



2011 GENERAL PLAN COMMITTEE

Community Development Department

Agenda

**2011 General Plan Committee
Regular Meeting
Wednesday, January 11, 2012
4:00 PM to 6:00 PM**

**Downstairs Conference Room, City Hall
201 S. Cortez Street
Prescott, Arizona
928-777-1207**

The following agenda will be considered by the Prescott General Plan Committee at its regular meeting on Wednesday, January 11, 2012, in the downstairs conference room, City Hall, 201 S. Cortez Street, Prescott, AZ. Notice of this meeting is given pursuant to *Arizona Revised Statutes*, Section 38-431.02.

I. Call to Order

II. Attendance

MEMBERS

Miriam Haubrich, Co-Chair	Elisabeth Ruffner
Terry Marshall, Co-Chair	George Sheats
Brad Devries	Gary Worob
Dave Fisher	
Glenn Gooding	<i>EX OFFICIO</i>
Zena Mitchell	Steve Blair, Councilman
Roxane Nielsen	John Hanna, Councilman
David Quinn	

III. Announcements

IV. Regular Items

1. Consider approval of the minutes of the November 9, 2011 meeting.
2. Draft 3 of the Water Resources Element (including a discussion of appropriate goals and strategies within the context of the General Plan).
3. Discussion on the next element to be updated.
4. Discussion on the usefulness of subcommittees to expedite the update process.
5. Call to the Public.

V. Adjournment

THE CITY OF PRESCOTT ENDEAVORS TO MAKE ALL PUBLIC MEETINGS ACCESSIBLE TO PERSONS WITH DISABILITIES. WITH 48 HOURS ADVANCE NOTICE, SPECIAL ASSISTANCE CAN BE PROVIDED FOR SIGHT AND/OR HEARING IMPAIRED PERSONS AT PUBLIC MEETINGS. PLEASE CALL 777-1272 OR 777-1100 (TDD) TO REQUEST AN ACCOMMODATION TO PARTICIPATE IN THIS MEETING.

CERTIFICATION OF POSTING OF NOTICE

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at Prescott City Hall and on the City's website on December 7, 2011 at 4:00 PM in accordance with the statement filed with the City Clerk's Office.

Ryan Smith, Community Planner

**2011 GENERAL PLAN COMMITTEE
REGULAR MEETING
NOVEMBER 9, 2011
PRESCOTT, ARIZONA**

MINUTES OF THE REGULAR MEETING OF THE 2011 GENERAL PLAN COMMITTEE HELD ON NOVEMBER 9, 2011 AT 4:00 PM IN THE DOWNSTAIRS CONFERENCE ROOM, CITY HALL, 201 S. CORTEZ STREET, PRESCOTT ARIZONA. Notice of this meeting was given pursuant to Arizona Revised Statutes, Section 38-431.02.

I. Call to Order

Co-chairman Marshall called the meeting to order at 4:00 PM.

II. Attendance

MEMBERS PRESENT	EX OFFICIO MEMBERS
Miriam Haubrich, Co-Chair	John Hanna, Councilman (absent)
Terry Marshall, Co-Chair	Steve Blair, Councilman
Brad Devries	
Zena Mitchell	STAFF MEMBERS PRESENT
Gary Worob	Tom Guice, Community Development Director
George Sheats	George Worley, Planning Manager
David Quinn	Ryan Smith, Community Planner & Committee Liaison
Elisabeth Ruffner	Leslie Graser, Water Resources Specialist
MEMBERS ABSENT	
Dave Fisher - unexcused	
Glenn Gooding - excused	

III. Announcements

Mr. Smith noted that new "public comment cards" are available to any member of the public. The cards will be kept on file and made available for the GP Committee.

Co-chairman Marshall reminded the committee members that the November 23, 2011 meeting has been cancelled due to the Thanksgiving holiday.

IV. Regular Items

1. Consider approval of the minutes of the October 26, 2011 meeting.

Mr. Sheats, **MOTION: to approve the minutes of the October 26, 2011 meeting.**
Co-chair Haubrich, 2nd. **Vote: 8-0, unanimous.**

2. Discussion regarding the scheduled December 28, 2011 meeting.

Ms. Ruffner, **MOTION: to cancel the December 28, 2011 meeting** due to the Christmas holiday. Ms. Nielson, 2nd. **Vote: 8-0, unanimous.**

3. Discussion of Water Resource element text.

(Co-chairs Haubrich and Marshall handed out a revised Water Element (WE) document and Ms. Ruffner's changes to Exhibit "A" dated October 26, 2011. (Neither document was ready at the time of the packet assemblage).

Co-chairman Marshall asked the members of the committee to submit any written comments and/or changes at least 24 hours prior to the meeting.

Co-chairman Marshall indicated that a 10-minute break would be taken at 4:50 p.m.

Mr. Smith noted he will start with Section 10.1 in the packet and have the committee members comment on the text and make changes, paragraph-by-paragraph, as desired.

Throughout the discussion of the Water Element, Mr. Smith made changes to the various sections. **Please refer to Exhibit "A" dated November 9, 2011, for the changes made.**

Ms. Graser noted that she will add updated information to the WE to reflect recent numerical data from GIS, ADWR, AMA and the City.

After review of Section 10.3, the following public comments were taken:

Mr. Howard Mechanic (no signature or address appears on the attendance sheet) commented:

- Section 10.3 – all pumping, including exempt wells is at four times the sustainable amount, and there is an 11,000 AF overdraft. The City depends on our aquifer; however the water supplied is shared;
- Section 10.2.2 – the County Water Conservation Committee represents all the county, and over one-half of the county is not in the AMA;
- Section 10.3 – population growth anywhere within the AMA will affect the aquifer, and subdivisions that do not have water rights already must provide other water sources.

Mr. Smith stated that Mr. Mechanic's comments in his email had been given to the committee members.

Mr. Daniel Mattson, commented: Sections 10.2.1 and 10.2.2 could be tightened and combined.

After a 10-minute break, Mr. Smith resumed review of the sections.

Mr. Quinn provided the following language for areas of concern:

1. Protection of our water resource supply should be focused upon our aquifers, rivers, and streams as well as upon the defined geography called an Active Management Area.
2. The separate legal and regulatory treatment of ground water and surface water is neither supported by science nor reasonable on its face. A unified legal and regulatory scheme should be developed and adopted by the state of Arizona.
3. The current *laissez-faire* approach to exempt wells is detrimental to our long term water supply. All private wells should be metered and licensed for specific maximum pumping, whether within an AMA or not. Excessive pumping should be subject to financial penalty sufficient to provide a deterrent.
4. Lot splits in unincorporated areas without an assured water supply should be prohibited by state law.

Committee members (including Councilman Blair, Roxane Nielsen, and Elisabeth Ruffner) voiced differing opinions with statement #4. Changing state law is not within the purview of the City. It was suggested that the statements, with the exception of #4 be placed in Section 6.4. Item #4, as written, deals with personal property rights.

Mr. Smith asked that an explanation of the strategy be placed in the text, perhaps "examples such as. . ." could be utilized.

Mr. Quinn proffered "review the practice of lot splits in unincorporated areas. . ." as a possible change.

Mr. Devries noted that while the GP is dealing with generalities, statement #4 deals with a very specific lobbying strategy.

Mr. Quinn asked for a goal of finishing the Water Element, not necessarily the final edit, at the next meeting.

4. Call to the Public.

Mr. Mechanic, speaking as chair of the Public Housing Committee of the Citizens' Water Advisory Group noted:

- Section 10.3.3 should include a statement that imported water should be shared for both growth and safe yield; and,
- Goal 6.4 should be rewritten because the "horse is after the cart" in regard to lot splits, *i.e.*, a committee should be in place and then a plan developed that will include exempt wells as the well owners need to pay their fair share to reach safe yield.

V. Adjournment

Co-chairman Marshall adjourned the meeting at 5:52 p.m.

Terry Marshall, Co-Chairman

Miriam Haubrich, Co-Chairman

Ryan Smith, Community Planner

Kathy Dudek, Administrative Assistant
and Recording/Transcribing Secretary
to the Committee

DRAFT

Exhibit "A" November 9, 2011

Meeting Minutes - Committee deletions are in ~~strikeout~~, additions are underlined

10.0 WATER RESOURCES ELEMENT

10.1 EXISTING CONDITIONS

Water availability is crucial to maintaining a strong economy and good quality of life. Natural precipitation supplies 100% of the water in the aquifer which serves as the primary source of water for the City of Prescott.

Under the Arizona Groundwater Code of 1980, the State of Arizona established five Active Water Management Areas to ensure that groundwater would not be depleted beyond the level being recharged, a condition defined as "safe yield." The City of Prescott water service area is located within the Prescott Active Management Area (AMA) along with Prescott Valley, Chino Valley, the Yavapai-Prescott Indian Tribe, Dewey-Humboldt and extensive county areas (see figure).

Communities within the AMA draw groundwater based on rights, goals and policies established by the groundwater law and must demonstrate a 100-year assured water supply (AWS) through a program aimed at new development ~~with the AMA~~. Management plans administered by the Arizona Department of Water Resources (ADWR) establish a water management strategy emphasizing conservation, replacement of existing groundwater, renewable supplies, recharge, and water quality management by all providers users within the AMA. Safe yield is the goal by the year 2025. Private domestic use wells are exempted from the 1980 Groundwater Code. What are the number of exempt wells in the AMA vs. COP?

In 1998 the Arizona Department of Water Resources (ADWR) determined that the Prescott AMA was no longer in a state of safe yield. This determination capped the amount of groundwater which could be used by the respective jurisdictions within the AMA as a source of assured water for new development.

The City of Prescott water service area accounts for about 8.6% of the land within the Prescott AMA. The groundwater basin aquifers within the AMA appears to be interconnected. Therefore, drawdown in other parts of the Prescott AMA will contribute toward decreased water tables in the Prescott water service area.

Prescott is in a montane region of relatively moist cool upland slopes below timberline dominated by large coniferous trees. Approximately 75% of the AMA is within the High Desert area of the state's Central Highlands region. Both areas are currently in a drought condition. Figure 10-1 indicates that the AMA has experienced a net loss of water from the aquifer.

FIGURE 10-1 Predicted Change in Aquifer Storage (ADWR Modeling Report No. 12)

Year	<u>2005</u>	<u>2015</u>	<u>2025</u>
Overdraft	-11,200	-12,000	-11,400

Acre Feet/Year

A.R.S. 9-461.05.

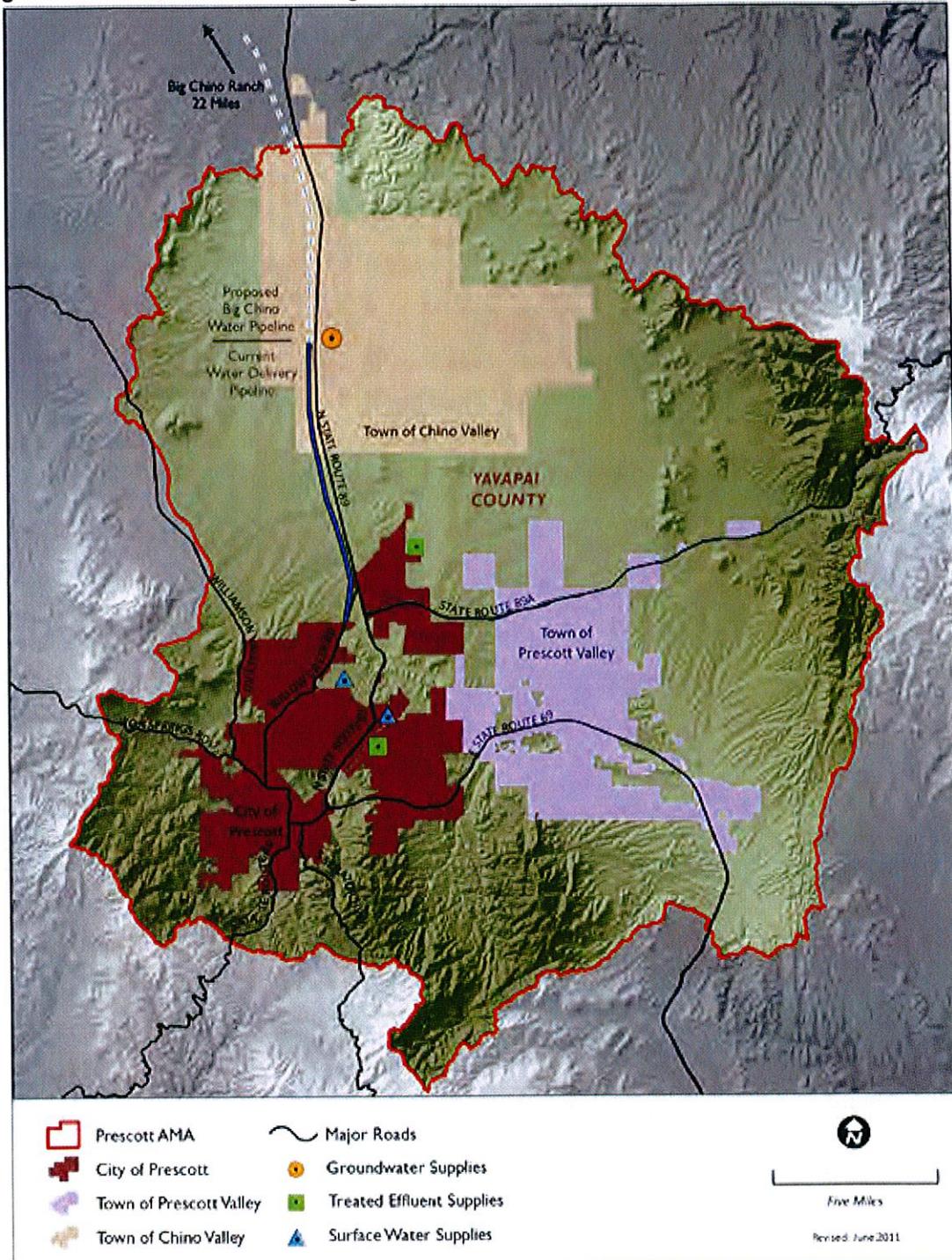
5. A water resources element that addresses:

(a) The known legally and physically available surface water, groundwater and effluent supplies.

(b) The demand for water that will result from future growth projected in the general plan, added to existing uses.

(c) An analysis of how the demand for water that will result from future growth projected in the general plan will be served by the water supplies identified in subdivision (a) of this paragraph or a plan to obtain additional necessary water supplies.

Figure 10-2 Prescott Active Management Area



The State's AMA safe yield is a groundwater management goal, which attempts to achieve and maintain a long-term balance between the amount of groundwater withdrawn and the annual amount of natural and artificial recharge in the AMA (see ARS §45-561.12). The Prescott AMA has not achieved safe yield, therefore, the current rate of drawdown is not sustainable over the long term.

10.2 LEGALLY AND PHYSICALLY AVAILABLE WATER

10.2.1 Legal Availability

Due to the restrictions imposed by the 1980 Groundwater Code and the 1998 declaration of water mining, communities within the AMA must develop additional water supplies to demonstrate the 100 year assured water supply for approved new development. Additional water rights acquired must meet standards of legal and physical availability as recognized by the state water code. Water supply is legally available when under State Law and when legal documentation exists securing the rights to a specific amount and source of water.

10.2.2 Physical Availability

The physical availability of water resources is dependent upon natural conditions such as the amount of precipitation, evaporation, natural recharge and geology etc. It is also dependent on the demand placed on the resource by all water users. Since the water policies pursued by an individual jurisdiction affect all jurisdictions in the AMA, water policies are a topic of major regional interest. Regional cooperation and coordination will be necessary to maintain an assured water supply for the City and the region. A regional coordinating body known as the Yavapai County Water Advisory Committee, has been established with members representing the AMA and local jurisdictions.

The City of Prescott has pursued an aggressive water management policy since 1985 and has invested in numerous strategies to secure both the legal and physical availability of water for existing and projected water users within the City of Prescott water service area. These resources include groundwater (including "type II" rights)*, surface water, Irrigation Grandfathered Rights (IGFR) credits, and effluent recharge. Among the City's water portfolio is the legal right to import up to 8068 acre-feet per year from the Big Chino sub basin (ARS §45-555E and F). The current water resources legally and physically available to the City are presented in figure 10-3.

Figure 10-3 Estimated Current water Supplies Available for Development - City of Prescott Water Service Area (ADWR Decision and Order 2009) Double check figures with Leslie?

Groundwater designated by ADWR as legally and physically available:	9,466 af/yr
Estimated effluent recharge recovery and direct use	3,712 af/yr
Surface Water recharge and recovery Granite & Willow Creeks (net)	1,733 af/yr
Imported Groundwater	** 8,068 af/yr
Total legally and physically available water supply	15,200 af/yr

*Note: Prescott has type II Water Rights for 3169 acre feet, but these are limited to commercial or industrial development and are not available for residential development. The City's water portfolio includes IGFR credits but these are committed to other uses. The City also has Hassayampa River and Del Rio Spring surface water claims of approximately 2769 acre feet but has no plans (as of 2003) to assert and tap those water claims. **Imported groundwater is subject to the construction of infrastructure and input from the public and subject to approval by the voters.

Without tapping importation rights, the city's current legal and physical availability of groundwater and alternative water sources can cover existing uses and projected allocations to all platted parcels in the water service area. This takes into consideration 10,800 acre feet of water that had been previously committed for preliminary subdivision plats approved prior to August 1998. Verify this statement with Leslie?

Since the declaration that the AMA is not in safe yield, the City has taken a conservative approach to the allocation of water to new development and has set up an annual "water budget" of 200-acre feet which ~~can~~ may be allocated to new development. This budget and the policies underpinning it are reviewed and updated by the City Council each year.

10.3 FUTURE GROWTH AND WATER DEMAND

Population growth and development anywhere within the AMA will affect the aquifers and the AMA goal of reaching safe yield. There are a number of specific threats to safe yield:

- population growth and resulting increases in aquifer draw-down
- commitment of groundwater to non-residential uses
- drilling of new exempt ~~(residential)~~ wells within the AMA

In addition, the aquifer has multiple jurisdictions drawing upon it, which increases the difficulty of achieving coordinated water management policies and practices which can collectively contribute to safe yield for the entire AMA. ~~As mentioned previously,~~ the City of Prescott accounts for approximately 8.6% of the land area of the Prescott AMA. Development patterns and policies in other jurisdictions within the AMA differ from those of the City of Prescott. The City anticipates the need to continue to work with regional water forums and implement a regional coordination strategy.

Prescott's projected population of 53,623 residents by 2025 assumes a moderate average annual growth rate of 2%. Meeting the water needs of these residents will require that the City optimize existing groundwater supplies through conservation and maximize alternative water supplies such as reuse or recharge of treated effluent. To meet the demands of the growing population and contribute to satisfy the safe yield goal mandate for the AMA, the City of Prescott anticipates the need to develop additional water sources including importation. Water rights have been secured and infrastructure is currently being explored to facilitate importation of water from the Big Chino Basin aquifer, located just north of the Prescott AMA.

Concerns relating to the importation of water include monetary, social and environmental costs. Economic impacts include the costs of infrastructure, methods of financing and securing of water rights. Social impacts include the effects on quality of life and public services caused by population growth fed by imported water. Environmental impacts can include the direct effect on surface water flows, of pipeline construction or the effects ~~affects~~ of increased urbanization on the land, habitats and air quality.

10.3.1 Effluent Supplies

Effluent has become an important water resource for the City of Prescott. When treated, effluent can be used for certain applications, such as irrigation of large turf areas, which reduces demand on groundwater supplies. Currently, the City supplies effluent to golf courses within the municipal service area. Effluent can also be used to recharge the aquifer through the use of recharge basins, where the treated effluent water percolates into the ground and is cleansed through the natural polishing process. The City of Prescott has operated an effluent recharge

facility near the airport since 1988. Between 2000 and 2010 the City has recharged an average of 2,500 acre feet per year of effluent.

Additional methods to optimize this resource include increasing the amount of effluent available for recharge by limiting the amount of new turf that must be irrigated, periodic review of effluent sale rates, possible penalties to customers who exceed their allotment and improved collection of wastewater in areas that are currently on septic systems.

10.3.2 Water Conservation

The City's existing water conservation program addresses the need for individuals to conserve water through wise water use practices. This program is currently posted on the City's website (www.cityofprescott.net). The City-adopted water budget policy requires that new allocations of water be within the available resources. Conservation measures that could yield water savings include limiting the additional sale of effluent and using the effluent to increase recharge, reducing the amount of lost and unaccounted for water, maintenance of an incentive billing structure, and further expansion of public education. Existing policies must ~~should~~ be reviewed and updated as necessary. Proposed new policies will require development, including public debate, and subsequent adoption.

10.3.3 Additional Water Supplies

Serving the anticipated population growth with water has been considered and incorporated in the City's Alternative Water Budget and in the ADWR Third Management Plan for the Prescott AMA. Importation could balance the overdraft and assist the goal of safe yield. However, even with importation, a degree of unpredictability exists. The current drought and its potential duration is relevant in ongoing water resources management. This climate condition, in combination with long distance water importation, creates a potential pitfall in that such additional water could be used to support increased urbanization beyond what available water resources could support.

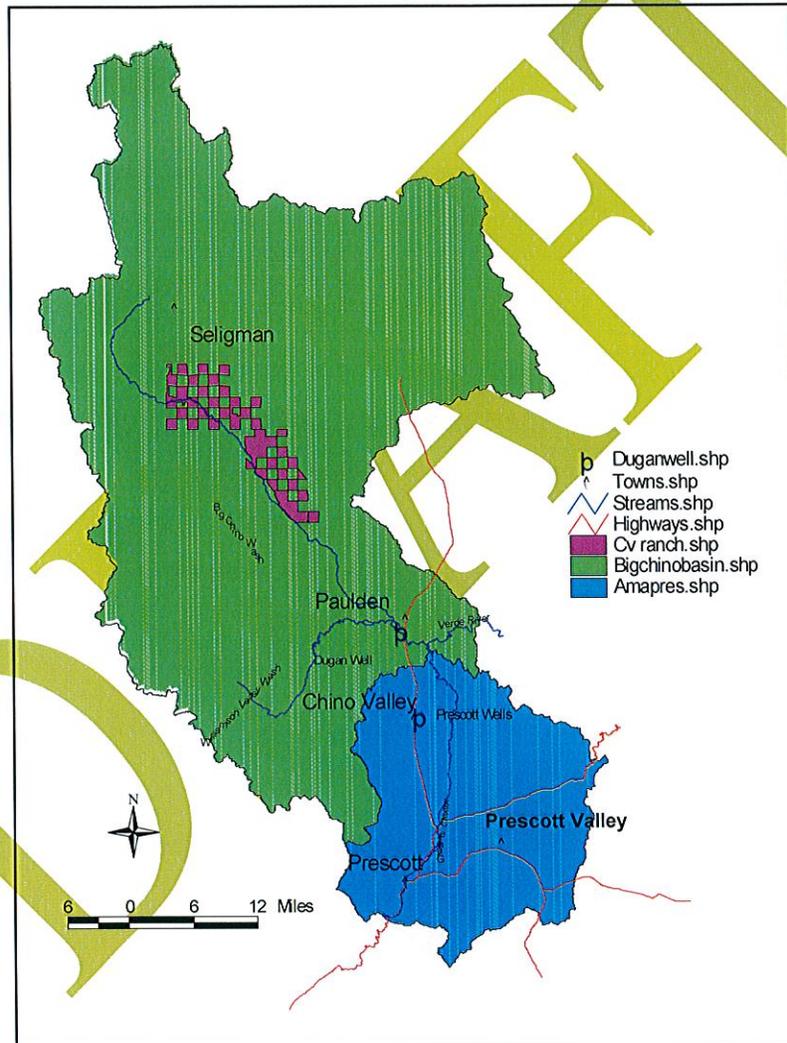
The Drought could cause these distant water sources to literally or legally "dry up", placing the community and its larger population in even greater jeopardy of water supply shortfalls. Existing and potential residents are ~~may be~~ at risk in that our water supply is ~~may be~~ beyond the control of the City of Prescott. Imported water, by policy, should be treated as a reserve to maintain a safe yield position. It should be used in place of local water and not to support further urbanization.

Concerns exist if legal and financial limitations to water importation can be overcome. The resolution of this controversy ultimately should lie in the hands of the citizens. Public information regarding the nature of the water situation is available. Public financing measures such as revenue bonding are voted on by the citizens of Prescott. An informed and participating citizenry is the best guide to future actions.

10.4 WATER RESOURCES LONG TERM MANAGEMENT PLAN

As of September 13, 2011 litigation ended with a City of Prescott Decision and Order (D&O) from the Arizona Department of Water Resources (ADWR), which describes the sources of water to which ~~that~~ the City is entitled ~~to~~. The D&O was based on ADWR examination of water that is physically, legally, and continuously available for 100 years. Now that the City's current and future water rights have been determined, the formulation of a long-term water management plan must be developed by the Prescott City Council ~~develop~~ to manage those resources. This plan would take into account all supplies recognized in the D&O which include groundwater, surface water, treated effluent, and imported supplies. All supplies will need to be assessed for their best use and to secure water for many future generations.

Figure 10-4 Prescott AMA and Big Chino Sub basin





2011 General Plan Committee Community Development

Date: Wednesday, December 14, 2011

To: Councilman Steve Blair, Brad Devries, Dave Fisher, Glenn Gooding, Councilman John Hanna, Miriam Haubrich, Terry Marshall, Zena Mitchell, Roxanne Nielsen, David Quinn, Elisabeth Ruffner, George Sheats and Gary Worob

From: Tom Guice, Community Development Director
George Worley, Planning Manager
Leslie Graser, Water Service Specialist
Ryan Smith, Community Planner

Staff Memo Water Element draft 3 - Changes to and Appropriate Level of Detail

PURPOSE:

To address changes to the Water Resources element by Committee members and discuss suggested changes by staff. The Committee has completed initial edits of the text, goals and strategies of the Water Element, however extensive additional changes are suggested by staff to create a more useable, implementable and sensible document.

To help expedite the update process, staff felt an additional discussion is needed regarding areas outside the purview of the City of Prescott General Plan. The requests currently being discussed deal with water availability and changes to the water element that are outside the influence of the Prescott City Council.

CHANGES MADE:

The text has been reworded and updated for clarification and consistency of information. Numerical information has been updated. Some figures were eliminated and the information was added to the text language. Other figures were no longer valid and updated images were not available. Text, goals and strategies are modified to reflect City activities and directives that are currently mandated in some way by other documents or agencies.

Subsection 10.4.1 **Water Availability For Future Development** has been added to the text to reflect information presented by Craig McConnell regarding the limited water supply. This includes unbuilt projects that have been previously allocated a legal right to water from the City portfolio.

Section **10.5 EMERGING CONTAMINANTS** has been added to address concerns regarding pharmaceuticals in the water supply. The previous strategy regarding research into this area was very specific. The Plan should not be limited in this regard and the strategy has been deleted. Also, as a regulated water provided, provisions exist to encompass any future contaminate that may be identified by federal and state agencies with authority in this area.

The Committee previously eliminated several strategies leaving stand alone goals. All goals must have strategies to support them, therefore, stand alone goals have been reworded into strategies and moved. Other strategies were modified to cover a broader area of concern or to provide the flexibility needed in a vision and guidance document.

Strategy 3.2 was eliminated because ultimately effluent rate setting is not within the structure of the General Plan, which is a vision and guidance document not an implementation document. The outcome of a Long-Term Water Management Plan may show the need to increase water rates and, if warranted, rate studies will commence with possible Council adoption. Strategy 4.4 was rewritten to allow for flexibility in efforts relating to the City lakes.

The updated text, goals and strategies are attached. Changes are in strikeout with additions underlined. Changes in goals and strategies made by the Committee have not yet been reviewed, therefore, they are also included along with suggested changes made by staff as noted above.

OTHER REQUESTED CHANGES:

Committee member David Quinn began a dialog, during the meeting of 11-9-11, requesting the addition of the following:

1. Protection of our water resource supply should be focused upon our aquifers, rivers, and streams as well as upon the **defined geography called an Active Management Area**.
2. The separate legal and regulatory treatment of ground water and surface water is neither supported by science nor reasonable on its face. A unified legal and regulatory scheme should be developed and **adopted by the state of Arizona**.
3. The current laissez-faire approach to exempt wells is detrimental to our long term water supply. All private wells should be metered and licensed for specific maximum pumping, whether **within an AMA** or not. Excessive pumping should be subject to financial penalty sufficient to provide a deterrent.
4. Lot splits in unincorporated areas without an assured water supply should be **prohibited by state law**.

These may added to the "existing conditions" portion of the plan text describing the legal climate in which the City must function. They are also important discussion points so the Committee may understand the complexity of water management within the City. However, they are very specific and too far reaching for a city general plan. The bolded words illustrate that the suggested goals and strategies are related to state law and beyond the scope of the City. All goals and strategies must implementable by the City of Prescott. However, items relating to issues outside of the City charter may be addressed in the text of the General Plan.

APPROPRIATE LEVEL OF DETAIL:

Several Committee members and the public have, in past meetings, requested changes that encompass the legal framework of the AMA, Yavapai County and the State of Arizona. While the points addressed are important and critical to the needs of the City, it is important to remember that the City of Prescott General Plan is a guide to future decisions within the City of Prescott only. The General Plan does not influence decisions made by the AMA, Yavapai County or the State. The General Plan must receive Council approval, before it moves forward to the voting public, and must contain measurable and attainable City goals to be effective.

10.0 WATER RESOURCES ELEMENT

10.1 EXISTING CONDITIONS

Water availability is crucial to maintaining a strong economy and good quality of life. ~~Natural~~ Precipitation supplies 100% of the water in the aquifer which serves as the primary source of water for the City of Prescott.

Under the Arizona Groundwater Management Code of 1980, the State of Arizona established five active water management areas to ensure that groundwater would not be depleted beyond the level being recharged, a condition defined as "safe-yield." The City of Prescott water service area is located within the Prescott Active Management Area (AMA) along with Prescott Valley, Chino Valley, the Yavapai-Prescott Indian Tribe, Dewey-Humboldt and extensive county areas (figure 10-1).

Communities within the AMA draw groundwater based on rights, goals and policies established by the groundwater law and must demonstrate a 100-year assured water supply (AWS) through a program aimed at new development. Management plans administered by the Arizona Department of Water Resources (ADWR) establish a water management strategy emphasizing conservation, replacement of existing groundwater, renewable supplies, recharge, and water quality management by all providers within the AMA. Safe yield is the goal by the year 2025. Private domestic use wells are exempted from the 1980 Groundwater Code. According to the ADWR Prescott AMA Assessment, exempt wells have increased steadily from 4,560 in 1985 to 11, 035 in 2006.

In 1998 the ~~Arizona Department of Water Resources (ADWR)~~ ADWR determined that the Prescott AMA was no longer in a state of safe yield. This determination capped the amount of groundwater which could be used by the respective jurisdictions within the AMA as a source of assured water for new development.

The City of Prescott water service area accounts for about 8.6% of the land within the Prescott AMA. The groundwater basin aquifers within the AMA ~~appears to be~~ are interconnected. Therefore, drawdown in other parts of the Prescott AMA will contribute toward decreased water tables in the Prescott water service area.

A.R.S. 9-461.05.

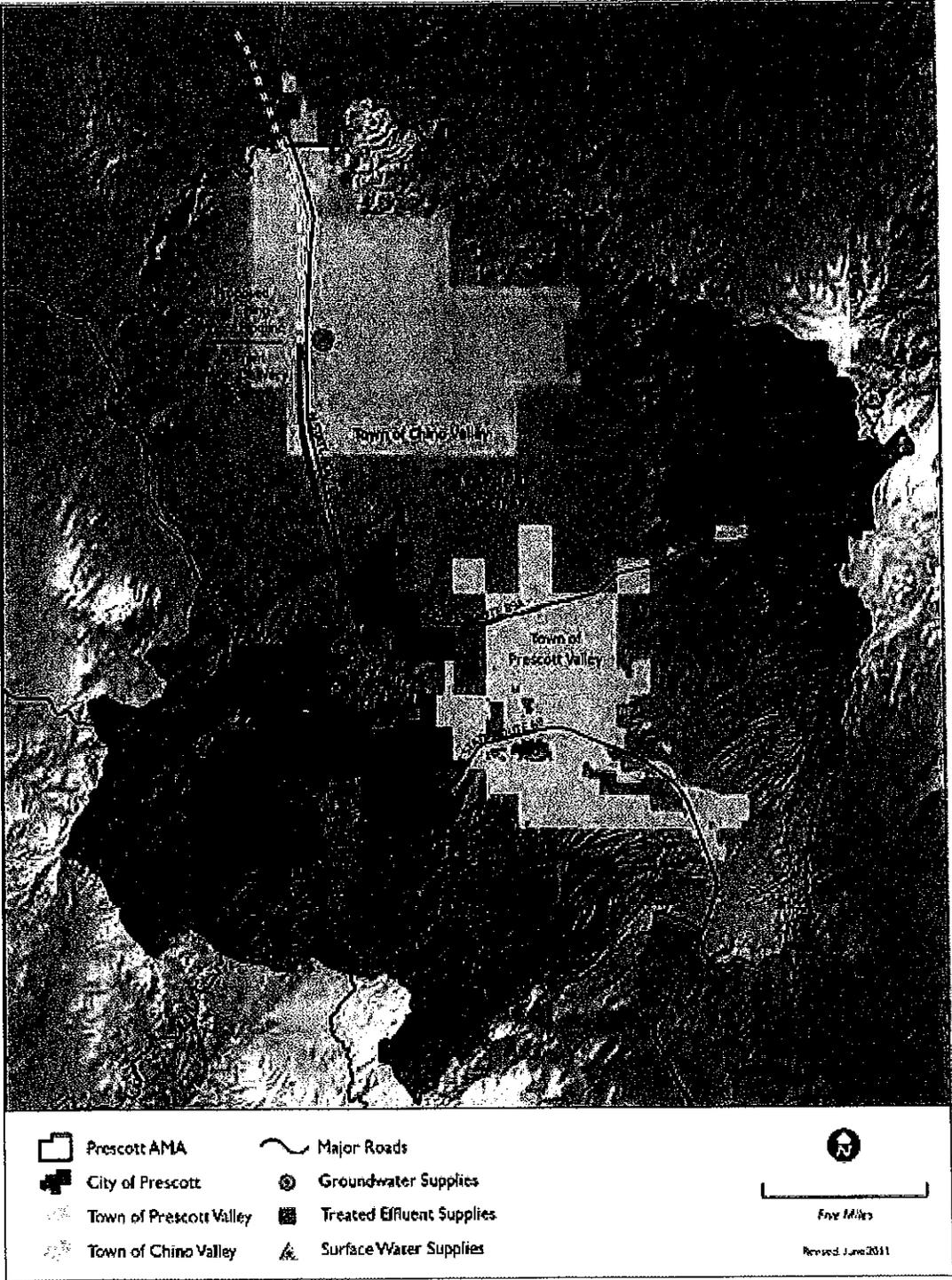
5. A water resources element that addresses:

(a) The known legally and physically available surface water, groundwater and effluent supplies.

(b) The demand for water that will result from future growth projected in the general plan, added to existing uses.

(c) An analysis of how the demand for water that will result from future growth projected in the general plan will be served by the water supplies identified in subdivision (a) of this paragraph or a plan to obtain additional necessary water supplies.

Figure 10-1 Prescott Active Management Area



Prescott is in a region of relatively moist cool upland slopes below timberline dominated by large coniferous trees. Other areas of the AMA are within the High Desert area of the state's Central Highlands region. Both areas are currently in a drought condition. Rainfall continues to be below average, with drought conditions being reported by various scientific institutions.

~~Figure 10-2 Predicted Change in Aquifer Storage with Imported Supplies.~~

The State's AMA safe-yield is a groundwater management goal, which attempts to achieve and maintain a long-term balance between the amount of groundwater withdrawn and the annual amount of natural and artificial recharge in the AMA (see ARS §45-561.12). The Prescott AMA has not achieved safe-yield, therefore, the current rate of drawdown is not sustainable over the long term.

10.2 LEGALLY AND PHYSICALLY AVAILABLE WATER

10.2.1 Legal Availability

Due to the restrictions imposed by the 1980 Groundwater Management Code and the 1998 ADWR declaration of water mining, communities within the AMA must develop additional water supplies to demonstrate the 100 year assured water supply for approved in order to approve new development. Additional water rights acquired must meet standards of legal and physical availability as recognized by the state water code. Water supply is available under State Law and when legal documentation exists securing the rights to a specific amount and source of water. The City's current legal document regarding water supplies is known as the 2009 Decision and Order (D&O) authorized and signed by ADWR.

10.2.2 Physical Availability

The physical availability of water resources is dependent upon natural conditions such as the amount of precipitation, evaporation, natural recharge and geology. It is also dependent on the demand placed on the resource by all water users. Since the water policies pursued by an individual jurisdiction affect all jurisdictions in the AMA, water policies are a topic of major regional interest. Regional cooperation and coordination will be necessary to maintain an assured water supply for the City and the region. A regional coordinating body known as the Yavapai County Water Advisory Committee, has been established with members representing the AMA and other local jurisdictions.

The City of Prescott has pursued an aggressive water management policy since 1985 and has invested in numerous strategies to secure both the legal and physical availability of water for existing and projected water users within the City of Prescott water service area. These resources, as recognized in the City's D&O, include groundwater (including "type-II" rights)*, surface water, Irrigation Grandfathered Rights (IGFR) credits, and treated effluent supplies used for recharge & recovery. Among the City's water portfolio is the legal right to import up to 8068 acre-feet per year from the Big Chino sub basin (ARS §45-555E and F). The current water resources legally and physically available to the City are presented in figure 10-3. Figure 10-2.

Figure 10-2 Estimated Current water supplies Available for Development—City of Prescott

Water Service Area (ADWR Decision and Order 2009) as allowed by the 2009 D&O.

Groundwater designated by ADWR as legally and physically available:	9,466 af/yr
Estimated Treated effluent (recharge and recovery and direct use)	5,446 af/yr
Surface Water (recharge and recovery) Granite & Willow Creeks (net)	1,733 af/yr
Imported Groundwater*	8,068 af/yr
Total legally and physically available water supply	24,713 af/yr

*Imported groundwater is subject to the initiation and completion of infrastructure. City Charter Article VI, Section 16, also requires voter approval for certain high value projects. Of this quantity of imported groundwater 45.9% is committed by intergovernmental agreement to the Town of Prescott Valley.

Note: The City holds additional groundwater rights and surface water claims that are not provided for in the 2009 D&O. These rights and claims are held in reserve.

*Note: Prescott has type II Water Rights for 3169 acre feet, but these are limited to commercial or industrial development and are not available for residential development. The City's water portfolio includes IGFR credits but these are committed to other uses. The City also has Hassayampa River and Del Rio Spring surface water claims of approximately 2769 acre feet but has no plans (as of 2003) to assert and tap those water claims. **Imported groundwater is subject to the construction of infrastructure and subject to approval by the voters.

Without tapping importation rights, the city's current legal and physical availability of groundwater and alternative water sources can cover existing uses and projected allocations to all platted parcels in the water service area. This takes into consideration ~~10,800 acre feet of~~ water demand that had been previously committed for preliminary subdivision plats approved prior to August 1998.

Since the declaration that the AMA is not in safe-yield, the City has taken a conservative approach to the allocation of water to new development through a "water budget" process specifying quantities to be made available, and has set up an annual "water budget" of 200 acre feet which may be allocated to new development. This budget and the policies underpinning it are reviewed and updated by the City Council each year.

10.3 FUTURE GROWTH AND WATER DEMAND

Population growth and development anywhere within the AMA will affect the aquifers and the AMA goal of reaching safe-yield. There are a number of specific threats to safe-yield:

- population growth and resulting increases in aquifer draw-down
- commitment of groundwater to non-residential uses
- drilling of new exempt wells within the AMA

In addition, the aquifer has multiple jurisdictions drawing upon it, which ~~increases the difficulty of~~ complicates achieving coordinated water management policies and practices which can collectively contribute to safe-yield for the entire AMA. The City of Prescott accounts for approximately 8.6% of the land area of the Prescott AMA. Development patterns and policies in other jurisdictions within the AMA differ from those of the City of Prescott. The City anticipates the need to continue to work with regional water forums and to implement a regional coordination strategy.

~~Prescott's projected population of 53,623 residents by 2025 assumes a moderate average annual growth rate of 2%.~~ Meeting the water needs of these future residents will require that the City optimize existing groundwater supplies through conservation and maximize alternative

water supplies such as reuse or recharge of treated effluent. To meet the demands of the growing population and contribute to the safe-yield goal for the AMA, the City of Prescott anticipates the need to develop additional water sources including importation. Water rights have been secured and infrastructure designed for infrastructure is currently being explored to facilitate importation of water from the Big Chino Basin-aquifer Sub-basin, located just north of the Prescott AMA.

~~concerns~~ Significant aspects relating to the importation of water include monetary, social and environmental ~~costs~~. Economic impacts factors include the costs of infrastructure, methods of financing and securing of water rights. Social impacts include the effects on quality of life and public services caused by population growth fed by imported water. Environmental ~~impacts can~~ considerations include the possibility of affecting surface water flows and increased urbanization, which may in turn affect land, habitats, and air quality. ~~direct effect on surface water flows and of pipeline construction or the effects of increased urbanization, on the land, habitats and air quality.~~

10.3.1 Treated Effluent Supplies

Treated effluent has become an important water resource for the City of Prescott. When treated, the effluent from the City's water reclamation plants can be used for certain applications, such as irrigation of large turf areas, ~~which reduces~~ reducing demand on groundwater supplies. ~~Currently,~~ The City supplies effluent to golf courses within the municipal service area. Treated effluent is also ~~can be~~ used to recharge the aquifer through the use of recharge infiltration basins, where the treated effluent water percolates into the ground and is further cleansed through the natural ~~water cycle~~ processes. The City of Prescott has operated an effluent recharge facility near the airport since 1988. Between 2000 and 2010 the City has recharged an average of 2,500 acre feet per year of effluent. Future plant expansions are planned. Using current techniques for wastewater treatment, the effluent is expected to be treated to federal standards termed A+. This is a healthier standard and will make available treated effluent to be used for a wider range of uses.

Work on both of the City's water reclamation plants is included in the 5-year Capital Improvement Plan with first phase completion anticipated to be early 2014. Class A+ water is an Arizona Department of Environmental Quality requirement for plants that are of 0.25 mgd capacity or greater. The Reclaimed Water Quality Standards include two "+" categories of reclaimed water, Class A+ and Class B+. Both categories require treatment to produce reclaimed water with a total nitrogen concentration of less than 10 mg/l. These categories of reclaimed water will minimize concerns over nitrate contamination of groundwater beneath sites where reclaimed water is applied. It will allow for landscape irrigation of areas open to public access. (Source: Sundog WWTP and Airport WRF Capacity and Technology Master Plan, October 2010 and ADEQ website.)

Additional methods to optimize this resource include increasing the amount of treated effluent available for recharge by limiting the amount of new turf that must be irrigated, periodic review of effluent ~~sale rates~~ pricing, possible financial penalties to customers who exceed their allotment, and improved collection of wastewater in areas ~~that are~~ currently on septic systems.

10.3.2 Surface Water Supplies

Watson and Willow Lakes and their associated water rights were purchased in 1998. These supplies are an important resource for City water customers. As with treated effluent, lake water is diverted to the City's recharge facility for storage and recovery purposes. This source is recognized in the City's 2009 D&O. The water level of the lakes is contingent upon weather patterns, therefore an inherent uncertainty from year to year exists with this supply. All water

supplies require careful management strategies, however, lake water supplies differ due to the need to balance their water supply, open space, and recreation functions.

10.3.3 Water Conservation

The City's existing water conservation program addresses the need for individuals to conserve water through encourages wise water use practices. This program is currently posted on the City's website (www.cityofprescott.net). ~~The City-adopted water budget policy requires that new allocations of water be within the available resources.~~ Conservation measures that could yield water savings include limiting the additional sale of additional quantities and direct use of effluent primarily for irrigation purposes of effluent and using the effluent to increase recharge, reducing the amount of lost and unaccounted for water by increasing the watertight integrity of the City's distribution system, maintaining financial incentives for conservation, maintenance of an incentive billing structure, and further expansion of public education. ~~Existing policies must be reviewed and updated as necessary.~~ Proposed new policies will require careful formulation and subsequent adoption through public processes, development, including public debate, and ~~subsequent adoption.~~ Trends in water consumption show greater seasonal use in the summer. Continuing efforts will be made to reduce outdoor use during the hotter months.

10.3.4 Additional Water Supplies

Serving the anticipated population growth with water has been considered and incorporated in the City's Alternative Water Budget and in the ADWR Third Management Plans for the Prescott AMA. Importation could balance the overdraft and assist in meeting the goal of safe-yield, however, even with importation, a degree of unpredictability uncertainty exists. The current drought and its potential duration is relevant in ongoing water resources management. ~~This climate condition, in combination with long distance water importation, creates a potential pitfall in that such additional water could be used to support increased urbanization beyond what available water resources could support.~~

Drought could cause distant water sources to literally or legally "dry up", placing the community and its larger population in greater jeopardy of water supply shortfalls. a larger future population relying upon imported resource in jeopardy of water supply shortfalls. Due to climatological factors and ongoing stream adjudication legal proceedings, our water supply is not and cannot be completely controlled by the City of Prescott.

~~Existing and potential residents are at risk in that our water supply is beyond the control of the City of Prescott. Imported water, by policy, should be treated as a reserve to maintain a safe-yield position. It should be used in place of local water and not to support further urbanization.~~

~~Concerns exist if legal and financial limitations to water importation can be overcome. The resolution of this controversy ultimately should lie in the hands of the citizens. Public information regarding the nature of the water situation is available. Public financing measures such as revenue bonding are voted on by the citizens of Prescott. An informed and participating citizenry is the best guide to future actions.~~

10.4 WATER RESOURCES LONG TERM MANAGEMENT PLAN

~~As of September 13, 2011, litigation ended resulting with a in recognition of the City of Prescott Decision and Order (D&O) 2009 D&O as the official document defining water availability from the Arizona Department of Water Resources (ADWR) ADWR, which describes enumerates the sources of water to which the City is entitled. The D&O was is based on ADWR examination of water that is physically, legally, and continuously available for 100 years. Now that the City's current and future water rights have been determined, the formulation of a long-term water management plan must be developed can occur by the Prescott City Council to manage apply those resources to the City's needs. This plan would will take into account all~~

supplies recognized in the D&O, which include groundwater, surface water, treated effluent, and imported supplies, as well as conservation and an appropriate contribution by Prescott toward meeting safe yield in the AMA. All supplies will need to be assessed for their best use and to secure water for many future generations.

10.4.1 Water Availability For Future Development

Water currently available for the City's future growth is defined by the D&O. The amount of unallocated water available for future growth is defined in an earlier D&O from 2005 where approximately 355 acre feet (AF) remains as of December, 2011. This quantity would support approximately 1014 new homes. The most recent D&O has an additional 1,472 acre-feet which could serve an additional 4,205 residential lots. Should water from the Big Chino Sub-basin be imported, this number would increase. Specific reservations have already been made for previously approved and unbuilt residential subdivisions, and for tracts of vacant, residentially zoned property within the current city limits. Considering that in 2010, the Census found 22,159 total housing units in Prescott, the following estimate quantifies future growth constrained by water availability:

<u>1998 Plats - Grandfathered Groundwater</u>	
Final Plats	3,398
Preliminary Plats	3,456
Reservation for Residentially Zoned Unwatered Tracts	1,920
Current Alternative Water Balance (355 AF)	1,014
<u>2009 Decision and Order</u>	
Alternative Water (1,472 AF additional)	4,205
TOTAL	13,993 housing units

The legal, physical and economic availability of water from sources which are known or can be reasonably anticipated, including the costs of water rights and infrastructure to access and deliver water, will be a limiting factor in the future development of Prescott. Even with a strong market demand, the availability of water and capital will determine the long-term growth of the City.

10.5 EMERGING CONTAMINANTS

As defined by the U.S. EPA, "emerging contaminants" are commonly derived from municipal, agricultural, and industrial wastewater sources and pathways. These newly recognized contaminants represent a shift in traditional thinking as many are produced industrially yet are dispersed to the environment from domestic, commercial, and industrial uses. Emerging contaminants can be broadly defined as any synthetic or naturally occurring chemical or any microorganism that is not commonly monitored in the environment but has the potential to enter the environment and cause known or suspected adverse ecological and/or human health effects. In some cases, the release of emerging chemical or microbial contaminants to the environment has likely occurred for a long time, but may not have been recognized until new detection methods were developed. In other cases, synthesis of new chemicals or changes in use and disposal of existing chemicals can create new types of emerging contaminants.

10.5 WATER RESOURCES GOALS AND STRATEGIES

~~Goal 1. Improve appropriate water law and regulations.~~

~~Strategy 1.1 Communicate to state level officials and representatives the need for improved and appropriate water law and regulations.~~

See strategy 6.4

Goal 2. ~~Provide a reliable water supply in quantity and quality for the city for the city~~ adequate for implementation of this General Plan.

Strategy 2.1 ~~Develop a Long-Term Water Management Plan.~~

Strategy 2.2 ~~Annually Review annually the city water budget and limit balance new allocations with available resources in accordance with the City's water management plan, to match available resources according to the City's water budget policy.~~

Strategy 2.3 ~~Reduce lost and unaccounted for water through monitoring, more accurate reporting, and system improvements, and appropriate action.~~

Strategy 2.4 ~~Pursue a Continuously seek, evaluate, and implement additional measures for conservation measures for possible addition to the City's existing Water Conservation Program.~~

Strategy 2.5 ~~Expand Water Conservation Program Public Education Component. [Deleted. Redundant - already included in the Water Conservation Program]~~

Strategy 2.6 ~~Maintain the incentive billing structure tied to consumption to encourage a water rate structure aligned to conservation.~~

Strategy 2.7 ~~Continue to encourage conservation and individual rainwater harvesting to reduce potable water use for outdoor watering through native plant choices and the addition of rain water catchments on businesses and residences.~~

Strategy 2.8 ~~Conduct a study to identify pharmaceutical pollution in supply wells and recharged effluent. [Deleted. Unnecessary - as a regulated water provider we are informed.]~~

Goal 3. ~~Improve~~ Maintain water supply reliability by optimizing all use of the effluent supplies resource component.

Strategy 3.1 ~~Provide no potable water or effluent for irrigation use by future golf courses or other turf intensive uses unless a clear benefit to the City of Prescott or region can be demonstrated. [Deleted. Unnecessary - already prohibited by the current Water Management Plan]~~

Strategy 3.2 ~~Periodically re-evaluate effluent rates and rate structure to all customers and impose penalties for use over allotments. Rates should be tied to market value in Arizona and tiered to discourage waste. Rates should cover all costs to the City related to effluent delivery. [Deleted. Unnecessary - treated effluent rates fall under extended (15 to 20 year) contracts which are evaluated whenever~~

a contract expires and renewal is sought. Also, treated effluent is often unavailable during summer months.]

Strategy 3.3 Maximize recharge of renewable resources, treated effluent and surface water. Continue to maximize effluent and surface water recharge programs and pursue efficient water management practices.

Strategy 3.4 Encourage extension of sanitary sewers into areas presently served by septic or other alternative disposal systems where feasible to increase return flow to water reclamation plants. Extend sewers wherever feasible to recover effluent from water customers presently on septic systems based upon a case-by-case cost-benefit analysis.

Goal 4. Develop Additional Water Supplies for the city Augment City water supplies.

Strategy 4.1 Pursue all Seek additional water resources in sufficient quantities to reduce depletion of local ground water reserves and contribute to the achievement of "safe-yield" by in the AMA.

Strategy 4.2 Develop funding strategies and investigate additional water impact fees, within state limitations, to finance new water sources and technologies.

Strategy 4.3 Investigate opportunities for enhancing infiltration within watercourses for groundwater replenishment, and implement rainwater macro-harvesting technology technologies for application within the City of Prescott and the Prescott AMA to increase water supply.

Strategy 4.4 Increase the retention capacity of Watson Lake and Willow Lake to the maximum legal limit by dredging or removal of sediments by damming portions of each lake and employing earthmovers. Operate City-owned lakes to maximize storage for surface water recharge while maintaining a balance with recreational and habitat values.

Goal 5. Include the citizens in decision making on water policies. Increase public information, awareness, and involvement in water management.

Strategy 5.1 Provide continuing public information regarding water policy questions. [Deleted. Redundant with Goal 5. above.]

Strategy 5.2 Promote public participation in water policy and initiatives through media outreach and public informational dissemination.

Goal 6. Continue to participate in regional coordination Programs regarding water resources. Maintain participation in regional water resource and management efforts.

Strategy 6.1 Invite other jurisdictions within the Prescott AMA to join in developing an integrated plan for achieving safe yield. Jointly

formulate a plan to achieve safe yield within the Prescott AMA with other jurisdictions.

Strategy 6.2 ~~Continue to take an active role in regional water forums. [Deleted. Unnecessary - the City must participate in regional water forums to further its interests. Also, the City cannot unilaterally take a leadership role.]~~

Strategy 6.3 Partner with other jurisdictions and contribute funding, where necessary, for development of intergovernmental water management programs. ~~fund studies to identify conservation measures and additional water resources.~~

Strategy 6.4 Work with regional partners to influence and modify Arizona state water laws and regulations of significant importance to the city and AMA.