ARIZONA DEPARTMENT OF WATER RESOURCES

YAVAPAI COUNTY ARIZONA 1865

Water Advisory Committee

# Central Yavapai Highlands Water Resources Management Study

# Water Advisory Committee Review of Phase I

# Wednesday November 20, 2013

**Yavapai County Water Advisory Committee**

**Arizona Department of Water Resources**

**Bureau of Reclamation**

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# The Study

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- A cooperative regional study including communities in three Verde Sub-basins (Big Chino, PrAMA, and Verde Valley)
- This is a three phase study. **Today we are looking at Phase I.**
- The Technical Working Group (TWG) has worked together to produce these Phase 1 results

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# CYHWRMS - General Review

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**A logically constructed, comprehensive assessment of alternatives to meet future "unmet" water resource demands in the area of study. Assess regional solution for future water needs.**

**Assesses available information to address three basic questions**

1. **Are there unmet future demands?**
2. **If so, what are the alternatives to meet the demand?**
3. **Is there potential for Federal involvement for meeting the demands? (next step would be "Feasibility")**

Then Ask: Do communities want to pursue any alternative(s)?

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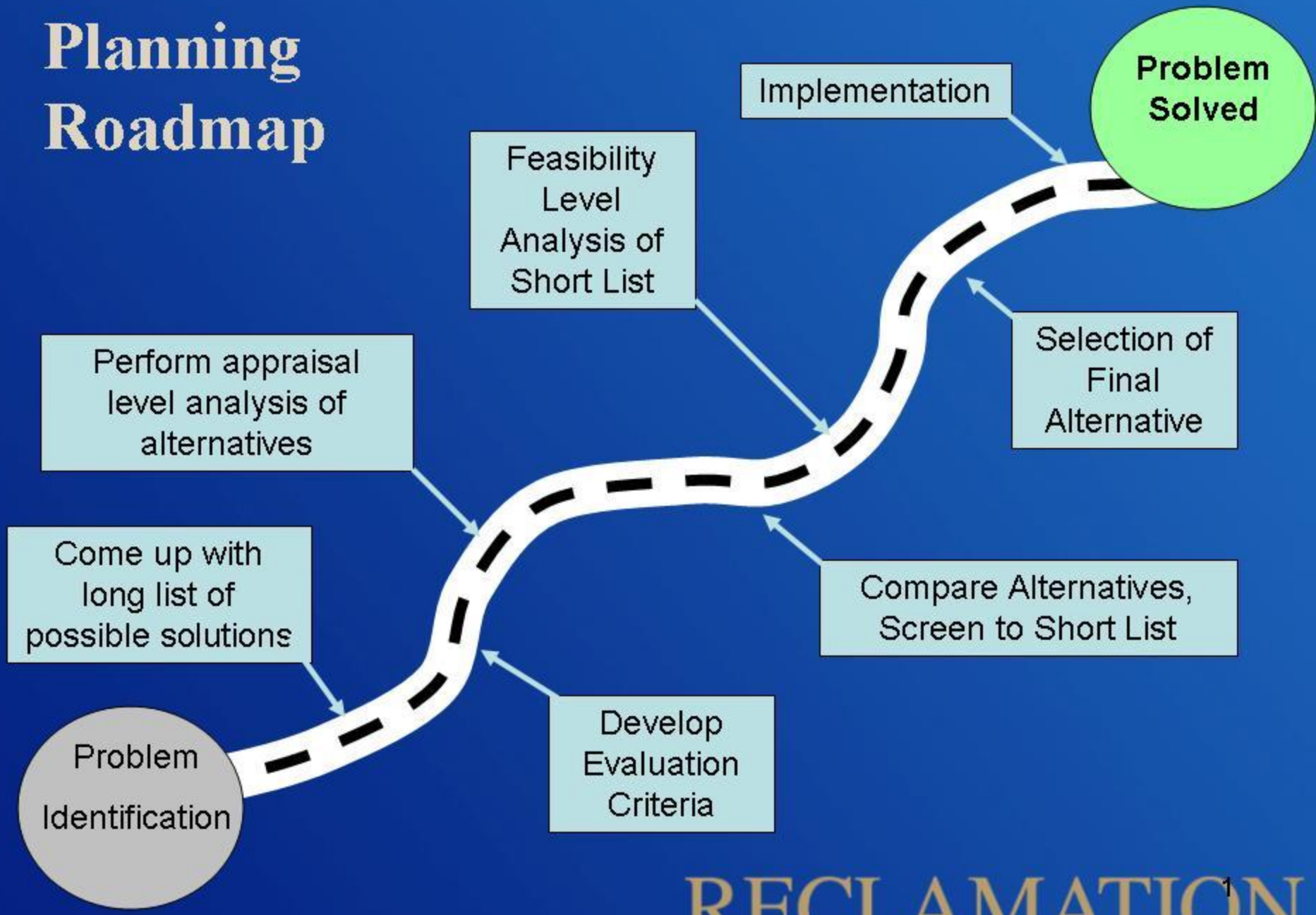
# Planning Roadmap



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# Structure for today's presentation

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- Explanation of the Phase 1 products (main and supporting)

- We will walk through the Demand Analysis Summary Table column by column and view supporting documents as necessary

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# Tasks – Phase I

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- Define Area
- Develop list of water providers

  Water Demand (evaluated for each Water Provider)
- Present Population
- Future Population
- Present Water Demands
- Present Water Resources (source and amount)
- Future Demands

**Questions:**

**Are there demands that will be unmet in 2050?**

**Where?**

**How much?**

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# Bottom Line:

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- **Yes - Phase 1 has identified "unmet" future demands.**
- **The unmet demands are detailed in a table (Demand Analysis Table) and several supporting documents.**
- **They are expressed as a range based on a range of approaches used in the phase 1 analysis (a "status quo" and a "water balance" approach).**
- **The total, overall study area unmet 2050 demands range from about 45,000 acft/yr (status quo method) to about 80,000 acft/yr (water budget method 1).**

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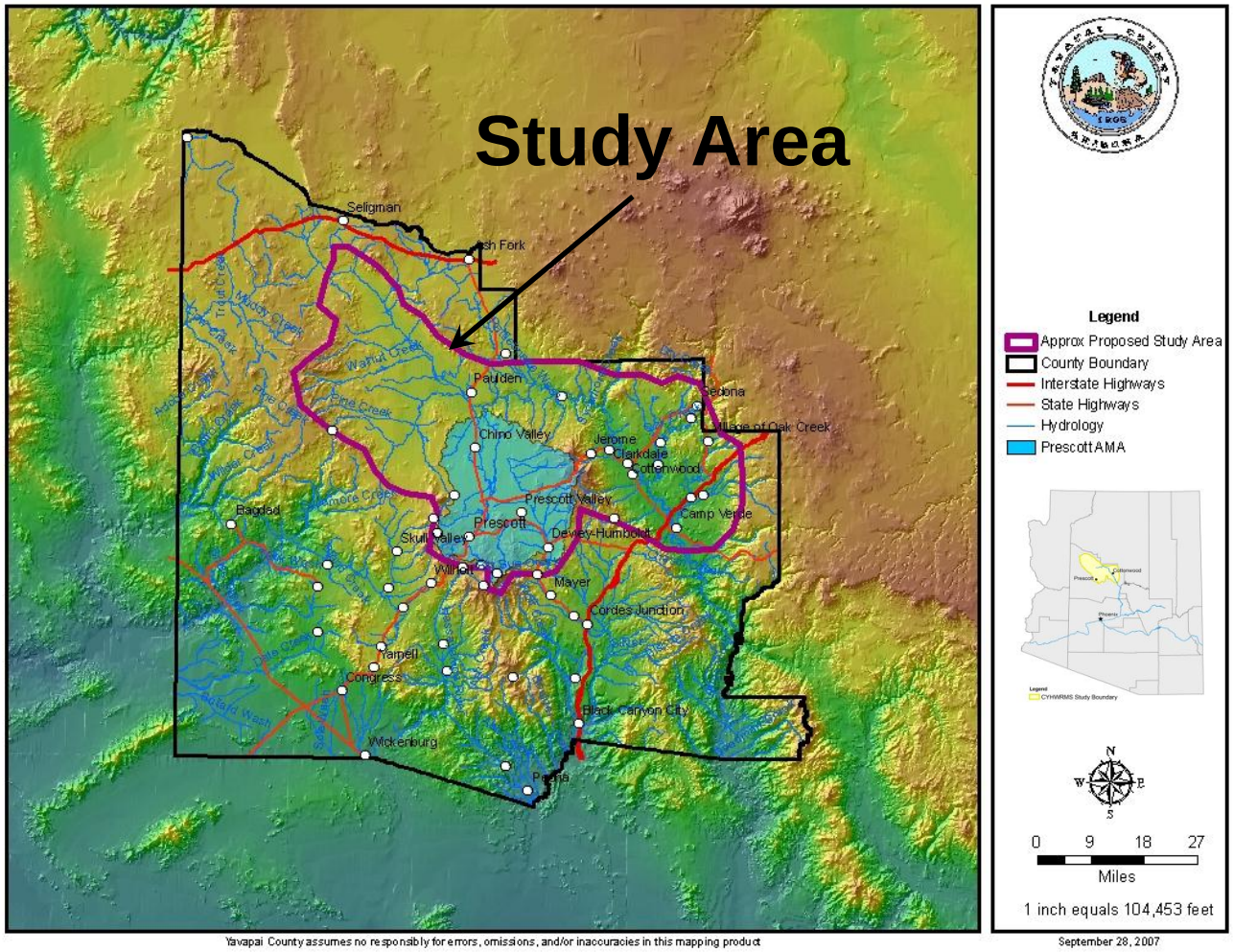
# CYHWRMS – Study Location – Yavapai County




- **Study Area includes areas with high potential growth and increased water demands: Big Chino, PrAMA, and Verde Valley**

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# CYHWRMS - Study Area

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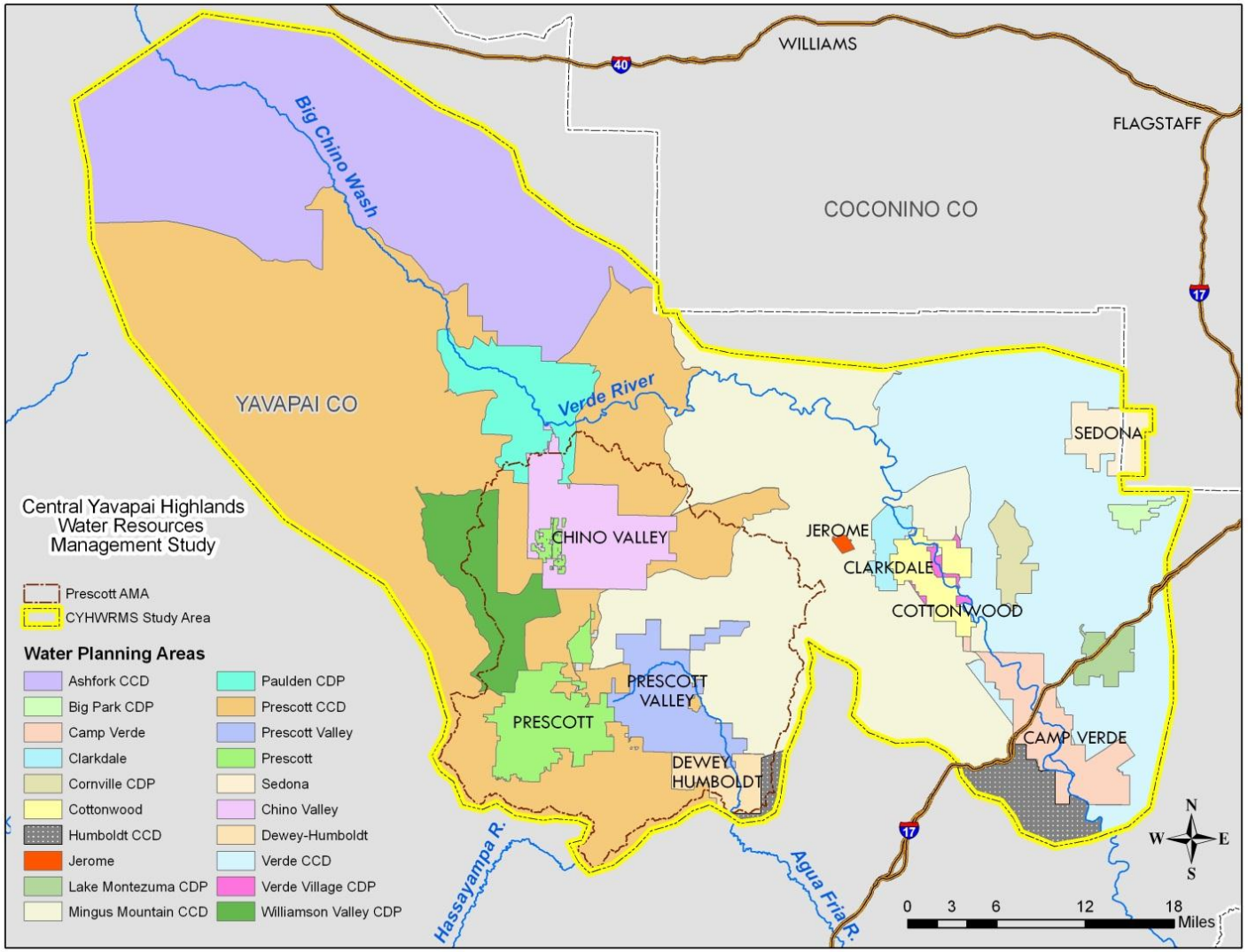


- **STUDY AREA:** Big Chino, PrAMA, and Verde Valley; High Potential Growth Areas; With increased water demands

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# Do we have unmet demands in 2050?

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- **Unmet 2050 demand for the entire study area = - 46,472 AF**
- **If the study area is broken down into groundwater sub-basins**

| | Verde Valley | PrAMA (Little Chino and Upper Agua Fria) | Big Chino |
|---|---|---|---|
| Status Quo | -11,886 | -31,677 | -2,909 |
| Water Budget 1 | -25,658 | -54,182 | -201 |
| Water Budget 2 | -21,898 | -41,085 | 3,119 |

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# How did the TWG get to these figures?

## Main Document - Demand Analysis Table

Central Yavapai Highlands Water Resources Management Study - Phase I

Demand Analysis

Draft

| A | B | C | D (C-B) | E | F | G | H (E+F+G) | I (E/B) | J Estimated | K | L (C*K) | M | N | O (L+M+N) | P (J-O) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Planning Area | 2006 Population[1] | 2050 Population[1] | Pop. Change | 2006 Mun/Dom Demand[2] | 2006 Com/Ind Demand[2] | 2006 AG Demand[2] | Total 2006 Demand | 2006[3] | Available Water Supply[4] | 2050[5] | 2050 Mun/Dom Demand[5] | 2050 Com/Ind Demand[6] | 2050 AG Demand[7] | Total 2050 Demand | 2050 Water Supply +/- |
| | | | | (AF/yr) | (AF/yr) | (AF/yr) | | GPPD | (AF/yr) | GPPD | (AF/yr) | (AF/yr) | (AF/yr) | (AF/ry) | (AF/yr) |
| Camp Verde | 12,497 | 23,277 | 10,780 | 1,597 | 887 | 9,320 | 11,804 | 114 | 11,804 | 112 | 2,920 | 887 | 6,215 | 10,022 | 1,782 |
| Dewey Humboldt | 4,134 | 6,943 | 2,809 | 607 | 38 | 569 | 1,214 | 131 | 1,214 | 120 | 933 | 722 | 37 | 1,692 | -478 |
| Clarkdale | 3,999 | 22,460 | 18,461 | 478 | 3 | 31 | 512 | 107 | 512 | 75 | 1,887 | 300 | 31 | 2,218 | -1,706 |
| Cottonwood | 20,400 | 77,630 | 57,230 | 3,370 | 1,782 | 1,137 | 6,289 | 147 | 6,289 | 125 | 10,870 | 1,782 | 760 | 13,412 | -7,123 |
| Jerome | 510 | 800 | 290 | 282 | 0 | 0 | 282 | 494 | 282 | 255 | 229 | 53 | 0 | 282 | 0 |
| Prescott Valley | 44,000 | 146,000 | 102,000 | 6,215 | 551 | 55 | 6,821 | 126 | 6,821 | 121 | 19,790 | 906 | 0 | 20,696 | -13,875 |
| Chino Valley | 12,690 | 63,690 | 51,000 | 1,294 | 552 | 1,691 | 3,537 | 91 | 2,755 | 75 | 5,351 | 4,222 | 158 | 9,731 | -6,976 |
| Prescott | 49,072 | 100,000 | 50,928 | 10,524 | 8 | 375 | 10,907 | 191 | 10,907 | 125 | 14,003 | 3,231 | 375 | 17,609 | -6,702 |
| Sedona | 11,080 | 17,100 | 6,020 | 3,794 | 40 | 278 | 4,112 | 306 | 4,112 | 361 | 6,915 | 40 | 185 | 7,140 | -3,028 |
| Paulden CDP | 5,342 | 14,099 | 8,757 | 778 | 148 | 1,346 | 2,272 | 130 | 2,272 | 120 | 1,895 | 148 | 962 | 3,005 | -733 |
| Big Park CDP | 7,731 | 8,810 | 1,079 | 1,361 | 1,153 | 0 | 2,514 | 157 | 2,514 | 198 | 1,954 | 1,153 | 0 | 3,107 | -593 |
| Cornville CDP | 4,075 | 7,448 | 3,373 | 927 | 31 | 2,823 | 3,781 | 203 | 3,781 | 185 | 1,544 | 31 | 1,880 | 3,455 | 326 |
| Lake Montezuma CDP | 4,237 | 8,308 | 4,071 | 631 | 751 | 537 | 1,919 | 133 | 1,919 | 120 | 1,117 | 751 | 360 | 2,228 | -309 |
| Ctn-Verde Village CDP | 3,373 | 11,706 | 8,333 | 118 | 1 | 1,124 | 1,243 | 31 | 1,243 | 125 | 1,639 | 1 | 750 | 2,390 | -1,147 |
| Verde CCD | 1,700 | 4,525 | 2,825 | 501 | 731 | 1,322 | 2,554 | 263 | 2,554 | 235 | 1,191 | 731 | 880 | 2,802 | -248 |
| Prescott CCD | 16,120 | 42,909 | 26,789 | 2,756 | 78 | 4,936 | 7,770 | 153 | 7,770 | 135 | 6,489 | 86 | 2,556 | 9,131 | -1,361 |
| Mingus Mtn CCD | 1,700 | 4,525 | 2,825 | 459 | 749 | 487 | 1,695 | 241 | 1,695 | 215 | 1,090 | 749 | 325 | 2,164 | -469 |
| Humboldt CCD | 230 | 612 | 382 | 49 | 5 | 759 | 813 | 190 | 813 | 170 | 117 | 5 | 506 | 628 | 185 |
| Ashfork CCD | 470 | 36,250 | 35,780 | 28 | 8 | 2,796 | 2,832 | 53 | 2,832 | 134 | 5,441 | 8 | 1,400 | 6,849 | -4,017 |
| | | | | | | | | | | | | | | | |
| Total | 203,360 | 597,092 | 393,732 | 35,769 | 7,516 | 29,586 | 72,871 | | 72,089 | | 85,375 | 15,806 | 17,380 | 118,561 | -46,472 |

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# Water Planning Areas
## (Demand Analysis Table Column A)

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- Municipal WPAs were defined by the municipal boundary and any portion of the service area that originates inside the municipal boundary and extends outside of it.
- WPA boundaries for Census Designated Places, as identified by US Census and used in 2008 H3J report.
- The larger Census County Divisions as identified in 2008 H3J and they were clipped to the study area.

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# CYHWRMS - Study Area

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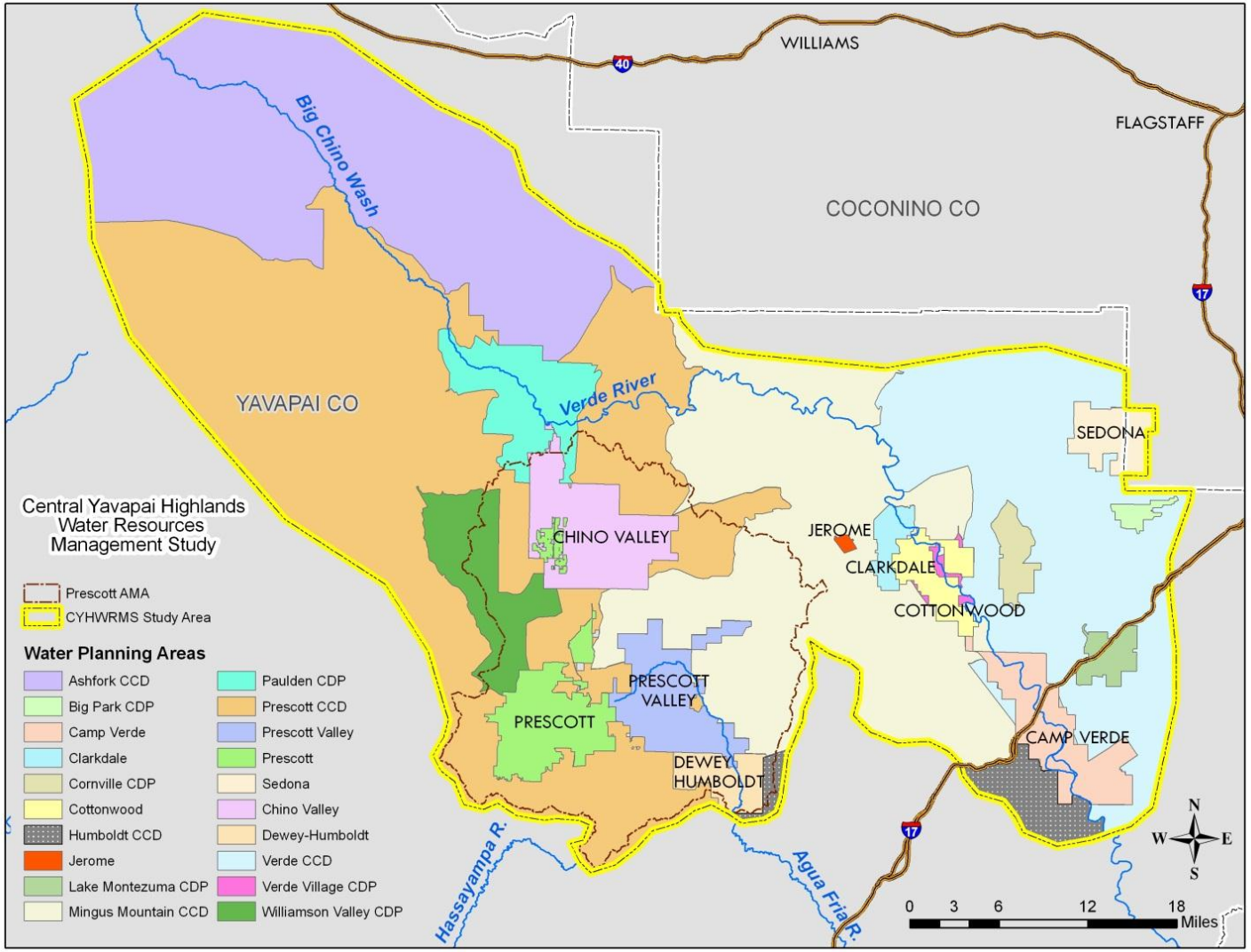


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# Demand Analysis – Population

## (Demand Analysis Table columns B and C)

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**Population was developed based on previous studies and assessments, past trends, and/or GIS analysis. All population values were finalized in consultation with technical and political representatives from each WPA.**

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| Water Planning Area | 2006 Population[1] | 2050 Population[1] | Pop. Change |
|---|---|---|---|
| | | | |
| Camp Verde | 12,497 | 23,277 | 10,780 |
| Dewey Humboldt | 4,134 | 6,943 | 2,809 |
| Clarkdale | 3,999 | 22,460 | 18,461 |
| Cottonwood | 20,400 | 77,630 | 57,230 |
| Jerome | 510 | 800 | 290 |
| Prescott Valley | 44,000 | 146,000 | 102,000 |
| Chino Valley | 12,690 | 63,690 | 51,000 |
| Prescott | 49,072 | 100,000 | 50,928 |
| Sedona | 11,080 | 17,100 | 6,020 |
| Paulden CDP | 5,342 | 14,099 | 8,757 |
| Big Park CDP | 7,731 | 8,810 | 1,079 |
| Cornville CDP | 4,075 | 7,448 | 3,373 |
| Lake Montezuma CDP | 4,237 | 8,308 | 4,071 |
| Ctn-Verde Village CDP | 3,373 | 11,706 | 8,333 |
| Verde CCD | 1,700 | 4,525 | 2,825 |
| Prescott CCD | 16,120 | 42,909 | 26,789 |
| Mingus Mtn CCD | 1,700 | 4,525 | 2,825 |
| Humboldt CCD | 230 | 612 | 382 |
| Ashfork CCD | 470 | 36,250 | 35,780 |
| | | | |
| Total | 203,360 | 597,092 | 393,732 |

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# Supporting Doc – Pop Comparison

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**Central Yavapai Highlands Water Resources Management Study - Phase I**
**Population Comparison**

| Water Planning Area[1] | not WPAs 2006 DES Population (not WPAs) | not WPAs DES 2050 Population (not WPAs) | DES Annual Growth Rate | WPAs 2006 DES modified for WPAs [1] | WPAs 2006[2] Yavapai County Parcel Population | WPAs 2006[2] Population - Yavapai County Estimates | WPAs 2006[3] Population | 2050 County Estimates 2.25% Growth [2,4] | WPAs 2050[1,3] Assumed Population | Annual Growth Rate | Pop. Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | % | | | | | | | % | |
| Camp Verde | 11,779 | 22,387 | 1.5% | | -9,826 | | 12,497 | | 23,277 | 1.4% | 10,780 |
| Dewey Humboldt | 4,134 | 6,943 | 1.2% | | -4,041 | | 4,134 | | 6,943 | 1.2% | 2,809 |
| Clarkdale | 3,732 | 5,146 | 0.7% | 3999 | -3,568 | | 3,999 | | 22,460 | 4.0% | 18,461 |
| Cottonwood | 11,201 | 20,411 | 1.4% | 20400 | -17,872 | | 20,400 | | 77,630 | 3.1% | 57,230 |
| Jerome | 330 | 334 | 0.0% | 510 | -429 | | 510 | | 800 | 1.0% | 290 |
| Prescott Valley | 35,609 | 90,620 | 2.1% | 41610 | -42,182 | | 44,000 | | 146,000 | 2.8% | 102,000 |
| Chino Valley | 13,235 | 37,836 | 2.4% | 12690 | -7,874 | | 12,690 | | 63,690 | 3.7% | 51,000 |
| Prescott | 42,154 | 79,588 | 1.5% | 49072 | -43,418 | | 49,072 | | 100,000 | 1.6% | 50,928 |
| Sedona | 11,080 | 15,030 | 0.7% | | -8,271 | | 11,080 | | 17,100 | 1.0% | 6,020 |
| Paulden CDP | 5,342 | 14,099 | 2.2% | | -5,890 | | 5,342 | | 14,099 | 2.2% | 8,757 |
| Big Park CDP | 6,566 | 12,582 | 1.5% | 7731 | -7,252 | | 7,731 | | 8,810 | 0.3% | 1,079 |
| Cornville CDP | 4,075 | 7,448 | 1.4% | | -3,747 | | 4,075 | | 7,448 | 1.4% | 3,373 |
| Lake Montezuma CDP | 4,237 | 8,308 | 1.5% | | -4,679 | | 4,237 | | 8,308 | 1.5% | 4,071 |
| Ctn-Verde Village CDP | 12,572 | 21,506 | 1.2% | 3373 | -1,928 | | 3,373 | | 11,706 | 2.9% | 8,333 |
| Verde CCD | 2,239 | 3,309 | 0.9% | | 1,700 | -2,239 | 1,700 | 4,525 | 4,525 | 2.2% | 2,825 |
| Prescott CCD | 20,525 | 26,720 | 0.6% | | 16,120 | -25,573 | 16,120 | 42,909 | 42,909 | 2.2% | 26,789 |
| Mingus Mtn CCD | 1,687 | 3,224 | 1.5% | | 1,700 | -1,687 | 1,700 | 4,525 | 4,525 | 2.2% | 2,825 |
| Humboldt CCD | 1,470 | 1,470 | 0.0% | | 230 | -287 | 230 | 612 | 612 | 2.2% | 382 |
| Ashfork CCD | 1,341 | 2,995 | 1.8% | | 470 | -500 | 470 | 1,251 | 36,250 | 10.4% | 35,780 |
| | | | | | | | | | | | |
| Total | 193,308 | 379,956 | 1.5% | | -140,757 | | 203,360 | | 597,092 | 2.5% | 393,732 |

1. Modifications to 2006/2050 DES populations based on differences between water service area boundaries and city/town boundaries.

1. Modifications to 2006/2050 DES populations based on input from town/water provider.

2. See Phase I - Data Sources and Documentation for methods and assumptions used to estimate CCD populations.

3. Populations for Camp Verde and Clarkdale include Yavapai-Apache Nation reservations located with each Water Planning Area.

4. Ashfork CCD 2050 Population includes 1250 plus 35000 growth for CVCF and Yavapai Ranches.

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# (Other) Main Document – Planning Area Water Use Summary Table

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- This document houses all the 2006 demand information.
- It is organized by Water Provider, Exempt Well, Agricultural, and Nonexempt well Demands

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# (other) Main Document – Planning Area Water Use Summary Table

YAVAPAI COUNTY ARIZONA 1865
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| Water Planning Area | Water User[1] | 2006 Demand[1] (AF/YR) | Estimated Available Supplies (using 2006 Status-Quo) (AF/YR) | Estimated Available Supplies (using Assured and Adequate Determination)[2] (AF/YR) |
|---|---|---|---|---|
| **Camp Verde** | Camp Verde Water System | **502** | 502 | 1923.86 |
| | Lake Verde Water Co. | **19** | 19 | |
| | Verde Lakes Water Corp. | **241** | 241 | |
| | Verde West Irrigation | **0** | 0 | |
| | Rainbow Acres | **17** | 17 | |
| | Yavapai-Apache – Middle Verde Sys. | **37** | 88 | |
| | Yavapai-Apache – Casino System | **21** | 85 | |
| | **Water Provider Total** | **837** | **952** | **1923.86** |
| | **Exempt wells (2303@.33AF/yr)** | **760** | **760** | **760** |
| | **Agricultural Water Use** | **9320** | **9320** | **9320** |
| | **Nonexempt wells** | **104** | **104** | **104** |
| ** | **Yavapai Apache Sand and Rock** | **100** | **100** | **100** |
| ** | **United Metro Materials** | **403** | **403** | **403** |
| ** | **Superior Materials** | **280** | **280** | **280** |
| | **PLANNING AREA TOTAL** | **11804** | **11919** | **12891** |

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# Demand Analysis – 2006 Muni/Dom Demands
## (column E)

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- A comprehensive list of water providers was developed from existing reports.
- ADWR wells 55 database was queried for the exempt well counts and GIS was used to clip the data to the appropriate WPA.
- The TWG decided upon the volume to assign to exempt wells using existing documents and working knowledge.
- ADWR annual reports were used to document AMA municipal provider demands.

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| Water Planning Area | 2006 Mun/Dom Demand[2] (AF/yr) |
|---|---|
| Camp Verde | 1,597 |
| Dewey Humboldt | 607 |
| Clarkdale | 478 |
| Cottonwood | 3,370 |
| Jerome | 282 |
| Prescott Valley | 6,215 |
| Chino Valley | 1,294 |
| Prescott | 10,524 |
| Sedona | 3,794 |
| Paulden CDP | 778 |
| Big Park CDP | 1,361 |
| Cornville CDP | 927 |
| Lake Montezuma CDP | 631 |
| Ctn-Verde Village CDP | 118 |
| Verde CCD | 501 |
| Prescott CCD | 2,756 |
| Mingus Mtn CCD | 459 |
| Humboldt CCD | 49 |
| Ashfork CCD | 28 |
| | |
| Total | 35,769 |

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**The 2006 Municipal/Domestic Demand is the sum of**

**water provider's reported demands**

**+**

**the number of exempt wells X 0.33 AF/year.**

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# Demand Analysis – 2006 Com/Ind Demands

## (table column F)

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- These are demands that are not served by a water provider (municipality or private water co.)
- Non-exempt wells that were identified in ADWR Wells 55 DB with a TWG reviewed query.
- The wells were organized into their correct WPA by using GIS and reviewed by the appropriate TWG member.
- The wells were organized by type of water use and assigned a TWG agreed volume (AF/yr).

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# Demand Analysis – 2006 Com/Ind Demands (cont.)

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- Non-exempt in the Prescott AMA portion of the study are required to report their use annually.

- One user in the AMA doesn't have a Grandfather right but does have a surface water claim. Surface water user are not required to file annual reports.

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| Water Planning Area | 2006 Com/Ind Demand[2] (AF/yr) |
|---|---|
| Camp Verde | 887 |
| Dewey Humboldt | 38 |
| Clarkdale | 3 |
| Cottonwood | 1,782 |
| Jerome | 0 |
| Prescott Valley | 551 |
| Chino Valley | 552 |
| Prescott | 8 |
| Sedona | 40 |
| Paulden CDP | 148 |
| Big Park CDP | 1,153 |
| Cornville CDP | 31 |
| Lake Montezuma CDP | 751 |
| Ctn-Verde Village CDP | 1 |
| Verde CCD | 731 |
| Prescott CCD | 78 |
| Mingus Mtn CCD | 749 |
| Humboldt CCD | 5 |
| Ashfork CCD | 8 |
| | |
| Total | 7,516 |

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**2006 Commercial and Industrial Demand is a sum of those non-exempt wells that are not associated with a water system. The volumes in areas outside the AMA were estimated from previous reports. The areas inside the AMA used reported volumes.**

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# Demand Analysis – 2006 AG Demand
## (column G)

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- A small working group from the TWG met to determine the best method for determining 2006 AG demands.
- ADWR performed two rounds of AG assessment using aerial imagery (2005 and 2007).
- The ADWR AG assessment was compared to early existing documents – Verde River Watershed Report, ADWR, 2000 and Big Chino Historical and Current Water Use and Water Use Projections, YCWAC, 2004

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# Demand Analysis – 2006 AG Demand (cont.)

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- Outside of the Prescott AMA, irrigated acres were determined and then multiplied by a weighted water duty. ADWR, 2000 has duties by region in the Verde Watershed (Big Chino, Middle Verde, etc.)
- In the Prescott AMA, annual reports filed by Irrigation Grandfather Right holders were applied.
- The surface water used in the AMA was also reviewed by the TWG.

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| Water Planning Area | 2006 AG Demand[2] |
|---|---|
| | (AF/yr) |
| Camp Verde | 9,320 |
| Dewey Humboldt | 569 |
| Clarkdale | 31 |
| Cottonwood | 1,137 |
| Jerome | 0 |
| Prescott Valley | 55 |
| Chino Valley | 1,691 |
| Prescott | 375 |
| Sedona | 278 |
| Paulden CDP | 1,346 |
| Big Park CDP | 0 |
| Cornville CDP | 2,823 |
| Lake Montezuma CDP | 537 |
| Ctn-Verde Village CDP | 1,124 |
| Verde CCD | 1,322 |
| Prescott CCD | 4,936 |
| Mingus Mtn CCD | 487 |
| Humboldt CCD | 759 |
| Ashfork CCD | 2,796 |
| | |
| Total | 29,586 |

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**2006 Agricultural Demand was determined based on whether the irrigation was outside or inside the AMA.**

**Outside the AMA = irrigated acres X weighted water duty.**

**Inside the AMA = reported use on Grandfather Irrigations Rights Annual Report + estimated for SW use for AG.**

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# Demand Analysis – Total 2006 Demands (column H)

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- Column H is Total 2006 Demand (summation of Mun/Ind, Com/Ind, and AG demands for 2006 (column E + F + G))

- 72,089 acre feet (2006 total demand for study area)

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# Demand Analysis – 2006 Gallons/Person/Day (GPPD) (column I)

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| | A | B | E | I |
|---|---|---|---|---|
| | | | | (E/B) |
| Water Planning Area | 2006 Population[1] | 2006 Mun/Dom Demand[2] (AF/yr) | | 2006[3] GPPD |
| Camp Verde | 12,497 | 1,597 | | 114 |
| Dewey Humboldt | 4,134 | 607 | | 131 |
| Clarkdale | 3,999 | 478 | | 107 |
| Cottonwood | 20,400 | 3,370 | | 147 |
| Jerome | 510 | 282 | | 494 |
| Prescott Valley | 44,000 | 6,215 | | 126 |
| Chino Valley | 12,690 | 1,294 | | 91 |
| Prescott | 49,072 | 10,524 | | 191 |
| Sedona | 11,080 | 3,794 | | 306 |
| Paulden CDP | 5,342 | 778 | | 130 |
| Big Park CDP | 7,731 | 1,361 | | 157 |
| Cornville CDP | 4,075 | 927 | | 203 |
| Lake Montezuma CDP | 4,237 | 631 | | 133 |
| Ctn-Verde Village CDP | 3,373 | 118 | | 31 |
| Verde CCD | 1,700 | 501 | | 263 |
| Prescott CCD | 16,120 | 2,756 | | 153 |
| MIngus Mtn CCD | 1,700 | 459 | | 241 |
| Humboldt CCD | 230 | 49 | | 190 |
| Ashfork CCD | 470 | 28 | | 53 |

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# Demand Analysis – Estimated Available Supply

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**The Demand Analysis Table has two tabs (Excel spreadsheet)**

- **The first tab houses the potential unmet demand if estimated supplies are based on the "Status Quo" = 2006 Demands.**

- **The second tab shows the unmet demand if estimated supplies are based on different components from existing water budgets.**

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# Demand Analysis – Estimated Supplies, using components from existing water budgets

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**SUB-BASIN "Water Balance 1" APPROACH -**

**<u>Verde Valley Sub-basin</u>:**
**Inflow (167,000) – Outflow (baseflow out 144,100) = 22,900 AF available**
**22,900 – 48,558 (2050 Demand) = -25,658 (unmet 2050 demand)**

**<u>Little Chino/Upper Agua Fria (PrAMA):</u>**
**Inflow Natural Recharge (8,070) – Outflow (4,850) = 3,220 AF available**
**3,220 – 57,402 (2050 Demand) = -54,182 (unmet 2050 demand)**

**<u>Big Chino Sub-basin</u>:**
**Inflow (30,300) – Outflow (17,900 baseflow out) = 12,400 AF available**
**12,400 – 12,601 (2050 Demand) = -201 (unmet 2050 demand)**

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ARIZONA DEPARTMENT OF WATER RESOURCES

# Demand Analysis – 2050 Water Demand
## (table columns L, M, N, O)

YAVAPAI COUNTY ARIZONA 1865

Water Advisory Committee

- Representative of each WPA provided their 2050 GPPD (table column K), and estimates were made for commercial/industrial (not served by a water provider) and agriculture volumes.

- Com/Industrial and Agriculture had to be examined separately due to an AMA being within the study area.

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# Demand Analysis –
## 2050 Water Demand – Muni/Dom

YAVAPAI COUNTY ARIZONA 1865
Water Advisory Committee

- Multiply the 2050 GPPD by the 2050 Population
- Total 2050 Muni/Dom = 85,375 AF/yr

| Water Planning Area | 2050 Population[1] | 2050 | 2050 Mun/Dom Demand5 |
|---|---|---|---|
| | | GPPD | (AF/yr) |
| Camp Verde | 23,277 | 112 | 2,920 |
| Dewey Humboldt | 6,943 | 120 | 933 |
| Clarkdale | 22,460 | 75 | 1,887 |
| Cottonwood | 77,630 | 125 | 10,870 |
| Jerome | 800 | 255 | 229 |
| Prescott Valley | 146,000 | 121 | 19,790 |
| Chino Valley | 63,690 | 75 | 5,351 |
| Prescott | 100,000 | 125 | 14,003 |
| Sedona | 17,100 | 361 | 6,915 |
| Paulden CDP | 14,099 | 120 | 1,895 |
| Big Park CDP | 8,810 | 198 | 1,954 |
| Cornville CDP | 7,448 | 185 | 1,544 |
| Lake Montezuma CDP | 8,308 | 120 | 1,117 |
| Ctn-Verde Village CDP | 11,706 | 125 | 1,639 |
| Verde CCD | 4,525 | 235 | 1,191 |
| Prescott CCD | 42,909 | 135 | 6,489 |
| Mingus Mtn CCD | 4,525 | 215 | 1,090 |
| Humboldt CCD | 612 | 170 | 117 |
| Ashfork CCD | 36,250 | 134 | 5,441 |
| | | | |
| Total | 597,092 | | 85,375 |

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# Demand Analysis – 2050 Com/Ind
## (column M)

YAVAPAI COUNTY ARIZONA 1865
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**Com/Ind – Outside of the AMA**

The future demand was determined in consultation with representative of the WPAs. Some areas chose to use the status quo from 2006 for the 2050 value, and others justified changing the value.

**Com/Ind – Inside the AMA**

Followed AMA assumptions for this sector as developed for the ADWR 2025 Assessment.

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# Demand Analysis – 2050 AG (column N)

YAVAPAI COUNTY ARIZONA 1865

Water Advisory Committee

The future Agricultural water demand was determined in consultation with the TWG.

## AG – Outside of the AMA

After several discussions, it seemed reasonable to choose Verde Valley Ag in 2050 to be 2/3 (66%) of that in 2006 (reduced by 1/3). Big Chino Ag in 2050 is assumed to be ½ (50%) of that in 2006.

## AG – Inside the AMA

Based on ADWR records and PrAMA staff assumptions.

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# Demand Analysis – Total 2050 Demand (column 0)

YAVAPAI COUNTY ARIZONA 1865

Water Advisory Committee

- Total of 2050 Demands (add columns L, M, N)
- Total year 2050 Study Area Demand = 118,561 AF/yr

| Water Planning Area | Total 2050 Demand (AF/ry) |
|---|---|
| Camp Verde | 10,022 |
| Dewey Humboldt | 1,692 |
| Clarkdale | 2,218 |
| Cottonwood | 13,412 |
| Jerome | 400 |
| Prescott Valley | 20,696 |
| Chino Valley | 9,731 |
| Prescott | 17,609 |
| Sedona | 7,140 |
| Paulden CDP | 3,005 |
| Big Park CDP | 3,107 |
| Cornville CDP | 3,455 |
| Lake Montezuma CDP | 2,228 |
| Ctn-Verde Village CDP | 2,390 |
| Verde CCD | 2,802 |
| Prescott CCD | 9,131 |
| Mingus Mtn CCD | 2,164 |
| Humboldt CCD | 628 |
| Ashfork CCD | 6,849 |
| | |
| Total | 118,561 |

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# Bottom Line (column P): 2050 Water Supply +/-

YAVAPAI COUNTY ARIZONA 1865

Water Advisory Committee

- Phase 1 has identified unmet future demands.
- The unmet demands are detailed the Demand Analysis Table (with several supporting documents).
- They are expressed as a range based on a range of approaches used in the phase 1 analysis (a "status quo" and a "water balance" approach).
- The total, overall study area unmet 2050 demands range from about 45,000 acft/yr (status quo method) to about 80,000 acft/yr (water budget method 1).

| Water Planning Area | 2050 Water Supply +/- (AF/yr) |
|---|---|
| Camp Verde | 1,782 |
| Dewey Humboldt | -478 |
| Clarkdale | -1,706 |
| Cottonwood | -7,123 |
| Jerome | -23 |
| Prescott Valley | -13,875 |
| Chino Valley | -6,976 |
| Prescott | -6,702 |
| Sedona | -3,028 |
| Paulden CDP | -733 |
| Big Park CDP | -593 |
| Cornville CDP | 326 |
| Lake Montezuma CDP | -309 |
| Ctn-Verde Village CDP | -1,147 |
| Verde CCD | -248 |
| Prescott CCD | -1,361 |
| Mingus Mtn CCD | -469 |
| Humboldt CCD | 185 |
| Ashfork CCD | -4,017 |
| | |
| Total | -46,472 |

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# Next Up…

YAVAPAI COUNTY ARIZONA 1865
Water Advisory Committee

**Phase II**

**Water Supply Assessment (in addition to present water resources)**

**Phase III**

- **Alternative Formulation**
- **Alternative Analysis**
- **Alternative Evaluation**

**Question: Is there at least one alternative that can meet the unmet demands?**

**Question: Is there a Federal Interest in the identified alternatives?**

**Phase IV**

- **Final Report Formulation**

**Question: What do communities want to do with this information?**

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# CYHWRMS Phase 2 Water Resource Inventory

YAVAPAI COUNTY ARIZONA 1865
Water Advisory Committee

- Purpose: locate and describe water resources that could be included in various portfolio(s) to meet future unmet demands
- Consider possibilities both within the Study Area and outside of the Study Area
- Consider both quantity and quality
- Consider several types of water (surface, ground, effluent, reservoirs, impaired waters, demand management, waste water, flood, and others)
- Findings represent appraisal level analysis based on available information and input from the Technical Working Group.

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