment Systems
- NSF/ANSI 58 Reverse Osmosis Drinking Water Treatment Systems
- NSF/ANSI 62 Drinking Water Distillation Systems

Such systems shall yield at least 85 gallons of treated water for each 100 gallons of water processed.

3.9 Metering – In multi-family buildings, each unit must be individually metered, submetered, or equipped with an alternate technology capable of tracking water use and making the information available to the residents of the individual unit.

<sup>2</sup> References to these and other NSF and ANSI standards apply to the most current version of those standards.

## 4.0 OUTDOOR WATER EFFICIENCY CRITERIA

- 4.1 Landscape – All landscape criteria for single-family homes apply to the front yard. In addition, the criteria apply to all areas improved upon by the builder for single-family and multi-family buildings, including common-use areas of multi-family buildings intended or made available for the use of building residents. This includes areas with vegetation beyond temporary stabilization measures, irrigation systems, permeable hardscape or softscape features, pools, spas, and/or water features.

Temporary landscapes (e.g., straw over bare soil) may be installed if permanent landscapes cannot be installed due to climate conditions or because occupancy of units in multi-family buildings occurs before common-area landscapes are installed. Homes or buildings with temporary landscapes can be inspected for compliance with indoor criteria and may be sold or occupied before a permanent landscape is installed. The WaterSense label designation (including use of stickers and certificates) may not be issued until the permanent landscape is installed, inspected, and certified to comply with all applicable criteria.

- 4.1.1 Landscape design – Design of the landscaped area shall be developed using the WaterSense Water Budget Tool. The tool and *WaterSense Water Budget Approach* can be found at [www.epa.gov/watersense/water\\_budget](http://www.epa.gov/watersense/water_budget). In single-family homes, pools, spas, and other water features shall be treated as turfgrass.

Lots with total landscapable areas equal to or less than 1,000 square feet are exempt from Criterion 4.1.1: *Landscape design*.

For multi-family buildings, common-use pools/spas and all areas that are reserved for private use of a particular residence/unit (e.g., areas deeded, identified as limited-use common elements, or otherwise restricted by building management) are excluded from the landscapable area. Additional criteria apply to pools/spas in Criterion 4.1.4: *Pools/spas*.

- 4.1.2 Slopes – Slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1) shall be vegetated.
- 4.1.3 Mulching – All exposed soil shall be covered with a 2- to 3-inch layer of mulching material.
- 4.1.4 Pools/spas – Pools and spas financed, installed, or sold as upgrades by the homebuilder in single-family homes shall have an appropriate cover.

Common-use pools/spas in multi-family buildings must have the following features:

1. Be independently metered such that water use attributable to the pool and/or spa can be tracked and leaks can be readily identified.
2. Be equipped with a gutter or grate system to catch water splashes or drag-outs.

3. Be equipped with either sorptive media or cartridge filtration.
- 4.1.5 Ornamental water features – Ornamental water features financed, installed, or sold as upgrades by the homebuilder must recirculate water and serve a beneficial use.
- 4.2 Irrigation System – Irrigation systems are not required. Irrigation systems that are financed, installed, or sold through the homebuilder must meet the following criteria:
  - 4.2.1 Design and installation – All irrigation systems shall be designed or installed by an irrigation professional certified by a WaterSense labeled program..

Waivers from this requirement may be available if there are an insufficient number of available certified irrigation professionals. See Appendix C for details on determining whether there are a sufficient number of available certified irrigation professionals in your area.
  - 4.2.2 Post-installation audit – All irrigation systems shall be audited by a certified irrigation professional. Auditing procedures are described in the *Guidelines for Irrigation Audits on WaterSense Labeled New Homes* at [www.epa.gov/watersense/docs/home\\_irr-audit-guidelines508.pdf](http://www.epa.gov/watersense/docs/home_irr-audit-guidelines508.pdf).

Waivers from this requirement may be available if there are an insufficient number of available certified irrigation professionals. See Appendix C for details on determining whether there are a sufficient number of available certified irrigation professionals in your area.
  - 4.2.3 Leaks – There shall be no detected leaks during the operation of the irrigation system. The system shall be checked for leaks during the post-installation audit.
  - 4.2.4 Runoff/overspray – Irrigation systems shall be designed and installed to sustain the landscape without creating runoff or direct overspray during a minimum operating duration.

Runoff and direct overspray shall be measured during the post-installation audit. The certified irrigation professional shall determine the minimum operating duration based on landscape conditions and irrigation system design.
  - 4.2.5 Distribution uniformity – Irrigation systems shall achieve a lower quarter distribution uniformity (DU<sub>LQ</sub>) of 65 percent or greater. Distribution uniformity shall be measured on the largest spray-irrigated area during the post-installation audit.
  - 4.2.6 Rainfall shut-off device – Irrigation systems shall be equipped with technology that inhibits or interrupts operation of the irrigation system

during periods of rainfall or sufficient moisture (e.g., rain sensors, soil moisture sensors).

4.2.7 Irrigation controllers – Irrigation systems shall be equipped with WaterSense labeled weather-based irrigation controllers or soil moisture sensor-based irrigation controllers that contain the following capabilities in both smart and standard mode:

1. The controller shall be capable of preserving the contents of the irrigation program settings when the power source is lost and without relying on an external battery backup.
2. The controller shall either be capable of independent, zone-specific programming or storing a minimum of three different programs to allow for separate schedules for zones with differing water needs.
3. The controller shall be capable of indicating to the user when it is not receiving a signal or local sensor input and is not adjusting irrigation based on current weather or soil moisture conditions.
4. The controller shall be capable of interfacing with a rainfall device.
5. The controller shall be capable of accommodating watering restrictions as follows:
  - Operation on a prescribed day(s)-of-week schedule (e.g., Monday-Wednesday-Friday, Tuesday-Thursday-Saturday; any two days; any single day).
  - Either even-day or odd-day scheduling, or any day interval scheduling between two and seven days.
  - The ability to set irrigation runtimes to avoid watering during a prohibited time of day (e.g., between 9:00 a.m. and 9:00 p.m.).
  - Complete shut-off (e.g., on/off switch) to accommodate outdoor irrigation prohibition restrictions.
6. The controller shall include a percent adjust (water budget) feature.<sup>3</sup>
7. If the primary source of weather or soil moisture information is lost, the controller shall be capable of reverting to either a proxy of historical weather data or a percent adjust (water budget) feature.
8. The controller shall be capable of allowing for a manual operation troubleshooting test cycle and shall automatically return to smart mode within some period of time as designated by the manufacturer, even if the switch is still positioned for manual operation.

A list of labeled weather-based irrigation controllers can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

4.2.8 Sprinkler irrigation – Sprinkler irrigation, other than as a component of a micro-irrigation system, shall not be used to water plantings other than maintained turfgrass. Sprinkler heads shall have a 4-inch or greater pop-up height and matched precipitation nozzles. Sprinkler irrigation shall not be used on strips of turfgrass less than 4 feet wide, nor on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1).

<sup>3</sup> The percent adjust (water budget) feature is defined as having the means to increase or decrease the runtimes or application rates for zones by means of one adjustment without modifying the settings for each individual zone.

- 4.2.9 Micro-irrigation systems – At a minimum, micro-irrigation systems shall be equipped with pressure regulators, filters, and flush end assemblies.
- 4.2.10 Schedule – Two watering schedules, developed by the certified irrigation professional as part of the post-installation audit, shall be posted at the controller. One schedule shall be designed to address the initial grow-in phase of the landscape, and the second schedule shall be designed to address an established landscape. Both schedules shall vary according to the seasons.
- 4.2.11 Metering – If an irrigation system is installed in a multi-family building, the system shall be independently metered, submetered, or equipped with an alternate technology capable of tracking water used for outdoor irrigation.

## 5.0 HOMEOWNER AND BUILDING MANAGEMENT EDUCATION

- 5.1 Operating Manual (for single-family homes) – The builder shall develop and provide to the single-family homeowner a written operating and maintenance manual for all water-using equipment or controls installed in the house and yard, including all relevant WaterSense materials on indoor and outdoor water use. This may be a chapter or folder in an existing manual. If clothes washers or dishwashers are not provided, general information about water-efficient appliances shall be included.
  - 5.1.1 Irrigation system – If an irrigation system is installed, the builder shall provide the single-family homebuyer with a record drawing (e.g., schematic) of the system, an itemized list of irrigation components, copies of the irrigation schedules, and information about reprogramming the schedule after establishment of the landscape. This information should be included in the operating manual.
- 5.2 Occupant Operating Manual (for homes in a multi-family building) – For multi-family buildings, the builder shall develop and provide to the occupant of each labeled unit a written operating and maintenance manual for all water-using equipment or controls installed in the unit, including all relevant WaterSense materials on indoor water use. This may be a chapter or folder in an existing manual. If clothes washers or dishwashers are not provided but hookups are present, general information about water-efficient appliances shall be included. In addition, the manual shall include relevant information on water-saving features of the building outside the unit, including landscape, pools, and laundry facilities.
- 5.3 Building Operating Manual – For multi-family buildings, the builder shall provide to the building management an operating and maintenance manual for all water-using equipment and controls outside of individual dwellings or inside of individual dwellings that are maintained by building management.
  - 5.3.1 Irrigation systems – If an irrigation system is installed, the builder shall provide building management with a record drawing (e.g., schematic) of

the system, an itemized list of irrigation components, copies of the irrigation schedules, and information about reprogramming the schedule after establishment of the landscape.

- 5.3.2 Pools/spas – If pools and/or spas are present, the builder shall include detailed information regarding filtration equipment and the manufacturer's recommended maintenance schedule, as well information on monitoring pools/spas for leaks.

## 6.0 FUTURE SPECIFICATION REVISIONS

EPA reserves the right to revise this specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. Industry partners and other interested parties will be notified in advance of anticipated changes. Revisions to the specification would be made following receipt of comments from and discussions with industry partners and other interested parties.

## 7.0 DEFINITIONS

ANSI – American National Standards Institute

ASME – American Society of Mechanical Engineers

CSA – Canadian Standards Association

EPA licensed certification provider – An organization licensed by EPA to hire or contract with inspectors, oversee new home inspections, and provide builder partners of certified new homes with the WaterSense new home label certificate. More information concerning the licensed certification provider's roles and responsibilities can be found in the WaterSense New Home Certification System.

Evaporative cooling system – System that cools the air using water evaporation. There are two types of evaporative cooling systems: direct and indirect, both called "two-stage." In a direct evaporative cooling system, a blower forces air through a permeable, water-soaked pad. As the air passes through the pad, it is filtered, cooled, and humidified. An indirect evaporative cooling system has a secondary heat exchanger that prevents humidity from being added to the airstream that enters the home. Cooling systems are defined by the temperatures they can "hold," either in the space and/or the process or equipment, and the amount of heat they can remove at full capacity. This heat removal is normally expressed in tons of cooling (i.e., refrigeration) capacity. One ton of cooling equals precisely 12,000 British thermal units of heat removal per hour (Btu/h).

Front yard – Use local code definitions when available. Otherwise, the front yard means the portion of the lot extending across the full width of the lot between the front lot line and the front walls of the house.

Hand-held shower – A subset of showerheads that are moveable devices for directing water onto a user and are connected to the shower valve via a hose. Hand-held showers can be installed on a support to function as a showerhead.

Hot water source – The container in which water is stored and/or heated, such as a hot water heater or a demand-controlled recirculation loop.

Irrigation professional certified by a WaterSense labeled program (i.e., certified irrigation professional) – A professional certified by a WaterSense labeled program who has demonstrated expertise in water-efficient irrigation technology and techniques. The specifications for professional certification programs can be found at [www.epa.gov/watersense/partners/product\\_program\\_specs.html](http://www.epa.gov/watersense/partners/product_program_specs.html), and WaterSense’s Directory of Certified Professionals can be found at [www.epa.gov/watersense/findapro](http://www.epa.gov/watersense/findapro). For irrigation professionals interested in obtaining a certification, a complete list of WaterSense labeled certification programs can be found at [www.epa.gov/watersense/outdoor/cert\\_programs.html](http://www.epa.gov/watersense/outdoor/cert_programs.html).

Landscaped area – The designed area of landscape excluding the footprint of the home and permanent hardscape areas, such as driveways, sidewalks, and patios. Septic drainage fields and public right-of-ways should also be excluded from this calculation.

Lower quarter distribution uniformity (DU<sub>LQ</sub>) – The measure of uniformity of irrigation water applied over an area. DU<sub>LQ</sub> is the ratio of the average of the lowest 25 percent of measurements to the overall average measurement.

Micro-irrigation system – The frequent application of small quantities of water on or below the soil surface as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. Micro-irrigation encompasses a number of methods or concepts, such as bubbler, drip, trickle, mist, or spray and subsurface irrigation.<sup>4</sup> For purposes of this specification, micro-irrigation includes emission devices that have flow rates less than 30 gallons per hour (113.6 liters per hour).

Mulching material – A permeable arrangement of organic and/or inorganic materials that will help to retain soil moisture, suppress weeds, and allow free movement of oxygen into and out of the soil.

NSF – NSF International

Ornamental water feature – Includes fountains, ponds, waterfalls, man-made streams, and other decorative water-related constructions. To meet the criteria, these features shall recirculate water and serve a beneficial use (e.g., habitat for wildlife, stormwater management, cooling properties).

Post-installation irrigation system audit – Procedure to collect and present information concerning the uniformity of application, precipitation rate, and general condition of an irrigation system and its components.<sup>5</sup>

Sprinkler irrigation – Type of irrigation using mechanical devices with nozzles (sprinklers) to distribute the water by converting water pressure to a high-velocity discharge stream or streams.<sup>6</sup>

<sup>4</sup> American Society of Agricultural Engineers, ASAE EP405.1 FEB03 Design and Installation of Microirrigation Systems. 2003.

<sup>5</sup> Irrigation Association. *Landscape Irrigation Scheduling and Water Management*. 2005.

<sup>6</sup> Irrigation Association. *Landscape Irrigation Scheduling and Water Management*. 2005.

Static service pressure – The pipeline or municipal water supply pressure when water is not flowing.

Water factor – The quotient of the total weighted per-cycle water consumption divided by the capacity of the clothes washer. Lower numbers indicate more efficient use of water.

WaterSense builder partner – A homebuilder who has committed to building new homes in accordance with the *WaterSense New Home Specification*. The builder must signify such commitment by signing a WaterSense partnership agreement with EPA.

WaterSense labeled bathroom sink faucet – A faucet that has been certified to meet the WaterSense specification for bathroom faucets. The faucet must have a flow rate that does not exceed 1.5 gallons per minute (gpm) (5.7 lpm) at a pressure of 60 psi (414 kPa) at the inlet when water is flowing and is not less than 0.8 gpm (3.0 lpm) at a pressure of 20 psi (138 kPa) at the inlet when water is flowing. The *High-Efficiency Lavatory Faucet Specification* can be found at [www.epa.gov/watersense/products](http://www.epa.gov/watersense/products), and a list of WaterSense labeled faucets and faucet accessories can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

WaterSense labeled flushing urinals – A urinal that has been certified to meet the WaterSense specification for urinals. These urinals have a flush volume that does not exceed 0.5 gallons (1.9 liters), comply with existing standards for flushing urinals, and are tested for trap seal restoration and flush effectiveness. The *WaterSense Specification for Flushing Urinals* can be found at [www.epa.gov/watersense/products](http://www.epa.gov/watersense/products), and a list of labeled urinals can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

WaterSense labeled showerhead – A showerhead that has been certified to meet the WaterSense specification for showerheads. The showerhead must have a flow rate that does not exceed 2.0 gpm (7.6 lpm) at flowing pressures of 20, 45, and 80 ± 1 psi (140, 310, and 550 ± 7 kPa). The *WaterSense Specification for Showerheads* can be found at [www.epa.gov/watersense/products](http://www.epa.gov/watersense/products), and a list of WaterSense labeled showerheads can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

WaterSense labeled tank-type toilet – A toilet that has been certified to meet the WaterSense specification for tank-type toilets. These toilets have a flush volume that does not exceed 1.3 gallons (4.8 liters), solid waste removal of 350 grams or greater, and can conform to the adjustability and other supplementary requirements included in the *WaterSense Specification for Tank-Type Toilets*. This specification can be found at [www.epa.gov/watersense/products](http://www.epa.gov/watersense/products), and a list of labeled toilet models can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

WaterSense labeled weather-based irrigation controller – An irrigation controller that has been certified to meet the WaterSense specification for weather-based irrigation controllers. It applies to stand-alone controllers, add-on devices, and plug-in devices that use current weather data as a basis for scheduling irrigation. The *WaterSense Specification for Weather-Based Irrigation Controllers* can be found at [www.epa.gov/watersense/products](http://www.epa.gov/watersense/products), and a list of labeled weather-based irrigation controllers can be found at [www.epa.gov/watersense/product\\_search.html](http://www.epa.gov/watersense/product_search.html).

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## APPENDIX A

### Informative Annex for WaterSense Labeling

The following requirements must be met before a new home may earn the WaterSense label.

#### 1.0 WATERSENSE PARTNERSHIP

The homebuilder must have a signed partnership agreement in place with EPA.

#### 2.0 CONFORMITY ASSESSMENT

Conformance to this specification must be certified by an EPA licensed certification provider in accordance with the WaterSense New Home Certification System.

## APPENDIX B

### Determining Volume of Piping Systems

#### Internal Volume of Various Water Distribution Tubing<sup>7</sup>

Ounces of Water Per Foot Length of Hot Water Tubing								
Nominal Size (Inches)	Copper M	Copper L	Copper K	CPVC CTS SDR 11	CPVC SCH 40	PEX-AI-PEX ASTM F 1281	PE-AL-PE	PEX CTS SDR 9
	1.06	0.97	0.84	N/A	1.17	0.63	0.63	0.64
½	1.69	1.55	1.45	1.25	1.89	1.31	1.31	1.18
¾	3.43	3.22	2.90	2.67	3.38	3.39	3.39	2.35
1	5.81	5.49	5.17	4.43	5.53	5.56	5.56	3.91
1¼	8.70	8.36	8.09	6.61	9.66	8.49	8.49	5.81
1½	12.18	11.83	11.45	9.22	13.20	13.88	13.88	8.09
2	21.08	20.58	20.04	15.79	21.88	21.48	21.48	13.86

Conversions: 1.0 gallon (3.8 liters) = 128.0 ounces  
 1.0 ounce = 0.00781 gallons (0.0296 liters)  
 0.5 gallons (1.9 liters) = 64.0 ounces  
 0.6 gallons (2.3 liters) = 76.8 ounces

<sup>7</sup> Modified from 2009 International Plumbing Code Table E202.1. International Code Council. January 2009.

## APPENDIX C

### Identifying Available Certified Irrigation Professionals

WaterSense has labeled certification programs for irrigation professionals in three categories: designers; installation and maintenance professionals; and auditors. Criteria 4.2.1: *Design and installation* and 4.2.2: *Post-installation audit* require the use of an irrigation professional who is:

- A certified designer, to design the irrigation system, or a certified installation/maintenance professional, to install the irrigation system (4.2.1).  
AND
- A certified auditor, to audit the irrigation system (4.2.2).

If there are fewer than three available irrigation professionals who are certified designers *and* fewer than three available irrigation professionals who are certified installation/maintenance professionals that provide services to the city, county, or metropolitan area where the home is located, an exemption from criterion 4.2.1 may apply.

If there are no available certified irrigation professionals who are certified auditors that provide services to the city, county, or metropolitan area where the home is located, an exemption from criterion 4.2.2 may apply.

The following steps should be followed to determine if there are a sufficient number of available certified irrigation professionals to comply with criteria 4.2.1 and 4.2.2.

#### 4.2.1 – Design and installation

1. Go to WaterSense's Directory of Certified Professionals at [www.epa.gov/watersense/findapro](http://www.epa.gov/watersense/findapro) and review the list of certified irrigation professionals by location.
2. If there are three or more irrigation professionals who are certified designers or three or more irrigation professionals who are certified installation/maintenance professionals that perform irrigation services in the city, county, or metropolitan area where the home is being built, contact the individuals to determine if they are accepting new residential work. If at least three certified irrigation professionals in one of the categories are accepting new residential work, there is no exemption.
3. If there are fewer than three irrigation professionals who are certified designers and fewer than three irrigation professionals who are certified installation/maintenance professionals that identified the city, county, or metropolitan area where the home is being built as areas in which they work, but there are additional irrigation professionals with the appropriate certification indicating they perform work throughout the state, either:
  - Contact the individual certified irrigation professionals to determine if they perform irrigation services in the city, county, or metropolitan area where the home is being built and are available to take on additional residential work.OR

- Contact the WaterSense Helpline to ask for assistance in determining if there are three or more available irrigation professionals with the appropriate certifications that perform irrigation services in the area where the home is being built.

If at least three certified irrigation professionals in one of the categories are accepting new residential work, there is no exemption.

4. If there are neither three irrigation professionals who are certified designers *nor* three irrigation professionals who are certified installation/maintenance professionals that perform residential work in that state, the home is exempt from the requirement(s) to have the irrigation system designed and/or installed by a certified irrigation professional. Contact the WaterSense Helpline to request a waiver from the requirement(s).

#### 4.2.2 – Post-installation audit

1. Go to WaterSense's Directory of Certified Professionals at [www.epa.gov/watersense/findapro](http://www.epa.gov/watersense/findapro) and review the list of certified irrigation professionals by location.
2. If there is at least one irrigation professional who is a certified auditor that performs irrigation services in the city, county, or metropolitan area where the home is being built, contact the individual to determine if he/she is accepting new residential work. If at least one certified irrigation professional is accepting new work, there is no exemption.
3. If no irrigation professionals who are certified auditors identified the city, county, or metropolitan area where the home is being built as areas in which they work, but there is at least one irrigation professional who is a certified auditor indicating he/she performs work throughout the state, either:
  - Contact the individual certified irrigation professional(s) to determine if they perform irrigation services in the city, county, or metropolitan area where the home is being built and are available to take on additional residential work.
  - OR
  - Contact the WaterSense Helpline to ask for assistance in determining if there is an available irrigation professional who is a certified auditor that performs irrigation services in the area where the home is being built.

If at least one irrigation professional who is a certified auditor is accepting new residential work, there is no exemption.

4. If there are no irrigation professionals who are certified auditors that perform residential work in that state, contact the WaterSense Helpline. The WaterSense Helpline will identify a professional who can perform the audit or will grant a waiver from the requirement(s).

## APPENDIX D

### Summary of Additional and Adjusted Criteria for Multi-Family Buildings

The following is a summary of criteria specific to units in multi-family buildings. In addition to requirements that apply to products, features, and systems within the unit(s), certain prerequisites must be met in a multi-family building for any unit to be eligible for the label. For the full criteria, please refer to the *WaterSense New Home Specification* (the specification). The summary below refers to criteria in the sections of the specification as noted.

#### SECTION 1: SCOPE AND OBJECTIVE

- 1.0 For homes in a multi-family building to be eligible for the WaterSense label, they must be in a building that meets all the prerequisites outlined in the *WaterSense New Home Specification* and is:
  - A building three stories (above grade) or less in size.  
OR
  - A building of any height provided the units have independent heating, cooling, and hot water systems separate from other units.<sup>8</sup>

#### Section 3: INDOOR WATER EFFICIENCY CRITERIA

Except where specifically noted or modified, any home or unit in a multi-family building must meet all of the indoor criteria in the specification.

- 3.2 Service Pressure and Pressure Loss Test – For units in multi-family buildings, the service pressure within the unit must be 60 pounds per square inch (psi) or less.
- 3.7.2 Laundry facilities – All equipment in common-use laundry rooms shall meet the criteria outlined in section 3.7.2 of the *WaterSense New Home Specification*:

Clothes washers shall be ENERGY STAR qualified with a water factor (WF) of less than or equal to 6.0 gallons of water per cycle per cubic foot of capacity. A listing of qualified clothes washers can be found at [www.energystar.gov/index.cfm?fuseaction=clotheswash.search\\_clotheswashers](http://www.energystar.gov/index.cfm?fuseaction=clotheswash.search_clotheswashers) for residential clothes washers and [www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=CCW](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW) for commercial clothes washers.
- 3.9 Metering – Each unit must be individually metered, submetered, or equipped with an alternate technology capable of tracking water use and making that information available to the homeowner.

<sup>8</sup> Units in buildings that utilize central hot water systems powered by alternative energies, such as solar or geothermal, for domestic hot water are allowed if the alternative energy source provides at least 50 percent of the hot water needs for the residential units.

## SECTION 4.0: OUTDOOR WATER EFFICIENCY CRITERIA

Units in multi-family buildings will only be eligible for the WaterSense label if all common-use outdoor areas meet the following criteria.

- 4.1 Landscape – In instances where specific units are occupied prior to others and landscaping is infeasible due to ongoing construction activity, temporary landscapes (e.g., straw over bare soil) may be installed. Units can be inspected for compliance with indoor criteria and may be occupied before a permanent landscape is installed. However, the WaterSense label may not be issued until the permanent landscape is installed, inspected, and certified to comply with the outdoor criteria.
- 4.1.1 Landscape design – The landscape design criteria outlined in *Section 4: Outdoor Water Efficiency Criteria* of the *WaterSense New Home Specification* will apply to all common-use outdoor areas.
- Landscapable area – The landscapable area for multi-family buildings will be defined as the area improved upon by the builder and intended or made available for the use of building residents. Such areas will include all areas with vegetation beyond temporary stabilization measures, irrigation systems, permeable hardscape, and softscape features.
  - Private-use areas – Areas that are reserved for private use of a particular residence (e.g., areas deeded, identified as limited-use common elements, or otherwise restricted by building management) are excluded from the landscapable area.
- 4.1.4 Pools/spas – Common-use pools/spas in multi-family buildings are excluded from the landscapable area. Pools/spas shall have the following features:
1. Be independently metered such that water use attributable to the pool and/or spa can be tracked and leaks can be readily identified.
  2. Be equipped with a gutter or grate system to catch water splashes or drag-outs.
  3. Be equipped with either sorptive media or cartridge filtration.
- 4.2 Irrigation System – An irrigation system is not required. If an irrigation system is installed, it shall be independently metered and meet all the requirements discussed in *Section 4.2: Irrigation System* of the *WaterSense New Home Specification*.

## 5.0 Resident and Building Management Education

- 5.2 Occupant Operating Manual – The builder shall develop and provide to the occupant of each labeled unit a written operating and maintenance manual for all water-using equipment or controls installed in the unit, including all relevant WaterSense materials on indoor water use. This may be a chapter or folder in an existing manual. If clothes washers or dishwashers are not provided but hookups are present, general information about water-efficient appliances shall be

included. In addition, the manual shall include relevant information on water saving features of the building outside the unit, including landscaping, pools, and laundry facilities.

- 5.3 Building Operating Manual – The builder shall provide to the building management an operating and maintenance manual for all water-using equipment and controls outside of individual dwellings or inside of individual dwellings that are maintained by building management.
- 5.3.1 Irrigation systems – If an irrigation system is installed, the builder shall provide building management with a record drawing (e.g., schematic) of the system, an itemized list of irrigation components, copies of the irrigation schedules, and information about reprogramming the schedule after establishment of the landscape.
- 5.3.2 Pools/spas – If pools and/or spas are present, the builder shall include detailed information regarding filtration equipment and the manufacturer's recommended maintenance schedule, as well as information on monitoring pools/spas for leaks.



## Watersense Partners

Filtered by: Builder, AZ

Partner Name	Partner Type	State
Dorn Homes	Builder	AZ
Energy Smart Homes LLC	Builder	AZ
Henry Design Build LLC	Builder	AZ
Mandalay Homes Inc	Builder	AZ
Meritage Homes Corporation	Builder	AZ

Please note:

- For retailer and distributor partners, the state listed represents a company's headquarters location. Please visit a company's Web site to find a location near you.
- Irrigation partners have been certified under a WaterSense labeled program. Each irrigation partner, not his or her company of employment, is a current WaterSense partner.
- Not specifying a state in the search may cause multiple records for irrigation partners and licensed certification providers if they have service areas in more than one state. Therefore, the number of records doesn't imply the number of total WaterSense partners.

Disclaimer of Endorsement: Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government.



## WaterSense® Labeled New Home Inspection Checklist

Site Information						
Builder Name:						
Lot Number/Street Address/Unit Number:						
City, State, Zip:						
Inspection Information						
Inspection Company:						
Inspector Name:						
Date:						
Time Started:			Time Completed:			
Sampling Protocol Information					Yes	No
Is this home being sampled and inspected as part of a sampling protocol for multiple homes in a planned community, subdivision, or multi-family building?						
Were the first seven homes in this planned community, subdivision, or multi-family building all directly inspected and certified?						
Was this home randomly selected for sampling from a group of seven homes that are scheduled for completion within 30 days of one another? (Provide additional information as indicated below for the homes covered by this sampling protocol.)						
Building Information					Yes	No
Is the home being inspected as a unit within a multi-family building?						
If yes, are all applicable building requirements met? (Provide responses to the requirements listed below.)						
Item	Section	Prerequisite Multi-Family Building Criteria	Yes	No	NI <sup>*</sup>	Doc <sup>†</sup>
Metering	3.9	Water metering/tracking for each unit				
Common use clothes washers	3.7.2	ENERGY STAR® qualified				Req.
		Water factor ≤ 6.0				Req.
<b>Notes on Multi-Family Building Criteria</b>						
By affixing my signature below, I do hereby declare that I have inspected the home in accordance with the <i>WaterSense New Home Specification</i> and the <i>Inspection and Verification Guidance for WaterSense Labeled New Homes</i> and will provide, if requested, the necessary supporting documents.						
Inspector Name:			Company:			
Signature:			Date:			

\* Not installed (NI)

† Documentation required (Req.) to be provided by the builder

Item	Section	Home or Unit Criteria	Yes	No	NI*	Doc†
<b>Indoor Water Efficiency Criteria</b>						
Leaks	3.1	Pressure-loss test on all water supplies detected no leaks				
		No visible leaks from hot water delivery system				
		No visible leaks from toilets/urinals				
		No visible leaks from bathroom faucets				
		No visible leaks from kitchen faucets				
		No visible leaks from showerheads				
		No visible leaks from other fixtures or appliances				
Service pressure	3.2	Single-family: Pressure tank installed and set ≤ 60 psi OR				
		Single-family: PRV installed upstream of fixtures and pressure test ≤ 60 psi OR				
		Single-family: Pressure test ≤ 60 psi and written documentation from water supplier that pressure ≤ 60 psi				Req.
		Multi-family: Pressure test ≤ 60 psi				
Hot water delivery	3.3	Acceptable system type				
		10°F temp. change within ≤ 0.6 gallons				
Toilets	3.4.1	WaterSense labeled				Req.
Flushing urinals	3.4.2	WaterSense labeled				Req.
Bathroom sink faucets	3.5.1	WaterSense labeled				Req.
		Measured flow rate—maximum 1.5 gpm (Flow test maximum: 0.25 gallons)				
Kitchen sink faucets	3.5.2	Measured flow rate—maximum 2.2 gpm (Flow test maximum: 0.4 gallons)				
Showerheads	3.6	WaterSense labeled				Req.
		Measured flow rate—maximum 2.0 gpm water per shower compartment ≤ 2,160 in <sup>2</sup> (Flow test maximum: 0.35 gallons/compartment)				
		Separate controls for showerheads if > 2160 in <sup>2</sup>				
Dishwashers	3.7.1	ENERGY STAR qualified				Req.
Clothes washers	3.7.2	ENERGY STAR qualified				Req.
		Water factor ≤ 6.0				Req.
Evaporative cooling system	3.8.1	Acceptable system type				Req.
		Maximum 3.5 gal/water/ton hour cooling, maximum 3 blowdowns in 24 hours				Req.
		Controls blowdown through conductivity or a basin temperature-based controller				Req.
Water softeners	3.8.2	Certified to NSF/ANSI Standard 44, including voluntary efficiency rating standards in Section 7				Req.
Drinking water	3.8.3					Req.

\* Not installed (NI)

† Documentation required (Req.) to be provided by the builder

treatment systems		NSF/ANSI certified, minimum efficiency rating 85%				
<b>Notes on Indoor Water Efficiency Criteria</b>						

Item	Section	Home or Unit Criteria	Yes	No	NI*	Doc†
<b>Outdoor Water Efficiency Criteria</b>						
Landscape design	4.1	Single-family: Front yard landscaped				
		All improved upon areas landscaped				
		Temporary landscape installed				
	4.1.1	Landscapable area of lot ≤ 1,000 ft <sup>2</sup> and exempt from landscape design criteria				
	4.1.1.1	Water budget tool calculations verified				Req.
Landscape complies with water budget design					Req.	
Slopes	4.1.2	Slopes ≥ 4:1 are vegetated				
Mulching	4.1.3	No exposed soil				
		All mulch is 2 to 3 inches deep				
Pools/spas	4.1.4	Single-family: Cover installed				
		Multi-family: Independently metered				
		Multi-family: Gutter or grate system				
		Multi-family: Sorptive media or cartridge filtration system				
Ornamental water feature	4.1.5	Recirculates water and serves beneficial use				
Irrigation system	4.2	WaterSense labeled weather-based irrigation controllers or approved soil moisture sensor-based controller				Req.
		Multi-family: Independently metered				
		Designed or installed by an irrigation professional certified by a WaterSense labeled program				Req.
		Provided waiver for design/installation				Req.
		System audited by certified irrigation professional				Req.
		<i>Irrigation System Audit Checklist</i> completed by certified irrigation professional				Req.
		Provided waiver for audit				Req.
<b>Notes on Outdoor Water Efficiency Criteria</b>						

\* Not installed (NI)

† Documentation required (Req.) to be provided by the builder

Item	Section	Home or Unit Criteria	Yes	No	NI*	Doc†
<b>Homeowner or Resident and Building Management Education Criteria</b>						
Single-family/ occupant operating manual	5.2	Written operating and maintenance manual (or chapter) for all water-using equipment/controls installed in house, unit, yard, or common use outdoor area				
		General information on water-efficient dishwashers and clothes washers if they are not installed				
Building operating manual	5.3	Multi-family: Manual for all water-using equipment and controls outside of individual dwellings or inside of individual dwellings that are maintained by building management				
Irrigation system	5.2	Schematic, itemized list of irrigation components, copies of irrigation schedules, and information on reprogramming schedules included in operating manual for homeowners of single-family homes and for building managers for multi-family buildings				
Pools/spas	4.1.4	Multi-family: Detailed information on filtration equipment and manufacturer's recommended maintenance schedule to building management				
<b>Notes on Homeowner Education Criteria</b>						

\* Not installed (NI)

† Documentation required (Req.) to be provided by the builder

Attachment 4 - Actual water usage in the Lakeside at Prescott Lakes, Pinon Oaks and Timber Ridge subdivisions

Contemporary Residential Subdivisions

	Lakeside at Prescott Lakes	Pinon Oaks	Timber Ridge
Lot count	136	652	406
Average lot size (acres)	0.22	0.48	0.3
Billing accounts (w/o zero use)	134	619	374
Range of monthly water usage (gallons)	524 - 16,746	2 - 33,573	153 - 16,379
Average Monthly Usage (gallons)	5,861	6,220	4,995
Average Yearly Usage (gallons)	70,332	74,640	59,940
Average Yearly Usage (acre-feet)	0.22	0.23	0.18

Notes

1. City Finance Department provided 3 years (2013-2015) of average monthly water usage records by parcel number
2. If a parcel's record showed "N/A", it was not included in the analysis