LOVELAND UTILITIES COMMISSION

July 19, 2017 – 4:00pm

Service Center Willow Room – 200 N. Wilson Ave.

REGULAR MEETING AGENDA

CALL TO ORDER

NEW EMPLOYEE INTRODUCTIONS

APPROVAL OF MINUTES – 6/21/2017

CITIZENS REPORT (*See procedural instructions on the following page.)

1. Renewables for Loveland – Bryce Carter

INFORMATIONAL ITEMS

STAFF REPORTS

2. Quarterly Financial Report Update – Jim Lees
3. Boring and Substructure Report – Brieana Reed-Harmel
4. Algae Update & Solar Bee Update– Roger Berg and Joe Bernosky

CONSENT AGENDA

5. Quarterly Goal Updates – Joe Bernosky
6. Wastewater Treatment Plant Biological Nutrient Removal and Digesters Project – Contract Amendment for Engineering Services for Brown and Caldwell – Brian Gandy

REGULAR AGENDA

7. Notice of Award for Package 2 of the Wastewater Treatment Plant Expansion to Garney Construction – Brian Gandy

COMMISSION & COUNCIL REPORTS

DIRECTOR'S REPORT

ADJOURN

The password to the public access wireless network (colguest) is accesswifi

City of Loveland

* Citizens Report Procedures

Anyone in the audience may address the LUC on any topic relevant to the commission. If the topic is a Consent Agenda item, please ask for that item to be removed from the Consent Agenda; pulled items will be heard at the beginning of the Regular Agenda. If the topic is a Regular Agenda item, members of the public will be given an opportunity to speak to the item during the Regular Agenda portion of the meeting before the LUC acts upon it. If the topic is a Staff Report item, members of the public should address the LUC during this portion of the meeting; no public comment is accepted during the Staff Report portion of the meeting.

Anyone making comment during any portion of tonight's meeting should identify himself or herself and be recognized by the LUC chairman. Please do not interrupt other speakers. Side conversations should be moved outside the Service Center Board Room. Please limit comments to no more than three minutes.

Notice of Non-Discrimination

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"La Ciudad de Loveland está comprometida a proporcionar igualdad de oportunidades para los servicios, programas y actividades y no discriminar en base a discapacidad, raza, edad, color, origen nacional, religión, orientación sexual o género. Para más información sobre la no discriminación o para asistencia en traducción, favor contacte al Coordinador Título VI de la Ciudad al TitleSix@cityofloveland.org o al 970-962-2372. La Ciudad realizará las acomodaciones razonables para los ciudadanos de acuerdo con la Ley de Discapacidades para americanos (ADA). Para más información sobre ADA o acomodaciones, favor contacte al Coordinador de ADA de la Ciudad en adacoordinator@cityofloveland.org o al 970-962-3319".

The password to the public access wireless network (colguest) is accesswifi

Commission Members Present: Dan Herlihey (Vice Chair), Dave Kavanagh, David Schneider, Gary Hausman (Chairman), Gene Packer, Larry Roos, John Butler, Randy Williams, Sean Cronin

Alternate Commission Members Present: Stephanie Fancher-English

Commission Members Absent: None

Council Liaison Absent: Troy Krenning

City Staff Members Present: Bob Miller, Brian Gandy, Brieana Reed-Harmel, Courtney Whittet, Cree Goodwin, Jim Lees, Joe Bernosky, John Beckstrom, Kim O'Field, Leslie Moening, Lindsey Bashline, Roger Berg, Matt Sadar, Dave Sehrt, William Ullom

Guest Attendance: Jennifer Gramling, Paul Davis, Jane Clevenger, Dick Mallot

CALL TO ORDER: Gary Hausman called the meeting to order at 4:00 pm.

EMPLOYEE INTRODUCTIONS:

Joe Bernosky
Leslie Moening
Matt Sadar
Dave Sehrt
William Ullom

PRESENTATION OF PLAQUE TO JENNIFER GRAMLING

APPROVAL OF MINUTES: Hausman asked for a motion to approve the minutes of the May 17, 2017 meeting.

Motion: Dave Schneider made the motion.

Second: Gene Packer seconded the motion. The minutes were approved unanimously with the noted changes.

Comments: Dan Herlihey requested a date change on the Approval of April 19, 2017 Minutes. An error had been made and the date listed was for the March 8, 2017 Minutes. Sean Cronin would like it noted in the minutes that on Item 2 – PRPA First Right of Refusal he requested additional information on the role of LUC on the availability of water rights, whether it be C-BT or Windy Gap.

CITIZEN REPORTS:

STAFF REPORTS

Item 5: Community Solar Program Update: Survey Results and Preliminary Cost Estimates – Lindsey Bashline & Paul Davis

Staff from Platte River, Loveland, Fort Collins and Longmont have been working to develop a community solar program that could serve all four municipalities. This item will review the results of their recent customer survey and discuss how this information will be used to guide a community solar program design.

Staff report only. No action required.

Comments: Larry Roos had questions regarding the comparison between Community Solar costs and Rawhide costs. Davis responded that they aren't really comparable as they are 2 different products. Cronin questioned how effective the marketing has been to existing and potential customers because he is a GreenSwitch customer paying the premium, but he is not quite sure what he is paying for. Davis said while the GreenSwitch program showed interest of about 40% in a survey, actual participation was only 2%. The survey for Community

Solar shows an interest rate of 30% but he expects to see a participation rate similar to GreenSwitch. Energy Model is paying extra cost monthly vs. Capacity Model, which is an upfront cost by the customer. Roos questioned why are we even planning this. Lindsey Bashline stated that there has been customer interest in the past and this is just another option to be able to offer customers. Stephanie Fancher wanted to clarify, if there is not enough participation to cover the costs, that the utility pays for it, most likely through an across the board fee for all utility customers.

INFORMATION ITEMS

Item 1: Financial Report Update – Jim Lees
This item summarizes the monthly and year-to date Preliminary financials for May 2017.

Information item only. No action required.

Item 2: Pole Attachment Rate Calculation – Jim Lees
This item documents how the fee for attaching to City of Loveland Power poles is calculated.

Information item only. No action required.

Comments: Dave Kavanagh questioned if we had made any adjustments for FCC Docket Number 15.151, which was put out in 2015 requiring a change in 2016. Jim Lees stated no we had not. Kavanagh also asked if the charge for cable was the same amount we were charging for broadband, Lees confirmed that we charge the same rate to broadband. Lees advised we did have a consultant do a study last year and made no adjustments, however he will look into this.

Item 3: Water Supply Update – Larry Howard
This item documents how the fee for attaching to City of Loveland Power poles is calculated.

Information item only. No action required.

CONSENT AGENDA

No Consent Agenda Items

REGULAR AGENDA

Item 4: 2018 Budget Review for Water, Wastewater and Power – Jim Lees
The purpose of this is to ask the LUC to adopt a motion recommending that City Council approve the proposed 2018 Water and Power budget.

Recommendation: Adopt a motion recommending that City Council approve the proposed 2018 Water and Power budget.

Motion: Dan Herlihey made the motion.
Second: John Butler seconded the motion. The motion was approved unanimously.

Motion: Sean Cronin made a second motion in response to evolving Water & Power demands and recovery from previous staff shortages, the LUC fully supports the staffing and related expenses and encourages the City Manager to fully evaluate the proposal and work closely with Water & Power Director to fully fund the proposal.
Second: Randy Williams seconded the motion. The motion was approved unanimously.

Comments: Dan Herlihey asked if the necessity for additional FTE positions is related to growth. Bob Miller and Roger Berg stated it is due to growth, increased workload and succession planning. Cree Goodwin stated that GIS/Utility Application Services is currently staffed by three positions and there is an increase in workload that is driven by GIS based technology. Cronin wanted to know if there was any advantage to going above and beyond a motion, he would like it noted that staff is important and can be overlooked in the wake of expensive capital projects. Gene Packer made a point that the motion and vote is for the budget as a whole and the city manager would most likely welcome additional comments regarding staffing. Cronin questioned the source of the recommendation for the 3.5% pay increase across the board, Lees responded the pay increase came from the budget office and is citywide. Cronin questioned why Meter Reading/Utility Billing is not part of the enterprise and is listed under the general fund. Would it be more cost effective and better customer service if it were included in the enterprise? Lees explained that Meter Reading/Utility Billing has bounced back and forth several times between the utility and finance. Dave Kavanagh questioned the amount budgeted for non-revenue water loss. Roger Berg explained the difference between non-revenue water and water loss. He also advised that we do not have as much budgeted for water main repairs, but it will ramp back up in 2020 through to 2026 for rehabilitation and replacement. Kavanagh questioned whether we could use surplus funds later in the year to work on water main rehabilitation. Berg explained that just recently a location was identified on Wilson Ave south of 1st St that is in need of urgent repair. Money was moved from a Water Resources account to cover the cost of repair for this section of water main. Cronin had questions about the C-BT Facilities Contract. Larry Howard advised this is a 25 year contract that is renewable. The contract was implemented in 2001 and should we decide not renew it in 2026, we would need to put a pump station down by the river to pump water into Green Ridge Glade Reservoir. Cronin questioned the Environmental Mitigation in Big Thompson Canyon, Howard and Berg stated this was for demolition and restoration after powerhouse and penstock removal. Kavanagh identified that there is a budget item for Canyon Electric Phase 4, but LUC never saw Phase 2 or 3. Some of the phases have been shuffled around depending on CDOT work and some of the phases were relabeled, Miller stated he would look into it and get back to LUC.

COMMISSION/COUNCIL REPORTS

Item 6: Commission/Council Reports
Discuss events that the Loveland Utility Commission Board members attended, special topics and any City Council items related to the Water and Power Department from the past month.

- City Council Report
- 2017 Annual Tri-City & District Water Board Meeting

Dan Herlihey:
Dave Kavanagh: Regarding the Foundry, he would like to know how much it will cost the utility to pump, treat and drain the groundwater into the City's storm drains.
Dave Schneider: Still had questions the investment portfolio doing poorly. Jim Lees advised that the projected return percent from the budget office was 1.75% however the actual has only been 1.3%. Larry
Gene Packer:
Gary Hausman: Tri-City Meeting was outstanding.
John Butler:
Larry Roos:
Randy Williams: Likes the live link to the Solar Facility. Very happy to see power work on Glade Rd behind his house.
Sean Cronin: Would like future reports, presentations and conversations about water rights, selling and securing of water units. Gary Hausman stated that we have had those discussions in the past, Larry Howard stated that there are updates that will be forth coming however nothing in the next few months.
Stephanie Fancher-English:

Council Report: Joe Bernosky gave on behalf of Troy Krenning

City Council Regular Meeting – June 6:

- Hydrozone Program Code Amendments (Greg Dewey)
- Pole Attachments (Breiana Reed-Harmel)
- Amend Muni Code to Standardize Adoption Method of Electric Development Standards (Kim Fentress)

City Council Study Session – June 13:

- Foundry Project Groundwater Update (Public Works)
- Capital Improvement Plan (Finance)

City Council Regular Meeting – June 20

- MEETING CANCELLED

DIRECTOR'S REPORT

Item 7: Director's Report – Joe Bernosky

ADJOURN The meeting was adjourned at 6:43 pm. The next LUC Meeting will be July 19, 2017 at 4:00 pm.

Respectfully submitted,

Courtney Whittet
Recording Secretary
Loveland Utilities Commission

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 1
MEETING DATE: 7/19/2017
SUBMITTED BY: Bryce Carter
STAFF TITLE: Colorado Sierra Club

ITEM TITLE:

Citizens Report – Renewables for Loveland

DESCRIPTION:

Bryce Carter, Conservation Programs Manager for Colorado Sierra Club, will be making a short presentation on renewable sources of energy.

SUMMARY:

Loveland citizens representing Ready for 100, a community group working to accelerate a transition to 100% renewable energy, have asked Mr. Carter to make a presentation to the Loveland Utilities Commission.

RECOMMENDATION:

Information item only. No action required.

ATTACHMENTS:

- Attachment A: Sierra Club Guidelines and Recommended Actions for 100% Renewable Energy
- Attachment B: PowerPoint Presentation Colorado Ready for 100

Attachment A

Achieving an Equitable and Just Transition to 100% Clean, Renewable Energy

Guidelines and Recommended Actions for U.S. Communities

Table of Contents

Acknowledgements

As a member of the Global 100% Renewable Energy Campaign, our guidelines and recommended actions for achieving a 100% renewable energy align with the international 100% Renewable Energy criteria, while also taking into consideration Sierra Club energy policies, and local and regional factors.

Thank you to the following organizations for their review and input on this document:

Renewable Cities
Center for Social Inclusion
ICLEI
Institute for Sustainable Communities
Meister Consulting Group

Introduction

The time for 100% clean, renewable energy has come. For too long, low income communities and people of color have borne the burdens of dirty energy in our communities. Rural and suburban workers are witnessing closure of coal plants due to market trends. And from mega-storms to drought and wildfires, communities across the country are beginning to experience the severe impacts of climate change. Local municipal leadership is necessary to shepherd the U.S. towards climate change mitigation and resilience. Numerous studies show that it is possible to eliminate fossil fuels around the globe by the year 2050. Studies of the U.S. align with this global finding and show it is technologically and economically possible to achieve 100% clean energy across the country by 2050 or even sooner. The challenge of this century is to transition to 100% clean, renewable energy in the United States and across the globe. Converting our energy sources to 100% renewable, sustainable energy is critical step in achieving the Greenhouse Gas reductions necessary to avoid the worst impacts of climate change. While not a simple transition, it is one we must pursue now in order to accomplish this transition in time.

As a member of the Global 100% Renewable Energy Campaign, our guidelines and recommended actions for achieving a 100% renewable energy align with international criteria, while also taking into consideration Sierra Club energy policies, and local and regional factors.

What is a 100% Renewable Energy Community?

Local or regional governments can show leadership in our transition to 100% renewable energy by setting a target to move the entire community to 100% clean, renewable energy and then actively pursuing a path towards implementation. A number of communities have already achieved this 100% renewable electricity, and many others have adopted strategies to move towards meeting 100% of their electricity, transportation, and heating and cooling needs from renewable energy sources . It can also refer to jurisdictions that have exceeded the 100% Renewable Energy benchmark for their community and become exporters of renewable energy.

A community-wide 100% goal should be realistic, time bound, developed in partnership with the community, and accompanied by plausible implementation measures. It must also take into account the imperative to move off of fossil fuels as a nation no later than 2050. A 100% goal is fully achieved when the amount of energy generated from renewable energy sources in the community (or brought into it) equals or exceeds 100% of the annual energy consumed within

that community. Guidelines and recommended actions for what a community-wide commitment to an equitable and just transition to 100% clean and renewable energy are outlined below.

Guidelines

Guideline 1: Efficiency First

Reducing the amount of energy used to power our economy and scaling up energy efficiency is essential to empowering a 100% clean energy future for all, and will make reaching that target easier and more cost effective. Determining the potential for energy efficiency and energy savings are a critical first step to implementing a 100% clean energy strategy. Before determining how much renewable energy is needed, first assess how the present energy demand can be reduced significantly. Strategies to enhance energy efficiency and energy savings technologically include weatherization, cogeneration, district heating and cooling, decentralized electricity generation and smart grids/microgrids, the use of industrial waste heat, building controls, automated lighting, and solar-powered hot water heaters. Cities should also pursue non-technological measures that enable behavior shifts (e.g. electricity saving campaigns) and creating a culture of energy saving behavior.

For research, policy analysis, and expert guidance on energy efficiency go to the American Council for an Energy-Efficient Economy (ACEEE)

Guideline 2: Equitable and Just

The transition to 100% renewable energy can bring a wealth of community benefits, particularly to those who are most vulnerable. Transitioning our energy systems entirely to renewable energy presents an unprecedented opportunity to address inequality and lift up those most impacted by climate change and fossil fuel extraction, infrastructure, and combustion. The transition to renewable energy can be a vehicle to decentralize and democratize our energy infrastructure, reduce and stabilize costs, create jobs, improve grid reliability, and distribute the economic benefits of generating energy more equitably. For examples, cities have been able to reduce electricity cost to consumers by integrating solar panels into their electrical generation mix. In order to achieve these benefits, we must be intentional and steadfast in integrating solutions to these challenges into the transition plan.

A transition to 100% renewable energy should include policy mechanisms and financial incentives that enable the following principles:

- **Create Quality Careers** for all people employed in clean energy industries. Local clean energy transitions must create local jobs that are self-determined by community members and community needs. Jobs created from cities transitioning to clean energy should be quality, fair-salary or unionized jobs that prioritize employing the often

non-traditional workers in clean energy programs, and people from traditionally marginalized backgrounds.

- **Provide a Just Transition** that protects the livelihoods and well-being of fossil fuel workers and communities. Communities whose primary economic driver has been the fossil fuel industry, that have borne the polluting brunt of fossil fuel production and/or workers currently employed by the fossil fuel industry - deserve protection, support and right to first access of new economic opportunity during a nationwide energy and economic transition to 100% renewables. Cities should address the needs of workers by engaging community-leadership and voices throughout the design and implementation of the transition plan.
- **Ensure Equitable Access** to clean-energy-related economic opportunities (including careers, wealth, and clean energy infrastructure) for vulnerable communities and individuals especially working class and low-income people, people of color, women, and youth. Regulatory models should prioritize ownership and benefits of the new energy system for people of identities that have been historically marginalized by the fossil-fuel economy.
- **Provide Affordable Clean Energy Options**, especially for members of vulnerable communities. A city transition plan should prioritize financing models that enable all income brackets and business sizes to choose 100% clean energy renewable energy The transition plan should secure community benefits and cost affordability of utility-scale renewable energy alongside growth in locally-owned, affordable options for distributed energy. Public financing programs should redirect money saved from energy efficiency measures to fund more community-owned clean energy and transportation projects, especially in communities with greater financial need.

Guideline 3: Clean and Renewable

Clean, renewable energy is defined as carbon and pollution free energy sustainably collected from renewable sources including wind, solar, tidal, and geothermal. Low-impact, small hydro and some forms of biomass may be included after being evaluated for sustainability and environmental justice implications. Nuclear, natural gas, coal, oil based, or any other forms of carbon-based energy production are not included as clean or renewable sources of energy.[1]

Guideline 4: All Sectors: Electricity, Heating and Cooling and Transportation

A community's 100% commitment should aspire to transition all energy sectors, including electricity, heating and cooling, and transportation. It is likely your community will be able to transition one sector faster than others, though the vision for the transition to 100% should encompass all types energy use in the city. One recommended approach is to set a goal of transitioning all energy sectors by 2050, with shorter-term targets for the sectors that can be

[1] Full details on Sierra Club's energy policies can be found at http://www.sierraclub.org/policy/energy

transitioned sooner. If it is not feasible to set a goal for all energy sectors, begin by establishing a goal to transition the electricity sector.

Guideline 5: Community-Wide

A number of communities have set (or achieved) goals to supply all the energy used by their municipal facilities or operations with renewable energy. Powering municipal operations with 100% renewable energy can be an important milestone on a city's path to 100% clean energy, but a municipal target alone does not achieve the scale necessary to address social and environmental threats facing us. A strong commitment to 100% clean, renewable energy is one that commits to transitioning the entire community to 100% renewable energy (in other words, it covers all energy used within a city-limits). Some cities are taking this on for their jurisdiction and others are working in cooperation with surrounding communities.

Guideline 6: Inclusive and Transparent Process

In order to successfully achieve an equitable and just transition to 100% clean, renewable energy, it's critical to develop and implement the commitment through inclusive and transparent processes. Individual citizens, local community organizations, public institutions, and small and large businesses must work in tandem to form the new system. Realizing just solutions requires inclusive policy processes and soliciting input from all of a community's diverse stakeholders on their needs and ideas. It also requires assessing and defining those populations most likely to be impacted by environmental problems and related climate and energy policies. This involves prioritizing a range of public participation opportunities and listening to and learning from people under-represented in decision-making processes and those who experience forms of discrimination and inequality.

Guideline 7: Include an Ambitious Target for Local and Distributed Energy

There is a tremendous amount of untapped renewable energy potential on rooftops and underutilized open space within the city-limits of our communities. Local, distributed energy provides a number of benefits to the community. It increases grid security and reliability, grows the local economy, creates new jobs, and provides an opportunity to increase local ownership of these assets and spread the economic opportunities of transition to clean energy across the community. A community's 100% commitment should incentivize a diversity of local investment and procurement options, and be coupled with standards for local hiring, workforce development, and options community ownership.

Recommended Actions

Action 1: Announce a Visionary Target

A statement or proclamation of 100% clean, renewable energy by a city leader is important to mark the beginning of a city's commitment to craft a strategy that moves it off of fossil fuels. It serves as a call to action to motivate local stakeholders, begin a conversation, and build a common vision of the city's energy future. 100% clean energy targets can vary by region, but should be time-bound, measurable, developed in partnership with community leaders, and include a commitment to address affordability, equity and access for all members of the community.

To date, cities have adopted this goal through a variety of commitments; following a Mayoral Commitment, San Francisco, CA integrated a goal of 100% RE into their climate action plan; Pueblo, CO and Moab, UT adopted city council resolutions; and in Burlington, where the community is served by a municipal utility, the city integrated the goal into the utility's integrated resource plan.

The outcomes of the 100% commitment greatly depend on who within your community signs on to it. A mayoral commitment is a strong first step, but the mandate to implement it is strengthened by a binding commitment and clear assignment of responsibilities for implementation. It will also be critical to engage in negotiations with the company(s) that currently provide electricity, transportation, and heating services for your community as soon as possible.

A commitment to 100% renewable energy should include the following core elements:

- **All Electricity:** A full transition of the electricity sector to clean, renewable energy;
- **By 2035:** A target year for when this commitment will be achieved no later than 2035 for electricity and 2050 for all energy sectors;
- **Ensuring Equity, Affordability, and Access:** A commitment to achieving equity, affordability, and access for all members of the community in the transition to 100% renewable energy;
- **Clean and Renewable Resources Only:** A clear definition of clean and renewable resources; and
- **A Transparent and Inclusive Process:** A commitment to a transparent and inclusive process for planning and implementation, ensuring that the public has an opportunity to participate.

We suggest the commitment also include:

1. **All Energy Sectors:** A commitment to transition other energy sectors to 100% including transportation and heating and cooling;

2. **A Goal for Local Generation:** A goal for how much of the community's energy needs will be met by local, distributed generation;
3. **Timeline for Planning and Implementation:** At least the first year, ideally a five year plan;
4. **Commitment to Collaboration:** A commitment to work with surrounding communities in achieving aligned clean energy and equity goals;
5. **Commitment to Advocate:** A commitment to advocate for policies or regulations at the state, regional and/or federal level that aid the city in their transition

Action 2: Assess Opportunities

Cities have more authority over their community's energy resources than you may realize. Below we've summarized the pathways cities have pursued to-date to implement their 100% electricity commitments. Each city should do an individual assessment of the options currently available based on regional and state laws.

PLANNING AND ASSESSMENT - As a first step in your roadmap, we recommend that you assess your baseline energy, greenhouse gas emissions, and socioeconomic factors.

- **Energy:** Important indicators to track for energy include total annual electricity consumption, total greenhouse gas emissions, the utility's current electricity resource mix, percentage of rooftops with solar installed, and the average cost of electricity per ratepayer. There are a number of energy and GHG baseline planning tools including ICLEI, NREL, and Project Sunroof.
- **Equity:** Socioeconomic indicators that you can track include the number of local clean energy jobs created, money saved from the avoidance of energy imports, economic benefits to local businesses and industries, decrease in energy costs, especially for low- and moderate-income households, avoided pollution and related health costs, and ensuring that a minimum percentage of all investments in clean energy infrastructure benefits disadvantaged communities, with a minimum of projects located directly in those communities. The UC Berkeley Labor Center and the Energy Democracy Alliance both have detailed guidance on this topic.
- **Policy and Regulatory Landscape:** It is also critical to assess the local, state and federal policy landscape on energy - what are the current laws in place to enable the transition, what successful policies have other local or state governments implemented. The State Policy Opportunitiy Tracker and the Database for State Incentives for Renewable Energy are both excellent resources to determine what existing energy laws and regulations are in place in your state.

ELECTRICITY. The following are examples of how other cities that have committed to 100% have pursued their goal. In order to achieve 100%, it is likely that your community will pursue a mix of the options outlined, and may also help to develop investment and partnership models not yet in practice.

- **Direct Investment in local, distributed solar and wind:** There are a range of ways the city can meet its 100% goal through local, distributed wind or solar:
    - Power at least a portion of municipal operations with on-site generation
    - Adopt city policies that enable residents and small businesses to install on-site renewable projects and/or invest in community solar or wind projects
    - Incentivize commercial, industrial, and other large-energy consumers in utilizing roof and parking-lot space for on-site solar and wind through building codes, simple permit processes and/or local tax incentives.
    - Participate in cooperative buying pools with other municipalities or large energy customers to aggregate your buying power.

  Check out the US Department of Energy SolSmart Program for more information and examples of case studies of cities like Hartford, CT, Columbia, MO, and Milwaukee, WI, just a few of the cities that have been designated as gold leaders in making it faster, cheaper, and easier to go solar.

- **Power Purchase Agreements (PPA)** - PPAs offer an avenue for communities to build commercial or utility-scale renewable energy projects to power municipal operations, hospitals, public schools and other energy users by contracting directly with an independent electricity generator or system owner to finance and implement renewable energy installations. Benefits of PPAs include the delivery of predictable, lower cost energy, long-term pricing, renewable energy certificates and tax credits, without large upfront costs. See NREL and SEIA for more details on PPAs.

- **Work with your Current Utilit(ies):** Most electric utilities in the U.S have invested in some level of renewable energy, and many are mandated by state renewable portfolio standard to transition a large percentage of their energy portfolio to renewable resources. Community-wide, you will likely represent a significant percentage of their total customers and load, and therefore have leverage to push the utility to pursue more ambitious renewable energy investment plans. Opportunities where cities can pursue the conversation on 100% include the utility's integrated resource planning process, and via the franchise agreement in place in most communities granting the utility right-of-way for transmission and distribution infrastructure. Shortly following Salt Lake City's commitment to 100% Renewable Energy, the city announced a new agreement with their utility, Rocky Mountain Power, in which the utility committed to working with the city to achieve their energy goals.

- **Existing Cooperative and Municipal Utilities:** Many of the communities that have successfully transitioned to renewable electricity - including Burlington, VT, Aspen, CO and Georgetown, TX - are served by a municipal or cooperative electric utility that own the power generation sources or engage in Power Purchase Agreements for their electricity customers. In places where a local community is already served by a municipal or cooperative utility, the local government can direct the utility to increase their use of renewable energy sources and implement programs that incentivize

residential and commercial action on energy efficiency, rooftop solar, and electric vehicle infrastructure.

- **Community Choice Aggregation (CCA)** - Community Choice Aggregation allows local governments to pool (or aggregate) their electricity load in order to purchase and/or develop power on behalf of their residents, businesses, and municipal accounts. CCA is an energy supply model that works in partnership with the region's existing utility, which continues to deliver power, maintain the grid, provide consolidated billing and other customer services. Historically, local governments have pursued CCA's in order to secure lower electricity rates for their residents. Recently in California CCA programs have launched that offer both lower rates and a cleaner electricity mix than what is offered by the existing utility.[2] CCA's are currently legal in CA, NJ, IL, MA, OH, RI, NY and under consideration in MN and UT. For more detail check out the Local Energy Aggregation Network.

- **Municipalization:** Municipalization is when a city or county takes control of its electric or gas system from an Investor Owned Utility (IOU) or Rural Electric Cooperative (Co-op). In addition to enabling a community to sources its energy needs from renewable energy, forming a municipal utility can lower rates, improve reliability, and create more community control over how the utility is operated. In recent years, Boulder, CO, Thurston County, WA, and Daytona Beach, FL have all pursued municipalization. For more detail check out the Community Power Network.

[Side Box] A Note on Unbundled Renewable Energy Credits (RECs). We do not recommend this as an investment primarily because RECs do not provide a potential for energy-costs savings, local job creation nor a guarantee of new renewable energy online. However, if a city does purchase RECs to offset the current electricity mix, you should ensure that the RECs meet the EPA's guidance on purchasing RECs and are sourced from facilities within your local renewable certificate tracking system. Over time, we advise the city to phase down the purchase of RECs and replace with direct investments in renewable energy projects as quickly as possible.

TRANSPORTATION

For the transportation sector, we recommend that the community pursue the following actions:

- Establish policies that reduce vehicle miles traveled by shifting passengers and freight to more efficient modes of travel, including transit, walking and biking, and creating an integrated transportation system.
- Establish policies that build infrastructure for electric cars, buses, and trucks.

[2] http://www.ebce.org/app_pages/view/41

- Establish vehicle fleet mandates that eventually require 100% of municipal vehicles (cars, garbage trucks, etc.) and transit vehicles (buses and non-revenue fleet cars) are electric, with interim targets created.
- Promote a widespread switch among the public to electric vehicles through programs such as educational outreach, excise tax waivers, rebates, EV car-sharing programs, etc.
- Ensure broad stakeholder engagement on green transportation, including among city and state agencies, utilities, various community, environmental, and health NGOs, impacted industry groups, and the public at-large.
- Prioritize smart land-use planning, public transportation and clean, alternative modes of travel in local transportation budgets
- Reallocate funds to support integrated multi-modal public transportation infrastructure and clean modes of transportation (high capacity vehicles, rail, light rail and subway systems, walking, biking, and bus, as appropriate), as well as judiciously prioritized road and infrastructure repair.

Action 3: Build a Policy Framework

A roadmap can help your community to define concrete, funded activities with assigned accountability for research, development and implementation. It is critical to underpin the city's transition roadmap with plausible policy measures that integrate this commitment with existing to fiscal, energy, economic and infrastructure policies. Below are some examples of of city climate and energy plans that include roadmaps to achieving 100% renewable energy:

- San Francisco, CA: Renewable Energy Task Force Recommendations Report
- Greensburg, Kansas: Sustainable Comprehensive Master Plan
- Burlington, VT: Climate Action Plan
- San Diego, CA: Climate Action Plan

ICLEI's 100% Renewable Energy Cities & Regions Network provides guidance, tools and a network of experts that can aide you in developing a plan to transition your community.

Action 4: Demonstrate Immediate Progress

Build, support or incentivize clean energy projects that benefit low-income residents and/or communities impacted by fossil fuels. Public buildings can also serve as locations for clean energy projects. Its critical that these projects are built at-scale, and not just small demonstration projects that generate a small portion of the building's energy needs.

Action 5: Invest in Learning and Cooperate with Surrounding Areas

The path to 100% is still being built. We do not have all the answers to how we will accomplish this transition today. In fact, a number of the solutions that will enable this transition have yet to be developed or refined. Further each community's unique geography, history, demographics, and socio-economic characteristics will shape and influence the solutions each city pursues.

Cooperation among cities, towns, and rural areas can provide advantages and efficiencies for all parties since most cities cannot meet this transition within their city boundaries, and rural communities. Over 2500 cities from across the globe are also sharing their progress and lessons learned through the UNFCCC's Global Climate Action tracker.

Action 6: Track and Assess Progress

Track and assess your progress towards 100% and evaluate ways to improve, refine and build upon the initial projects pursued. There are a number of well respected tracking tools for cities that are implementing climate and energy solutions including Star Communities, ICLEI's HeatPlus, and CDP.

Action 7: Advocate

A transition that achieves all of the principles and guidelines outlined in this document will require each community to become strong advocates for policies at the state and federal level that encourage rapid deployment of renewable energy. It will also be critical to engage in ongoing dialogue and negotiations with the companies that currently provide electricity, transportation, and heating services for your community.

Appendix 1: Summary of City Commitments (As of November 30, 2016)

City	State	Population	Transition Year	Resource Mix	How
100% Clean Energy Communities					
Aspen	CO	6,600	2015	46% small hydro, 54% wind, 1% landfill gas	City Commitment achieved through Direct ownership and PPAs
Burlington	VT	42,282	2015	77% Class II RECs, 23% Hydro, 0.3% Solar	Municipal Utility Integrated Resource Plan achieved through direct ownership PPAs and RECs
Columbia	MD	133,358	2015	75% wind, 25% solar	RECs
Greensburg	KS	14,660	2013	wind, solar, geothermal	local solar and geothermal + PPA for 12.5 MW of wind
Kodiak Island	AK	14,135	2012	Wind and Hydro	Kodak Electric Association adopted goal and built wind
Rock Port	MO	1300	2008	100% Wind	PPA
Communities Committed to 100%					

Boulder	CO	103,166	2030		Mayoral Commitment
Del Mar	CA	4,400	2035		Council Resolution
East Hampton	NY	21,457	2030		Council Resolution
Georgetown	TX	54,256	2017		Utility Integrated Resource Plan, implemented through Wind and Solar PPAs
Grand Rapids	MI	192,294	2020		
Nassau	NY	4,789	2020		Proclamation
Palo Alto	CA	63,000	2017		Climate Action Plan
Park City	UT	7962	2032		Council Vote and Mayoral Pledge
Rochester	MN	110,742	2031		Mayor Proclamation
Salt Lake City	UT	191,180	2032		City Council Approved Climate Plan
San Diego	CA	1,300,000	2035		Climate Action Plan
San Francisco	CA	805,235	2020	pursuing primarily through CCA program	Mayoral Commitment and Climate Action Plan
San Jose	CA	960,000	2022		"Green Vision"
Taos	NM	5731	2030		Joint Resolution
St Petersburg	FL	249,688	2030		Council Resoution

SIERRA CLUB COLORADO

READY FOR 100%

The Movement to 100

Renewable Energy Transition and the Sierra Club Ready for 100 Campaign

SIERRA CLUB COLORADO READY FOR 100%

Who we are

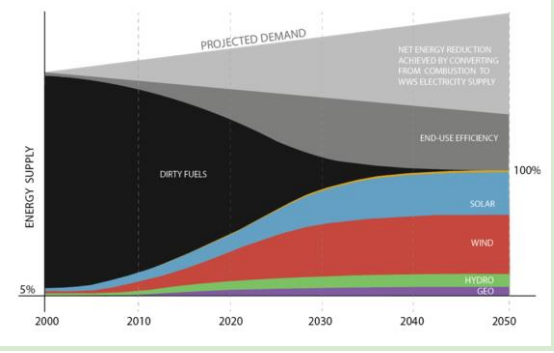
Sierra Club is one of the oldest and largest environmental advocacy organizations with 3.1 million members and supporter

Colorado Sierra Club has over 80,000 members and supporters

Loveland has over 1,700 supporters

Ready for 100

Ready for 100 is an ***educational*** campaign of the Sierra Club is asking *Mayors, Private Boards (co-ops), and other Administrative Bodies* to obtain a commitment from community leaders to achieve 100% renewable electricity through an equitable transition by no later than 2035.

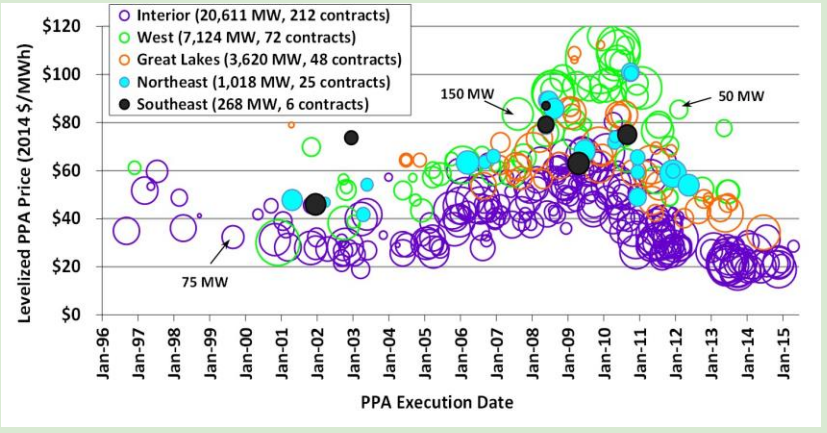


Ready for 100

The *Theory of Change* is establishing ***collective bargaining power*** of power utility customers (Xcel Energy, Black Hills, Tri-State, etc.) for achieving 100% renewable electricity. If utilities are unable to competitively achieve such a goal, then these customers will shop elsewhere and they'll lose business.

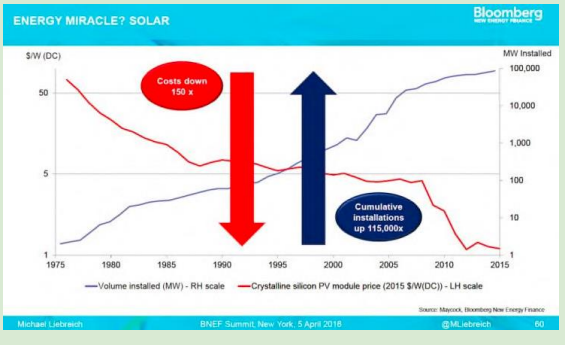
The Unstoppable Shift to Renewables

2015 wind prices are hitting .02 cents per kilowatt hour (NREL 2014 Wind Technologies Market Report)



The Unstoppable Shift to Renewables

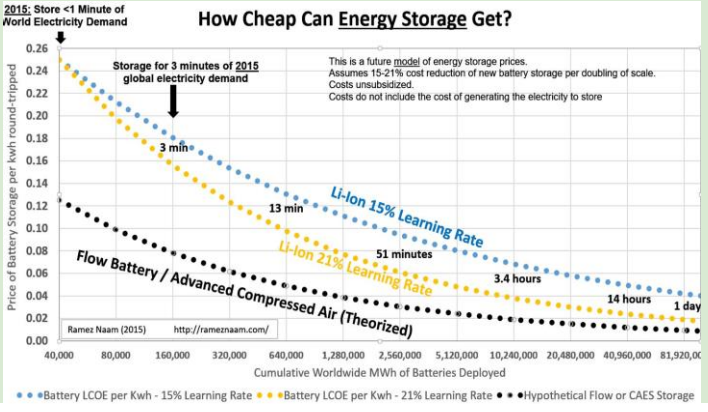
"Solar is already at least as cheap as coal in Germany, Australia, the U.S., Spain and Italy. The levelized cost of electricity from solar is set to drop another 66% by 2040. By 2021, it will be cheaper than coal in China, India, Mexico, the U.K. and Brazil as well." (Bloomberg New Energy Finance)



SIERRA CLUB COLORADO

The Unstoppable Shift to Renewables

Tuscon Electric enters contract for solar and **storage** project at 4.5 cents per kilowatt hour. NextEra Energy will build a 100 MW solar array with a 30 MW, 120 MWh energy storage facility (Utility Dive, May 2017)



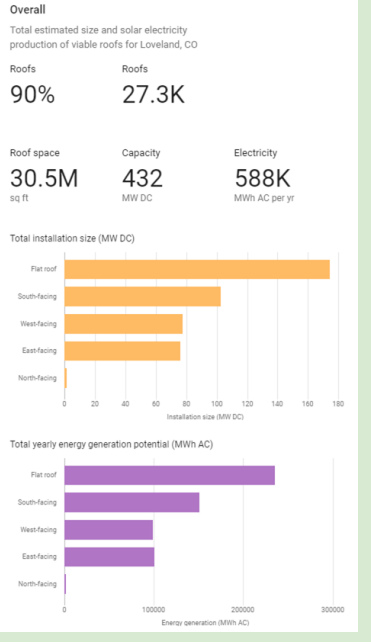
SIERRA CLUB COLORADO

Loveland's Solar Potential

If all the viable solar installations were implemented, the amount of avoided CO_2 emissions from the electricity sector in Loveland would be:

Carbon dioxide		Passenger cars		Tree seedlings
358K	=	75.7K	=	9.2M
metric tons		taken off the road for 1 yr		grown for 10 yrs

Project Sunroof



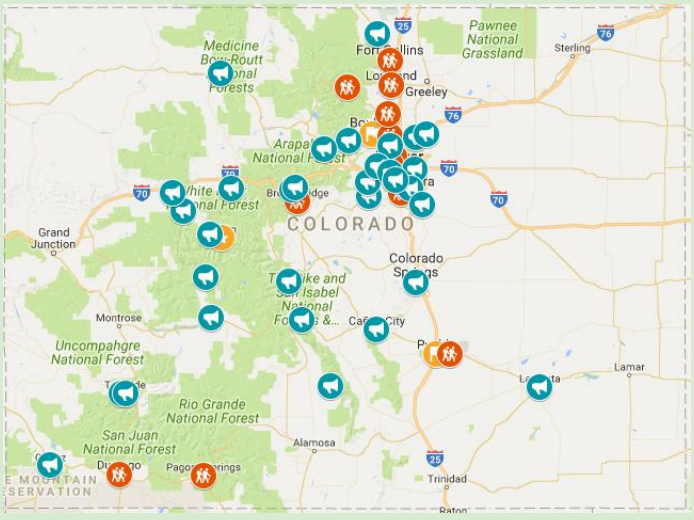
Why pursue 100%?

"By committing to transition to 100% clean and renewable energy, Pueblo will set a powerful example for other cities in Colorado to join us in making clean energy a priority. Our hometown deserves more opportunities in the growing clean energy sector. This commitment will provide long-lasting benefits to our hometown by creating more jobs and energy security, cleaner air, and equitable access to affordable energy. No one should have to choose between feeding their family or keeping the lights on and our commitment to 100% clean energy will provide important relief to families throughout Pueblo."

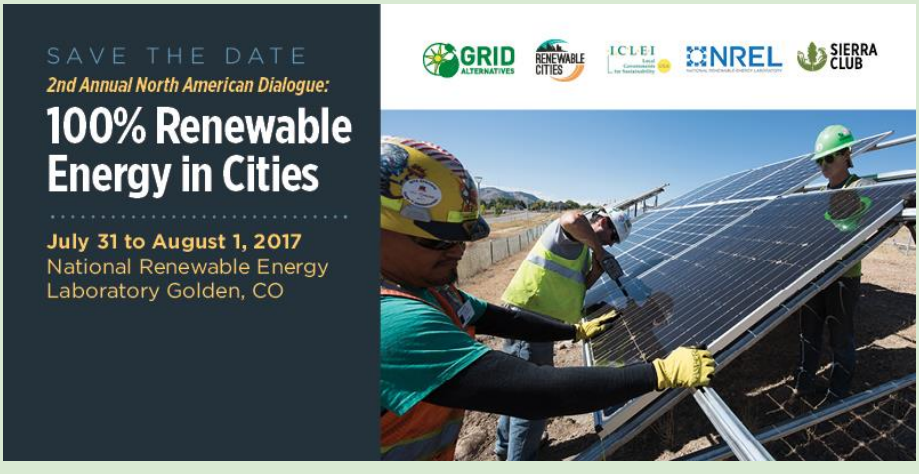
- Pueblo City Councilman Larry Atencio

An Inclusive Transition

A Growing Network



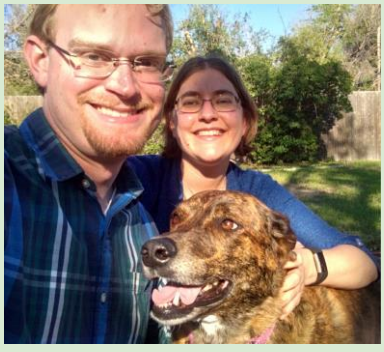
100% Dialogue



Our Movement in Action

Questions?

Bryce Carter
Conservation Programs Manager
Colorado Sierra Club
bryce.carter@sierraclub.org
303-454-3364



LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 2
MEETING DATE: 7/19/2017
SUBMITTED BY: Jim Lees
STAFF TITLE: Utility Accounting Manager

ITEM TITLE:

Quarterly Financial Report Update

DESCRIPTION:

This item summarizes the monthly and year-to date Preliminary Financials for June 2017.

SUMMARY:

The June 2017 financial reports are submitted for Commission review. The following table summarizes the sales and expense results for the month of June, and the June Year-To-Date results in comparison to the same periods from 2016. The summarized and detailed monthly financial statements that compare June Year-To-Date actuals to the 2017 budgeted figures are attached.

	June				June Year-To-Date			
	2017	2016	$ Ovr/(Und) vs. 2017	% Ovr/(Und) vs. 2017	2017	2016	$ Ovr/(Und) vs. 2017	% Ovr/(Und) vs. 2017
WATER								
Sales	$1,393,079	$1,282,326	$110,753	8.6%	$5,670,439	$4,937,432	$733,006	14.8%
Operating Expenses	$949,818	$983,369	($33,550)	-3.4%	$10,639,501	$5,559,511	$5,079,990	91.4%
Capital (Unrestricted)	$231,232	$641,315	($410,083)	-63.9%	$565,870	$2,317,480	($1,751,610)	-75.6%
WASTEWATER								
Sales	$954,998	$844,321	$110,677	13.1%	$5,427,698	$4,798,655	$629,043	13.1%
Operating Expenses	$530,141	$519,583	$10,558	2.0%	$3,293,961	$2,942,754	$351,207	11.9%
Capital (Unrestricted)	$296,123	$402,883	($106,760)	-26.5%	$947,133	$1,172,584	($225,451)	-19.2%
POWER								
Sales	$4,719,838	$4,532,516	$187,322	4.1%	$28,063,139	$26,924,272	$1,138,866	4.2%
Operating Expenses	$5,497,801	$5,514,755	($16,954)	-0.3%	$26,345,181	$24,966,912	$1,378,269	5.5%
Capital (Unrestricted)	$2,525,670	$411,433	$2,114,237	513.9%	$6,799,664	$3,853,398	$2,946,266	76.5%

RECOMMENDATION:

Staff item only. No action required.

ATTACHMENTS:

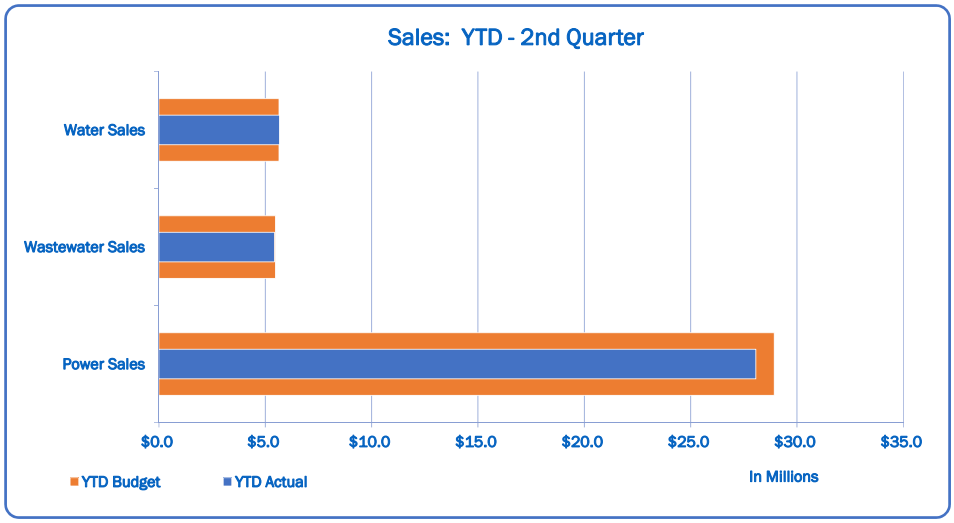
- Attachment A: 2nd Quarter 2017 Financial Presentation
- Attachment B: City of Loveland Financial Statement-Raw Water
- Attachment C: City of Loveland Financial Statement-Water
- Attachment D: City of Loveland Financial Statement-Wastewater
- Attachment E: City of Loveland Financial Statement-Power
- Attachment F: June Balance Sheets

Attachment A

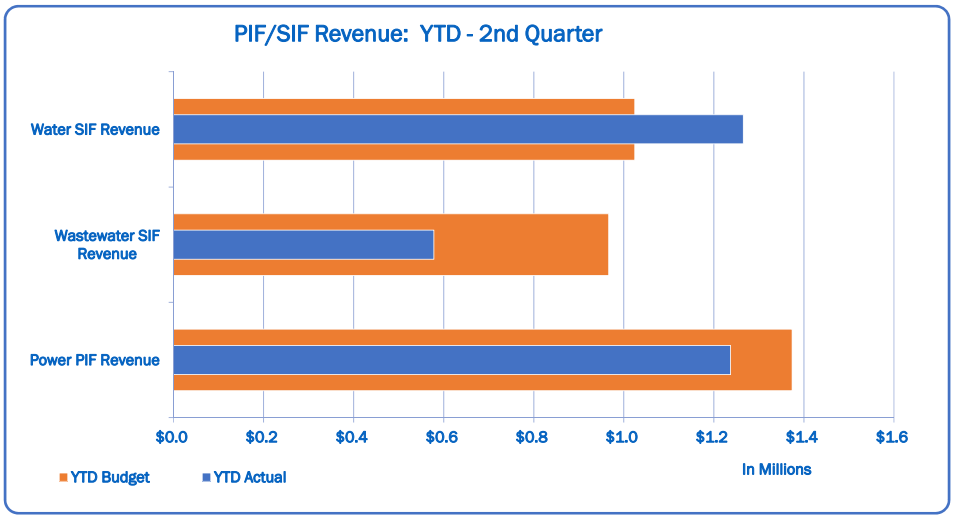
LOVELAND UTILITIES COMMISSION

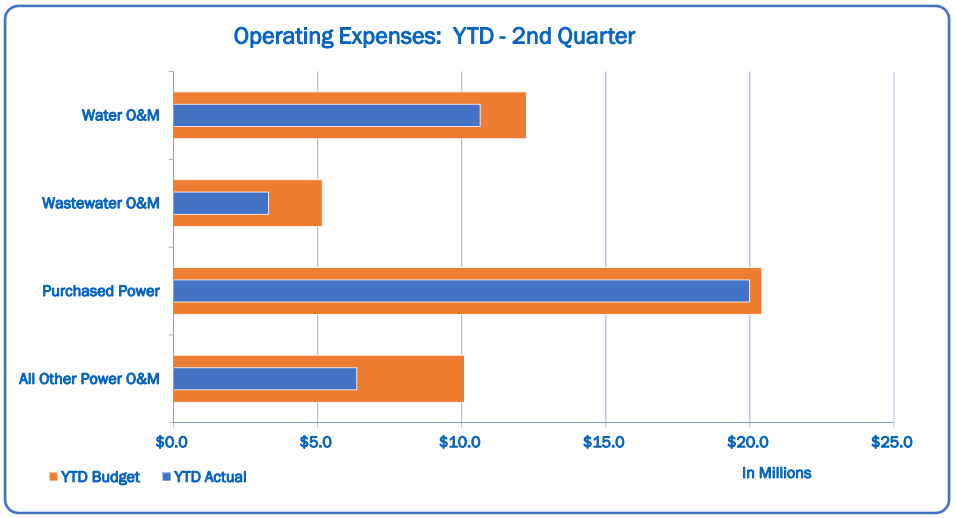
Water & Power
Quarterly Financial Report

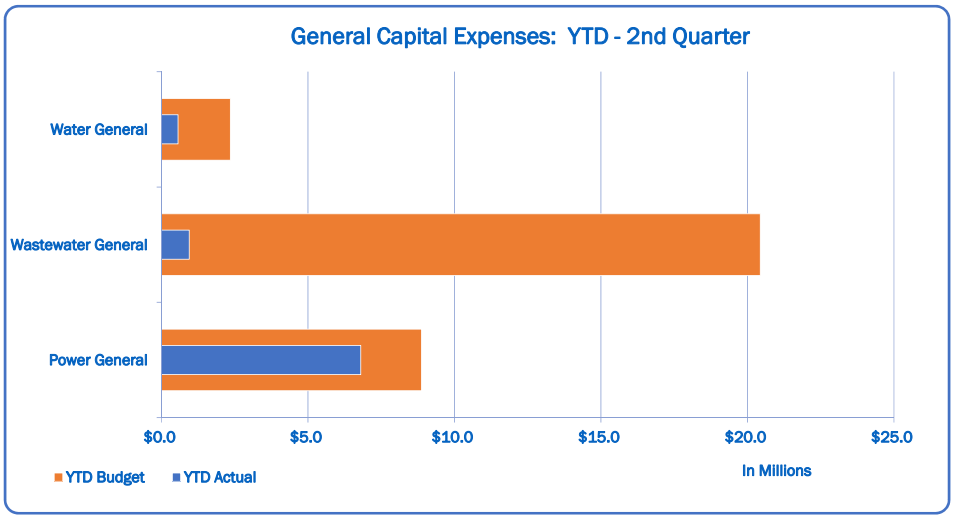
Jim Lees, Utility Accounting Manager
7/19/2017

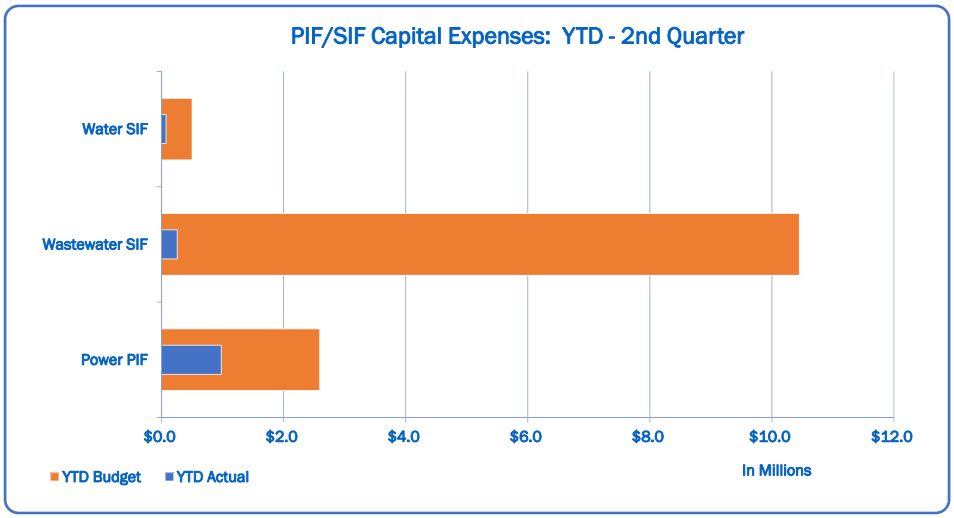


LOVELAND UTILITIES COMMISSION


PIF/SIF Revenue: YTD - 2nd Quarter
Water SIF Revenue
Wastewater SIF Revenue
Power PIF Revenue
$0.0
$0.2
$0.4
$0.6
$0.8
$1.0
$1.2
$1.4
$1.6
YTD Budget
YTD Actual
In Millions


Operating Expenses: YTD - 2nd Quarter
Water O&M
Wastewater O&M
Purchased Power
All Other Power O&M
$0.0
$5.0
$10.0
$15.0
$20.0
$25.0
YTD Budget
YTD Actual
In Millions


General Capital Expenses: YTD - 2nd Quarter
Water General
Wastewater General
Power General
$0.0
$5.0
$10.0
$15.0
$20.0
$25.0
YTD Budget
YTD Actual
In Millions


PIF/SIF Capital Expenses: YTD - 2nd Quarter
Water SIF
Wastewater SIF
Power PIF
$0.0
$2.0
$4.0
$6.0
$8.0
$10.0
$12.0
YTD Budget
YTD Actual
In Millions


LOVELAND
UTILITIES COMMISSION
QUESTIONS?

Attachment B

City of Loveland
Financial Statement-Raw Water
For Period Ending 06/30/2017

		TOTAL BUDGET FYE 12/31/2017	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
1	**REVENUES & SOURCES**					
2	High Use Surcharge	52,500	58,319	26,280	32,039	121.9%
3	Raw Water Development Fees/Cap Rec Surcharge	411,446	194,030	209,996	(15,966)	-7.6%
4	Cash-In-Lieu of Water Rights	250,000	79,152	124,980	(45,828)	-36.7%
5	Native Raw Water Storage Fees	5,000	93,079	2,500	90,579	3623.2%
6	Loan Payback from Water	4,050,375	4,161,687	4,050,375	111,312	2.7%
7	Raw Water 1% Transfer In	434,340	170,113	153,610	16,503	10.7%
8	Interest on Investments	374,120	130,677	187,080	(56,403)	-30.1%
9	**TOTAL REVENUES & SOURCES**	**5,577,781**	**4,887,057**	**4,754,821**	**132,236**	**2.8%**
10	**OPERATING EXPENSES**					
11	Loan to Water	0	0	0	0	0.0%
12	Windy Gap Payments	7,100	7,044	3,552	3,492	98.3%
13	**TOTAL OPERATING EXPENSES**	**7,100**	**7,044**	**3,552**	**3,492**	**98.3%**
14	NET OPERATING REVENUE/(LOSS) (excl depr)	5,570,681	4,880,013	4,751,269	128,744	2.7%
15	RAW WATER CAPITAL EXPENDITURES	2,051,794	1,262,691	1,345,924	(83,234)	-6.2%
16	**ENDING CASH BALANCES**					
17	Total Available Funds		17,203,264			
18	Reserve - Windy Gap Cash		0			
19	Reserve - 1% Transfer From Rates		5,732,427			
20	Reserve - Native Raw Water Storage Interest		1,613,447			
21	**TOTAL RAW WATER CASH**		**24,549,138**			

NOTE: YTD ACTUAL DOES NOT INCLUDE ENCUMBRANCES TOTALING: 17606.1

Attachment C

City of Loveland
Financial Statement-Water
For Period Ending 06/30/2017

		TOTAL BUDGET FYE 12/31/2017	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
1	****UNRESTRICTED FUNDS****					
2	**REVENUES & SOURCES**					
3	Water Sales	14,477,980	5,670,439	5,644,253	26,186	0.5%
4	Raw Water Transfer Out	(434,340)	(170,113)	(153,610)	(16,503)	10.7%
5	Wholesale Sales	138,790	30,133	28,156	1,977	7.0%
6	Meter Sales	54,710	43,769	20,900	22,869	109.4%
7	Interest on Investments	152,410	49,338	76,200	(26,862)	-35.3%
8	Other Revenue	950,250	246,961	737,450	(490,489)	-66.5%
9	Federal and State Grants	0	75,804	0	75,804	0.0%
10	Internal Loan Monies Received	751,356	750,339	751,356	(1,017)	-0.1%
11	External Loan Monies Received	0	0	0	0	0.0%
12	**TOTAL REVENUES & SOURCES**	**16,091,156**	**6,696,668**	**7,104,705**	**(408,037)**	**-5.7%**
13	**OPERATING EXPENSES**					
14	Source of Supply	2,754,390	960,923	1,606,700	(645,777)	-40.2%
15	Treatment	3,466,452	1,316,187	1,741,423	(425,236)	-24.4%
16	Distribution Operation & Maintenance	3,674,830	1,491,505	1,896,547	(405,042)	-21.4%
17	Administration	764,857	180,808	379,169	(198,361)	-52.3%
18	Customer Relations	384,899	142,622	164,014	(21,392)	-13.0%
19	PILT	983,050	385,023	356,847	28,176	7.9%
20	1% for Arts Transfer	101,551	3,725	76,311	(72,586)	-95.1%
21	Services Rendered-Other Departments	1,309,058	654,538	654,538	0	0.0%
22	Internal Loan Debt Expense	4,856,625	4,908,116	4,856,625	51,491	1.1%
23	External Loan Debt Expense	1,013,988	596,053	506,994	89,059	17.6%
24	**TOTAL OPERATING EXPENSES**	**19,309,700**	**10,639,501**	**12,239,168**	**(1,599,668)**	**-13.1%**
25	NET OPERATING REVENUE/(LOSS)(excl depr)	(3,218,544)	(3,942,832)	(5,134,463)	1,191,631	-23.2%
26	CAPITAL EXPENDITURES	3,552,038	565,870	2,347,749	(1,781,879)	-75.9%
27	ENDING CASH BALANCE (21% OF OPER EXP)		**4,148,977**			100
28	WATER DEBT FUNDS ENDING CASH BALANCE		**0**			100
29	MINIMUM BALANCE (15% OF OPER EXP)		2,896,455			
30	**OVER/(UNDER) MINIMUM BALANCE**		**1,252,522**			
31	****RESTRICTED FUNDS****					
32	**REVENUES & SOURCES**					
33	SIF Collections	2,755,460	1,265,493	1,024,340	241,153	23.5%
34	SIF Interest Income	33,180	13,728	16,880	(3,152)	-18.7%
35	SIF Federal and State Grants	0	75,804	0	75,804	0.0%
36	Internal Loan Monies Received	0	0	0	0	0.0%
37	**TOTAL SIF REVENUES & SOURCES**	**2,788,640**	**1,355,024**	**1,041,220**	**313,804**	**30.1%**
38	SIF Capital Expenditures	828,787	74,967	502,596	(427,629)	-85.1%
39	1% for Arts Transfer	1,049	518	520	(2)	-0.3%
40	Legal Agreements & Settlements	53,700	17,885	53,700	(35,815)	-66.7%
41	**SIF ENDING CASH BALANCE**		**2,600,398**			**100**
42	**TOTAL ENDING CASH BALANCE**		**6,749,375**			
	NOTE: YTD ACTUAL DOES NOT INCLUDE ENCUMBRANCES TOTALING:					
43	Water Treated at WTP (in million gallons)		1,883			
44	Water Sold To Customers (in million gallons, includes Ranch Water & Hydrant Sales)	3,561	1,223	1,211	12	1.0%

Attachment D

City of Loveland-LIVE
Financial Statement-Wastewater
For Period Ending 06/30/2017

		TOTAL BUDGET FYE 12/31/2017	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
1	****UNRESTRICTED FUNDS****					
2	**REVENUES & SOURCES**					
3	Sanitary Sewer Charges	11,325,240	5,427,698	5,484,054	(56,356)	-1.0%
4	High Strength Surcharge	360,690	191,066	152,291	38,775	25.5%
5	Interest on Investments	164,020	71,802	82,020	(10,218)	-12.5%
6	Other Revenue	12,920	6,654	6,650	4	0.1%
7	Bond Proceeds	16,000,000	0	16,000,000	(16,000,000)	-100.0%
8	Federal Grants	0	0	0	0	0.0%
9	State Grants	0	0	0	0	0.0%
10	**TOTAL REVENUES & SOURCES**	**27,862,870**	**5,697,221**	**21,725,015**	**(16,027,794)**	**-73.8%**
11	**OPERATING EXPENSES**					
12	Treatment	3,998,641	1,546,330	1,999,554	(453,224)	-22.7%
13	Collection System Maintenance	2,907,659	859,002	1,457,303	(598,301)	-41.1%
14	Administration	422,986	113,552	229,740	(116,188)	-50.6%
15	Customer Relations	45,509	18,911	22,984	(4,073)	-17.7%
16	PILT	818,020	393,314	409,008	(15,694)	-3.8%
17	1% for Arts Transfer	234,793	4,420	196,323	(191,903)	-97.7%
18	Services Rendered-Other Departments	633,529	316,769	316,769	0	0.0%
19	Debt Service	1,051,432	41,664	525,720	(484,056)	-92.1%
20	**TOTAL OPERATING EXPENSES**	**10,112,569**	**3,293,961**	**5,157,401**	**(1,863,440)**	**-36.1%**
21	NET OPERATING REVENUE/(LOSS)(excl depr)	17,750,301	2,403,260	16,567,614	(14,164,354)	-85.5%
22	CAPITAL EXPENDITURES	26,021,469	947,133	20,438,582	(19,491,449)	-95.4%
23	ENDING CASH BALANCE (126% OF OPER EXP)		**12,706,257**			126.00%
24	MINIMUM BALANCE (15% OF OPER EXP)		1,516,885			
25	OVER/(UNDER) MINIMUM BALANCE		11,189,372			
26	****RESTRICTED FUNDS****					
27	**REVENUES & SOURCES**					
28	SIF Collections	2,039,750	578,183	966,570	(388,387)	-40.2%
29	SIF Interest Income	134,730	50,878	67,380	(16,502)	-24.5%
30	SIF Bond Proceeds	8,900,000	0	8,900,000	(8,900,000)	-100.0%
31	**TOTAL SIF REVENUES & SOURCES**	**11,074,480**	**629,061**	**9,933,950**	**(9,304,889)**	**-93.7%**
32	SIF Capital Expenditures	14,052,210	257,570	10,448,517	(10,190,947)	-97.5%
33	1% for Arts Transfer	125,668	52	108,728	(108,676)	-100.0%
34	Debt Service	584,859	25,536	292,428	(266,892)	-91.3%
	SIF ENDING CASH BALANCE		**8,885,934**			100
	TOTAL ENDING CASH BALANCE		**10,402,819**			

NOTE: YTD ACTUAL DOES NOT INCLUDE ENCUMBRANCES TOTALING 7,959,520

Attachment E

City of Loveland
Financial Statement-Power
For Period Ending 6/30/2017

		*	TOTAL BUDGET	*	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
	****UNRESTRICTED FUNDS****	*		*				
		*		*				
1	REVENUES & SOURCES:	*		*				
2	Electric revenues	*	$62,342,360	*	$28,063,139	$28,931,650	($868,511)	-3.0%
3	Wheeling charges	*	$244,650	*	$112,540	$122,325	($9,785)	-8.0%
4	Interest on investments	*	$229,810	*	$99,126	$114,905	($15,779)	-13.7%
5	Aid-to-construction deposits	*	$1,830,000	*	$870,168	$915,000	($44,832)	-4.9%
6	Customer deposit-services	*	$310,000	*	$115,586	$155,000	($39,414)	-25.4%
7	Late Payment Penalty Fees	*	$415,000	*	$239,892	$207,500	$32,392	15.6%
8	Connect Fees	*	$160,000	*	$76,953	$80,000	($3,047)	-3.8%
9	Services rendered to other depts.	*	$0	*	$600	$0	$600	0.0%
10	Other revenues	*	$333,100	*	$148,461	$166,550	($18,089)	-10.9%
11	Federal Grants	*	$0	*	$328,916	$0	$328,916	0.0%
12	State Grants	*	$0	*	$54,819	$0	$54,819	0.0%
13	Year-end cash adjustments	*	$0	*	$0	$0	$0	0.0%
14	**TOTAL REVENUES & SOURCES**	*	**$65,864,920**	*	**$30,110,201**	**$30,692,930**	**($582,729)**	**-1.9%**
		*		*				
15	OPERATING EXPENSES:	*		*				
16	Hydro oper. & maint.	*	$6,407,916	*	$564,980	$3,203,958	($2,638,978)	-82.4%
17	Solar oper.& maint.		$90,000		$284	$45,000	($44,716)	-99.4%
18	Purchased power	*	$43,470,597	*	$19,988,200	$20,412,628	($424,428)	-2.1%
19	Distribution oper. & maint.	*	$4,926,787	*	$2,079,843	$2,463,394	($383,550)	-15.6%
21	Customer Relations	*	$1,270,771	*	$265,120	$635,386	($370,265)	-58.3%
22	Administration	*	$824,162	*	$280,397	$412,081	($131,684)	-32.0%
23	Payment in-lieu-of taxes	*	$4,328,980	*	$1,942,827	$2,073,581	($130,754)	-6.3%
24	1% for Arts Transfer	*	$147,470	*	$35,195	$70,638	($35,444)	-50.2%
25	Services rendered-other depts.	*	$2,376,665	*	$1,188,335	$1,188,333	$3	0.0%
26	**TOTAL OPERATING EXPENSES (excl depn)**	*	**$63,843,348**	*	**$26,345,181**	**$30,504,998**	**($4,159,817)**	**-13.6%**
		*		*				
27	NET OPERATING REVENUE/(LOSS) (excl depn)	*	$2,021,572	*	$3,765,020	$187,932	$3,577,088	$0
		*		*				
28	CAPITAL EXPENDITURES:	*		*				
29	General Plant/Other Generation & Distribution	*	$15,615,817	*	$5,745,580	$7,807,909	($2,062,329)	-26.4%
30	Aid-to-construction	*	$1,830,000	*	$892,782	$915,000	($22,218)	-2.4%
31	Service installations	*	$310,000	*	$161,302	$155,000	$6,302	4.1%
32	**TOTAL CAPITAL EXPENDITURES**	*	**$17,755,817**	*	**$6,799,664**	**$8,877,909**	**($2,078,245)**	**-23.4%**
		*		*				
33	**ENDING CASH BALANCE (26% of Oper Exp)**	*		*	**$16,552,741**			
		*		*				
34	MINIMUM BAL. (23% of OPER EXP excl depn/chg 201	*		*	$14,683,970			
35	OVER/(UNDER) MINIMUM BALANCE	*		*	$1,868,771			
		*		*				
36	****RESTRICTED FUNDS****	*		*				
		*		*				
37	PIF Collections	*	$2,747,630	*	$1,236,782	$1,373,815	($137,033)	-10.0%
38	PIF Interest Income	*	$25,030	*	$18,330	$12,515	$5,815	46.5%
39	Water Loan Payback	*	$806,250	*	$791,700	$806,250	($14,550)	-1.8%
40	Federal Grants		$0		$0	$0	$0	0.0%
41	State Grants		$0		$0	$0	$0	0.0%
42	**TOTAL REVENUES**	*	**$3,578,910**	*	**$2,046,813**	**$2,192,580**	**($145,767)**	**-6.6%**
		*		*				
43	PIF Feeders	*	$2,461,722	*	$858,803	$1,230,861	($372,058)	-30.2%
44	PIF Substations & Solar	*	$2,723,278	*	$120,955	$1,361,639	($1,240,684)	-91.1%
45	**TOTAL EXPENDITURES**	*	**$5,185,000**	*	**$979,758**	**$2,592,500**	**($1,612,742)**	**-62.2%**
		*		*				
46	**ENDING PIF CASH BALANCE**	*		*	**$2,352,703**			
		*		*				
47	**TOTAL ENDING CASH BALANCE**	*		*	**$18,905,445**			

NOTE: YTD ACTUAL does NOT include encumbrances totalling $5,268894.00

48	Energy Purchased (in million kWh) from PRPA	*	737	*	348	355	(7)	1.0%
49	Energy Sold to Customers (in million kWh)	*	715	*	333	344	(12)	-3.3%

Attachment F

City of Loveland

Statement of Net Assets - For Fund Water fund - Proprietary consolidated
For Period Ending 3/31/2017

Assets

Current Assets

Equity in Pooled Cash	$	(3,728,152.39)
Equity in Pooled Investments		7,820,367.99
Receivables, Net		1,691,462.96
Interfund Loan Receivable		-
Accrued Interest		69,683.47
Inventory, at Cost		239,979.06
Total Current Assets		6,093,341.09

Restricted Assets

Future Raw Water Projects		24,411,747.81
Restricted Cash		751,907.89
System Impact Fees		2,582,838.34
Windy Gap Commitment		-
Total Restricted Assets		27,746,494.04

Property, Plant & Equipment

Land		508,866.43
Intangible Assets/Easements		3,013,102.58
Buildings		3,467,553.01
Equipment		2,076,127.27
Improvements Other Than Buildings		175,203,548.86
Water Rights		65,848,151.03
Construction in Progress		4,003,336.26
Total Property, Plant & Equipment		254,120,685.44
Accumulated Depreciation		(48,344,224.97)
Net Property, Plant & Equipment		205,776,460.47
Total Non-Current Assets		233,522,954.51
Total Assets	$	239,616,295.60

Liabilities

Current Liabilities

Accounts Payable	$	179,507.31
Accrued Liabilities		261,378.01
Bond Interest Payable		172,649.92
Deferred Revenue		-
Current Portion of Long-Term Debt		227,252.80

Total Current Liabilities		840,788.04
Long-Term Liabilities		
Compensated Absences		185,934.11
External Loan Payable		13,200,000.00
Interfund Loan Payable		3,000,000.00
Total Long-Term Liabilities		16,385,934.11
Total Liabilities	$	17,226,722.15
Net Position		
Net Investment in Capital Assets	$	205,776,460.47
Restricted for Future Capital Improvements		27,746,494.04
Unrestricted		(11,133,381.06)
Total Net Position	$	222,389,573.45

NOTES:

Some items on the balance sheet are only changed at the end of the year, such as capital assets and accumulated depreciation.

City of Loveland

Statement of Net Assets - For Fund Wastewater fund - Proprietary consolidated
For Period Ending 3/31/2017

Assets

Current Assets		
Equity in Pooled Cash	$	1,086,169.09
Equity in Pooled Investments		11,497,837.01
Receivables, Net		1,367,728.31
Accrued Interest		51,995.21
Inventory, at Cost		3,333.18
Total Current Assets		14,007,062.80
Non-current Assets		
Interfund Loan Receivable		-
Restricted Assets		
System Impact Fees		8,796,693.58
Property, Plant & Equipment		
Land		365,147.60
Intangible Assets/Easements		3,039,071.07
Buildings		3,441,799.26
Equipment		2,969,252.06
Improvements Other Than Buildings		80,006,372.20
Construction in Progress		6,062,700.61
Total Property, Plant & Equipment		95,884,342.80
Accumulated Depreciation		(28,981,427.55)
Net Property, Plant & Equipment		66,902,915.25
Total Non-Current Assets		75,699,608.83
Total Assets	$	89,706,671.63

City of Loveland

Statement of Net Assets - For Fund Wastewater fund - Proprietary consolidated
For Period Ending 3/31/2017

Liabilities

Current Liabilities		
Accounts Payable	$	233,308.26
Accrued Liabilities		205,618.64
Deferred Revenue		-
Current Portion of Long-Term Debt		186,148.77
Total Current Liabilities		625,075.67
Long-Term Liabilities		
Compensated Absences		152,303.54
Total Liabilities	$	777,379.20
Net Position		
Net Investment in Capital Assets	$	66,902,915.25
Restricted for Future Capital Improvements		8,796,693.58
Unrestricted		13,229,683.60
Total Net Position	$	88,929,292.43

NOTES:

Some items on the balance sheet are only changed at the end of the year, such as capital assets and accumulated depreciation.

City of Loveland

Statement of Net Assets - For Fund Power fund - Proprietary consolidated
For Period Ending 3/31/2017

Assets

Current Assets		
Equity in Pooled Cash	$	(1,414,856.81)
Equity in Pooled Investments		17,811,796.80
Receivables, Net		7,274,522.08
Accrued Interest		50,705.61
Inventory, at Cost		2,777,223.20
Total Current Assets		26,499,390.88
Non-current Assets		
Interfund Loan Receivable		3,000,000.00
Restricted Assets		
System Impact Fees		2,330,703.99
Property, Plant & Equipment		
Land		1,407,823.89
Intangible Assets/Easements		3,214,002.47
Buildings		3,654,046.86
Equipment		4,179,730.80
Improvements Other Than Buildings		141,706,780.15
Construction in Progress		29,966,609.14
Total Property, Plant & Equipment		184,128,993.31
Accumulated Depreciation		(56,196,497.27)
Net Property, Plant & Equipment		127,932,496.04
Total Non-Current Assets		133,263,200.03
Total Assets	$	159,762,590.91

City of Loveland

Statement of Net Assets - For Fund Power fund - Proprietary consolidated
For Period Ending 3/31/2017

Liabilities

Current Liabilities		
Accounts Payable	$	6,386,695.26
Accrued Liabilities		344,089.30
Deposits		4,379,338.74
Current Portion of Long-Term Debt		278,916.23
Total Current Liabilities		11,389,039.53
Long-Term Liabilities		
Compensated Absences		228,204.18
Interfund Loan Payable		-
Total Liabilities	$	11,617,243.71

Net Position

Net Investment in Capital Assets	$	127,932,496.04
Restricted for Future Capital Improvements		2,330,703.99
Unrestricted		17,882,147.17
Total Net Position	$	148,145,347.20

NOTES:

Some items on the balance sheet are only changed at the end of the year, such as capital assets and accumulated depreciation.

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 3
MEETING DATE: 7/19/2017
SUBMITTED BY: Brieana Reed-Harmel
STAFF TITLE: Senior Electrical Engineer

ITEM TITLE:

Boring and Substructure Report

SUMMARY:

Short verbal update on the status of boring and substructure work.

RECOMMENDATION:

Staff item only. No action required.

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 4
MEETING DATE: 7/19/2017
SUBMITTED BY: Joe Bernosky
STAFF TITLE: Director

ITEM TITLE:

Algal Mitigation & Solar Bee Update

SUMMARY:

Short verbal presentation on the status of algal mitigation at Green Ridge Glade Reservoir and the effectiveness of the Solar Bees.

RECOMMENDATION:

Staff item only. No action required.

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 5
MEETING DATE: 7/19/2017
SUBMITTED BY: Joe Bernosky
STAFF TITLE: Director

ITEM TITLE:

2nd Quarter 2017 Goal Update Report

DESCRIPTION:

This is a quarterly review of our progress on our 2017 utility goals.

SUMMARY:

This item is to review the attached 2017 utility goals and the 2nd quarter goal updates.

RECOMMENDATION:

Review the presented information and approve the 2017 2nd Quarter 2017 Goals Update Report.

ATTACHMENTS:

- Attachment A: 2017 2nd Quarter Goal Update Report

Attachment A

	2017 Goals & Quarterly Updates	Est. Completion	Actual Completion
1	**Finalize design and begin construction in spring 2017 of the Wastewater Treatment Plant expansion and rehabilitation project.**	**July 2017**	**Jul-17**
	Q1 Update: The Wastewater Treatment Plant improvements project is in its final stages of design and beginning to transition into the construction phase. With the recent approval of the Construction Package No. 1 by the LUC and City Council, Garney Construction is scheduled to mobilize to the plant site by the end of April. Construction activities to take place include the demolition of the abandoned digesters/maintenance building, demolition of the abandoned sludge drying beds, excavation for the new digester facility, rehabilitation of all three existing secondary clarifiers, construction of a new maintenance building, and various water and sewer line relocations. While Garney is constructing the above items, the design engineers will complete the design for the remaining scope of work. Construction Package No. 2 will be presented to the LUC and City Council for approval during the June/July timeframe.		
	Q2 Update: The design of the WWTP expansion is now 100% complete. Construction of Package 1 is underway. Package 2 GMP cost proposal is currently being negotiated between the City and the Contractor. Construction of Package 2 is anticipated to begin in late August 2017 and will continue through the first quarter of 2019.		
2	**Complete the construction of the Foothills Substation by September 2017.**	**September 2017**	
	Q1 Update: The substation is currently under construction. The substation walls have been completed and we are waiting on final installation of the gates. Foundations for the electrical equipment are under construction with the City's portion complete. PRPA is nearing completion of their foundations for the high voltage equipment. City staff and PRPA staff did factory witnessing of the production and design tests for the transformers at the manufacturing plant in Pocatello, Idaho. The transformers have arrived onsite and are being installed and field tested before the City accepts delivery.		
	Q2 Update: The substation is still under construction. The foundations and substructure are complete. The city owned and PRPA owned equipment within the substation is installed and is being connected. The transmission infrastructure has been upgraded and the additioanl towers have been installed and new wiring strung to serve the new substation. Testing and wiring connections will be completd during July and August with estimated completion in mid-August.		
3	**Complete an algae mitigation study and implement selected solutions to prevent taste and odor issues by July 2017.**	**July 2017**	
	Q1 Update: We are in the process of finishing a comprehensive algal mitigation study with Corona Environmental, the finalized memo is expected mid-April. This study includes options for reservoir management, water intake structure gate optimization and in-plant taste and odor removal. Currently, Water will be pursuing a reservoir mixing technology from the Medora Solarbee Corporation with an implementation goal of early May. We are also contracting with Lake Solitude management for back up algaecide application in case of an unexpected algal bloom. Additionally, Water Quality staff is beginning a study on carbon efficiency improvements for increased taste and odor removal. Customer Relations and Water Quality are currently planning a communications plan for public outreach on algae and interdepartmental notifications on algal issues.		
	Q2 Update: SolarBee mixers were installed May 12, city staff is working in conjunction with Medora to properly adjust the drop tubes in order to improve mixing. Following guidance from water quality staff the WTP is drawing water from the bottom gate of GRGR in order to treat the water with the lowest taste and odor and algae. In addition, discussions with Water Resources are being had on better river utilization to dilute potential taste and odor issues. Powdered activated carbon efficiency is currently being studied with the selection of the best performing product anticipated for August. Staff is still working on a contract for back up algaecide application with the		
4	**Participate with Platte River and member cities in the program evaluation of common Demand Side Management programs.**	**December 2017**	
	Q1 Update: We have selected, with Fort Collins as the lead in the RFP, Research into Action (Portland, OR) to lead the third party evaluation. We hope to have Research into Action under contract by the end of April and start the evaluations in May.		
	Q2 Update: We have hired Research Into Action and its partners Apex Analytics and Mesa Point Energy (the evaluation team) to evaluate		

	2017 Goals & Quarterly Updates	Est. Completion	Actual Completion
5	**Support the efforts of a new Customer Information Systems (CIS), IT Roadmap and Community Solar Initiative working collaboratively with Platte River, member cities and various City departments.**	**Ongoing**	
	Q1 Update: CIS: Utility Applications Services (UAS) staff held meetings with key department stakeholders to gather requirements for the new CIS. UAS staff shared these findings with the CIS project team. IT Roadmap: UAS staff has organized a new steering committee and that will provide guidance and governance to technology projects in the department. UAS staff is organizing a city-wide GIS summit to explore the ways different departments use and support GIS. We are currently soliciting proposals to evaluate and optimize our work order system implementation. Community Solar: Platte River and municipality staffs continue to work on developing a community solar program that could serve all four municipalities. A customer survey is being completed to provide insight on the solar market and local solar economics.		
	Q2 Update: Community Solar: A customer survey was completed in April 2017 and results presented to LUC on June 21, 2017. We are currently working on developing an RFP, including participating in discussions with the Rocky Mountain Institute on a joint RFP with local co-ops. Discussions also continue around program administration and marketing. CIS & IT Roadmap: No update.		
6	**Support the Colorado Water Plan and strengthen Loveland's raw water supply portfolio through continued participation in the Windy Gap Firming Project, finalizing a decision on acquiring downstream storage, and continuing to explore how to use alternative transfer methods (ATMs) when opportunities arise.**	**Ongoing**	
	Q1 Update: Loveland continues its participation in the WGFP, and during this quarter its subscription was increased from 9,000 AF of storage to 9,451 AF of storage, out of 90,000 AF in the project. A meeting was held with the Board of the Hillsborough Ditch Company concerning future cooperation with the City on its Big Thompson River diversion structure in exchange for being able to make diversions or replacements at or near their location. Staff has continued working with the City's consultant on an evaluation of a potential downstream storage site. Easements across intervening property for a pipeline for filling or draining the reservoir have been discussed with the landowner. No new opportunities for participation in an ATM has become evident this quarter.		
	Q2 Update: Planning and preliminary design for the Windy Gap Firming Project continues to move ahead. The US Army Corps of Engineer's 404 Permit has been issued, received, and approved, which is an important step. Decisions on the type of dam have moved ahead, with the most likely being an asphault core rockfill design. This design has been used more commonly in Europe, but is being driven here because of a lack of sufficient clay material on the site for a clay core. Staff is in discussions on downstream storage with the owner and neighboring property owner.		
7	**Complete an infiltration and inflow/selenium study in our wastewater collection system and develop a selenium reduction program to reduce selenium discharges from the Wastewater Treatment Plant.**	**September 2017**	
	Q1 Update: The Infiltration and inflow/selenium study has been started. A sampling plan for the project has been developed and adopted for this project. A total of 26 flow meters and 17 sampler have been deployed. A set of wastewater samples has been taken during the low flow time periods from April 4, 2017 thought April 6, 2017. All samples have been turned into the lab for testing and we are continuing to collect wastewater flow data.		
	Q2 Update: We have completed several months of flow monitoring and have completed two differenct wastewater sampling events. We are currently processing the data from the sampling events and working on the study that will be turned into the state in September of 2017.		

	2017 Goals & Quarterly Updates	Est. Completion	Actual Completion
8	**Complete a comprehensive in house audit and update of the Water & Power Schedule of Rates, Charges and Fees.**	**August 2017**	
	Q1 Update: This project starts after we have submitted our 2018 budget to the Budget Office, so it will be getting under way in late June.		
	Q2 Update: We are underway with some work completed on updating the impact fees and the entire update will be completed by the		
9	**Continue the second phase of the M36 water loss audit which will improve water tracking methods and practices to ensure data validity. Review and implement cost-effective recommendations.**	**Ongoing**	
	Q1 Update: We are in the process of compiling the water audit for the 2016 calendar year. This year, we have requested logs to backup each number used in the audit. We have made great improvements in the tracking of various authorized, but unbilled and unmetered water usage (i.e. fire training, fire fighting, sanitizing of new water lines, line flushing, tank cleaning, etc.).		
	Q2 Update: Progress will resume when Michelle Erickson returns from leave.		
10	**Acquire additional CBT shares that apply the concept of dollar cost averaging to future purchases and negotiate prices based on the market.**	**Ongoing**	
	Q1 Update: Contacts have been received from parties, but prices remain very high. Staff continues to follow up with interested parties.		
	Q2 Update: Contacts have been received from parties, but prices remain very high. Staff continues to follow up with interested parties.		
11	**Continue water and electric resource planning to address current and anticipated trends and concerns.**	**Ongoing**	
	Q1 Update: Water: The Water Department is working closely with Northern Water on the final permitting and financial planning for the Chimney Hollow reservoir. Also, the Water Department is evaluating the feasibility of acquiring a gravel pit located downstream from the wastewater treatment plant in order to take full advantage of certain water rights that can be used to extinction. Electric: We are continuing to work with PRPA on future electric resource needs including a possible partnership with the other cities to construct a solar garden. PRPA is scheduled to do a Resource Planning presentation at the May 2017 LUC meeting.		
	Q2 Update: Power: We are continuing to work with PRPA on the Customized Resource Plan. In 2017 our goals are to develop a broad understanding of the CRP environment and develop some basic cost impacts. Water: The Chimney Hollow Reservoir Project recently received the Corps of Engineers 404 permit bringing us one step closer to adding much needed storage capacity to firm up our Windy Gap Units. Regarding the downstream storage reservoir, the feasibility study is complete, and negotiations have been ongoing with the land owner. We have budgeted $3.3M in 2018 to aquire the reservoir, and we have identified funds in our 10 CIP (starting in 2026) to construct the necessary diversion structure and pump station to make the reservoir usable.		

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 6
MEETING DATE: 7/19/2017
SUBMITTED BY: Brian Gandy
STAFF TITLE: Special Projects Manager

ITEM TITLE:

Wastewater Treatment Plant Biological Nutrient Removal and Digesters Project– Contract Amendment for Engineering Services for Brown and Caldwell

DESCRIPTION:

The purpose of this item is to amend the engineering contract with Brown and Caldwell for additional design-phase services.

Per the Municipal Code, if a Contract exceeds $500,000 or 20% of the original value through previously approved amendments, all subsequent amendments must be approved by the LUC. As such, this contract amendment is presented here for LUC consideration.

SUMMARY:

Brown and Caldwell performed additional effort through the final stages of design that was not originally scoped or budgeted for because of late additions and revisions from the project team. The value engineering phase from the 60% to the 90% level of design was unexpected by the design engineer. In an effort to bring the project back within budget, several design elements were re-designed including portions of the new digester facility as well as the existing digester facility. There was also an additional design effort related to the "packaging" of the project into multiple construction contracts. The original design scope did not include the effort to split the design as well as the additional review/comment periods related to the quality control of these packages.

Funds are available for this professional service contract amendment in the current 2017 budget.

RECOMMENDATION:

Adopt a motion to approve the amendment to Brown and Caldwell's contract for engineering services in the amount of **$39,864** and increase the not-to-exceed amount to $2,513,408.

ATTACHEMENTS:

- **ATTACHMENT A:** Scope and Fee for Brown and Caldwell

Attachment A

CITY OF LOVELAND WWTP

BNR AND DIGESTERS PROJECT

(FORMERLY: NEW ANAEROBIC DIGESTION FACILITY AND REHABILITATION OF EXISTING DIGESTION FACILITY)

FINAL DESIGN SERVICES AMENDMENT

AMENDMENT #3

SCOPE OF SERVICES

JULY 2017

AMENDMENT #3 SCOPE OF SERVICES

Overview

Through the progression of the CMAR design of the City of Loveland's combined BNR and Digester Improvements project, there have been numerous changes from a design and delivery standpoint. BC has endeavored to accommodate this changes in a timely fashion as to ultimately not affect the schedule of the City and our design partners as the project team works through this fluid delivery model together. This ultimately required BC to take on additional effort that that were not scoped or budgeted for or due to late changes to our design from late additions or revisions from the project team. While these items provided value to the City and our CMAR partners, BC also incurred additional effort to provide that value. The sections below discuss these two items.

The Amendment is supplementary to the Scope of Services for final design services of the New Aerobic Digestion Facility dated March 2016 which was itself supplementary to the original scope of services dated August 2015. The overall project objectives and City responsibilities are unchanged from the original scopes of work by this amendment.

Value Engineering Exercise:

After the 60% design submittal and generation of the 60% GMP, a VE exercise was conducted to reduce the cost of the project through design and scope changes. Amendment #1 captured the large redesign effort associated with that effort, the Digester Tank column addition, but did not include additional efforts that were not scoped for previously. There were two meetings associated with this exercise, along with additional investigation and preparation to support this effort. In addition, the following changes were incorporated into the design that were new or required rework due to a revisiting of a decision previously made:

- Redesign Digester 3 and 4 mixing piping from below slab to through wall/above slab configuration
- Revise design to have third heat exchanger and redundant mixing pumps and piping changed to future with appropriate connections to allow later addition of equipment
- Provide necessary design modifications to Digester 1 and 2 rehabilitation to pull the majority out of the design while still maintaining connection to the rest of the system. This includes:
    - Tie in of digester gas system with additional piping and sediment trap
    - Addition of unit heaters and interim hot water piping to feed system (routing through existing piping)
    - Investigation of options on how to provide desired electrical/I&C modifications and changes to design to provide desired options

BC is requesting $12,800 for this effort as shown in Table 1.

90% to "Final" Design:

The understanding reached at CMAR kickoff was that the design teams would not be progressing to a final design, but rather moving forward with construction at the 90% submittal. Therefore, BC reallocated $119,488 from Phase 600 – Final Design to cover the agreed upon Amendment #1 effort, thereby creating a zero-dollar change to the contract. That final design effort was originally intended for addressing a final round of comments from the City and reissuance of a final set of documents.

Despite taking this out of the budget, many of the tasks were still otherwise performed for Packages #1 and #2. This includes:

- Reviewing/clarifying comments with the City via conference call (including resolution of conflicting comments and decision on whether comments should be addressed)
- Conducting a 90% process mechanical model walkthrough/ comment review meeting
- Reviewing and addressing comments across all disciplines with drawing and specification changes
- Providing notes and annotations to identify the three pieces of the final design package:
    - Package 1 (already bid)
    - Future Rehab (not to be included except for select pieces)
    - Identification of drawing revisions for contractor that bid package from review set
- Issuance of another "Final" submittal package (drawings and specifications)

At 90%, comments also included late stage scope additions that required analysis and inclusion as agreed upon:

- Replacing the ductbank to the Primary Pump Station
- Replacement of drain line from the Primary Pump Station
- Glycol feed system
- Adding additional suction line for each of the mixing pumps

The budget shown for this effort is associated with Package 2. A similar effort was conducted with the issuance of Package #1 for bidding. The remaining budget in the Final Design effort was used to address comments and issue a revised "Final" set for that package. As shown in Table 1, BC is requesting $27,064 of the $119,488 that was taken out of Phase 600 – Final Design to be added back into that budget for this effort.

TABLE 1: Proposed Budget Labor Detail

Loveland, City of (CO) -- WWTP BNR and Digesters Project - Amendment #3

Phase	Phase Description	Patel, Vishal J	Kell, Kevin A	Anderson, Dawn M	Rossillon, Thomas M	Heibel, Stephen R	Lee, Brett A	Siverts-Wong, Elena	Buhman, Darrell L	Muller, Theresa C	Senior Designer			Airfare	Lodging and Food	Other Travel				
		PM	Proc/Mech Engineer	Structural Engineer	Civil Engineer	Electrical Engineer	I&C Engineer	Proc/Mech Engineer	Proc/Mech Engineer	HVAC Engineer	Designer	Total Labor Hours	Total Labor Effort				Total ODCs	Total Expense Cost	Total Expense Effort	Total Effort
		$184.00	$184.00	$172.00	$172.00	$184.00	$184.00	$132.00	$172.00	$184.00	$132.00									
100	**Value Engineering Exercise**	14	17	2	2	8	0	2	6	4	22	**77**	**12,800**	0	0	0	**0**	**0**	**0**	**12,800**
200	**90% to "Final" Design**	20	24	6	16	18	10	12	4	2	56	**168**	**27,064**	0	0	0	**0**	**0**	**0**	**27,064**
	GRAND TOTAL	**34**	**41**	**8**	**18**	**26**	**10**	**14**	**10**	**6**	**78**	**245**	**39,864**	**0**	**0**	**0**	**0**	**0**	**0**	**39,864**

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 7
MEETING DATE: 7/19/2017
SUBMITTED BY: Brian Gandy
STAFF TITLE: Special Projects Manager

ITEM TITLE:

Wastewater Treatment Plant Biological Nutrient Removal & Digester Project – Package 2 Construction Contract

DESCRIPTION:

This is for the approval of the construction contract for Package 2 of the Wastewater Treatment Plant Biological Nutrient Removal & Digester Project (Project # W1604H).

SUMMARY:

Upon the March 2017 approval of the Package 1 construction contract with Garney Construction, the contractor was able to begin construction activities while the engineers completed the design of the remaining project elements. The design is now complete and the subsequent Package 2 contract documents are ready for construction.

The scope of **Package 2** includes the following:

Biological Nutrient Removal (BNR) Improvements

- Renovation of all six aeration basins (small bubble diffusers, large bubble mixing)
- Construction of a new RAS anoxic tank adjacent to the existing aeration basins
- RAS pump station improvements (new RAS pumps, piping, and valves)
- Aeration Lift Pump Station (ALPS) improvements
- Electrical and Instrumentation Improvements

Digester Improvements

- Digester Facility (two tanks, mechanical room, ferric chloride building, electrical/MCC building)
- Primary Sludge Pump Station improvements
- Minor piping improvements to the existing Digester facility
- Electrical and Instrumentation Improvements

The project is being delivered via the Construction Manager-at-Risk delivery model. The Contractor, Garney Construction, prepared a Guaranteed Maximum Price (GMP) cost proposal. The GMP cost proposal is comprised of the self-performed work of Garney as well as all subcontracted trades. The subcontracted work, equipment, and materials were all competitively bid. City staff and consultants participated in the evaluation and selection of the subcontractors most of the materials and equipment. The City utilized a third-party independent cost estimator to evaluate the GMP and the cost of Garney's self-performed work. The reconciliation of Garney's GMP and the independent estimate yielded a (% to be determined prior to start of meeting) cost differential between the two estimates which satisfied the Department goal of less than a three percent deviation.

- **Final GMP for Package 2:** (contract amount to be determined prior to start of meeting)

Funds are available for the Package 2 scope in the 2017 budget. There will be a Package 3 in 2018, which will cover the remaining construction elements associated with this project including improvements

to the headworks facility, UV modifications, site restoration, and other miscellaneous items. Budgeted funds for Package 3 will be available in 2018. This project will be paid for partly by cash reserves and partly by the $24.9M in loan funding through NBH Bank (which was secured in January).

Per Municipal Code 3.12.060A and 3.12.060B, the LUC may approve Water and Power contracts above $500,000 or any change order that causes a contract to equal or exceed $500,000 and which, when combined with all previous change orders, equals or exceeds 20% of the original contract amount. However, due to the project being funded from wastewater revenue bonds, City Council must approve this contract per Ordinance No. 6077, Authorizing the Issuance and Sale of the City of Loveland, Colorado, Wastewater Enterprise Revenue Bond Series 2017.

RECOMMENDATION:

Adopt a motion to recommend that City Council approve the Construction Contract with Garney Construction in the amount of (contract amount to be determined prior to start of meeting.)

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 8
MEETING DATE: 7/19/2017
SUBMITTED BY: Joe Bernosky
STAFF TITLE: Director

ITEM TITLE:

Commission & Council Report

SUMMARY:

Discuss events that the Loveland Utility Commission Board members attended, special topics and any City Council items related to the Water and Power Department from the past month.

- City Council Report

RECOMMENDATION:

Commission/Council report only.

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 9
MEETING DATE: 7/19/2017
SUBMITTED BY: Joe Bernosky
STAFF TITLE: Director

ITEM TITLE:
Director's Report

GENERAL & PREVIOUS LUC MEETING FOLLOW UP ITEMS:
Raw Water Master Plan: Staff will present Raw Water Master Plan in October or November 2017 following its completion.

Green Switch: Staff will make a presentation in August 2017.

Water Loss/Non-Revenue: Staff plans to bring additional discussion to LUC no later than September 2017.

Canyon Electric Phase 2 & 3 Update: The original plan (and phasing) for the Canyon Electric improvements was determined prior to the 2013 flood. After the flood, the plans were altered and portions of Phases 2 & 3 were completed as part of the initial flood restoration work or rescheduled into Phase 1 or 4; thus there are no Phases 2 or 3 in the CIP.

Foundry impact on Stormwater: Joe Bernosky will provide an update.

Investment Portfolio Information: Jim Lees held a meeting with Dave Schneider on July 14th to review the Investment Portfolio and answer questions.

EVENTS:
Please note the following events that LUC members may wish to attend:

Big Thompson River Stakeholder Meeting: This meeting will be held at the City of Loveland Public Works Department Room 202 and 203 on July 14, 2017 from 10:30 a.m. – 12:00 p.m. This meeting will discuss the Big Thompson River Corridor Master Plan.

Markets 101 Training: Combined session with Fort Collins Energy Board at 222 LaPorte Ave, Fort Collins in the Colorado River Community Room. Dinner will be served at 5:00 p.m. with the presentation to follow at 5:30 p.m. Andy Butcher, Chief Operating Officer for Platte River Power Authority, will be making this presentation.

Colorado Water Congress 2017 Summer Conference: The conference will be held at Hotel Talisa in Vail, Colorado from August 23 through 25, 2017. Please let Courtney Whittet know if you are interested in attending. For more information, visit http://www.cowatercongress.org/summer-conference.html

2017 RMSAWWA/RMWEA Joint Annual Conference: The 2017 RMSAWWA/RMWEA Joint Annual Conference will be held at the Embassy Suites in Loveland, Colorado from September 10 - 13, 2017. Please let Courtney Whittet know if you are interested in attending. For more information, visit http://www.rmwea.org/annual_conference.php

South Platte Forum: Save the date for the 2017 South Platte Forum on October 25th & 26th at the Loveland Embassy Suites. For more information, visit www.southplatteforum.org.

OPERATIONS:

Water Operations:

Water Master Plan Update: The City of Loveland Water Division is currently completing an update to the Water Master Plan. Last updated in 2009 the master plant analyzes the current supply and distribution systems referencing existing and future water demands. The document is critical to help staff make informed decisions about planning and constructing capital projects as well as guiding developers in the necessary size of proposed infrastructure. There are numerous large capital projects that the master plan will identify in terms of scope and schedule including including water storage tanks, additional pumps, and new transmission lines. Recently CH2M updated the system hydraulic model for the City and are now building upon this with the master plan update. The updated master plan is expected to be completed by the end of 2017.

Selenium Study Phase II: In September of 2015 the City's wastewater treatment plant received a permit compliance schedule from the Colorado Department of Public Health and Environment (CDPHE). The compliance schedule required the City to evaluate the sources of selenium entering the wastewater collection system and treatment plant with the goal of eventually reducing the inflow. The first phase of the Selenium Study was completed in September of 2016 and identified the Old Boyd Basin as being the biggest contributor to the selenium loading. As part of the recommendations of this original study, the City has requested an extension on the compliance schedule and will conduct testing and an infiltration and inflow study of the Old Boyd Basin. A permit modification was submitted to CDPHE and the second phase of the Selenium Study was implemented. Ayres Associates and CH2M have been contracted to complete the infiltration and inflow study and testing.

The consultants installed 26 flow meters and 19 samplers within the Old Boyd Basin. Two sampling events were conducted for the study: one during a dry weather period in April of 2017 and the second around a rain/snow event in May of 2017. Both testing events have been completed and the data indicates there are several sub basins adding significant selenium loadings into the wastewater collection system. However, one sub basin in particular has a larger concentration of selenium than the others. Currently both consulting firms are working to complete analysis of the testing and flow data and to provide a conclusion as to how the selenium is being introduced to the collection system and possible remedies. In the meantime water operations staff have started a closed circuit television inspection of the sewer lines in the sub basin of interest within the Old Boyd Basin with the hopes of finding the cause(s) of the inflow and infiltration.

Green Ridge Glade Low Flow Release: The City of Loveland Water Division is currently working on a design for the Green Ridge Glade low flow release outfall. The Water Resources Division has a need to send low flow releases to the river to augment water for themselves and other entities in need. This is a very valuable replacement asset to the City. A consultant has been selected to finish the design and bid the project. A contractor will be selected to perform the piping work required in the design. The electrical/SCADA portion of the project will be completed utilizing in-house expertise.

Wastewater Treatment Plant Biological Nutrient Removal and Digester Project: Construction is now underway at the Wastewater Treatment Plant. The Garney Construction crews have started work in several areas around the plant site as part of this first approved construction package. As part of the Biological Nutrient Removal

scope, the first of three secondary clarifiers was recently taken out of service for rehabilitation (pictured below). This work includes replacing selected components of the rotating mechanism as well as a complete sandblast and re-coating of the mechanism, center column, and bridge. The old sludge drying beds along the east side of the south entry road have been demolished to make way for the new maintenance building. Foundation work is underway for the new maintenance building including concrete footings and stem walls. Other activities include installing a groundwater dewatering system for what will soon be a mass excavation for the new digester facility, natural gas line installation in the newly acquired parcel of land to the east of the plant boundary, as well as exploratory excavations for both in service and abandoned underground utilities.

Preparations are being made for the complete demolition of the abandoned digesters/maintenance garage, which is slated for later this summer.

Power Operations:

Line Crew Switching Training: The Line Crews started this month with their bi-annual switchman's training facilitated by PRPA. The Line Crews spent the first part of the training in a classroom setting going over the responsibilities of a switchman and Loveland's relationship in switching with that of PRPA. Once the classroom portion was completed, crews headed to Horseshoe Substation for hands on training where selected crew members went through actual switching operations set up by the PRPA trainers. Effective communication was emphasized during this training. The photographs below give a glimpse of the switching action.

Electric Metering: The electric meter shop completed repairs to the Foothills primary metering cabinet that was damaged and taken out of service due to a power surge in April 2017. The Meter Crew rebuilt the interior of the

cabinet, replacing all components damaged from the surge. This metering cabinet, records the generation output from the Foothill Solar Field. Photos below.

Damaged Metering Cabinet

Rebuilt Cabinet

Line Crews - Derby Substation Outage: Following a significant storm event, Loveland experienced a large power outage for customer's feed of the Derby Substation located at on Colorado Avenue, north of 14th Street. Engineering is still working on why the substation was knocked off line. Taking advantage of the substation outage, the line maintenance crew was able to make necessary repairs to the switches owned and operated by Loveland.

Line Crews – Pole Repair: The Line Crews were called into action shortly after midnight on Saturday morning, June 17th, responding to a car / pole incident at Madison Avenue and 22nd Street. Working with police and fire department, the crews were able to make the site safe for the removal of the car locked in place by the broken Pole. Following the car removal, the crews worked diligently to replace the pole in and tie in the existing overhead and underground system. Photos below.

Foothills Substation: Construction of the substation is scheduled to wrap up by the end of June with the installation of the base and top rock. Commissioning and testing of the equipment and communication system by Platte River Power Authority (PRPA) engineers and technicians has commenced and will continue through July. Installation and commissioning of the security system is ongoing. Photos right and below.

Derby Hill Substation: The City of Loveland owns six substations, is constructing a new one, and jointly operates one with Western Area Power Administration (WAPA) and Poudre Valley Rural Electric Association (PVREA). These are the transition points from the bulk transmission system to the distribution system. Just like a car, they require maintenance and troubleshooting if something goes wrong. This is exactly what happened earlier this year at the jointly owned Derby Hill Substation. A fault occurred that resulted in a loss of several control electronics for the City and other utilities. Ironically, the fault occurred only a week prior to scheduled maintenance for the substation, so during the investigation and troubleshooting testing and maintenance was completed on the equipment at the substation. City, PRPA, WAPA, and PVREA crews worked together to maintain safe working conditions, investigate issues, conduct maintenance and bring the substation back to service over the course of four weeks.

Removed control board

Control cable removed from the station

GENERATION, TRANMISSION & NORTHERN COLORADO UTILITY REPORTS:

Northern Water Conservancy District: The minutes from the July 13, 2017 board meeting have not been posted. The next board meeting will be held on Thursday, August 10, 2017 at 9 am at Northern Water headquarters located at 220 Water Ave., Berthoud, CO 80513.

Northern Water summer tour season: Northern Water conducts two full-day East Slope facility tours, and two full-day West Slope facility tours, each summer. The two East Slope tours highlight the Conservation Gardens, water operations and proposed storage projects. The two West Slope tours travel through Rocky Mountain National Park to the collection facilities for the C-BT and Windy Gap projects.

Please let Courtney Whittet know if you are interested in attending one of the tours. The dates and approximate times for the remaining 2017 tours are:

East Slope *(7:30 a.m. - 4 p.m.)*	West Slope *(7 a.m. – 6 p.m.)*
Wednesday, Sept. 6, 2017	Tuesday, Aug. 1, 2017

Platte River Power Authority (PRPA): The minutes from the May 25, 2017 meeting have not been posted yet. There was no board meeting scheduled for June 2017, the next board meeting will be held on Thursday, July 27, 2017 at 9 am at PRPA headquarters located at 2000 E. Horsetooth Rd, Fort Collins, CO 80525.

Fort Collins Energy Board: The board meeting scheduled for July 13, 2017 was cancelled. The next board meeting will be held on Thursday, August 10, 2017 at 5:30 pm at the Colorado River Community Room, 222 LaPorte Avenue, Fort Collins, CO.

UTILITY APPLICATION SERVICES

CIS Replacement: The CIS team will be finalizing the vendor evaluation matrix at the end of the month, which will determine how City staff rank the CIS vendor responses. The RFP is currently being finalized for submittal by the end of the month.

Work Order System Replacement & Optimization: The LWP Technology Steering Committee is currently reviewing three proposals for the project to replace the HTE work order system along with the possible expansion and optimization of our Cityworks work order system.

Project & Request Tracking: One of the Technology Roadmap recommendations was to establish a tracking system for our team's work. Since the beginning of the year we have configured Cityworks for this purpose. The big projects, tracked as work orders, are reported to,be approved and prioritized by our LWP Technology Steering Committee. There are currently 32 approved projects in our queue. The smaller, maintenance-type jobs are tracked as service requests. So far this year we have completed 110 requests within an average of 3.28 days. Here they are broken down by type:

- Application Requests - 1.8 days
- Application Support – 4.08 days
- Data Requests - 2.25 days
- Hardware Support – 5.14 days
- Map Requests – 5.62 days
- Report Requests - 1.0 days

UTILITY ACCOUNTING:

Power Peak Demand and Energy Up In May: We saw an increase in both power usage and peak demand in May compared to a year ago, but year to date, there is some departure between the two. Loveland's share of PRPA's peak was 90,545 kW, up 6.7% from May of last year, but still 5.4% below the average of the last 5 years peaks in May. Purchased energy was up 5.6% vs. May of 2016. Overall, in comparing the year-to-date total of the January-May monthly peak demands to the same period in 2016, this year is up 4.2%, but, in contrast, purchased energy is down 1.2% year-to-date.

Water Sales Update: Summer usage has not yet kicked in, but the average water usage per customer is off to a slow start. This year's YTD average through May is 6,515 gallons per customer. The 6,515 gallons is 2.5% lower than the May YTD average usage of the past five years. In spite of this slow start, water sales are ahead of budget by $53,000 through May.

Assembling the 2018 Budget Model: The 2018 budget for W&P is complete and was unanimously approved by the LUC at the June meeting. We have had three meetings in late May/early June with two liaisons from the LUC, Chairman Gary Hausman, and Larry Roos. We appreciate the time and insights provided by Gary and Larry. The 10-year projections for all four utilities look good. There is definite upward pressure on rates for Water, Wastewater and Power due to dramatic increases in health insurance expense, cost allocations expense and funding for the Customer Information System (CIS) software purchase and implementation. Both Raw Water and Wastewater have borrowing programmed into their 10-year projections – Raw Water for helping to fund construction of Chimney Hollow Reservoir and Wastewater for higher growth-related capital investment from 2020 forward than was in place a year ago.

CUSTOMER RELATIONS:

Community Outreach:

Customer Relations will be participating in the following events:

- Community Stewardship Lecture Series – Smart Homes July 11, 2017

Facebook Insights (June - 2017):

- Reach (unique users) – 6,306 people
- Engagement (unique users) – 238 people
- Impressions (total count) –21,331 people

Media:

- Reporter Herald – June 20, 2017: Parking garage will pump out water
- Best of Loveland Magazine - July 2017: Getting the Funk Out; Loveland's Water Treatment Experts Battle Algae (Attachment 1)

Energy Efficiency:

Water Conservation:

ATTACHMENTS:

- Attachment A: Getting the Funk Out; Loveland's Water Treatment Experts Battle Algae

GETTING THE FUNK OUT

Loveland's Water Treatment Experts Battle Algae

by Brad Shannon

Since the fall of 2013, a new member of ecosystem in Loveland's Green Ridge Glade reservoir has proven to be a bad neighbor. That's the first time a different type of blue-green algae called Anabaena (an-uh-bee-nuh) made its presence known in Loveland's water supply.

According to Tim Bohling, water quality analyst for Loveland Water and Power, "The water supply has always had algae. It grows naturally in open bodies of water, and we have 30 years of data on taste and odor and algal growth in the water we provide to customers. In 2015 and 2016 it was the worst it has ever been." The problem is Anabaena produces a larger amount of a chemical that makes the water smell and taste bad. They are working to fix the problem, and it has proven challenging.

"We are working hard to address this in a proactive manner," noted Lindsey Bashline, customer relations specialist for Loveland Water and Power. "This is a prime concern. We live here, we work here, we use the water, and we've studied the problem and implemented a lot of changes to try to solve it."

In addition to the proactive work being done, the most important things for residents to know are:

- Algae is not present in the City's drinking water; and
- The musty taste/odor is caused by a harmless chemical.

What's the Problem?

Anabaena produces an organic compound called geosmin (gee-oz-min). Other types of algae produce geosmin, too, but not in the amounts Anabaena does.

Geosmin, though harmless, has a distinct, earthy flavor and aroma described as musty. It gives beets an earthy taste. (Don't like beets? Cooking them with an acid like vinegar or lemon juice renders geosmin odorless.) Love the smell of the earth when you garden or the air after a rain storm? Part of those familiar, well-loved scents, called petrichor, is geosmin.

Even though many of us like those scents, geosmin in water is a problem. Humans can detect geosmin at concentrations as low as five-parts-per-trillion. That's one drop in an Olympic-sized swimming pool (660,000 gallons). For some, even this little geosmin in water is unpalatable.

Even though Loveland's state-of-the-art water treatment plant produces some of the best drinking water in the world, once Anabaena population exploded and geosmin levels went up, the plant couldn't keep up. The problem was compounded in 2015 when environmental concerns ended the use of a chemical, copper sulfate, that is very effective at mitigating Anabaena.

Where Did It Come From?

There was early speculation that the 2013 flood brought Anabaena into Loveland's water supply. That, Bohling notes, was coincidental. Loveland's source water monitoring data shows Anabaena in The Big Thompson Canyon but not the troublesome species seen in Loveland's Green Ridge Glade Reservoir. The striking green of the algae blooming on Green Ridge Glade likely originated with ducks or geese, which picked up and carried the plankton in their feathers from other bodies of water around the same time. The flood brought more nutrients in the reservoir at that time, so when the new strain arrived, it found plenty of food to fuel its population growth.

Did You Gag? Or Even Notice?

Do you like cilantro? Some can't stand it.Between 4 and 14% of the population it tastes like soap. Their genetic makeup includes olfactory-receptor genes that a type of chemical called aldehydes present in cilantro and soap.

Geosmin is an aldehyde, and some – including Bohling – are especially sensitive to it. For those Loveland water customers, the problem has been obvious as soon as the algae blooms in summer, and goes away as soon as the first cold snap arrives in fall.

Some (10 to 20 percent of people) are missing that same gene and can't smell geosmin at all. Those lucky locals continued cooking, drinking and showering, none the wiser, blissfully unaware.

The Battle to Date

Once copper sulfate couldn't be used to kill Anabaena in the reservoir, in 2015 Bohling's team turned to a powdered hydrogen peroxide algaecide. "It worked well. We would go out on the reservoir and use it, and you could see it killing the algae," Bohling noted, "but it only worked on the surface. Any growth beyond five feet deep was not affected."

The treatment plant had never seen a bloom so big and never had a taste and odor issue this large. Their experience in 2015 and 2016 made it clear this approach was not effective on a reservoir the size of Green Ridge Glade (160 surface acres, 79 feet deep, 6,800 acre feet). "In summer, we can treat 38 million gallons a day," Bohling shared. "We spent well over $70,000 on the hydrogen peroxide powder in summer alone and used more powdered activated carbon than ever in our treatment process to try to neutralize the geosmin."

Those unsatisfactory results spurred an eight-month feasibility study to find an approach to effectively mitigate the algae. Parts of that approach have been implemented, parts are ready when the algae blooms, and further is study underway to explore other improvements if needed.

What Next?

The City's multi-part mitigation strategy seeks to manage algae in the reservoir so the water is easier to treat. Components include:

- Installing four solar-powered mixers (each covers 40 surface acres) to stir up the water and prevent the algae from settling at or moving to where it grows best.
- Increasing taste and odor monitoring at the intake of the treatment plant.
- Optimizing water intake to pull in water with less algae.
- Applying a new, liquid hydrogen peroxide algaecide to any bloom, and using pumps and tubes to target treatment at different depths.
- Studying the current powdered-activated carbon treatment approach to find ways to optimize removing taste and odor, to be completed in August.

Will it Work?

Bohling and his team are optimistic and eager to see the results of the changes. However, he cautioned, "It may not work. Algae is biology, and life finds a way. This is one of the earliest life forms on Earth. It's natural, and it has been around since the dinosaurs." Still, they expect improvement if not a complete fix.

If the changes don't address the problem, or don't address it completely, he and his team will keep working to find a way to ensure that Loveland water is reliably, predictable taste- and odor-free year-round.

Have a Question or Concern?

If you have a taste and odor issue with your Loveland water, the City wants to hear from you. Report it by calling 970-962-3000.

Learn More

Link to the May 23, 2017 City Council Study Session: https://loveland.viebit.com/player.php?hash=btjjPQCWgnN7

(Presentation of algal mitigation study results starts at 1:03:08)

Read the Algal Mitigation Assessment report commissioned by the City:

http://www.cityofloveland.org/home/showdocument?id=34501

Loveland Water and Power on the web:

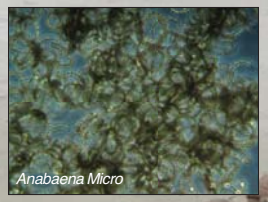
www.cityofloveland.org/WaterQuality

Find reports on water quality, answers to frequently asked questions, and more.

Brad Shannon is a freelance writer and marketing and PR consultant with offices in Downtown Loveland.


9-29-16 Algae


Normal Algae


Anabaena Micro


SolarBee


Algae bloom