

REVISED TOWN OF MARANA DROUGHT PREPAREDNESS PLAN

Arizona is in the midst of a prolonged drought that has various impacts on our environment. Specifically regarding water supplies in Southern Arizona, the drought does not immediately equate to water shortage. We are not running out of water. In fact, the Town of Marana (Marana) has a 100-year assured water supply designation from the State of Arizona. Additionally, Marana has been steadily working toward the use of renewable supplies rather than relying solely on our groundwater.

The Arizona Department of Water Resources requires that all water providers are to have a Drought Preparedness Plan by January 2007. While no water shortage exists, no one knows how long the current drought might last. Some climatologists are predicting that we are in a 20- to 30-year drought cycle; therefore, Marana feels it is important to have a Drought Preparedness Plan in place that can respond to a reduction of our available water supply due to a drought.

Marana's Drought Preparedness Plan includes measures initiated based on the severity of the drought response. In the early stages of drought Marana will rely on its customers to voluntarily comply with requests for water reduction. Marana can also implement a drought surcharge to its rates, limit potable water for construction uses, and in the most severe drought response stage begin statutory process to adopt a moratorium on new water consuming uses. The main focus of Marana's Drought Preparedness Plan is to continue its overall objective of sound water management. A primary tool is the current cooperation with Oro Valley, Metro Water District, and Flowing Wells Irrigation District to develop a Northwest Area Renewable Supply Treatment and Distribution System. By directly using Central Arizona Project water, our groundwater well levels will be able to recover and then our wells can serve as a backup to the renewable supplies.

Marana has decided to use information from the Arizona Drought Monitor (ADM) which brings together researchers who study the processes and effects of climate on the Southwest region with individuals and organizations who need climate information to make informed decisions. The Monitoring Technical Committee (MTC) gathers drought, climate, and weather data and disseminates the information to land managers, policy-makers, and the public. The MTC determines drought conditions based on monitoring data, tracks changes in weather and physical conditions, forecasts likely future conditions, and provides early detection of changes in drought severity. The MTC will also assess local area impact assessment information provided by citizens throughout the state. The project's mission is to improve the ability of the region to respond sufficiently and appropriately to climatic events and climate changes. The MTC aims to foster participatory, iterative research involving researchers, decision makers, resource users, and others who need more and better information about climate and its impacts. MTC also provides a focal point for identifying and serving the information needs of stakeholders at the local, state, national, and international levels.

Marana's Drought Preparedness Plan includes four stages in response to the impacts of a drought on our available water supply, which currently is primarily groundwater. The stage then determines which measures are initiated. The stages are determined when any two triggers are present. 1. Arizona Drought Monitor percent of average precipitation for the water year, 2. Arizona Drought Monitor, 3. Annual decline of the overall groundwater levels and 4. The number of consecutive days over 100 degrees.

Stage One (Moderate) is initiated when any two of the triggers are present. 1. Arizona Drought Monitor percent of precipitation for the water year is 70% to 90% of normal. 2. Arizona

Drought Monitor is D-2: severe drought. 3. The annual decline of the overall groundwater level is between 1.0 feet to 2.4 feet. 4. Over 45 consecutive days of 100 degrees. In Stage One, Marana will increase customer awareness about the drought and water resources through education. Additionally, Marana will work with Pima County to put in place ordinances that strengthen Southern Arizona's conservation ethic. Marana will work with its neighboring water providers to look at cooperative efforts that include providing emergency backup as well as joint conservation efforts. Most importantly, Marana will continue its overall water management efforts to use renewable water supplies. In effect, Marana has been doing all of Stage One measures the last few years.

Stage Two (Abnormally Dry) is initiated when any two of the triggers are present. 1. Arizona Drought Monitor percent of precipitation for the water year is 50% to 70% of normal. 2. Arizona Drought Monitor is D-3: extreme drought. 3. The annual decline of the overall groundwater level is between 2.5 feet to 3.9 feet. 4. Over 60 consecutive days of 100 degrees. In Stage Two, Marana requests customers to limit landscape irrigation to two days per week between 8:00 p.m. and 8:00 a.m. as well as avoid other outdoor water uses; for example, hosing down walkways and washing vehicles without a bucket and hose with a positive cutoff nozzle. Hotels and restaurants will be asked to initiate industry green measures for conserving water, such as providing water only on request and washing sheets and towels only if requested. Under Stage Two, all of the measures of Stage One will also continue.

Stage Three (Emergency) is initiated when any two of the triggers are present. 1. Arizona Drought Monitor percent of precipitation for the water year is 25% to 50% of normal. 2. Arizona Drought Monitor is D-4: exceptional. 3. The annual decline of the overall groundwater level is between 4.0 feet to 4.9 feet. 4. Over 75 consecutive days of 100 degrees. In Stage Three, Marana will not permit the use of potable water for construction including dust control; reclaimed water will need to be used instead. Marana will consider instituting a drought surcharge to Tier 5 of the rate structure. Additional voluntary water reduction measures will be requested from customers including the limiting of landscape irrigation to one day per week between 8:00 p.m. and 8:00 a.m. In addition to avoiding outdoor water uses, customers will be asked not to empty or fill their pools. The other measures of Stage One and Stage Two will continue to be in place.

Stage Four (Crisis) is initiated when any two of the triggers are present. 1. Arizona Drought Monitor percent of precipitation for the water year is 25% of normal. 2. Arizona Drought Monitor is D-4: exceptional. 3. The annual decline of the overall groundwater level is 5.0 feet or more. 4. Over 90 consecutive days of 100 degrees. Under Stage Four, Marana will begin the process set forth in Arizona Revised Statutes section 9-463.06 to consider adopting a moratorium on the issuance of permits and approvals for new water-consuming uses and activities. Marana will consider instituting a drought surcharge to Tier 3 and Tier 4 of the rate structure in addition to the one for Tier 5. No potable water will be used for construction. Customers will be requested to limit landscape irrigation ONLY to trees and shrubs one day per week between 8:00 p.m. and 8:00 a.m. and no irrigation of turf or ground covers. Other previous measures will continue to be in place.

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Drought Responses	Measures
<p>Stage 1 - Moderate Arizona Drought Monitor % average precipitation for water year 70% - 90% Arizona Drought Monitor D-2 Overall Groundwater Levels 1.0' – 2.4' annual decline Over 45 consecutive days of 100 degrees</p>	<ul style="list-style-type: none"> • Increase Customers Awareness through Education • Work with County to put Ordinances in place • Continue Overall Water Management Efforts to Use Renewable Water Supplies • Work with Neighboring Water Providers
<p>Stage 2 – Abnormally Dry Arizona Drought Monitor % average precipitation for water year 50% - 70% Arizona Drought Monitor D-3 Overall Groundwater Levels 2.5' – 3.9' annual decline Over 60 consecutive days of 100 degrees</p>	<ul style="list-style-type: none"> • Request Voluntary Water Reduction Measures <ul style="list-style-type: none"> - Limit Landscape Irrigation to 2 days per week between 8:00 p.m. and 8:00 a.m. - Hotels and Restaurants will be asked to conserve water. - Avoid other outdoor water uses including misters and car washes • Continue to work with County to Ordinances in place • Continue Overall Water Management Efforts to Use Renewable Water Supplies • Work with Neighboring Water Providers
<p>Stage 3 - Extreme Arizona Drought Monitor % average precipitation for water year 25% - 50% Arizona Drought Monitor D-4 Overall Groundwater Levels 4.0' – 4.9' annual decline Over 75 consecutive days of 100 degrees</p>	<ul style="list-style-type: none"> • No Potable Water for Construction • Institute Drought Surcharge to Tier 5 of the Rate Structure • Request Additional Voluntary Water Reduction Measures <ul style="list-style-type: none"> - Limit Landscape Irrigation to 1 day per week between 8:00 p.m. and 8:00 a.m. - Pools not be filled • Continue to work with County to put Ordinances in place • Continue Overall Water Management Efforts to Use Renewable Water Supplies • Work with Neighboring Water Providers
<p>Stage 4 – Severe Arizona Drought Monitor % average precipitation for water year less than 25% Arizona Drought Monitor D-4 Overall Groundwater Levels 5.0' and more annual decline Over 90 consecutive days of 100 degrees</p>	<ul style="list-style-type: none"> • Begin statutory process to adopt moratorium on new water-consuming uses. • Institute Drought Surcharge to Tier 3 and 4 of the Rate Structure in addition to Tier 5 • No Potable Water for Construction • Request Additional Voluntary Water Reduction Measures <ul style="list-style-type: none"> - Limit Landscape Irrigation ONLY to trees and shrubs 1 day per week between 8:00 p.m. and 8:00 a.m. - No irrigation of turf or ground covers • Continue to work with County to put Ordinances in place • Continue Overall Water Management Efforts to Use Renewable Water Supplies • Work with Neighboring Water Providers