TOWN OF PATAGONIA

DROUGHT PREPAREDNESS PLAN

Purpose: A drought preparedness plan is required by Arizona statutes for all public water systems and is to be part of the Water Operating system plan. More important, for a Town such s Patagonia where the water supply may be subject to conditions such as drought or other interruption of the existing water supply, advance planning is essential.

Public Education: Drought preparedness and successful implementation of the measures included herein depends on effective communication with, and from, the public. The majority of the public, if they understand the critical nature of the situation and the importance of water use reduction, will comply with the restrictions. For those that do not, enforcement remains necessary.

The following are elements of the public awareness and education plan:

- The water management condition is real.
- Reductions in water demand are necessary
- The adopted measures realistically correspond to the severity of the situation.
- All customers share the inconvenience during water shortages.
- Patagonia is effectively, uniformly and fairly managing the existing water supply.

Applicability: The plan applies to all users, premises and customers receiving water from the Town of Patagonia.

Responsibility for Drought Stage Declarations: The Mayor is responsible for making the initial Drought Stage Declarations. The Mayor will use the drought triggers as a partial basis for the declarations, however the declarations may be adjusted to reflect conditions not reflected in either of the triggers but which, require a different Drought Response Stage than that indicated by either of the Drought Triggers. The Mayor's drought declarations must be confirmed by vote of the Town Council at the next regular meeting.

Triggering criteria for initiating and terminating Drought Response Stages: Patagonia uses either of two triggering mechanisms to initiate or terminate the responses required under the drought response plan:

Trigger Number One: Patagonia carries out a weekly monitoring program to determine water levels in the Town's two public water supply wells. The wells are approximately 90 feet deep and water levels have fluctuated between 9 feet and 45, feet which was the lowest during the summer of 2014. A recent study of the aquifer suggested that there is water to a depth of as much as 300 feet however the length and width of the aquifer at such depths is not known so we have no assurance that the 2.5 to 4.5 million gallons per month that the town typically pumps would be available at anything approximating that depth.

Absent further data, the town is establishing an initial trigger at a depth of 40 feet or if the well levels drop 4 or more feet in a month or less. The following chart depicts the correlation between the town well trigger and the Palmer Drought Severity Index

Trigger Number Two: Palmer Drought Severity Index: The Palmer Drought Severity Index is a national index with data as refined as Counties. It is considered most accurate for "Unirrigated cropland" which is generally descriptive of the area around Patagonia. It is the most accurate reflection of long term conditions.

Correlation between two triggers:

severity index	Town well trigger	Description	Actions steps (see appendix A for possible additional actions)
none	Normal ranges above 40 feet or No consecutive drops of 4 or more feet.	**Normal**	**No restrictions-good water system practices including leak repair and prevention**
DO	Well level at or below 40 feet or monthly drop exceeding 4 feet.	**Abnormally Dry**	**Public notice, encourage voluntary conservation**
D1	Well level at 45 feet or 2 monthly drops exceeding 4 feet.	**Moderate Drought**	**Conservation outreach, offer specific advice, cap bulk water sales for commercial use at 4,000 gallons/month.**
D2	Water levels continue below 50 feet, no recovery of well levels	**Severe Drought**	**Irrigation and outdoor water use restrictions, bulk water sales limited to residential use. No bulk water sales for commercial use. Institute increased rates from table below.**
D3	further decline in well levels in excess of 4 feet.	**Extreme Drought**	**Restrict bulk water sales for residential use to 50 gallons per day per customer , prohibition on use for irrigation or other non-consumptive use, fines for excess use**
D4	continuing decline in well levels .	**Exceptional Drought**	**Rationing, strict enforcement of restrictions.**

It should be noted that during a period of dropping well levels, the town will increase the frequency of well depth monitoring to insure immediate response to a continuing decline in levels.

Severe drought rates

present rates	<2,000 gallons	2,000 to 10,000/month	10,000 to 15,000 gallons/month	15,000 to 20,000 gallons/month	over 20,000 gallons/month
	$16.85 total	$1.40 /excess 1000 gallons	$2.00/ excess 1000 gallons	$2.50/ excess 1000 gallons	$2.70/ excess 1000 gallons
severe drought rates	gallons/day/person	verified occupancy			
weekly monitoring	<50 GPD	50-70 GPD	.70 GPD	>100 GPD	
	$16.85 base	$2.80/1000/ person/ month	$3.00/1000 gallons/ person/ month	1. warning 2. fine 3. shut off	shut off accounts can get water from bulk station.

Special situation variances

Mayor and council may consider special situations and grant variances from any of these restrictions and special rates.

Bulk water Sales regulations: In Patagonia we are well aware of the importance of bulk water sales to homes and businesses in the area. These regulations are intended to provide support where needed without impairing supplies to the residents and business connected to the town system. The first limitation would occur during a period of moderate drought and would preclude bulk sales for commercial use: commercial use is defined as a use by any business for purposes other than consumption by humans or domestic animals. The second limitation would occur when water supplies are seriously threatened and would limit bulk sales to customers who use the water for domestic consumption only. Because many of these` customers have their water hauled by a commercial firm, the hauler will be required to provide a certification from the customer who receives the water and the customers total use will be limited to 50 gallons per occupant per residence per day. It should be noted that nationwide average water use is about 100 gallons per day and in jurisdictions where aggressive conservation efforts are carried out, average consumption is down around 50 gallons per person per day so this is an achievable figure during a drought emergency. The following list from March 2014 shows a typical water use distribution in Patagonia.

total customers	419
0 usage	45
1-2000 gallons	127
2001 to 10000	213

10001 to 15000	20
15001 to 20000	4
20000>	10

Some accommodation also needs to be made for commercial customers providing meals or accommodations. I think we should get some input from the owners of such businesses prior to adopting such regulations.

Any accommodations for such users shall be based on a requirement, and verification, that **all their fixtures are low water use types.**

We will also undertake to find a grant program to establish a repair and replacement program for low income families to install low water use fixtures in all qualifying homes.