

LINCOLN WATER COMMISSION

WATER SUPPLY SYSTEM MANAGEMENT PLAN FIVE YEAR PROGRESS REPORT

(EXECUTIVE SUMMARY)

This progress report and supplemental update of necessary Water Supply System Management Plan (WSSMP) components is meant to document that there have been no significant changes to the Lincoln Water System and by extension to the existing WSSMP approved on September 29, 2009 and reported on in November 2015.

1. Goals

The Commission is organized and operates to serve the water supply needs of the owners of the system: i.e. the citizens and businesses of the service area that generally consists of the geographical boundaries of the Town of Lincoln. As such the Commission complies with all laws, rules, regulations, and directives of appropriate legal authorities and operates the system in accordance with generally accepted standards for water systems. The Lincoln Water Commission's primary goal is to operate a water system for the benefit of and to meet the legitimate needs of the customers in the service area. In accordance with that overall goal the Commission's additional goals are to:

1. Comply with all applicable laws and regulations
2. Protect the integrity of existing supply connections
3. Protect the quality of existing groundwater sources
4. Protect the integrity of current emergency supplies
5. Promote the efficient use of water through:
 - a. Efficient operation of the system in accordance with industry and state standards
 - b. Efficient use of water by the customers through effective metering and public information programs regarding the wise use of water
6. Cooperate with the overall goals of the Town of Lincoln as outlined in the Town Comprehensive Plan
7. Provide for service to all locations within the service area.
8. Conform to the overall goals for water suppliers established in the State Guide Plan element No 721.

The goal of this Water Supply System Management Plan progress report is to amend and update, where necessary, the plan approved on September 29, 2009 and the progress report submitted on November 16, 2015.

2. System Description

Legal

The Lincoln Water Commission is an independent Commission providing water within the political boundaries of the Town of Lincoln. The Commission is established under State law with full authority to manage its business, as approved by qualified voters of the Town of

Lincoln. Creation of the Lincoln Water Commission is included as part of "An Act for a Public Water Works System in the Town of Lincoln", which was passed on April 27, 1955 and confirmed by the qualified electors of the Town of Lincoln on October 11, 1955. A copy of the Act was included in the 2001 submittal and referenced in the 2009 submittal. This information remains the same.

Organization

The owners of the Lincoln Water Commission are the qualified electors of the Town of Lincoln. The qualified electors are eligible to vote for the members of the Commission; which consists of five members, one from each voting district in Lincoln. The Commission has the authority to employ and fix the compensation of various classes of employees including the authority to hire a Superintendent and contract for his services for a period not to exceed five years. The Commission is vested with the power and authority to construct and maintain a water works system for the Town of Lincoln and is empowered with contract authority for that purpose. The Lincoln Water Commission operates as a true "enterprise fund" within Town government. The Commission has the authority to set rates and expend funds to complete its purpose. The Town maintains a water fund solely for the operations, maintenance and capital needs of the water system. The Board of Commissioners regularly reviews and updates the Rules and Regulations, with the latest revision dated August 8, 2018.

System overview

The Lincoln Water Commission has evolved from the combining of several water systems in sections of Lincoln adjacent to other communities; i.e. Pawtucket, Cumberland and Woonsocket and by the development of a system to serve all areas of Lincoln. The systems were purchased from said Municipalities and along with the construction of major water mains and storage tanks was converted into one integrated water system. An additional well was purchased from Pawtucket and storage facilities were constructed in the southern portion of the Town. The development of this system provided for the water supply and fire protection needs of the residents of Lincoln in the 1950's. The water system has evolved from that beginning in the 1950's to a system providing water and fire protection throughout the Town. In 1985 the Lincoln Water Commission completed a connection to the Providence Water Supply to replace the previous groundwater supplies that were identified as contaminated.

Water Supply Sources

The Lincoln Water Commission obtains the majority of its water supply by direct wholesale purchase from the Providence Water Supply Board. The Commission has one supply connection with Providence Water. In addition the Lincoln Water Commission has emergency connections with the City of Woonsocket Pawtucket Water supply Board and the Town of Cumberland Water Department. The Lincoln Water Commission had maintained Well #4 in the Lonsdale wellfield as a "supplemental supply". At one time the Commission used Well #4 as a production well to supplement the primary supply from Providence Water. Use of this well allowed the Commission to meet peak needs during the summer without placing undue stress on the Providence Connection and Pump Station. This practice was discontinued in October of 2004. The well is not currently operated.

Treatment

The Commission receives treated water from the Providence Water Supply Board and does not provide any additional treatment in its system now that well #4 is not operated. This information remains the same as that reported in the March 2009 approved plan and the progress report submitted on November 16, 2015

Transmission, Storage and Pumping Facilities

The transmission system includes piping and three pressure boosting pump stations that comprise the basic supply and two pressure zones. There are five distribution storage facilities in the Lincoln Water Commission system providing a total of 6.15 million gallons of finished water storage. With the exception of new variable frequency drives installed in the Providence Connector pumping station, these facilities remain the same as that reported in the March 2009 approved plan and the progress report submitted on November 16, 2015

Interconnections

The Lincoln Water Commission has one interconnection with the Providence Water Supply Board for primary supply of water on a wholesale purchase basis and three emergency interconnections with the City of Woonsocket, the Town of Cumberland and the Pawtucket Water Supply Board. The capacity of the interconnections remains unchanged from that reported in the approved March 2009 plan and the progress report submitted on November 16, 2015. The only change relates to the Cumberland emergency interconnection at Martin Street. This connection had been inoperable since early 2010 due to water line support failure; however, the Commission effected repairs and placed the connection into an operable status in the Fall of 2016.

Service Area

The service area of the Lincoln Water Commission continues to be coincident with the political boundaries of the Town of Lincoln. The boundaries of the service area include approximately twenty (20) square miles. The Lincoln Water Commission provides water service to 98 % of the Town of Lincoln. The remaining 2% within the service area boundaries are supplied from private wells. In addition the Providence Water Supply Board supplies water on a retail basis to approximately twenty-five (25) homes in Heritage View, a residential development in the southwestern portion of the Town adjacent to the North Providence border. The Lincoln Water Commission serves two (2) customers at the North Central Airport Industrial Park that are actually located in the Town of Smithfield on the eastern border with Lincoln. In both of these cases the connections are made because of the proximity of the distribution lines to the users. The Commission's service area information remains the same as that reported in the March 2009 approved plan and the progress report submitted on November 16, 2015

Population Served

The US Census Bureau and the 2020 Census continues to be the basis for population estimates for the area served by the Lincoln Water Commission. In 2020 the population was reported as 21,731. The Town's current population was reported as 21,870 in the Commission's FY 20 reporting to the Water Resources Board. Rhode Island Statewide Planning program

Technical Paper 162 projects the Town of Lincoln's 2020 and 2035 populations to be 21,857 and 23,470 respectively.

Master Meters

Master meters are maintained at the Providence connection and the Woonsocket emergency connection. The meter at the Providence connection is calibrated at regular intervals while the meter at Woonsocket emergency connection is calibrated prior to use. No meters are installed at the emergency connections with the Town of Cumberland (new) and the Pawtucket Water Supply. Meters would be provided were these connections to be activated during an emergency.

Distribution Meters

The Lincoln Water Commission meters 100% of the water distributed to its customers, billing residential accounts on a quarterly basis and commercial accounts on a monthly basis. The Commission began installing radio read meters in 2012 in order to meet State Water Use and Efficiency Act goals. As of its reporting to the Board of Water Commissioners in July of 2018, the Commission's system stood at 100% radio read.

System Production Data

The Lincoln Water Commission continues to receive water through one connection with the Providence Water Supply Board. In FY 2020 one hundred per cent of the water was provided through this connection, a total of 799,155,000 gallons. The amount supplied by month in gallons, is as follows:

July.....	99,212,000	November.....	53,355,000	March.....	51,301,334
August.....	95,474,500	December.....	51,583,000	April.....	46,299,000
September.....	77,260,500	January.....	52,221,333	May.....	63,282,000
October.....	59,523,000	February.....	50,417,333	June.....	99,226,000

This information was provided to the Water Resources Board in the Commission's FY 2020 water supplier reporting.

Water Use

The discussions as presented in the approved March 2009 WSSMP and November 16, 2015 progress report submissions remain the same. No wholesale water sales have occurred over this reporting period.

Major Users

Large Water user is defined in "Title 46 Waters and Navigation, Chapter 46-15.1, Water Supply Facilities, Section 46-15.1-1.1 Definitions"

c) "Large water user" means a water user that withdraws more than three million (3,000,000) gallons per year, which is equivalent to eight thousand two hundred (8,200) gallons per day.

This has been interpreted to include multiple connections and multiple locations under the same owner. In the March 2009 and November 2015 WSSMP submissions, the Lincoln

Water Commission reported 17 and 20 major users respectively. In 2020 the Commission lists 17 large water users as shown in the following updated *Figure 14 – Major Water Users*:

1	25,097,380	Com/Ind/Gov
2	12,986,750	Com/Ind/Gov
3	12,783,622	Com/Ind/Gov
4	7,828,977	Com/Ind/Gov
5	6,755,242	Com/Ind/Gov
6	5,723,827	Com/Ind/Gov
7	5,348,599	Com/Ind/Gov
8	5,344,022	Com/Ind/Gov
9	5,088,841	Com/Ind/Gov
10	4,984,256	Com/Ind/Gov
11	4,870,395	Com/Ind/Gov
12	4,280,169	Com/Ind/Gov
13	4,050,000	Com/Ind/Gov
14	3,807,144	Com/Ind/Gov
15	3,706,983	Com/Ind/Gov
16	3,556,000	Com/Ind/Gov
17	3,279,227	Com/Ind/Gov

Water Conservation

The Lincoln Water Commission continues to be actively involved in promoting water conservation programs. Additional information is provided throughout the original WSSMP as well as subsequent various updates.

System Needed Improvements

The information presented in the March 2009 and November 2015 WSSMP submissions remain valid. The Lincoln Water Commission maintains both Capital Improvement and Infrastructure Rehabilitation Plans that are frequently revised and updated according to the needs of the system. The Commission last updated its clean water infrastructure replacement plan in August of 2015 and is in the process of preparing another update. The Commission's focus of effort continues to be on maintenance of the existing water system, since the system service area is geographically defined and has little room for expansion.

3. Water Quality Protection Component

General

The information provided for this section remains the same as reported in the March 2009 approved plan and November 16, 2015 progress update.

Well #4

The Lincoln Water Commission has not used this well as a supplemental source since October 2004 due to various financial, operational, and regulatory issues. The well is no longer maintained in a 'standby status' although it could be used in an emergency. A Wellhead Protection Plan update was submitted as part of the WSSMP Thirty Month Interim Report

dated December 2005 in response to review comments from the RI Department of Environmental Management. The information presented in this update remains the same as that reported in the March 2009 approved plan and November 16, 2015 progress update.

4. Mapping

A system map is included in the appendices of the summary document.

5. Supply Management

General

The majority of information presented for this section remains the same as that reported in the March 2009 approved plan and November 16, 2015 progress update. As discussed earlier Lonsdale Well #4 is no longer maintained in "Standby status".

Anticipated Future Demands

The March 2009 and November 2015 WSSMP submissions discussed in detail the anticipated population growth and the anticipated available water for the 5 and 20 year planning horizons. The assumptions and calculations used in those discussions remain valid. *Figure 16 – Summary of Anticipated Demands* is expanded and updated as follows:

YEAR	Actual/Estimate	MGD	MGY
2000	Actual	2.25	824.1
2005	Actual	2.42	884.8
2008	Actual	2.19	799.5
2015	Actual	2.31	841.4
2020	Actual	2.19	799.1
2028	Estimate	2.5	912.0
2043	Estimate	2.7	940

The above estimates assume continuing existing trends over the next 20 year period and include allowances for moderate residential construction. Theoretical 'build out' of all available lots in Lincoln is not anticipated in the period covered by this report.

Available Water

Water continues to be available from the Providence Water Supply Board and is provided according to the terms of a 1988 agreement even though same is expired. Neither the PWSB nor the Commission has initiated discussions on a new agreement. Water is also available from the City of Woonsocket, the Town of Cumberland and the Pawtucket Water Supply Board. As previously noted, well No 4 is no longer on standby status, but could be used in an emergency situation. Available water totaling 6.6 MGD remains the same as that reported in the Commission's March 2009 approved plan and November 15, 2015 progress report.

Alternative Supplies

The information presented in the Commission's approved March 2009 and November 2015 WSSMP submissions remains the same. The Lincoln Water Commission continues to evaluate existing sources of supply and anticipated demand on a regular basis. Prior efforts have been concentrated on improving and strengthening existing interconnections with neighboring water systems.

Supply Augmentation Studies

The Commission has been studying supply augmentation via a proposed second connection to the Providence Water Supply Board. The anticipated connection point would be at Mineral Spring and Lexington with an eight or twelve inch line in Lexington making its way to the North Providence/Lincoln border at Angell Road. Providence Water has reviewed the potential alignment while the Commission has produced a conceptual design for the station that will be required to pump water into the Lincoln system. The secondary connection would help address summer demand and reduce wear and tear on the pumps in the main station. With regard to regional water supply, the LWC continues to cooperate fully with State and Federal authorities on any studies.

6. Demand Management

General

The Commission's Demand Management Strategy completed in August of 2012 was approved by the Water Resources Board on September 20, 2013. As documented in same, the LWC implements an active outreach program to encourage water conservation and the efficient use of this limited resource. Some of the programs currently operated by the LWC are:

- in-house leak detection program
- large meter testing program
- residential/commercial meter replacement program
- maintaining 100% metering of all consumers
- meter downsizing program
- use of the local media to inform consumers on current issues
- mailings to large users informing them of water saving programs
- seasonal messages included on bills
- door-to-door handouts during emergencies
- maintaining a website with water conservation information
- identification and monitoring of large residential users
- identification and monitoring of large commercial users
- free home and business inspections for high consumption complaints
- investigation of automatic billing reports of high or unusual consumption patterns
- free toilet tank retrofit kits
- free water conservation 'Activity Books' to all second grade Lincoln students
- tours and talks to all Lincoln second grade classes, 350 students per year
- weather-based irrigation control rebate incentive
- increasing stepped rate structure

The program is adjusted with different elements added or deleted on a regular basis. Overall the effect has been seen as positive. The Lincoln Water Commission actively supports all conservation programs, including those initiated by various State agencies, the U.S. Environmental Protection Agency, the American Water Works Association, the New England Water Works Association, and the Atlantic States Rural Water and Wastewater Association.

The Commission's approved Demand Management Strategy as well as additional information on some of the current programs is presented in the appendices of the summary document.

7. System Management

Statement of Objectives

The discussions presented in the approved March 2009 and November 2015 WSSMP submissions remain the same.

General

A sanitary survey was conducted by the RI Department of Health Office of Drinking Water Quality on June 10, 2014 and again on March 4, 2020. No critical deficiencies were noted in either report. Minor deficiencies, if any, were addressed at the time.

Current Status

The Lincoln Water Commission regularly reviews its *Rates, Rules and Regulations* as discussed above in section 2. *Water Supply System Description*. The last revision to the *Rules and Regulations and Rates* was August 8, 2018.

Non-Billed Water

One of the Commission's goals is to comply with all Federal and State regulations, policies and guidelines. As such the Commission endeavors to maintain non-billed water including leakage below 10%. In FY 2020 the Lincoln Water Commission supplied 799,155,000 gallons to the distribution system, all purchased from the Providence Water Supply Board and measured by a master meter. For the same period of time, the Lincoln Water Commission collected revenues on the sale of 653,917,491 gallons. The resulting *non-billed water* (non-revenue) of 145,237,509 gallons is 18.17%. Water main breaks, fire-fighting, theft, and meter error account for approximately half of the non-metered total effectively reducing the 18.17% to approximately 9%. As has been discussed in great detail in correspondence with the Water Resources Board in the yearly reports to that agency and in the prior WSSMP submission updates, this number can only be viewed as an indicator.

It is important to realize that these numbers only represent non-revenue water, which typically includes the following consumption:

1. Fire Dept training and fire-fighting.
2. DOT/DPW Usage
3. Theft.
4. Meter age.