



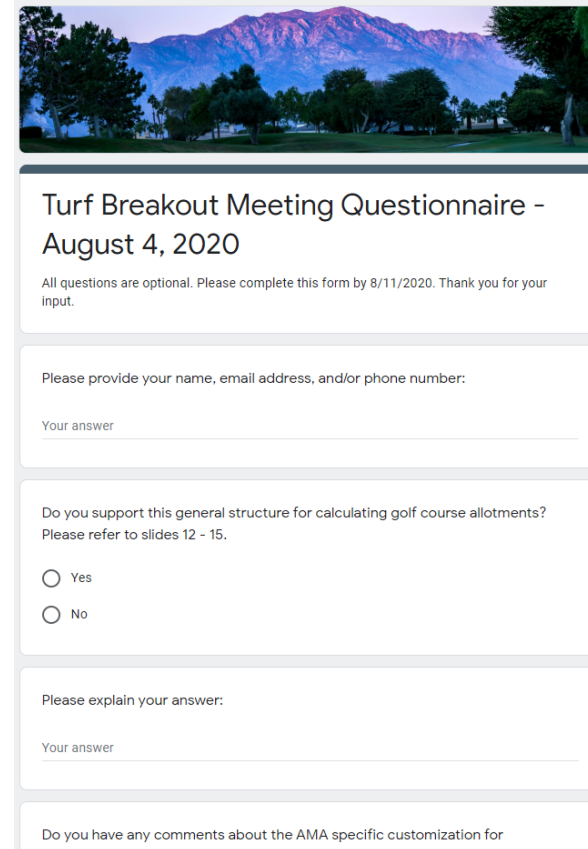
5th Management Plans Work Group Turf Breakout Meeting

August 4, 2020

New Google Form Questionnaire

- * Opportunity to provide input and feedback
- * Questions are optional

Link to Questionnaire:
<https://forms.gle/kYhVsBtnJgvkAkzq7>



Turf Breakout Meeting Questionnaire - August 4, 2020

All questions are optional. Please complete this form by 8/11/2020. Thank you for your input.

Please provide your name, email address, and/or phone number:

Your answer

Do you support this general structure for calculating golf course allotments?
Please refer to slides 12 - 15.

Yes

No

Please explain your answer:

Your answer

Do you have any comments about the AMA specific customization for

Agenda

- I. Welcome
- II. Recap of Previous Meetings
- III. Proposed Golf Course Application Rate Calculation Method Discussion
 - A. Differences Between AMAs
 - B. Turf Allotment Proposal Calculator for Golf Courses
 - C. Allotment Additions
- IV. Other Turf-Related Facility Considerations for the 5th Management Plans
 - A. Flex Accounts
 - B. Effluent Adjustment
- V. Initial Discussion of Application Rates for Non-Golf Turf Facilities
- VI. Closing

Recap from Previous Meetings

5MP Turf Breakout - Progress

Update from Past Meetings:

- * Detailed existing conservation programs
- * Discussed goals for 5MP Conservation Program
 - * Simplicity
 - * Data-driven
 - * Equitable
 - * Groundwater Reductions
- * **Today:**
 - * **Continued Discussion of 5MP Conservation Program for Golf Courses**
 - * **Introduce Discussion of other turf-related facilities**

Next Steps for Future Meetings:

- * Evaluate conservation requirements for other turf-related facilities (parks, schools, HOAs, etc.)

Next Meeting:



10/22: Non-Golf Course Turf Facilities

Development of Turf Conservation Programs for the 5th Management Plans

Management Plans

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.”

Fifth Management Plans

Possible framework for redesign of the Turf Conservation Program under the 5MPs

Needs:



- “Reduction in withdrawals of groundwater”
- Improved transparency through simplicity
- Balanced, reasonable

Wants:

- Inclusion of realistic over-seeding practices
- Update of Application Rates
- Streamlining Categories/Additions/Limitations

Proposed Method: Two Categories

Phoenix AMA

Category	Under 5 Acres/Hole		Over 5 Acres/Hole		Reduce Withdrawals of Groundwater	Equitable
	Rate	Limit	Rate	Limit		
Turf Category 1	5.84 AF/Ac	3.6 Acres/Hole	5.84 AF/Ac	2.8 Acres/Hole		
Turf Category 2	4.22 AF/Ac	3.6 to 5 Acres/Hole	4.22 AF/Ac	2.8 to 5 Acres/Hole		
Turf Category 3	0 AF/Ac	Not allowed	2.5 AF/Ac	5 Acres/Hole		
Water Surface Acres	6.2 AF/Ac	If built after 1989, 0.14 Acres/Hole	6.2 AF/Ac	If built after 1989, 0.14 Acres/Hole		



Turf Category 1: Overseeded acres

Turf Category 2: Non-overseeded acres

Turf Category 3: Acres in excess of 5 Acres/Hole or 90 Acres/18 Holes

Proposed Method: Two Categories

Prescott AMA

Category	Under 5 Acres/Hole		Over 5 Acres/Hole		Reduce Withdrawals of Groundwater	Equitable
	Rate	Limit	Rate	Limit		
Turf Category 1	5.24 AF/Ac	3.6 Acres/Hole	5.24 AF/Ac	2.8 Acres/Hole		
Turf Category 2	3.62 AF/Ac	3.6 to 5 Acres/Hole	3.62 AF/Ac	2.8 to 5 Acres/Hole		
Turf Category 3	0 AF/Ac	Not allowed	0 AF/Ac	Not Allowed, to align with 4MP		
Water Surface Acres	5.5 AF/Ac	If built after 1984, 0.14 Acres/Hole	5.5 AF/Ac	If built after 1984, 0.14 Acres/Hole		



Turf Category 1: Overseeded acres

Turf Category 2: Non-overseeded acres

Turf Category 3: Acres in excess of 5 Acres/Hole or 90 Acres/18 Holes

Proposed Method: Two Categories

Pinal AMA

Category	Under 5 Acres/Hole		Over 5 Acres/Hole		Reduce Withdrawals of Groundwater	Equitable
	Rate	Limit	Rate	Limit		
Turf Category 1	5.84 AF/Ac	3.6 Acres/Hole	5.84 AF/Ac	2.8 Acres/Hole		
Turf Category 2	4.22 AF/Ac	3.6 to 5 Acres/Hole	4.22 AF/Ac	2.8 to 5 Acres/Hole		
Turf Category 3	0 AF/Ac	Not allowed	2.5 AF/Ac	5 Acres/Hole		
Water Surface Acres	6.2 AF/Ac	If built after 1985, 0.14 Acres/Hole	6.2 AF/Ac	If built after 1985, 0.14 Acres/Hole		



Turf Category 1: Overseeded acres

Turf Category 2: Non-overseeded acres

Turf Category 3: Acres in excess of 5 Acres/Hole or 90 Acres/18 Holes

Proposed Method: Two Categories

Tucson AMA

Category	Under 5 Acres/Hole		Over 5 Acres/Hole		Reduce Withdrawals of Groundwater	Equitable
	Rate	Limit	Rate	Limit		
Turf Category 1	5.84 AF/Ac	3.6 Acres/Hole	5.84 AF/Ac	2.8 Acres/Hole		
Turf Category 2	4.22 AF/Ac	3.6 to 5 Acres/Hole	4.22 AF/Ac	2.8 to 5 Acres/Hole		
Turf Category 3	0 AF/Ac	Not allowed	0 AF/Ac	Not Allowed		
Water Surface Acres	5.8 AF/Ac	If built after 1991, 0.14 Acres/Hole	5.8 AF/Ac	If built after 1991, 0.14 Acres/Hole		



Turf Category 1: Overseeded acres

Turf Category 2: Non-overseeded acres

Turf Category 3: Acres in excess of 5 Acres/Hole or 90 Acres/18 Holes

Proposed Method: Two Categories

Santa Cruz AMA

Category	Under 5 Acres/Hole		Over 5 Acres/Hole		Reduce Withdrawals of Groundwater	Equitable
	Rate	Limit	Rate	Limit		
Turf Category 1	5.84 AF/Ac	3.6 Acres/Hole	5.84 AF/Ac	2.8 Acres/Hole		
Turf Category 2	4.22 AF/Ac	3.6 to 5 Acres/Hole	4.22 AF/Ac	2.8 to 5 Acres/Hole		
Turf Category 3	0 AF/Ac	Not allowed	0 AF/Ac	Not Allowed		
Water Surface Acres	5.8 AF/Ac	If built after 1991, 0.14 Acres/Hole	5.8 AF/Ac	If built after 1991, 0.14 Acres/Hole		

Turf Category 1: Overseeded acres

Turf Category 2: Non-overseeded acres

Turf Category 3: Acres in excess of 5 Acres/Hole or 90 Acres/18 Holes

Calculator

PROPOSED 5MP TURF ALLOTMENT CALCULATOR FOR GOLF COURSES

DRAFT

Enter Course Information In White Boxes Below

Proposed Allotment Information

Total Turfed Acres

Number of Holes

Water Surface Acres

Year Course Built

AMA

Choose AMA

Course Category

Turf Category 1 (AF)

Turf Category 2 (AF)

Turf Category 3 (AF)

Water Surface Area (AF)**

Total Proposed Allotment (AF)*

0.00



Last Updated: 7/30/2020

**Total Proposed Allotment does not account for any allotment additions or adjustments.*

***If water surface acres were added after a certain year, depending on the AMA, the course may not be eligible for full water surface area allotment (see Proposal Description for more information).*



Questions & Comments

- * Do you have any questions about the structure of the proposed 5MP turf allotment method for golf courses?
- * Do you have any questions related to how the method would be applied in each individual AMA?
- * Do you have any questions about the draft 5MP turf allotment calculator for golf courses?
- * Other questions/comments?

Other Turf-Related Facility Considerations for the 5th Management Plans

Effluent Adjustment

4MP:

Effluent Adjustment:

“For purposes of determining compliance with the maximum annual water allotment requirement, the Director shall count each acre-foot of direct use effluent or effluent recovered within the area of impact used at the facility for landscape watering purposes during the calendar year as 0.6/0.7 acre-foot of water.”

History:

- * In the past was a lower quality water/throwaway water, which was “underutilized”
- * Value of effluent has changed
 - * Advances in research, technology, and new uses of effluent/ reclaimed water
 - * ADHS 1972 Reclaimed Water Rules
 - * 1989 Supreme Court Ruling
 - * ADEQ 2001 Reclaimed Water Rules
 - * ADEQ 2018 Recycled Water Rules

Effluent Adjustment

allotment. A turf-related facility that uses effluent to meet 50 to 89 percent of its annual allotment or actual use (whichever is less) shall have each acre-foot of effluent counted as 0.85 acre-foot of water. Each acre-foot of effluent will be counted as 0.80 acre-foot of water if the amount of effluent used is equal to or greater than 90 percent of the facility's annual allotment or actual use (whichever is less).

Prescott AMA 2nd Management Plan

AMA	2MP Effluent Adjustment	3/4MP Effluent Adjustment	Proposed 5MP Effluent Adjustment
Prescott	0.8-0.85	0.6	0.8-0.85
Phoenix	0.8-0.85	0.6	0.8-0.85
Pinal	0.9-0.95	0.7	0.8-0.95
Tucson	0.9-0.95	0.7	0.80-0.95
Santa Cruz	N/A	0.7	0.80-0.95



Questions

- * Should the effluent adjustment be tiered?
- * Should the effluent adjustment be a flat number for all amounts of effluent use?
- * Should the effluent incentive be different across AMAs?
- * Other Questions/Comments?

Flex Accounts

4MP:

- * “... a flexibility account shall be established for a turf-related facility with a beginning balance of zero ac-ft”
- * “The maximum positive account balance allowed in the flexibility account of a turf-related facility after any credits ... shall be calculated by multiplying the facility’s maximum annual water allotment for the calendar year for which the credits are registered by 0.2. If the account balance exceeds the maximum positive account balance... the balance carried forward shall be equal to the maximum positive account balance.”
- * “The maximum negative account balance allowed in the flexibility account of a turf-related facility after any debits ... shall be calculated by multiplying the facility’s maximum annual water allotment for the calendar year for which the debts are registered by -0.2. If the account balance is less than the maximum negative account balance ... the balance carried forward shall be equal to the maximum negative account balance.”

5MP Proposal:

- * Carry forward Flexibility Accounts
- * Ensure correct annual limits of accounts

Allotment Additions

- * Revegetation
 - * Recommend removing: no more application rates for low water-use plants
- * Newly Turfed Area
 - * Single year, 1 AF/ac and no more than 5 AF/hole (PrAMA: 0.8 AF/ac and no more than 4 AF/hole)
 - * Recommend removing
- * Filling or Refilling Bodies of Water
 - * Single year
 - * Recommend keeping
- * Addition for Leaching
 - * Remains in effect as long as TDS remains high
 - * Recommend keeping

Questions

- * How should flexibility accounts be managed for the 5MPs?
- * Comments regarding allotment additions and recommendations made?
- * Other Questions/Comments?

Non-Golf Turf Facilities



Non-Golf Turf Facilities

4MP

- * *“... the maximum annual water allotment for a turf-related facility (any facility, including a school, park, cemetery, or common area of a housing development, with a water-intensive landscaped area of ten or more acres) that is not a golf course shall be calculated by multiplying the number of acres in existence within the facility ... in each of the categories listed ..., by the applicable application rate listed ... then adding together the products plus any allotment additions ...”*
- * Application Rate Categories:
 - * Turfed Acres
 - * Water Surface Area
 - * Low Water use

5MP Potential Modifications:

- * Different application rates for different uses
- * Consideration Total Acres of Landscape vs Acres of Turf

Questions

- * Do you have ideas for potential methods to modify the non-golf turf facilities conservation program?
- * Other Questions/Comments?

Closing Comments



5MP Turf Breakout - Progress

Update from Past Meetings:

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- * Discussed goals for 5MP Conservation Program
 - * Simplicity
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 - * Equitable
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- * **Today:**
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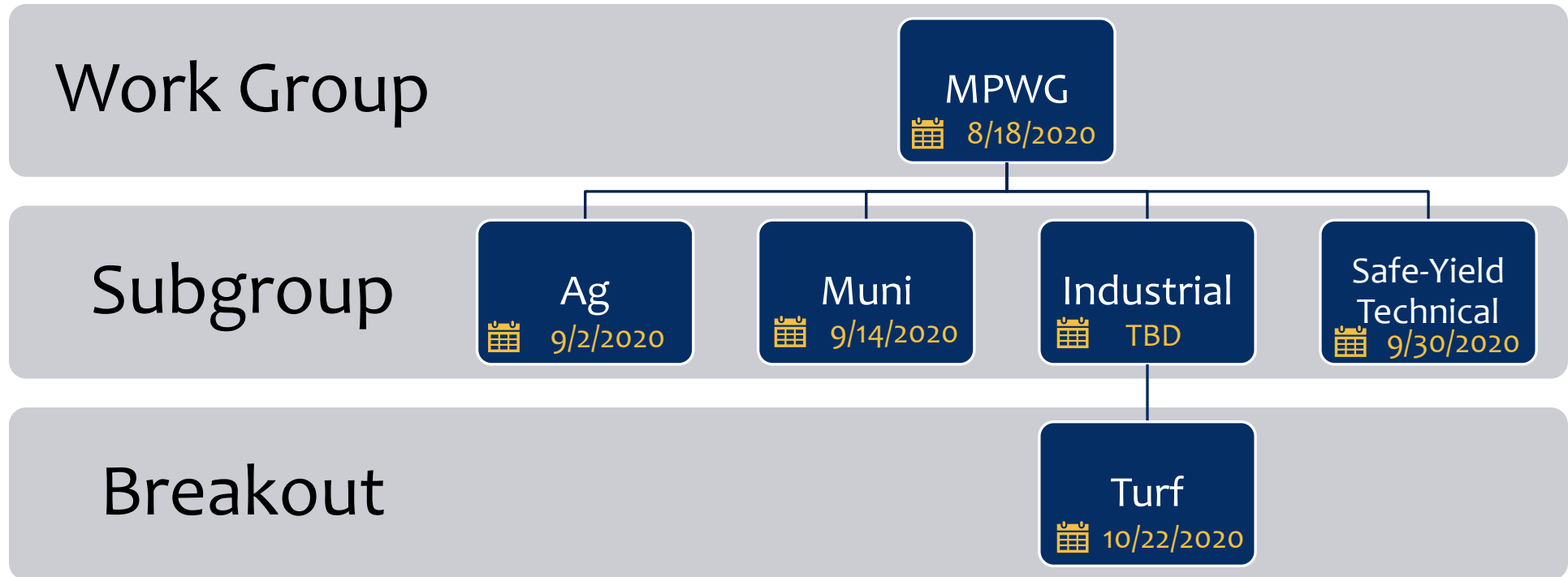
- * Evaluate conservation requirements for other turf-related facilities (parks, schools, HOAs, etc.)

Next Meeting:



10/22: Non-Golf Course Turf Facilities

MPWG Subgroups



Questions?

managementplans@azwater.gov

Management Plans Work Group:
new.azwater.gov/5MP

Full Text of Management Plans:
new.azwater.gov/ama/management-plans