



## MEMORANDUM

**To:** Utility Advisory Board

**From:** Mark Lobermeier, SEH Inc.

**Date:** January 15, 2018

**Re:** Resolution Supporting Licensing decision for Hydro Electric Project P-10489

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### RECOMMENDED ACTION

Support the resolution recommending one of the three licensing scenarios as adopted for review by the City Council.

In conjunction with this recommendation, the Kinni Corridor Project Committee will formulate their recommendation to the City Council regarding the licensing scenarios. The City Council is scheduled to make the final decision regarding licensing on February 27, 2018.

### BACKGROUND

The River Falls Hydroelectric Project (P-10489) was granted a 30-year license from the Federal Energy Regulatory Commission (FERC) (the Commission) on September 27, 1988 that expires on August 31, 2018. The City of River Falls (City) currently owns, operates, and maintains the River Falls Hydroelectric Project (Project). The project consists of the hydroelectric facilities at the Junction Falls (Upper) and Powell Falls (Lower) dams.

The Junction Falls (Upper) Dam was constructed in 1920 and significant rehabilitation, at a cost of \$950,000, was completed in 1990. It consists of a concrete gravity dam, 140 feet long and 32 feet high, with an uncontrolled overflow spillway and a crest length of 115 feet. The existing reservoir, Lake George is 16 acres with a storage capacity of 142 acre-feet. The Powell Falls (Lower) Dam was constructed in 1966. It consists of a concrete gravity dam, 110 feet long and 22 feet high, with an uncontrolled overflow spillway. The reservoir, Lake Louise, is 15.4 acres with a normal 37 acre feet capacity.

**Junction Falls Hydro Facility**

- Reconstructed in 1990
- Rated Capacity – 250 kW
- Produced 1,474,268 kWh in 2016
- Produced \$144,000 in revenue 2016
- Provides power for 110 – 185 homes
- Inspection report completed in Sep. 2017 identified no threats to dam safety. Caulking and brush removal recommended
- No significant planned capital expenditures for the foreseeable future assuming a 50 year useful life.
- \$25,000 - \$50,000 in exterior building maintenance recommended.
- Improvement from 1990 will be fully depreciated in 2030.

**Powell Falls Hydro Facility**

- Constructed in 1966
- Rated Capacity – 125 kW
- Produced 635,637 kWh in 2016
- Produced \$62,102 in revenue in 2016
- Provides for power 50-85 homes
- Inspection report in 2014 identified no threats to dam safety.
- Possible capital expenditures for the spillway repair and repair of generating equipment (\$250,000 estimated).
- \$25,000 - \$50,000 in exterior building maintenance recommended.

On November 27, 2013, the City submitted its notice of intent to relicense the Project and pre-application document to Commission. Consistent with Commission regulations, an initial consultation meeting was held at the project facilities and the River Falls City Hall on March 24, 2014. It was widely attended by community members and other interested parties from the region and state. Initial comments and study requests from stakeholders were received by the City for consideration by May 23, 2014.

On January 13, 2015, the City Council adopted a resolution that supported pursuit of a license extension from FERC, and supported the Kinnickinnic River Corridor Planning strategy. The comprehensive planning strategy included a community process for determining the disposition of the project facilities and incorporated a decision point for whether the hydroelectric operations will continue and the continued disposition of facilities, consistent with FERC regulations.

On March 17, 2016, the Federal Energy Regulatory Commission (FERC) granted the City's request for a five-year license extension for the River Falls Hydroelectric Project (P-10489) to accommodate the Kinnickinnic River Corridor Planning Process. This action extended the license term to 2023 and delayed any notice by the City to FERC to August 31, 2018 on whether the City will relicense or surrender the license.

On July 12, 2016, Short Elliott Hendrickson Inc. (SEH) was awarded the contract for Phase I - Analysis, Feasibility, and Preliminary Concept Plans for the Kinnickinnic River Corridor Plan.

On October 25, 2016, the Council approved the 11-person Kinnickinnic River Corridor Committee, schedule and public engagement plan. The three-year, multi-phased process to

develop a comprehensive long-term plan for the Kinnickinnic River Corridor, included a decision to keep or remove one or both of the City's hydroelectric facilities.

October 10, 2017 the City Council approved a resolution limiting the hydro licensing decision to three basic scenarios:

***Scenario 1:** Relicense the current hydro facilities, maintaining both the Junction Falls and Powell Falls hydro facilities and dams*

***Scenario 2:** Surrender the license, which would remove both the Junction Falls and Powell Falls hydro facilities and dams at some point in the future*

***Scenario 3:** Relicense the Junction Falls hydro facility, and remove the Powell Falls hydro facility and dam at some point in the future*

On November 20, 2017, Bob Kost from SEH presented the results of the October Kinni Corridor Planning Charrette to the UAB including design concepts representing the potential future of the corridor.

On December 18, 2017, Mark Lobermeir of SEH and Lesley Brotowski of TRC Solutions presented an overview of the hydroelectric operations, the relicensing process and options available for the UAB regarding the licensing decision. In addition, the base project costs for the three scenarios were discussed. The table on page 4 illustrates the estimated base project costs for each scenario.

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Item	Unit	Est. Quantity	Unit Price			Scenario 1	Scenario 2	Scenario 3	Notes
999									
<b>BASE PROJECT</b>									
<b>Junction Falls Dam Removal - Demolition</b>						\$0	\$528,809	\$0	FOTK Report page 66, lines 1 - 6
Staging and mobilization	Lump Sum	1	\$111,809				\$111,809		Assumes traffic control, construction site erosion control, staging, single mobilization, equal to 10% of remaining construction items
General erosion control	Lump Sum	1	\$15,000				\$15,000		Includes silt fencing, sediment trap construction and management, removal.
Clearing and grubbing	Acre	1	\$7,000				\$7,000		Tree and shrub removal, salvage trees for channel restoration.
Haul road/access	Lineal Feet	1000	\$25				\$25,000		Temporary haul road construction.
Flow management	Lump Sum	1	\$30,000				\$30,000		Assumes diversion, but no full dewatering through pumping necessary. Assumes bypass or gravity only (no pumping).
Demolition	Cubic Yards	1700	\$200				\$340,000		Includes dam spillway removal, penstock removal but no powerhouse or remnant feature removal. Hydraulic jack access from below. Assumes off- site concrete disposal. Assumes cleaning to natural bedrock.
<b>Powell Falls Dam Removal</b>						\$0	\$391,405	\$391,405	FOTK Report page 68, lines 1 - 6
Staging and mobilization	Lump Sum	1	\$86,005				\$86,005		
General erosion control	Lump Sum	1	\$15,000				\$15,000	\$15,000	
Clearing and grubbing	Acre	1	\$7,000				\$7,000	\$7,000	
Haul road/access	Lineal Feet	2600	\$25				\$65,000	\$65,000	
Flow management	Lump Sum	1	\$30,000				\$30,000	\$30,000	
Demolition	Cubic Yards	942	\$200				\$188,400	\$188,400	
<b>Stream Restoration, upstream of Junction Falls</b>						\$0	\$701,050	\$0	FOTK Report page 66, lines 7 - 15
Excavation	Cubic Yards	66600	\$7				\$466,200		
Channel stabilization	Square yards	3400	\$7				\$23,800		
Fabric encapsulation	Lineal Feet	1000	\$75				\$75,000		
Channel restoration	Cubic Yards	556	\$50				\$27,800		
Large wood habitat	Each	50	\$500				\$25,000		
Seeding	Pounds	275	\$130				\$35,750		
Planting (Trees)	Each	210	\$150				\$31,500		
Planting (Shrubs)	Each	550	\$20				\$11,000		
Planting (Plugs)	Each	1000	\$5				\$5,000		
<b>Stream Restoration, between Powell Falls and Junction Falls</b>						\$0	\$554,710	\$554,710	FOTK Report page 68, lines 7 - 15
Excavation	Cubic Yards	40500	\$7				\$283,500	\$283,500	
Channel stabilization	Square yards	1200	\$7				\$8,400	\$8,400	
Fabric encapsulation	Lineal Feet	1600	\$75				\$120,000	\$120,000	
Channel restoration	Cubic Yards	556	\$50				\$27,800	\$27,800	
Large wood habitat	Each	50	\$500				\$25,000	\$25,000	
Seeding	Pounds	327	\$130				\$42,510	\$42,510	
Planting (Trees)	Each	210	\$150				\$31,500	\$31,500	
Planting (Shrubs)	Each	550	\$20				\$11,000	\$11,000	
Planting (Plugs)	Each	1000	\$5				\$5,000	\$5,000	
<b>Bridge and Infrastructure Modification</b>						\$275,000	\$2,305,000	\$25,000	
Winter Street Bridge pier and abutments							\$500,000		Estimate based on lowered river profile exposing pier and seal
Modifications to Veterans Bridge Pier							\$175,000		Architectural Treatment ends at elevation 862.9
Modifications to Maple Street Piers							\$400,000		Need further evaluation of foundations which are founded on rock
Removal of remnants of original dam							\$50,000		Old timber and rock fill dam 30 feet upstream of Junction Falls Dam
Storm water outfall modification and stabilization	Each	12	\$15,000				\$180,000		12 outfalls impacted by dam removal
Mitigation of other infrastructure impacts	Lump Sum	1	\$1,000,000				\$1,000,000		Allowance for other utility work (sewer, water etc.)
Junction Falls Dam Repair and Maintenance	Lump Sum	1	\$25,000			\$25,000		\$25,000	Per 2017 Ayres Dam Safety Inspection (caulking, brush removal)
Powell Falls Hydro Facility Repair and Maintenance	Lump Sum	1	\$250,000			\$250,000			Based on 2015 estimates, revised in 2017 per Kevin W. (pending)
						<b>subtotal</b>	<b>\$275,000</b>	<b>\$4,480,974</b>	<b>\$971,115</b>
						30% Construction Contingency:	\$82,500	\$1,344,292	\$291,335
						<b>Est. Construction Cost</b>	<b>\$357,500</b>	<b>\$5,825,266</b>	<b>\$1,262,450</b>
						30% Engineering, Administrative, Legal and Fiscal Expenses:	\$107,250	\$1,747,580	\$378,735
						<b>subtotal</b>	<b>\$464,750</b>	<b>\$7,572,846</b>	<b>\$1,641,184</b>
<b>Regulatory</b>						\$290,000	\$440,000	\$290,000	
Relicensing Process	Lump Sum	1	\$250,000			\$250,000	\$0	\$250,000	Submission of NOI, PAD and application (due August 2020)
Surrender Process	Lump Sum	1	\$400,000			\$0	\$400,000	\$0	Submission of NOI, PAD and application (due August 2020)
Permitting	Lump Sum	1	\$40,000			\$40,000	\$40,000	\$40,000	
						<b>Est. Base Project Cost</b>	<b>\$754,750</b>	<b>\$8,012,846</b>	<b>\$1,931,184</b>

## **PUBLIC INPUT**

Over the course of the Kinni Corridor Project there have been multiple opportunities for people participating in the planning process to have their comments and questions addressed.

Through online and in-person surveys, comment cards at the six “Tech Talks” in 2017, and community discussions at the design charrette, numerous themes emerged that have aided in the planning process for the river corridor. Two of relevant themes were dam removal and keeping the dams.

### Dam Removal

Over the planning process there has been significant input regarding removing the dams. Members of the public have commented about the effect of the removal of the dams ranging from wanting the river to be restored to its pre-dam state to having more opportunities for recreation. Many comments include the desire to showcase the river and make it a focal point of the community. Questions have included how the dam removal would affect the fish and waterfowl habitat as well as how dam removal would impact the river temperatures. Questions about how the river might look in a dam removal scenario were brought developed, raising questions about what will occur with any reclaimed land resulting from elimination of Lake George and Lake Louise.

Those in support of dam removal believe the approach to be more environmentally conscious, and could add more spaces for recreation along the river. Questions regarding ways in which to integrate other forms of renewable energy sources in lieu of the dams were also mentioned as removal includes the loss of power generation. Comments also address how removing dams and restoring a free flowing river can add additional opportunities for tourism and riverfront development.

### Keeping the Dams

The comments and questions relating to keeping the dams and relicensing the hydro facilities with FERC have a multitude of rationales. Many would like to see the lakes restored with improved habitat and aesthetics. Some of the most common comments discuss how removing the dams potentially could make the cost of power go up due to the removal of an energy source for the community. Some were concerned that by removing the dams the sediment that has built up in Lake George and Lake Louise will flow downstream because of faster moving currents with a restored river that potentially could disrupt the ecosystem in the lower Kinnickinnic. Others have encouraged the City to continue to produce renewable energy and utilize the existing hydros for as long as possible. Total cost for the removal of the dams has also been cited as a significant concern, as well as the costs that will come once Lake George and Lake Louise are gone as the City must bear the expense of maintaining the new river corridor.

Visit [www.kinnicorridor.org](http://www.kinnicorridor.org) for the complete information on Kinni Corridor planning, reports and assessments, timelines, links to stakeholder groups, feedback opportunities, event calendar and more.

## DISCUSSION

There are three scenarios for consideration:

**Scenario 1 – Relicense and maintain both the Junction Falls and Powell Falls facilities.**

Under Scenario 1, the City would seek a new 40 year license that would allow the City to continue to (but not be required to) generate power from the two hydro facilities. During this period, it is anticipated that no funds will be invested in Powell Falls to make identified structural and generation improvements.

The current estimated base cost (2017 dollars) for this scenario is \$754,750.

**Scenario 2: Surrender the license, and remove both the Junction Falls and Powell Falls hydro facilities and dams at some point in the future.**

Under Scenario 2, the City would endorse the ultimate removal of both facilities, surrendering the license for Hydroelectric Project P-10489, thus eliminating power generation effective August 31, 2023, coincident with the expiration of the existing license on August 31, 2023. Implied in Scenario 2 is the timely remove both of facilities including establishment of a free flowing river, developing stream habitat and restoring the adjacent reclaimed flood plain within the limits of the City's financial capacity and available funding from non-City sources.

The current estimated base cost (2017 dollars) for this scenario is \$8,012,846.

**Scenario 3: Relicense and maintain the Junction Falls facility.**

Under Scenario 3, the City would seek a new 40 year license that would allow the City to continue to (but not be required to) generate power from the Junction Falls facility. During this period, the City could continue to produce power throughout the 40 year duration of the license which would expire in 2063. Implied in Scenario 3 is the timely removal of the Powell Falls facility including establishment of a free flowing river below the Junction Falls dam, developing stream habitat and restoring the adjacent reclaimed flood within the limits of the City's financial capacity and available funding from non-City sources.

The current estimated base cost (2017 dollars) for this scenario is \$1,931,184.

## FINANCIAL CONSIDERATIONS

A specific financing plan has not been developed. The table below provides a comparison of potential property tax and utility rate impacts from base project costs, assuming the projects are completed today.

Scenario	Base Project Cost	Projected annual increase in residential property taxes <sup>1</sup>	Projected annual increase in residential utility bill <sup>2</sup>	Projected increase in electric rates	Non-City Funding sources
Scenario 1	\$754,750	\$11.09	\$1.32	0.27%	tbd
Scenario 2	\$8,012,846	\$117.78	\$13.97	1.40%	tbd
Scenario 3	\$1,931,184	\$28.39	\$3.37	0.34%	tbd

<sup>1</sup> Impact on \$180,000 home based on debt service on a 20 year bond at 4% interest and 100% funding

<sup>2</sup> Impact on average annual utility bill of \$1000 based on debt service on a 20 year bond at 4% interest and 100% funding.

The table below illustrates the impact of the projected increase in electric rates on the annual electric costs for some of the largest customers, assuming that 100 percent of the base project costs are to be covered by utility rates.

	Increase in annual utility billing necessary to cover 100% of the base project cost		
	Scenario 1	Scenario 2	Scenario 3
Winfield	\$357.91	\$1,844.41	\$444.52
UW-RF	\$3,253.70	\$16,767.36	\$4,041.06
Rise (Best Maid)	\$976.11	\$5,030.21	\$1,212.32
Falcon Center	\$585.67	\$3,018.13	\$727.39
MN Rubber	\$976.11	\$5,030.21	\$1,212.32

## CONCLUSION

Staff recommends approval of the attached resolution.



**RESOLUTION NO. 2018-XX**

**RESOLUTION REGARDING RELICENSING OF  
HYDROELECTRIC PROJECT P-10489**

**WHEREAS**, the City of River Falls operates two hydroelectric facilities on the Kinnickinnic River known as Hydroelectric Project (P-10489) and

**WHEREAS**, the hydroelectric facilities are operated under license from the Federal Energy Regulatory Commission (FERC); and

**WHEREAS**, the current FERC license expires as of August 31, 2023; and

**WHEREAS**, the Junction Falls facility is currently capable of generating approximately \$40,000 in net revenues per year from power generation; and

**WHEREAS**, the Junction Falls facility was reconstructed in 1990 at a cost of \$950,000 and will be fully depreciated in 2030; and

**WHEREAS**, the Junction Falls facility is currently in good operating condition with no significant capital expenditures anticipated for more than twenty years; and

**WHEREAS**, the Powell Falls facility is currently capable of generating approximately \$35,000 in net revenues per year from power generation; and

**WHEREAS**, the City is required to notify FERC regarding its intentions regarding the future of the licensing the facilities by August 31, 2018; and

**WHEREAS**, the process for submitting sufficient notice and pre-application documents to FERC should begin by March 1, 2018; and

**WHEREAS**, the City of River Falls has initiated the development of a corridor plan to help establish the long term vision for the Kinnickinnic River corridor and to inform the licensing decision; and

**WHEREAS**, the City Council has established an eleven person Kinni Corridor Project Committee to guide the planning process and to recommend to the City Council an appropriate action regarding the relicensing decision on or before February 27, 2018; and

**WHEREAS**, the City Council has identified three licensing scenarios: (1) relicense both facilities, (2) surrender the license, and (3) relicense the Junction Falls facility.



**NOW, THEREFORE, BE IT RESOLVED** that the Utility Advisory Board (UAB) of the City of River Falls hereby recommends one of the following options

**Option 1:** Relicense the current hydro facilities, maintaining both the Junction Falls and Powell Falls hydro facilities. Any future hydro or dam related expenditures over \$5,000 will be brought to the Utility Advisory Board and City Council for review and approval

**Option 2:**  
Surrender the license, which would remove both the Junction Falls and Powell Falls hydro facilities and dams at some point in the future

**Option 3:**  
Relicense the Junction Falls hydro facility, and remove the Powell Falls hydro facility and dam at some point in the future. Any hydro or dam related expenditures over \$5,000 will be brought to the Utility Advisory Board and City Council for review and approval.

Dated this 15<sup>th</sup> day of January 2018.

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Adam Myszewski, President

ATTEST:

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Amy White, City Clerk