LARIMER COUNTY | COMMUNITY DEVELOPMENT

P.O. Box 1190, Fort Collins, Colorado 80522-1190, 970.498.7683, Larimer.org

# MEMORANDUM

**TO:** Larimer County Board of County Commissioners

**FROM:** Kassidee Fior, Principal Planner, Community Development Department

**DATE:** March 31, 2025

**Re: Platte River Power Authority Rawhide 1041 Application**
**File Number 24-ZONE3715 - Additional Information**

This memorandum is to provide the Larimer County Board of County Commissioners with the attached document containing additional information provided by the applicant, Platte River Power Authority.

Staff will be reviewing the information, and if necessary, an additional memorandum with staff findings may be provided in advance of the April 21st, 2025 hearing.

Thank you,

Kassidee Fior
Principal Planner

Platte River Power Authority

Estes Park • Fort Collins • Longmont • Loveland

# Memorandum

**Date:** 3/28/2025

**To:** Larimer County Commissioners
Commissioner Kristin Stephens
Commissioner John Kefalas
Commissioner Jody Shadduck-McNally
Kassidee Fior – Larimer County Principal Planner

**From:** Matt Tribby – Senior Air Quality Engineer

**Subject:** **Platte River Power Authority Response to the March 10, 2025 Public Hearing Continuance for 1041 Permit Application 24-ZONE3715 Rawhide New Generation Project**

## Introduction

Platte River Power Authority (Platte River) requests that the Larimer County Board of County Commissioners approve its application for a 1041 land use permit to build five proposed aeroderivative turbines at the Rawhide Energy Station to support reliability and affordability as it works toward its clean energy goals.

At their March 10, 2024 public hearing on Platte River's permit application, the commissioners decided to continue the hearing and asked Platte River to further demonstrate compliance with Criteria C and E in Section 10.9.1 of the Land Use Code, to discuss climate impacts, to further show the Project's compliance with Larimer County's Comprehensive Plan, and to address a mitigation hierarchy. This memorandum responds to the commissioners' requests.

## Background

Platte River has ambitious carbon-reduction goals and a firm deadline. Rawhide Unit 1 (a coal-fired power plant) will close at the end of 2029. We committed in our Colorado Clean Energy Plan to reduce our carbon emissions by over 80% from 2005 levels by 2030. And our board-approved Resource Diversification Policy calls on us to pursue a 100% noncarbon energy goal while protecting reliability and financial sustainability. Platte River cannot sacrifice the reliability and affordability the citizens of Larimer County count on while we wait for new technologies to mature. Electric service is critical for

health and safety, for hospitals, emergency responders, and homes. Platte River's system must deliver power 24 hours a day, seven days a week. We must have a workable solution today.

The Project Platte River proposes to build is a necessary piece of the bigger energy puzzle. It helps Platte River more quickly add solar and wind to our portfolio by providing both "insurance" (energy when the wind is not blowing and the sun is not shining) and stability for a grid that increasingly depends on intermittent resources. Platte River will site the Project at its Rawhide Energy Station, a brownfield location with existing energy infrastructure and minimal impacts to surrounding land, consistent with the Larimer County Land Use Code and Comprehensive Plan. The Project is the fastest, lowest-cost way for Platte River to drastically reduce carbon emissions and close coal facilities. If Platte River cannot build the Project at Rawhide before Unit 1 closes, all other options will be more expensive, less reliable, and have a much greater impact on the surrounding land and other natural resources.

Platte River understands community concerns about climate change, and we share these concerns. The elected leaders of the Larimer County communities of Fort Collins, Loveland, and Estes Park (as well as the mayor of our fourth owner community, Longmont) are on our board, and support the Project because they know how much their citizens rely on clean, affordable, reliable energy. Platte River's application meets all requirements of the Larimer County Land Use Code and supports the Comprehensive Plan, both environmentally and by supporting the resiliency and affordability of the electric grid. Specifically, Platte River's application meets Criteria C and E in Section 10.9.1 of the Land Use Code and avoids, minimizes, or mitigates Project impacts, as described in more detail in our application materials and below.

## Application Overview

On October 15, 2024, Platte River submitted 1041 Permit Application 24-ZONE3715 for the Rawhide New Generation Project to Larimer County. The Applicant and Project Owner is Platte River, a not-for-profit, community-owned public power generation and transmission utility that provides safe, reliable, environmentally responsible, and financially sustainable energy and services to the Colorado communities of Estes Park, Fort Collins, Longmont, and Loveland for delivery to their distribution utility customers.

Platte River will retire 431 megawatts (MW) of coal-fired generation (partial ownership of Craig Units 1 and 2 and Rawhide Unit 1) by 2030. To help integrate increasing renewable energy resources, Platte River proposes to construct the Rawhide New Generation Project (the Project): five simple-cycle natural gas-fired aeroderivative turbines and associated infrastructure. Specifically, Platte River has determined that General Electric LM6000 aeroderivative turbine technology best meets the needs of the owner communities while upholding Platte River's mission of safely providing reliable, environmentally responsible, and financially sustainable energy.

Platte River, working with industry experts and consultants, concluded it will need at least 200 MW of "dispatchable capacity" (resources able to generate immediate power on demand) to keep our system reliable as we add intermittent renewable energy resources to replace retiring coal generation. The five proposed new LM6000 aeroderivative turbine generating units will not only provide dispatchable capacity and grid stability during our energy transition, but have the potential to shift to hydrogen (a noncarbon fuel) in the future. The new turbines will complement renewable generation on a minute-to-

minute, hour-to-hour, and day-to-day basis. They can start, stop, ramp up, and ramp down as the output from wind and solar resources varies. They will run only when the grid needs them to maintain reliable power, unlike Platte River's current coal units that generally run continuously as "baseload" units or current gas units that are intended to cover "peak" load times but cannot quickly and constantly adjust to changes in output from wind and solar resources.

## Analysis

**Criteria C. The applicant has adequately considered reasonable siting and design alternatives, including co-location when requested by Larimer County, or shown why such alternatives are not available or not feasible, and the proposed project is the best alternative available based on consideration of consistency with the Comprehensive Plan, Land Use Code, need, existing technology, cost, and impact on the site and surrounding property.**

**Platte River Evaluated Reasonable Siting and Design Alternatives, Including Co-location**:

The proposal to site and design the Project at Rawhide Energy Station is the best alternative to construct new aeroderivative turbines. The Rawhide site is a brownfield site dedicated to power generation. Siting the Project at Rawhide:

- Limits construction impacts—Platte River owns the property and has sufficient existing transportation, waste, and other infrastructure to support construction at the site;
- Does not harm nearby property owners or change the land's use;
- Complies with current Industrial Heavy zoning—Larimer County has no other Industrial Heavy locations approved for this type of use;
- Will not harm water resources—in fact, the Project requires Platte River to remediate legacy PFAS contamination at the selected site with an accelerated schedule;
- Will not damage wildlife habitat or natural resources because the site is located within an existing industrial facility used for power generation;
- Will not adversely impact historic sites or structures;
- Provides supporting substation and transmission facilities, emergency response capabilities, site security, and other services for Project construction and operation;
- Does not significantly change the viewshed compared to other potential sites within the Rawhide perimeter, because the Project's interior location will be surrounded on four sides by existing energy infrastructure.

In sum, there is no better location to site a new power plant than at an existing power plant. Because the Project will be co-located with other power generation at the Rawhide site, it will use Platte River's existing roads, security, skilled workforce, transmission infrastructure, gas infrastructure, waste disposal services, utilities, and other resources and services. The Project complies with existing County-

approved zoning. By co-locating the new turbines within existing power infrastructure, Platte River minimizes both the impacts and costs of the Project.

**Other Alternatives Are Not Available or Feasible**:

To site the Project anywhere other than Rawhide Energy Station would conflict with the Land Use Code and Comprehensive Plan.

Platte River considered different locations on the Rawhide site, as well as potential locations in other areas, but none better fulfill the criteria. Any potential "greenfield" location would be much costlier and could damage or degrade habitat, water resources, archeological resources, or property owned by others. In every case, it would unreasonably increase both land impacts and costs compared to siting the Project at Rawhide. Platte River would need to build new transmission and gas infrastructure, along with the turbines, at any other site. And any site other than an existing power generation facility would change the land use of that area, with significant impacts to its surroundings.

Criteria C of the Land Use Code focuses on Project siting and design. It is not a basis to rewrite Platte River's Integrated Resource Plan.[1] Platte River understands that many do not want natural gas to be the necessary bridge between coal and 100% renewable energy. We too wish for more advanced alternative technology. Platte River considered a broad array of other technologies and designs before concluding the aeroderivative turbines were the best approach.

Both the 2020 and 2024 Integrated Resource Plans considered four-hour battery technology instead of fossil fuel-fired turbines to meet Platte River's need for dispatchable (on-demand) power. But current battery technology cannot match the proposed turbines for reliability or cost. Batteries must be charged with surplus energy (above customer needs) which, once exhausted, cannot be called on until the power system once again has enough excess energy to recharge the batteries—something that may not happen for many hours or days if power demand stays high and available energy remains limited. Batteries have shorter operational life spans and, on a megawatt-for-megawatt basis, are far more expensive than the aeroderivative turbines, even under high-gas-cost scenarios.

This is why, for example, when the National Renewable Energy Laboratory (NREL) published a report on Xcel Energy's 2030 Colorado Preferred Plan for Public Service Company of Colorado (PSCo) in March 2024, NREL concluded that if PSCo were to rely solely on batteries to supplement renewable resources, there would be serious and extended power outages during an extreme event like Winter Storm Uri.[2] NREL's report concluded that " . . . as PSCo's generation fleet becomes dependent on wind and solar generation, there will continue to be periods that call on the unique resilience value of gas

[1] A utility's Integrated Resource Plan is its long-range planning tool (a "roadmap") for how the utility will acquire and deploy resources to meet its obligation to serve customer load plus a minimum required "reserve margin." It is necessarily based on projections and models of an unknown future, including future electricity demand, renewable resource costs, technology advancements, and market changes. Platte River developed its 2024 Integrated Resource Plan over a two-year period, with advice from consultants and industry experts, to plan how we will reliably meet our carbon reduction goals. Platte River's board of directors approved the 2024 Integrated Resource Plan and staff submitted the approved plan to the federal Western Area Power Administration, as required by law.

[2] The report is posted at https://www.nrel.gov/docs/fy24osti/79812.pdf.

combustion turbines and combined cycles. These periods are infrequent but can happen any time of year, during stormy conditions or simply during cloudy, calm weather. The fast response resources need not utilize natural gas; they could, in the future, use carbon-free fuels like hydrogen" (p.28).

Platte River also evaluated other gas-fired options, including reciprocating internal combustion engines or relying solely on our existing gas turbines (with or without retrofits). None of these options met the combined need for rapid response to variations in renewable energy output while also minimizing air emissions—some of the main reasons for selecting aeroderivative turbines. Platte River's existing gas units are not the right tool to integrate renewable resources and advance the County's noncarbon future. They are not designed to follow rapidly changing intermittent resource output. They are less efficient (higher emissions for the same energy) than aeroderivative turbines and incur substantial "wear and tear" with every start, especially "fast starts." Platte River's studies showed that keeping the existing gas combustion turbines and adding only batteries increased costs dramatically without supporting reliability as effectively.

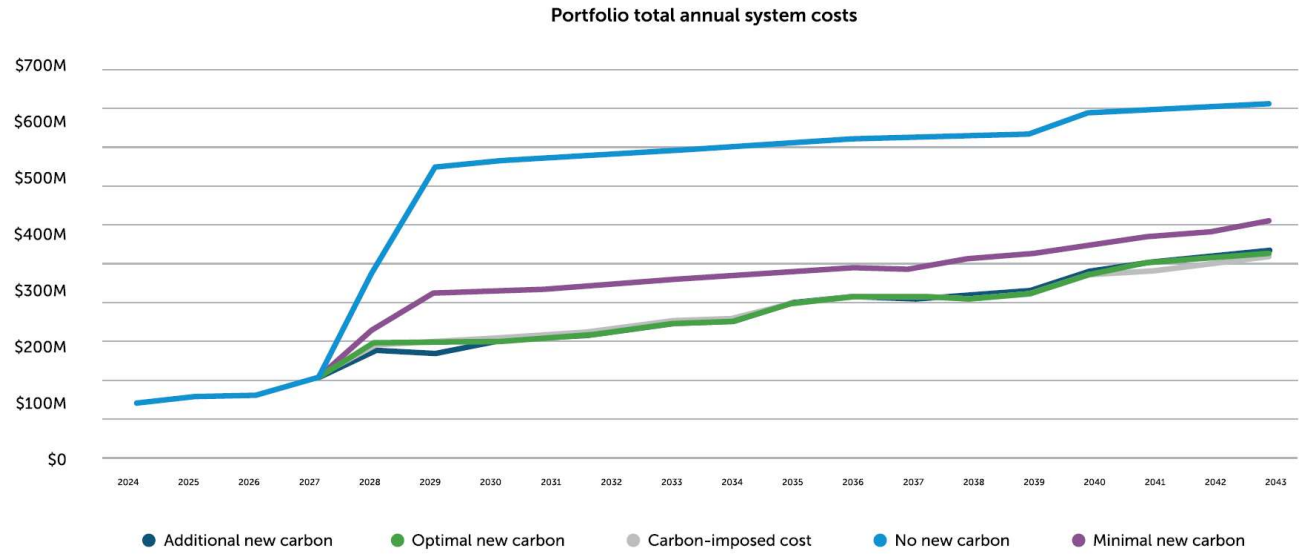



**Figure 1: Cost Comparison of "No New Carbon" Portfolio[3]**

Although power supply technologies have advanced, emerging technologies (for example, small modular nuclear or long-duration batteries) are not commercially available at the scale and cost Platte River needs today. The aeroderivative turbines are the best, most reliable, commercially available option to support Platte River's increasingly renewable energy portfolio as its coal plants retire.

[3] From Platte River's 2024 Integrated Resource Plan, Section 8.3.1. "Portfolio Costs," page 156. This graph compares the costs of scenarios where Platte River adds different amount of "carbon" generation (new gas) to the "no new carbon" portfolio with no added gas resources. The "optimal new carbon" portfolio includes the Project. Available at https://prpa.org/2024irp/.

**The Proposed Project Is the Best Alternative Consistent with the Comprehensive Plan and Land Use Code**:

The Larimer County Comprehensive Plan and the Land Use Code both support siting the Project at Rawhide, as proposed in Platte River's application. There is no better location. The Project also supports broader Larimer County goals by allowing Platte River to close its coal-fired generation while protecting system reliability.

One of Larimer County's goals in the Comprehensive Plan is to "improve efforts to mitigate environmental and public health impacts associated with climate change." (Health and Social Policy HS2.6.) The Project enables Platte River to close 431 MW of coal-fired generation (both Craig Units and Rawhide Unit 1). This is the single largest step Platte River can take to mitigate climate change. The Project advances Platte River's Clean Energy Plan goal to reduce greenhouse gas emissions by over 80% by 2030.

But mitigating climate change is not the Comprehensive Plan's only goal. The Comprehensive Plan also calls on Larimer County to "promote the resiliency and redundancy of critical infrastructure systems to minimize disruptions and failures in lifeline services." (Infrastructure Policy I2.3.) Resiliency is the ability of a system to minimize the spread of a problem and bounce back quickly. Redundancy is the duplication of resources to minimize the impact of a failure.

The Project creates resiliency and redundancy. As Platte River's (and others') energy portfolios rely increasingly on intermittent renewable resources, the electric grid needs more redundancy and diversity to minimize disruptions and failures. Although Platte River's 2024 Integrated Resource Plan does not use the words resiliency or redundancy, it focuses on reliability—a broader term that encompasses both. The aeroderivative turbines will provide electricity when the sun does not shine and the wind does not blow (or when their intensity changes suddenly). The turbines will enhance power supply reliability, will provide redundancy, and will minimize disruptions and failures in the critical electricity supplies to customers, consistent with the Comprehensive Plan.

The Project also enables Platte River to increase the share of renewable energy sources in its portfolio and to decrease greenhouse gas emissions, supporting Larimer County goals. Without a stabilizing, dispatchable resource like the aeroderivative turbines proposed in the Project, Platte River would be unable to maintain a reliable grid with increasing wind and solar energy. Platte River can add hundreds of megawatts of wind and solar *because* the turbines can "fill in" for and "follow" the renewable resources in a way that our current gas units cannot. This supports Larimer County's climate and sustainability goals and significantly reduces Platte River's greenhouse gas emissions.

**The Proposed Project Is the Best Alternative Based on Need**:

Some commenters claim Platte River does not need the Project, and therefore, the best alternative is to forego it completely. They are wrong. As described above, Platte River's aggressive renewable energy goals mean closing all coal-fired generation and replacing almost all that energy with wind and solar generation. But unlike steady baseload resources (like coal plants) which ramp up and down slowly, solar and wind outputs continuously fluctuate. **Figure 2** shows example intermittency, or peaks and valleys, in local wind and solar generation compared to customers' load. As utilities add more wind and solar, the peaks will become taller and the valleys deeper.

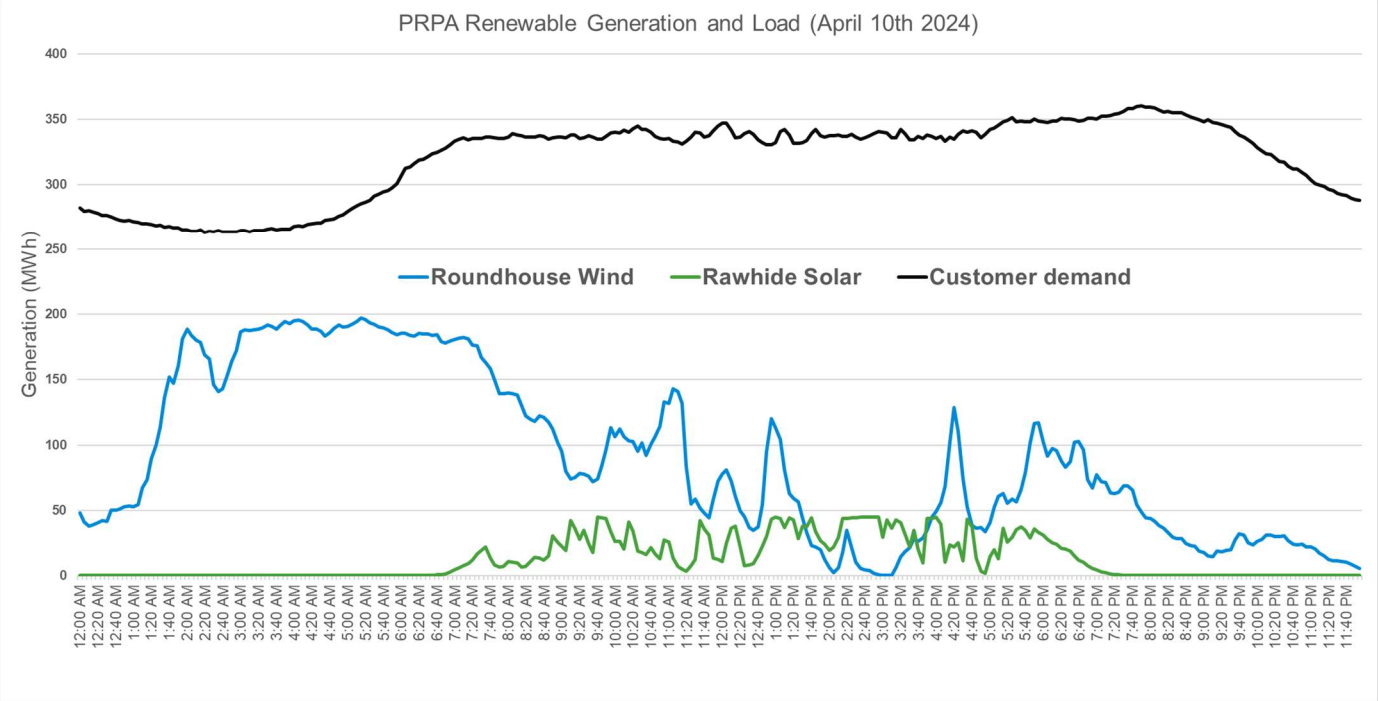



**Figure 2: Platte River Example Renewable Generation and Load in 20 Minute Increments (April 10, 2024)**

Aeroderivative turbines are the best available solution to manage renewable intermittency. Other Colorado utilities with aggressive renewable portfolio goals have found they need gas turbines. Indeed, in-state utilities have submitted air permit applications to the Colorado Department of Environment and Public Health (CDPHE) for more than 20 new gas units in roughly the past year (apart from Platte River's current air permit application).[4]

Studies and assessments from independent entities like NREL, Independent System Operators, and governmental entities show the need for natural gas dispatchable capacity to protect reliability and smooth out power grid operations when renewable resource output is high. The Project's five proposed aeroderivative turbines can quickly ramp up and down to counterbalance intermittent renewable generation. They can generate when energy is not available from renewables (as, for example, during

[4] Air permit applications are available at: https://oitco.hylandcloud.com/CDPHERMPublicAccess/index.html.

"dark calm" periods without wind or solar), and can help stabilize the grid by responding to rapid changes in power supply or load. The turbines can also operate in "synchronous condensing" mode, which allows them to spin and operate without firing (and without emissions). This is important for voltage support, which the grid needs at all times and also enables the units to qualify as "spinning" reserve (generation that responds immediately and automatically to grid emergencies).

Platte River needs the Project both when renewable output is high (as described above) and to fill the potential gaps when renewable energy drops off. As part of its integrated resource planning process, Platte River must develop solutions that keep the lights on and system stable during "dark calms" (when there is no wind or solar). This is not a hypothetical problem; in 2021, Platte River (and others) experienced a four-day "dark calm" during Winter Storm Uri. Neither solar nor wind delivered significant energy during that long winter storm.

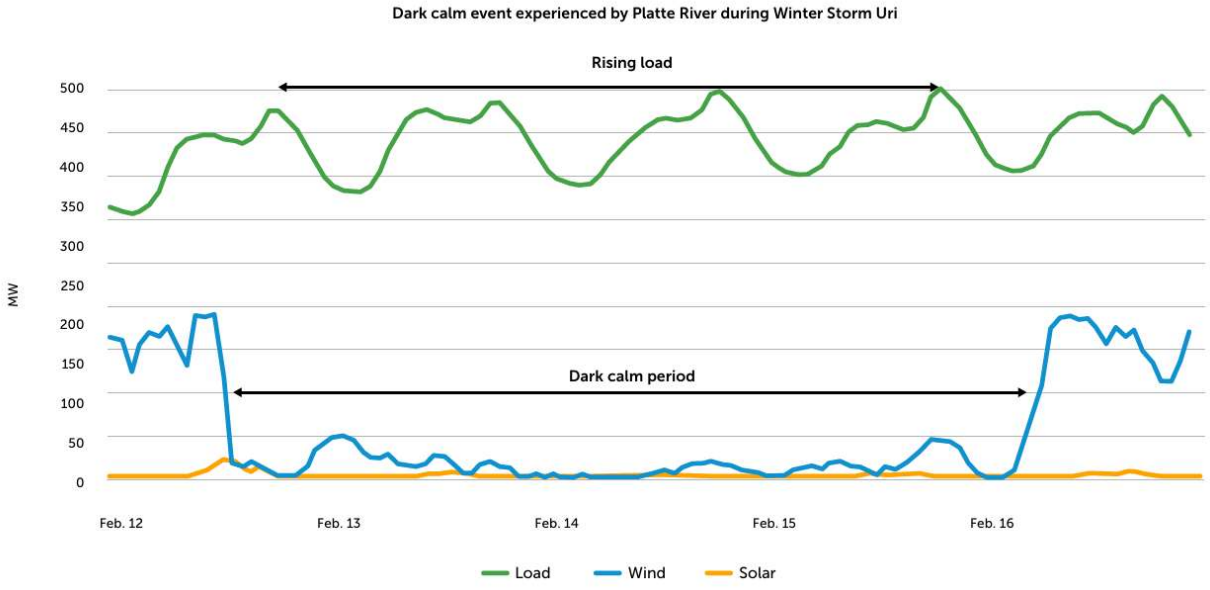



**Figure 3: Winter Storm Uri Dark Calm Event[5]**

During this "dark calm," Platte River coal units stayed online and kept power flowing to Larimer County's citizens and businesses. But after all coal units retire in 2030, we may experience similar, or more severe, dark calms. Platte River is ultimately responsible for reliably supplying electricity to Estes Park, Fort Collins, Loveland, and Longmont. We must keep the lights on. We cannot risk a blackout across Larimer County because we have no safety net for our intermittent resources. The Project, in conjunction with the existing gas units, helps Platte River protect reliability through all hours and all conditions.

Platte River's 2018 Resource Diversification Policy to work towards the goal of 100% noncarbon energy cannot be separated from our commitment to protect system reliability and financial sustainability. Platte River will retire its coal generation by the end of 2029, and Platte River committed in its Clean Energy Plan to reduce carbon emissions by 80% by 2030 (compared to 2005 levels). But Platte River

[5] From Platte River's 2024 Integrated Resource Plan, page 127. Available at https://prpa.org/2024irp/.

cannot meet this goal, and keep the lights on, without this Project. And there is no better location for it than the Rawhide site.

**The Proposed Project Is the Best Alternative Based on Existing Technology and Cost**:

Platte River does not have the luxury of unlimited time or money to make its energy transition. As described above, Platte River evaluated commercially available four-hour batteries when looking at noncarbon, dispatchable options in both the 2020 and 2024 Integrated Resource Plan but they were cost-prohibitive. See **Figure 1**, above. In both cases, Platte River determined it would need highly efficient natural gas technology to support a portfolio based on renewable energy sources in 2030. We cannot wait any longer for the technology to mature, or for a new technology to emerge. To meet our clean energy goals in 2030, Platte River must make and execute on its decisions today.

This is not to say that Platte River is abandoning new technology. Platte River envisions a three-pronged approach to dispatchable capacity. The dispatchable component of Platte River's chosen resource portfolio adds over 100 MW of four-hour battery storage and over 150 MW of solar and storage distributed energy resources ("DER"), 32 MW of which ("storage DER") are projected to come from Platte River's virtual power plant[6] in 2029. In January 2024, Platte River contracted for 100 MW of four-hour battery storage, at a cost of almost $300 million over 20 years, and we are finalizing contracts with vendors to implement the virtual power plant, starting in 2027. These clean dispatchable resources complement the 257 MW of solar that Platte River has committed to add to its system and up to another 400 MW of wind. Platte River's path to a reliable, low-carbon system depends on an "all-of-the-above" strategy.

[6] A virtual power plant consists of distributed energy resources such as distributed generation, distributed storage and flexible loads—like electric vehicles and air conditioning—that can be controlled through advanced software to provide capacity and energy services to the electric grid, much like a conventional power plant.

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coal | 431 | 431 | 354 | 354 | 354 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hydro | 81 | 78 | 75 | 72 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Frame units (existing) | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 | 388 |
| Aeroderivative units (new) | 0 | 0 | 0 | 0 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Solar | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 30 | 0 | 0 |
| Solar (new) | 0 | 150 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 400 | 400 | 400 | 400 | 400 | 450 | 450 | 450 | 550 | 600 |
| Wind | 231 | 231 | 231 | 231 | 231 | 231 | 231 | 291 | 291 | 291 | 285 | 285 | 285 | 285 | 285 | 285 | 225 | 225 | 225 | 0 |
| Wind (new) | 0 | 0 | 0 | 200 | 400 | 400 | 460 | 400 | 400 | 400 | 400 | 500 | 500 | 500 | 600 | 600 | 660 | 660 | 660 | 885 |
| Storage 4-hr | 2 | 2 | 27 | 52 | 102 | 177 | 177 | 202 | 227 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 250 | 250 | 250 | 275 |
| Storage LT | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 60 | 60 | 60 | 60 | 60 | 110 | 160 | 160 | 160 |
| Solar DER | 46 | 62 | 83 | 105 | 126 | 141 | 155 | 169 | 180 | 190 | 200 | 210 | 223 | 236 | 251 | 266 | 282 | 299 | 318 | 337 |
| Storage DER | 3 | 6 | 10 | 17 | 24 | 32 | 39 | 47 | 54 | 63 | 70 | 76 | 82 | 86 | 90 | 94 | 101 | 108 | 115 | 123 |
| **Total** | **1234** | **1399** | **1520** | **1772** | **2257** | **2281** | **2082** | **2128** | **2173** | **2216** | **2327** | **2493** | **2511** | **2529** | **2647** | **2717** | **2788** | **2840** | **2936** | **3038** |

**Figure 4: Platte River's selected resource portfolio, additions through 2043**[7]

Platte River also cannot experiment with unproven technology. The citizens of Larimer County rely on us to supply electricity, 24 hours a day, seven days a week. As a smaller, municipally owned utility, we cannot divert scarce capital to emerging technologies that may not work, but will increase customers' costs. Although we embrace new technology, Platte River must not risk system reliability or affordable power by betting on experimental solutions. Aeroderivative turbines, like the ones proposed for the Project, are the most reliable, least expensive way to rapidly deploy a renewable energy-heavy portfolio—and to reduce Platte River's greenhouse gas emissions by over 80% by 2030.

**The Proposed Project Is the Best Alternative Based on Impact on the Site and Surrounding Property**:

As described above and in our application, locating a new power plant at an existing power plant is the best way to minimize impact on the site and surrounding property. Unlike any other alternative, siting the Project at Rawhide Energy Station maintains the current land use, does not disturb habitat, does not significantly change the viewshed or lighting, increases reliability with transmission upgrades, and does not require Platte River to build extensive new supporting infrastructure. The currently proposed location is the best alternative for the site and surrounding property.

[7] From Platte River's 2024 Integrated Resource Plan, Table 30, page 153. Available at https://prpa.org/2024irp/.

**E. The proposed project incorporates and reflects the growth, development, and environmental and mitigation policies in the Larimer County Comprehensive Plan and regulations in Article 4.0, Development Standards to ensure that the development, to the greatest extent possible, has mitigated any impacts to the environment and natural resources, and will not significantly degrade the environment or natural resources, or exacerbate or worsen climate change. The mitigation shall follow a hierarchy to first avoid impacts to resources of highest value, second minimize the impacts that are unavoidable and finally mitigate the impacts that occur. For purposes of this section, the term environment shall include:**

1. **Air quality,**
2. **Surface water quality and stream and river health,**
3. **Groundwater quality,**
4. **The ecological and functional health of wetlands and riparian areas,**
5. **Terrestrial and aquatic animal life,**
6. **Terrestrial and aquatic plant life,**
7. **Soils and geologic conditions, and**
8. **Visual quality**

**The Project Advances the Growth, Development, and Environmental Policies in the Comprehensive Plan**:

Platte River serves 80% of the residents of Larimer County in its owner communities of Fort Collins, Loveland and Estes Park. This Project squarely supports the resiliency framework and goals in the Comprehensive Plan in multiple ways: it helps Platte River significantly reduce its greenhouse gas emissions, supports resiliency for critical systems, encourages wind, solar, and battery integration into Platte River's portfolio, and provides adequate infrastructure for the County to grow and electrify. Specifically,

- By redeveloping an existing industrial site and minimizing conflicts with land uses and natural resources, the Project fulfills Economy Policy E1.6, Energy Provision I4.5, and Watershed and Natural Resources Policy W&NR1.3 and W&NR1.8.

- The Project clearly "[p]romote[s] the resiliency and redundancy of critical infrastructure systems to minimize disruptions and failures in lifeline services, such as …energy delivery" (Infrastructure Policy I2.3). The aeroderivative turbines will provide electricity when the sun is not shining and wind is not blowing to maintain reliability, provide redundancy, and help minimize disruptions and failures in the critical supply of electricity. And, as noted above, they can also function as instantaneous "safety nets" for the power grid through their ability to provide voltage support and "spinning" power reserves (even when they are not using fuel or causing emissions).

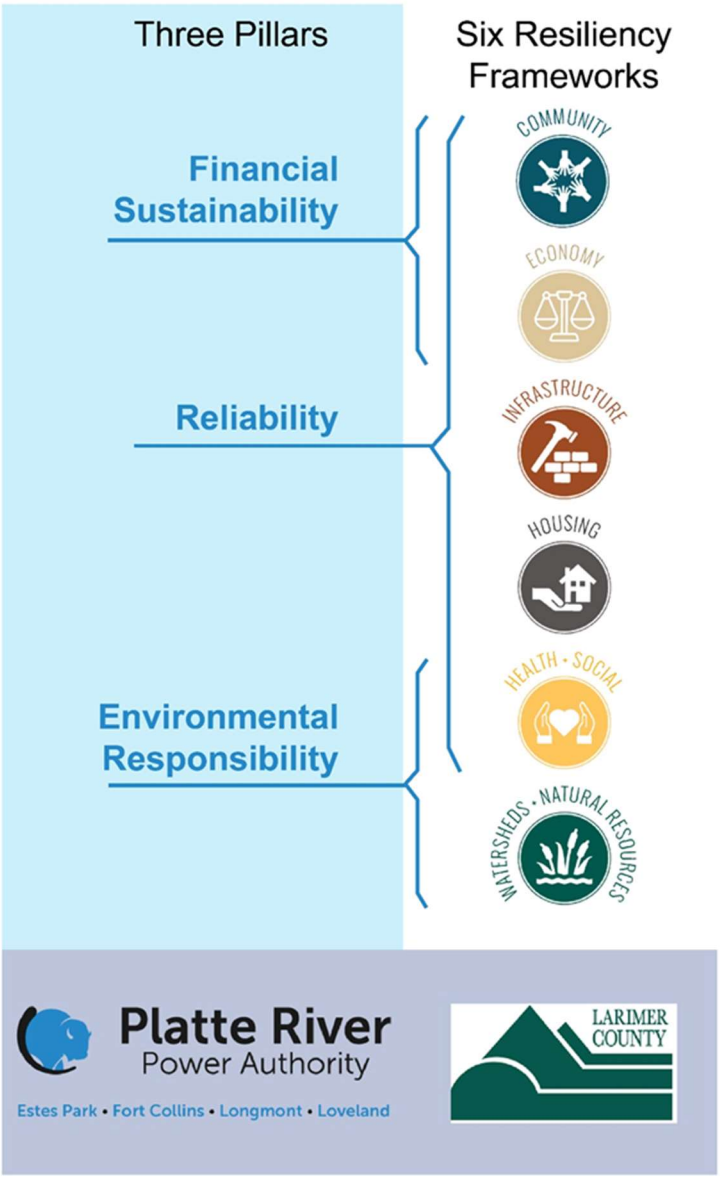
- The County's approval of the Project would further Infrastructure Principal I4 on Energy Provision: "Larimer County collaborates on oil and gas, renewable energy, and gravel extraction

to reduce land use conflicts, protect environmental quality and public health, and maintain reliable conventional and renewable energy sources."

- By supporting renewable resources and coal plant retirements, the Project will "reduce stationary and mobile source emissions and pollutants which cause adverse health effects, impair visibility, and contribute to climate change [and] remain within the state and federal air quality standards" (Health and Social Policy HS2.7). As described below, when Platte River retires Rawhide Unit 1 and adds the Project, Platte River will reduce carbon emissions by approximately 90%, surpassing the Clean Energy Plan (HB19-1261) goals, which call for Colorado utilities to reduce carbon emissions by at least 80% by 2030 (using 2005 as the baseline).

- And perhaps most importantly, there is no way to achieve Infrastructure Policy I4.1, "encourag[ing] opportunities for wind, solar, battery, and future renewable energy sources" without tools to counterbalance their intermittency. The Project will help Platte River integrate roughly 760 MW of solar and wind generation while maintaining reliability and financial sustainability.

The Comprehensive Plan also seeks to "provide adequate service for current needs and future planned growth" (Infrastructure Policy I1.9). Platte River's three pillars align with the County's six-part resiliency framework and help the County fulfill its essential functions. Strengthening the sustainability, reliability, and stewardship of energy builds the County's capacity to support the nearly 200,000 new residents expected by 2050. Platte River's projections similarly show that the electrical load in Larimer County will grow from beneficial electrification programs that help combat climate change, like vehicle electrification and electric heat in new buildings. This means the County and Platte River must meet the challenge to provide additional clean energy to support both current and planned growth, while building system redundancy and resilience. This Project meets all these Comprehensive Plan goals.




**The Project Incorporates Article 4.0, Development Standards**:

The Project also complies with Article 4.0 of the Land Use Code, governing development standards, mainly because it is sited at an existing power plant facility, but also because it meets the goals of the Code and the Comprehensive Plan as described in Article 4.0.

Article 4.0 requires that development meet the Comprehensive Plan goals of: (A) Encouraging safe, affordable, and reliable infrastructure, connectivity, and services, compatible with rural activities and needs; (B) Encouraging the deployment of reliable, affordable, and redundant connectivity with built in redundancy for critical infrastructure; (C) Valuing, identifying, protecting, and responsibly managing the County's natural and cultural resources to minimize impact and protect our air, soil, open spaces, watersheds, water supply, and other ecosystem services; (D) Ensuring land use is suitable for and compatible with the environmental characteristics of the site; (E) Preparing for wildfires, floods, and other natural disasters, and helping residents and businesses prepare themselves to be resilient to such events; and (F) Ensuring that adequate public and/ or private facilities and services are provided and maintained concurrent with development. The Project meets Article 4.0's emphasis on reliability, affordability and redundancy. Article 4.0's standards address impacts on traffic, services, lighting, environmental resources, wetlands, and other considerations for new development, which Platte River

either addressed in its October 15, 2024 permit application or proposes to address through technical review. The Project meets each of these Comprehensive Plan goals.

This Project will help Larimer County encourage safe, affordable, reliable infrastructure and services—it is the least expensive and most reliable way to enable Platte River to retire its coal-fired fleet. It provides the necessary reliability and redundancy for County residents' critical electricity needs. It supports emergency preparedness by enabling Platte River to provide electricity regardless of local weather (including extreme winter cold or summer heat). And, by siting the Project at an existing power plant facility, Platte River minimizes the impacts to natural and cultural resources and does not change the characteristics of the site. **Table 1 ("Mitigation Hierarchy")**, below, details additional avoidance and mitigation measures, addressing specific aspects of Article 4.0.

**Climate Impact Analysis: the Project Does Not Exacerbate or Worsen Climate Change**:

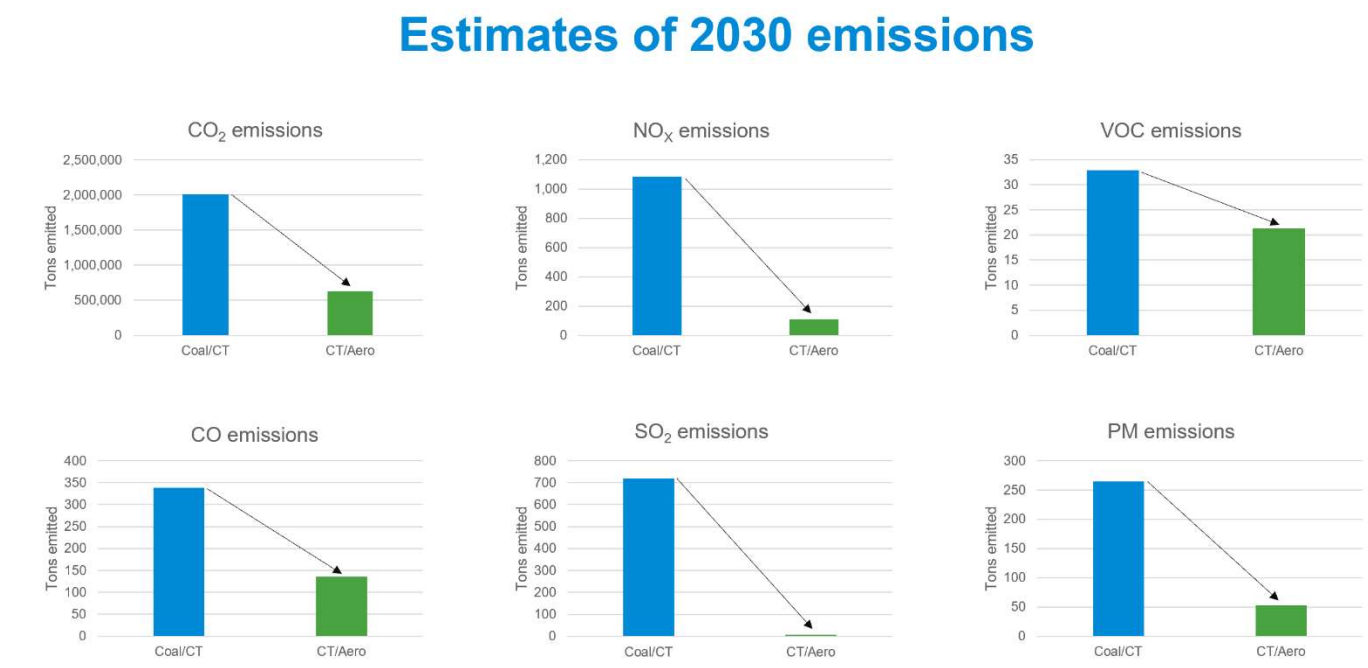
As discussed above, the Project enables Platte River to close its coal-fired generation by 2030 and replace the baseload power from that generation with renewable sources (wind and solar), supported by the Project turbines when needed. This furthers Platte River's Clean Energy Plan commitment to reduce its carbon emission by over 80% by 2030.

Platte River submitted a Climate Impact Analysis as part of its initial application.[8] That Climate Impact Analysis showed the overall decrease in carbon emissions from the Project, in conjunction with closing Rawhide Unit 1. Air emissions from the new turbines must also meet applicable federal and state regulations with oversight from the federal Environmental Protection Agency and the CDPHE. The CDPHE must issue a specific air construction permit to Platte River before construction can start. The CDPHE will carefully review and analyze complex air quality modeling, evaluate applicable emission limit standards, and engage with stakeholders through a public comment period. The CDPHE will not issue a final permit unless the Project meets all federal and state air regulations and does not exceed ambient air quality standards (established to protect public health). Part of this assessment is already complete; the CDPHE's Permit Modeling Unit determined in October 2024 that the Project air quality modeling is complete and approved.

Platte River also proposes to equip the new aeroderivative turbines with top-tier control technologies to reduce nitrogen oxides (NOx), carbon monoxide, and volatile organic compound (VOC) emissions through selective catalytic reduction (SCR) and oxidation catalyst systems. The SCR systems will reduce the turbines' NOx emissions by nearly 90% and the oxidation catalyst will reduce VOC emissions by nearly 50%. This, coupled with the retirement of the Craig units and Unit 1 by the end of the decade, will dramatically decrease emissions and enable Platte River to mitigate any impacts to regional air quality. Platte River's air construction permit application estimated and accounted for ammonia emissions from the SCR systems. Platte River expects the CDPHE to apply specific limits to the final permit to mitigate ammonia emissions. These permit conditions further Platte River's commitment not to worsen air quality or climate change for Larimer County residents.

[8] See Platte River 1041 Permit Application 24-ZONE3715, Item 24, Climate Impact Analysis.

Because the Project enables Platte River to close coal-fired Unit 1, the Project will drastically reduce overall emissions in 2030. **Figure 5**, below, compares current emissions (with both Platte River's current gas-fired combustion turbines ("CTs") and Rawhide Unit 1 ("Coal") operating), to estimated emissions in 2030, with only the CTs and the new aeroderivative units ("Aero") running:




Note: The Coal/CT scenario shows emissions using 2021-2022 operational averages to be consistent with methodology used in the air construction permit application.

**Figure 5: Estimated 2030 Emissions from Gas CTs and Aeroderivative Turbines[9]**

Platte River acknowledges the concern that total emissions might increase during the brief "overlap" period (2028 – 2029) when Platte River has both coal generation and the Project available. While this may be a theoretical possibility "on paper," it is extremely unlikely in practice, for the following reasons:

- Platte River's permit will limit the Project units' total operating hours—they are not "baseload" units and will not be allowed to run 100% of the time.
- Energy markets like the Southwest Power Pool's regional transmission organization dispatch (call upon) generation based on marginal cost. In practice, this means that renewable sources without fuel costs (like wind and solar) will dispatch first when available; more expensive units (like the aeroderivative turbines) are called upon only if needed.

[9] Figure 5 shows emissions reduced at Rawhide Energy Station solely from closing Rawhide Unit 1 and adding the aeroderivative turbines. The estimated emissions shown in Figure 5 reflect the assumptions in Platte River's air permit application, and are therefore conservative (higher than expected in operational use). Platte River's Clean Energy Plan includes other coal unit closures (Craig 1 and 2), delivering an over 80% reduction in carbon dioxide emissions by 2030 from 2005 levels.

- One of the most important reasons for Platte River to complete the Project in 2028 is to test *running the system without coal.* Platte River will not run coal-fired resources at full output during all hours in this "testing" period. In fact (as shown in **Figure 6** below), since Platte River joined the Southwest Power Pool's Western Energy Imbalance Service market in April 2023, our coal plants run far ***fewer*** hours (and at lower output levels) each year than they did before we joined. This has lowered facility emissions overall. And we expect this trend to continue during the "overlap" as we, and our market partners, develop more renewable energy resources.

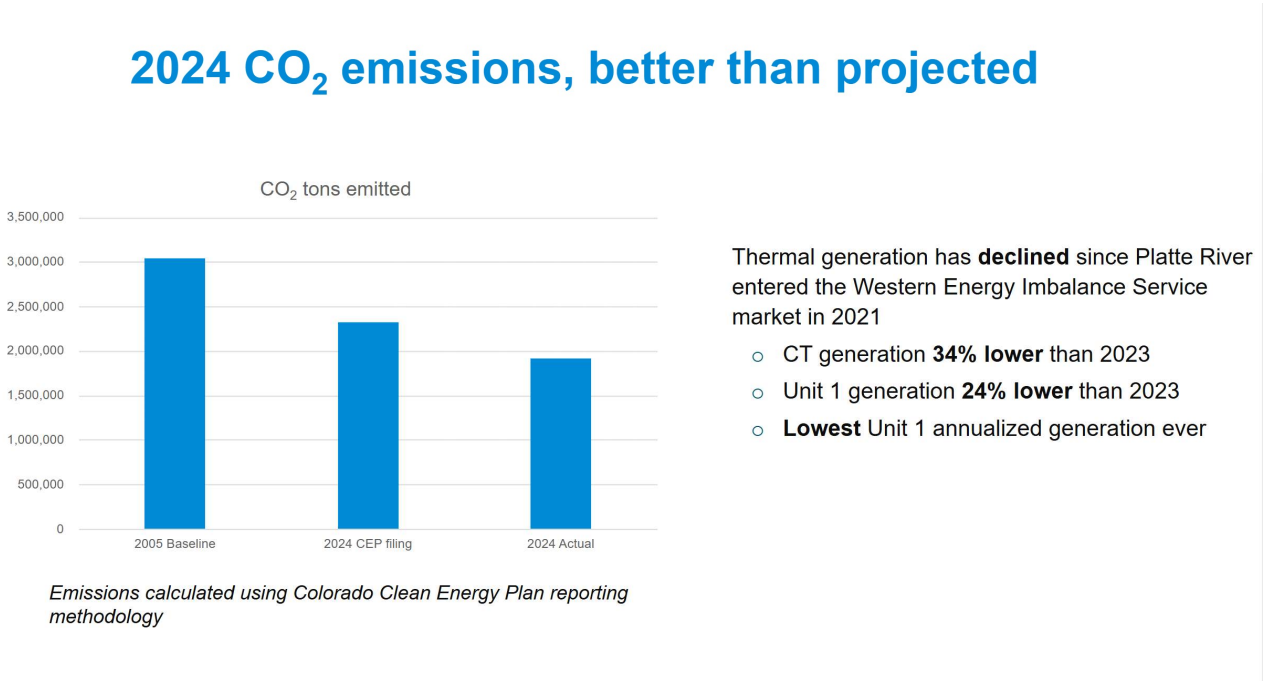



**Figure 6: Declining Trend in Recent Years – Fossil Fuel Greenhouse Gas Emissions**

The Project, which will decrease all emissions, not just greenhouse gases, is necessary for Platte River to meet its commitment to reduce its greenhouse gas emissions by over 80% from 2005 levels by 2030. The two-year period Platte River needs to test the system's reliability and resiliency before closing down its coal unit will not worsen or exacerbate climate change.

**The Project Avoids, Minimizes, and Mitigates Impacts to the Environment and Natural Resources to the Greatest Extent Possible**:

In addition to the alternatives discussion in Criteria C above, **Table 1 ("Mitigation Hierarchy")** presents an avoidance, minimization, and mitigation hierarchy. The first column, Source, identifies whether the measure is a voluntary commitment found in Platte River's October 15, 2024 1041 permit application (and the applicable page number), or a staff-recommended condition of approval. Please note that several voluntary commitments align with staff-proposed conditions of approval. Measures are organized by the resources listed in Criteria E.

As the County's long-term partner, Platte River remains open to identifying further mitigation measures through County staff's subsequent technical review of construction plans.

## Conclusion

Platte River's 1041 permit application complies with the Larimer County Land Use Code and Comprehensive Plan, including Criteria 10.9.1 C and 10.9.1 E. The Rawhide Energy Station site is the best location for the Project, with the fewest possible impacts to land, water, neighbors, natural resources, and the County. The Project will not worsen climate change or air quality—indeed, the Project is vital to Platte River's clean energy goals, as reflected in both its Resource Diversification Policy and its voluntary Clean Energy Plan. And the Project directly advances other Larimer County Comprehensive Plan goals: affordable, reliable, redundant infrastructure that will support the County's residents and their growing electricity needs.

While we recognize that some oppose this Project, denying this permit will not make the air cleaner. Denying this permit will make electricity more expensive and less reliable for Larimer County residents. If we cannot build this Project at Rawhide, Platte River will keep working to decarbonize while supporting a reliable grid, but it will take longer and cost more—potentially much more—with no benefit to Larimer County or its citizens (our customers).

Platte River's 1041 permit application complies fully with all provisions of the Larimer County Land Use Code and Comprehensive Plan. Platte River is committed to providing reliable, financially sustainable, environmentally responsible electricity to its owner communities, and they support this Project. Commissioners should approve Platte River's permit application because the Project advances Larimer County's goals to have cleaner, more reliable, more affordable energy for its citizens in Estes Park, Loveland, and Fort Collins.

**Table 1. Mitigation Hierarchy—Avoidance, Minimization, and Mitigation Commitments**

VC = Voluntary Commitment; LC COA = Larimer County Condition of Approval

| Source | Resource | Avoidance | Minimization | Mitigation |
|---|---|---|---|---|
| | **Air Quality – Fugitive Dust** | | | |
| VC Item 3 p. 22, 24, 26, 33, 39<br>LC COA 7 | Platte River Power Authority and/or respective contractors shall create a fugitive dust control plan specifically addressing controls used for the turbine construction project. The fugitive dust control plan shall be submitted as part of Technical Review | X | X | X |
| VC Item 3 p. 9<br>LC COA 9 | The applicant shall obtain any applicable Air Pollutant Emissions Notice (APEN) before construction and comply with Colorado Air Quality Control Commission (AQCC) regulations during construction. | X | X | X |
| | **Air Quality – Emissions** | | | |
| VC Item 3 p. 38<br>VC Item 24 p. 1, 2<br>LC COA 8 | Platte River Power Authority and/or respective contractors shall create an air quality management plan (or emission control plan) for reducing impacts of construction activity related air pollution emissions beyond the required dust control plan. | X | X | X |
| VC Item 3 p. 27<br>LC COA 14 | If the 1041 permit is approved, a report of how the AERMOD results differ based on 5 turbines rather than 6 turbines shall be provided at the time of Technical Review. | | X | |
| VC Item 3 p. 38 | All new turbines installed as part of the Project will have post-combustion control equipment designed to reduce NOx and VOCs. Platte River will install an SCR system to reduce NOx emissions by roughly 90% and an oxidation catalyst system to reduce VOC emissions by roughly 50%. | | | X |
| | **Surface Water Quality and Stream and River Health** | | | |
| VC Item 3, p. 23, 29, 30, 34<br>LC COA 29 | A site-specific Stormwater Management Plan and Erosion and Sediment Control Plan shall be developed and submitted to the County for approval. | X | X | |
| VC Item 3, p. 23, 24, 30, 34, 36<br>VC Item 12, p. 10<br>LC COA 32 | At the time of Technical Review, additional information will be provided to the satisfaction of the Larimer County Environmental Planner or other staff, including but not limited to:<br>i. Stormwater and erosion control measures; | X | X | X |
| VC Item 14 | Construction and operation of the Project will incorporate measures intended to minimize accidental discharges or any adverse effects on water quality. | X | X | |

| Source | Resource | Avoidance | Minimization | Mitigation |
|---|---|---|---|---|
| | **Groundwater Quality** | | | |
| VC Item 3, p. 20, 21<br>LC COA 32 | At the time of Technical Review, additional information will be provided to the satisfaction of the Larimer County Environmental Planner or other staff, including but not limited to:<br>vi. Avoidance and/or remediation of existing PFA/C contamination; | | X | X |
| VC Item 3 p. 21 | Platte River is working with the Colorado Department of Public Health and Environment (CDPHE) Waste Division to properly remove and dispose of PFAS-contaminated material. This includes a thorough decommissioning design, a materials management plan, and a groundwater well network with routine monitoring and reporting requirements. Platte River will use this decommissioned fire training area only for industrial purposes and will continue groundwater monitoring indefinitely. | | | X |
| | **Ecological and Functional Health of Wetlands and Riparian Areas** | | | |
| VC Item 10, p. 2, 3, 4<br>LC COA 6 | At the time of Technical Review, the following shall be submitted for review, comment and approval by Larimer County Staff:<br>a. Floodplain Hydraulic/Hydrologic Modeling Report<br>b. If required, a viewshed and simulation of potential visual impacts from Soapstone Prairie Natural Area | X | | |
| | **Terrestrial and Aquatic Animal Life** | | | |
| VC Item 3, p. 20<br>VC Item 11, p. 4, 11, 12, 17<br>LC COA 32 | At the time of Technical Review, additional information will be provided to the satisfaction of the Larimer County Environmental Planner or other staff, including but not limited to:<br>v. Satisfaction of Migratory Bird Treaty Act requirements;<br>viii. Consultation with Colorado Parks and Wildlife regarding potential lighting impacts on both on- and off-site wildlife and Soapstone Prairie Natural Area, particularly:<br>1. Black-footed ferrets<br>2. Bats (Chiroptera) | X | X | |
| | **Terrestrial and Aquatic Plant Life** | | | |
| VC Item 3, p. 32<br>LC COA 26 | All disturbed areas must be regraded and revegetated to match or exceed their preconstruction condition. | | X | X |
| VC Item 3, p. 32<br>LC COA 30 | At the time of Technical Review, a Noxious Weed Management Plan must be submitted to the satisfaction of Larimer County Natural Resources. | | X | X |
| VC Item 3, p. 32<br>LC COA 31 | During construction and post-construction, the applicant shall permit Larimer County to inspect the Project site for adherence to the Noxious Weed Management Plan and to survey for new weed populations. | | X | X |

| Source | Resource | Avoidance | Minimization | Mitigation |
|---|---|---|---|---|
| VC Item 3, p. 32<br>LC COA 32 | At the time of Technical Review, additional information will be provided to the satisfaction of the Larimer County Environmental Planner or other staff, including but not limited to:<br>iii. Reclamation and revegetation measures;<br>iv. Management of noxious weed populations onsite; | | X | X |
| | **Soils and Geologic Conditions** | | | |
| VC Item 3 p. 8, 36<br>LC COA 25 | The applicant shall obtain a stormwater discharge and construction dewatering permit from the Colorado Department of Public Health and Environment for construction at drainage crossings and land disturbances of one acre or more. The permit will include the preparation of a Storm Water Management Plan and Best Management Practices to prevent stormwater runoff and sediment in disturbed areas from reaching nearby waterways or otherwise leaving the site. Multiple state permits may be required for the different project areas. | X | X | |
| VC Item 3 p. 26<br>VC Item 15 p. 6, 8, 9, 19<br>LC COA 32 | At the time of Technical Review, additional information will be provided to the satisfaction of the Larimer County Environmental Planner or other staff, including but not limited to:<br>ii. Soil salvage and topsoil management | X | X | X |
| | **Visual Quality** | | | |
| VC Item 3 p. 33<br>LC COA 32 | At the time of Technical Review, additional information will be provided to the satisfaction of the Larimer County Environmental Planner or other staff, including but not limited to:<br>vii. A Lighting Plan or Alternative Compliance Plan, if required; | | X | |
| | **Other General COAs and Other VCs** | | | |
| LC COA 1 | Technical Review and approval are required prior to any construction at the site and prior to applying for any permits from the County. | X | X | X |
| VC Item 3 p. 8 - 10<br>LC COA 2 | All construction activities associated with the approval of this 1041 Permit shall be in compliance with all applicable regulations and obtain all required county, state, and federal permits. | X | X | X |
| LC COA 3 | Failure to comply with any conditions of this 1041 approval may result in reconsideration and possible revocation of the approval by the Board of County Commissioners. | X | | |
| VC Item 3 p. 11<br>LC COA 4 | This approval shall automatically expire unless the applicant takes affirmative action consistent with this approval within three years of the date of final approval. | X | | |

| Source | Resource | Avoidance | Minimization | Mitigation |
|---|---|---|---|---|
| VC Item 3 p. 9, 19, 25, 39<br>LC COA 5 | If cultural resources are found during Technical Review or construction, the applicant shall notify the County immediately, consult with the State Historic Preservation Office, and begin appropriate measures to preserve the cultural resource, including historic or archeological excavation, reasonable project redesign, or relocation activities. Any such mitigation efforts shall be taken in coordination with and with the approval of the County, or their designee. | X | X | |
| VC Item 3 p. 25 | Platte River maintains its own firefighting team and will continue to work with ten mutual aid partners, including the Wellington Fire Protection District and the Poudre Fire Authority, to provide adequate fire response strategies for the Project. Fire Response Plans for Natural Gas Facilities and Combustion Turbines are currently in place at the Rawhide plant and are available upon request. | | X | X |
| | **Noise—Construction and Overall Operations** | | | |
| VC Item 20, p. 2, 8, 9<br>LC COA 10 | Turbine construction noise levels shall comply with construction activity sound thresholds as set out in the Larimer County Noise Ordinance. Any exceptions shall be evaluated by Larimer County including Health, Planning, and Engineering. | | X | |
| VC Item 20, p. 2, 8, 9<br>LC COA 11 | As stated in the Noise Analysis, the manufacturer's noise control mitigation shall be applied to ensure that the turbines and associated compressors will be in compliance with the Larimer County Noise Ordinance for residential property lines. | | X | X |
| VC Item 3 p. 11 - 14<br>LC COA 12 | An outreach plan shall be submitted at the time of Technical Review, outlining how any community concerns will be managed. As part of this plan, easily visible signage with contact information for Platte River Power Authority and related contractors (phone number, email, and website, if created) for addressing questions and concerns shall be posted along East County Road 82 at the construction entrances. | | X | X |
| VC Item 3 p. 33<br>VC Item 20 p. 2, 8, 9<br>LC COA 13 | Audible observation and sound monitoring and measuring shall be conducted by a third party within 30 days of commencing turbine operations in conjunction with the coal unit and current turbine operations to verify compliance with the County Noise Ordinance for nearby residential property lines. The report of the findings shall be provided to Larimer County Community Development and Health and Environment Departments for evaluation to determine if additional mitigation is necessary. | | X | X |

| Source | Resource | Avoidance | Minimization | Mitigation |
|---|---|---|---|---|
| | **Hazardous Materials** | | | |
| VC Item 3 p. 8, 30, 31, 38<br>VC Item 12, pg. 13<br>LC COA 15 | At the time of Technical Review, a Hazardous Materials Management Plan shall be submitted for review, comment and approval by Larimer County Staff containing a list of chemicals that will be new to the project and site, relative quantities, estimated locations, and wastewater characteristics and systems to be installed. The plan shall also include detailed construction plans, operational conditions, safety and spill prevention and control measures for all aqueous ammonia, demineralized water, and wastewater systems and infrastructure. | | X | X |
| VC Item 3 p. 38, 42<br>VC Item 12, pg. 13<br>LC COA 16 | At the time of Technical Review, a Hazardous Materials Impact Analysis shall be submitted for review and comment by Larimer County staff in alignment with current hazardous material management plans. | | X | X |
| | **Construction** | | | |
| VC Item 3 p. 10<br>LC COA 17 | The applicant must obtain a Larimer County Development Construction Permit for the planned construction activities. As applicable, the applicant or its contractors will also be required to obtain other Larimer County permits. These could include but are not limited to Building Permits and/or Floodplain Development Permits. | X | X | |
| VC Item 13 p. 2, 3<br>LC COA 18 | The applicant must submit a detailed construction schedule, including anticipated phasing, planned workdays and hours, and haul routes for construction traffic. | X | X | |
| VC Item 13 p. 2, 3<br>LC COA 19 | The applicant shall allow access to Larimer County staff and consultants for inspections and construction observation as appropriate. | | X | |
| VC Item 13 p. 2, 3<br>LC COA 20 | Whenever it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, the applicant will provide and maintain suitable and safe detours or other temporary expedients for the accommodation of public and private travel, emergency vehicles, delivery services, garbage pickup, school bus stops, etc. | | X | X |
| VC Item 13 p. 2, 3<br>LC COA 21 | When construction activity is taking place within or impacting Larimer County ROW in any way, the applicant shall obtain and abide by the standards and conditions of the applicable County ROW permit(s), per the Code of Ordinances and the Land Use Code. Construction plans detailing the work to be completed will need to be provided. Additionally, Traffic Control Plans, developed by a certified traffic control company, must be submitted for all work performed within road ROW or that will directly affect the traveling public. | | X | X |

| Source | Resource | Avoidance | Minimization | Mitigation |
|---|---|---|---|---|
| VC Item 13 p. 2, 3<br>LC COA 22 | Larimer County regulates access to county roads to maintain safe traffic flow, road drainage facilities, and efficient use of the County's roads. Access Permits will be required for any new access from Larimer County ROW regardless of whether they are to be used for temporary construction purposes or are to be permanent. Staff may also require an Access Permit for existing access points proposed for temporary construction or permanent access. | | X | X |
| VC Item 13 p. 2, 3<br>LC COA 23 | The applicant shall be required to designate planned haul routes. The existing surface condition of all planned haul routes will need to be evaluated prior to construction. If the County Engineer determines that the roadway surface has deteriorated more rapidly during or after construction due to construction traffic, equipment, or hauling, the applicant will be required to restore the roadways to their prior condition. This may include regrading and/or resurfacing. | | X | X |
| VC Item 13 p. 3<br>LC COA 24 | Heavy equipment traffic will be subject to all weight limit restrictions along adjacent roadways and will obtain oversized/overweight permits. | X | X | |
| VC Item 3, p. 28<br>LC COA 27 | If required, the applicant shall submit an analysis of impacts on any County roads and repair any Project-caused damage. | | X | X |
| VC Item 3 p. 7<br>LC COA 28 | The applicant shall provide Larimer County with as-built construction drawings and certifications prepared by a Colorado-registered professional engineer. | | X | X |