REDACTED
Docket No. 20000-___-ER-23
Witness: Timothy J. Hemstreet

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Direct Testimony of Timothy J. Hemstreet

March 2023

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address, and present position with PacifiCorp d/b/a Rocky Mountain Power ("PacifiCorp" or "Company").

A. My name is Timothy J. Hemstreet. My business address is 825 NE Multnomah Street, Suite 1800, Portland, Oregon 97232. My present position is Vice President of Renewable Energy Development for PacifiCorp.

Q. Briefly describe your education and business experience.

A. I hold a Bachelor of Science degree in Civil Engineering from the University of Notre Dame in Indiana and a Master of Science degree in Civil Engineering from the University of Texas at Austin. I am also a Registered Professional Engineer in the State of Oregon. Prior to joining the Company in 2004, I held positions in engineering consulting and environmental compliance. Since joining the Company, I have held positions in environmental policy, engineering, project management, and hydroelectric project licensing and program management. In 2016, I assumed a role in renewable energy development, and in June 2019 I assumed a role focusing on PacifiCorp's wind repowering effort, and assumed my current role in September 2022, in which I oversee the development of renewable energy resources that enhance and complement PacifiCorp's existing renewable energy resource portfolio.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I have previously sponsored testimony in California, Idaho, Oregon, Utah, Washington, and Wyoming.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. The purpose of my testimony is to demonstrate the prudency of the Company's efforts to acquire and repower the Foote Creek II, III and IV ("Foote Creek II-IV") and Rock River I wind energy facilities (collectively, the "Projects"), similar to the effort undertaken previously at the Company's Foote Creek I wind facility, for which cost recovery was approved in the Company's last general rate case.[1] My testimony provides detail on the Company's commercial and other arrangements related to the Projects, and explains their customer benefits. Specifically, my testimony addresses:

- the background of the Projects;
- the scope of the repowering effort and the Project's relationship to the Company's earlier repowering efforts;
- the contracting arrangements, implementation status, permitting status, and schedule for the Projects;
- the energy benefits of the Projects;
- the financial benefits for customers of repowering resulting from production tax credit ("PTC") qualification of the Projects; and
- the evaluation of the Projects in the 2021 Integrated Resource Plan ("IRP").

Additionally, my testimony describes the Company's investments in hydroelectric resources to replace the Prospect No. 3 flowline, and construct a new Fall Creek Hatchery, and describes how these projects are consistent with the requirements of the Federal Energy Regulatory Commission ("FERC") and, in the case of the Fall Creek Hatchery, the Klamath Hydroelectric Settlement Agreement ("KHSA").

[1] *In re Application of RMP to Increase Retail Electric Service Rates by Approximately $7.1 Million Per Year or 1.1 Percent, To Revise the Energy Cost Adjustment Mechanism, and to Discontinue Operations at Cholla Unit 4,* Docket No. 20000-578-ER-20 (Record No. 15464), Order 27138 (Jul. 15, 2021).

III. SUMMARY OF TESTIMONY

Q. Please summarize your testimony.

A. In March 2021, PacifiCorp completed a significant effort to repower the entirety of its owned wind fleet that was originally constructed before 2011, including the Foote Creek I facility. These repowered facilities are now delivering enhanced value and long-term customer benefits. The Company is pursuing additional benefits for customers by acquiring and repowering additional wind facilities adjacent to the Company's Foote Creek I facility in Carbon County, Wyoming, at the Foote Creek II-IV and Rock River I wind projects. These Projects will allow the Company to leverage existing long-term wind energy lease rights, facilities, and infrastructure in the local area (including staff and contractor resources) that will provide customers with benefits from these cost-effective, high-capacity-factor wind energy resources.

Acquiring and repowering the Projects is consistent with the Company's 2021 IRP, that identified both Projects as beneficial to customers and included their repowering in the Company's least-cost, least risk preferred portfolio. Repowering these facilities is also consistent with recent Wyoming Public Service Commission ("Commission") decisions that approved certificates of public convenience and necessity ("CPCNs") for both Projects.[2] Construction at Foote Creek II-IV began in the summer of 2022, and the project is on track to reach commercial operation in late 2023,

[2] *In re Application of RMP for a Certificate of Public Convenience and Necessity to Construct New Wind Turbines and Update Collector Lines at the Existing Foote Creek II-IV Wind Energy Facility,* Docket No. 20000-606-EN-21 (Record No. 16955) (a bench decision was rendered by the Commission on April 26, 2022; a written order has not been issued at the time of drafting this testimony); *In re Application of RMP for a Certificate of Public Convenience and Necessity to Construct New Wind Turbines and Update Collector Lines at the Existing Rock River I Wind Energy Facility,* Docket No. 20000-613-EN-22 (Record No. 17017), Order 29130 (Feb. 3, 2023).

while construction of Rock River I will begin in the spring of 2023 with commercial operation to follow in late 2024.

The Company operates a series of hydroelectric projects on the Rogue River in Southern Oregon, including Prospect No. 3, a 7.2-megawatt ("MW") facility. The Company recently received a new FERC license for the facility, which requires PacifiCorp to replace an existing deteriorating wood stave flowline with a new, steel pipeline.[3] This new pipeline will reduce leakage, provide protection from ruptures related to rock falls, and avoid associated erosion from those events. This new pipeline will also address recent failures from the existing flowline that eroded steep banks between the flowline alignment and the South Fork Rogue River and that has interrupted hydroelectric power generation at the facility until the flowline can be replaced. Replacing the wood stave flowline will also allow erosion remediation to be completed, and return the facility to operation so customers can continue to benefit from the resource.

Finally, the Company is building a new fish hatchery adjacent to the Fall Creek Hydroelectric Plant, which is the remaining operating Company-owned hydroelectric development within the Klamath Hydroelectric Project. The hatchery is necessary for the Company to meet its obligations under the KHSA to continue fish production for an eight-year period following Klamath dam removal.[4] The facility has been designed in consultation with the California Department of Fish and Wildlife ("CDFW") and the National Marine Fisheries Service ("NMFS") specifically to meet fish production goals

[3] *In re Prospect No. 3 Re-Licensing,* 168 FERC ¶ 62,175 (Sept. 27, 2019).
[4] *In re Klamath Hydroelectric Settlement Agreement*, at 49 (Feb. 18, 2020, as amended Nov. 30, 2016) (available here).

that will be in effect following the removal of Iron Gate Dam. Construction of the facility is underway, and the new hatchery will be operational in December 2023 to ensure fish production can continue following planned removal of Iron Gate dam in 2024. Completion of the hatchery and fulfillment of the Company's obligations under the KHSA has protected customers from the uncertain costs and risks related to the Klamath hydroelectric assets that are being removed.

IV. WIND REPOWERING PROJECT BACKGROUND, SCOPE AND RELATION TO PRIOR REPOWERING PROJECTS

Q. Please explain the background of the Foote Creek II-IV and Rock River I wind energy projects.

A. The Foote Creek Rim wind energy projects, consisting of Foote Creek I, II, III and IV, were the first utility-scale, commercial wind energy projects in the state of Wyoming. The projects are located at Foote Creek Rim due to the extraordinary combination of geography and wind energy resource at the site that causes already robust winds to accelerate as they move over the elevated plateau of the Foote Creek Rim. Development of wind energy facilities to take advantage of these favorable wind energy characteristics began in the early 1990s, and construction of the Foote Creek Rim projects was completed between 1999 and 2000. The Rock River I wind project is located approximately five miles northeast of the Foote Creek Rim projects and four miles northwest of the High Plains and McFadden Ridge projects. Rock River I was developed shortly after the Foote Creek Rim projects, and reached commercial operation in October 2001. Rock River I was similarly developed adjacent to the Foote Creek Rim due to these similar favorable wind energy resource characteristics.

PacifiCorp participated in wind energy development at the Foote Creek Rim

site in partnership with the Eugene Water & Electric Board ("EWEB") and the Bonneville Power Administration ("BPA"). PacifiCorp and EWEB were co-owners of the Foote Creek I wind energy facility that reached commercial operation in 1999, and BPA purchased a portion of the project's output. PacifiCorp acquired full ownership of the Foote Creek I project in 2019 and completed repowering of the project in March 2021. The Foote Creek II-IV wind energy facilities, which were previously owned by Terra-Gen, LLC ("Terra-Gen"), were independently developed and their generation output was sold to other utilities under power purchase agreements. The Foote Creek II-IV projects were constructed with 64 wind turbines (of which 33 turbines had a nameplate capacity of 0.6 MW each and 31 turbines had a nameplate capacity of 0.75 MW) with a total nameplate capacity of 43.35 MW.

Rock River I was constructed with 50 wind turbines (each turbine with a nameplate capacity of one megawatt) with a total nameplate capacity of 50 MW. Rock River I was previously co-owned by Terra-Gen and Shell Wind Energy Inc. ("Shell") and its output was sold to the Company under a 20-year power purchase agreement that expired in December 2021. The Rock River I project interconnects to the Company's transmission system at the Foote Creek Substation.

Q. What does it mean to repower a wind energy facility?

A. Repowering a wind energy facility means upgrading the wind turbine generator ("WTG") equipment at an existing wind energy project with more efficient equipment to increase the power generation from the facility and extend the life of the facility. Specifically, repowering Foote Creek II-IV and Rock River I involves installing new turbines while reusing other pre-existing facility infrastructure.

Q. Please briefly describe PacifiCorp's effort to repower the Foote Creek II-IV and Rock River I facilities.

A. Similar to the Company's effort to repower its neighboring Foote Creek I facility, repowering of the Projects involves installing modern WTGs.

At Foote Creek II-IV, the repowering effort will involve installing 11 new WTGs of the same type recently installed at Foote Creek I to replace the older wind turbines of much smaller capacity that were previously at the site. Similarly, the Rock River I repowering effort will install 19 new WTGs to replace the smaller capacity turbines originally at the project.

The new WTGs at the Projects will be supported on new foundations and connected to the Foote Creek Substation with new energy collector circuits. The turbines will have updated switchgear and controls, and the new WTG locations will be linked by new turbine access roads. The proposed site layout for the Foote Creek II-IV repowering effort is shown in RMP Exhibit 8.1 and the Rock River I site layout is shown in RMP Exhibit 8.2.

Q. Will the Projects benefit from PacifiCorp's prior efforts to repower the adjacent facilities?

A. Yes. As part of the Foote Creek I repowering effort, the Company obtained the master wind energy lease rights for the entire Foote Creek Rim site, encompassing the original Foote Creek I, Foote Creek II, Foote Creek III, and Foote Creek IV wind energy project boundaries. These rights were acquired in August 2019 and their acquisition enhanced the customer benefits of the Foote Creek I repowering project by reducing the ongoing land rights cost of the project. Similarly, repowering the Foote Creek II-IV facilities

will allow customers to fully benefit from these wind energy lease rights, which provide the ability to cost-effectively generate power at one of the most favorable wind energy locations in Wyoming. Acquiring the Foote Creek II-IV facilities allows the Company to nearly double the number of modern turbines it operates at the Foote Creek Rim, increasing operations and maintenance efficiencies associated with current operations at the repowered Foote Creek I facility.

The Rock River I facility will benefit from the Company's recent repowering effort at the nearby High Plans and McFadden Ridge projects, utilizing operations and maintenance staff contracted for that project to also operate the Rock River I facility. Thus, no additional operations facilities are needed to support project operations. Some project controls will also be housed at the Company's Foote Creek operations and maintenance building, which is nearby the Foote Creek substation, where Rock River I will interconnect to the transmission system. This local infrastructure results in efficiencies and cost savings for the project since it can draw on existing infrastructure as well as Company staff and contractor resources.

Q. Are there other ways in which Foote Creek II-IV will benefit from PacifiCorp's prior repowering effort at Foote Creek I?

A. Yes. As part of the Project, an existing 2.0 MW turbine previously constructed as part of the Foote Creek I repowering project will be interconnected to the 1.8 MW Foote Creek II interconnection. This will allow this small Foote Creek II interconnection to be used by an existing, appropriately sized turbine while also allowing more generation from the existing Foote Creek I turbines as a result of less curtailment at higher wind speeds. Additionally, the Foote Creek I repowering project required access road

upgrades to the Foote Creek Rim plateau to allow larger, modern wind turbine equipment to be delivered to the site. These improvements will also be used for the Foote Creek II-IV facilities, and the enclosed switchgear building constructed adjacent to the Foote Creek Substation as part of the Foote Creek I repowering project will be used for equipment that will support the repowered project, reducing costs. Finally, the Foote Creek II-IV facilities will be operated from the Company's existing operations and maintenance building for the Foote Creek I project, so no additional facilities are needed for project operations.

Q. Will the larger blades from the new turbines increase the potential for avian impacts at the repowered facilities?

A. Monthly monitoring conducted at the Projects over the last several years shows no significant avian impacts. Although the larger blades and greater rotor-swept area will increase the overall risk zone of the repowered wind turbines, this does not necessarily correlate with an increased risk of avian impacts. The significant reduction in the number of turbines that will be deployed at the site also means that less of the overall project site area will be covered by wind turbines. To further mitigate any potential impacts, at both the Foote Creek II-IV and Rock River I projects, new turbine locations have been sited to avoid areas of higher avian use such as the edges of the plateaus.

The Company also performs monthly monitoring at all Company-owned Wyoming wind facilities and reports to both the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service. Once repowering concludes, the Company will begin this monthly monitoring at the Projects to determine if the new turbines cause additional impacts to avian species and will engage with the appropriate agency to

discuss and, if prudent and practicable, implement additional avoidance, minimization, or mitigation measures. In addition, the Company is coordinating with both the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service on the Project, including the development of an Eagle Conservation Plan and Bird and Bat Conservation Strategy for the new turbines.

V. WIND REPOWERING PROJECT CONTRACTING, PERMITTING STATUS, SCHEDULE, AND COST

Q. What commercial arrangements has PacifiCorp made to acquire and repower the Projects?

A. For Foote Creek II-IV, in addition to the earlier acquisition of the master wind energy lease rights for the project site, PacifiCorp executed a Purchase and Sale Option Agreement ("PSOA") with Terra-Gen to acquire 100 percent of its interests in the Foote Creek II, III and IV facilities. Pursuant to the PSOA, Terra-Gen has removed the original 64 turbines from the site and completed site restoration activities in preparation for repowering of the facility by the Company. The Company closed on the acquisition of the facilities pursuant to the PSOA in June 2022, following the approval of the Company's CPCN application by the Commission.

For Rock River I, the Company negotiated a PSOA with Terra-Gen and Shell to acquire 100 percent of their interests in the Rock River I facility including the project's wind energy lease rights, transmission and access easements, and interconnection agreement. Pursuant to the PSOA, Terra-Gen and Shell removed the original 50 turbines from the site and completed site restoration activities in preparation for repowering of the site by the Company. The Company closed on the acquisition of the facilities pursuant to the PSOA in February 2023, and shortly thereafter issued a

Full Notice to Proceed to the construction contractor. The Company is now preparing for repowering construction activities beginning in the spring of 2023, in support of a late 2024 in-service date for the project.

Q. What other commercial arrangements has PacifiCorp made with respect to the Projects?

A. For Foote Creek II-IV, the Company executed a master supply agreement and a turbine supply agreement for the repowering turbines with Vestas-American Wind Energy, Inc. ("Vestas") in which Vestas will supply and commission WTGs suitable for the site of the same type used at the Foote Creek I facility. The Company has also executed a contract for balance of plant ("BOP") wind energy construction services following a competitive procurement process in which proposals from qualified wind energy construction companies were solicited. The Company has also executed a turbine service and maintenance agreement with Vestas, which will provide service for the repowered turbines consistent with negotiated pricing and terms.

For Rock River I, the Company executed a safe harbor purchase agreement and a turbine supply agreement with General Electric International, Inc. ("GE") in which GE will supply and commission WTGs suitable for the site. The Company has also executed a BOP wind energy construction services contract. The Company has also executed a full service agreement with GE under which GE will maintain the repowered turbines consistent with negotiated pricing and terms.

Q. What is the status of necessary permitting to begin construction of the repowering projects?

A. For both Projects the Company has received the necessary Federal Aviation

Administration no-hazard determinations to install the larger new turbines at the site. The Company has also received Conditional Use Permits for the repowering efforts from Carbon County, Wyoming. The Company has received building permits from Carbon County for the Foote Creek II-IV project and is in the process of obtaining building permits for Rock River I.

Q. What is the anticipated construction schedule for the Projects?

A. For Foote Creek II-IV, the Company began construction in the summer of 2022, and turbines and commissioning activities will occur in 2023. Foote Creek II-IV is anticipated to be fully online and serving customers in December 2023. Major Project milestones for Foote Creek II-IV are shown below:

Milestone	Completion Date
Wyoming CPCN Approval	May 2022
Project Acquisition	June 2022
Construction Mobilization	June 2022
Turbine Foundation Completion	November 2022
	Anticipated Date
Access Road Completion	May 2023
Complete Turbine Deliveries	June 2023
Mechanical and Electrical Completion	August 2023
Turbine Commissioning Completion	December 2023
Final Completion/Site Restoration	July 2024

For Rock River I, the Company anticipates construction to begin in the spring of 2023, with foundations and access roads the focus of efforts in 2023 and turbine delivery, installation and commissioning activities occurring in 2024. The Rock River I project is anticipated to be fully online and serving customers in December 2024. Major Project milestones are indicated below:

Milestone	Completion Date
Wyoming CPCN Approval	September 2022
Project Acquisition	February 2023

	Anticipated Date
Construction Mobilization	April 2023
Turbine Foundation Completion	November 2023
Access Road Completion	May 2024
Complete Turbine Deliveries	June 2024
Mechanical and Electrical Completion	August 2024
Turbine Commissioning Completion	December 2024
Final Completion/Site Restoration	July 2025

Q. What is the construction status of Foote Creek II-IV?

A. At Foote Creek II-IV, 96 percent of the access road improvements have been completed and all 11 foundations have been completed and backfilled and are ready to support the new turbines. Approximately 95 percent of the collection cable and fiber optic cable has been installed. Construction activities have been halted for the winter, and the contractor is expected to resume site work in April 2023 to prepare to receive and install the new turbines. The Company has been filing monthly construction status reports as required by the Commission.

Q. When will construction at Rock River I begin?

A. Rock River I construction will commence in the spring of 2023. The construction contractor has been issued a full notice to proceed with construction and is making preparations to mobilize to the site and procure needed materials for the project.

Q. What is the forecasted cost of the Projects?

A. The cost of acquiring and repowering the Foote Creek II-IV facilities is estimated at $[redacted] on a total-Company basis. The cost of acquiring and repowering the Rock River I facility is estimated at $[redacted] on a total-Company basis.

Q. Does the acquisition and repowering of the Projects benefit customers?

A. Yes. Acquisition and repowering of the Foote Creek II-IV and Rock River I projects will result in significant benefits for customers as a result of the energy and PTC

benefits of the project, as more fully detailed in the direct testimony of Company witness Mr. Thomas R. Burns.

VI. WIND REPOWERING BENEFITS INCLUDING REQUALIFICATION FOR PRODUCTION TAX CREDITS

Q. What benefits will customers realize from the Projects once repowered?

A. Given the extraordinary wind resource in the area, the Projects will provide significant energy benefits to customers: the Foote Creek II-IV facilities are estimated to have a high net capacity factor of [redacted] percent, and the Rock River I facility is estimated to provide a similarly high net capacity factor of [redacted] percent. These high net capacity factors allow the facilities to contribute to system capacity needs.

Q. Will the repowered Projects qualify for PTCs?

A. Yes. Repowering will requalify both Projects for PTCs, which will be passed on to the Company's customers.

Q. What is the value of the PTC for the Projects?

A. For 2023, the value of the federal PTC is 2.75 cents per kilowatt-hour, or $27.5 per megawatt-hour. This PTC value is adjusted annually based upon an inflation index, and the PTC is available for energy produced during the 10-year period after the wind facility begins commercial operation. Pursuant to the Inflation Reduction Act of 2022, the Projects are expected to qualify for 110 percent of the value of the federal PTC given the location of the projects in Carbon County, which is expected to meet the definition of an "energy community" under the law. Location in an "energy community" increases the PTC value from 100 percent to 110 percent under the Inflation Reduction Act.

Q. Are there other requirements that the repowered Projects must satisfy to qualify for the PTC?

A. Yes, the repowered Foote Creek II-IV and Rock River I projects must be in service before the end of 2025 and 2026, respectively, to meet the IRS continuous efforts safe harbor and qualify for the PTC by completing construction within four calendar years. Because repowering at the Projects will not incorporate retained components from the existing wind turbines at the site there are no requirements related to the Internal Revenue Service "80/20" test – a test that was applicable to the repowering of the majority of PacifiCorp's wind fleet in which the foundations and towers were retained.[5]

Q. Will repowering increase the overall generating capacity of the Projects?

A. No. The existing Foote Creek II - IV, and Rock River I interconnections will be fully used but the generating capacity of the Projects is not expected to be expanded as a result of repowering. The wind turbine equipment that will be used at the Projects has been optimized to make full use of the existing interconnection capacities and the Company does not at this time anticipate increasing the interconnection capacity for the facilities.

Q. What is the anticipated generation that the Projects will produce?

A. The Company retained the engineering consulting firm Black & Veatch, Inc. ("Black & Veatch") to evaluate the energy production expected from the Projects. To complete this assessment, Black & Veatch used site wind data, wind turbine location data, operational performance data, and other available site-specific information to model the expected generation from the Projects. The wind model also evaluated generation

[5] *Internal Revenue Service Notice 2016-31*, § 6 (May 5, 2016) (available here).

losses resulting from the wake losses at each turbine location. Wake losses are the reduction in generation at turbines downwind of other turbines due to reduced wind speed and increased turbulence in the airflow—or wake—behind a turbine. At Foote Creek II-IV, the estimated annual energy production from the 11 new turbines is expected to be [redacted] gigawatt-hours ("GWh"), resulting in a high net capacity factor of [redacted] percent. An additional [redacted] GWh per year is expected to be produced as a result of interconnecting a previously constructed 2.0 MW turbine at Foote Creek I to the Foote Creek II interconnection as part of the Project. At Rock River I, the estimated annual energy production of the facility is expected to be [redacted] GWh after repowering, resulting in a high net capacity factor of [redacted] percent. In total, the repowered Projects will produce an amount of energy used by nearly 42,000 homes. The technical analysis documenting the expected generation from the Projects is provided in Confidential RMP Exhibit 8.3 and Confidential RMP Exhibit 8.4.

VII. REVIEW OF WIND REPOWERING PROJECTS IN THE 2021 IRP

Q. Were the Projects reviewed as part of the Company's 2021 IRP?

A. Yes. The Projects were made available as a potential resource that could meet customer energy and capacity needs in the model used to develop the Company's 2021 IRP.[6] Because the resources were beneficial to customers, they were included in the Company's least-cost, least-risk preferred portfolio.

[6] *In re PacifiCorp's 2021 Integrated Resource Plan,* at 295 (Sept. 1, 2021) (available here).

Q. Was the acquisition and repowering of the Projects included in the 2021 IRP Action Plan?

A. Yes. Action Item 2b of the 2021 IRP notes the Company will pursue necessary regulatory approvals to authorize the acquisition and repowering of the Foote Creek II-IV and Rock River I facilities in order to support late 2023 and late 2024 in-service dates, respectively.[7] The Company's 2021 IRP Update continued to include acquisition and repowering of the Projects in the preferred portfolio.[8]

VIII. PROSPECT NO. 3 FLOWLINE REPLACEMENT BACKGROUND AND STATUS

Q. What is the Prospect No. 3 flowline replacement project?

A. As part of the new license issued by the FERC for the Company's Prospect No. 3 Hydroelectric Project in Southern Oregon, FERC directed the Company, consistent with the Company's relicensing proposal, to replace the Prospect No. 3 flowline.[9] The Prospect No. 3 flowline is a 5,558-feet long, 66-inch diameter, wood stave pipeline that conveys flows diverted from the South Fork Rogue River by the South Fork Diversion Dam to the Prospect No. 3 canal, and then to the Prospect No. 3 powerhouse for generation of up to 7.2 MW of hydroelectric power. Water diverted into the flowline and to the Prospect No. 3 powerhouse is subsequently conveyed downstream to augment generation at the Prospect Nos. 1, 2, and 4 powerhouses. The flowline begins 273-feet downstream of the diversion dam near river elevation, and conveys up to 150 cubic feet per second of diverted waters out of the steep river canyon and into the canal, which is located on the relatively flat plateau between the South and Middle Forks of

[7] *Id.* at 323.
[8] *In re PacifiCorp's 2021 IRP Update,* at 5 (Mar. 31, 2022) (available here).
[9] 168 FERC ¶ 62,175.

the Rogue River. The wood staves that make up the flowline date to the original construction of the hydroelectric project in 1932.

Q. Where is the Prospect No. 3 flowline located?

A. The Prospect No. 3 flowline is located on the north (right) bank of the South Fork Rogue River, east of the community of Prospect in northeastern Jackson County, Oregon. The flowline alignment includes property owned by PacifiCorp and the federal government as administered by the United States Department of Agriculture, Forest Service ("Forest Service"). Approximately 3,592-feet (65 percent) of the flowline occurs within and to the east of the Rogue River-Siskiyou National Forest boundary. The remaining segment of the flowline west of the National Forest boundary is on PacifiCorp property.

Q. Why does the Prospect No. 3 flowline have to be replaced?

A. On September 27, 2019, FERC issued to PacifiCorp a new 40-year license to operate the Prospect No. 3 Hydroelectric Project. Article 301 of this FERC license requires PacifiCorp to complete construction of the flowline within five years from the issuance date of the license (i.e., by September 27, 2024). The license explains that PacifiCorp is required to replace the deteriorating wood stave flowline with a new, steel pipe to reduce leakage, prevent flowline ruptures from rock falls, and avoid associated erosion from flowline leakage. In March 2022, after an extended, dewatered, outage period, the flowline experienced multiple wood stave failures upon rewatering the flowline. These flowline failures resulted in erosion of the steep banks between the flowline alignment and the South Fork Rogue River. Shortly thereafter PacifiCorp closed the Prospect No. 3 headgate, ceasing water diversions and halting hydroelectric power generation until

the flowline can be replaced and the erosion remediated. Erosion remediation cannot be completed until the existing flowline is demolished, thereby providing heavy equipment access to the erosion sites along the narrow flowline bench perched along the steep river canyon walls. The flowline is integral to operation of the overall hydroelectric project, and, as mentioned above, also provides water used for generation at the downstream hydroelectric developments.

Q. What is the status of the Prospect No. 3 flowline replacement project?

A. PacifiCorp has developed final engineering designs for the flowline replacement and submitted these designs to regulatory agencies for approval. Additional plans to address the erosion will be developed as access is made possible by demolition of the wood stave pipe. The engineering designs include construction access roads that traverse the steep slopes between the plateau above and the narrow flowline alignment below on both PacifiCorp and Forest Service property. These construction access roads are necessary to safely demolish the existing flowline and construct the new steel pipeline, including concrete supports and protective measures against rockfall remediation. PacifiCorp is completing a competitive procurement process to select a contractor for the flowline construction work. All agencies have provided authorization or a notice to proceed for the construction of the access roads. However, PacifiCorp is awaiting authorization and notice to proceed from FERC and Forest Service before construction may begin on the demolition of the old flowline and construction of the new flowline.

Q. What regulatory agencies are involved in the review, consultation, and approval of the Prospect No. 3 Flowline Replacement Project?

A. PacifiCorp has received or will receive review, consultation, exemptions, and/or

authorizations from the following federal, state, and local agencies with respect to the Prospect No. 3 flowline replacement project: FERC, Forest Service, U.S. Army Corps of Engineers, Oregon Department of Environmental Quality, Oregon Department of Forestry, Oregon Department of State Lands, Oregon State Historic Preservation Office ("SHPO"), and Jackson County Planning Department. The flowline replacement project will be conducted pursuant to the Prospect No. 3 Hydroelectric Project FERC license and the associated FERC-approved management plans, including the following: Erosion and Sediment Control Plan, Fire and Fuels Management Plan, Fish Salvage Plan, Historic Properties Management Plan ("HPMP"), Operations Compliance Monitoring Plan, Road Plan, Vegetation Management Plan, and Wildlife Crossing Plan. PacifiCorp has consulted with the following tribes regarding the flowline replacement project pursuant to the HPMP and Programmatic Agreement between FERC and the SHPO: the Confederated Tribes of the Grand Ronde Community of Oregon, Confederated Tribes of Siletz Indians, the Cow Creek Band of Umpqua Tribe of Indians, and the Klamath Tribes.

Q. What is the cost of the flowline replacement project?

A. The cost of the project is $[redacted], including design, permitting, and construction.

Q. What is the value of the Prospect No. 3 flowline replacement project to PacifiCorp's customers?

A. The Prospect No. 3 flowline replacement will allow PacifiCorp to safely operate the Prospect No. 3 Hydroelectric Project through 2059 in compliance with the FERC license. The new flowline will reduce leakage of diverted waters, thereby increasing generation efficiency at the Prospect No. 3 plant, as well as at the downstream Prospect

Nos. 1, 2 and 4 plants, while also decreasing the risk of environmental damage resulting from flowline leakage and subsequent erosion. Removal of the existing flowline will also facilitate remediation of existing erosion from wood stave flowline leakage.

IX. FALL CREEK HATCHERY BACKGROUND, SCOPE, STATUS, COST AND BENEFITS

Q. Please explain the background of the Fall Creek Hatchery project.

A. The Fall Creek Hatchery project fulfills the Company's obligation under the KHSA to provide for the continuation of hatchery fish production for an eight-year period following the removal of Iron Gate dam. The KHSA was signed by Klamath Basin Tribes, the U.S. Departments of the Interior and Commerce, the states of California and Oregon, the Company, and other stakeholders on February 18, 2010, and amended on April 6, 2016, and November 30, 2016. The KHSA resolved the issues surrounding the relicensing of the Klamath Hydroelectric Project (FERC Project. No. P-2082) through the transfer of the Lower Klamath Project developments (J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate) to the Klamath River Renewal Corporation ("KRRC") and the states of California and Oregon, which will undertake their removal. FERC formally split the Klamath Hydroelectric Project into two licenses in March 2018 and in doing so created the Lower Klamath Project (P-14803). In July 2021, FERC issued a license transfer order that, when it became effective, would transfer the license for the Lower Klamath Project from the Company to the KRRC and the states of California and Oregon as co-licensees. On November 17, 2022, FERC issued a license surrender order for the Lower Klamath Project and on December 1, 2022, the KRRC, California, and Oregon formally accepted that surrender order and the Company transferred the license to the Lower Klamath Project and associated real property to the KRRC,

California, and Oregon on the same date. The Company retains ownership of the Fall Creek development including the water rights, diversion works, canals, powerhouse, and the property on which the new hatchery will be constructed. The Company is continuing to operate the Lower Klamath Project as a contract operator until the facilities are removed, and the Company's customers will continue to benefit from the generation from the Lower Klamath Project facilities until they are decommissioned.

The original Fall Creek Hatchery facilities were constructed following the completion of Copco No. 1 Dam in 1918. This hatchery was operated by the California Department of Fish and Wildlife from approximately 1918 to 1948, and then sporadically thereafter. Because of the age of the facility and the lack of routine use, the existing Fall Creek Hatchery is not in suitable condition to meet current fish-rearing or worker safety requirements and is not capable of rearing the number of fish that need to be raised to meet established production goals.

Q. Why is the Company required to build the Fall Creek Hatchery?

A. Section 6.1.1 of the KHSA obligated the Company to implement a suite of interim measures to address water quality and aquatic species impacts of the Lower Klamath Project facilities until their removal. One of these, Interim Measure 19, requires the Company to develop a plan in consultation with CDFW and NMFS to continue to meet established fish production goals for a period of eight years after the removal of Iron Gate Dam. Implementation includes the development of designs, specifications, permits, and construction as necessary to ensure hatchery production goals are achieved following dam removal. Interim Measure 20 requires the Company to fund hatchery

operations and maintenance costs for a period of eight years after removal of Iron Gate Dam.

The KHSA also requires that the Company have the hatchery production continuity measures in place before Iron Gate Dam is removed and Iron Gate Hatchery is no longer able to function when its existing water supply from Iron Gate Reservoir is no longer available. Given the current schedule for removal of Iron Gate Dam in 2024, construction of Fall Creek Hatchery has been scheduled to occur in 2023 so that the facility is operational when needed to continue fish rearing.

Q. Why is it necessary to build a new hatchery?

A. Iron Gate Hatchery was completed in 1962, concurrent with the completion of Iron Gate Dam, and has been in continuous operation since that time. The cold-water supply to Iron Gate Hatchery is provided by Iron Gate Reservoir through intake structures in the dam itself. With the removal of Iron Gate Dam, starting with reservoir drawdown planned for January 2024, there will no longer be a cold-water supply for Iron Gate Hatchery and it will not be possible to raise Chinook and Coho salmon at the existing facility.

Q. Did the Company consider other means of meeting its hatchery obligations under the KHSA?

A. Yes. The Company, in coordination with the KRRC and CDFW and NMFS, evaluated a suite of alternatives to the Fall Creek Hatchery. Alternatives considered included ways to keep the Iron Gate Hatchery functioning using alternative water supplies, building new facilities to rear fish at different locations, and using other existing hatchery facilities in Oregon and California. The use of Iron Gate Hatchery, with

modifications to address the impacted water supply after dam removal, was not feasible because Klamath River water temperatures are too warm in the summer to rear salmon and there are no suitable local surface or groundwater sources that could support the hatchery. Development of hatchery facilities at other locations was also evaluated, but the lack of infrastructure and access at these remote sites made operations, staffing, and security challenging. Other existing hatchery facilities in Oregon and California were investigated to determine if hatchery production capacity was available but other suitable facilities were found to be operating at capacity and therefore unavailable to assist in meeting hatchery production goals. Even if capacity were available, using out-of-basin facilities to raise fish would have created biological challenges related to increased straying in returning adults, inter-basin transfer, and potential fish disease issues.

Ultimately, building a new facility at the existing Fall Creek Hatchery site was determined to be the best option. The main reasons for this determination was due to the fact that there is an adequate volume of water available to support the fish to be raised at the new facility, that water is of high quality, and, because it comes from spring-fed sources, is near optimal temperatures for rearing fish throughout the year. CDFW also had experience with successfully raising fish at this location during operation of the original Fall Creek Hatchery facilities. Additionally, the Company continues to own this property, facilitating construction in a timeline that meets the requirements of the KHSA.

Q. Does construction of the Fall Creek Hatchery facility allow the Company to meet its obligations under the KHSA?

A. Yes. Constructing the Fall Creek Hatchery facility will fulfill the Company's obligation under the KHSA to provide funding for implementation of the mitigation plan developed under Interim Measure 19. The fish raised at the Fall Creek Hatchery will help mitigate for fisheries impacts associated with dam removal activities and help provide ongoing fish harvest opportunities for Klamath Basin Tribes as well as commercial and sport fishing stakeholders. The agreed-upon fish production levels will help bolster populations of Coho and Chinook salmon as they recolonize areas upstream of Iron Gate Dam.

Q. Has the project been approved by relevant regulatory agencies?

A. Yes. Plans for the construction of the Fall Creek Hatchery were submitted to FERC for approval and FERC approved the plans and issued an authorization to the Company to proceed with construction on December 21, 2022. Other approvals and permits are in place from the U.S. Army Corps of Engineers, the California State Water Board, CDFW, U.S. Fish and Wildlife, NMFS, and the California State Historic Preservation Officer. At this time, the only outstanding approvals are related to local building permits, heavy haul permits, and an air quality permit for an emergency generator. These permits are being obtained.

Q. What is the cost of the hatchery?

A. The total cost for the new hatchery is $[redacted]. This includes all planning, design, permitting, materials, construction, oversight, and project management costs. This cost does not include operations costs following completion.

Q. Where are operational costs captured?

A. Operational costs for the Fall Creek Hatchery are to be paid by the Company per Interim Measure 20 of the KHSA[10] and are consistent with the costs for operation of the Iron Gate Hatchery that have been in the Company's budget as a routine operational and maintenance cost since the original KHSA was executed in 2010.

Q. What is the construction status of the project?

A. Following a competitive bid process in 2022, the Company selected a contractor to build the new Fall Creek Hatchery. A construction contract has been executed and a limited notice to proceed was issued on August 26, 2022, to allow for the contractor to order long-lead time items (e.g., pre-fabricated buildings) and secure necessary subcontracts. Following receipt of the approval from FERC on December 21, 2022, the Company issued a full notice to proceed on December 28, 2022. The contractor mobilized to the site on January 23, 2023, to begin construction. The hatchery will be capable of receiving fish from Iron Gate Hatchery in December 2023 and final completion is expected in April 2024.

Q. How does construction of the facility benefit Wyoming customers?

A. Implementation of the KHSA, of which this project is one element, benefits Wyoming customers by achieving a fair and balanced outcome related to the relicensing proceeding for the Klamath Hydroelectric Project, and addresses costs, risks, and liabilities associated with ongoing operation of the four dams slated for removal. Through its order approving transfer of the Lower Klamath Project assets to the KRRC and the states of California and Oregon consistent with the KHSA, the Commission has

[10] *KHSA,* at Appendix D-7.

previously recognized the benefits to customers of mitigating risk associated with the Klamath dams that are slated for removal.[11]

Q. Is the Company transferring the hatchery to the Klamath River Renewal Corporation as it did the Lower Klamath Project?

A. No. The Company is not transferring the Fall Creek Hatchery or the property on which the hatchery will be built to the KRRC. The Company will continue to own both the new hatchery and the property for the foreseeable future.

X. CONCLUSION

Q. Please summarize your testimony.

A. Repowering Foote Creek II-IV and Rock River I wind projects leverages federal PTC benefits to renew not only some of Wyoming's first utility-scale wind plants, but also expands the Company's wind operations in one of the most favorable wind energy locations in the Country, while increasing customer benefits and savings.

The Prospect No. 3 flowline replacement is required by FERC to support continued generation from the Prospect No. 3 Hydroelectric Project, will reduce leakage of diverted waters, increase efficiency, and decrease the risk of environmental damage from flowline leakage and subsequent erosion. These upgrades will allow the Prospect No. 3 Hydroelectric Project to continue to provide dependable generation for the Company's customers.

Construction of the Fall Creek Hatchery supports implementation of the KHSA, and benefits Wyoming customers by achieving a fair and balanced outcome related to

[11] *In the Matter of the Application of Rocky Mountain Power for Authority to Transfer the Lower Klamath Hydroelectric Facilities to Klamath River Renewal Corporation*, Docket No. 20000-594-EA-21 (Record No. 15692), Order 28601 (May 3, 2022).

the costs, risks, and liabilities associated with ongoing operation and removal of the four mainstem Klamath River hydroelectric dams.

Q. What is your recommendation?

A. I recommend the Commission: (1) find that acquiring and repowering the Foote Creek II-IV and Rock River I wind projects, replacing the Prospect No. 3 flowline, and building the Fall Creek Hatchery are prudent, reasonable and in the public interest and will benefit customers; and (2) allow the Company to recover the cost of these investments in retail rates.

Q. Does this conclude your direct testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION OF WYOMING

IN THE MATTER OF THE APPLICATION OF ROCKY MOUNTAIN POWER FOR AUTHORITY TO INCREASE ITS RETAIL ELECTRIC SERVICE RATES AND TO REVISE THE ENERGY COST ADJUSTMENT MECHANISM	DOCKET NO. 20000-___-ER-23 (RECORD NO. _____)

AFFIDAVIT, OATH AND VERIFICATION

Timothy J. Hemstreet (Affiant) being of lawful age and being first duly sworn, hereby deposes and says that:

Affiant is the Vice President of Renewable Energy Development for PacifiCorp, which is a party in this matter.

Affiant prepared and caused to be filed the foregoing testimony. Affiant has, by all necessary action, been duly authorized to file this testimony and make this Oath and Verification.

Affiant hereby verifies that, based on Affiant's knowledge, all statements and information contained within the testimony and all of its associated attachments are true and complete and constitute the recommendations of the Affiant in his official capacity as Vice President of Renewable Energy Development.

Further Affiant Sayeth Not.

Dated this 25th day of February, 2023

Timothy J. Hemstreet
Vice President, Renewable Energy Development

STATE OF Oregon)
) SS:
COUNTY OF Multnomah)

The foregoing was acknowledged before me by Timothy J. Hemstreet on this 25 day of February, 2023. Witness my hand and official seal.

Notary Public

My Commission Expires: 2/17/24

OFFICIAL STAMP
MICHAEL CARL LEES
NOTARY PUBLIC - OREGON
COMMISSION NO. 996914
MY COMMISSION EXPIRES FEBRUARY 17, 2024

Rocky Mountain Power
Exhibit 8.1
Docket No. 20000-___-ER-23
Witness: Timothy J. Hemstreet

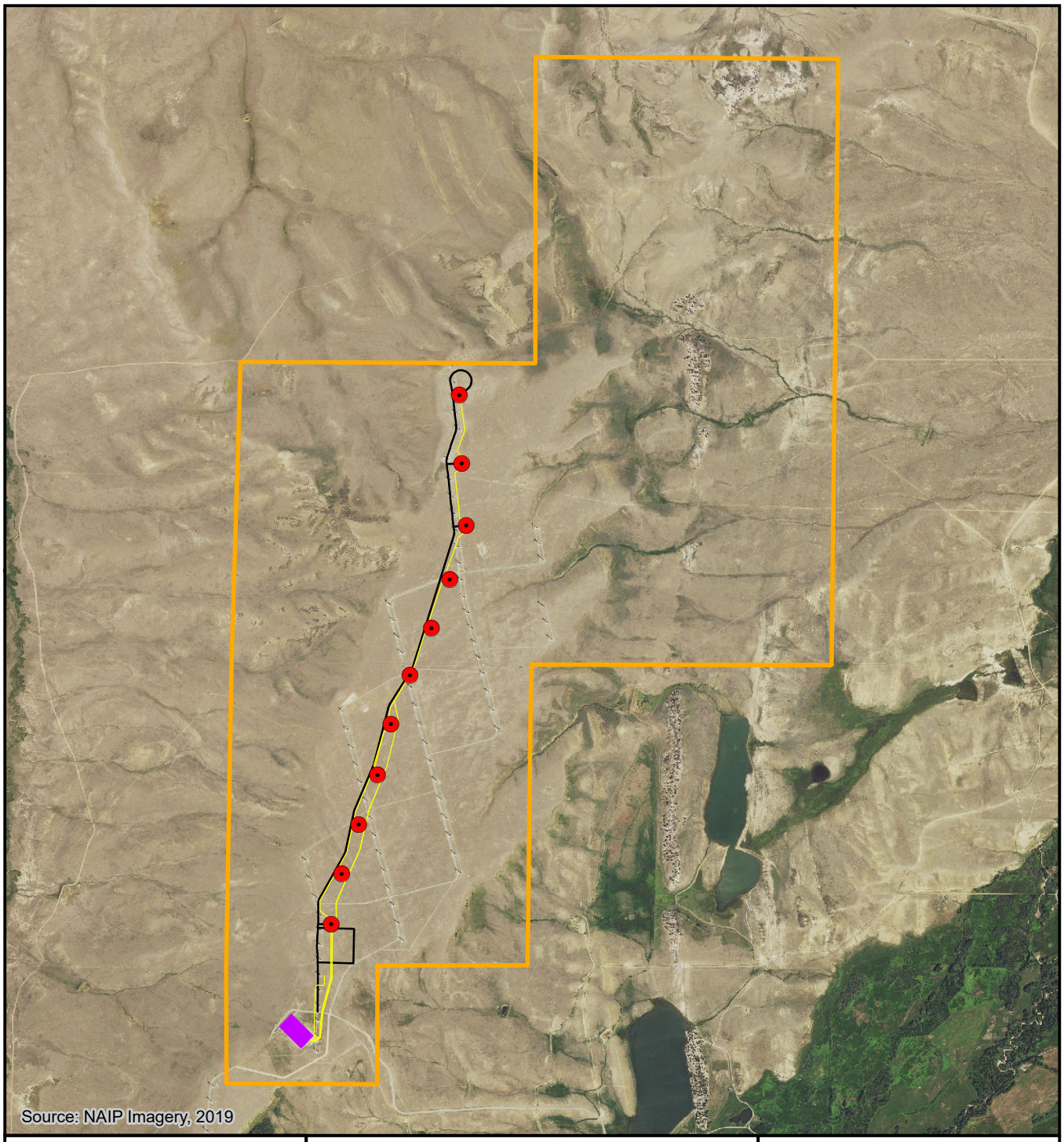
BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

ROCKY MOUNTAIN POWER

Exhibit Accompanying Direct Testimony of Timothy J. Hemstreet

Foote Creek II-IV Site Layout

March 2023


Source: NAIP Imagery, 2019
Carbon
Lease Boundary
Foote Creek II-IV Turbine
Electrical Collection Line
Access Road
Laydown Area
Substation
N
Miles
0
0.5
1
Foote Creek II-IV
Repowering
Project Location
MARTIN & NICHOLSON
ENVIRONMENTAL CONSULTANTS

Rocky Mountain Power
Exhibit 8.2
Docket No. 20000-___-ER-23
Witness: Timothy J. Hemstreet

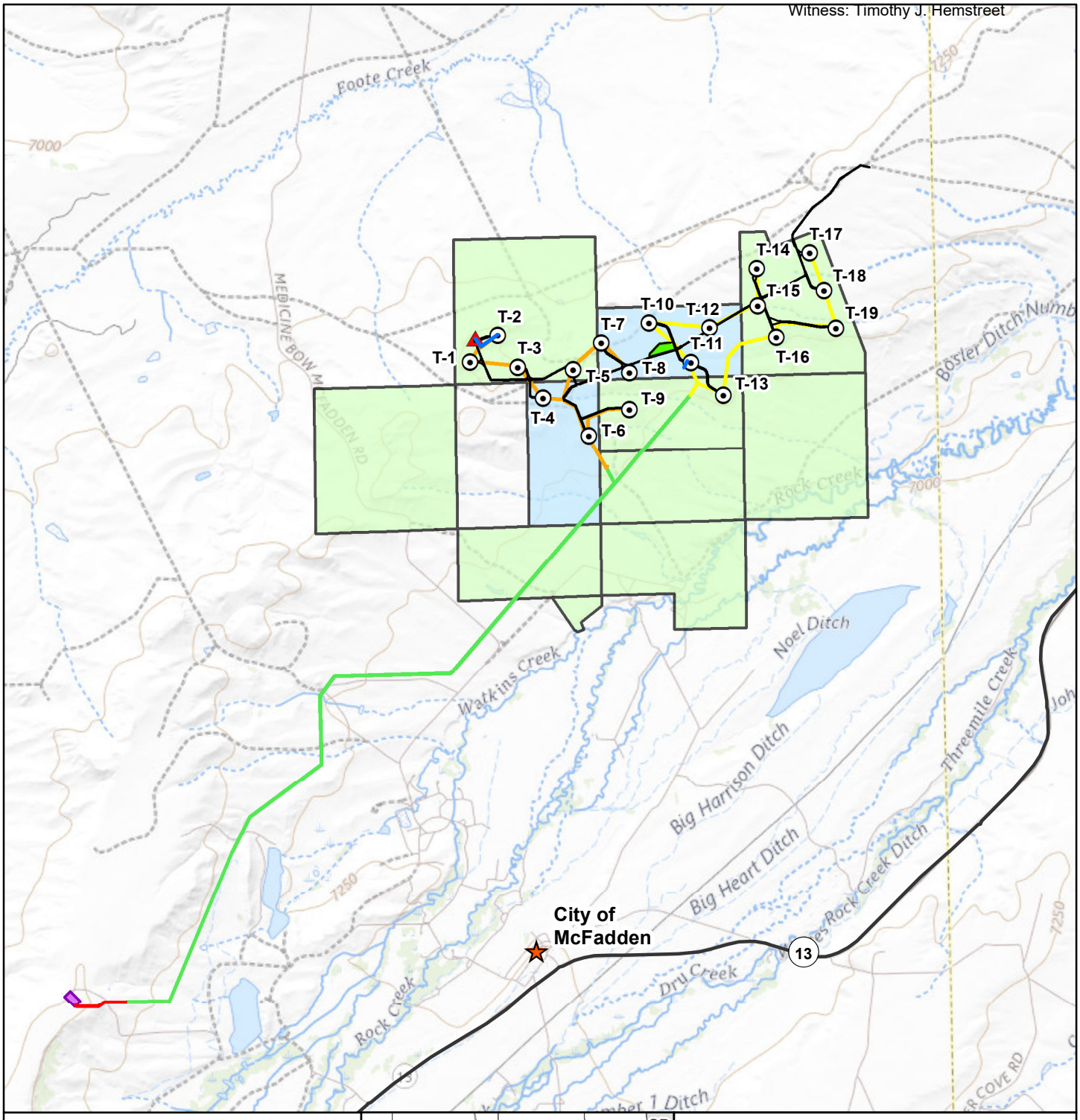
BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

ROCKY MOUNTAIN POWER

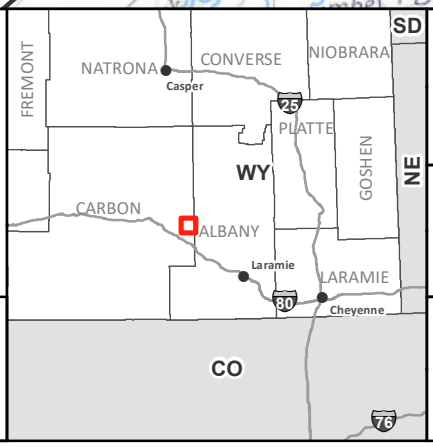
Exhibit Accompanying Direct Testimony of Timothy J. Hemstreet

Rock River I Site Layout

March 2023



MET Tower
Structure
Roadway
Existing Overhead Transmission Line
Feeder 1
Feeder 2
LV AC Cable
UG Feeders
Laydown Area
Substation
Rocky River Ranches
State of Wyoming



Sources:
USGS (2019)
ESRI (2021)

FIGURE 1: VICINITY MAP

ROCK RIVER REPOWER PROJECT
CARBON COUNTY, WYOMING
Project No. 193579D.000

PACIFICORP

wsp

0 0.5 1 1.5 2
Miles

REDACTED
Rocky Mountain Power
Exhibit 8.3
Docket No. 20000-___-ER-23
Witness: Timothy J. Hemstreet

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Timothy J. Hemstreet

Foote Creek II-IV Energy Production Analysis

March 2023

THIS EXHIBIT IS CONFIDENTIAL IN ITS ENTIRETY
AND IS PROVIDED UNDER SEPARATE COVER

REDACTED
Rocky Mountain Power
Exhibit 8.4
Docket No. 20000-___-ER-23
Witness: Timothy J. Hemstreet

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Timothy J. Hemstreet

Rock River I Energy Production Analysis

March 2023

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