

FACTSHEET

TITLE: COMPREHENSIVE PLAN AMENDMENT NO. 14003

BOARD/COMMITTEE: Planning Commission

APPLICANT: Director of Planning, at the request of the Public Works & Utilities Department

RECOMMENDATION: Approval (9-0: Scheer, Beecham, Cornelius, Corr, Harris, Hove, Lust, Sunderman and Weber voting 'yes').

STAFF RECOMMENDATION: Approval

OTHER DEPARTMENTS AFFECTED: Public Works & Utilities, Lincoln Water System

SPONSOR: Planning Department

OPPONENTS: Yes (see below)

REASON FOR LEGISLATION:

To amend the 2040 Lincoln/Lancaster County Comprehensive Plan to adopt the Lincoln Water System Facilities Master Plan.

DISCUSSION / FINDINGS OF FACT:

1. The proposed Lincoln Water System Facilities Master Plan updates the previous master plan and provides the City of Lincoln with a guide for short-term and long-term improvements to the infrastructure of the Lincoln Water System to the year 2060. The master plan was developed in conjunction with the growth tiers map and population projections from the 2040 Comprehensive Plan. The information is to be used for general planning, identifying projects for the Capital Improvements Program (CIP) and determining funding requirements. The master plan is updated every five years.
2. The staff recommendation to approve the proposed amendment is based upon the "Analysis" as set forth on p.2-4, concluding that the proposed Lincoln Water System Facilities Master Plan is in conformance with the 2040 Comprehensive Plan. The specific amendments to the Comprehensive Plan are found on p.4. The staff presentation is found on p.6.
3. Testimony in opposition is found on p.8, with concerns about the lack of sufficient annual replacement of water mains.
4. On June 11, 2014, the Planning Commission agreed with the staff recommendation and voted 9-0 to recommend approval.
5. The Executive Summary of the Master Plan was submitted to the City Council members prior to the precouncil meeting held on June 2, 2014.

FACTSHEET PREPARED BY: Jean Preister, Administrative Officer

DATE: June 18, 2014

REVIEWED BY: Marvin Krout, Director of Planning

DATE: June 18, 2014

LINCOLN /LANCASTER COUNTY PLANNING STAFF REPORT
for June 11, 2014 Planning Commission Meeting

- PROJECT #:** Comprehensive Plan Amendment #14003
- PROPOSAL:** Amend the 2040 Lincoln/ Lancaster County Comprehensive Plan to adopt the Lincoln Water System Facilities Master Plan.
- CONCLUSION:** The proposed Lincoln Water System Facilities Master Plan is in conformance with the 2040 Lincoln-Lancaster County Comprehensive Plan.

<u>RECOMMENDATION:</u>	Approval of the proposed amendment
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GENERAL INFORMATION:

HISTORY: The previous Lincoln Water System Facilities Master Plan was adopted as Comprehensive Plan Amendment #10003 in 2010 as part of the 2030 Comprehensive Plan and was retained with the adoption of the 2040 Comprehensive Plan in November 2011.

COMPREHENSIVE PLAN SPECIFICATIONS:

The basic elements of the Lincoln Water System are identified on pages 11.2 and 11.7-11.10 of the 2040 Comprehensive Plan. These sections describe the existing water system and outlines future improvements that were projected to meet future needs of community growth.

- Page 11.2 ***Guiding Principles:***
It is the policy of the City of Lincoln to only provide water and wastewater service to properties located within the corporate limits of the city. This policy provides for contiguous growth, allows for efficient long range planning and cost effective construction and management of the system.
- Page 11.2 ***Water Guiding Principles:***
Water improvements must be in accordance with the Lincoln Water System Facilities Master Plan and LPlan 2040. The *Lincoln Water System Facilities Master Plan* will guide future actions and serve as the basis for facilities planning and improvements.
- Page 12.6 Urban Growth Tiers with Priority Areas
- Page 12.16 Lincoln Water System Facilities Master Plan, Public Works and Utilities Department; April 2007.

ANALYSIS:

1. The Executive Summary for the Water Facilities Master Plan was provided at the joint briefing of the City Council and Planning Commission on June 2, 2014.
2. Following the adoption of the Lincoln-Lancaster County 2040 Comprehensive Plan in November 2011, the City's Public Works and Utilities Department developed the 2013 Lincoln Water System Facilities Master Plan. This plan provides the City of Lincoln with a guide for short-term and long-term improvements to the infrastructure of the Lincoln Water System to the year 2060. The Water Facilities Master Plan was developed in conjunction with the growth tiers map and population projections from the 2040

Comprehensive Plan. The information is to be used for general planning, identifying projects for the Capital Improvement Program (CIP), and determining funding requirements. The Water Facilities Master Plan is updated every five years.

3. The plan's recommended improvements are divided into four phases that align with the growth tiers of the Comprehensive Plan:
 - Immediate (2014-2019): (serve Tier I, Current Capital Improvement Program)
 - Short-term (2020-2025): (serve Tier I, Priorities A and B)
 - Mid-term (2026-2040): (serve Tier I, Priority C)
 - Long-term (2041-2060): (serve Tier II)
4. Immediate improvements include projects identified for inclusion in the current 6-year Capital Improvement Program. The total projected cost for projects is \$12,186,000 for Transmission Improvements and \$18,459,000 for Distribution Improvements.
5. Short-term improvements include projects up to the year 2025. The total projected cost for projects is \$46,427,000 for Transmission Improvements and \$25,442,000 for Distribution Improvements.
6. Mid-term improvements include projects up to the year 2040. The total projected cost for projects is \$106,041,000 for Transmission Improvements and \$31,570,000 for Distribution Improvements.
7. Long-term improvements include projects up to the year 2060. The total projected cost for projects is \$92,356,000 for Transmission Improvements and \$70,710,000 for Distribution Improvements.
8. The "average day demand" is used to estimate future revenues and operating costs. The "maximum day demand" is used to size water supply hydraulics, treatments facilities and pumping stations. The "maximum hour demand" is used to determine the sizes and locations of distribution facilities. (see Page 11 of Waster Facilities Master Plan)
9. Currently, Lincoln Water System has budgeted \$4.0 million for main replacements in fiscal year 2013. This will replace approximately five miles, or 0.4 percent, of the overall distribution system. This budgeted replacement rate is expected to continue over the next several years. Seven miles of pipe replacement per year is recommended by the master plan.
10. Lincoln's water currently comes from the Platte River near Ashland. Due to concerns over reliability of supply from the Platte River meeting long-term future demand (beyond 2040), an alternative supply analysis was conducted including various aquifers, additional wells along the Platte River, and wells along the Missouri River. The Missouri River was determined to be a more reliable and longer-term investment and is recommended as an

additional source for Lincoln's water in the future. It also opens up the opportunity to serve additional entities/customers outside of the future service limit. The costs (\$500 million in 2013 dollars) associated with acquiring and developing that resource are included in the Plan.

11. Assumptions in this Water Facilities Master Plan will need to be updated after the next Comprehensive Plan is adopted.

PROPOSED AMENDMENTS:

Amend the 2040 Lincoln-Lancaster County Comprehensive Plan as follows:

1. Amend the following text on pages 11.7-11.9, Energy and Utilities:
The existing water system is made up of more than 1,240 miles of water distribution mains. Pipes providing service to customers range in size from 4" to 16" in diameter and total ~~4,080~~ 1,100 miles. There are also 160 miles of transmission and transfer mains which range from 24" to 54" in diameter.

The Public Works and Utilities Department completed the Lincoln Water System Facilities Master Plan in ~~2007~~13. The plan is a guide for short term and long term improvements to the infrastructure of the Lincoln Water System during the planning period. The Lincoln Water System Facilities Master Plan was adopted as a subarea plan in ~~2007~~14 (see Plan Realization chapter). The projected maximum day water demand for year 2040 is 141 million gallons per day (MGD), and for 2060 is ~~201~~175 MGD based on the assumed population growth rate of 1.2% per year. Additional supply, treatment, and transmission improvements will be necessary to meet these growing demands. The well fields currently owned by the Lincoln Water System have a projected maximum capacity approximately equal to the projected need ~~for the year by 2040 to 2050~~. Additional well field property and water rights will need to be acquired in the planning period to meet these demands, and a financial plan adopted to fund such a project.

2. Amend the following text on page 12.16, Plan Realization under "Subarea Planning":

Lincoln Water System Facilities Master Plan ~~Update~~, Public Works and Utilities Department; ~~April June, 2007~~14.

Prepared by:

Brandon M. Garrett, AICP

Planner

APPLICANT:

Miki Esposito, Director
Public Works & Utilities Dept.
555 S. 10th Street
Lincoln, NE 68508

CONTACT :

Steve Owen
Lincoln Water System
2021 N. 27th Street
Lincoln, NE 68503
402-441-7571
sowen@lincoln.ne.gov

COMPREHENSIVE PLAN AMENDMENT NO. 14003

PUBLIC HEARING BEFORE PLANNING COMMISSION:

June 11, 2014

Members present: Beecham, Weber, Scheer, Sunderman, Harris, Corr, Cornelius, Hove and Lust.

Staff recommendation: Approval.

Ex parte communications: Corr disclosed that she exchanged emails with several parties, including Shawn Ryba, Pat Anderson-Sifuentez and Russell Miller.

Beecham disclosed that she had received emails from the same individuals. She responded by encouraging the individuals to come to the public hearing.

Staff presentation: **Brandon Garrett of Planning staff** explained the proposed Comprehensive Plan Amendment to add a subarea plan. Chapter 12 of the Comprehensive Plan lists plans which are appended to the Comprehensive Plan, p.12.16. This Master Plan is another one of those appendices.

Garrett explained that currently, the Comprehensive Plan includes a Water System Facilities Master Plan which was adopted in 2007. The Lincoln Water System has gone through the process of updating that plan over the last year and is now submitting a brand new Master Plan. Garrett stated that the new plan is in step with the current Comprehensive Plan. Lincoln Water System keeps an eye on the Comprehensive Plan and as soon as a new Comprehensive Plan is adopted, Lincoln Water System sort of recalibrates their own plan so that they keep in step with the Comprehensive Plan.

Beecham stated that she attended the briefing held before the City Council. As we talk about the Missouri River as a potential resource, she is curious whether the Missouri River was considered as part of the modeling done to look at what we might run into if other people are interested in the Missouri River as a resource. **Nick McElvain of the Lincoln Water System** acknowledged that one of Omaha's three treatment plants draws directly from the Missouri River, as well as St. Joe, Kansas City, and St. Louis. However, McElvain pointed out that the amount of demand compared to the amount of water going down that river is probably a fraction of 1%. The river is managed for recreation and for barge traffic, so they keep enough flow in it at certain times to move the barges up and down the river and the amount needed for those functions is so much more than any of the municipal demands. There could be irrigation requests, but we don't see a lot of that kind of development on the horizon right now. Yes, it could happen, especially if our Platte River resources get less and less. On the other hand, the State enacted some laws that call for integrated management plans, which require the local NRD, which governs groundwater, and the State Department of Natural Resources, which governs surface water, to get together for any drainage basin that is considered over-appropriated, and there are some in western Nebraska. Those integrated management plans are geared toward the management of the water and how to conjunctively use the water. We don't necessarily see the Platte totally drying up, but we cannot avoid years like 2012. What we do know about the modeling of our well field is that today the capacity is 110 million gallons per

day. If the river is dry for 60-90 days, that capacity would fall in half, and we were close to that in 2012. That is why, over time, the Missouri looks attractive rather than buying more land along the Platte River.

Beecham inquired whether there are interstate agreements in place or a regional plan. McElvain indicated that there are such agreements and they are referred to as “compacts”. He then referred to three different compacts that are in place and there are national level hearings held on those compacts.

Beecham then inquired whether the modeling was only based on today’s levels and supply. Was there any modeling done to take into account potential changes in climate, drought, etc.? In other words, did we take any specific forecast or any specific shortage into account? McElvain stated that the modeling looked at zero river flow. The Missouri River basin is very large, and there is a lot of stored water but those storage facilities can be depleted, and they have been. In addition, we have variable weather conditions. There is no model that will tell us what the next 100 years might be, so we base it on the current date and current pool of information, but we look at the highs and lows. We model at the lowest conditions.

Lust noted that in the briefing they heard numbers like a 500 million dollar project with regard to the Missouri River. Are we certain that the Missouri River is going to be a reliable source of water into the future? McElvain responded by stating that we have 30 years of planning to continue to keep an eye on those weather trends. If the basin is that dry, the Missouri River is going to be more reliable than the Platte River. It will give us two sources – today we have one. It gives us options. Going further to the Mississippi or the Rocky Mountains is probably not an option at this stage.

Harris referred to page 9 of the Executive Summary, under “Long-term (2041-2060) horizon,it is recommended that field investigation for well field site selection be conducted in 2016 and that land acquisition for the well field facility occur in approximately 2018 in order to secure a site for future source development.” Harris wondered whether the pricing for the rights can be locked in at that point, and how long do those prices last? It is McElvain’s understanding that options to purchase can be bought. Our intent would be to acquire enough land to begin a well field once we determine the location of a site. He then discussed the staging of the process.

Harris then referred to page 21 of the Executive Summary which talks about a reserve fund. Would the reserve fund be used to service any debt payments? McElvain then reminded that this is a financial feasibility study. It is definitely not a plan. They are just saying, if the City took this project on in this amount by itself, would it be financially feasible? The recommendation in 2018 would be to budget one million dollars for the reserve fund, which takes a rate increase – the next year two million – the next year three million and so on. So as you get out 30 years, you’ve got a large pool of money. The City puts money into the reserve fund and that becomes the downpayment on this five hundred million dollar project.

Harris then confirmed that this study assumes the City’s water system is taking that on all by itself. Any other sources or partnerships that might be formed to help fund it have not been considered in this study. McElvain reiterated that it is a feasibility study. It is not a plan.

Corr asked for further explanation of the previous discussion about the backlog for the water mains being fixed going from 5 miles to 7 miles. McElvain explained that it is a tiered/step-up

approach in the CIP so that each year we are growing it by ½ million dollars and 3/4 of a mile each year. We would be moving towards that number. We do not know what the amount of inflation will be.

Corr inquired whether the Lincoln Water System is proactive or more reactive. Are you fixing the water mains before they break or just reactive in nature? McElvain stated that all repairs are reactive. The replacements are proactive. We look at the history of breaks and the risk of leaving a particular pipe in service. Some get higher priority, such as hospitals or arterial streets. There are some projects that they do not get to and there are some with snags or issues.

Opposition

1. Russell Miller submitted his testimony in writing. He believes this Master Plan should receive much greater emphasis than it is. He discussed the material types used in making the mains called, “unprotected ductile and thin walled cast iron”. The study points out that the deterioration trend for these materials is very steep and the overall performance is poor relative to the pipe age. A substantial peak is evident at 55-59 years of age. In other words, the pipes tend to fall apart at 60 years of age. The table in the study shows that there are 300 miles of this pipe and it was installed from 1948 to 1972. This means Lincoln has 300 miles of pipe with life expectancy being attained between 2008 to 2030, which means we should be replacing 15 miles of this type of pipe per year. There are approximately 20,000 homes being served by this type of pipe, or approximately 20% of Lincoln’s housing units. He is sure that is why essentially all of last year’s water main replacement was in areas of this type of pipe.

Because of the magnitude and seriousness of this situation, Miller urged the Planning Commission to direct the City Council to make sure adequate water department revenues are always available to replace 8 to 10 miles of mains each year, and increase it to 15 miles in the next budget cycle. We’re never going to catch up. We have 45 miles of 100-year-old mains. We have to attack this problem vigorously. It will never be pleasant, but it’s going to get worse as the years go by.

Staff questions

Corr wanted to understand the difference in the quality of the pipes. Is the City finding those that are being replaced the ones of not that high quality. McElvain stated, “not really.” In the same year, we replaced a 130-year-old pipe, and replaced another segment that was 30 years old. The biggest issue is corrosion, and there are areas of Lincoln that have much more corrosive soils. The average over 3 years replaced was 80 years of age. Some were 60-year-old pipes and some 100-year-old pipes.

McElvain then stated that Miller was a great asset to the stakeholder group and asked the hard questions. How do we define “failure”? If three breaks is an acceptable definition, then we only have 50 miles of failed pipes in the system. We’re still providing water. The key question is: What is an acceptable backlog of failures? Our goal is to not let that get over 60. Five years from now, we will update this master plan to review and determine how we are doing with the predictions of the master plan. McElvain agreed that “we did not invest enough early enough”.

ACTION BY PLANNING COMMISSION:

June 11, 2014

Hove moved approval, seconded by Weber.

Beecham suggested that we get into trouble when we don't take care of our aging infrastructure and she would certainly support a more aggressive approach to funding the repair of the old pipes. She has some concerns about looking at our long range planning based on our water supply for today. People worry when we talk about potential changes in local temperatures, but it is our job to look at those options. The models are critical to look at how it is now and how it may be. She would like to see more consideration, discussion and debate and would encourage that more models be included. She does, however, agree that this master plan is in conformance with the Comprehensive Plan.

Corr expressed appreciation for all of the work that has gone into this. This is a balancing act where we need the main replacements, so we have to balance the money need on one side with how much we can get done on the other side. She believes that the Lincoln Water System is doing a pretty good job with that. The national average is 23 to 27 breaks per 100 miles and she knows that Lincoln is below that. It would be great to go up to 8 miles of replacement per year. We know that we are going to have to do something about water capacity in the future so we should start saving now.

Motion for approval carried 9-0: Beecham, Weber, Scheer, Sunderman, Harris, Corr, Cornelius, Hove and Lust voting 'yes'. This is a recommendation to the City Council.