Welcome

- Please keep your phone muted during the meeting.
- Type your question/comment in the chat box and it will be read and addressed at the end of each presentation.
- During the Call to Public people will have the option to speak to the Council.
- With any technical difficulties please contact ADWR Help Desk at 602-771-8444 or tickets@azwater.gov.
Meeting Agenda

1. Call to Order – Welcome & Introductions - Chair
2. Meeting Logistics – Kennedy Shepard, ADWR
3. AMA Director Report – Kyle Miller, ADWR
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9. Adjournment – Chair
Prescott AMA GUAC
August 8, 2022
Meeting Agenda

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• This meeting is being recording and will be posted to ADWR’s website.

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### 2021 Annual Reporting

#### Total Reports Received by Filing Method

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>FILED ONLINE</th>
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<td><strong>TOTAL</strong></td>
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<td><strong>2796</strong></td>
<td><strong>5787</strong></td>
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![Reports Received Chart](image-url)
5MP Adoption Timeline

1. Initial Draft Published
2. GUAC and Public Comments
3. Updated Draft Published
4. Public Hearing
5. Final Adoption

5MP Conservation Programs are expected to become effective January 1, 2025.

Conservation Program Requirements go into effect at least 2 years after a plan is adopted. ADWR shifts the actual effective date past the 2 year mark to line up with Reporting Years.
# Prescott AMA 5MP Dates

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
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<tbody>
<tr>
<td>Initial Draft Published</td>
<td>January 31, 2022</td>
</tr>
<tr>
<td>Presented to GUAC for Comment</td>
<td>February 28, 2022</td>
</tr>
<tr>
<td>Hearing</td>
<td>May 31, 2022</td>
</tr>
<tr>
<td>Adoption</td>
<td>June 30, 2022</td>
</tr>
<tr>
<td>Variance/Administrative Review Application Deadline</td>
<td>October 10, 2022</td>
</tr>
<tr>
<td>Conservation Requirements go into Effect</td>
<td>January 1, 2025</td>
</tr>
</tbody>
</table>
* The 5MPs are the final management plans established by the Groundwater Management Act.
* 5MP conservation requirements become effective January 1, 2025
* The requirements in the 5MP remain in effect “until the legislature determines otherwise” (A.R.S. § 45-568(C))
### AWS Applications Received and Pending

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<td>Supply</td>
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<tr>
<td>Physical Availability Determination - Inside AMA</td>
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<td></td>
<td></td>
<td>1 (1)</td>
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<td>1 (1)</td>
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<tr>
<td>Physical Availability Determination - Outside AMA</td>
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<td>1 (1)</td>
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<td>2</td>
<td>2</td>
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<td>14</td>
</tr>
</tbody>
</table>

*Pending applications indicated in parentheses*
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Supply & Demand

John Riggins
Statewide Planning Manager
As Arizona transitions to a drier future, we must continue to promote a culture of conservation - one that enables the unbeatable quality of life and boundless opportunity we enjoy.

GOVERNOR DOUG DUCEY
Signs Arizona DCP Legislation (1.31.19)
"Challenges bring opportunity. This expansion of WIFA creates an opportunity for the state to secure its water future. I want to thank Governor Ducey, the Arizona Legislature and stakeholders for coming together to collaboratively come up with this important legislation."

Tom Buschatzke
Director, Arizona Department of Water Resources
A.R.S. § 45-105(B)(14)

“Not later than December 1, 2023 and on or before December 1 of each year thereafter, prepare and issue a water supply and demand assessment for at least six of the forty-six groundwater basins established pursuant to section 45-403. The director shall ensure that a water supply and demand assessment is completed for all groundwater basins at least once every five years…”
A.R.S. § 49-1304

“A. The authority shall determine the order and priority of water supply development projects proposed to be funded in whole or in part with monies from the long-term water augmentation fund, participation in projects to import water or allocation of imported water based on the following, as applicable:

...  

14. Existing, near-term and long-term water demands compared to the volume and reliability of existing water supplies of the beneficiaries of the funding or project. In evaluating this criterion, the authority shall consider information contained in any applicable water supply and demand assessment that has been issued by the director of water resources pursuant to section 45-105, subsection b, paragraph 14, in addition to any other information submitted to evaluate this criterion.”
Previous Assessments/Studies

DRAFT Demand and Supply Assessment
November 3, 2010
Phoenix Active Management Area

This Assessment is a compilation and study of historical water demand and supply characteristics for the Phoenix AMA from the year 1985 through 2006. In addition, the Assessment calculates eight water supply and demand projection scenarios to the year 2025.

DRAFT Demand and Supply Assessment
May 13, 2011
Pinal Active Management Area

This Assessment is a compilation and study of historical water demand and supply characteristics for the Pima AMA from the year 1985 through 2006. In addition, the Assessment calculates seven water supply and demand projection scenarios to the year 2025.

DRAFT Demand and Supply Assessment
May 28, 2010
Santa Cruz Active Management Area

This Assessment is a compilation and study of historical water demand and supply characteristics for the Santa Cruz AMA from the year 1985 through 2009. In addition, the Assessment calculates seven water supply and demand projection scenarios to the year 2025.

DRAFT Demand and Supply Assessment
July 2012
Tucson Active Management Area

This Assessment is a compilation and study of historical water demand and supply characteristics for the Tucson AMA from the year 1985 through 2006. In addition, the Assessment calculates seven water supply and demand projection scenarios to the year 2025.

DRAFT Demand and Supply Assessment
January 2011
Prescott Active Management Area

This Assessment is a compilation and study of historical water demand and supply characteristics for the Prescott AMA from the year 1985 through 2006. In addition, the Assessment calculates seven water supply and demand projection scenarios to the year 2025.

Source: 2010 Supply and Demand Assessments
Statewide Water Use Estimates

Compiled AMA data is available at new.azwater.gov/ama/ama-data
Statewide Water Use information is available at www.arizonawaterfacts.com
Statewide Water Use Estimates (2019)

Creation of Arizona Department of Water Resources

36% Colorado River
18% In-State Rivers
5% Reclaimed Water
41% Groundwater
22% Municipal Use
72% Agricultural Use
6% Industrial Use

http://www.arizonawaterfacts.com/water-your-facts
Timeline: Supply & Demand Analysis

- Present – December 2022
  - Hiring/Training Staff
  - Developing initial datasets
  - Developing initial assumptions
  - Identify initial basins for analysis
- CY 2023
  - Analyses for initial basins
  - Reports due December 1, 2023 (and December 1 of each year thereafter)
Considerations for Scenarios & Assumptions

Supply

• Treatment of water types/categories
  ▪ Source
  ▪ Current Utilization
  ▪ Additional Supply
• Definition of Imbalance
• Shortage Scenarios

Demand

• Treatment of Various Sectors/Water Uses
  ▪ Data availability
  ▪ Methods for estimates
• Impact of Conservation Programs and/or Curtailments
• Impact of Population Change
“In Arizona, we’re going to have to make tough policy choices about water management. We’ll have to make choices about which aspects of our lifestyle we can give up and which we will maintain.”

ADWR Director Tom Buschatzke
Questions?

John Riggins
Statewide Planning Manager

Phone: 602-771-8742
Email: jrriggins@azwater.gov
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Overdraft and Safe-Yield in the Prescott AMA

Prescott AMA GUAC Meeting
August 8, 2022
Amanda Long
AMA Planning Manager
Agenda

* Safe-Yield Discussions in the Management Plans
* Fifth Management Plans Work Group: Safe-Yield Technical Subgroup
  - Safe-Yield vs. Overdraft
  - Annual Overdraft Calculation
  - Long-Term Overdraft Calculation
  - Achieve & Maintain
  - Communication Strategy
* Overdraft Data Dashboard
* Status of Safe-Yield in the Prescott AMA


PrAMA 5MP Chapter 2, available at: https://new.azwater.gov/sites/default/files/media/PrAMA5MP.pdf
Management Goals
(A.R.S. § 45-562)

Safe-yield:
“A groundwater management goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area.”

(A.R.S. § 45-561(12))

Prescott, Phoenix, and Tucson AMAs:
Safe-yield by the year 2025

Pinal AMA:
To allow development of non-irrigation uses and to preserve existing agricultural economies in the AMA for as long as feasible, consistent with the necessity to preserve future water supplies for non-irrigation uses.

Santa Cruz AMA:
To maintain a safe-yield condition in the AMA and to prevent local water tables from experiencing long term declines
Safe-Yield Discussions in the Management Plans

* Safe-yield discussions in the first to fourth management plans:
  * Not consistent
  * Past plans may have included:
    * Annual water budgets overtime
    * Potential for safe-yield under various projections and scenarios
    * Impediments to safe-yield
  * Often did not include the actual status of the goal

* Goal for 5MP:
  * Clear, consistent methodology for assessing safe-yield or the management goal in each AMA
  * A method to communicate the status of safe-yield to the public, regulated community, and water professionals
A.R.S. § 45-563 (A)

“The director shall develop a management plan for each initial active management area for each of five management periods... and shall adopt the plans only after public hearings... The plans shall include a continuing mandatory conservation program... designed to achieve reductions in withdrawals of groundwater.”

ADWR-led stakeholder forum for the development of the 5th Management Plans (2019-2021)

Goals:
* Assess existing conservation programs
* Update existing management strategies
* Develop new management strategies

Five Subgroups Created
* Agricultural
* Municipal
* Industrial
* Turf
* Safe-Yield Technical Subgroup
Safe-Yield vs. Overdraft
What Safe-Yield is:

* Statutory definition with 3 parts:
  * Annual Calculation
  * Long-term Balance
  * Achieve & Maintain Balance
* AMA Level, all sectors play a role
* A groundwater focused budget comprised of paper and wet water components
* Legal groundwater vs. water that is under the ground
* Attempts to achieve

Safe-yield:
“A groundwater management goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area.”

(A.R.S. § 45-561(12))

What Safe-Yield is Not:

* Not a set volume
* Not a measure of aquifer health
* Does not prevent groundwater withdrawals
* Does not solve cumulative overdraft
* Overdraft ≠ Safe-yield
  * Overdraft is one component of Safe-yield
Overdraft Calculation

- Quantitative water budget calculation comparing inflows to and outflows from the aquifer
- Annual or long-term timeframe
- Groundwater focused
- AMA-level
- One component of safe-yield

OVERDRAFT
Outflows from Aquifer > Inflows to Aquifer

BALANCE
Inflows to Aquifer ≥ Outflows from Aquifer
Safe-Yield

ACHIEVE AND MAINTAIN LONG-TERM BALANCE = SAFE-YIELD!

* Safe-Yield:
  * Quantitative and Qualitative
  * No overdraft in the long-term (long-term balance of inflows and outflows) & maintenance thereafter
  * Considers:
    * Annual inflows and outflows (Annual Overdraft Calculation, Quantitative)
    * Long-term trends of annual inflows and outflows (Long-Term Overdraft Calculation, Quantitative)
    * Other factors that may allow or prevent maintenance of a long-term balance (Qualitative)
Safe-Yield Technical Subgroup

https://new.azwater.gov/5MP

* Goals

1. Assess each component of annual overdraft and develop a consistent method to calculate annual overdraft *(Annual Overdraft Calculation)*
2. Develop a general and consistent approach to assessing overdraft in the long-term *(Long-Term Overdraft Calculation)*
3. Develop a communication strategy that considers qualitative and quantitative factors to provide status of the management goal in each AMA *(Achieve & Therefore Maintain)*

* Development dashboard and concept/proposal summaries:
https://new.azwater.gov/5MP/plans-concepts

**Safe-yield:**

“A groundwater management goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area.”

*(A.R.S. § 45-561(12))
Safe-Yield Technical Subgroup
https://new.azwater.gov/5MP

* Goals

1. Assess each component of annual overdraft and develop a consistent method to calculate annual overdraft (Annual Overdraft Calculation)

2. Develop a general and consistent approach to assessing overdraft in the long-term (Long-Term Overdraft Calculation)

3. Develop a communication strategy that considers qualitative and quantitative factors to provide status of the management goal in each AMA (Achieve & Therefore Maintain)

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(A.R.S. § 45-561(12))
## Annual Calculation – Data Sources

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<th>Source</th>
<th>Inflows</th>
<th>Outflows</th>
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<td>Groundwater Inflow</td>
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<tr>
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<td>Streambed Recharge</td>
<td>Riparian Demand</td>
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<td>Mountain-front Recharge</td>
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<td></td>
<td>Cut to the Aquifer</td>
<td>Remediated Groundwater</td>
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<tr>
<td></td>
<td>CAGRD Replenishment</td>
<td>Poor Quality Groundwater</td>
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</table>

**Annual Overdraft Calculation:**

Inflows – Outflows = Overdraft

or

Inflows - Outflows = Balance

Items highlighted in **blue** are outputs of ADWR’s regional groundwater models.
Items highlighted in **gray** are compiled from AMA Annual Reports.
Overdraft Data Dashboard: Annual

Click on the columns and/or legend components to highlight specific data.

YEAR
40K

AMA
-20K Phoenix Pinal Prescott Santa Cruz Tucson
0K

SECTOR
-20K Agricultural Artificial Industrial Municipal Natural
20K

COMPONENT
0K CAGRD Replenishment Canal Seepage Cut to Aquifer Groundwater Demand Groundwater Inflow Groundwater Outflow
20K

For more information, click here for the Safe-Yield Report

https://new.azwater.gov/ama/ama-data
* Goals

1. Assess each component of annual overdraft and develop a consistent method to calculate annual overdraft *(Annual Overdraft Calculation)*

2. Develop a general and consistent approach to assessing overdraft in the long-term *(Long-Term Overdraft Calculation)*

3. Develop a communication strategy that considers qualitative and quantitative factors to provide status of the management goal in each AMA *(Achieve & Therefore Maintain)*

* Development dashboard and concept/proposal summaries:

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**Safe-yield:**

“A groundwater management goal which attempts to **achieve and thereafter maintain** a **long-term** balance between the **annual** amount of groundwater withdrawn in an active management area and the **annual** amount of natural and artificial recharge in the active management area.”

(A.R.S. § 45-561(12))
Overdraft Data Dashboard: Long-Term

Long-Term Balance Calculation:
- 3 year rolling average of artificial components
- 20 year rolling average of natural components
* Goals

1. Assess each component of annual overdraft and develop a consistent method to calculate annual overdraft (*Annual Overdraft Calculation*)
2. Develop a general and consistent approach to assessing overdraft in the long-term (*Long-Term Overdraft Calculation*)
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(A.R.S. § 45-561(12))

Factors affecting achievement and maintenance of safe-yield

* Prescott AMA demand considerations:
  * Population growth
  * Exempt well demands

* Prescott AMA supply considerations:
  * Large proportion of supply is groundwater
  * Surface water supplies are inconsistent
  * Uncertainty regarding volumes and timing for any importation from Big Chino
* Goals

1. Assess each component of annual overdraft and develop a consistent method to calculate annual overdraft *(Annual Overdraft Calculation)*

2. Develop a general and consistent approach to assessing overdraft in the long-term *(Long-Term Overdraft Calculation)*

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*(A.R.S. § 45-561(12))*
### Communication Strategy: General Public

#### OVERDRAFT DATA DASHBOARD: Status of Management Goal

<table>
<thead>
<tr>
<th>Overdraft</th>
<th>Safe-yield</th>
<th>Status of the Management Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>An annual or long-term AMA-level condition where outflows from the aquifer are greater than inflows to the aquifer. Annual or long-term balance exists when there is no overdraft in an AMA.</td>
<td>An AMA level condition where inflows and outflows are balanced and maintained in the long-term. Safe-yield is the management goal for the Prescott, Phoenix, and Tucson AMA. Safe-yield is also a portion of Santa Cruz management goal.</td>
<td>Although it could be possible to reach safe-yield under certain limited scenarios, with current practices and conditions, the Prescott AMA is not expected to achieve safe-yield.</td>
</tr>
</tbody>
</table>

**Achieve and Maintain Long-Term Balance = Safe-Yield!**

- **YEAR 1**
- **YEAR 2**
- **YEAR X**
- **LONG-TERM**

**AMA**
- Phoenix
- Pinal
- Prescott
- Santa Cruz
- Tucson

**Year of Management Goal Assessment:** 2019

[https://new.azwater.gov/ama/ama-data](https://new.azwater.gov/ama/ama-data)
Communication Strategy: Technical

OVERDRAFT DATA DASHBOARD: Management Goal Assessment

ANNUAL OVERDRAFT
• Annual

LONG-TERM OVERDRAFT
• Status

LONG-TERM OVERDRAFT
• Direction

17K
• Single Year (AF)

105.1%
• By Percent of Groundwater Demand

70.7%
• By Percent of Total Demand

OUTLOOK (4MP ONLY)
• Absence of imported water supplies

MANAGEMENT GOAL STATUS (4MP ONLY)
• Although it could possible to reach safe yield under certain limited scenarios, with current practices and conditions, the Prescott AMA is not expected to achieve safe yield.

AMA
• Phoenix
• Pinal
• Prescott
• Santa Cruz
• Tucson

Management Period
☐ 1MP (1985-1989)
☐ 2MP (1990-1999)
☐ 3MP (2000-2009)
☐ 4MP (2010-Present)

METRIC DEFINITIONS:
For the definition of the metric:
1. Hover over the white metric box and this symbol
2. See Section 7 of the Safe-Yield Report

2019
• Last Year of Long-Term Analysis

https://new.azwater.gov/ama/ama-data
Communication Strategy: Technical

Annual Overdraft Calculation, Qualitative

https://new.azwater.gov/ama/ama-data
Communication Strategy: Technical

OVERDRAFT DATA DASHBOARD: Management Goal Assessment

- **ANNUAL OVERDRAFT**
  - Annual

- **LONG-TERM OVERDRAFT**
  - Status
  - Direction

- **LONG-TERM OVERDRAFT**
  - 17K
    - Single Year (AF)
  - 105.1%
    - By Percent of Groundwater Demand
  - 70.7%
    - By Percent of Total Demand

- **OUTLOOK (AMP ONLY)**
  - Absence of imported water supplies

- **MANAGEMENT GOAL STATUS (AMP ONLY)**
  - Although it could possible to reach safe-yield under certain limited scenarios, with current practices and conditions, the Prescott AMA is not expected to achieve safe-yield.

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Long-Term Overdraft Calculation, Qualitative

https://new.azwater.gov/ama/ama-data
## Communication Strategy: Technical

### OVERDRAFT DATA DASHBOARD: Management Goal Assessment

<table>
<thead>
<tr>
<th>ANNUAL OVERDRAFT</th>
<th>LONG-TERM OVERDRAFT</th>
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**Long-Term Overdraft Calculation, Quantitative**

Although it could possible to reach safe-yield under certain limited scenarios, with current practices and conditions, the Prescott AMA is not expected to achieve safe-yield.

**METRIC DEFINITIONS:**

1. Hover over the white metric bar and this symbol.

[https://new.azwater.gov/ama/ama-data]
Communication Strategy: Technical

Factors affecting Achievement & Maintenance of Safe-Yield, Qualitative

https://new.azwater.gov/ama/ama-data
Communication Strategy: Technical

OVERDRAFT DATA DASHBOARD: Management Goal Assessment

ANNUAL OVERDRAFT

- Status: Annual

LONG-TERM OVERDRAFT

17K
- Single Year (AF)

Direction

- By Percent of Groundwater Demand: 105.1%

- By Percent of Total Demand: 70.7%

OUTLOOK

(AMP ONLY)

- Absence of imported water supplies

MANAGEMENT GOAL STATUS

(AMP ONLY)

- Although it could be possible to reach safe-yield under certain limited scenarios, with current practices and conditions, the Prescott AMA is not expected to achieve safe-yield.

METRIC DEFINITIONS:

1. Hover over the white metric box and this symbol will appear.
2. See Section 7 of the Safe-Yield Report.

https://new.azwater.gov/ama/ama-data

Status of Safe-Yield, Qualitative
Resources

5th Management Plans Workgroup
https://new.azwater.gov/5MP/plans-concepts

PrAMA 5MP Chapter 2,
available at:
https://new.azwater.gov/sites/default/files/media/PrAMA5MP.pdf

5th Management Plans
https://new.azwater.gov/sites/default/files/media/2022_SYReport_0.pdf

OVERDRAFT, SAFE-YIELD,
AND THE MANAGEMENT GOALS OF ARIZONA’S ACTIVE MANAGEMENT AREAS

OVERDRAFT DASHBOARD: Annual Overdraft

Source Data

Overdraft Data Dashboard: https://new.azwater.gov/ama/ama-data
Questions?

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Natalie Mast
AMA Director - Planning
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Meeting Agenda

1. Call to Order – Welcome & Introductions - Chair
2. Meeting Logistics – Kennedy Shepard, ADWR
3. AMA Director Report – Kyle Miller, ADWR
   Kyle will provide an update on 2021 Annual Reports and agency activities
4. Groundwater Withdrawal Fee Recommendations & WMAP
   a. Review withdrawal fee rates and money collected in past five years, WMAP projects, and remaining balance - Melissa Sikes, ADWR
   b. Discuss and recommend to ADWR Director groundwater withdrawal fee rates for reporting year 2023 - Council
5. Statewide Planning Updates – John Riggins, ADWR
   John will discuss upcoming supply and demand assessments and provide the council with an update on GWAICC activities and progress
6. Overdraft and Safe-Yield in the Prescott AMA – Amanda Long, ADWR
   Amanda will present on the status of safe-yield in the Prescott AMA using the method described in a recent published report assessing each AMA's progress towards its management goal
7. Call to the Council – Council
8. Call to the Public – Chair
9. Adjournment – Chair
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