

**Pensacola Hydroelectric Project  
FERC Project No. 1494**

**Exhibit D  
Project Cost and Financing**

**Draft License Application**

**Prepared for**



**Prepared by**



**December 2022**

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## LIST OF ABBREVIATIONS

Applicant	Grand River Dam Authority or GRDA
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
FPA	Federal Power Act
GRDA	Grand River Dam Authority
MW	megawatt
MWh	megawatt hour
OM	Operations Model (2022)
Pensacola Project	Pensacola Hydroelectric Project
Project	Pensacola Hydroelectric Project
USACE	U.S. Army Corps of Engineers

## 1. Introduction

The Pensacola Hydroelectric Project (Project) (FERC No. 1494) is located on the Grand Neosho River (Grand River) in Craig, Delaware, Mayes, and Ottawa Counties, Oklahoma. It creates Grand Lake O' the Cherokees, also known as Grand Lake. The Project is owned and operated by Grand River Dam Authority (GRDA, Applicant), which is a non-appropriated agency of the State of Oklahoma, created by the Oklahoma legislature in 1935 to be a "conservation and reclamation district for the waters of the Grand River." As licensed by the Federal Energy Regulatory Commission (FERC), the Project serves multiple purposes, including hydropower generation, water supply, public recreation, and wildlife enhancement. Since the Project's original development, Congress has mandated that the U.S. Army Corps of Engineers (USACE), and not the Commission, regulates the Project for flood control purposes. As directed by Congress under section 7 of the Flood Control Act of 1944, and section 7612 of the National Defense Authorization Act for Fiscal Year 2020, GRDA controls the operation of the Project until the reservoir elevation is expected to exceed 745 feet PD, at which time USACE has exclusive jurisdiction over Project operations for flood control purposes.

The enabling legislation that created GRDA did not provide it with any funding to accomplish its stated mission to develop the resources of the Grand River. It was not until GRDA applied for and received funding from the U.S. Public Works Administration (PWA) that formal planning for construction of the Pensacola Dam began. The PWA provided all the funding for the construction of the Pensacola Dam with 45 percent in the form of grants and the remaining 55 percent as loans.

This exhibit is required under 18 CFR § 4.51(e) and 5.18(a)(5)(iii). The information in this Exhibit D serves the purpose of providing a statement of costs and financing.<sup>1</sup>

## 2. Original Cost for Initial License

Under 18 CFR § 4.51(e)(1), this section is not applicable because this application is not for an initial (original) license. The Project was originally licensed in 1939.

## 3. Amount Payable for Section 14 Takeover

The Pensacola Hydroelectric Project is owned and operated by GRDA. GRDA is a non-appropriated agency of the State of Oklahoma and a municipality for purposes of section 3(7) of the Federal Power Act (FPA). Therefore, the Project is not subject to takeover pursuant to Section 14 of the FPA and the takeover cost requirements under 18 CFR § 4.51(e)(2) do not apply.

## 4. Estimated Cost of New Development

GRDA is not proposing any new development or any expansion of any land or water rights as a consequence of this application. Therefore, the requirements of 18 CFR § 4.51(e)(3) do not apply.

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<sup>1</sup> All 2020 figures will be updated with the most-current information for the final license application to be submitted in May of 2023.

## 5. Annual Cost of Total Project as Proposed

As required under 18 CFR § 4.51(e)(4), the average annual cost of the Project includes capital and annual operating costs. The annual costs include any costs associated with the proposed protection, mitigation, and enhancement measures.

### 5.1 Cost of Capital

#### 5.1.1 Existing Project Valuation

As of December 31, 2021, the net book value for the Pensacola Project was calculated at \$73,874,182 and the gross book value was calculated at \$91,906,529. This figure includes land and land rights, structures and improvements, waterway improvements, generating equipment, accessories, and miscellaneous equipment.

#### 5.1.2 Cost of Capital

The last remaining construction bonds for the Pensacola Project were retired in 1961. Since that time, GRDA has issued several revenue bond series for construction of new GRDA generation projects and GRDA system improvements. All outstanding bonds are secured by a pledge of and first lien on all system revenues, including the Pensacola Project. The aggregate principal on all GRDA outstanding bonds as of December 31, 2021 is \$9,214,862. Rates of Series A Bonds ranged from 3.0% to 5.0% and Series B Bonds ranged from 1.804% to 7.155%.

The Project ownership cost is estimated by multiplying the net book value by the cost of capital. Based on a net book value of \$73,874,182 and an estimated cost of capital of 4%, the cost of Project ownership is estimated at \$2,954,967.

### 5.2 State, Local, and Federal Taxes

As an agency of the State of Oklahoma GRDA is exempt from most state, local, and federal taxes, GRDA is only subject to nominal taxes such as excise and certain railroad related taxes.

### 5.3 Depreciation or Amortization

GRDA depreciates the Pensacola Project according to the Uniform System of Accounts for licenses subject to the FPA. As of year-end 2021, the total allocated depreciation for the Pensacola Project was \$18,332,347.

### 5.4 Operation and Maintenance Expenses

The annual costs of operating the Project for the period of 2016-2021 are presented in **Table 5.4-1**.

*Table 5.4-1 Summary of Operating Costs and Expenses for the Pensacola Project 2016-2021*

<b>Year</b>	<b>Operation and Maintenance</b>	<b>FERC Fees</b>	<b>Depreciation</b>	<b>Admin and General</b>	<b>Total</b>
2017	\$8,444,958	\$85,167	\$746,950	\$2,066,772	\$11,343,847
2018	\$7,150,975	\$174,989	\$722,048	\$1,454,051	\$9,502,063
2019	\$7,471,522	\$62,060	\$634,978	\$2,047,711	\$10,216,271
2020	\$7,530,976	\$174,320	\$952,132	\$2,545,635	\$11,203,063
2021	\$7,435,097	\$140,138	\$284,000	\$1,271,794	\$9,131,029
<b>2017-2021 Average</b>	<b>\$7,606,705</b>	<b>\$127,335</b>	<b>\$668,022</b>	<b>\$1,877,192</b>	<b>\$10,249,254</b>

### 5.5 Costs for Proposed Environmental Measures

GRDA is in the process of evaluating the need for project mitigation and enhancement measures. Costs for proposed environmental measures will be provided in **Table 5.5-1** of the Final License Application (FLA).

*Table 5.5-1 Estimated Costs of Proposed Environmental Measures<sup>2</sup>*

<b>Proposed Measure</b>	<b>Existing or Proposed</b>	<b>Capital Cost (2023 dollars)</b>	<b>Annual Operations and Maintenance Costs (2023 dollars)</b>
Implementation of Historic Properties Management Plan	Proposed	\$100,000	\$200,000
Coal Creek Wildlife Management Area	Existing	\$0	\$5,000
Continue Water Quality Enhancements	Existing	\$0	\$2,930,000
Shoreline and Vegetation Management Plan Implementation	Existing (Updated)	\$0	\$1,095,000
Lost generation cost for WQ enhancements	Existing	\$0	\$1,905,000
GRDA Law Enforcement	Existing	\$2,400,000	\$1,135,000
Recreation Site Maintenance (formal and informal)	Existing (Updated)	\$0	\$125,000

<sup>2</sup> The capital cost of developing the Historic Properties Management Plan and the Shoreline Management Plan has been included in the Section 8 costs to develop the license application.

## 6. Estimated Value of Project Power

In accordance with 18 CFR § 4.51(e)(5), the annual value of project power is estimated based on the cost of obtaining equivalent power from the lowest cost alternative source. The prices in this section were determined by using the forward price curve for SPP South Hub for the time period of 2025 through 2031 and assuming the purchase of power on the open market. The average cost of replacement energy for both on-peak and off-peak use is \$40.81 per megawatt hour (MWh). Assuming an annual energy production of 444,855 MWh per year, the annual value of project energy is \$18,153,240. The assumed cost of replacement capacity is \$5 per kilowatt-month. Assuming an average annual accredited capacity of 122 megawatts (MW), the annual value of project capacity is \$7,320,000. The total annual value of project power (capacity and energy) is \$25,473,240.

## 7. Financing and Annual Revenues Available to Meet Costs

GRDA has annual revenues and financing options to meet its cost of operation for the term of a new license. Financing is available to GRDA through the issuance of revenue bonds. As of December 31, 2021, GRDA has 4 outstanding bond series, of which the total principal is \$9,214,862 related to the Pensacola Project. A breakdown of the outstanding revenue bonds is shown in **Table 7-1**.

*Table 7-1 Outstanding GRDA Revenue Bonds*

Year	Debt Outstanding	Range of Bond Rates A Series	Range of Bond Rates B Series
2010 Bond Series	\$193,548	N/A	3.71% to 7.155%
2014 Bond Series	\$194,246	3.0% to 5.0%	1.804% to 3.961%
2016 Bond Series	\$8,548,013	3.0% to 5.0%	1.828% to 3.503%
2017 Bond Series	\$279,054	3.0% to 5.0%	N/A
<b>Total</b>	<b>\$9,214,862</b>	N/A	N/A

Annual revenues are provided to GRDA through the sale of electric power and energy and through non-utility operations. The average annual total revenues for the Pensacola Project from the time-period 2017 through 2021 were \$25,580,130.

## 8. Costs to Develop the License Application

The cost for GRDA to relicense under the Integrated Licensing Process through the filing of the FLA will be provided in the FLA.

## 9. Estimated Value of On-Peak Power and Off-Peak Power

The Pensacola Project is a GRDA asset. GRDA is an agency of the State of Oklahoma and is not subject to rate regulation by the Oklahoma Corporation Commission as investor owned, for-profit utility companies are. As shown in **Table 9-1**, the estimated average annual value of on-peak generation and off-peak generation is \$13,244,421 and \$6,003,070, respectively. The average value of both on-peak and off-peak use is \$37.80 per MWh. Values of on-peak and off-peak generation are based on average historical data from 2017-2021 and are shown in **Table 9-1**. Values can vary depending upon market conditions, and therefore should only be used as an approximation of the value of power.

*Table 9-1 Pensacola Project Estimated Average Gross Revenue from On-Peak and Off-Peak Generation (2016-2020)*

<b>Description</b>	<b>Energy (MWh)</b>	<b>Nominal Market Price (\$/MWh)</b>	<b>Average Gross Annual Revenue</b>
Average Annual On-Peak Generation	313,303	42.55	\$13,244,421
Average Annual Off-Peak Generation	202,301	20.33	\$6,003,070
Average Combined On-Peak and Off-Peak Generation	515,603	37.80	\$19,247,490

## **10. Estimated Change in Project Generation and Value of Project Power Due to Changes in Project Operations**

According to GRDA's generation records for the 10-year period spanning January 2012 through December 2021, the Pensacola Project had a gross average annual energy production (output) of 444,855 MWh per year.

As part of the study effort for this license application, an Operations Model (OM) was developed in accordance with the approved study plan. The OM has the ability to model the baseline operation of the Project and the anticipated operation of the Project. To provide a proper comparison of the estimated change in project generation, the OM estimates an average annual generation under the baseline operation of 397,734 MWh and an average annual generation under the anticipated operation of 425,911 MWh or an average annual increase of 28,117 MWh. Using a nominal market price for average combined On-Peak and Off-Peak generation reported in **Table 9-1**, the value of this average annual power increase is \$1,062,823.