|  | Massachusetts Department of Environmental Protection  Bureau of Water Resources – Water Management Act Program  Seasonal Demand Management Plan  For Permitted Water Management Golf Courses | | | | | | | | | | | | | | | Facility Name    Permit #    City or Town | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Plan Requirements | | | | | | | | | | | | | | | | | | | |
| **Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.  keys | Golf courses permitted under the Water Management Act (WMA) are required to implement a Seasonal Demand Management Plan (SDMP) that, at a minimum, implements Best Management Practices throughout the May 1st through September 30th irrigation season outlined in Section B, and reduces irrigation during dry periods based on:   * a Drought Declaration of Mild, Significant or Critical by the Massachusetts Drought Management Task Force[[1]](#footnote-1) (DMTF) for the Drought Region where the golf course is located (see <https://www.mass.gov/service-details/drought-regions>), or * streamflow or groundwater levels measured at a United States Geological Survey (USGS) stream gage or groundwater monitoring well assigned in the WMA permit.   During a Mild Drought or greater, or when the WMA permit streamflow or groundwater trigger is reached, nonessential outdoor water use shall not occur between the hours of 9 a.m. to 5 p.m. when evapotranspiration rates are highest, except that hand-watering of hot spots may occur at any time as necessary, and limited watering of gardens and ornamentals for courses whose core business includes a special event venue as outlined in Section C.  During a Mild Drought or greater, or when the WMA permit streamflow or groundwater trigger is reached, reductions are required in the irrigation of fairways and roughs as outlined in Section C of this document.  During a Drought Emergency, at a minimum, the irrigation of fairways and roughs must cease. Additional action may be required by the Governor’s Emergency Proclamation.  Golf course facility managers shall be responsible for:   * tracking drought declarations and streamflow or groundwater levels, * recording when water use reductions are implemented, and * within 14 days of implementing water use reductions for the first time in a calendar year, notifying MassDEP by submitting the MassDEP Notification of Water Use Reductions Form for Golf Courses (<https://www.mass.gov/doc/notification-of-golf-course-water-use-restriction-0/download>).   Each golf course permit will include instructions on tracking drought declarations and streamflows or groundwater levels at the assigned USGS gage or monitoring well.    If you have any questions, contact Duane LeVangie at [duane.levangie@mass.gov](mailto:duane.levangie@mass.gov) or 617-780-1962, or Shi Chen at [shi.chen@mass.gov](mailto:shi.chen@mass.gov) or 857-360-0042. | | | | | | | | | | | | | | | | | | | |
|  | A. Golf Facility Information | | | | | | | | | | | | | | | | | | | |
|  | Facility Name | | | | | | | | | | | | | | | | | | | |
|  | City/Town | | | | | | | | | |  | | | | | | | | | |
|  | Course Manager | | | | | | | | | |  | | | | | | | | | |
|  | Phone Number | | | Email | | | | | | |  | | | | | | | | | |
|  | Date | | |  | | | | | | |  | | | | | | | | | |
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|  | B. Best Management Practices (BMPs) | | | | | | | | | | | | | | | | | | | |
|  | Check the following BMPs for water conservation and management that you implement. | | | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 1. Water use is 100% metered. (Required by WMA permit.) | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 2. Source meters are calibrated annually. (Required by WMA permit.) | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 3. New and existing irrigation ponds are lined with impervious material. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 4. Implement an irrigation system inspection and maintenance program that includes leak detection and repair, sprinkler head maintenance and replacement on a weekly basis. | | | | | | | | | | | | | | | | | |
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|  | Yes  No | | 5. Irrigate in the early morning or evening hours, when evaporation is lowest. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 6. Improve irrigation uniformity through evaluation of design criteria such as nozzle size, spacing, scheduling coefficient and pressure selection. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 7. Use of soil sensors and/or soil samples to monitor soil moisture. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 8. Use of a weather app or an onsite weather station combined with an automated sprinkler system governed by atmospheric conditions. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 9. Use of computerized irrigation management system equipped with flow management to increase irrigation efficiency. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 10. Use of rain shutoff switches on new and existing irrigation systems. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 11. Use of environmentally-safe wetting agents to improve water infiltration and minimize evaporation. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 12. Use of low water-use turf grass where applicable. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 13. Raising turf height during dry weather and drought conditions. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 14. Regular aeration of turf to increase the percolation of water into the soil. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 15. Reduction of irrigation rates in secondary rough areas and, where possible, elimination of irrigation in non-play areas. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 16. Use of mulch materials in planting beds to improve water-holding capacity. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 17. Use of low water-use landscaping or native drought-tolerant plants around buildings, parking areas, or other appropriate places. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 18. Employee training in water conservation and management. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 19. Use of low-pressure alarms on water pumps and variable-speed drives. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 20. Use of 3rd-party retrofit nozzles. | | | | | | | | | | | | | | | | | |
|  | Yes  No | | 21. Reuse of wastewater and/or stormwater for irrigation. | | | | | | | | | | | | | | | | | |
|  | Comment: | | | | | | | | | | | | | | | | | | | |
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|  | C. Seasonal Demand Management Approach for Irrigation Reductions | | | | | | | | | | | | | | | | | | | |
|  | Tables 1. and 2. below reflect two approaches to water use reductions during a drought. You may choose to complete the Acres Table or the Time Table to reflect your water use reduction approach, or otherwise describe your specific water use reduction plan (Option 3). The Acres Table reduces water use by limiting the number of irrigated acres for fairways, roughs, and ornamentals. The required irrigation reductions in both options increase as the drought severity increases.  Along with completing one of the tables, you may provide an additional narrative explanation of your plan to implement required irrigation reductions as drought conditions worsen. This could be through such practices as limited rotation of sprinkler heads, limits on water pressure, limiting irrigation to hot spots, eliminating non-target watering, etc. (Attach additional pages as necessary.) | | | | | | | | | | | | | | | | | | | |
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|  | Check box if choosing Option 1. | | | | | | | | | | | | | | | | | | | |
|  | TABLE 1. ACRES TABLE (Fill in number of acres in all blank cells) | | | | | | | | | | | | | | | | | | | |
|  | Irrigating Less Acreage as Drought Severity Increases  Watering allowed up to designated percent | | | | | | | | | | | | | | | | | | | |
|  | Massachusetts Drought Level | Irrigated Tees & Greens | | | | | Irrigated Fairways | | | | | Irrigated Roughs | | | | | Irrigated Landscape & Ornamentals | | | |
|  |  | Percent | | | Acres | | Percent | | Acres | | | Percent | | Acres | | | Percent | | Acres | |
|  | Normal | 100% | | |  | | 100% | |  | | | 100% | |  | | | 100% | |  | |
|  | Mild Drought or  WMA Permit Trigger is reached | 100% | | |  | | 80%† | |  | | | 50%† | |  | | | 0%\*\* | | | |
|  | Significant Drought | 100% | | |  | | 60%† | |  | | | 0% | | | | |  | | | |
|  | Critical Drought | 100% | | |  | | 40%† | |  | | |  | | | | |  | | | |
|  | Emergency \* | TBD | | | | | 0% | | | | |  | | | | | 0% | | | |
|  | † Irrigation use shall not occur between the hours of 9 a.m. and 5 p.m., except that hand-watering of hot spots may occur at any time  \* Additional actions to be determined by the Governor’s Emergency Proclamation. | | | | | | | | | | | | | | | | | | | |
|  | \*\* Courses whose core business includes a special event venue may continue to irrigate gardens, flowers and ornamental plants by means of hand-held hose or drip irrigation during a Mild, Significant, or Critical Drought. | | | | | | | | | | | | | | | | | | | |
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|  | **C. Seasonal Demand Management Approach for Irrigation Reductions** | | | | | | | | | | | | | | | | | | | |
|  | Check box if choosing Option 2. | | | | | | | | | | | | | | | | | | | |
|  | TABLE 2. TIME TABLE (Fill in time in minutes in all blank cells) | | | | | | | | | | | | | | | | | | | |
|  | Irrigating for Shorter Durations as Drought Severity Increases  Reduced Minutes in Irrigation Cycles | | | | | | | | | | | | | | | | | | | |
|  | Massachusetts Drought Levels | Irrigated Tees & Greens | | | | | | Irrigated Fairways | | | | | Irrigated Roughs | | | | | Irrigated Landscape & Ornamentals | | |
|  |  | Percent | | | | Time (min.) | | Percent | | Time (min.) | | | Percent | | Time (min.) | | | Percent | | Time (min.) |
|  | Normal | Full cycle | | | |  | | Full cycle | |  | | | Full Cycle | |  | | | 100% | |  |
|  | Mild Drought or  WMA Permit Trigger is reached | Full cycle | | | |  | | 80%† | |  | | | 50%† | |  | | | 0%\*\* | | |
|  | Significant Drought | Full cycle | | | |  | | 60%† | |  | | | 0% | | | | |  | | |
|  | Critical Drought | Full cycle | | | |  | | 40%† | |  | | |  | | | | |  | | |
|  | Emergency \* | TBD | | | | | | 0% | | | | |  | | | | | 0% | | |
|  | † Irrigation use shall not occur between the hours of 9 a.m. and 5 p.m., except that hand-watering of hot spots may occur at any time  \* Additional actions to be determined by the Governor’s Emergency Proclamation. | | | | | | | | | | | | | | | | | | | |
|  | \*\* Courses whose core business includes a special event venue may continue to irrigate gardens, flowers and ornamental plants by means of hand-held hose or drip irrigation during a Mild, Significant, or Critical Drought. | | | | | | | | | | | | | | | | | | | |
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|  | Check box if choosing Option 3. | | | | | | | | | | | | | | | | | | | |
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|  | 3. Alternative Approach | | | | | | | | | | | | | | | | | | | |
|  | MassDEP offers flexibility for equivalent irrigation use reductions. Golf courses that have developed an equivalent plan that quantifies real water use reductions by other means that can relate to the Massachusetts DMTF action levels, may submit their plan for the MassDEP’s review and approval.  (Attach additional pages as necessary.) | | | | | | | | | | | | | | | | | | | |
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1. See Massachusetts Drought Management Task Force at <https://www.mass.gov/orgs/drought-management-task-force>. [↑](#footnote-ref-1)