Tiered Water Rates for Conservation 2019

Brief History of the need for Tiered Water Rates

- S.B. 28 Water System Conservation Pricing
  - This bill was introduced in 2016. It requires water providers to establish an increasing rate structure for culinary water.
- Through a pricing structure the goal is to increase conservation due to the high end user being billed at higher rates. This helps encourage conservation through the only true way of influence. Money.
- With the increased cost of water production this also helps in reducing lost revenue.
- Water Conservation is a huge need in North Logan City. We use way too much water and need something to change.
- NLC Customers used 715,369,000 Gallons of water in 2018
  NLC Customers used 603,849,000 Gallons of water in 2016

Current Water Shortage Management Program

Phase 1	Normal Water Conditions - This phase should be ongoing and primarily be an education and conservation encouragement phase by which the City Council, with the Public Works Department, compile, create, and publish drought education and management information to the public and industry. The intent of this phase is to educate and encourage water use conservation.
Trigger	There is no specific trigger for implementing this phase. This phase is on-going and intended to educate and encourage the public to conserve water.
Target	Water Use Reduction: No specific target Water Shortage Management Plan
Reduction Strategies	Public Education (See Appendix A)

Phase 2	This phase is intended as a cautionary phase by which the City Council with the Public Utility Division informs the public that the city is experiencing moderate drought conditions and all indications are that this condition will extend for the rest of the water season (May 1st to October 15th).
Trigger	**This phase is initiated when:** ● The Green Canyon Reservoir levels drop below eleven (11) feet (for more than 3 hours), and/or, ● The secondary index indicates that projected water levels are below 80% of average.
Target	Water Use Reduction: A city wide reduction of water usage of 15-20%.
Reduction Strategies	**Public Education and Encouragement:** ● Water users must cut back exterior watering by 15% (ie. users shall water no more than three days per week). ● Commercial, Industrial, and Research Buildings cut back by 15% on all water usage (both inside/outside usage). ● No washing of cars using culinary water at a home/residence. ● No spraying sidewalks, driveways..etc. with a hose. ● No excessive or wasteful watering. ● City's splash pad will be reduced to 6 hours/day. The City may also monitor water usage through real time water meter reports. If a resident, commercial, industrial, or research related water user is using excessive amounts of culinary water they will be subject to the Enforcement standards included in this document.

MAY - SEPTEMBER 2018

Phase 3	This a highly cautionary phase by which the City Council with the Public Utility Division informs the public that the city is experiencing moderate to severe drought conditions and that the City water supply is not adequately meeting the demand of the residents.
Trigger	**This phase is initiated when:** ● The Green Canyon Reservoir levels drop below nine (9) feet (for more than 3 hours), and/or, ● The secondary index indicates that projected water levels are below 70% of average. ● Canal/Irrigation companies have implemented similar water management strategies.
Target	Water Use Reduction: A city wide reduction of water usage of 30-40%.
Reduction Strategies	**Public Education and Water Management:** ● Water users must cut back exterior watering by 30% (culinary water users may only water lawns twice per week (1 hour maximum exterior watering time each day per water user) - Monday & Thursday for homes/buildings with an odd address, and Wed. and Saturday for homes/buildings with an even address). ● No washing of cars using culinary water at a home/residence. ● No spraying sidewalks, driveways..etc. with a hose. ● No excessive or wasteful watering. ● No refilling pools/hot tubs. ● Reduce shower times by 50%. ● City's splash pad will be reduced to 3 hours/day for 2 days a week. The City will also monitor water usage through real time water meter reports. If a resident, commercial, industrial, or research related water user is using excessive amounts of culinary water they will be subject to the Enforcement standards included in this document.

Phase 4	This phase is intended to warn the public that the city is in an extreme drought condition and there is a critical need to reduce water usage and increase water management strategies. This condition may, at the City Council, the Mayor, or the Public Utility Manager's discretion, require mandatory actions. This phase is used when the drought indices indicate a progressive severe drought situation.
Trigger	**This phase is initiated when:** ● The Green Canyon Reservoir levels drop below seven (7) feet (for more than 3 hours), and/or, ● The secondary index indicates that projected water levels are below 50% of average. ● Canal/Irrigation companies have implemented similar water management strategies.
Target	Water Use Reduction: A city wide reduction of water usage of 50-60%.
Reduction Strategies	**Public Education and Water Management:** ● Water users must cut back exterior watering by 60% (culinary water users may only water lawns once per week for no more than 1 hour/home/water user). Even Addresses north of 2900N will water on Monday, Odd addresses North of 2900N on Tuesday. Even addresses between 2200N and 2900N shall water on Wednesday, Odd addresses between 2200N and 2900N shall water on Thursday. Even addresses between 1500N and 2200N shall water on Friday, Odd addresses between 1500N and 2200N shall water on Saturday. No watering on Sunday. ● Commercial, Industrial, and Research Buildings cut back by 60% on all water usage (both inside/outside usage), and follow exterior lawn watering requirements based on address (listed in the previous bullet). ● No washing of cars using culinary water at a home/residence. ● No spraying sidewalks, driveways..etc. with a hose. ● No excessive or wasteful watering. ● No refilling pools/hot tubs. ● City's splash pad will be shut off. ● Shower times shall be reduced to 2 minutes/person/day. The City may also monitor water usage through real time water meter reports. If a resident, commercial, industrial, or research related water user is using excessive amounts of culinary water they will be subject to the Enforcement standards included in this document.

Phase 5	This is the most severe of the drought indices. This phase is initiated when the supply of water is not able to keep up with the demand and there is a possibility of initiating mandatory shut off of water service.
Trigger	**This phase is initiated when:** • The Green Canyon Reservoir levels drop below five (5) feet (for more than 3 hours), and/or, • The secondary index indicates that projected water levels are below 33% of average, or • Extraordinary drought: A region wide drought has progressed to the point where the utility cannot maintain water service to a major portion of the city, or • Significant system failure: An important water supply line breaks or any other significant system component fails and a large section of the city is without water for a period of time, or • Water Supply Contamination: A contaminant is found within the water system that could affect the health and well being of major portion of the city residences. • Canal/Irrigation companies have implemented similar water management strategies.
Target	Water Use Reduction: A city wide reduction of water usage of 75-100% (unless there is a contamination level, then the City will implement policies to deal directly with the contaminant, ie a boil order...etc.).
Reduction Strategies	This phase is intended to provide only those water services needed to sustain immediate public health and safety. This phase also sets in motion an emergency situation by which the public utility may need to prioritize water service to keep the most critical services, residences, and industries supplied and shut off certain types of non-essential use. Those critical industries will include hospitals, nursing homes and other life and health preserving enterprises. This phase may require the utility working closely with state drinking water authorities to assist in mitigating and managing the situation. • This phase will prohibit the usage of culinary water outside of the home. • If this phase is implemented due to water shortage, all residential, commercial, industrial, and research water users may be required to eliminate water usage unless it is used to sustain human life (only drinking water, and minimal restroom water usage will be allowed). • If this phase is implemented due to water contamination, then the appropriate measures will be taken to ensure that the water is not consumed or utilized by water users, in any way, until the City has advised otherwise. The City may also monitor water usage through real time water meter reports. If a resident, commercial, industrial, or research related water user is misusing culinary water they will be subject to the Enforcement standards included in this document.

Water Conservation Plan - Secondary Users

Secondary Water Company and City Collaborative Water Conservation Efforts: The City shall work closely with companies that provide secondary irrigation water throughout the watering season.

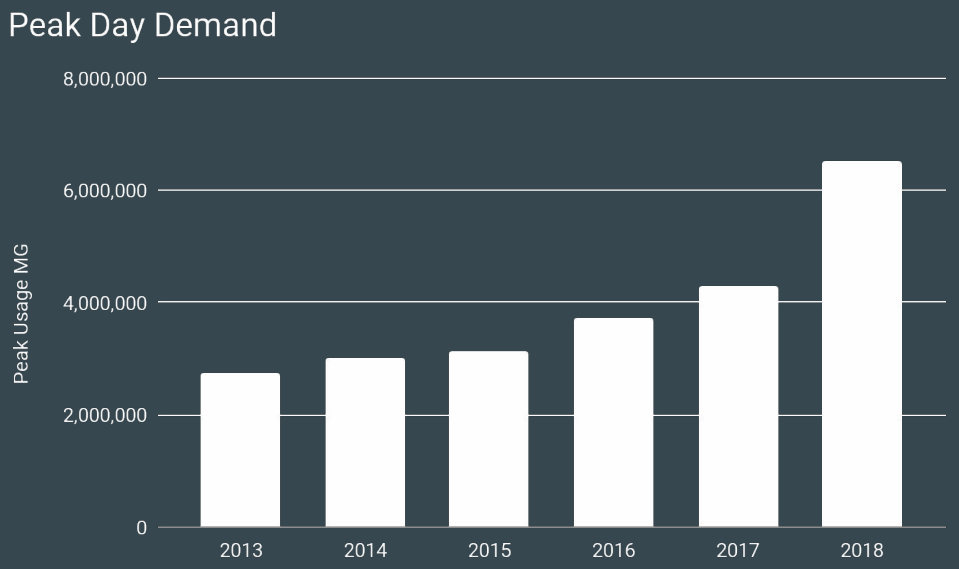
- While water supplies and resources may differ for the culinary and secondary water, the water management and shortage policies should be similar in nature.

- Incidentally, those culinary water users who generally utilize secondary irrigation water for outside watering needs, shall not utilize culinary water for outside watering in the event of a secondary water restrictions. This can place an unintended, and harmful burden on the City's culinary water system, that can stress and cause damage to the overall culinary water distribution system.

System demand problems occur when the canal companies restrict to two watering days and the city doesn't closely match. Customers are very likely to use culinary water to irrigate their landscapes. Which hurt all efforts in water conservation.

Peak Day Demand - Culinary Water

Year	Day	Gallons Pumped	Increase from previous year
2015	July 13	3,125,000	
2016	July 20	3,726,000	19.23%
2017	July 7	4,282,000	14.92%
2018	July 13	6,529,000	52.48%



Current Holding Capacity and the State requirement

H.B. 303(2018) - Requires a storage capacity of the Peak Day demand. This is to have adequate storage for the community. A recommendation of a 20% surplus has been made to help the system in the event of a fire.

Current Storage capacity : 3,000,000 Gallons

Required Storage Capacity: 6,500,000 Gallons (as of 2018; 2019 could increase requirement) Due to the Peak Day Demand of July 13, 2018.

Recommended Storage Capacity: 7,800,000 Gallons

1 Gallon of Storage costs roughly $1.50 to build = $4,800,000 Dollars in cost

Storage (cont.)

NLC- 2,572 connections; 12,000 population; 3MG storage
Hyde Park- 1,361 connections; 5,500 population; 3MG storage
River Heights- 620 connections; 1,900 population; 6MG storage

With an ERC of 3,278 connections. Just using the minimum storage per connection requirement of 400 gallons of indoor use water. The equalization storage amount is 1,311,200 gallons. (UT Admin Code R309-510-08).

1,311,200 gallons (43%) of our storage is used in the minimum sizing requirements. This does not include Fire protection requirements or Irrigation requirements.

50% reservoir levels for 3 or more hours initiates level 3 water conservation measures (ORANGE)

MAY - SEPTEMBER 2018

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Target	Water Use Reduction: A city wide reduction of water usage of 30-40%.
Reduction Strategies	**Public Education and Water Management:** ● Water users must cut back exterior watering by 30% (culinary water users may only water lawns twice per week (1 hour maximum exterior watering time each day per water user) - Monday & Thursday for homes/buildings with an odd address, and Wed. and Saturday for homes/buildings with an even address). ● No washing of cars using culinary water at a home/residence. ● No spraying sidewalks, driveways..etc. with a hose. ● No excessive or wasteful watering. ● No refilling pools/hot tubs. ● Reduce shower times by 50%. ● City's splash pad will be reduced to 3 hours/day for 2 days a week. The City will also monitor water usage through real time water meter reports. If a resident, commercial, industrial, or research related water user is using excessive amounts of culinary water they will be subject to the Enforcement standards included in this document.

Infrastructure Replacement Plan -

- We have created a infrastructure replacement plan that needs to be funded.
- Increase of water rates or less use on the system/lower pumping costs will help us meet the goals that have yet to be provided for.
- This along with increase in impact fees will help increase funds for water storage, supply, and distribution

- Over 2 miles of water lines need to be replaced ASAP
- 28 PRV station rebuild/maintenance costs
- 6 existing wells need maintenance
- Increased storage
- Fire Hydrant replacement
- $487,000 Yearly Capital Replacement Budget starting 2019 - This is to replace and repair existing items in the system.
- Yearly Operational Budget of $2,000,000, this does not include any funds for future infrastructure.

Current Pricing Structure

- Residential ¾ in. - 1 in. Meters - Base Rate ($7.11) + Usage ($1.57/1000 Gallons)
- Commercial and Institutional- Base Rate varies by Meter Size + Usage ($1.57/1000 Gal)

This billing structure has not been updated since 1997. We were/are some of the lowest cost water in Cache Valley. Our New Tiered price structure will allow for us to increase revenue, conserve water, and keep it low cost for the residents.

$7.11 in 1997 is equivalent in purchasing power to about $11.12 in 2018.

Base Rate

Base Rate is a guaranteed money source. This is helps us keep use rates lower and have operational funds that we can rely on. This helps us maintain the production and distribution system. This source of revenue covers everything from water meters to well replacements.

- A proposed change is to eliminate the variable base rate based on meter size and implement it on a per door basis for Multi Family Units.
- Commercial and Institutional will still pay a variable meter size base rate.
- The proposed new base rate is just above the inflation trend. Keeping the water as low cost as we can make it. It would be advisable to increase the rate more than used in the examples presented.

Proposed Tier Structure

The Tiered structure is a way to promote water conservation.

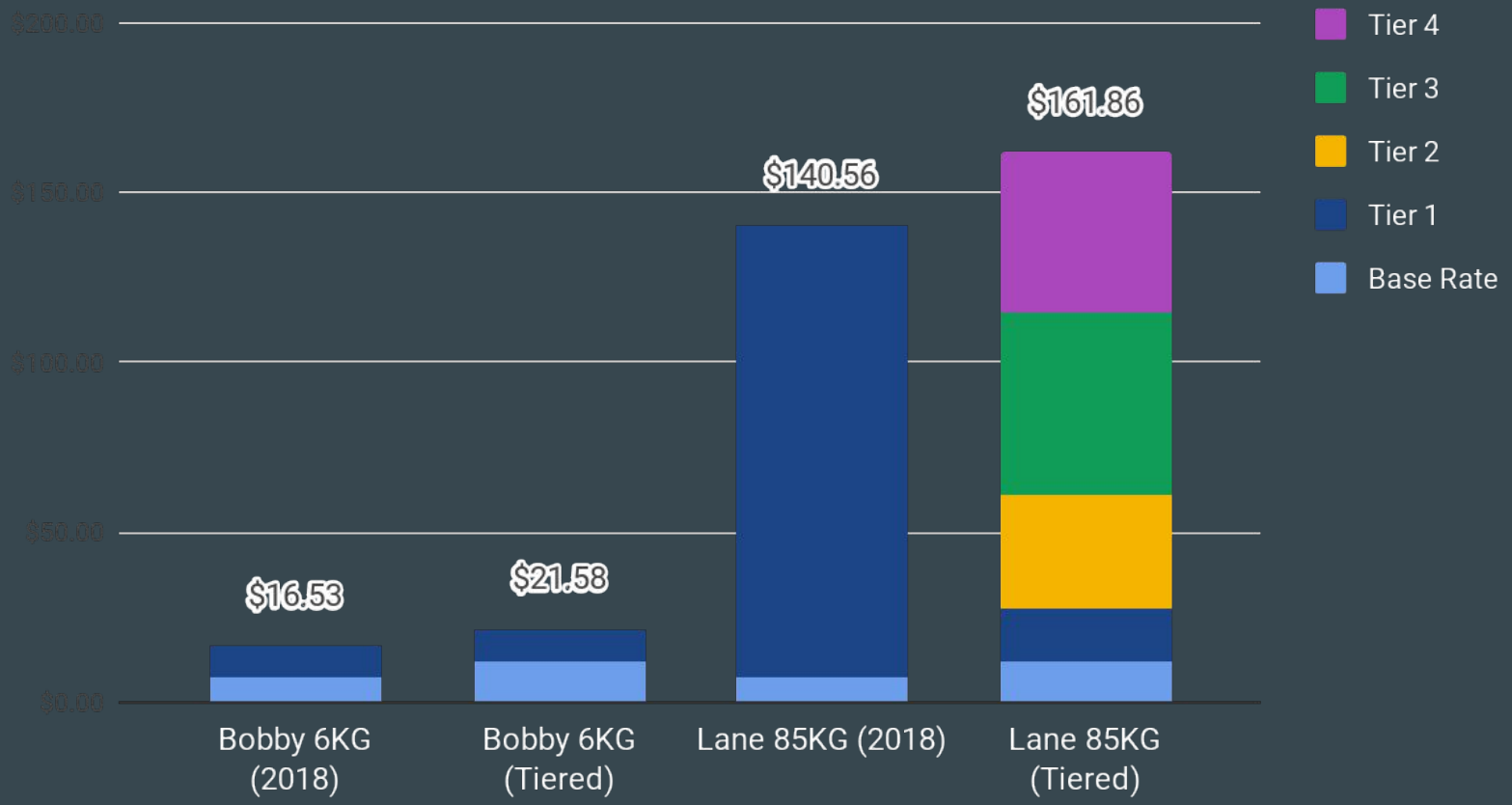
- Users will be billed at different rates based on how much they use. Rate structure accounts for many details of the water distribution system.
    - I.e. How much money is spent in pumping costs to get water to the different regions of the city. We have created a multi-tier system that allows users to target exactly how much they want to spend. With the Multi-tiers, Citizens may even able to lower their water bill.

You are not charged the ending tier amount for all your water. Only the amount of water that is in that Tier. Ex. 31,000 gallons used = 30,000 gallons charged Tier 2 amount and 1,000 gallons charged Tier 3 amount.

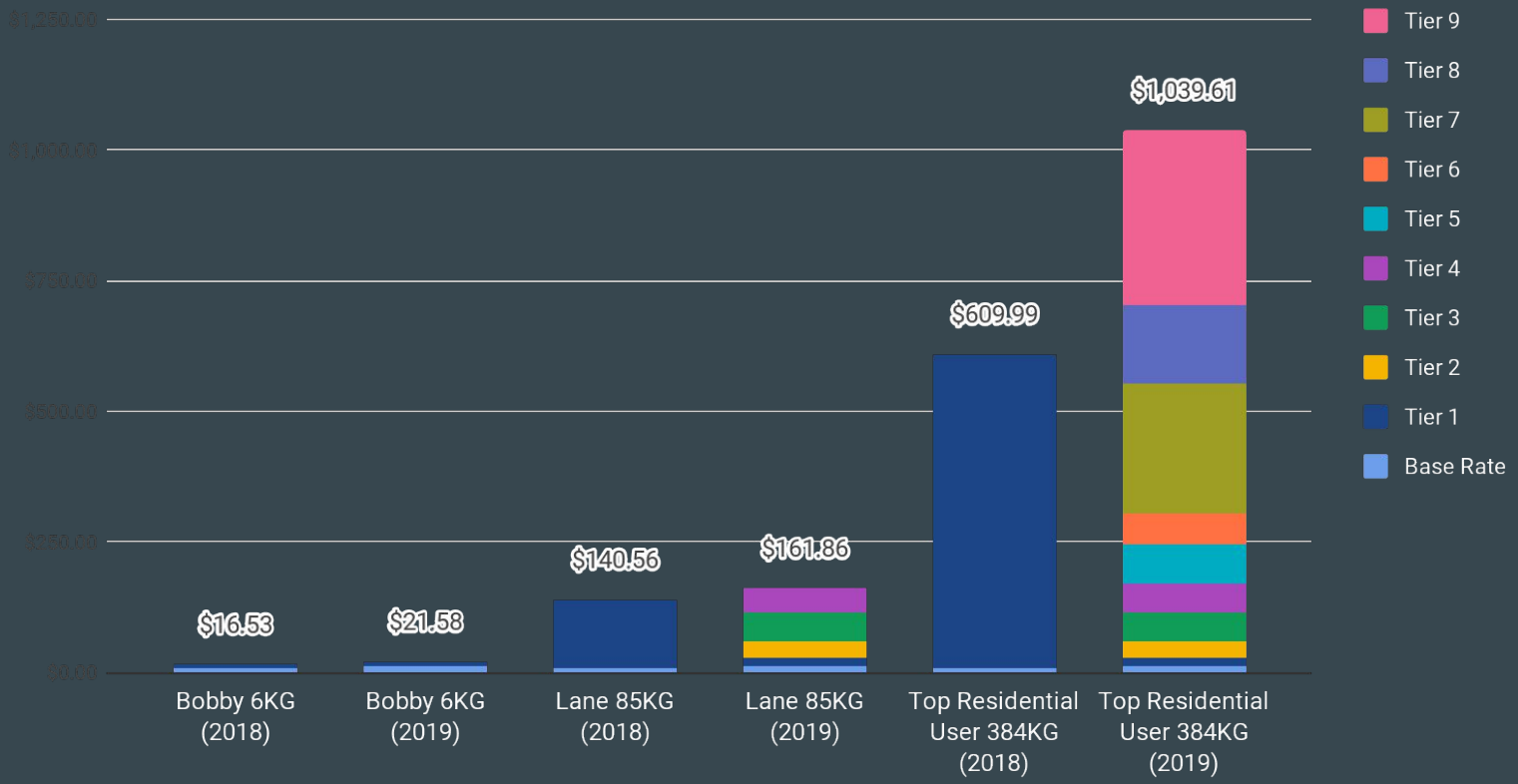
Single Family Units - Residential

Base Rate	Tiers per Meter read	Price 1,000 gallons
$12.15	1 - 10,000 gal	$1.57
	10,001 - 30,000 gal	$1.67
	30,001 - 60,000 gal	$1.77
	60,001 - 90,000 gal	$1.90
	90,001 - 125,000 gal	$2.10
	125,001 - 150,000 gal	$2.35
	150,001 - 250,000 gal	$2.50
	250,001 - 300,000 gal	$3.00
	300,001+ gal	$4.00

July Billing



July Water Use



Is 384,000 gallons needed?

Water.utah.gov calls for watering Utah lawns 3 days per week at 0.5 inches at a time. 0.5 inches x 12 days per month at peak ET demand (JULY)= 6 inches of water total.

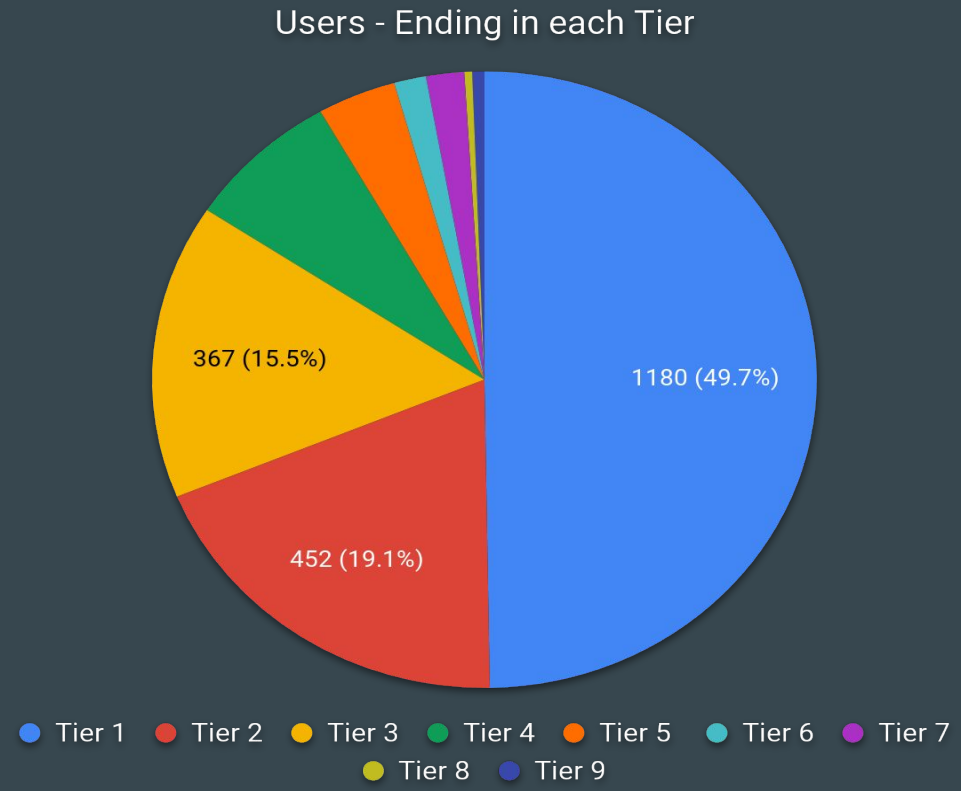
162,925.5 gallons = 0.5 acre feet of water (6 inch water depth over 1 acre).
On 1 acre of grass you would need 162,925 gallons of water per month.

The top residential user has about 0.65 acres of turf grass.
Using 384,000 Gallons in July. Only needs about 60,000-65,000 gallons.

384,000 gallons = 1.17 Acre Feet of water. Just imagine a football field with 12 inches of standing water.

The Average Resident needs about 30,000 gallons of water on ¼ acre of landscaping in July.

Percent of Residential Connections - New Tier System



Tiers	Price per 1,000 gallons
1 - 10,000 gal	$1.57
10,001 - 30,000 gal	$1.67
30,001 - 60,000 gal	$1.77
60,001 - 90,000 gal	$1.90
90,001 - 125,000 gal	$2.10
125,001 - 150,000 gal	$2.35
150,001 - 250,000 gal	$2.50
250,001 - 300,000 gal	$3.00
300,001+ gal	$4.00

How does this affect the majority of Residents?

60,000 Gallons of Water used. Billed per 1,000 gallons

Tiered:

(10 x $1.57) + (20 x $1.67) + (30 x $1.77) + (Base Rate ($12.15)) = $114.35

2018 Rate:

(60 x $1.57) + (Base Rate ($7.11)) = $101.31

An increase of $13.04. ($5.04 is base rate increase, $8.00 is the water use increase)

85% of Residents use less than 60,000 gallons a month.

Multi Units - Any residential buildings that have 2+ units per meter.

Base Rate	Tiers	Gallons	Price per 1,000 gallons
$7.11 per unit (each door)	1	1 - 10,000 gal	$1.57
	2	10,001 - 30,000 gal	$1.67
	3	30,001 - 60,000 gal	$1.77
	4	60,001 - 90,000 gal	$1.90
	5	90,001 - 125,000 gal	$2.10
	6	125,001 - 150,000 gal	$2.35
	7	150,001 - 250,000 gal	$2.50
	8	250,001 - 300,000 gal	$3.00
	9	300,001+ gal	$4.00

Multi Unit


Multi Unit
$20,000.00
$15,000.00
$10,000.00
$5,000.00
$0.00
$245.84
$403.34
$6,551.48
$7,918.05
$6,637.83
$16,315.80
200 E 24 Units 150KG (2018)
200 E 24 Units 150KG (2019)
300 E 60 Units 2MG (2018)
300 E 60 Units 2MG (2019)
400 E 85 Units 4.1 MG (2018)
400 E 85 Units 4.1 MG (2019)
Tier 9
Tier 8
Tier 7
Tier 6
Tier 5
Tier 4
Tier 3
Tier 2
Tier 1
Base Rate

Multi Unit

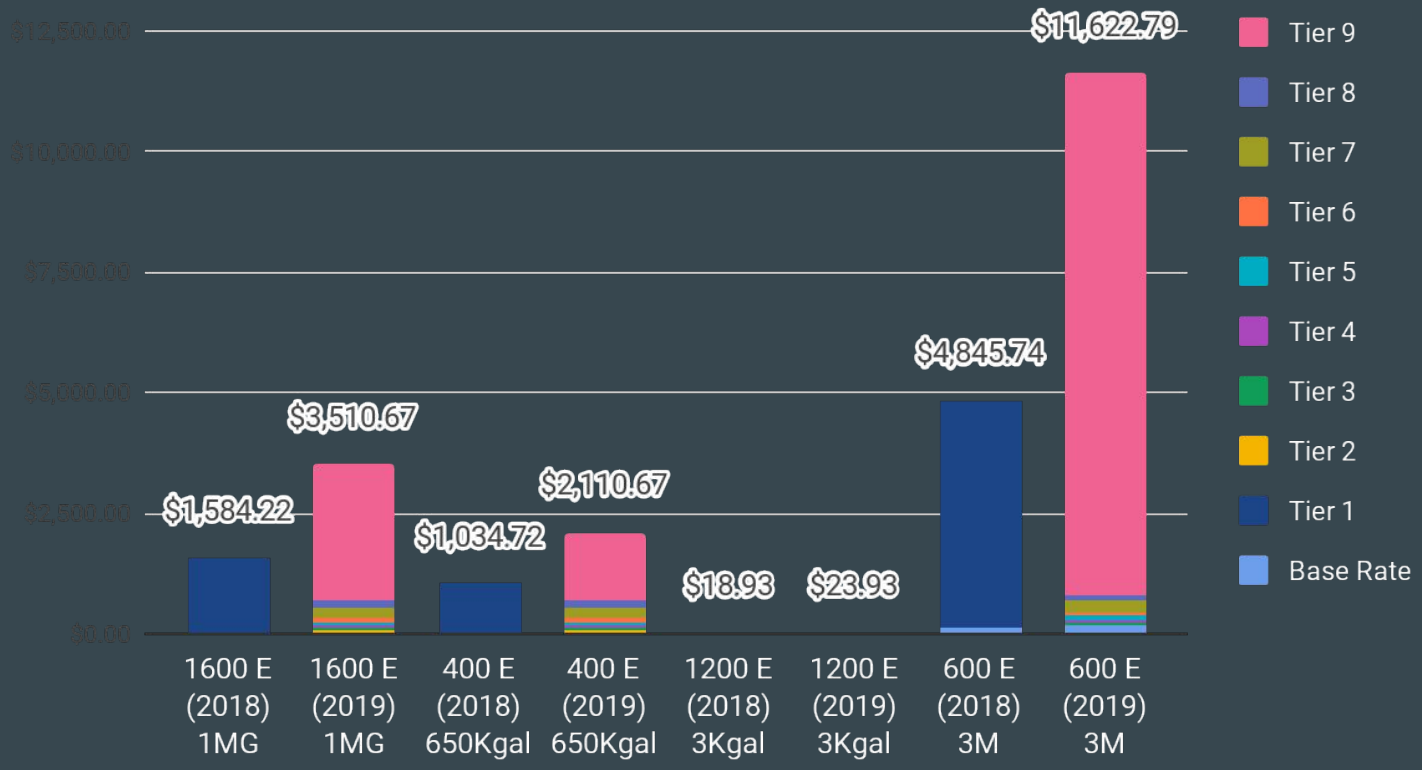
This forces the high user Multi-Units to switch to secondary water for their irrigation and outdoor watering. This will dramatically reduce demand on our culinary system. The high cost increase can be mitigated by utilizing the easily accessible secondary system.

Many of the Multi-Unit complexes have secondary hookups already installed or the canal runs right through the property. The owners are just choosing not to use them.

Institutional Rates

Meter Size	Base Rate	Tiers per Meter	Price per 1,000 gallons
¾ or 1”	$12.15	1 - 10,000 gal	$1.57
1 ½”	$15.34	10,001 - 30,000 gal	$1.67
2”	$19.22	30,001 - 60,000 gal	$1.77
3”	$29.09	60,001 - 90,000 gal	$1.90
4”	$74.49	90,001 - 125,000 gal	$2.10
6”	$164.74	125,001 - 150,000 gal	$2.35
8”	$200.00	150,001 - 250,000 gal	$2.50
		250,001 - 300,000 gal	$3.00
		300,001+ gal	$4.00

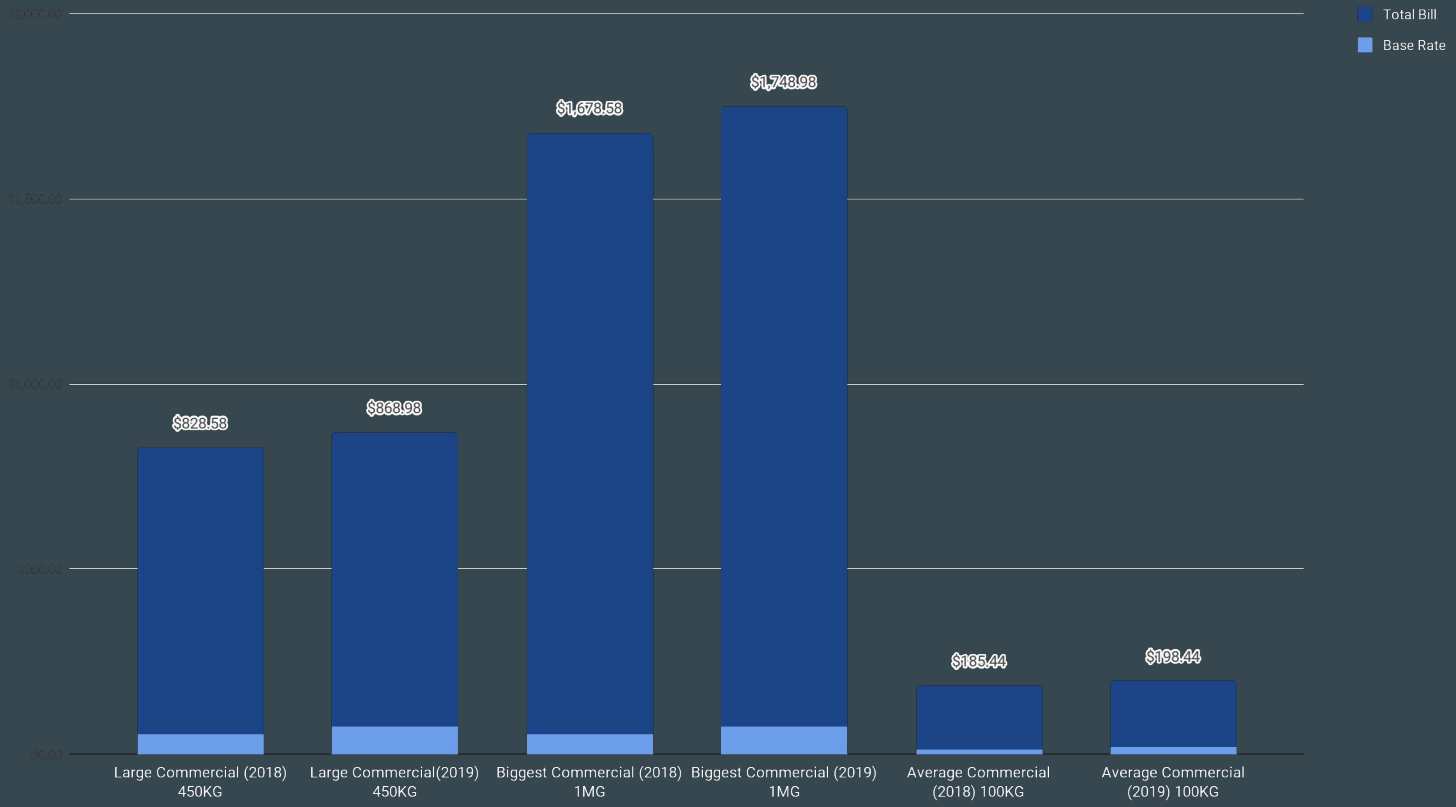
Institutional



Commercial

Meter Size	Base Rate	Tiers	Price per 1,000 gal
¾” or 1”	$12.15	1 - 1,500,000 gal	$1.60
1 ½”	$15.34	1,500,000 - 2,000,000 gal	$1.95
2”	$19.22	2,000,000 + gal	$3.85
3”	$29.09		
4”	$74.49		
6”	$164.74		
8”	$200.00		

Summer Use - Commercial



NLC vs. JVWCD (Top 3 water supplier in Utah)

NLC

Tiers	Price per Tier
1 - 10,000 gal	$1.57
10,001 - 30,000 gal	$1.67
30,001 - 60,000 gal	$1.77
60,001 - 90,000 gal	$1.90
90,001 - 125,000 gal	$2.10
125,001 - 150,000 gal	$2.35
150,001 - 250,000 gal	$2.50
250,001 - 300,000 gal	$3.00
300,001+ gal	$4.00

JORDAN VALLEY WATER DISTRICT

Tiers	Standard	Foothills*	Upper**
1-12,000 gal	$1.78	$1.96*	$2.11**
12,001-53,000 gal	$2.65	$2.83*	$2.98**
54,000 + gal	$3.71	$3.89*	$4.04**

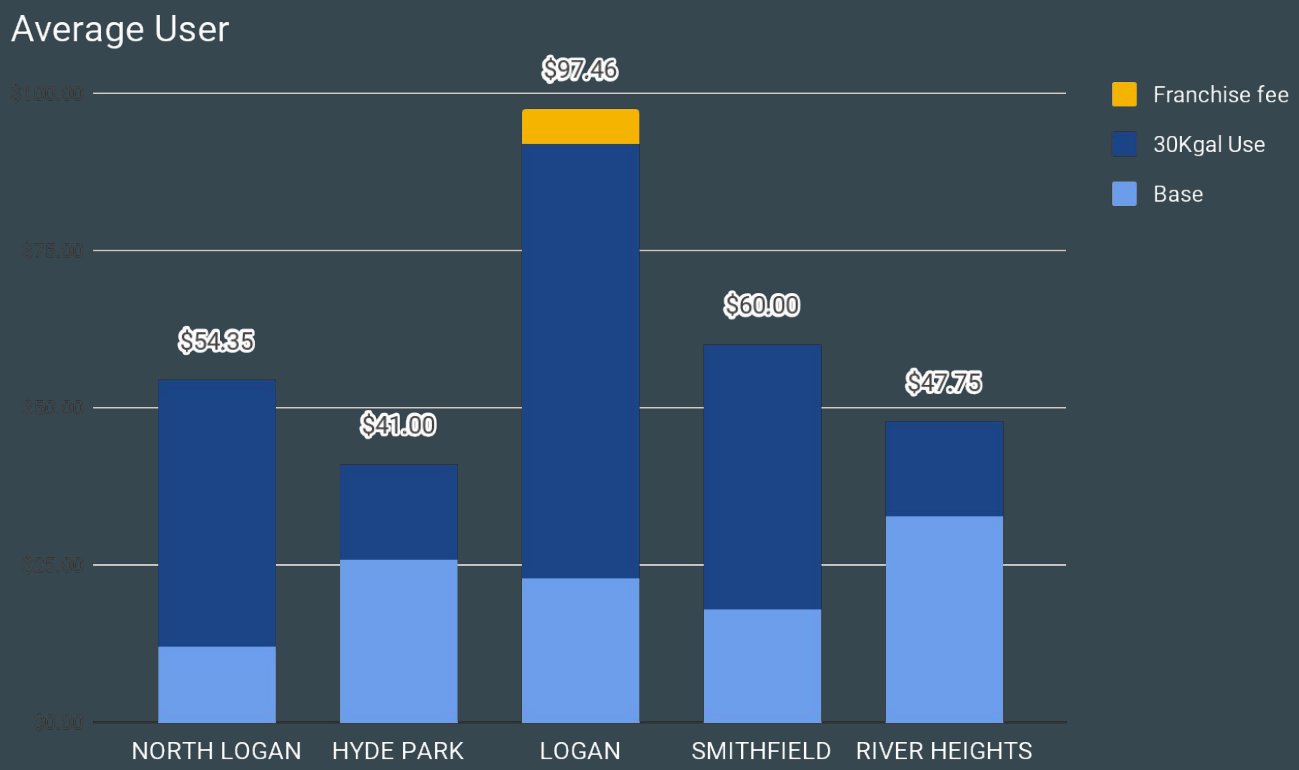
NLC top user 384 kG = $1,039.61 (tiered); $609.99 (2018)
JVWCD 384 kG = $1,339.30 (2018)

NLC vs. LOGAN

Tiers	Single and Multi Family	Commercial
Base Rate	$12.15 / $7.11 (each door)	Variable
1 - 10,000 gal	$1.57	$1.60
10,001 - 30,000 gal	$1.67	
30,001 - 60,000 gal	$1.77	
60,001 - 90,000 gal	$1.90	
90,001 - 125,000 gal	$2.10	
125,001 - 150,000 gal	$2.35	
150,001 - 250,000 gal	$2.50	
250,001 - 300,000 gal	$3.00	
300,001+ gal	$4.00	

Tiers	Single Family	Multi-Family	Commercial	Franchise Fee
Base Rate	$22.95	$14.85 (Every door)	Variable	6% added to each bill regardless of type (Water, Sewer, Power, Garbage)
0-10,000 Gal	$1.42	$1.35	$1.62	
10,001 +	$2.30	$2.25		

Valley Comparison 2019 rates



Total Revenue Increase (if usage stays the same as 2018)

$406,200.00 in Residential Usage Tiered Rate increase.
$161,602.56 in Residential Base Rate increase of $5.04
$124,396.56 in Multi Unit Base Rate of $7.11 per door.
$56,000.00 increase with Institutional increase.

Total: $748,199.12

2018 Income was $1,600,000, 2019 Budget is $2,000,000. The State recommends to receive 125% of the expenses. The goal of these rates are to reduce usage, as well as, get close to the $2,500,000 recommendation.

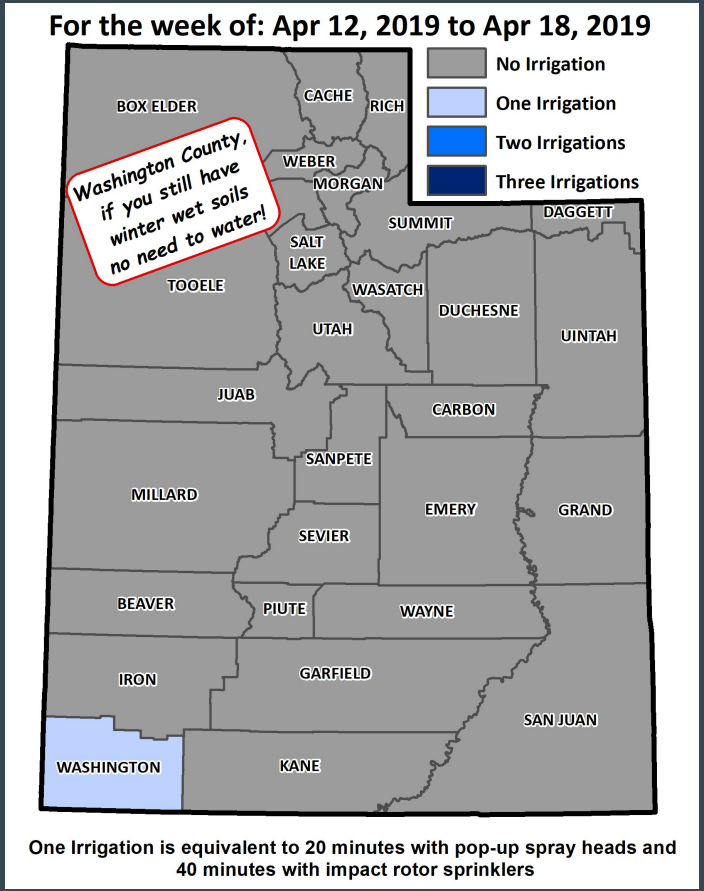
Implementation Phases:

Phase 1-

- Change billing rate structure.
  - Lower water use through the summer months.
  - Increase City Revenue

Phase 2-

- Public Education to promote water conservation.
  - https://conservewater.utah.gov/guide.html
  - Website/newsletter updates.
  - USU Extension water audits.
- Work with neighboring water suppliers: Coordinating water conservation
  - Measures. (Canal Companies, USU, etc.)



- No Irrigation = zero inches of water needed
- One Irrigation = 0.5 inches of water needed
- Two Irrigation = 1.0 inch of water needed
- Three Irrigation = 1.5 inches of water needed

Only in the hottest summer months will we see the "Three Irrigation" recommendation.

This is what a lawn needs to water in one 7 day period.

Phase 3- after success in conserving water.

- Rebates- Working with Cache Water District to implement
- Consultations- USU Extension does free water audits/sprinkler system checks
- Classes/ Neighborhood workshops/Community outreach
- Progress Reports sent to residents showing water use trends
- Provide Rain Gauges to residents that need/want one

This is the idea phase. We have a lot of options and ways to consider helping the City and the Residents.

Water Conservation Committee Members

Alan Luce- City Administrator / Resident
Jordan Oldham- Public Works Director
Bob Wilhelm- Utilities Super. / Resident
Sam Morris- Public Works Clerk / Utility Billing
Joe Nielson- Streets And Stormwater
Kurt Hogan- Canal Master / Resident
Jake Lott- Landscape Designer / Resident
Lance Anderson- Engineer / Resident
Ryan Campbell- Parks
Zac Root- Water Treatment Plant
Debbie Bond- City Treasure