



City of Goodyear
Drought Preparedness Plan

2022



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Summary

Understanding that the City of Goodyear resides within an arid environment susceptible to drought cycles and climate variability concerns, the City of Goodyear plans to ensure a sustainable and resilient water supply for its customers. The Drought Preparedness Plan (DPP) identifies strategies to be used to reduce demand so that essential water uses are protected in the event of water shortages due to operational emergencies or water shortages caused by drought. These guidelines are meant to provide a framework for expedient responses while maintaining the flexibility to respond to each unique water supply reduction event. They assist City officials in making the necessary decisions throughout the duration of shortage episodes.

There are three primary components of the DPP – recognition of incidents that could trigger water supply reduction events, establishment of a Water Emergency Response Team (WERT) to advise the City Manager, and the corresponding measures that are recommended for responding to them. The DPP identifies four stages with each stage progressively requiring more restrictive measures to be implemented.

The DPP will be implemented in stages when demand or regional conditions reach specific trigger levels. Stage 1 (Water Watch) may be enacted whenever there is a direct impact to the City's overall water portfolio that is significant. Stage 2 (Water Alert), Stage 3 (Water Warning), and Stage 4 (Water Emergency) will be triggered as demand rises from 85% to 90% and 95% or more of daily available water delivery capacity. "Daily available capacity" will include all resources available for delivery beyond 24 hours.

The WERT will be integral in assessing and implementing the measures that best address the water supply shortage event. The DPP provides a **Drought Matrix (Appendix A)** with a menu of measures focused on reducing water use which the WERT may choose to recommend to the City Manager for implementation. The City Manager will have the authority to declare all stages along with relevant measures to reduce water use, and cancel all implemented stages.

Drought Preparedness Plan

Introduction

In accordance with A.R.S §45-342(A) the State of Arizona requires that all potable water providers prepare and utilize Drought Preparedness Plans (DPP). The DPP must identify demand reduction measures, the levels of water shortage at which they would be triggered, and the ways in which the plans would be implemented and enforced.

The Plan aims to implement both proactive measures that respond to potential local and regional water concerns, as well as creating very clear trigger points that identify action to acute water supply issues related to the ability for the system to maintain proper operations, and an adequate level of water supply contingency levels.

Objectives

The DPP enables City staff to respond promptly and apply measures that suit the particular circumstances. By addressing each emergency event specifically rather than broadly, the City has greater flexibility and control in applying the correct level of response that minimizes service disruptions and minimizes water curtailment.

The Plan defines water supply curtailment stages, provides authority and enforcement, and offers a set of demand reduction measures for the City Manager to deploy.

City of Goodyear Water System Information:

Designated Water Provider Number:
002019.0000

Address:
4980 S. 157th Ave
Goodyear, AZ 85338

Key Personnel
Public Works Director
Deputy Public Works Director
Water Resources and Sustainability Manager
Process Operations Manager

Phone Number
623-932-3010, Option 3

Water Use Restriction Stages

The City may invoke four stages of any combination of voluntary or mandatory water restrictions based on anticipated or direct levels of shortage. Each stage below defines what the specific trigger is to prompt the City to act. The restrictions may be imposed on portions of the service area or the entire region, depending upon the cause of the shortage. Additional restrictions may be imposed in accordance with the City Charter.

Stage 1 Water Watch

The City of Goodyear may enact stage 1 in response to direct impacts to Goodyear's water portfolio that are significant due to regional drought conditions. Stage 1 does not have mandatory water curtailment measures in place in this stage. Water Conservation staff will engage in increased active community outreach and messaging with the goal to bring awareness and information that will challenge water customers to reduce overall water use voluntarily. The city will serve as an example by implementing higher levels of water conservation measures in city owned facilities. The WERT will be activated to assess the emergency and provide recommendations to the City Manager on potential actions to take.

Stage Two Water Alert

The City of Goodyear may request a combination of voluntary and mandatory reductions from water users. The WERT will assess the emergency and recommend actions for the City Manager to take. Stage two may be triggered when demand reaches or exceeds 85% of the daily available water production capacity available for delivery and there is no expected recovery of service for the next seven days.

Stage Three Water Warning

The City invokes mandatory restrictions from some or all users. Stage three may be triggered when demand reaches or exceeds 90% of the daily available water production capacity available for delivery and there is no expected recovery of service for the next seven days.

Stage Four Water Emergency

The City invokes the most severe restrictions and enforcement for all users. Stage Four may be triggered when demand exceeds 95% of the daily available water production supply.

Category Exemptions

- Uses to maintain health, welfare and safety of water customers of the City of Goodyear
- Hospitals
- Essential city services that protect the health and safety of the community
- Immediate fire, hazardous waste, or sanitation hazards
- Construction of projects essential to maintain health, safety and welfare of the public

Plan of Action:

The DPP will establish a Water Emergency Response Team (WERT) assigned to assess the current and projected water supply, water use demands, and water shortage incidents. The WERT will report findings and make recommendations to the City Manager. The WERT will assemble when one or more of the identified triggers are met. The WERT is tasked with assessing and determining the appropriate level of response for each water shortage emergency. A drought matrix (Appendix A) has been created listing several water reduction measures for implementation by the WERT. The team may choose one or a combination of measures found within the drought matrix to implement and solicit the assistance of other departments within the city. The WERT will ensure open communication and outreach is achieved both with internal and external customers for the duration of the water emergency event.

The WERT will be activated and led by the Public Works Director and be comprised of key members of the Utilities team staff. The Director could assemble representatives from Parks and Recreation, the City Attorney's office, Finance, Communications and other city departments as appropriate.

The Drought Matrix (Appendix A) is a menu of options that serves as a resource for the management of water shortages. The measures identified in the matrix are based on the following areas: municipal, residential, non-residential, and outreach.

Demand Management Options

Under Appendix A is a list of water reduction strategies that the city could impose during times of water shortage. The strategies provided here are very broad and identify categories where reductions in water use can be realized. The drought matrix provides more specific actions the WERT can recommend to the City Manager to mitigate any water emergencies.

Enhance Voluntary Reduction through Public Education

The city will build cooperation in reducing demand through enhancing public awareness of the water supply status. The city conducts regular educational outreach to build understanding of droughts, regional drought status, the DPP, and ways to reduce citywide demand as part of its conservation education program.

The WERT and Digital Communications Department will escalate communication when demand approaches levels that would trigger implementation of the DPP. Social media, marquee signage, web site features, reverse 911 calling, and all other appropriate media will be used in the event the Plan is implemented.

Regional Water Shortage Awareness Campaign

Each city has its unique trigger points for implementing their Drought Preparedness Plans. Enacted restrictions in neighboring municipalities doesn't necessarily mean the City of Goodyear's water supplies have been impacted. Water Shortage Awareness messaging may be enacted as part of a regional effort to provide public outreach and education to residents, however, implementation of restrictions within the City will only be enforced as part of the City's direct efforts in addressing specific water supply issues.

Increasing Financial Incentive Programs

In drought and other water shortages with long durations, the city will look at ways to escalate and enhance its rebate, retrofit and other conservation programs that can produce immediate reliable water demand reductions.

Municipal Use Reductions

All City Departments are subject to any water restriction measures whenever the DPP is enacted. The city will set the example and comply so long as essential services are not disrupted.

Outdoor Use Restrictions and Bans

In Goodyear, over half of water consumption occurs outdoors. Because swimming pools, non-athletic irrigated landscapes are amenities rather than essential life services, it is appropriate to reduce the water used for these functions before other uses. Should water shortages reach extreme levels, the WERT could recommend to the City Manager to impose measures that ban certain outdoor water uses. The City would delay imposing restrictions upon the Goodyear Ballpark until the shortages are severe. The Goodyear Ballpark is irrigated with multiple sources of water which includes non-potable water, i.e. remediated and effluent.

Reduction of New Connections

Goodyear is a growing area, with construction and development continuing to add new demand. The new development provides jobs and revenue to the city. In a water shortage, adding new demand to the water system exacerbates the problem.

Because development is vital to Goodyear's health, the city would only completely halt addition of new customers and construction in the most extreme shortages. Limits on new permits and service would expire with the end of the shortage. During less severe shortages, the city will decrease the issuance of new permits and otherwise limit the addition of new demand. This will avoid magnifying the problem. Applicable federal, state, and local laws will be followed by the City during the implementation of mandatory water restrictions. The drought matrix lists specific measures that will achieve this result.

Physical Rationing and Mandatory Bans

Physical rationing of water can be imposed through percentage reductions or specific use bans. Percentage reductions assign customers a consumption reduction goal, depending on water use, compared to some established prior use. Violations of physical reduction requirements can only be caught after the water has been used, when meters are read.

Specific use bans are imposed primarily through education and enforcement. Allowing watering only on specified days and prohibiting use of water features and refilling pools can be effective. Bans build awareness and prioritize water uses. They establish a sense of equity within the community. They can be enforced while water is in use, so that the undesired use may be immediately halted. This plan incorporates bans rather than percentage reductions.

Implementation of Plan and Restrictions

The Curtailment Ordinance will authorize the City Manager to request that the Public Works Director or the City Manager's designee update the Plan as needed.

The DPP may be initially implemented at any stage, depending on the shortage level. The WERT will provide information to the City Manager on water supplies in the event that shortages appear likely. The City Manager may declare Stage One through Stage Four as demand reaches the level specified for each stage and approve all mandatory water restrictions.

The City Manager may terminate the curtailment of any Stage upon learning that the water shortage no longer exists from the WERT. Applicable federal, state, and local laws will be followed by the City during the implementation of mandatory water restrictions.

Enforcement and Penalties

The City will enforce the mandatory restrictions of each stage of the DPP in all parts of the service area that lie within the City. When a report of a violation is investigated or a City Code Enforcement, Public Works, or staff designated by the City Manager observes a violation, an educational notice will be handed to the resident or business operator or left at the address. If the violation is not corrected in a timely manner, defined in proportion to the severity of the shortage, enforcement will move to the next step.

Violations of mandatory restrictions will be treated as civil code violations, as laid out in the current Waste of Water Ordinance (14-7-8). After a warning notice is given on the second report, the City will issue a citation. Each day a violation is not corrected will be treated as a separate violation.

Second and succeeding violations of Stage Four restrictions will be treated as possible misdemeanors as defined in the current Unauthorized Use of Water Ordinance (14-7-6). Each day may be charged separately.

Emergency Supplies

Groundwater Savings Facilities:

The city has stored water in both the Salt River Project (SRP), and Roosevelt Irrigation District (RID) Groundwater Savings Facilities (GSF). The water can be pumped and delivered as wet water by SRP through their canals to the city. The additional water will add to the City's supplies should it enact its Drought Preparedness Plan.

Interconnection:

Two interconnects between the City and Liberty Utilities exist. The connections are used to flow water to the city when needed. There is an existing agreement in place between the two parties allowing for the exchange of water.

Municipal Groundwater Wells:

Should additional supplies be needed the city has the option to add water by bringing online any or all of its 15 municipal wells to meet water demands. Existing wells provide redundancy to the water system and increase operational flexibility.

Conclusion

The DPP provides proactive and reactive means for the city to reduce water demand when shortages require prompt action. Publicizing the DPP and its trigger levels to build advance awareness will be essential to obtain quick, full cooperation from affected water users. The DPP is focused on protecting the City's ability to deliver water to our existing customers.

References

Black and Veatch, 2007, 2007 City of Goodyear Integrated Water Master Plan, Volumes 1-4, Phoenix, AZ.

Finance Department, 2021, Consumption Summary--City of Goodyear, Goodyear, AZ.

LPSCo, 2008, Monthly Water Use by City of Goodyear Reports per Meter, July 2005- June 2008, Litchfield Park, AZ.

Red Oak Consulting, 2007, City of Goodyear Water Resources Department Cost of Service Study - Phase II , December 2007, Denver, CO.

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APPENDIX A

Implementation Guide for Response Choices			Description					
Water Savings	Implementation Difficulty		Implementation difficulty levels take into consideration staff time, financial & labor resources, the level of established relationships, the level of positive perception from an action, general acceptability, and ease of policy enforcement.					
High	Easy							
Moderate	Moderate							
Low	Difficult							
Marginal	Challenging		Advisory	Alert	Warning	Emergency		
Customer	Recommended Response Actions		1	2	3	4	Estimated Savings	Difficulty
Municipal	A	Reduce Landscape watering for facilities and Right of Ways maintained by the city.	x	x	x	x	High	Moderate
	B	Prohibit Landscape watering for facilities and Right of Ways maintained by the city.			x	x	High	Difficult
	C	Reduce watering for City Park areas with passive recreation turf and non-turf.	x	x	x	x	High	Moderate
	D	Prohibit watering for City Park areas with passive recreation turf and non-turf.			x	x	High	Difficult
	E	Reduce watering for City Park areas with active recreation turf. (GY Ballpark exempt)		x	x	x	High	Moderate
	F	Prohibit watering for City Park areas with active recreation turf. (GY Ballpark exempt)				x	High	Challenging
	G	Turn off City ornamental fountains, water parks and splash pads.	x	x	x	x	Low	Easy
	H	Conduct special once-through leak assessments & repair for all city facilities by checking for any new continuous leaks.	x	x	x	x	Low	Difficult
	I	Reduce washing of non-public safety fleet vehicles.	x	x	x	x	Low	Easy
	J	Prohibit washing of non-public safety fleet vehicles.			x	x	Low	Easy
	K	Reduce washing of public safety fleet vehicles.		x	x	x	Low	Difficult
	L	Prohibit washing of public safety fleet vehicles. (Except for emergencies).			x	x	Low	Challenging
	M	Reduce hydrant flushing for non-water quality issues, such as hydrant maintenance.	x	x	x	x	Marginal	Moderate
	N	Prohibit hydrant flushing for non-water quality issues, such as hydrant maintenance.			x	x	Marginal	Difficult
	O	Utilize no-discharge technology for distribution system water quality flushing.		x	x	x	High	Difficult
	P	Reduce use of water for fire training. Report all necessary use to Water Resources.		x	x	x	Low	Challenging
	Q	Reduce filling of non-emergency water trucks, sweeper trucks, and Waste Water Collections trucks	x	x	x	x	Low	Moderate
	R	Prohibit filling of non-emergency water trucks, sweeper trucks, and Waste Water Collections trucks			x	x	Low	Difficult
	S	Reduce overall distribution system pressure to reduce incidental system leaks on city and customer sides.		x	x	x	Moderate	Moderate
	T	Close and cover any city maintained pools.			x	x	Low	Difficult

		Recommended Response Actions	1	2	3	4		
Residential	A	Turn off ornamental fountains.	x	x	x	x	Low	Easy
	B	Prohibit pool draining and refilling except for emergencies.		x	x	x	Moderate	Easy
	C	Proactively monitor violations of Water Waste Prohibition Ordinance GYMC 14-5-7	x	x	x	x	Marginal	Challenging
	D	Reduce overseeding of winter lawns. <i>E.g. backyards only are permitted.</i>	x	x	x	x	High	Moderate
	E	Prohibit overseeding of winter lawns.			x	x	High	Difficult
	F	Reduce landscape watering to once weekly.		x	x	x	High	Moderate
	G	Prohibit all landscape watering.				x	High	Challenging
	H	Prohibit installation of new sod, seeding, and/or other landscaping in existing homes.			x	x	High	Difficult
	I	Increase capacity for proactive identification of residential leaks. <i>E.g. AMI leak alerts if available.</i>		x	x	x	Moderate	Challenging
	J	Prohibit irrigation after any rainfall event measuring 1/2" or more.	x	x	x	x	Moderate	Moderate
	K	Prohibit vehicle washing in driveways.	x	x	x	x	Marginal	Easy
	L	Delay new pool permits on existing homes.			x	x	Marginal	Challenging
	M	Delay installation of new residential meter connections.			x	x	Low	Challenging
	N	Delay issuance of new residential meter connection permits.			x	x	Low	Challenging

	Recommended Response Actions	1	2	3	4		
Non-Residential (Schools, Commercial, Industrial, Churches, etc)	A Increase capacity for proactive identification of non-residential leaks. <i>E.g. AMI leak alerts if available.</i>		x	x	x	Moderate	Challenging
	B Prohibit pool draining and refilling except for emergencies. (includes hotels, schools, etc)			x	x	Low	Moderate
	C Serve water in restaurants only upon request.	x	x	x	x	Marginal	Moderate
	D Turn off misting systems.	x	x	x	x	Low	Easy
	E Prohibit overseeding of winter lawns.			x	x	High	Moderate
	F Prohibit installation of new sod, seeding, and/or other landscaping in existing facilities.			x	x	High	Difficult
	G Reduce watering by specified percentage for landscaped areas with passive recreation turf and non-turf maintained by schools, HOA's, businesses etc.	20%	40%	50%	x	High	Difficult
	H Prohibit watering for landscaped areas with passive recreation turf and non-turf maintained by schools, HOA's, businesses etc.				x	High	Challenging
	I Reduce watering for landscaped areas with active recreation turf maintained by schools, HOA's, businesses etc.	10%	20%	30%		High	Difficult
	J Prohibit watering for landscaped areas with active recreation turf maintained by schools, HOA's, businesses etc.				x	High	Challenging
	K Proactively monitor violations of Water Waste Prohibition Ordinance GYMC 14-5-7		x	x	x	Low	Challenging
	L Installed Construction hydrant meters transition to:	25% non-potable Sources	50% non-potable Sources	75% non-potable Sources	No Potable Sources Permitted	High	Challenging
	M Prohibit vehicle dealership lot power washing			x	x	Low	Difficult
	N Reduce Commercial Car Washes by 50%				x	High	Challenging
	O Delay new pool permits.			x	x	Low	Challenging
	P Delay issuance of new hydrant meters for construction use.				x	High	Challenging
	Q Delay installation of new non-residential billing meter connections.			x	x	Low	Challenging
	R Delay issuance of new non-residential billing meter connection permits.			x	x	Low	Challenging
	S Prohibit outdoor power washing or other water-based cleaning. <i>E.g. restaurants, drive thru's</i>		x	x	x	Marginal	Easy
	T Other Industrial, Commercial, and Businesses reduce consumption by 50%				x	High	Challenging
	U Implement Drought surcharge to fund increase in CAP O & M fees.			x	x	Low	Difficult

		Recommended Response Actions	1	2	3	4		
Outreach	A	Weekly digital communication of status and recommended actions to water customers	x	x			N/A	Easy
	B	Daily digital communication of status and recommended actions to water customers			x	x	N/A	Moderate
	C	Focused messaging to individual water use groups	x	x	x	x	N/A	Moderate
	D	Focused messaging to individual <u>Residential</u> users with specific required actions		x	x	x	N/A	Difficult
	E	Focused messaging to individual <u>Residential</u> users with enforcement penalty communication			x	x	N/A	Challenging
	F	Focused messaging to individual <u>Non-Residential</u> users with specific required actions		x	x	x	N/A	Difficult
	G	Focused messaging to individual <u>Non-Residential</u> users with enforcement penalty communication			x	x	N/A	Challenging
	H	Increase water rates per drought surcharge guidelines based on CAP fee increases or other factors*			x	x	N/A	Difficult
		* Recommended actions for each stage of the Drought Matrix are intended as guidelines only. The Water Emergency Response Team (WERT) may recommend to implement any number of specific actions in response to the situation. The quantity and selection remains at their discretion depending on circumstances.						