

City of Lincoln Presentation and Review of the Water Shortage Options

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Overview of the Presentation

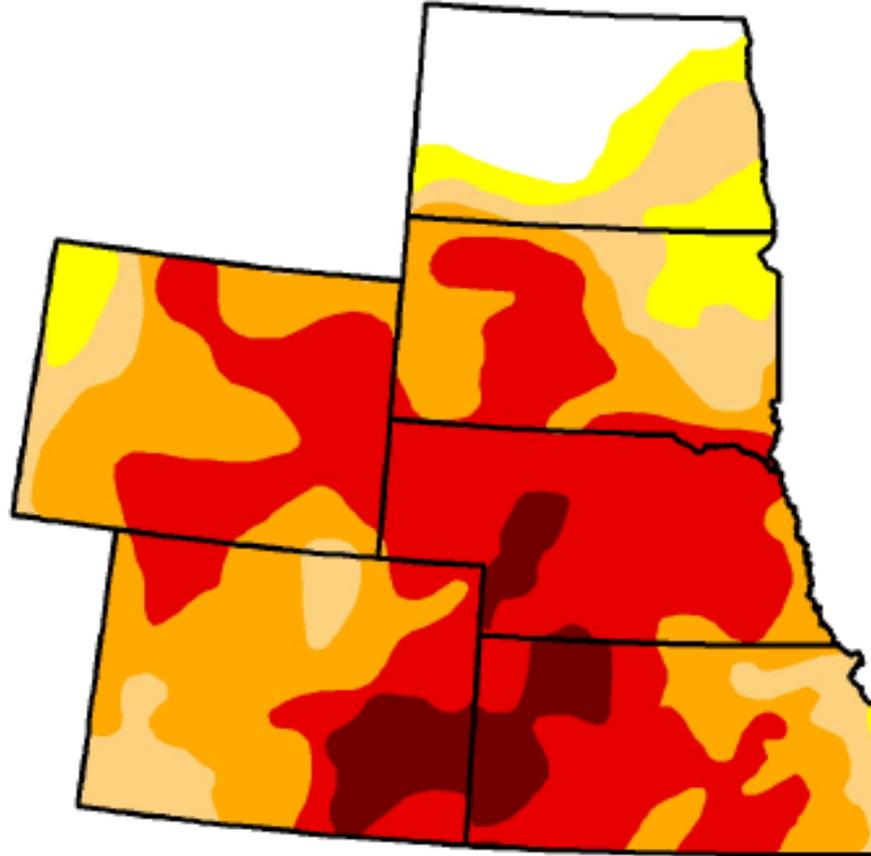


- Discuss the resource planning and financial/rate issues associated with water shortages
- Review the development of the City's water shortage rates
- Summarize the study's key findings, conclusions and recommendations

Water Shortages/Droughts

“Drought is unique among natural hazards because it is not a clear event, like a flood, earthquake, hurricane or tornado. These events strike, leave their mark, and are gone. A drought, however, sneaks up on us quietly disguised as lovely, sunny weather. Unlike a hurricane, we cannot follow its course on a map. We are never sure when a drought began until after it is already well underway, and we are often unsure when it ends. Any day when it doesn’t rain or snow . . . could be the beginning of the next drought.”

Drought Monitor – Current Outlook



U.S. Drought Monitor - National Drought Mitigation Center at the University of Nebraska-Lincoln, the U.S. Department of Agriculture, and the National Oceanic and Atmospheric Administration. – As of April 2013

Key Issues/Objectives for This Study

- *During water shortages or drought conditions, customers will need to reduce their consumption to meet the available water supply conditions*
- *How should the City best achieve the following objectives?*
 - Encouraging conservation and efficient use through voluntary and mandatory means
 - Keep the utility financially whole (i.e. a 20% reduction in use and revenues will create significant financial issues for the utility)
 - For those customers that conserve and use water efficiently, have little or no bill impacts

Proactively Addressing Water Shortages and Droughts

- Develop a water management plan
 - Proactive management/“best management practice”
 - Clearly defines the various levels of drought/water management
 - Defines the specific trigger events (availability of water or catastrophic event) to declare a water shortage
 - Specifies the desired level of savings
 - Specifies voluntary and mandatory actions to be taken to achieve needed savings
- The Department’s Water Management Plan was the basis for the development of the water shortage rates developed here in.

Achieving the Needed Savings

- Needed savings (reductions) can be achieved via:
 - **Economic Incentives** – Pricing of the water to provide direct economic incentives for efficient use
 - **Command and Control** – Direct regulation of an activity by legislation that states what is permitted and what is illegal
- Some combination of these methods is often used and needed to achieve the needed savings
 - Using pricing (economic incentives) to reduce demand has been found to be the more cost effective than non-price methods

Objectives of Water Shortage Rates

- Create a “price signal” to encourage efficient use and conservation
 - For customers that do not conserve, bills should be higher than normal and, in extreme shortages, the rate (bill) should penalize their failure to reduce use
- Customers that do conserve should have bills at or near their “normal” level
- At the same time, as much as possible, be revenue neutral

Defining Phases of Water Shortage and the Targeted Savings

- Phases and savings are defined in Department's Water Management Plan
 - Phases are defined by availability of supply (river flow) and customer demand
 - Targeted savings are achieved through a combination of non-price and price means
 - Initial phases rely more on voluntary savings and less on price incentives to achieve reductions in use

	Moderate Shortage Phase 1	Severe Shortage Phase 2	Critical Shortage Phase 3	Catastrophic Water Shortage
Targeted Reduction Goal	10.0%	Up to 20%	Up to 30%	Up to 50%

Key Objective – Revenue Neutrality

- Water shortage rates are designed (intended) to be revenue neutral
 - i.e., Achieve the same level of revenue as derived under “normal” water conditions
 - Fixed and variable (consumption) charges
 - The City’s rates lean heavily toward variable (consumption) charges – low revenue stability
- Additional (extraordinary) expenses incurred during water shortages

Water Consumption and Reductions

- Where possible, the water shortage plan and rates target different segments of consumption
 - Non-discretionary versus discretionary usage
 - Residential indoor versus outdoor use
 - Efficient versus inefficient and/or wasteful usage

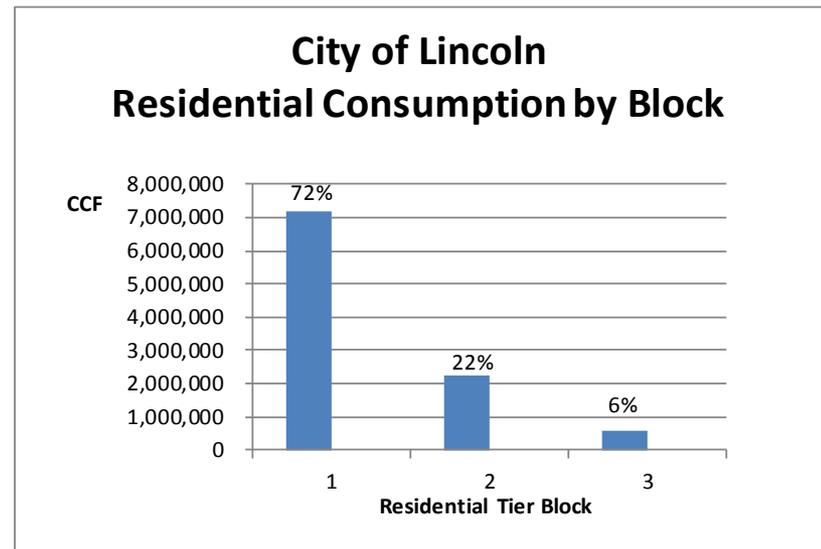
Overview of the Current Water Rates

	2012 Rate [1]	2013 Rate [2]
<u>Monthly Meter Charges –</u>		
5/8"	\$3.60	\$3.80
5/8" x 3/4"	4.55	5.75
3/4"	4.55	5.75
1"	7.60	9.60
1-1/2"	15.15	19.15
2"	24.25	30.65
3"	45.50	57.50
4"	75.85	95.85
6"	151.65	191.65
8"	242.65	306.65
10"	348.85	440.85
<u>Residential Usage Charges (\$/CCF)[3] –</u>		
1 to 8 CCF [3]	\$1.344	\$1.344
8.1 to 23 CCF	1.911	1.911
All Usage Over 23 CCF	2.961	2.961
<u>Non-Residential Usage Charges (\$/CCF) –</u>		
1 to 80 CCF	\$1.344	\$1.344
All Usage Over 80 CCF	1.911	1.911
<u>High User Usage Charges (\$/CCF) –</u>		
All Usage	\$1.276	\$1.276
[1] – Rates are effective November 2012		
[2] – Rates are effective November 2013		
[3] – CCF = one hundred cubic feet of water = 748 gallons		

Residential Water Shortage Options

- Reviewed three different options for residential

- Options focused on efficient “outdoor” use and some “indoor” use
- “Outdoor” use (i.e. 2nd and 3rd block usage) is considered more discretionary
- To achieve savings and desired financial stability, options will need to include, at some level, block 1 consumption



- The option selected maintains existing the rate structure, and in Phase 1, does not change the first block of use

Proposed Residential Water Shortage Rate^[1]

	Normal Water Conditions	Residential Water Shortage Rate - \$/CCF			Catastrophic Water Shortage
		Moderate Shortage Phase 1	Severe Shortage Phase 2	Critical Shortage Phase 3	
Demand Reduction Goal	0%	Up to 10%	10% to 20%	20% to 30%	30% to 50%
<i>Adjust All Blocks and Tiers, Except Block 1, Phase 1</i>					
Block 1: 0 - 8 CCF	\$1.344	\$1.344	\$1.559	\$1.855	\$2.873
Block 2: 8 - 23 CCF	\$1.911	\$2.624	\$2.771	\$3.726	\$5.446
Block 3: Over 23 CCF	\$2.961	\$4.587	\$5.635	\$7.249	\$10.393

Note: 1 CCF of water = 748 gallons

	Drought Conditions - % Change from Normal			Catastrophic Water Shortage
	Up to 10% Phase 1	10% to 20% Phase 2	20% to 30% Phase 3	
<i>% Change from Normal Water Rates</i>				
Block 1: 0 - 8 CCF	0.0%	16.0%	38.0%	113.8%
Block 2: 8 - 23 CCF	37.3%	45.0%	95.0%	185.0%
Block 3: Over 23 CCF	54.9%	90.3%	144.8%	251.0%

[1] – The fixed monthly meter charges remain in effect during each water shortage phase – no change to the level of the charges

Residential Bill Comparison

Targeted Reduction Goal	Total Monthly Bill				
	Normal Water Conditions	Moderate Shortage	Severe Shortage	Critical Shortage	Catastrophic Water Shortage
	0.0%	10.0%	20.0%	30.0%	50.0%
Tier 1 Customer Using 8 CCF					
Assuming No Change in Use - 8 CCF	\$15.30	\$15.30	\$17.02	\$19.39	\$27.53
Assuming Reduced Usage -					
Revised CCF Usage	8 CCF	7 CCF	6 CCF	5 CCF	4 CCF
Total Monthly Bill	\$15.30	\$13.96	\$13.90	\$13.83	\$16.04
Tier 2 Customer Using 23 CCF					
Assuming No Change in Use - 23 CCF	\$43.97	\$54.66	\$58.59	\$75.28	\$109.22
Assuming Reduced Usage -					
Revised CCF Usage	23 CCF	21 CCF	18 CCF	16 CCF	12 CCF
Total Monthly Bill	\$43.97	\$49.41	\$44.73	\$49.20	\$49.32
Tier 3 Customer Using 40 CCF					
Assuming No Change in Use - 40 CCF	\$94.30	\$132.64	\$154.38	\$198.51	\$285.91
Assuming Reduced Usage -					
Revised CCF Usage	40 CCF	36 CCF	32 CCF	28 CCF	20 CCF
Total Monthly Bill	\$94.30	\$114.29	\$109.30	\$111.53	\$92.89

Non-Residential Water Shortage Rate

- Non-Residential rate is a two-block structure;
 - 0 – 80 CCF (approx. 60,000 gallons)
 - Over 80 CCF
- Usage blocks are not predicated on “indoor” and “outdoor” usage
 - Diverse customer types
 - There can be some significant outdoor usage in this class of service
- Assumed targeted savings equal across both consumption blocks
 - Size of the adjustments moderated to reflect limited ability to manage/reduce certain usage

Non-Residential Proposed Water Shortage Rate

	Normal Water Conditions	Non-Residential Shortage Conditions - \$/CCF			Catastrophic Water Shortage
		Moderate Shortage Phase 1	Severe Shortage Phase 2	Critical Shortage Phase 3	
Demand Reduction Goal	0%	Up to 10%	10% to 20%	20% to 30%	30% to 50%
Block 1: 0 - 80 CCF	\$1.344	\$1.496	\$1.688	\$1.934	\$2.714
Block 2: OVER 80+ CCF	\$1.911	\$2.128	\$2.400	\$2.750	\$3.858

		Shortage Conditions - % Change from Normal			Catastrophic Water Shortage
		Up to 10%	10% to 20%	20% to 30%	
Block 1: 0 - 80 CCF		11.3%	25.6%	43.9%	101.9%
Block 2: OVER 80+ CCF		11.4%	25.6%	43.9%	101.9%

Non-Residential Bill Comparison

Targeted Reduction Goal	Total Monthly Bill				Catastrophic Water Shortage
	Normal Water Conditions	Moderate Shortage	Severe Shortage	Critical Shortage	
	0.0%	10.0%	20.0%	30.0%	50.0%
Tier 1 Customer Using 80 CCF					
Assuming No Change in Use - 80 CCF	\$112.07	\$124.23	\$139.59	\$159.27	\$221.67
Assuming Reduced Usage -					
Revised CCF Usage	80 CCF	72 CCF	64 CCF	56 CCF	40 CCF
Total Monthly Bill	\$112.07	\$112.26	\$112.58	\$112.85	\$113.11
Tier 2 Customer Using 125 CCF					
Assuming No Change in Use - 125 CCF	\$198.07	\$219.99	\$247.59	\$283.02	\$395.28
Assuming Reduced Usage -					
Revised CCF Usage	125 CCF	113 CCF	100 CCF	88 CCF	63 CCF
Total Monthly Bill	\$198.07	\$194.45	\$187.59	\$181.27	\$175.53

High Use Customer Water Shortage Rate

- “High Use” is a separate and distinct customer group and rate schedule
 - Rate is available to any non-residential customer which uses more than 12 million cubic feet of water the previous calendar year (approx. 7.5 million gallons per month)
 - Existing rate structure has “efficiency” incentives built into it
- “High Use” customers primarily use water for production purposes
 - Limited ability to reduce significantly without impacting production levels
 - Proposed water shortage rate reflects the unique nature of this group of customers

High Use Proposed Water Shortage Rate

	Normal Water Conditions	High User Shortage Conditions - \$/CCF			Catastrophic Water Shortage
		Moderate Shortage Phase 1	Severe Shortage Phase 2	Critical Shortage Phase 3	
Demand Reduction Goal	0%	Up to 10%	10% to 20%	20% to 30%	30% to 50%
Rate 1: Base or Below	\$1.276	\$1.276	\$1.289	\$1.302	\$1.340
Rate 2: Usage 5%-15% above base	\$1.323	\$1.323	\$1.349	\$1.376	\$1.402
Rate 3: Usage 15%-25% above base	\$1.365	\$1.365	\$1.420	\$1.447	\$1.474
Rate 4: Usage 25% above base	\$1.407	\$1.407	\$1.491	\$1.520	\$1.548

	Drought Conditions - % Change from Normal			Catastrophic Water Shortage
	Up to 10%	10% to 20%	20% to 30%	30% to 50%
Rate 1: Base or Below	0.0%	1.0%	2.0%	5.0%
Rate 2: Usage 5%-15% above base	0.0%	2.0%	4.0%	6.0%
Rate 3: Usage 15%-25% above base	0.0%	4.0%	6.0%	8.0%
Rate 4: Usage 25% above base	0.0%	6.0%	8.0%	10.0%

High Use Bill Comparison

Targeted Reduction Goal	Total Monthly Bill				
	Normal Water Conditions	Moderate Shortage	Severe Shortage	Critical Shortage	Catastrophic Water Shortage
	0.0%	10.0%	20.0%	30.0%	50.0%
Tier 1 Customer Using 1,000 CCF					
Assuming No Change in Use - 1,000 CCF	\$1,316.90	\$1,316.90	\$1,329.90	\$1,342.90	\$1,380.90
Assuming Reduced Usage -					
Revised CCF Usage	1000 CCF	900 CCF	800 CCF	700 CCF	500 CCF
Total Monthly Bill	\$1,316.90	\$1,189.30	\$1,072.10	\$952.30	\$710.90

Summary

- Development of the water shortage rates is the culmination of many months of analysis and review
 - Adoption of water shortage rates is a proactive/prudent management and policy decision
 - Designed to provide economic/price incentives for efficient use during times of water shortage
 - Attempted to craft a proposal that is equitable to all customers, recognizes each customer group's unique characteristics and primarily targets the least efficient usage on the water system