



# Platte River

Power Authority

Estes Park • Fort Collins • Longmont • Loveland



## Strategic Plan

2017-2027



The Energy We Live By™

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## From the Chairman of the Board and Platte River Power Authority's General Manager / CEO



The electric power industry is in the midst of great change. Change is being driven by new economic paradigms, such as lower natural gas prices and the price trends of renewable resources, an uncertain regulatory future and the constant evolution of customer expectations. In the face of change our commitment is two-fold – to proactively embrace the future while also leveraging on our strong foundation in order that we can continue to provide safe, reliable, environmentally responsible and competitively priced energy services. We can accomplish this through employee engagement, an emphasis on rigorous planning and budgeting, risk management and community collaboration, along with the engaged guidance from our Board of Directors – all of which you will see reflected throughout this latest edition of Platte River Power Authority's 2017-2027 Strategic Plan.

Safety is paramount in all that we do. A safe work environment requires an ongoing investment in training and equipment, as well as a visible commitment from our senior leadership and all employees.



Safety ranks as the first order priority because our employees are the cornerstone of this organization and are essential to successfully executing our goals. The importance of our employees is also reflected through the investment we make in our employees. Platte River's leadership actively encourages employee development, engagement, training, and succession planning - all themes that permeate the strategic plan. Our employees' engagement is crucial as they are tasked with transforming our plans into reality while at the same time planning and preparing for the future.

The key operational goals we've identified continue to provide clear focus and a strategic direction for the organization moving forward. New goals include physical security, emergency management, policy governance and the leveraging of system assets for the benefit of our community owners. As goals are met or become integral to our operations they are removed from the strategic plan. An example of this is the project management initiative. The concepts underlying project management have been successfully integrated in our operations and are no longer a planning focus.

Leveraging our strengths - strong financial position, operational expertise, industry reputation, and reliable infrastructure - will positively influence our ability to capitalize on future opportunities such as increased community involvement, regional collaboration, and deployment of innovative technologies. These strengths have already paid dividends on important regional initiatives, such as the Windy Gap Firming Project and the formation of the Mountain West transmission and wholesale market structure.

Resource planning and portfolio diversification continue to be foundational elements of our long range planning. A new 30

mw solar facility became operational in 2016, and we continue to pursue additional community solar resources. Non-carbon resources will provide approximately one third of our 2017 generation. We are also pleased that Western Area Power Administration (WAPA) approved our new five year Integrated Resource Plan (IRP). You can find details on the IRP action plan contained within this document.

Our strategic plan also captures municipal planning highlights from our owner communities, resource planning updates, risk management plan summaries, and further detail on environmental, legislative and regulatory issues.

The future is sure to contain many opportunities and challenges, including new market dispatch options, regionalization of fiber assets, distributed generation resources, expanded community involvement and future compliance requirements. As we move forward we remain adaptable and responsive to our owner communities while leveraging our values to guide future decisions.

It is an exciting time to be in our industry, and our commitment will ensure Platte River Power Authority remains a customer-focused, sustainable and innovative energy provider for our owner communities of Estes Park, Fort Collins, Longmont, and Loveland, Colorado. Many thanks to our employees, the staff of our owner communities, and our Board of Directors for their ongoing support and engagement.

Sincerely,

Tom Roiniotis and Jason Frisbie

Handwritten signatures of Tom Roiniotis and Jason Frisbie in black ink.



## Introduction



Platte River Power Authority delivers safe, reliable, environmentally responsible, and competitively priced energy and services to its owner municipalities of Estes Park, Fort Collins, Longmont, and Loveland, Colorado for their utility customers.

**Headquarters:**

Fort Collins, Colorado

**Began Operations:**

1973

**Governance:**

Platte River is governed by an eight-member board of directors comprised of each mayor or designee and a person appointed by each municipality's governing body.

**The Organization:**

Platte River is a political subdivision of the State of Colorado.

**Employees (Dec. 31, 2015):**

237

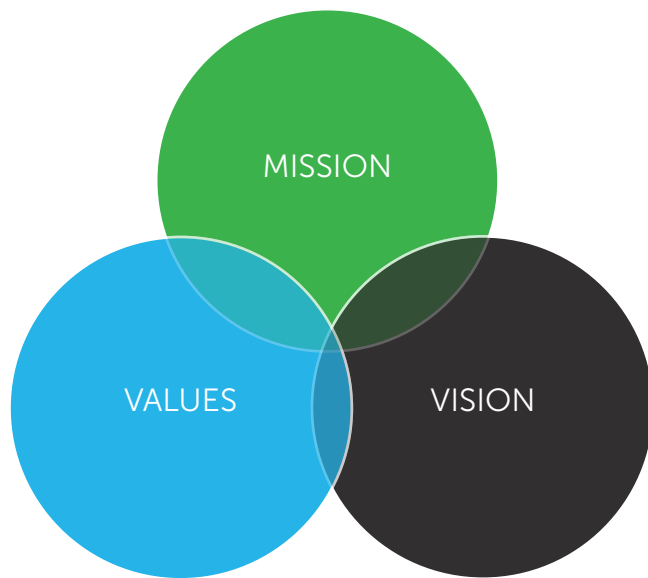
**Historical Peak Municipal Demand:**

659 MW on June 21, 2016

**Transmission System:**

Equipment in 26 substations, 258 miles of wholly owned and operated high-voltage lines, 511 miles of high-voltage lines jointly owned with other utilities.

## Mission, Vision & Values



### **MISSION:**

Provide safe, reliable, environmentally responsible, and competitively-priced energy services

### **VISION:**

As a respected leader and responsible energy partner, improve the quality of life for the citizens served by our owner communities



# Values



## Safety

### What is non-negotiable?

Working safely to protect the public, our employees, and the assets we manage.



## Integrity

### What is at the core of what we do?

Being ethical and holding ourselves accountable to conduct business in a fair, honest, open, compliant, and environmentally responsible manner.



## Customer Service

### What creates added value and improves customer satisfaction?

Providing quality service at a competitive price while being responsive to our owners' needs.



## Respect

### What leads us to optimal solutions for even the most difficult challenges?

Encouraging constructive dialogue that promotes a culture of inclusiveness, recognizes our differences, and accepts varying viewpoints.



## Operational Excellence

### How do we provide reliable service while managing costs and creating a rewarding work environment?

By engaging employees to strive for excellence and continuous improvement.



## Sustainability

### How do we ensure long-term viability of the organization and communities we serve?

By maintaining financial integrity, minimizing our environmental impact, and supporting responsible economic development in our owner communities.



## Innovation

### How do we mitigate risk and create opportunities?

By becoming an early adopter of technologies proven to improve electric efficiency, protecting the environment, and creating a diversified energy supply portfolio.

**Reuben Bergsten**  
**Vice Chairman**

Director of Utilities  
Town of Estes Park

**Todd Jirsa**

Mayor  
Town of Estes Park

**Steve Adams**

City Manager  
City of Loveland

**Wade Troxell**

Mayor  
City of Fort Collins

**Gerry Horak**

Mayor Pro Tem  
City of Fort Collins

**Cecil Gutierrez**

Mayor  
City of Loveland

**Tom Roiniotis**  
**Chairman of the Board**

General Manager  
Longmont Power &  
Communications  
City of Longmont

**Dennis Coombs**

Mayor  
City of Longmont





## Board of Directors

Platte River is governed by an eight-person board of directors uniquely designed to bring relevant expertise to the decision-making process. The board includes the mayor (or a designee of the mayor) from each of the owner municipalities. The other four directors are appointed to four-year staggered terms by the governing bodies of the owner municipalities.

## Senior Management Team

Platte River operates under the direction of a general manager who serves at the pleasure of the board of directors. The general manager is the principal executive officer with full responsibility for planning, operations, and the administrative affairs of Platte River.



**Andy Cofas**

Plant Manager

**Pete Hoelscher**

Chief External Affairs and  
Customer Relations Officer

**Joe Wilson**

General Counsel

**Jason Frisbie**

General Manager / CEO

**Andy Butcher**

Vice President of  
Power Delivery



**Angela Walsh**

Executive Assistant to the  
General Manager / CEO

**Karin Hollohan**

Chief Administrative  
Services Officer

**Heather Banks**

Fuels & Water Manager

**Dave Smalley**

Chief Financial &  
Risk Officer

## Strategic Initiatives

### Safety

Promote a culture where no job is so important and no service so critical that employees must compromise their own safety to perform their job.

### Compliance

Promote a culture of compliance where all employees conduct business with the highest standards of ethics and integrity. Meet or exceed all policy and regulatory requirements.

### Financial Stability

Generate adequate cash flows, maintain access to low-cost capital, provide stable and competitive wholesale rates, and effectively manage financial risks, all with a focus on continually improving our financial processes.

### Operational Excellence

Design, construct, operate, and maintain safe, reliable, and environmentally-responsible generation and transmission assets in a cost-effective manner.

### Exceptional Customer Service

Provide exceptional service for internal and external customers with a focus on continuous improvement through relationships, knowledge of customer needs and preferences, key performance metrics, and future program development.

### Employee Engagement

Create a work environment that encourages employee engagement at all levels through a framework of effective communication. Make investments to leverage diversity, grow internal talent, develop innovative skills, and maintain high standards.

### Resource Management

Employ an adaptive strategy to cost-effectively maintain reliability, manage risks, and ensure regulatory compliance.

### Collaboration and Communication

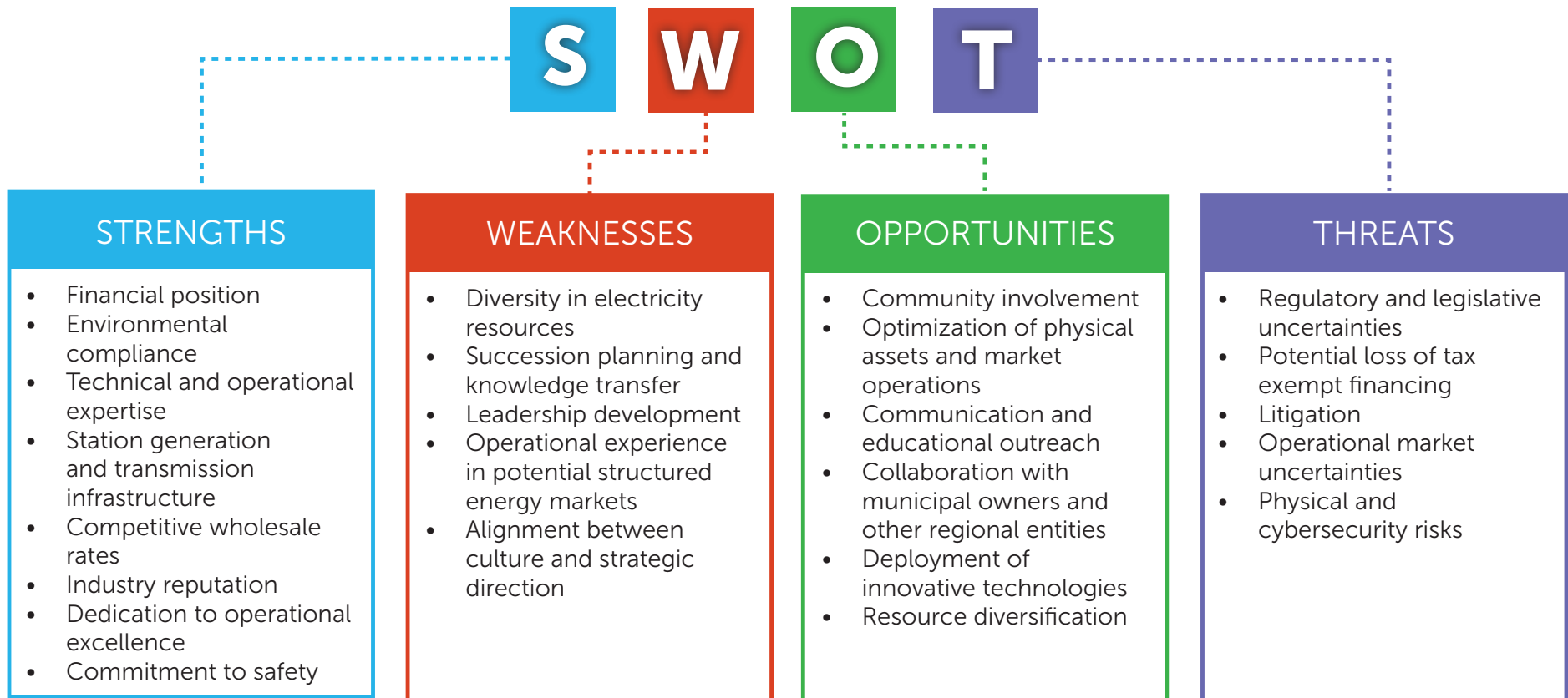
Continuously improve collaboration and communication internally and externally to enable successful projects and services, build stakeholder relationships, and articulate value.

### Technological Innovation and Sustainability

Actively monitor and adopt new, proven technologies that cost-effectively enhance performance and promote the long-term viability of Platte River, the municipalities, and their customers.

# SWOT Analysis

## Strengths, Weaknesses, Opportunities and Threats







## Key Operational Goals & Activities





### **EPA Clean Power Plan**

Actively engage in Colorado's stakeholder process to help shape the State Compliance Plan so it aligns with Platte River's strategic direction.

### **Rate Planning and Coordination**

Continue collaborating with the owner municipalities, including exploring long-term rate development and potential changes to rate structure.

### **Regional Wholesale Market Initiatives**

Proactively engage in the design and development of organized markets in the Rocky Mountain region to help ensure that the market structure is workable for all participants.

### **Legislative Policy Engagement**

Establish core messaging and an engagement plan at both the state and federal levels to encourage a favorable political climate for our continued operations.

### **Renewable Energy Supply Integration**

Ensure effective integration of all renewable generation resources into Platte River's operations.

### **Water Resource Management**

Use board-adopted policy as guideline to increase participation in the Windy Gap Firming Project, and manage water resources as an asset.

### **Debt Financing**

Plan and analyze debt financing structures to support long-term capital improvements and manage debt portfolio based on market conditions and opportunities.

### **Resource Planning**

Implement a strategy that includes:

- Decommissioning Craig Unit 1
- Expanding energy efficiency programs
- Implementing a system-wide demand response technology pilot
- Developing a distributed resource strategy
- Ensuring system resiliency
- Preparing for risks related to climate change
- Continuing generation diversification

### **Cybersecurity**

Build our cybersecurity culture by promoting greater risk awareness and behavioral changes upon a foundation of compliance. Continue to build in infrastructure hardening, use external resources to evaluate the cybersecurity program and risk, and document programs and policies.

### **Talent Management**

Ensure availability of appropriate tools, technology, training, and resources for optimal work effectiveness; develop programs focused on succession planning, employee development, knowledge transfer, and attracting and retaining top talent.

### **Headquarters Campus Design and Engineering**

Select a cost-effective, energy-efficient, and viable headquarters campus space alternative that will meet the long-term projected space needs for staff, technology, and equipment; initiate permitting, design, engineering, and construction.

## Key Operational Goals & Activities

### Continued

#### Policy Governance and Board Procedures

Review existing and identify new board-approved policies and procedures that help staff manage day-to-day operations.

#### Physical Security

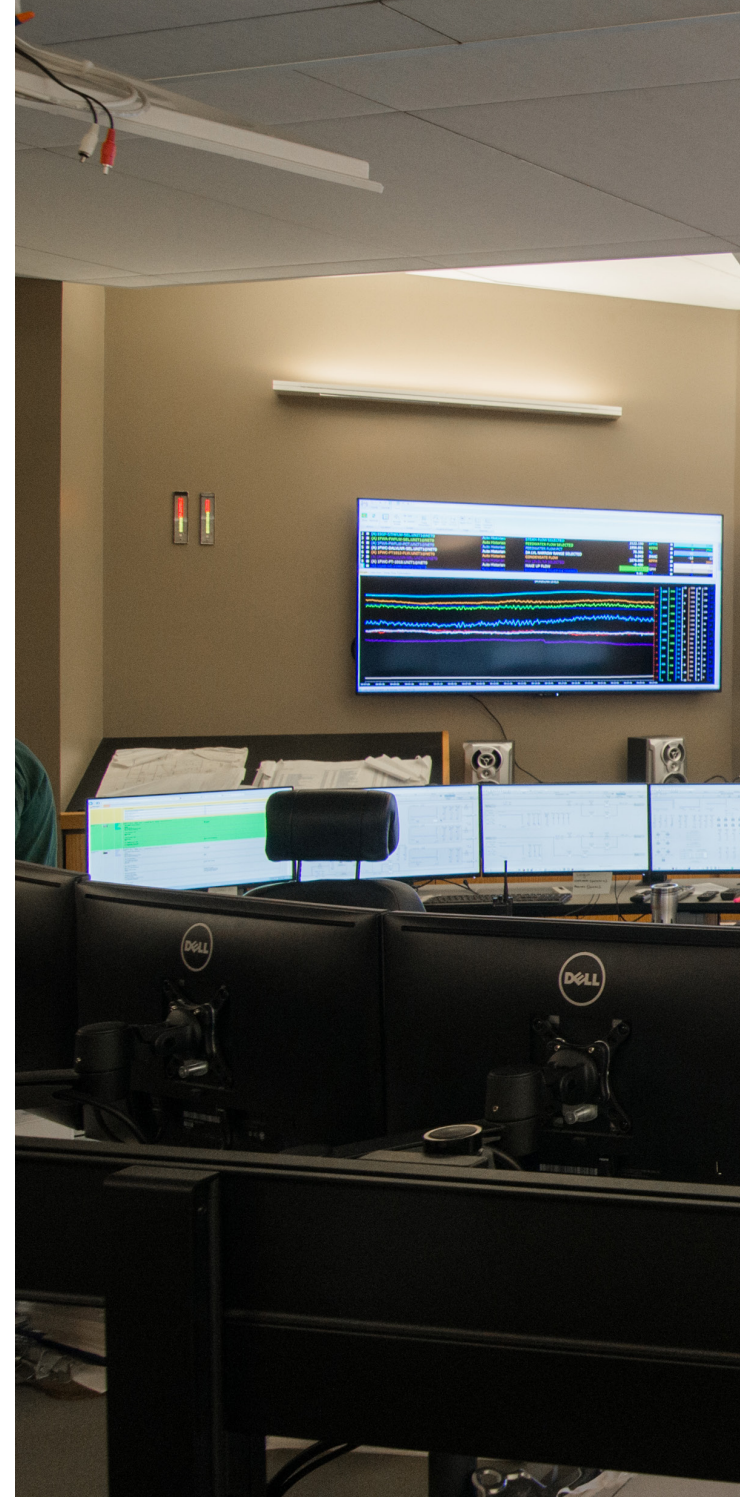
Strengthen physical security plans, practices, and infrastructure for all facilities with a key focus on substations and generation assets.

#### Emergency Management

Improve response plans and conduct cross-functional exercises to ensure a pro-active approach and better preparation for disaster recovery.

#### System Assets

Add value for our member owners by leveraging assets such as a Customer Information System, Supervisory Control and Data Acquisition system, and the fiber optic system.









## Resource Planning

Resource planning and management is a cross-functional activity involving many departments throughout the organization. This effort is continuous and ever-changing as market, regulatory, and other planning variables evolve.

This section provides a high-level overview of resource management. Details on resource planning activities and insights appear in Appendix A—Resource Planning Update. More details can be found in Platte River’s 2016 Integrated Resource Plan.

Platte River’s resource planning efforts follow a simple statement of direction:

- Platte River Power Authority employs an adaptive strategy to cost-effectively maintain reliability, manage risks, and ensure regulatory compliance.

This statement of direction provides staff the flexibility needed to recommend future resource actions, and also enables Platte River to position itself for compliance with the Clean Power Plan (CPP) and the individual needs of our owner-municipalities, with the potential to go beyond CPP requirements if cost effective.

### Future Resource Management

Platte River faces future resource management decisions from a position of strength. Generation and transmission facilities owned and operated by Platte River have performed well historically. Platte River has significant surplus capacity based on updated load forecasts and continues to expand energy efficiency and other demand-side programs to manage growth and provide services to customers in our owner communities.

Renewable energy supply to the municipalities already exceeds the Colorado Renewable Energy Standard and 30 MW of new renewable supply will come from the Rawhide Flats Solar facility during 2016. Given its favorable geographic location Platte River and its owner municipalities can select from a variety of renewable resource options going forward.

The board of directors has provided support for multiple activities related to Platte River’s resource management, including:

- Continued focus on diversification of Platte River’s generation and fuel portfolios
- Further expansion of energy efficiency programs
- Integration of significant wind and solar resource additions (increased from 18 MW in 2013 to 108 MW by 2016)
- Development of a strategy for exiting ownership of Craig Unit 1
- Development of a demand response pilot program
- Several collaborative efforts related to distributed resources
- Consideration of membership in an organized regional transmission market

These activities will continue to be a focus during 2017 and over the short-term planning horizon, through 2020. Fortunately, Platte River does not need to make short-term decisions regarding new resources to meet peak capacity needs.

We can plan capacity additions as part of a broader long-term resource strategy that integrates positioning for CPP compliance.



## Formal IRP

In June 2016, Platte River filed an Integrated Resource Plan (IRP) with the Western Area Power Administration (Western), as required every five years by Western of its federal hydropower customers. Platte River's IRP marks the culmination of an extensive planning effort, and provides recommendations and actions for changes to Platte River's existing operations in preparation of long-run energy industry

changes arising from technological progress, consumer preferences, and regulatory mandates.

The IRP identifies an action plan for Platte River in the coming years, as shown in the exhibit below. Western's response to Platte River's IRP filing is expected in mid-summer 2017.

| 2016 IRP Action Plan |                                                                                                                                                              | Schedule  |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                      | Continue to diversify the portfolio to prepare for long-run CO <sub>2</sub> reductions                                                                       |           |
| ▶                    | Immediately pursue a diversification strategy to exit Platte River's share of Craig Unit 1                                                                   | 2016-17   |
| ▶                    | Integrate 30 MW of new solar generation into the portfolio beginning in 2016                                                                                 | 2016-17   |
| ▶                    | Evaluate the acquisition of additional renewables generation                                                                                                 | Ongoing   |
|                      | Prepare for business structures, products, and programs preferred by our member-owners                                                                       |           |
| ▶                    | Work with member communities to develop customized future supply portfolios                                                                                  | 2016-17   |
| ▶                    | Continue expansion of cost-effective energy efficiency programs                                                                                              | Ongoing   |
| ▶                    | Continue development and implementation of a demand response pilot                                                                                           | 2016-17   |
| ▶                    | Participate with member-owners in the development of distributed technologies such as community solar and combined heat-and-power applications               | Ongoing   |
|                      | Continue to implement ways to maintain the high reliability of Platte River's power system                                                                   |           |
| ▶                    | Look to secure affordable ways of balancing expected long-term growth in renewables generation through contracted tariff services or future services markets | 2016-2020 |
| ▶                    | Manage unit outage risk through mutual support agreements, use of peaking resources, or other market opportunities for capacity                              | Ongoing   |
| ▶                    | Actively monitor regional markets to understand options for cost-effective reliability products                                                              | Ongoing   |
| ▶                    | Provide direction to influence the development of regional energy and ancillary services markets                                                             | 2016-17   |

## Risk Management

The Risk Oversight Committee (ROC) consists of the general manager, senior management, and key staff members. It is charged with managing Platte River's risks and the Risk Management Plan. The Risk Management Plan (see Appendix B) is a summary of Platte River's proactive efforts to identify, evaluate, rank, and mitigate risks significant to Platte River. These are risks that could negatively impact electric supply, finances, reputation, and safety.

Using a bottom-up approach, Platte River's risk management process provides the framework to identify and assess specific risks by soliciting input directly from subject matter experts (SMEs) throughout the organization and developing mitigation strategies. This approach has increased employee engagement, resulting in more accurate risk assessment and mitigation development.

For example, perspectives from SMEs resulted in expanding cybersecurity assessments. This expansion included identifying risks specific to separate facilities and areas of operation, and subsequent mitigations related to each respective area. SMEs also refined the risk assessments for increasing fuel costs, focusing on the combined impact of all commodities on Platte River finances.

Proactive efforts to improve Platte River's risk management are

continuous. A third-party review of the Risk Management Plan and associated activities was conducted in late 2015, concluding in 2016. The review provided valuable feedback, summarizing strengths and potential areas for improvement. Project planning to implement the initial phase of improvement began in 2016





## Financial Management

Platte River's Strategic Financial Plan (SFP, see Appendix C) provides direction for creating long-term financial stability. The SFP's priorities include generating adequate cash flows, maintaining access to low-cost capital, providing stable and competitive wholesale rates, and effectively managing financial risk. The board of directors reviews the SFP annually.

Many of the SFP goals establish targets used in setting municipal wholesale rates. The SFP is designed to maintain Platte River's current AA senior lien debt credit rating by all three rating agencies: Fitch Ratings (AA), Moody's Rating Service (Aa2), and Standard & Poor's Rating Service (AA).

The SFP policies and goals are interrelated. Achieving the targets for debt service, net income, and days of unrestricted cash on hand should result in adequate cash flows to meet liquidity targets, exceed the debt-to-capitalization goal, and maintain access to low-cost capital.

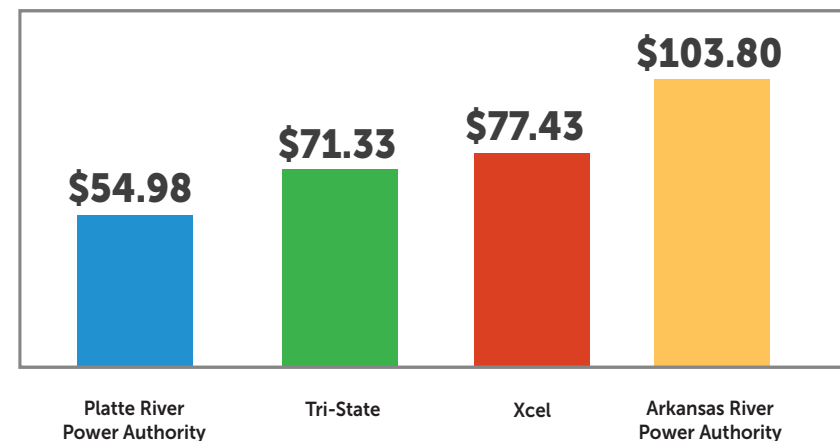
Maintaining the minimum unrestricted days cash-on-hand ensures a strong cash position, significantly enhancing future operating and financing flexibility. The Rate Stabilization Fund is available if an unforeseen event were to occur, such as an extended unplanned Rawhide outage. The remaining financial goals focus on providing competitive wholesale rates to the municipalities, prudently investing capital, and establishing appropriate and cost-effective programs to manage Platte River's business risks.

### 10-Year Rate Projections

To continue meeting SFP goals, Platte River's board of directors increases rates when necessary. Currently, wholesale rates are projected to increase approximately 30 percent from 2016 to 2026. Projections could change significantly depending on the CPP implementation and other factors including capacity expansion plans beyond the current 10-year horizon. To minimize single-year rate impacts, Platte River will continue rate-smoothing strategies; currently, a 3.0 percent rate increase is planned for 2017; from 2018 through 2026, 2.5 percent annual increases are projected.

Platte River will review and revise rate projections and smoothing strategies, at least annually, based on the financial forecasts and the latest information including the impacts and timing of the CPP.

**Figure 1. 2015 Average Wholesale Rates Comparison**



## Environmental Management

Platte River has a longstanding commitment to being a good steward of the environment, as demonstrated by the organization's record of consistently meeting or exceeding regulatory requirements.

Figures 2 and 3 show a comparison of emissions performance for Platte River's Rawhide Energy Station relative to other US coal plants. Rawhide is a top performer among coal plants.

By continuing to look for ways to improve performance and making investments in technology, Platte River is able to operate its generation and transmission systems at high levels of reliability and environmental compliance. Rawhide is a top performer among coal plants in terms of emissions performance.

When new legislation and regulations are proposed, Platte River takes an active role in discussions. This helps shape the final outcome so that reliability, risk, and costs are fully considered. This is consistent with the organization's strategic direction and essential to meeting its mission.

Appendix D highlights the environmental-based principles that are central to the organization's planning guidelines. It also gives context to major areas of environmental focus and consideration, including Clean Power Plan and ozone regulations.

Figure 2. 2015 Average Emission Rates of SO<sub>2</sub> + NO<sub>x</sub>  
(Coal-fired plants in the US)

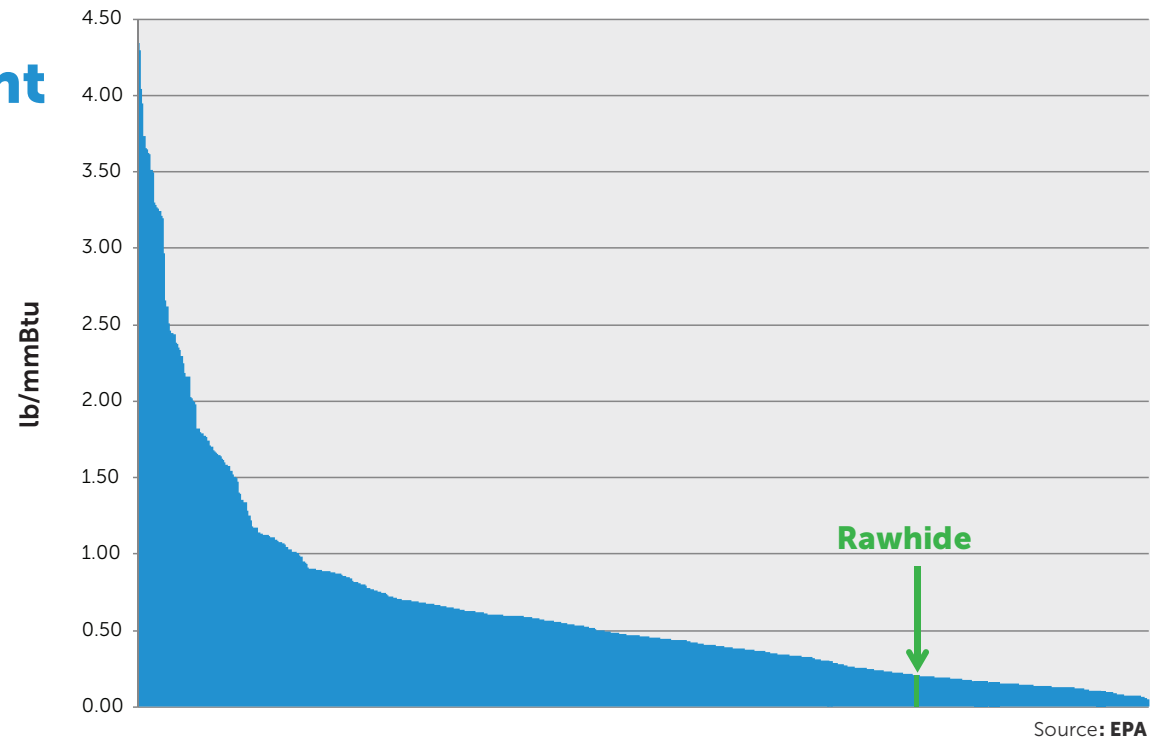
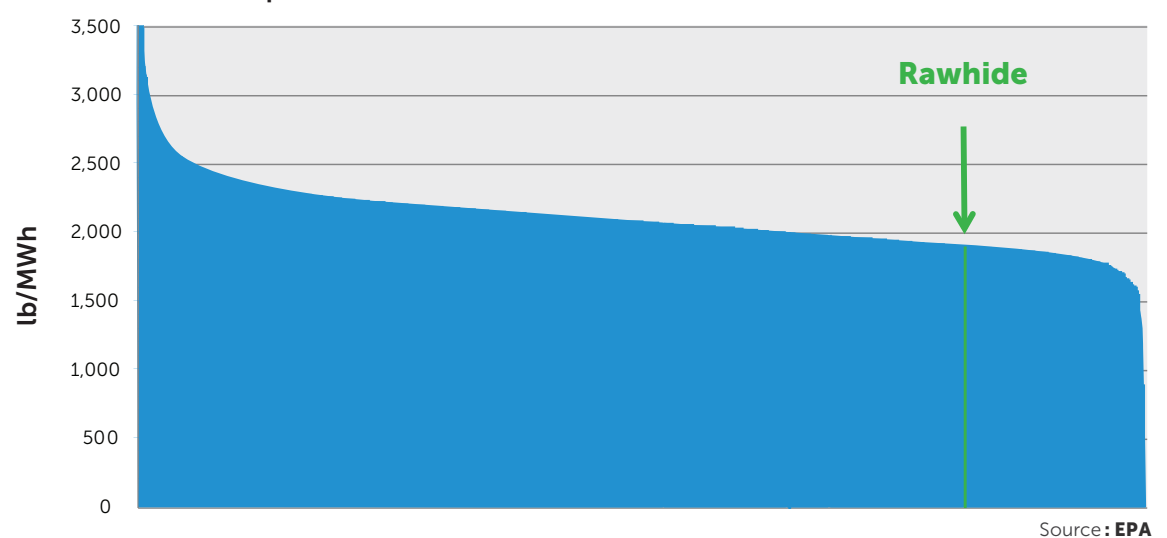


Figure 3. 2015 Average Emission Rates of CO<sub>2</sub>  
(Coal-fired plants in the US)





## Legislative and Regulatory Planning

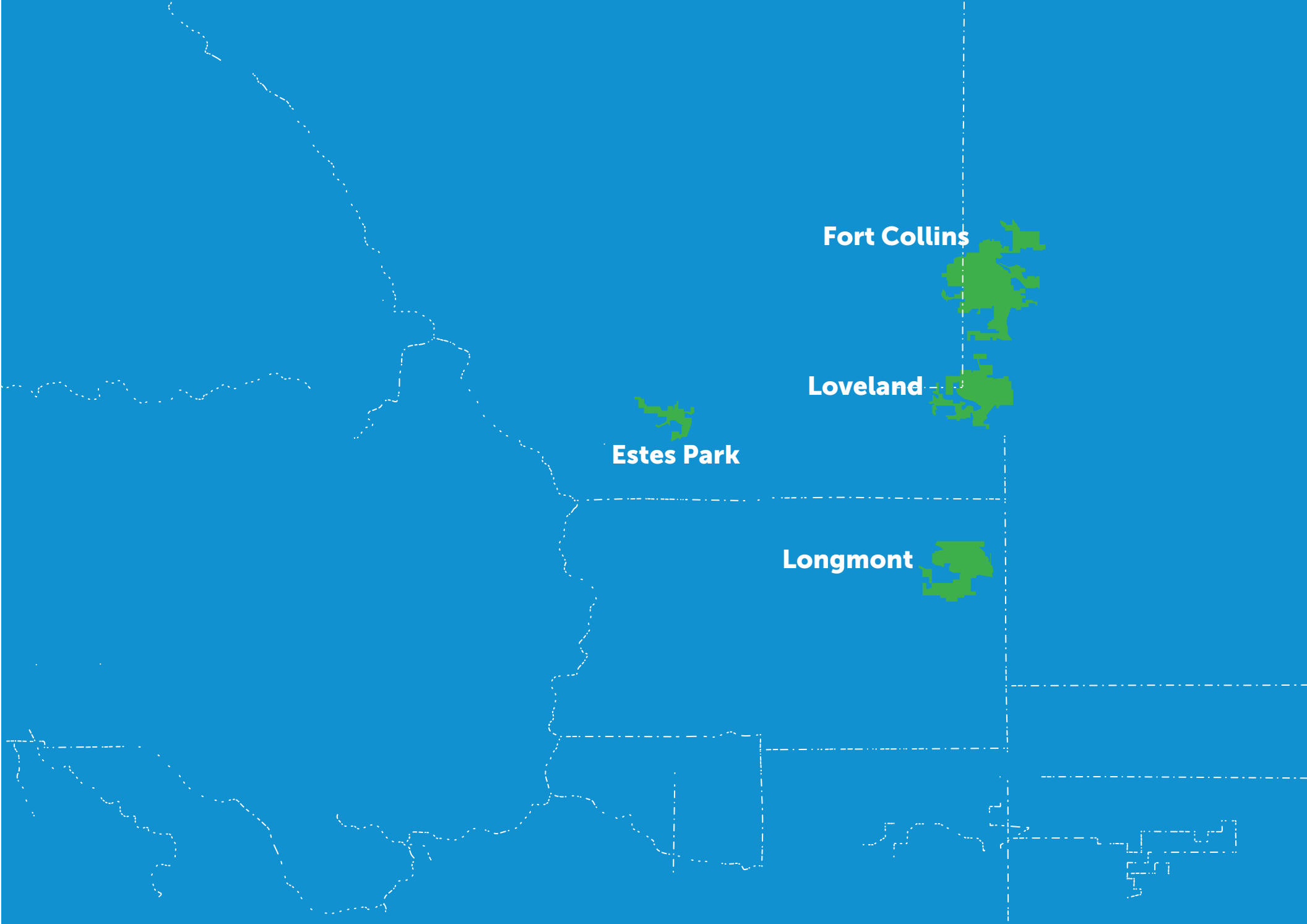
Platte River maintains positive relationships with members of Colorado's congressional delegation, the governor's office, the Colorado General Assembly, as well as with state and federal regulators.

In addition to direct issue-related communication with governmental decision makers, Platte River is an active participant in trade associations such as the American Public Power Association (APPA), the Large Public Power Council (LPPC), and the Colorado Association of Municipal Utilities (CAMU). These associations offer a cost-effective means to participate in legislative and regulatory proceedings.

Platte River management and staff actively participate with these organizations to ensure our positions are appropriately reflected by these organizations

Appendix E provides a summary of pending issues and positions such as the CPP and ozone regulations. The appendix also includes specific environmental policies and principles that provide guidance to Platte River management and staff.





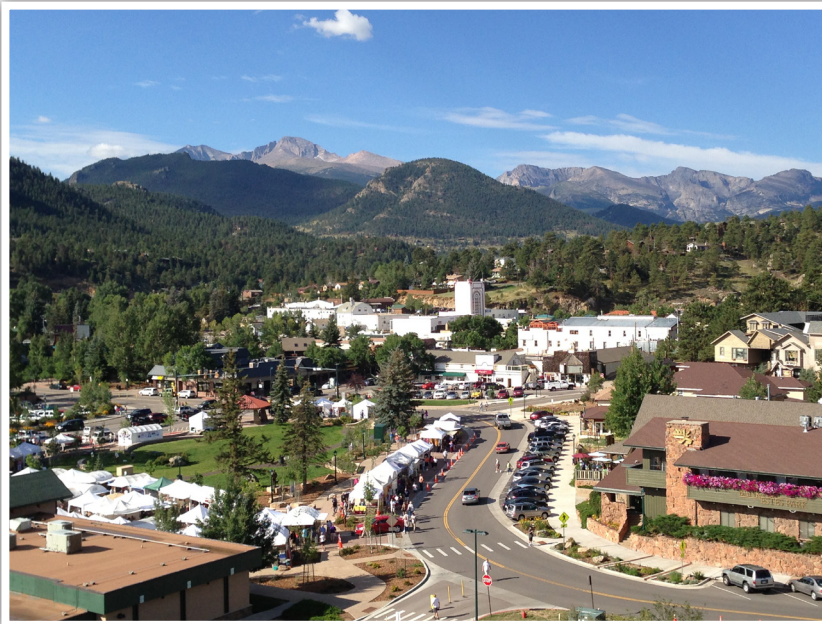
## Community Owned

Platte River Power Authority is a Colorado political subdivision established to provide wholesale electric generation and transmission to the municipal utilities of its owner communities – **Estes Park, Fort Collins, Longmont, and Loveland.**



## Municipal Planning

### Town of Estes Park



**Estimated population for 2015:** 6,257

**Utility:** Estes Park Light & Power, established in 1945

### Cost Sensitivity

The Town of Estes Park is cost sensitive because of its larger service territory with fewer customers, which makes its rates higher than large municipalities. However, rates are still lower than regional investor-owned or rural electric utilities. Cost consciousness will impact future planning.

### Environmental Advocacy

Significant environmental advocacy exists within the Town and the community is interested in understanding the cost impacts of renewable energy or other environmental initiatives, especially our higher-than-average population of fixed income retirees.

### Capital Investment

The current focus is toward capital investment. Other areas of focus include cost management and identifying risks, opportunities and prioritization.

### Key Initiatives

The key initiatives currently underway or being considered as part of the overall planning process include economic development, land use, and water/energy planning.

### Renewables

The Town supports renewable energy by voluntarily purchasing all of its electrical energy from renewable sources for use in its municipal operations.

## Municipal Planning

### City of Fort Collins



**Estimated population for 2015:** 161,175  
**Utility:** Fort Collins Utilities, established in 1938

### Plan Fort Collins

The name, "Plan Fort Collins" refers to the integrated process to prepare major updates to two key documents: City Plan and the Transportation Master Plan (TMP). City Plan is the comprehensive plan for the City of Fort Collins, and illustrates how the community envisions Fort Collins over the next 25 years and beyond. The TMP serves to document a bold vision for the long-term multi-modal transportation system that will support the Fort Collins community well into the future. The TMP provides policy direction for decisions regarding the implementation of the transportation system to achieve the community's vision. The process for updating two distinct plans, City Plan and the Transportation Master Plan, was unified around the tenets of innovation, sustainability, and connections. This meant the long range visions and policies for City Plan and the Transportation Master Plan would become mutually supportive and comprehensive.

### City Strategic Plan

The City of Fort Collins Strategic

Plan is the roadmap to achieve the City's vision of providing world-class municipal services through operational excellence and a culture of innovation. The plan reflects the priorities and values of Fort Collins residents, businesses and community partners as identified through the Citizen Survey, focus groups and community engagement efforts. The City aspires to provide world-class services to the community while cultivating an outstanding organizational culture for its employees. In order to achieve this vision, both internal and external services are data-driven and implemented according to organizational values.

Residents can not only expect to receive exceptional service, but also to have the opportunity to engage with decision-makers, provide input regarding the way City resources are allocated, and have access to government information in a timely and transparent manner. The City of Fort Collins works to continuously improve seven key outcome areas: community and neighborhood livability, culture and



recreation, economic health, environmental health, safety, transportation, and high performing government. The city budget is divided among these seven areas, and revenue is allocated to support policies and initiatives that drive improvement in outcomes. While each outcome area has unique defining characteristics, city investment in a single objective regularly impacts more than one outcome area.

### Energy Policy

The City of Fort Collins' Energy Policy reflects the community's values of reliability, safety, affordability, greenhouse gas (GHG) emissions reduction, pollution prevention, and energy independence with the vision of "Fort Collins is a leader in the transition to sustainable and resilient local energy systems to serve the community's 2050 carbon neutral future." The policy provides goals for the prioritization of decision making, programs and services related to the quantity of use and the sources of energy for electricity, thermal end-uses, and transportation. The Energy Policy uses a systems approach to energy production and consumption, as well as triple bottom line metrics (economy, society, and environment), to guide City government in the development of plans promoting policy outcomes for residents, businesses, and other organizations. The policy supports Fort Collins leadership in solutions at a community scale and includes specific targets for energy efficiency savings, renewable energy, demand response and reliability.

### Fort Collins Utilities Strategic Financial Plan

The purpose of the Fort Collins Utilities Strategic Financial Plan (SFP) is to manage the financial resources to achieve business objectives and maximize customer value for each utility service by recognizing the investments in a 10 year planning horizon that supports both operational and capital funding to meet utility service level expectations of the Fort Collins community. The SFP encompasses the full range of finances, from establishing objectives and identifying resources, analyzing data, and making financial decisions that support

the outcomes of the City Strategic Plan.

### Road to 2020

In March 2015, the City of Fort Collins developed a Climate Action Plan Framework (Framework) document and adopted updated carbon reduction goals to reduce community emissions as follows: reduce by 20 percent below 2005 levels by 2020, by 80 percent below 2005 levels by 2030, and achieve carbon neutrality by 2050. The Framework lays out a number of high-level strategies in the areas of building, mobility, energy supply, and waste reduction.

Since the Framework was developed, staff has been developing specific strategies to achieve the 2020 goals. The 31 initiatives that were initially identified are being vetted through the City's Budgeting for Outcomes process with a broader analysis of the benefits, costs, and overall effectiveness of the various initiatives. A formal roadmap to achieve the 2020 goals will be presented to City Council in February 2017.

### Broadband Strategic Plan

As the demand for more advanced, reliable, and affordable broadband service rises, the city must define its ongoing role in ensuring access is provided. "Next generation" high-speed internet services are becoming important infrastructure for communities in the 21st century. This demand for service is challenging local communities to develop effective strategies for connecting citizens, businesses, and institutions. On November 3, 2015 Fort Collins voters overturned Senate Bill 152, removing legal barriers to the city's involvement in providing residents telecommunication services. With the vote, the city will continue researching practices in other communities and the feasibility of a range of business models for telecommunications. Staff plans to work with the public throughout 2016 to gauge what role the city should play in broadband services, if any.

## Municipal Planning

### City of Longmont



**Estimated population for 2015:** 92,088

**Utility:** Longmont Power & Communications, established in 1912

### Focus on Longmont

This Focus on Longmont Plan sets direction at a city level and is included in the city's annual budget process. Seven key categories/initiatives with general goals include: (1) healthy business climate, (2) education, (3) community identity, (4) enhance the natural environment, (5) revitalize downtown, (6) high-performing government, and (7) community safety. The city is also working on incorporating a budget prioritization model into the plan. Longmont Power & Communications (LPC) has ties to most of these categories.

Highlights include: low electric and broadband rates, unmatched broadband speeds, excellence in reliability and customer satisfaction for both electric and broadband, energy efficiency programs, and quality safety programs with results for employees and the community. LPC provides related reporting statistics – definitive goals are not included as a part of the plan.

### Sustainability Plan

The city has incorporated sustainability policies and programs across various departments throughout its history. In the latter part of 2015, the city plans to begin updating a sustainability strategy. The Sustainability Plan will incorporate LPC's programs including: Efficiency Works™, LED replacement in street lighting, electric vehicles and charging stations, renewable energy options, and others.

### Comprehensive Plan

Longmont uses the city's Comprehensive Plan to identify long range capacity requirements. The plan provides a model for staff to predict average loads based on specific densities and land development types.

New for 2015, Envision Longmont is a community-wide planning effort by the city to update and integrate the Longmont Area Comprehensive Plan and the Longmont Multi-Modal Transportation Plan. The plans were last updated in 2003 and 2005, respectively. The updated Comprehensive Plan will serve as a policy guide for the city over the next 10 to 20 years. Envision Longmont will be a collaborative and inclusive process in which all citizens are encouraged to participate. LPC's planning strategy includes distribution and substation needs for the complete build out of the community. As the Comprehensive Plan is modified, LPC reviews and updates planning strategies accordingly.

### NextLight™ Broadband Services

LPC began offering 100 percent fiber-to-the-premise services as a pilot during 2013. A full build-out of the community began in 2014, and network infrastructure installation is expected to be complete near the end of 2016. LPC currently provides a 10 gigabit-wide area network to the St. Vrain Valley School District, internet speeds up to a symmetrical Gig for residents, and both standard and custom speeds for commercial customers. Digital voice service is offered as well. Customer demand is high, significantly exceeding study projections. Network and customer installations are taking place in phases throughout the city.



## Municipal Planning

### City of Loveland



**Estimated population for 2015:** 75,182

**Utility:** Loveland Water and Power, established in 1925

### Management, Staff and Funding

The Loveland Utility Commission serves as an advisory body to the city council on all matters pertaining to the water, waste water, and electric utility operations and services provided by the city.

The new City Manager is Steve Adams. Adams, formally Loveland Water and Power (LWP) Director, took office July 1, 2016. Adams has served as Loveland Water and Power Director since 2011. Adams will be working on reaffirming the City Council goals in his new role. Gretchen Stanford, former Customer Relations Manager, will be serving as Interim Water and Power Director for at least six months.

### In Process

Loveland is actively researching the feasibility of high-speed, fiber-optic broadband service throughout the city. Loveland is also gathering citizen feedback and research on traffic congestion on main thoroughfares in the city. The city is redeveloping several blocks of the downtown area to accommodate new office space, residential living, retail space and a movie theatre. Loveland Water and Power is performing a cost of service rate study, a water treatment plant expansion and a wastewater treatment plant expansion. LWP is also building the Foothills Solar and Substation project which is the first generating facility in the United States to receive approval through the FEMA process. The project includes a 3.5 MW solar array and a substation on 52 acres.

### Key Planning

Key planning items for Loveland include cost control, asset management, demand-side management, demand response, renewable supply integration, new rate designs, economic development, energy efficiency programs, workforce planning, public outreach, operational excellence, progressive technologies, regional cooperation, customer service, broadband service, water capital program, long-range planning, and addressing aging infrastructure.

### Comprehensive Plan

City Council updated The Comprehensive Plan in 2015. The document serves as a guide for aspects of Loveland's planning. It provides mission/vision statements and is mostly focused on land-use planning. From a utility perspective, it includes water conservation through land use, investigating options for alternative renewable energy generation on city properties, supporting enhanced efficiency and performance measures to reduce energy costs and conserve resources through energy efficiency and water conservation and undergrounding power lines.

### Economic Development Strategic Plan

Loveland adopted an Economic Development Strategic Plan and Incentive Policy in February 2012. That plan is scheduled to be updated by December 2016.

# Appendices

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## Appendix A:

### Resource Planning Update

#### Current Resources

Platte River owns and contracts for a mix of fossil-fueled and renewable generation. The existing portfolio of owned resources includes coal-fired generation located at the Rawhide and Craig stations, and natural gas-fired combustion turbines at the Rawhide site. Platte River also receives energy through federal contracts for hydropower. Deliveries from hydropower sources depend on local and regional hydrology conditions, which vary over time.

Wind energy is supplied to Platte River through contracts from the Medicine Bow and Silver Sage wind projects in southeast Wyoming, and the Spring Canyon site in northeast Colorado. Platte River has a diversified resource mix from a capacity (MW) perspective; however, about three-fourths of energy (MWh) delivered by Platte River to the municipalities is generated by coal plants. Platte River also has a gap in its current resource lineup — it lacks the flexible, complementary resources that can help

integrate more intermittent renewable sources over the long term.

Platte River's renewable resources have grown significantly over the past few years. Wind power accounts for 78 MW and about 9 percent of delivered energy (2015), while solar will account for 30 MW and roughly 1.5 percent of total delivered energy by 2017. To meet the potential needs of the EPA's Clean Power Plan, the use of renewable generation will need to increase, requiring enhanced management of intermittent resources.

The current mix of resources has delivered roughly 3,300 GWh annually to the four municipalities that Platte River serves over the last five years. Surplus energy produced by Platte River is sold to third parties, and typically averages about 750 GWh per year, primarily from Platte River's share of the Craig units.

In 2016, Platte River prepared an integrated resource plan with an emphasis on CO<sub>2</sub> emission reduction options, covering the 20-year planning period from 2015 to 2035. The IRP focused on two distinct analytical segments—the near-term Resource Acquisition Period (2015-2020), and the Planning Period (2020-2035). The IRP links directly to the goals and initiatives that have been presented in prior Strategic Plan documents.

The purpose of the document was to satisfy the Integrated Resource Plan filing requirements as prescribed by Western, and to provide recommendations and actions for changes to Platte River's existing operations in preparation of long-run energy industry changes arising from technological progress, consumer preferences, and regulatory mandates.

## Platte River's Projected Sources of Energy in 2016

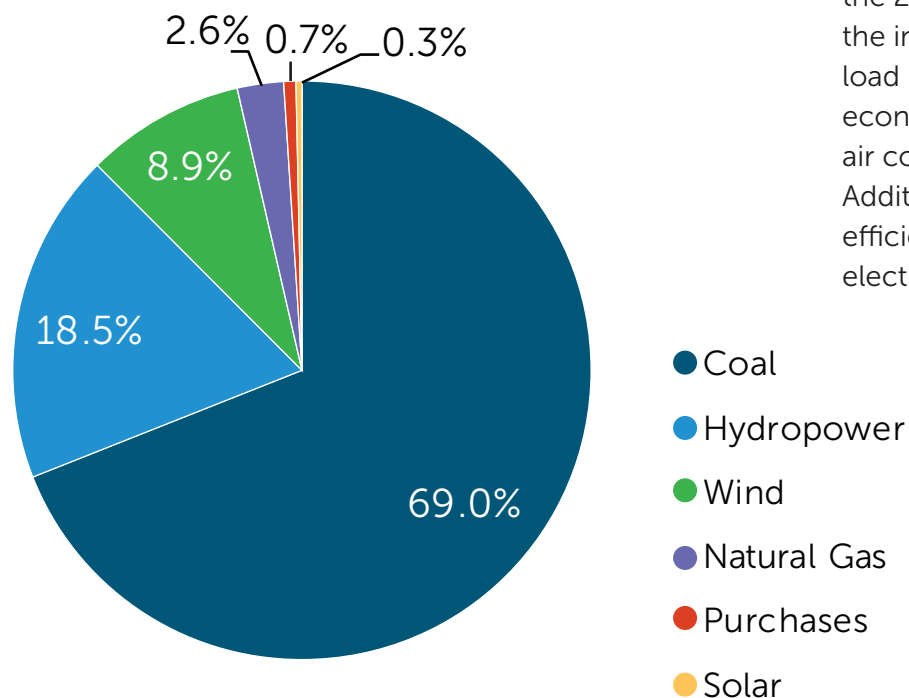


Figure 5. Projected 2016 Energy Mix

Due to the growing interest in the climate impacts from greenhouse gases, the 2016 IRP placed emphasis on portfolio options that can provide significant CO<sub>2</sub> emission reductions. Platte River considers this to be particularly relevant now, given the increasing likelihood that carbon regulations will come into effect, including possible future implementation of the US EPA's Clean Power Plan (CPP), a federal rule designed to reduce carbon emissions from the electric power sector.

## Electric Load Forecast

Platte River's system electric load forecast is one of the primary drivers in the resource planning process. Platte River's statistical model uses multiple variables to predict demand and energy growth in the owner municipalities. These variables include population, employment, and weather.

Peak load growth increased rapidly during the 1990s and into the 2000s, due primarily to strong economic growth and the increased incidence of air conditioning use. Future peak load growth is expected to be lower than growth prior to the economic downturn of the late 2000s—primarily because air conditioning use has reached high levels of saturation. Additionally, lower economic growth and increased energy efficiency (EE) efforts over the last few years have reduced electric load growth in the municipalities.

Platte River's EE programs continue to evolve and are planned to expand in the future. The cumulative impact of EE is expected to reduce energy needs by approximately 574 GWh through 2030, a nearly 14% decrease relative to the projected loads without EE.

### Capacity and Renewables Planning

Platte River’s reliability planning standards indicate that a new firm capacity resource will not be required until after 2030, and with the current load patterns of our customers, the next resource is likely to be needed only at time of system peak. Many influences could accelerate the timing and type of Platte River’s next firm resource, including:

- New regulatory requirements affecting the operation of current resources
- The impacts of expanded demand-side management (DSM)
- Unexpected new load growth (such as the addition of new large customers)
- Changes in energy consumption patterns (air conditioning, electric vehicles, miscellaneous electrical devices, etc.).

Because of Platte River’s recent efforts to add renewable generation resources, further renewable resources are not required to meet existing state standards until well after 2030. However, Platte River will continue to evaluate options to add more renewables to our generation fleet as renewable costs continue to decline—for the purpose of diversifying the fleet and providing further fuel risk mitigation.

The decision to add a new capacity resource is based on ensuring an adequate balance between loads and resources at all times. Traditionally, resource planning for electric utilities has focused primarily on balancing loads and generation through capacity planning, which is still a long-term focus for Platte River. However, Platte River’s process incorporates an integrated review of a variety of objectives, with a consideration of potential CO<sub>2</sub> reductions.

**Platte River uses the following criteria for determining the timing of new firm generation resources:**

| Planning Standard                                                         | Expected Capacity Needs                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maintain a minimum planning reserve margin of 15%                         | Under this standard, Platte River is not expected to need additional firm capacity until after 2030.                                                                                                                                                             |
| Ensure loss of load expectation (LOLE) of less than one day in ten years. | Platte River’s LOLE analysis indicates that system peaks are likely to exceed available supply on a one-in-ten basis in the 2033 timeframe. The addition of about 10-15 MW/year may be required after 2033 for Platte River to maintain the one-in-ten threshold |



## Portfolio Analysis

Platte River uses the AURORAxmp Electric Market Model (“Aurora”), developed by EPIS Inc., to perform modeling related to system dispatch and production cost analysis. Aurora simulates the hourly operation of Platte River’s generation system and its management within regional energy markets. The model also captures fixed costs and capital costs which are necessary for evaluating the full cost of potential new generation alternatives. Inputs for the model are collected from a variety of resources including internal and external experts. Internal experts review data supplied by consultants to ensure it is reasonable.

Since the model cannot evaluate every potential combination of portfolios, the pool of candidates is narrowed to a reasonable number of the most promising technologies.

## Clean Power Plan

### Federal

On August 3, 2015, the Environmental Protection Agency released the Clean Power Plan Final Rule under 111d of the Clean Air Act (CPP). The CPP is intended to curb CO<sub>2</sub> emissions from US power plants by 2030. For the nation overall, the CPP targets a reduction of 32% below 2005 levels by 2030, with potential interim targets for early progress. The responsibility for the implementation of the CPP is intended to be delegated to the states, and the reduction targets vary by state. Colorado’s 2030 proposed target is 35%, relative to reported 2012 CO<sub>2</sub> emissions.

A stay was issued by the US Supreme Court on February 9, 2016, pausing implementation of the CPP while litigation proceeds. The outcome of this process is uncertain and is further complicated by the possibility that the incoming administration may make further changes. Platte River

staff remains engaged in the process and is prepared to analyze any changes that come about and update plans as appropriate.

### Local

In 2016, Platte River will begin discussions with its member owners to evaluate customized power production portfolios that best suit the individual needs of the communities. The goals for this project will be determined jointly by the member-owners, and driven by individual power cost and emissions reduction objectives of the communities. For example, Fort Collins has a council-approved climate action plan with specific CO<sub>2</sub> reduction objectives through 2050 that will be addressed within the context of the other cities’ goals.

## Craig Unit 1 Exit Strategy

Platte River is a partial owner of Craig Units 1 and 2 (also referred to as the Yampa Project). Units 1 and 2 typically generate approximately one-fourth of all Platte River energy sales and about one-third of CO<sub>2</sub> emissions. In 2015-16, Platte River studied three primary strategies, including:

1. Exiting Craig Unit 1 by 2020 and both Craig units by 2030, or
2. Exiting both units by 2020, or
3. Operating the two units at minimum contractual capacities during most of the year.

Platte River’s board of directors approved staff’s recommendation to develop a strategy to exit Craig Unit 1, which was finalized in 2016. Through negotiations with the State’s environmental office and other resource advocates, the joint owners of the Craig Generating Station (PacifiCorp, SRP, Tri-State, PSCo, and Platte River), reached an agreement to close Craig Unit 1.

The agreement results in a favorable balance for the plant owners, their employees, and their customers—costly measures for emissions controls will be avoided by the early retirement of the unit, while Craig Unit 1 will continue to operate through December 31, 2025.

## Demand Side Management

Demand side management (DSM) refers to programs offered by utilities that influence customers’ use of electricity. DSM goals for the near-term include continued expansion of energy efficiency programs, continued implementation of a system-wide demand response (DR) pilot program that is focused on existing DR resources, and developing a distributed energy resource (DER) strategy.

## Expanded Energy Efficiency Programs

Based on studies conducted by Platte River and its consultants, we anticipate increasing our incremental annual



efficiency program savings from about 0.4% of load in 2015 to 1.25% of load in 2019. Following this trajectory and continuing to add 1.25% energy savings each year thereafter will result in approximately 739 GWh of cumulative energy efficiency savings by 2035.

As part of the expansion, Platte River anticipates working with the municipalities to hire an independent program evaluator

to evaluate one or more programs and provide independent assessment of whether programs are achieving energy-saving and demand-saving goals, and can help identify opportunities for improving program outcomes.

## Demand Response Pilot Program

DR has the potential to provide net capacity for use in a variety of ways, including the ability to avoid or delay new generation capacity, to shift energy use from high-cost times to low-cost times, or to provide reserve services (where permitted by the balancing authority or regional market). An emerging use of DR is to help integrate intermittent renewable generation, such as wind and solar.

Platte River and its consultants estimate that the present-value costs of 20 to 50 MW of DR would be \$18 - \$35 million, and present-value benefits would be \$12 - \$31 million over the period 2025 through 2050. The analysis period was chosen to align with the date of Platte River’s projected need for peaking generation capacity, which may be delayed with DR programs starting in 2025. More information on potential benefits and costs for DR will be gathered as part of the pilot program.

The DR Pilot Program will provide Platte River’s system operators with the ability to dispatch a portion of the municipalities’ existing DR capacity. The goal of the pilot is to explore how DR could be operated by Platte River to provide maximum benefits to the overall system (integrated wholesale and retail perspectives), and to identify improved methods for allocating the system DR benefits to the municipalities in proportion to the verified and reliable DR resource they provide.

## Distributed Energy Resource Strategy

For 2017 forward, Platte River and the municipalities will work together to develop a more formal strategy for implementing and integrating distributed resources. This strategy may include some of the following:

- A range of distributed resources including generation (such as combined heat and power, or CHP), load management (including DR), and energy storage.
- Develop procedures to maintain an up-to-date distributed generation database that includes proposed projects.
- Integrate lessons learned from the system DR pilot program into overall strategy.
- Enhance modeling capabilities to analyze distributed resources from wholesale, distribution, and customer perspectives.
- Evaluation of means to improve the reliability, predictability, and operational value of DER resources through a variety of methods (e.g., metering/monitoring, variable generation forecasting, appropriate rates and/or incentives, judicious siting).
- Evaluate benefits and costs in an integrated fashion, including the generation and transmission system, distribution system, and end-use customers.
- Solar photovoltaic (PV) and CHP are the two types of distributed generation most likely to be used in the near future.
- PVs can be installed at an end-user's facility or provided by larger-scale installations at the distribution or wholesale

utility level. Platte River retained Nexant (a consultant) to evaluate the potential for roof-mounted PV in the region, based on roof orientation, capacity factors and economics. Nexant suggested that PV installations could grow to an estimated rated (direct-current) output of 120 MW in the next 20 years (by 2035) — if utility incentives are provided to cover all of the cost. This would have the effect of reducing the summer peak by about 30 MW (and shifting it to later in the day). Considering all PV systems already installed on homes and businesses (over 630 systems), the Loveland solar project (funded via FEMA), solar programs in Fort Collins, and a potential system-wide community solar program — total distributed PV installations could exceed 12 MW by 2017.

- CHP refers to a generation system that uses a fuel — typically natural gas or biofuel — to generate electricity and incorporates a heat recovery system that captures waste thermal energy for beneficial use, making steam or hot water. Nexant evaluated the potential for several CHP technology applications and concluded that cost effective potential for CHP was fairly low — less than 5 MW of system wide capacity. This preliminary assessment did not include detailed evaluation of specific larger projects at individual customer facilities such as Colorado State University, breweries, and regional hospitals. These larger, case-by-case projects will be evaluated in more detail going forward.
- Community Solar is an option growing in popularity among utilities nationwide. Under a community solar program, customers subscribe to a large PV array to purchase either a share of capacity or a share of the energy output from the PV by paying a large up-front or small monthly payment, respectively. Community solar is a popular option because it can be made available to customers that don't own their home or that don't have suitable roof space for solar.



It also takes advantage of the economies of scale inherent in classic utility-customer service models, with the added benefit that the utility takes care of the operations and maintenance of the system on behalf of the customer. Platte River is currently evaluating the development of a system-wide community solar program. Key factors being evaluated are the cost of a solar project, the benefits it provides, the resulting net cost that would be passed on to customers, and the anticipated level of customer interest at that level of cost.

### Renewables Integration

In the coming years, Platte River will continue to focus on integrating renewable energy resources within its resource mix. Key areas of emphasis include expanding operating expertise with wind resources (78 MW total), gaining experience with the management and integration of 30 MW of new solar generation, and modeling operational aspects of renewable resource integration. Platte River will also continue to monitor regional renewable resource opportunities at the wholesale level and include distributed renewable sources in system planning activities.

### Intermittency

Preparing to manage the intermittency of renewable generation will be an important effort for Platte River in the

coming years. The currently approved 108 MW of wind/solar in Platte River's portfolio is anticipated to grow substantially to meet 2030 EPA CPP compliance requirements.

Currently, Platte River lacks sufficient flexible generation resources to manage the intermittency of wind and solar generation. To help address this need, Platte River relies on PSCo (the regional balancing authority) to provide the services to help balance intermittent renewables generation. Since PSCo determines changes to the future cost of balancing services, total reliance on these services carries uncertainty. Platte River may be exposed to additional financial risks if large amounts of renewable resources are added to its system.

### Integration Study

In 2015, Platte River began efforts to evaluate the system cost and performance impacts from higher levels of intermittent generation. A consultant's report evaluated the expected incremental cost of balancing Platte River's system at various levels of solar and wind penetration (ranging from 7.5 percent to 30 percent of Platte River's total energy deliveries), concluding that at lower levels of renewable penetration, Platte River could expect additional integration costs of about \$5 - \$7/MWh. As the penetration of renewables increases to 30 percent of total energy supply, the expected cost could rise to over \$30/MWh.



These preliminary cost estimates were included in Platte River's modeling efforts to date, and Platte River expects to engage in further analysis to more accurately determine potential costs for renewable resource integration. Also, Platte River intends to work closely with Xcel Energy and the National Renewable Energy Laboratory for better collaboration of large-scale integration of renewable sources. Platte River expects to bring expertise related to sub-hourly modeling in-house over time, similar to the approach for hourly production cost modeling using Aurora.

### Transmission Plan

Platte River's 10-Year Transmission Plan is updated annually to ensure that an adequate transmission system is planned for the reliable delivery of electricity to the municipalities and other Platte River transmission customers. The planning studies and reliability assessments for the

near-term and long-term planning horizons demonstrate the transmission system meets performance requirements of the Western Electricity Coordinating Council (WECC) and NERC.

In its planning and engineering efforts, Platte River works with its member-owners to ensure the effective integration of our transmission network and the municipal distribution systems. As our businesses continue to evolve, we will continue to plan for future system adaptations, including the accommodation of potential distributed generation resources within our service area.









A summary of planned transmission projects is provided in the table below.

### Platte River Planned Transmission Projects

| In-Service     | Project Name                               | Description                                                                                                                                                  | Purpose                                                                                       |
|----------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| May 2017       | Loveland Foothills 115/12.47kV Substation  | Site next to Mehaffey Park in west Loveland off 29th St. and adjacent to Loveland West-Horseshoe 115kV line to locate additional 115/12.47kV transformer(s). | New delivery point to serve growing load.                                                     |
| December 2017  | Boyd 230/115kV Substation Expansion        | Add 230/115kV transformer T2 and reconfigure 230kV and 115kV yards to breaker-and-a-half arrangement.                                                        | Improve system reliability in the Loveland area.                                              |
| May 2018-2019  | Harmony 230kV Substation Terminals Upgrade | Modify 4 transformer bays with circuit switcher additions and modify transformer relaying.                                                                   | Remove conditional line ratings on the Portner and Timberline lines.                          |
| May 2018       | Avery 230kV Substation                     | Sectionalize Carey-Timberline 230kV Line with a new substation. PSCo will own and operate the substation.                                                    | New PSCo delivery point to serve growing load.                                                |
| September 2020 | Timberline 230/115kV T3 Replacement        | Replace 230/115kV transformer T3.                                                                                                                            | Improve system reliability in the Fort Collins area. Existing transformer was installed 1976. |
| February 2020  | Fordham 115kV Substation Expansion         | Add 115/12.47kV transformer T3.                                                                                                                              | New delivery point to serve growing load.                                                     |
| April 2020     | Re-Configure Harvard Substation            | Connect Harvard 115/12.47 kV transformers T1 & T2 to different bays at Longmont NW Substation.                                                               | Improve reliability to each transformer. Meet Platte River design criteria.                   |

| In-Service    | Project Name                                 | Description                                                                                                                                                                                                             | Purpose                                   |
|---------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| October 2021  | Rawhide Unit 1 GSU Replacement               | Rawhide Unit 1 GSUs (3 + 1 spare) in coordination with major Rawhide plant outage.                                                                                                                                      | Satisfy maintenance requirements.         |
| May 2021      | Loveland Boedecker 115/12.47kV Substation    | Site near southeast corner of Boedecker Lake adjacent to Loveland West Tap 3-terminal 115kV line structures to locate additional 12.47kV transformer(s). Loveland owns the land.                                        | New delivery point to serve growing load. |
| November 2021 | Valley 115kV Substation Expansion            | Add 115/12.47kV transformer T3.                                                                                                                                                                                         | New delivery point to serve growing load. |
| December 2021 | Fort Collins Northeast 115/13.8kV Substation | Considering a site south of Richard Lake Substation and west of I-25 Substations. A short double circuit 115kV transmission line will be required.                                                                      | New delivery point to serve growing load. |
| May 2022      | Loveland Southeast Substation                | Considering sites near intersection of I-25 and Hwy 402 to locate additional 12.47kV transformer(s). Could be a 230kV or 115kV transmission interconnection depending on desired project route. Loveland owns the land. | New delivery point to serve growing load. |
| October 2022  | Rawhide Station Service XFMR                 | Replace Rawhide 230/12.47 Station Service transformer with major plant outage                                                                                                                                           | Life cycle replacement.                   |

## Appendix B:

### Risk Management Plan

The Risk Management Plan summarizes Platte River's proactive efforts to identify, evaluate, rank, and mitigate risks that could negatively impact electric supply, finances, reputation, and safety requirements. Platte River's risk management process provides a framework to identify and assess specific risks by soliciting staff input and following an assessment and documentation process.

Identified risks are evaluated through a risk assessment process coordinated by the chief financial and risk officer, financial planning staff, and a Risk Oversight Committee (ROC) consisting of the general manager, senior management, and key staff members.

The ROC identifies subject matter experts throughout Platte River to provide expertise and information regarding each identified risk and to alert the ROC of additional risks. As risks are identified, a detailed risk review process assesses risk magnitude and probability based on Platte River data, industry data, staff and management experience, and evaluation.

The ROC assigns each risk a magnitude and probability rating based on specific criteria. Risks are prioritized for the development and implementation of appropriate actions. Strategic actions to address risks include avoidance, transference, mitigation, and acceptance. Platte River's objective is to reduce risk exposures to acceptable levels when elimination is not feasible. The ROC reassesses all

identified risks and the effectiveness of mitigation strategies. The financial planning staff maintains all assessment documentation and supporting analysis, and the ROC reviews those materials.

All identified risks are listed in a Risk Inventory. The chief financial and risk officer approves all risks included in the Risk Inventory, along with assessments, and supporting documentation.

A third party review of the Risk Management Plan and risk mitigation activities concluded in 2016. The review included a report summarizing strengths and suggested improvements to Platte River's overall risk management process. The overall findings of the third party assessment show that Platte River has achieved a certain level of stability through the annual risk assessment process and the transition from a "top-down" to a "bottom-up" approach have been successful. The report recommended a phased work plan for specific actions that can be adopted by Platte River to improve the risk management program in four key areas: governance and organization, policy and process, risk culture and awareness, and risk infrastructure. The first phase of improvements, which include expansion of defined risk management program goals, improved processes and communication, and redefined metrics are underway.



Platte River's identified risks are analyzed and assigned a magnitude and probability classification, respectively.

| Risk Magnitude | Electric Supply                     | Safety                                | Financial                         | Reputation and Interests     |
|----------------|-------------------------------------|---------------------------------------|-----------------------------------|------------------------------|
| HIGH           | Loss of supply to an entire city    | Loss of life or serious bodily injury | Significant impact >\$10 million  | Significant long-term damage |
| MEDIUM         | Loss of supply to part of a city    | Bodily injury                         | Limited impact \$5 - \$10 million | Short-term damage            |
| LOW            | Momentary loss to a city substation | No injury                             | Modest impact <\$5 million        | No appreciable damage        |

| Profitability Rank | Probability Rank Definition                                                  |
|--------------------|------------------------------------------------------------------------------|
| HIGH               | The identified risk is likely to occur within five years.                    |
| MEDIUM             | The identified risk could occur within five years and should be anticipated. |
| LOW                | The identified risk is unlikely to occur within five years.                  |

## Identified Risk

Risks identified as significant to Platte River that could negatively impact electric supply, finances, reputation, and safety requirements.

## Magnitude

The impact of an identified risk occurring. Ranking classifications are detailed below.

## Probability

The likelihood of an identified risk occurring within a specified time period. Ranking classifications are detailed below.

## Risk Oversight Committee

A committee consisting of the general manager, senior management, and key members, charged with managing Platte River's risks and developing the Risk Management Plan.

## Risk Management Plan

A document included as an integral part of Platte River's Strategic Plan summarizing Platte River's identified risks and risk mitigation strategies.

## Risk Inventory

A table within the Risk Management Plan summarizing the magnitudes and probabilities of identified risks.

## Risks & Mitigation Strategies

The number assigned to each risk does not indicate a priority or level of severity. It is designed to make it easier to find the related detail of that risk on the following pages.

| #  | Identified Risk                                       | Magnitude | Probability |
|----|-------------------------------------------------------|-----------|-------------|
| 1  | New Mandated Emission Reductions                      | High      | High        |
| 2  | Business Cybersecurity System Intrusions              | Medium    | High        |
| 3  | EPA Coal Combustion Residuals Rule Implementation     | Medium    | High        |
| 4  | Cybersecurity - Customer Data                         | High      | Medium      |
| 5  | Corporate Conduct                                     | Medium    | Medium      |
| 6  | Damage by Outside Contractor Employees                | Medium    | Medium      |
| 7  | Defined Benefit Plan Investment Under-Performance     | Medium    | Medium      |
| 8  | Employee Errors Resulting in Loss of Electric Service | Medium    | Medium      |
| 9  | Interest Rate Changes                                 | Medium    | Medium      |
| 10 | Mandated Renewable Energy Standard                    | Medium    | Medium      |
| 11 | Physical Threats Affecting Reliability or Human Life  | Medium    | Medium      |
| 12 | Acts of Workplace Violence                            | High      | Low         |

| #  | Identified Risk                                                                     | Magnitude | Probability |
|----|-------------------------------------------------------------------------------------|-----------|-------------|
| 13 | Cybersecurity - Generation Combustion Turbines                                      | High      | Low         |
| 14 | Cybersecurity - Generation Unit 1 and Gas Yard Balance of Plant                     | High      | Low         |
| 15 | Cybersecurity - System Operations                                                   | High      | Low         |
| 16 | Environmental Violations                                                            | High      | Low         |
| 17 | Interruption of Coal Supply (Fuel and Rail, Trapper Mine)                           | High      | Low         |
| 18 | Interruption of Water Supply for Rawhide Generation                                 | High      | Low         |
| 19 | Unplanned Capital Requirements                                                      | High      | Low         |
| 20 | Increased Turnover of Employees (Knowledge Loss)                                    | Low       | High        |
| 21 | Credit Risk                                                                         | Medium    | Low         |
| 22 | Financial Internal Controls                                                         | Medium    | Low         |
| 23 | Commodity Market Volatility                                                         | Low       | Medium      |
| 24 | Electric Facility Siting Constraints                                                | Low       | Medium      |
| 25 | Extended Baseload Forced Outage: Craig                                              | Low       | Medium      |
| 26 | FERC/NERC Regulatory Compliance Violation                                           | Low       | Medium      |
| 27 | General Liability                                                                   | Low       | Medium      |
| 28 | Increased Federal Oversight                                                         | Low       | Medium      |
| 29 | Changes to Tax Exempt Status and Classification of Newly Issued Power Revenue Bonds | Low       | Low         |
| 30 | Increased State Oversight                                                           | Low       | Low         |
| 31 | Extended Baseload Forced Outage: Rawhide                                            | Low       | Low         |
| 32 | Interruption of Natural Gas Supply (Fuel and Pipe)                                  | Low       | Low         |
| 33 | Loss of Communication Systems Functionality (Phone, Fiber, Etc.)                    | Low       | Low         |
| 34 | Misalignment of Capacity Resources and System Loads                                 | Low       | Low         |
| 35 | Physical Property Loss                                                              | Low       | Low         |
| 36 | Transmission Interruption                                                           | Low       | Low         |
| 37 | Wholesale Electric Market Manipulation                                              | Low       | Low         |



**A brief summary of each risk and its mitigation strategies follows. Each mitigation strategy requires the ROC's attention and follow-up to evaluate alternative courses of action.**

## 1. New Mandated Emission Reductions

Platte River generation facilities consistently operate below existing emission permit limits for all regulated pollutants, and the emission levels from Rawhide and Craig are among the lowest for coal units in the United States.

Evolving operational and environmental standards may require further reductions in emission levels; staff will continue monitoring regulatory developments and analyze various mitigation strategies. Emission reductions are also evaluated as part of a larger strategic planning process currently underway.

## 2. Business Cybersecurity System Intrusions

Platte River cyber systems are facing a growing and evolving threat of system intrusions. To date, no known successful intrusions have occurred. In response to the increased risk, beginning in 2016 IT will be moving from an opportunistic to a program-driven approach to cybersecurity improvements.

## 3. EPA Coal Combustion Residuals Rule Implementation

In April 2015, the EPA finalized new rules resulting in increased regulation of coal combustion residuals (CCR). The new rules include standards for new and existing facilities, applicable to operations at Rawhide. Platte River is in the process of complying with current requirements and determining what future requirements may apply. Platte River will continue to monitor initial implementation of the rule across the country, including industry best practices and enforcement actions. Participation will also continue

in stakeholder meetings and public process coordinated by Colorado Department of Public Health and Environment concerning possible changes to state regulations to incorporate the new federal standards.

Platte River is evaluating options for upgrades to the ash handling system at Rawhide including a range of alternatives. The evaluation is not simply limited to the least cost options to meet compliance but will deliberately include a particular focus on more costly alternatives that would have additional benefits including reduced risk of environmental impacts.

## 4. Cybersecurity – Customer Data

Platte River hosts the Customer Information System (CIS) on behalf of two municipalities; the CIS database includes records containing confidential data. A third-party vulnerability assessment is scheduled for late 2016, documenting opportunities for improvement and developing an action plan to address identified improvement areas.

## 5. Corporate Conduct

Ethics violations typically receive highly negative publicity, which could damage Platte River's reputation and result in legal action. As a result, Platte River has incorporated a "Code of Conduct" within the Employee Handbook, providing guidance and ethical principles applicable to all employee behavior.

Platte River has provided workforce training on ethics guidelines and the Employee Handbook section on ethics has been strengthened with more specific guidance for employees. These guidelines will be reviewed annually. Staff has implemented a compliance hotline for reporting potential violations and communications efforts to reinforce the tool will continue.

## 6. Damage by Outside Contractor Employees

The responsibility for screening contractors' employees rests with the contractors themselves. However, Platte River personnel responsible for administering contracts must account for the risk posed by contractors.

The contractor screening, selection, and bidding process helps mitigate the risk. Contract terms and conditions further mitigate risks and reinforce administrative personnel's responsibility and authority. These terms and conditions include, but are not limited to, contract termination, safety assessments, indemnification, or surety bond requirements.

## 7. Defined Benefit Plan Investment Under Performance

Investment earnings on the Defined Benefit Plan are subject to volatility. Platte River closed the Defined Benefit Plan to employees hired on or after September 1, 2010, which reduced future Defined Benefit Plan funding requirements. The reinstated lump sum distribution, combined with modified plan assumptions implemented in 2016, further reduces the risk of investment under-performance. The Retirement Committee, in conjunction with investment advisors, meets quarterly to monitor investment diversity and performance, and evaluate and update investment strategies.

## 8. Employee Errors Resulting in Loss of Electric Service

Reliance upon human behavior introduces the unavoidable element of human error.

To reduce errors and minimize their impacts, Platte River implemented job training focused on acquiring and maintaining skills. The training includes updating apprenticeship step progression requirements, regular refresher training on specialized processes or activities, and documenting processes. Time is scheduled to review job hazards before starting work, which minimizes the potential

for errors and standardizes safety procedures and practices.

## 9. Interest Rate Changes

Interest income and financing costs are divergently impacted by interest rate volatility.

A ladder maturity strategy based on cash flow projections mitigates the impact of interest rate volatility on investments. Staff analyzes various debt options to help mitigate potential rising rates during times of anticipated debt issuance.

## 10. Mandated Renewable Energy Standard

The Colorado Renewable Energy Standard (RES) currently does not apply to Platte River, but requires municipal utilities with more than 40,000 customers to provide 10 percent of their energy from qualified renewable resources by 2020; currently one owner municipality qualifies. Future mandates, from both federal and state governments, may require additional renewable resources in Platte River's portfolio. Platte River will continue to proactively diversify its resource portfolio, while monitoring the regulatory landscape and analyzing potential scenarios for future compliance.

## 11. Physical Threats Affecting Reliability or Human Life

Generation and transmission facilities include high-value assets in multiple locations serving the owner municipalities. This exposes Platte River to increasing physical security threats.

Platte River implements the NERC Critical Infrastructure Protection (CIP) reliability standards as required, and uses them as a roadmap for physical security practices in other areas. An internal committee developed a comprehensive security policy and completed a security evaluation to identify areas of improvement.

## 12. Acts of Workplace Violence

Platte River, similar to any employer, is exposed to threats of violence against its employees, both at the jobsite and outside the workplace. A zero-tolerance policy is defined in the Employee Handbook, including disciplinary actions for employee demonstrating threatening behavior. Workplace violence training has occurred, and avenues exist for employees to report potential workplace violence concerns. Platte River will continue to improve employee safety through training and facility planning.

## 13. Cybersecurity – Generation Combustion Turbines

CIP reliability standards from NERC, FERC, and WECC require significant cyber oversight, resulting in the installation of system hardware and software to protect generation combustion turbines. The most recent audit found no potential violations, and cited no areas of concerns or recommendations.

The Controls Network Administrator maintains reliability and security of the controls network and all cyber assets connected to it, including the combustion turbines. Multiple layers of cybersecurity protection exist, along with built-in redundant, independent protections. The presence of five smaller, independent, generation units mitigates the impact versus possessing all peaking capacity on a single unit.

## 14. Cybersecurity – Generation Unit 1 and Gas Yard Balance of Plant (BOP)

In the event of a severe cyber breach, a loss of generation infrastructure would cause a system outage until manual restoration occurred, along with potential personnel and equipment damage. CIP reliability standards from NERC, FERC, and WECC do not currently apply to Unit 1 and Gas Yard BOP. An initial cybersecurity assessment demonstrated

areas in need of improvement. Staff has identified and implemented strategies to address concerns, and will continue assessing future security needs.

## 15. Cybersecurity – System Operations

System Operations uses a SCADA system to monitor and control the Platte River Bulk Electric System (BES) assets. The technology used by the SCADA system and personnel with access may introduce vulnerabilities. A breach of the SCADA system cybersecurity could cause a loss of control or situational awareness, resulting in the loss of load to one or more of the owner municipalities.

Platte River will address threats and regulatory requirements specific to SCADA systems through internal controls improvement, capital investment, employee training, and proper staffing to adapt to evolving threats.

## 16. Environmental Violations

Operation of a BES requires compliance with numerous environmental regulations with increasing complexity. Non-compliance during the operation of generation and transmission facilities may result in financial penalties and/or mandated system upgrades.

Platte River remains proactive in environmental compliance, and continually trains staff to ensure environmental compliance. Training programs are enhanced as regulations and other requirements evolve.



### 17. Interruption of Coal Supply (Fuel and Rail, Trapper Mine)

The absence of coal for baseload generation would result in replacement power purchased, or peaking generation, both potentially higher cost alternatives to Platte River's baseload units. The proximity of mines, coal mine diversity, and adequate stockpile inventories reduce the chances of interruption.

To avoid an interruption, Platte River will continue to seek long-term coal supply and rail contracts, while maintaining strong relationships with coal and rail providers. Platte River targets a minimum of 75 days of stockpile inventory at Rawhide and a minimum of 60 days of stockpile inventory at Craig to mitigate supply disruptions.

### 18. Interruption of Water Supply for Rawhide Generation

Without a reliable water supply, Platte River could experience sustained curtailments of generation from the Rawhide coal unit. The Windy Gap Project is the primary source of water for Rawhide generation, and historically produces adequate water for operational needs.

To mitigate the risk of water shortages, Platte River is participating in the Windy Gap Firming Project to improve reliability of the Windy Gap water supply. The permitting process is nearly complete and current projections indicate the firming project will be completed and begin filling by 2021 or 2022. In the interim, Platte River will continue researching alternative water supplies for Rawhide coal unit operations.

### 19. Unplanned Capital Requirements

Capital expenditures are planned and prioritized annually to determine capital funding requirements over the next several

years. Significant variances over planned project expenses can produce financial strain and rate pressure.

Platte River implements best practices for project management to improve cost projections.

### 20. Increased Turnover of Employees (Knowledge Loss)

The demographics and tenure of a portion of Platte River's workforce suggest many employees may consider retirement in the near future, resulting in a loss of institutional and operational knowledge. Individual managers of impacted areas continue to improve the documentation and knowledge sharing in their areas as this loss is recognized. The recruiting function will continue to strengthen as well as training and development programs.

### 21. Credit Risk

Platte River invests in a number of Government Sponsored Enterprises ("agencies") that present credit risk. Default of any agency debt could result in substantial loss of investment principal.

Platte River diversifies its portfolio by purchasing different types of securities allowed under Colorado State Statute: agency debt, treasury notes, investment pools, bank deposits, and money market accounts. Within direct purchase agency debt, Platte River limits its exposure to each individual agency to less than 20 percent (subject to review by the chief financial and risk officer). Platte River will continue to maintain a diversified investment portfolio while monitoring the Federal Housing Finance Agency reports to ensure the counterparties remain stable.

## 22. Financial Internal Controls

A financial loss due to fraud or embezzlement is limited by strong financial internal controls and separation of financial duties. An internal auditor is on staff, and policies and procedures exist to support internal financial controls. The Internal Audit Committee prioritizes the internal audit program, reviews audit findings, and recommends action items.

Additionally, Platte River has a confidential hotline, operated by external auditors, for employees to report suspicious activity. Platte River also maintains insurance policies to mitigate financial loss.

## 23. Commodity Market Volatility

Commodity prices are currently in a period of depressed prices; market recovery and volatility is anticipated. Platte River expenses directly impacted by commodity market volatility currently represent 29% of total budgeted expenses, with projections increasing to 33% in 2021. Increased operating expenses resulting from variances above current projections would be offset by increased surplus sales revenues.

Platte River will continue to monitor markets for future opportunities to mitigate price volatility and analyze future resource and fuel needs.

## 24. Electric Facility Siting Constraints

Installation of new electric facilities (generation and transmission) requires extensive time for planning, design, permitting, and construction. Analysis using strategic planning tools to properly forecast the timing of a new

facility, combined with proper project planning, mitigates delays associated with siting and permitting.

## 25. Extended Baseload Forced Outage: Craig

In the event a forced outage exceeding two weeks occurred at either of the Craig units, Platte River's ability to serve load would not be curtailed. This is due to the presence of Platte River's natural gas peaking units, availability of other generation resources in the region, and the wholesale market.

The primary exposure is the cost to replace baseload generation with a combination of natural gas fueled combustion turbines and wholesale market purchases. To represent Platte River's interests, Platte River employees serve on the Yampa Engineering and Operating Committee and the Yampa Coordinating Committee.

## 26. FERC/NERC Regulatory Compliance Violation

Platte River is subject to the NERC Compliance Monitoring and Enforcement program for mandatory and enforceable Reliability Standards.

This requires annual self-certifications and compliance audits every three years. FERC has the authority to issue civil penalties for violations.

Platte River's Reliability Compliance Program and well-documented internal compliance program operate independently of areas responsible for reliability standards compliance. Responsibilities are assigned to relevant staff, and numerous policies, processes, procedures, and internal controls have been implemented.

## 27. General Liability

Due to risks associated with the nature of Platte River business activities, Platte River purchases various insurance products to mitigate financial risk. With the assistance of insurance brokers, appropriate insurance policies are maintained.

Platte River promotes a culture of high safety standards, starting with the general manager, with a focus on continuously improving business policies and procedures.

## 28. Increased Federal Oversight

As a political subdivision of Colorado, many federal legislative and regulatory reforms that apply to private businesses do not apply to Platte River. Increasingly Platte River is subject to federal oversight in areas such as employment, finance, business transactions, employment benefits, land and water development, and wildlife protection.

Platte River remains active in monitoring changes to the legislative and regulatory landscape, and communicates its positions to legislators and regulators, when necessary. In addition, Platte River is an active member of coalitions that monitor and participate in the legislative and regulatory process.

## 29. Changes to Tax Exempt Status of Newly Issued Power Revenue Bonds

Platte River's ability to issue tax-exempt debt lowers financing costs, which benefits rate payers. Modifications to tax-exempt financing are being considered as part of federal tax reform.

Platte River will continue to support APPA and LPPC in their efforts to ensure the continuance of tax-exempt financing. Staff will continue analyzing various debt options that could be used if tax exempt financing is modified.

## 30. Extended Baseload Forced Outage: Rawhide

Historical performance of Rawhide Unit 1, along with staff analysis defines an extended baseload outage as a two-week outage. An outage of this duration would not jeopardize Platte River's ability to serve load because excess capacity has been constructed to meet peak summer demands and ensure electric supply during outages. The primary exposure is the cost to replace baseload generation. Replacement resources available include natural gas combustion turbines, wholesale market purchases, and a forced outage assistance agreement. Excellent maintenance practices and operating standards will continue to sustain the unit reliability.

## 31. Increased State Regulatory Oversight

Historically, Platte River has not been subject to any significant degree of regulatory oversight by the Colorado Public Utilities Commission (CPUC) due to its status as a political subdivision and municipally owned utility.

Platte River will continue actively monitoring changes to the legislative and regulatory landscape, and communicate Platte River's positions to legislators and regulators, when necessary.



## 32. Interruption of Natural Gas Supply (Fuel and Pipe)

Natural gas is currently used only on an intermittent basis. Regular inspections ensure reliability of the pipeline, and Platte River maintains a consistent and reliable interconnection with Xcel Energy. In the event a natural gas disruption occurred, Platte River could sustain a loss of load depending on the timing and duration of the event.

Regular inspection and maintenance of natural gas pipeline infrastructure, including the Colorado Interstate Gas interconnects, will continue to ensure reliability. Staff remains familiar with scheduling procedures on Colorado Interstate Gas' pipeline as an alternate source, while monitoring potential alternative supply sources, including natural gas storage.

## 33. Loss of Communication Systems (Phone, Fiber, Etc.)

Communication losses have been quickly repaired with minimal impact. Communication reliability is maintained through system redundancies, emergency backup systems, and continued maintenance.

## 34. Misalignment of Capacity Resources and System Loads

Platte River has two significant risks related to capacity resources and load: 1) resources are insufficient to serve loads (short capacity), or 2) Platte River costs increase due to underutilized generation resources (long capacity).

Platte River updates the load forecast annually to include recent load trends. In 2016 Utility Financial Solutions modified and verified Platte River's econometric model for statistical validity. Additionally, resource planning efforts are underway to analyze the timing of future capacity expansion.

## 35. Physical Property Loss

Platte River has experienced few instances of property damage or loss because of maintenance procedures, training programs, and safety standards. Platte River's property insurance, which is reviewed annually, limits financial exposure to policy deductibles.

## 36. Transmission Interruption

Forced outages on overhead transmission lines are typically of short duration. Inventories of temporary transmission equipment exist to quickly recover from a forced outage. Platte River's redundant transmission system is continually reviewed for opportunities to decrease system constraints in the event of an outage.

## 37. Wholesale Electric Market Manipulation

The jurisdiction of the FERC was expanded to include oversight preventing market manipulation, subject to fines and penalties. Platte River policy prohibits market manipulation. A compliance audit program and internal controls minimize the likelihood of market manipulation.



# Appendix C:

## Strategic Financial Plan

Platte River's Strategic Financial Plan (SFP) provides direction to create long-term financial stability. The priorities of the SFP are to generate adequate cash flows, maintain access to low-cost capital, provide stable and competitive wholesale rates, and effectively manage financial risk. The board of directors reviews the SFP policies, goals, and financial projections at least annually.

### Rate Requirements

Under Colorado law, Platte River's board of directors has the exclusive authority to establish electric rates. The Power Supply Agreements (PSAs) with the municipalities require the board to review rates at least once each calendar year.

The PSAs with the municipalities and the General Power Bond Resolution contain specific provisions governing Platte River's rate setting. The PSAs require that rates be sufficient to cover all operating and maintenance expenses, purchase power costs, debt service expenses, and to provide reasonable reserves and adequate earnings margins so Platte River may obtain favorable debt financing. The General Power Bond Resolution requires that rates be sufficient to generate net revenues that cover debt service expense at a minimum 1.10 times.

### Policies and Goals

The policies and goals listed below are described in detail on the next page.

- Generate minimum debt service coverage of 1.50 times
- Generate minimum net income equal to \$6 million
- Target minimum 200 unrestricted days cash-on-hand
- Maintain \$20 million in the Rate Stabilization Fund
- Target debt-to-capitalization ratio less than 50 percent

- Provide stable and competitive wholesale rates
- Maintain access to low-cost capital and favorable credit ratings
- Maintain bond required reserves
- Prudently manage and invest reserves
- Variable rate debt managed in accordance with interest rate risk management policy
- Manage financial risk

The listed policies and goals are interrelated. By achieving the minimum target for debt service coverage of 1.50 times, the net income target of \$6 million, and the minimum 200 days of unrestricted cash-on-hand, Platte River should generate adequate cash flows to meet liquidity targets, exceed its debt-to-capitalization goal, and maintain access to low-cost capital.

### Generate Minimum Debt Service Coverage of 1.50 Times

While the legal requirement for debt service coverage is 1.10 times, coverage at this level does not generate adequate cash flows. It also increases future debt issuance and significantly impacts Platte River's credit rating, which increases the cost of future financings. Target debt service coverage of 1.50 times provides sufficient annual cash flows to partially fund future capital additions, as well as, maintain favorable credit ratings.

### Generate Minimum Net Income of \$6 Million

PSAs with the municipalities require Platte River to have an adequate earnings margin to obtain revenue bond financing on favorable terms. A target minimum of \$6 million net income is a sufficient earnings margin to maintain cash balances, meet liquidity requirements, and provide financial flexibility.

## **Target Debt-to-Capitalization Less Than 50 Percent**

A debt-to-capitalization ratio less than 50 percent provides Platte River with a strong balance sheet. It also reduces the risk of becoming over leveraged in the debt market.

## **Target Minimum 200 Days of Unrestricted Cash-on-Hand**

A minimum 200 days of unrestricted cash-on-hand target ensures that adequate cash is generated and maintained, thus ensuring Platte River's financial flexibility, strength, and liquidity. Included in the days of unrestricted cash-on-hand target is a Rate Stabilization Fund target of \$20 million. The purpose of the Rate Stabilization Fund is to reduce or eliminate the rate impact due to an unforeseen event that affects Platte River's ability to meet the minimum legal debt service coverage requirement.

## **Maintain Access to Low-Cost Capital and Favorable Credit Ratings**

Interest rates between various credit ratings can fluctuate significantly depending on market conditions. Maintaining a strong credit rating provides access to low-cost capital and favorable financing terms, resulting in lower overall debt service expense.

## **Provide Stable and Competitive Wholesale Rates**

The board develops and reviews rate projections at least annually. To provide more stable rates from year to year, Platte River may smooth the projected rate modifications over several years to meet SFP criteria. Platte River uses rate comparisons with other utilities in the region to measure the competitiveness of wholesale rates charged to the municipalities.

## **Maintain Bond-Required Reserves**

The General Power Bond Resolution requires Platte River to

maintain a Reserve and Contingency Fund at a minimum of 2 percent of net plant. Bond service and bond reserve funds are maintained as required.

## **Prudently Manage and Invest Reserves**

Platte River's investments will be managed according to Platte River's Investment Policy. The primary objectives of the investment activities are safety, liquidity, and yield, while achieving market returns comparable to benchmark performance.

## **Variable Rate Debt Managed In Accordance With Interest Rate Risk Management Policy**

The board-approved Interest Rate Risk Management Policy has established guidelines that govern variable rate debt.

## **Manage Financial Risk**

Platte River's financial risks are managed according to, but not limited to, the following board-approved documents: Energy Risk Management Policy, General Power Bond Resolution, Interest Rate Risk Management Policy, and PSAs. The Energy Risk Management Committee and the ROC are charged with managing Platte River's business risks.



# Appendix D:

## Environmental Regulatory Issues

Platte River uses state-of-the-art air quality control systems at its power generation stations and meets or exceeds all applicable environmental laws and regulations. As new legislation and regulations are proposed, Platte River participates in public processes and supports additional control requirements where costs are commensurate with measurable environmental benefits. In addition, as technology improves and opportunities arise, Platte River will be proactive in evaluating and implementing improvements in its power operations that balance environmental and other socio-economic concerns.

### Principles

The following principles are used to guide Platte River's decision making and operations:

- Consider environmental factors in planning, design, construction, and operations decisions
- Ensure compliance with applicable laws, rules, regulations, and permits
- Conserve natural resources
- Reduce environmental risks
- Communicate environmental values
- Encourage public participation
- Support cost-effective programs to conserve energy
- Coordinate generation and transmission planning with interconnected utilities
- Consider environmentally progressive technologies to meet future generation needs

### Clean Power Plan

On August 3, 2015, the EPA issued a set of rules regulating the emission of CO<sub>2</sub> from new, modified and reconstructed,

and existing fossil fuel-fired electric generating units (EGUs) under section 111 of the Clean Air Act (CAA). Nationwide, EPA projects that the set of rules will reduce emissions from the power sector by 32 percent (from 2005 levels) by the year 2030. Presently the Supreme Court has stayed the CPP, and litigation may extend into 2018. Considerable uncertainty exists about the outcome of this process and what additional changes the incoming administration will make. The following is a brief description of the program as it exists currently.

#### Set of Rules

1. A final rule under section 111(b) of the CAA setting emission standards for new EGUs, based on the "partial" application of carbon capture and sequestration for coal-fired EGUs
2. In the same rule, emission standards for modified and reconstructed EGUs, which are not based on carbon capture and sequestration for coal-fired EGUs
3. The final "Clean Power Plan (CPP)," a rule under section 111(d) of the CAA that establishes state-by-state CO<sub>2</sub> emission reduction "goals" starting in 2022. It directs each state to submit for EPA approval a plan demonstrating how the state's affected EGUs will meet its reduction goals.

In addition, EPA released a proposed federal plan that would establish unit-by-unit emission reduction obligations for affected EGUs in states that did not submit an approvable state plan. The proposed federal plan also includes presumably approvable model trading frameworks for states submitting their own plans.

## State Responsibilities

As with many other CAA regulatory programs, section 111(d) gives states the primary responsibility to meet their reduction obligation by adopting state plans that limit emissions at regulated facilities. The CPP sets state-specific CO<sub>2</sub> emission goals to reduce statewide emission from the power sector.

These goals consist of an Interim Goal, which must be met on average during the years of 2022-2029, and a Final Goal for 2030 and beyond.

However, the EPA proposes to allow states to determine when and how quickly individual EGUs in the state must reduce their emissions. The EPA allows states to demonstrate progress either through multi-year “step down” goals or through a state-determined “glide-path” approach.

## Three Forms of Goals

EPA specifically set state goals in three forms, which it deems equivalent:

1. A rate-based goal measured in pounds of CO<sub>2</sub> per megawatt hour (lb CO<sub>2</sub> /MWh) of generation by the electric power sector.
2. A mass-based goal covering the mass emission of only existing affected EGUs within the state, measured in tons of CO<sub>2</sub>.
3. A mass-based with new source complement, measured in tons of CO<sub>2</sub>, which includes emissions from both existing and new affected EGUs.

States choose the goal they want to use when designing and submitting their plans. The CPP requires states to submit their initial plans by September 6, 2016. Note: The EPA may grant a state an extension for as many as two years, provided its initial

submission meets certain specified criteria for progress and consultation.

States must submit their final plans by September 2018.

## EPA Changes

Reacting to significant public comment, EPA has adopted a number of changes to address reliability concerns. These changes include:

- A requirement that each state plan demonstrate that it has considered reliability
- A way for a state to revise its plan in the face of unanticipated reliability challenges
- A temporary “safety-valve” for individual EGUs when CPP requirements conflict with reliability obligations
- An agreement between EPA, the Department of Energy, and the Federal Energy Regulatory Commission to coordinate and monitor implementation of the rule in order to ensure reliability.

Staff are preparing for these new requirements and taking an active role in collaborating with peer utilities, trade groups, and consultants to determine possible effects on operations and determine best practices for compliance going forward. After a final disposition of CPP is determined at the federal level, and the State of Colorado sets its implementation plan, Platte River and other utilities will be able to produce fully informed models that support different planning scenarios.

## Ozone Standards

On November 25, 2014 the EPA issued a proposed rule under the National Ambient Air Quality Standards program to tighten the primary and secondary standards for ground-level ozone.

NOx emissions from combustion sources and volatile organic compounds (VOCs) are the major contributors to ozone. Major NOx sources include vehicles, commercial/industrial activities, and electric generation. The main contributors to VOC emissions are oil and gas operations.

On October 1, 2015, the EPA announced revisions for ground-level ozone. The standard has been changed from 75 parts per billion (ppb) to 70 ppb, which is at the top of the 60 ppb to 70 ppb range that was proposed. The change has no immediate effect on Platte River operations, but may have some future implications:

1. **More difficult and complicated permitting requirements.**  
With the current 75 ppb standard the North Front Range ozone non-attainment area does not quite reach Rawhide. However, this new standard increases the likelihood that the Rawhide site will be included in the future.
2. **Further state-level rulemaking for additional reductions.**  
If the state is unable to show that sufficient emissions reductions can be achieved to meet this standard through existing programs or other less expensive alternatives, we could see new reduction mandates for existing units through additional rulemaking. Depending on the magnitude, impacts at Rawhide could range from a simple air permit change to expensive new controls including installation of selective catalytic reduction (SCR).

### Potential Nonattainment Boundaries

At present, the Rawhide Energy Station is in an area that attains the 75 ppb standard. Based on 2011-2013 monitoring data, EPA indicates that at 70 ppb, 358 counties nationwide would violate the standard. Extension of the nonattainment area depends on the 2014-2016 monitoring data and modeling results. At 70 ppb, if ozone monitoring data shows favorable results, the North Front Range nonattainment area may

not be extended. The EPA will make attainment boundary recommendations in October 2016, and designation of nonattainment areas are expected in October 2017.

Permitting for new resources located in a non-attainment area is considerably more difficult and complicated. NOx emission offsets must be obtained from existing sources within the nonattainment area for any new emissions. New units must also be constructed with lowest achievable emission reduction controls and limits. Any additional NOx produced from new generation units at the Rawhide site may involve committing to lower emissions from Rawhide Unit 1.

Depending on the designation of nonattainment areas and the ability of the state to show that sufficient reductions are possible with existing programs, the Rawhide coal unit may be required through future rulemaking processes to make additional emissions reductions. The cost of additional NOx controls, in the form of SCR or selective non-catalytic reduction (SNCR), would be significant and would result in relatively small incremental reduction due to the already relatively low NOx emission rates achieved with existing combustion controls.

### Disposal of Combustion Residuals from Electric Utilities Rule (CCR Rule)

On April 17, 2015 the EPA posted to the Federal Register a final rule including new regulations affecting coal combustion residuals (CCR).

The regulations became effective October 17, 2015.

The CCR Rule includes comprehensive requirements for design, monitoring, and reporting; with requirements for new and existing CCR disposal facilities.



Platte River operates two bottom ash transfer ponds and an ash monofill that are subject to the rule, all located at Rawhide. There is still considerable uncertainty as to exactly how the new standards will be enforced, what the state's role will be, and how some important details will be interpreted. In the face of such uncertainty, below is a list of actions Platte River expects to be required to take during the initial 42-month implementation period:

- Expand the existing groundwater monitoring plan.
- Demonstrate that all existing operations meet the new standards, and make contingency plans in case they do not.
- Comply with expanded inspection requirements (weekly, monthly, and annually).
- Comply with expanded recordkeeping requirements.
- Comply with a new requirement to post compliance information to a public website.

Platte River is recommending a significant upgrade to the existing bottom ash handling system at Rawhide during the fall 2018 outage. The goal of this project is to implement industry best practices by eliminating the use of wet impoundments from the existing bottom ash handling system. The existing system operates via a sluicing process, moving coal ash through pipes with water to a dewatering impoundment where solids settle out and are periodically excavated.

Although there is no reason to suspect that the existing system has caused environmental harm, the current regulatory environment and our industry is moving away from storing ash in wet impoundments and it is prudent for Rawhide to be proactive on this front as well.

Technology exists for handling this material in a dry form without sluicing or replacing the impoundments with a system of self supporting tanks. Platte River has retained an experienced engineering consultant to assist in evaluating the various options and will make a final recommendation by the fall of this year.

Benefits of upgrading the bottom ash handling system include improved short-term and long-term regulatory certainty, reduced compliance costs and risk, lower auxiliary load costs, lower water usage, and lower operations and maintenance costs.

In response to the CCR Rule, the Colorado Department of Public Health and Environment is planning to update their solid waste regulations and incorporate the new EPA requirements. Staff is planning to participate in any related rulemaking stakeholder processes to communicate the need for achievable standards with clear expectations and include flexibility for operations.

Craig is not subject to the CCR rule as it is primarily managed as backfill material at Trapper Mine. This type of CCR management is specifically exempt from the current rule; however, similar standards are expected in the future through the Office of Surface Mining.

Due to the type of coal burned, boiler chemistry, and other factors, mercury emissions from the Craig Station are low and no emission control equipment is currently required for that facility.

# Appendix E:

## Legislative and Regulatory Issues

### Clean Power Plan Regulations

The CPP regulations focus the electric industry's attention on the issue of carbon emissions in a new and dramatic fashion. Presently the CPP regulations are stayed, and the litigation may well continue into 2018. If upheld by the courts the regulations pose a number of unique challenges, many of which will be addressed through the creation of a State Plan for Colorado. Planning activities are on-going in Colorado despite the pendency of the stay. Platte River will work with industry participants, stakeholders, legislators, and regulators in a positive manner with the goal of crafting an implementation plan that meets compliance goals in the most reasonable, equitable, and cost effective manner.

### Ozone Regulation

The new ozone standards may expand the non-attainment areas within Colorado. In turn, this may create operational issues for existing sources of NOx emissions as well as for new sources, including resources that may be necessary to meet regional load growth and compliance with the CPP. Revisions to the boundaries of the nonattainment areas may take a number of years identify. Platte River will actively monitor this process and participate as necessary.

### Dodd-Frank Reform

The Dodd-Frank legislation and subsequent rulemakings affect a number of Platte River business practices. Platte River has complied with new Dodd-Frank protocols for natural gas hedging. Platte River supports on-going legislative and statutory efforts to limit the application of Dodd-Frank requirements to public power business

transactions unrelated to the types of transactions that led to the 2008 financial crisis.

### Tax-Exempt Status of Municipal Bonds

Federal budget concerns have put the tax-exempt status of municipal bonds at risk.

The unique tax-exempt status of public financings dates back to the inception of the income tax, and recognizes the public nature of the capital projects funded by municipal bonds. Platte River has issued \$2.4 billion in debt during its history.

The issuance of this debt has been critical for developing the infrastructure necessary to meet the needs of the growing populations in our owner municipalities. The reduced interest costs associated with tax-exempt financings are passed directly to electric utility customers in these communities.

Platte River strongly opposes repealing or altering the current tax-exempt status of municipal bonds.

### Transmission Planning and Wholesale Market Reform

FERC requires jurisdictional utilities to operate their transmission systems as common carriers. Platte River is non-jurisdictional, but voluntarily adopted an open access transmission tariff. The Platte River open access tariff is modeled after the FERC pro forma tariff with rates consistent with the FERC rate setting formula.

FERC also requires jurisdictional utilities to engage in regional transmission planning. Platte River is a member of WestConnect, a regional transmission planning organization. Platte River is presently involved in efforts associated with regional joint dispatch and transmission tariff reform. Platte River is a member of the Colorado Coordinated Planning Group and the Foothills Planning Group, and has established a transmission planning process as part of its open access transmission tariff. Platte River supports regional transmission planning as a means to assist in the development and integration of renewable resources and enhance grid resilience.

Under the auspices of the Mountain West Transmission Group, Platte River is working with others entities to create a single transmission tariff that will eliminate rate pancaking. This effort may eventually yield a workable wholesale market in the western region.

### Renewable Energy Standard and Incentives

Changes to the Colorado Renewable Energy Standard should be incremental and must not conflict with other regulatory requirements. Platte River supports the continuation of federal financial incentives to encourage the development of renewable energy.

Renewable energy incentives should continue, be expanded, and be made available on an equal basis to municipal power systems, rural electric cooperatives, and investor-owned utilities.

### Fuel and Resource Diversity

Platte River supports policies that promote improved technology for all electricity generation sources including coal, natural gas, hydro, nuclear, wind, solar, geothermal, and biomass as vital components of the country's energy portfolio.

Efforts at the federal level to encourage diversity should provide clean coal technology funding, increased research and development funds addressing the integration of renewable resources, and innovative distributed generation, particularly as these issues and technologies apply to smaller utilities.

### Preventing Market Abuses

The Energy Policy Act of 2005 (EPAAct 2005) grants FERC expanded jurisdiction to address market manipulation, including authority over public power systems. In 2006, Platte River adopted a policy prohibiting market manipulation and implemented training and audit programs in pursuit of this policy. Platte River conducts bi-annual market manipulation audits, and none of the audits have revealed any market manipulation by Platte River employees. Platte River encourages continued FERC oversight of market abuses, and recognizes that this will become an increasingly important issue as organized markets evolve in the West.

### System Reliability

In 2007, FERC adopted electric reliability standards with the force and effect of law. Platte River is registered to perform ten functions under the reliability protocols adopted by FERC, and the municipalities are registered as distribution providers. Platte River has a well-established Reliability Compliance Program and promotes a culture of compliance. Platte River continues to assist the municipalities with reliability compliance.

### Physical and Cybersecurity

There is an increasing recognition of the importance of physical and cybersecurity for the interconnected bulk power system. Platte River is engaged in national discussions of these issues before the relevant legislative and regulatory bodies as this issue matures.

## Federal Hydropower

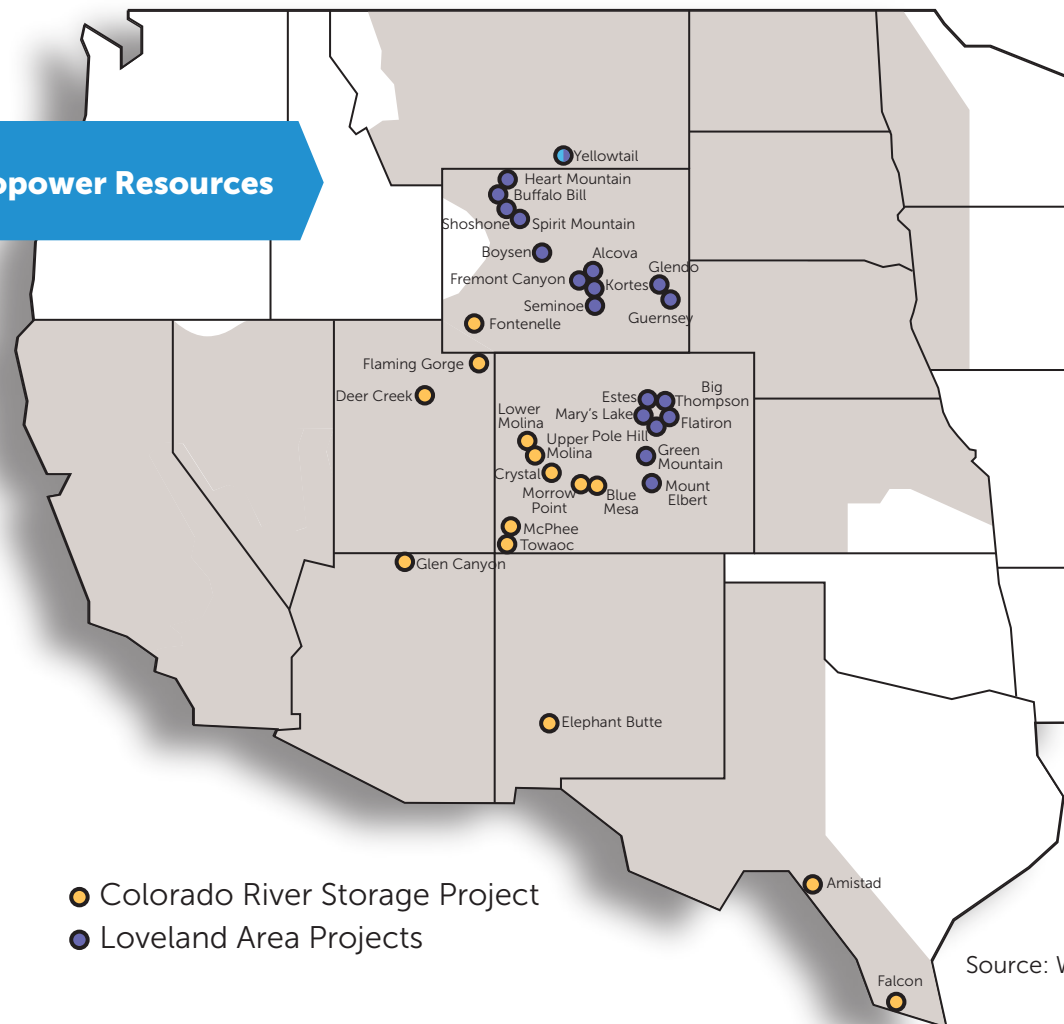
Federal hydropower comprises a significant portion of the electricity delivered to the municipalities. Platte River supports continued federal ownership and management of hydropower resources through regional power marketing administrations (PMAs). Platte River supports the continued operation of the PMAs within the constraints set forth by Congress through authorizing legislation, including the rate-setting guidance contained therein. Platte River recognizes

that hydropower dams create unique environmental challenges and supports a reasonable balance between species recovery and operational flexibility.

## Municipal Annexation and Utility Service Territory

Colorado's Constitution and the existing state statutes regarding electric service provision in newly annexed areas are equitable to all parties. Any proposed changes will be closely scrutinized to ensure that equity is maintained.

### Platte River's Hydropower Resources



Source: Western Area Power Administration



| ACRONYM         | DEFINITION                                  |
|-----------------|---------------------------------------------|
| APPA            | American Public Power Association           |
| ARPA            | Arkansas River Power Authority              |
| CAA             | Clean Air Act                               |
| CAMU            | Colorado Association of Municipal Utilities |
| CAP             | Climate Action Plan                         |
| CCR             | Coal Combustion Residuals                   |
| CHP             | Combined Heat and Power                     |
| CIP             | Critical Infrastructure Protection          |
| CO <sub>2</sub> | Carbon Dioxide                              |
| CPP             | Clean Power Plan                            |
| CPUC            | Colorado Public Utilities Commission        |
| DR              | Demand Response                             |
| DSM             | Demand Side Management                      |
| EE              | Energy Efficiency                           |
| EGU             | Electric Generating Unit                    |
| EPA             | Environmental Protection Agency             |
| EPAct 2005      | The Energy Policy Act of 2005               |
| FERC            | Federal Energy Regulatory Commission        |
| GHG             | Greenhouse Gases                            |
| GWh             | Gigawatt-hour                               |
| IRP             | Integrated Resource Plan                    |
| LPC             | Longmont Power & Communications             |
| LPPC            | Large Public Power Council                  |

| ACRONYM   | DEFINITION                                              |
|-----------|---------------------------------------------------------|
| MATS      | Mercury and Air Toxics Standard                         |
| MW        | Megawatt                                                |
| MWh       | Megawatt-hour                                           |
| NERC      | North American Electric Reliability Corporation         |
| NOx       | Nitrogen Oxides                                         |
| PMA       | Power Marketing Administrations                         |
| ppb       | Parts Per Billion                                       |
| PSA       | Power Service Agreement                                 |
| PSCo      | Public Service Company of Colorado                      |
| PV        | Photovoltaic                                            |
| RES       | Renewable Energy Standard                               |
| ROC       | Risk Oversight Committee                                |
| SCADA     | Supervisory Control and Data Acquisition                |
| SCR       | Selective Catalytic Reduction                           |
| SFP       | Strategic Financial Plan                                |
| SNCR      | Selective Non-Catalytic Reduction                       |
| SO2       | Sulfur Dioxide                                          |
| SWOT      | Strengths, Weaknesses, Opportunities, and Threats       |
| TRI-STATE | Tri-State Generation and Transmission Association, Inc. |
| VOC       | Volatile Organic Compound                               |
| WECC      | Western Electricity Coordinating Council                |