STUDY REQUEST: ECONOMIC ANALYSIS OF THE BENEFITS AND COSTS OF OPERATION AND MAINTENANCE - CITY OF RIVER FALLS HYDROELECTRIC DAMS FERC PROJECT NO. P-10489-013

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cc: Kimberly D. Bose, Secretary
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Via email, no hard copy

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Study Request: Economic Analysis

INTRODUCTION

Friends of the Kinni is a broad based citizens group interested in the relicensing of the two City of River Falls dams and associated hydroelectric power stations located on the Kinnickinnic River. As part of the relicensing process a public meeting was held in River Falls on March 24, 2014. The City maintains an audio recording of this event.

One of the individuals who spoke at that meeting, Tony Stifter, made the following statement: "The day you install a dam is the day you make a commitment to remove the dam." Prior to any discussion of that eventuality (i.e., dam removal), it is important that the community and the City government have a full understanding of the various economic issues affecting the dams.. This three-phase study request calls for the utilization of independent third parties to examine the economic feasibility and performance of the operations and maintenance of the facilities - past, present and future.

After City staff has assembled all relevant data and has performed a first level review, a team of qualified accountants and engineers should follow this initial data collection and then undertake a detailed economic analysis of past performance and forecasted future performance. This is necessary to assure the community that all due diligence has been conducted on their behalf. The economic study that we propose will evaluate the capital, operational and maintenance costs of the dams and associated hydropower facilities, using standard Generally Accepted Accounting Principles (GAAP). Such an analysis, combined with other study results (including but not limited to recreation, environmental, aesthetic and community surveys regarding citizen values) will help to define a consensus of the best use of the Kinnickinnic watershed, as well as the profitability of the dams into the future.

The City's Pre-Application Document (PAD) asserts that the City's annual investment in maintaining and operating the Project is approximately $35,000 and that over the course of the 30-year license, the net investment is estimated to be at least $1,100,000. Other than this, the PAD has no mention of the economic impact of the two dams.

GOALS

1. Analyze the past profitability of the two dams, hydroelectric stations, and connections to the grid during the current license period (1988-2018). This would entail an accounting of all sources of revenue, all maintenance and operations costs, expenditure patterns, trends, cost drivers, and short and long term capital expenditures.
2. Establish baseline financial and quantitative standards for future operations of the dams and associated hydropower facilities that can be used on an annual basis to assess ongoing profits or losses, as well as adjustments to minimize losses.
3. Using baseline financial analysis data, and quantitative standards, determine the profitability and feasibility of owning, operating, maintaining and upgrading the hydroelectric facilities, including any and all appurtenances, and related and required equipment. Determine said profitability via development of a comprehensive economic model, approved by all stakeholders (including taxpayers and Electric Utility customers), that provides economic

projections for the next 30 years license period and identifies all sources of revenue, all costs, all necessary and anticipated capital investments, and all maintenance and operation standards and costs, including the costs associated with maintaining the FERC license and costs of relicensing. This includes the costs of ensuring compliance with all license provisions, such as the required run-of-the-river operation.

4. Develop an accurate financial model that provides for successfully determining the costs and benefits of operating and maintaining the hydroelectric facility with regard to environmental costs and community benefits that become identified by other re-licensing studies.
5. Establish an economic model for the costs associated with the removal of the dams, hydroelectric facilities, and related appurtenances. This model would also include any necessary remedial environmental actions, as well as benefits that arise from removal, such as aesthetic and recreational benefits, and the benefits and lower costs that may come with alternative co-generation of an equivalent amount of power from solar, or from energy savings through conservation programs.

Phase 1: Historical Financial Analysis

A. Analyze past profitability for the term of the current license.
Term: Because the facilities have been operating under an existing license, an economic review of the current license period is required to effectively establish a baseline for a project that has been using, and continues to use the Kinnickinnic River to generate electricity. Conduct a detailed assessment of cash flows and net profits analysis beginning with the onset of the current and expiring license. Include the costs of planning, designing, financing (both to the General Fund and Utility Fund), bonding, as well as construction and the renovations to all generating-related facilities, including substations and connections to the grid. This analysis is to be based on existing audited financial statements, 1988-present, and other accepted, historically accurate documents.

Trends and Variances: Throughout the evaluation of the net profits or losses analysis, identify the significant trends and variances that occur.

Included Costs: Balanced against annualized revenues, the following operating costs, at a minimum, must be evaluated:

- Insurance
- Maintenance and normal life-expectancy upgrade costs
- Maintenance and upgrade costs associated with connecting hydro-generated power to the grid for distribution (substations and switching)
- Dam maintenance
- Facility maintenance, including switching, penstocks, control gates, safety, and bluff stabilization

- Remedial and environmental clean-up of impoundments, sediments, fuel facilities and galleries associated with diesel and natural gas generation
- Costs of inspections
- Cost of acquiring and maintaining existing license
- Costs associated with repairing Powell dam to normal capacity following lightening strike
- Labor costs, including management and labor, both direct and indirect
- Facility and equipment costs
- Cost of complying with license conditions (such as run-of-the-river operation)
- Capital expenditures
- Known environmental costs
- Public safety (fences, floats, etc)

Maintenance costs are viewed as a key element of the economic analysis. For that reason maintenance costs in the study should include dam and building structural maintenance, as well as routine items such as the cost of debris removal and maintenance of buildings, grounds and equipment. Additionally, long term and/or major maintenance costs need to be identified and evaluated relative to the current operating permit. (Example: an analysis of costs associated with automatic gates for controlling flow and otherwise complying with license provisions

B. Compare:

-Budgeted versus actual expenditures (planned and unplanned);
-Annualized capital operations and maintenance, using terms of not less than ten years and ideally fifteen years;
-Required expenditures versus discretionary expenditures.

C. Analyze kilowatt output per hour, week, or month (actual time unit to be determined) to establish necessary historical cash flow comparisons between income and expense. Correlate to purchase power agreements with various power providers. Relate to cost of power from alternative providers.

D. Compare cost/benefit to industry or peer groups and/or discreet facilities' historical data to determine past profitability and cost of operations against similar regional facilities.

<u>Phase 2:</u> Projected Cash Flow and Net Profitability Analysis

The City is in the business of providing electric power to the community. Therefore, a major benefit resulting from a completion of the proposed analysis is the ability to:

- understand the impact of revenue growth assumptions on net profit and cash flow assumptions by establishing detailed low and high range revenue projections;

- understand the influence of expenses (fixed and variable) and provide expense projections in detailed low and high range for the license period;
- understand capital outlays by identifying all anticipated costs necessary to keep the facilities functioning within the permit limits;
- produce a risk-model for costs that are unanticipated but likely to occur during the license period;
- understand and document the assumptions used in creating the economic model;
- itemize and understand all the risks and assumptions associated with the model as represented by quantifiable financial factors, qualitative natural environmental factors and factors imposed by the regulatory environment; and
- develop a comprehensive model that provides necessary guidance to all involved.

A. Projected net profitability per annum and for the 30 year license period.

Analyze actual financial results from Phase 1 using horizontal analysis, vertical analysis, ratio and common size analysis. The results of these analyses are necessary in order to compare profitability against industry norms. These are to be supplemented with interviews, industry research, other quantifiable and pertinent study results, approved or estimated and required community costs necessary to prepare the above.

In addition to including the known or documented costs resulting from Phase 1, the model should reflect the following:

- Licensing costs, including direct and indirect costs associated with staff and consultants
- Annual compliance costs
- Capital Improvement Costs, including, but not limited to the following known concerns:
  1. Bluff stabilization (Junction Falls dam).
  2. Switchgear and transmission line costs to connect to the grid as the substation becomes upgraded and the existing empty power plant becomes unnecessary.
  3. Renovations to the powerhouses, penstocks and buildings necessary to house the hydroelectric generating equipment.
  4. Repair/replacement cost covering Powell Falls facility, which we believe has not been generating at capacity since 1994.
  5. Correction and blockage of major seepage. Prior FERC inspections have identified "seepage through a joint above the wasteway exit" on the Junction Falls dam, and "seepage through the cracks, spalls and the wall/bedrock interface" on the Powell dam. In addition, significant boils have been documented by the boil below the Junction Falls dam, boils which may not been previously recognized or repaired.
  6. Purchase and installation of the automatic equipment necessary to ensure compliance with a run-of-the-river permit at both dams.
  7. Necessary costs attributable to other studies identified as part of this relicensing process. For example, these may include environmental and recreational opportunities, such as pathways along the river.
  8. Life expectancy of the reservoirs as they continue to fill with silt; cost to dredge or otherwise keep the reservoirs sufficiently clear to allow economical hydro-generation.
- Planned-for capital investments associated with aging and similar structures.

- Routine maintenance costs, as referenced above, recognizing and documenting rates and costs for in-house and contracted work tasks.
- Long term maintenance costs, detailed as above.
- Decommissioning costs for both dams and the sequestering of adequate funds within the cash reserves of the City government to pay for the removal of both dams. (See Phase 3).

Based on historical data, establish cash flow projections and planned improvements projections for the above and maintenance schedules.

B. Prepare an analysis based on the above and compare to costs associated with purchasing an equivalent amount of power.

Phase 3. Decommissioning of the Dams

A. Develop a projected profitability model of economic performance of buying or co-generating if the dams have been removed.

B. Lost profits analysis at the utility level, at the residential level and at a commercial/industrial level. The results are needed in order to allow decision-makers and the community to understand the annual fiscal impact of the removal of the dams on the entire utility base, and the mean and median annual fiscal impacts on residential and commercial/industrial users.

C. Complete an analysis of the cost of decommissioning both dams.

D. Complete an analysis of the future economic value of the natural falls (without the two dams), including tourism potential.

SUMMARY

The required study will utilize existing and available information in the form of audits and other City or utility documents, DNR, and FERC records. The nexus of the proposed study is the provision of a comprehensive analysis of the economic impacts of the dams and hydro facilities on the community. Prior to entering into any future long-term commitment to pay for necessary upgrades, such as automatic flow gates necessary to maintain "run of river" operations, or replace equipment to restore or improve operations, the true benefits of those actions need to be known. The use of Generally Accepted Accounting Principles associated with the proposed forensic evaluation and projections, along with the application of approved engineering standards and practices, will provide the community with necessary documentation to move forward.

Friends of the Kinni respectfully proposes that the City of River Falls should plan for this proposed economic study as part of its budget planning process for the year 2015, with study consultants to begin work January 1, 2015, and be completed within 12 months.