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# Energy & Utilities Dialogue

## Community Committee Meeting

November 19, 2020

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**PLAN FORWARD 2050**  
Lincoln-Lancaster County Planning Department



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# Energy & Utilities

## Introduction

Over the next several months the Planning Department will be coordinating presentations with topic experts and discussions on various topics for the Community Committee meetings. This will be one of the key ways the Community Committee will have an opportunity to provide input on these topics. The discussion topic for the Community Committee meeting on November 19<sup>th</sup> will focus on energy and utilities. This document is being provided to you as a resource in advance of the November 19<sup>th</sup> meeting.

## Energy & Utilities Policies in LPlan 2040

The current City-County Comprehensive Plan, LPlan 2040, contains many energy and utilities goals. All of these strategies and goals are found in [Chapter 11, Energy & Utilities](#). These strategies and goals lay a good foundation for development of PlanForward 2050. Some of these goals have been accomplished over the last 10 years whereas others may be removed or carried forward in the new Comprehensive Plan. While the Comprehensive Plan lists several goals and strategies related to energy and utilities, a smaller sample of the strategies and goals is provided below. These will continue to be discussed and examined as PlanForward 2050 is developed. Additional conversation is needed in relation to adding in new policies with the development of the Climate Action Plan as well.

Continue the City's growth policy of contiguous urban growth; urban development will occur in areas immediately abutting the city that reflect a logical and timely extension of urban infrastructure.
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.
Promote renewable energy sources.
Continue to encourage and expand wind and solar access to buildings and other land uses.
Encourage higher density housing in/near large commercial development, redevelopment nodes and corridors and employment centers.
Encourage energy efficient compact development, conservation design for new subdivisions and mixed use development.
Explore options for allowing more home occupations that are compatible with neighborhoods.
Encourage transit-oriented development near transit stops, bicycle pathways and bicycle parking stations.
Continue to encourage water conservation practices with the development of the City and County.
The City's collection system, in general, will continue to be a gravity flow system that is designed to accommodate urbanization of drainage basins and sub-basins. This system encourages orderly growth within the natural drainage basin boundaries. This policy encourages urban growth from the lower portion of the drainage basin and discourages pumping of wastewater across basin boundaries.
Maintain and expand programs to recycle and reuse treated wastewater effluent and bio-solids where appropriate.
Encourage programs to minimize impacts of treatment facilities on adjacent properties and natural resources.
Utilize naturalized approaches or bioengineered solutions to drainage issues wherever possible, and use public projects as an opportunity to set positive examples. Seek opportunities for Best Management Practices (e.g. Rain to Recreation, Rain Gardens, etc) that reduce flood damages, protect water quality and natural areas, while providing

for recreational and educational opportunities so as to realize multiple benefits.
Enhance recycling efforts in the community by increasing waste reduction and recycling and reducing the per capita disposal by 30 percent by 2040.
Continue to include, and increase where feasible, renewable sources of energy, such as wind and solar energy, in future planning of LES facilities and partnerships. Continue to investigate the development of Smart Grid technology to increase efficiency and allow consumers a higher degree of control over their energy usage.
Explore efforts to increase access to information technology for all members of Lincoln and Lancaster County, especially within minority, low income, disabled, rural, and aging communities.
Ensure the new broadband infrastructure is available to every student within our community through partnership with educational, business, and community leaders.
Partner with private broadband providers to construct fiber optic-based infrastructure to every home and business in our community.

## Lincoln Water System Facilities Master Plan

[The Lincoln Water System Facilities Master Plan](#) has historically conducted master planning efforts at 5-year intervals; a comprehensive master planning effort every 10 years and updates to address system growth and distribution system needs every 5 years. Water utilities must continuously plan to address system needs and challenges, such as system growth, aging infrastructure, increasingly stringent regulatory requirements, and the need for a well-planned and efficient Capital Improvement Program. The Lincoln Water System Facilities Mater Plan was last updated in 2014 and provides a guide for the short-term and long-term improvements for the infrastructure of the Lincoln Water System through the year 2060.

## Lincoln Wastewater Facilities Plan Update

[The Lincoln Wastewater Facilities Plan Update](#) offers improvements that serve as the basis for the planning, design, and financing of sanitary sewer collection system improvements identified to meet growth and system reliability needs. Planning is a continuous process and recommended improvements may need to be accelerated or deferred to match actual development and as forecasts are replaced with operating records. The recommendations are schematic in nature and should be thoroughly reviewed and updated during the design process. The plan was last updated in 2015.

## Watershed Management

[Watershed Management](#) aims to utilize new technology and ecologically-based engineering and planning practices. The future will bring challenges to avoid the types of stormwater issues that are problematic in the existing urban area. Watersheds will be managed in a proactive, balanced manner which will take careful planning, and the implementation of consistent funding mechanisms and projects. Projects and programs will decrease flood hazards, protect stream channels and preserve water quality.

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## Solid Waste

The [Solid Waste Plan 2040](#) for Lincoln and Lancaster County is a guidance document, communication tool, and a resource for policy decisions regarding solid waste management systems, facilities and programs. The recommendations in the plan move the solid waste management system toward a more comprehensive and integrated strategy and reduced quantities of solid waste going to disposal in landfills. The recommendations are based on a hierarchy of solid waste management practices and guiding principles established in the planning process.

## Lincoln Electric System, Norris Public Power District, and Black Hills Energy

The Lincoln Electric System (LES) is owned by the City of Lincoln. It is operated under the direction of an administrative board appointed by the Mayor and City Council. LES is revenue producing and self-supporting. LES provides electric service to the City of Lincoln and much of the surrounding area within Lincoln's three-mile planning jurisdiction. The LES service area includes the City of Waverly and the unincorporated villages of Cheney, Walton, Prairie Home, and Emerald. The balance of Lancaster County, including cities and villages, is served by the Norris Public Power District.

[The Lincoln Electric System](#) adopted in 2011, the Sustainability Target, which calls for LES to meet the area's future peak load growth through sustainable power resources and energy-efficiency programs that reduce demand on the system. The goal is perpetually ongoing, as every year LES looks to offset demand growth forecasts out another 5 years in the future.

LES has a Sustainable Energy Program which offers customers and contractors financial incentives for energy-efficient installations and upgrades. The program helps lower the cost of energy-smart investments in a home or business while helping lower community-wide demand for electricity.

Black Hills Energy owns and operates natural gas and distribution systems in Lincoln and eight other incorporated and unincorporated communities in Lancaster County. Black Hills Energy transports natural gas to area customers through two major interstate pipeline systems which traverse the county. Black Hills Energy is the only provider of natural gas services in the county.

## Information Technology

Information technology is subject to rapid and dramatic change. The nature of the industry continues to push the limits of the technology. LPlan 2040 notes that "the concept of 'telecommuting' portends a city where people may be able to work from most any site – including their own home. During Covid-19, we have seen businesses and public offices support working from home efforts and an increase in the usage of teleconferencing options. In spring 2020, while students were attending school from home, it highlighted the need to extend Wi-Fi networks into every home to ensure that every student in Lincoln has access to safe and secure high-speed Wi-Fi networks, regardless of income.

The need for additional infrastructure to support wireless facilities, specifically the push for building out the 5G network, is expected to increase in response to rising consumer demand and new applications.

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Intelligent Transportation Systems use computers and digital technology to get the most out of the community’s investment in roads and other transportation facilities. [Green Light Lincoln](#) is an initiative by the City of Lincoln Traffic Engineering Division to improve traffic safety and traffic flow citywide. The continued deployment of Green Light Lincoln will result in vast improvements to the overall traffic signal system, and numerous projects with high benefit/cost ratios.

## Cleaner Greener Lincoln

The [Cleaner Greener Lincoln](#) initiative contributes to the vibrancy of our city, supporting its sustainable, resilient future for generations to come. In recent years, the City of Lincoln has earned numerous accolades – being named one of the safest places to live, the second happiest city in the country and a growing market for tech jobs. This initiative was started over ten years ago.

## Climate Action Plan

The [2020 Draft Climate Action Plan](#), paints a vision for what the City of Lincoln could become over the next 30 years. It is a vision of a city that is thriving with local businesses and verdant greenways; a city that uses both ordinary and innovative measures to reduce greenhouse gas emissions in transportation, electricity and buildings; a city that is inclusive, welcoming and fair. The Climate Action Plan attempts to take an intersectional approach to climate resilience, looking at the ways in which climate risks will intersect with Lincoln’s socio-economic, health and systemic vulnerabilities, and also at the ways in which solutions can have co-benefits across sectors.

## Community Indicators Report

The Planning Department publishes an annual report known as the [Community Indicators Report](#). This report is used to evaluate and monitor changes in the community and assess if assumptions in the Comprehensive Plan continue to be valid. The report is divided into six major areas of interest. A sample of the energy and utility indicators are provided below, and you can view the full report online.

In 2019, non-residential electrical consumption was 1.91 million megawatt-hours by 17,190 customer accounts. In 2010, the consumption was 1.97 million megawatt-hours with only 16,565 customer accounts.
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Although the number of LES residential customers has increased by 10.9 percent since 2010, residential electrical consumption increased by only 4.8 percent during the same period.
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Open space preservation that guarantees vacant floodplain will be kept free of development and higher regulatory standard for development in floodplains are two of the factors considered in the Community Rating System (CRS), which establishes flood insurance rates for communities. Lincoln has a rating of 5, one of the highest in the nation, and those who own property in the floodplain and have flood insurance receive a 25 percent discount as a result.
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Per capita waste is significantly below levels seen prior to 2008, and has been generally steady in recent years. A dramatic increase in FY 2015-2016 can be attributed to an uncharacteristically large amount of contaminated soil being moved to a facility outside Lancaster County, most likely coming from an increase in construction-related waste. In FY 2016-2017 per capita waste returned to levels more consistent with recent years.
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## Staff Discussions

Planning Department staff began engaging with various City and County Departments in 2019 to discuss the upcoming Comprehensive Plan Update. Below is a summary of staff comments that relate to energy and utilities.

Review the possibility of a cost-benefit analysis for each new section of sewer line to be installed in growth areas.
Generation stations should be included in resiliency planning.
Burying power lines is important to neighborhoods.
Explore a second source of water or become a part of a regional water system. Possibly merge with Waverly by 2050 to share water.
Explore the concept that all water has value. For example, utilize treated graywater to deliver to industrial users for nonpotable uses.
Examine possible policies on wind/solar in growth areas.
Review and plan for future technology uses, including small cell.
Work towards becoming a carbon neutral city.

## Energy & Utilities in Other Comp Plans

Planning staff have been researching what innovative practices for energy and utilities are happening in other cities. Some sample goals and priorities from other cities' comprehensive plans are listed below. You can also view the full documents by clicking on the links that are provided.

### Minneapolis, MN Comprehensive Plan

The Minneapolis 2040 Comprehensive Plan includes several policies related to energy, utilities, and technology. Some of the key action items are included below, and you can also view the [Minneapolis 2040 Comprehensive Plan online](#).

Support the education and outreach efforts of transportation management organizations focused on reducing single-occupancy vehicle trips.
Continue to evaluate and implement traffic control measures to minimize vehicle emissions.
Proactively plan for impacts of automated and connected vehicles.
Work with purveyors of new transportation and infrastructure technology to ensure timely, equitable, and climate sensitive deployment.
Proactively ensure that all residents have equal access to information infrastructure.
Decrease demand for energy and increase the proportion derived from renewable energy sources.
Consider climate forecasts in stormwater feasibility and modeling work to inform infrastructure investments.
Prioritize and incentivize energy efficiency improvements in existing residential and commercial buildings with program emphasis on high energy users, historic buildings, low-income neighborhoods, and Green Zones.
Support and incentivize use of geothermal, hydrothermal, and waste energy and heat facilities, including sewer thermal energy recovery, and other clean renewable energy alternatives in building, district, or municipal systems.
Minimize drinking water waste through infrastructure improvements.
Encourage and require reductions in amounts of impervious surfaces. Pilot and promote permeable surface solutions as alternatives to impervious surfaces.

Encourage use of rain cisterns and storage tanks for diversion from public stormwater system and to satisfy on-site graywater uses.
Provide incentives for residents and businesses to divert materials from the trash.

## Oklahoma City, Oklahoma Comprehensive Plan

The Oklahoma City Comprehensive plan, planokc, is organized in a hierarchy with the broadest category being “Big Ideas” that define the overall direction of the plan. Policies and strategies fit within the “Big Ideas” and a sample of the strategies that touch upon the energy, utilities, and technology topics are below. The entire [planokc](#) can be viewed online.

Oklahoma City enjoys safe drinking water, conserves waterways, wetlands and other water resources, and employs practices that protect water quality.
Flooding risk is minimized.
Oklahoma City is a model of energy efficiency and conservation, and sustainable building practices and products.
Drinking water supplies are protected and conserved.
Oklahoma City’s built environment is designed to minimize the effects of urban heat islands.
Allow low-impact development design features such as pervious pavement, rain gardens, landscaped parkways, and alternative curbing designs.
Restore watershed features such as forest, wetlands, and natural stream channels.
Identify and remove barriers related to water conservation practices, including rainwater harvesting, graywater irrigation, treated effluent re-use practices, and others.
For projects involving City rights-of-way, require a coordinated approach to utility work, installation, upgrades, etc. – including water, sewer, stormwater, communications, electricity, and gas – as it pertains to placement, timing, and maintenance. Consider establishing major utility corridors to facilitate this coordination and to signal tangible support for increased development in specific areas throughout the city.

## Madison, WI Comprehensive Plan

The Madison, WI Comprehensive Plan is organized by topic areas, strategies and action items. Energy, utilities, and technology are spread out within multiple topics areas in the Madison plan. Below are some strategies that relate to the energy, utilities, and technology topic. The complete [Madison Comprehensive Plan](#) is also available for viewing online.

Expand access to low-cost, high-speed internet service.
Consider new systems and technologies, such as a 311 system, for people to efficiently communicate with the City.
Increase the use and accessibility of energy efficiency upgrades and renewable energy.
Implement the Energy Plan to reach the goal of 100% renewable and zero-net carbon emissions.
Support infrastructure to expand the use of electric vehicles and other eco-friendly fuel sources.
Use the urban service area process to guide development to areas that can be served best.
Be judicious with outward expansion of utilities and community facilities.