5th Management Plans Work Group

Turf Breakout Meeting

December 3, 2020
Additional opportunity to provide input and feedback on items discussed in the meeting

Questions are optional so you can choose what you’d like to provide input on

Responses will be posted anonymously on our 5MP Concepts Webpage

Please respond by 12/17/2020

Link to Google Form Questionnaire: https://forms.gle/NLvxnvfPAfNYgSAr5
I. Welcome
II. Recap of Previous Meetings
III. Development of Turf Conservation Programs for the 5th Management Plans
IV. Non-Golf Turf Program Overview
   A. Turf Facilities Data
   B. Current Conservation Program
V. Potential Program Updates for Non-Golf Turf Facilities
   A. Total Landscape vs. Total Turf
   B. Use Dependent Application Rates
      i. Logistics & Reporting
VI. Closing
Recap from Previous Meetings
Update from Past Meetings:

* Detailed existing conservation programs
* Discussed goals for 5MP Conservation Program
  * Simplicity
  * Data-driven
  * Equitable
  * Reasonable
  * Groundwater Reductions
* Proposed golf course allotment calculation method
* Discussed other turf-related facility considerations
* Today:
  * Discussion of non-golf turf-related facilities

Next Steps for Future Meetings:

* Allotment calculation methodology for non-golf turf-related facilities (parks, schools, HOAs, etc.)
* Allotment calculation methodology for Golf Courses
* Other Turf-Related Facility Considerations
  * Effluent Adjustment
  * Allotment Additions

Next Meeting:

February 24, 2021 10:00 am
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

<table>
<thead>
<tr>
<th>Needs:</th>
<th>Wants:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “Reduction in withdrawals of groundwater”</td>
<td>• Inclusion of realistic over-seeding practices</td>
</tr>
<tr>
<td>• Improved transparency through simplicity</td>
<td>• Update of Application Rates</td>
</tr>
<tr>
<td>• Balanced, reasonable</td>
<td>• Streamlining Categories/Additions/Limitations</td>
</tr>
</tbody>
</table>
Non-Golf Turf Facilities
## Turf Facilities Data

### Number of Regulated Turf Facilities by AMA (2018)

<table>
<thead>
<tr>
<th>AMA</th>
<th>Park</th>
<th>School</th>
<th>HOA</th>
<th>Cemetery</th>
<th>Misc.</th>
<th>Golf</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescott</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Phoenix</td>
<td>149</td>
<td>134</td>
<td>112</td>
<td>15</td>
<td>6</td>
<td>169</td>
<td>586</td>
</tr>
<tr>
<td>Pinal</td>
<td>6</td>
<td>14</td>
<td>16</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>47</td>
</tr>
<tr>
<td>Tucson</td>
<td>30</td>
<td>39</td>
<td>2</td>
<td>4</td>
<td></td>
<td>43</td>
<td>118</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Current Non-Golf Turf Conservation Program

* Maximum annual water allotment
* For turf-related facilities over 10 acres water-intensive landscaped area
* New facilities will be limited to maximum area of 90 acres
* Certain exemptions for cemeteries
* Conservation program includes allotment additions, effluent adjustments, and flexibility accounts

* Maximum water allotment calculation method:
  * 3 Application Rates multiplied by Acres in each category

<table>
<thead>
<tr>
<th>Category</th>
<th>Application Rate (AF/Acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turf Acres</td>
<td>4.45 - 4.9</td>
</tr>
<tr>
<td>Low Water Use Landscaped Area</td>
<td>1.5</td>
</tr>
<tr>
<td>Total Water Surface Area</td>
<td>5.5 - 6.2</td>
</tr>
</tbody>
</table>
Questions
Potential Program Updates for Non-Golf Turf Facilities
Non-Golf Turf Facility Size

Potential Update for 5MP

* Conservation Program requirement for turf-related facilities:
  * Less than 10 Acres
  * Total landscaped area rather than water intensive landscaped area

ADWR Recommendation

* Very resource intensive to implement
* May reconsider in the future
* Other ideas of how this could be implemented?
Use Dependent Application Rates

4MP Allotment Calculation Method

* 3 Application Rate Categories:
  * Turfed Acres
  * Water Surface Area
  * Low Water use

Potential 5MP Allotment Calculation Method

* Use-Dependent Application Rates
  * Ornamental
  * Athletic
  * Other?

* Application Rate categories for:
  * Low Water Use
  * Water Surface Area
## Use Dependent Application Rates: Potential Option 1

### Category Application Rate (AF/Acre)

<table>
<thead>
<tr>
<th>Category</th>
<th>Application Rate (AF/Acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic Turf</td>
<td>5.11*</td>
</tr>
<tr>
<td>Ornamental Turf</td>
<td>4.43*</td>
</tr>
<tr>
<td>Low Water Use Landscaped Area</td>
<td>0.74</td>
</tr>
<tr>
<td>Total Water Surface Area</td>
<td>6.2</td>
</tr>
</tbody>
</table>

*Application rates will be customized for each AMA. These values reflect the Phoenix AMA.

### Subcategory Percent Athletic Percent Ornamental Reduce Withdrawals of Groundwater Equitable

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Percent Athletic</th>
<th>Percent Ornamental</th>
<th>Reduce Withdrawals of Groundwater</th>
<th>Equitable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park</td>
<td>50%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>50%</td>
<td>50%</td>
<td>[✓]</td>
<td>[✓]</td>
</tr>
<tr>
<td>HOA</td>
<td>50%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cemetery</td>
<td>50%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Use Dependent Application Rates: Potential Option 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Application Rate (AF/Acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic Turf</td>
<td>5.11*</td>
</tr>
<tr>
<td>Ornamental Turf</td>
<td>4.43*</td>
</tr>
<tr>
<td>Low Water Use Landscaped Area</td>
<td>0.74</td>
</tr>
<tr>
<td>Total Water Surface Area</td>
<td>6.2</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Percent Athletic</th>
<th>Percent Ornamental</th>
<th>Reduce Withdrawals of Groundwater</th>
<th>Equitable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park</td>
<td>25%</td>
<td>75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>75%</td>
<td>25%</td>
<td>✅</td>
<td>✅</td>
</tr>
<tr>
<td>HOA</td>
<td>0%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cemetery</td>
<td>50%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
* Initial allotment is based on assumed default breakdown of turf type unless documentation is provided stating otherwise
  * Example: A park with more than 25% athletic fields could submit a form requesting that their allotment reflect the actual percentage.

* Documentation could provide an “Allotment Addition”
  * Each type of facility would have a maximum allotment addition for each category of turf
Questions

* Do you have comments about an allotment calculation method using use-dependent application rates?
* Are either of the potential turf percentage breakdown reasonable?
* Do you have other ideas for potential methods to update the non-golf turf facilities conservation program?
* Other Questions/Comments?
Closing Comments
Update from Past Meetings:
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February 24, 2021 10:00 am
MPWG Subgroups

Work Group

Subgroup
- Ag 12/8/2020
- Muni 2/10/2021
- Industrial TBD
- Safe-Yield Technical 3/10/2021

Breakout
- Turf 2/24/2021
Questions?

managementplans@azwater.gov

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

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