ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: The EQB webpage of Environmental Review Guidance Documents / http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.
Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.
Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project title:

A-Mill Artist Lofts Hydroelectric Project

2. Proposer

Minneapolis Leased Housing Associates IV, Limited Partnership
Contact person: Neal Route
Title: Development Associate
Address: 2905 Northwest Blvd., Suite 150
City, State, ZIP: Plymouth, MN 55441
Phone:763-354-5640
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3. RGU

Department of Natural Resources
Contact person: Kate Frantz
Title: Planning Director, Environmental Review Unit
Address: 500 Lafayette Rd., Box 32
City, State, ZIP: St. Paul, MN 55155
Phone: 651-259-5082
Fax:
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4. Reason for EAW Preparation (check one)

Required:
☐ EIS Scoping
☒ **Mandatory EAW**

Discretionary:
☐ Citizen petition
☐ RGU discretion
☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

Minnesota Rules part 4410.4300 Subpart 24 Water Appropriation and Impoundments

5. Project Location

County: **Hennepin**
City/Township: **City of Minneapolis**
PLS Location (¼, ¼, Section, Township, Range): **Township 29 N, Range 24 W, Section 23**
Watershed (81 major watershed scale): **#20 Mississippi River**
GPS Coordinates: **N44.98330° W93.25310° Datum: NAD27**Tax Parcel Number: **PID No. 23-029-24-41-0215 (100 3rd Ave SE)**

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project; **(See EAW Figure 1)**
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and **(See EAW Figure 2)**
- Site plans showing all significant project and natural features. **(See EAW Figure 3)** Pre-construction site plan and post- construction site plan. **(See Attachment 1: EA, Table 2-1)**

6. Project Description

a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

Minneapolis Leased Housing Associates IV, Limited Partnership (MLHA) is proposing the development and operation of the A-Mill Artist Lofts Hydroelectric Project (Project), restoring hydroelectric renewable energy using existing, historic infrastructure at the Pillsbury A-Mill building on the Mississippi River in Minneapolis, Minnesota. The Project would generate up to 600 kilowatt (kW) of renewable power to meet approximately 70% of on-site residential demands and would be located at St. Anthony Falls on the Mississippi River at river mile (RM) 854 in Minneapolis, Hennepin County, Minnesota.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: **1)** construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, **2)** modifications to existing equipment or industrial processes, **3)** significant demolition, removal or remodeling of existing structures, and **4)** timing and duration of construction activities.

The proposed Project will consist of the following principal components:

(1) an existing concrete and stone masonry intake structure will be modified to remove the existing concrete deck and stone center pier; install a new concrete intake passage

between the existing stone wing walls; and install stoplog slots and a low inlet velocity trashrack with 1.25 inch clear spacing between bars;

(2) a new concrete bulkhead with a rectangular to round transition segment and a cast-in fitting to connect with a new steel penstock will replace the existing concrete bulkhead;

(3) a new 616-foot-long, 5-foot-diameter steel penstock will be installed on concrete cradles (saddles) attached to the limestone floor of the existing head race tunnel; a 50-foot-long penstock segment will be installed vertically in the existing A-Mill Wheel 2 drop shaft;

(4) a new vertical axis, 600-kilowatt Kaplan-type turbine/generator unit will be installed at the bottom of the drop shaft; a related programmable logic controller (PLC)-based control system will be installed in a nearby mechanical room located above the water passages in the A-Mill Building;

(5) a steel elbow-type draft tube segment will be embedded in concrete at the bottom of the former drop shaft and transition to a new 6-foot-wide by 4-foot-tall concrete outlet conduit (box culvert) that will be installed on the floor of the existing concrete tailrace tunnel and canal and discharge onto an existing concrete apron between existing stone and concrete canal walls; beyond the apron, outflow will continue down the existing unlined A-Mill tailrace channel to merge with the Mississippi River; and

(6) appurtenant facilities.

Project Construction

Project construction will require the removal of sediment material that has accumulated in front of the intake since the A-Mill ceased operations in 1955. The volume of sediment material to be removed is estimated to be 500 cubic yards and would be removed to the invert of the existing intake structure (approximately 15 feet below the normal water surface level) for a distance of 10 feet riverward and a width of approximately 20 feet, tapering up to the existing bed elevation at nominally a 2:1 slope. Reactivation of the outlet structure will also require the removal of sediment and debris. An estimated 150 cubic yards will be removed from the bottom of the existing tailrace tunnel to install a box culvert outlet tunnel. In addition, approximately 100 cubic yards of sediment will be removed from the submerged concrete apron at the outlet, in the form of a wedge approximately 10 feet wide by five feet deep at the outlet and tapering up to the existing tailrace channel bed in a generally trapezoidal shape.

Project construction will require removal of eight trees (average diameter of approximately 15 inches) in the vicinity of the intake structure, and twelve small trees (average diameter of less than 12 inches) in the vicinity of the outlet structure. Construction of the project is estimated to take approximately five months, with most major construction activities completed before fall.

Project Operation

Project controls will be installed above the raceway and generation levels in a dedicated mechanical room of the A-Mill building. The generating unit will be operated and monitored by a dedicated industrial grade PLC furnished by the water-to-wire equipment supplier. To provide for maximum safety and reliability, control options will include *Manual and Automatic* as well as *Local and Remote.* An automatically controlled run-of-river operation with a minimum pool elevation will be the prescribed operating mode for the Project. The turbine included in the project design can operate over a range of inflows while responding to small changes in pool elevation.

No wastes are anticipated to be produced from the operation of the proposed project.

For further information, see Attachment 1: EA, Section 2.0

c. Project magnitude:

Construction/ Infrastructure Elements	**Size**
Total Project Site* Acreage	3.28 acres
Linear project length	Not Applicable
Number and type of residential units	None
Commercial building area (in square feet)	None
Industrial building area (in square feet)	None
Institutional building area (in square feet)	None
Other uses – specify (in square feet)	Electric Generation
Structure height(s)	Not Applicable

*Note: The proposed Project site includes the Project Boundary, as defined for the FERC license application and Environmental Assessment (Attachment 1: EA), as well as additional area that is discussed in the land cover section of this EAW.

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the proposed Project would be to develop a new source of hydroelectric power for a term of 30 to 50 years for the residents of the Pillsbury A-Mill Artist Lofts. For further information, see Attachment 1: EA, Section 1.2

e. Are future stages of this development including development on any other property planned or likely to happen?

☐ Yes ☒ **No**

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

f. Is this project a subsequent stage of an earlier project?

☒ Yes ☐ **No**

If yes, briefly describe the past development, timeline and any past environmental review.
The proposed hydroelectric Project is a subsequent stage of the proposed Pillsbury A-Mill Complex project, for which environmental review was conducted in 2004. The proposed Pillsbury A-Mill Complex project was not constructed and completed following the 2004-2005 environmental review process. Instead, a smaller version of the proposed project, including the A-Mill Artist Lofts, a 251 unit affordable housing artist community within the restored A-Mill building, is currently under construction. The currently proposed hydroelectric Project was not proposed as a component of the 2004 Pillsbury A-Mill Complex project.

7. Cover types (See EAW Figure 3)

Estimate the acreage of the Site with each of the following cover types before and after development:

Cover Type	Before	After	Cover Type	Before	After
Wetlands	0	0	Lawn/landscaping	0	0
Deep water/streams	0.77	0.77	Impervious surface	1.71	1.71
Wooded/forest	0.80	0.80	Stormwater Pond	0	0
Brush/Grassland	0	0	Other (describe)	0	0
Cropland	0	0			
			TOTAL	3.28	3.28

8. Permits and approvals required

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Unit of Government	Type of Application	Status
Federal Energy Resource Commission	Minor Hydropower License	In process
Army Corps of Engineers	Section 404 Section 10	To be determined
National Park Service	Historic preservation certification application	In process
Department of Natural Resources	Water Appropriation Permit	In process
Department of Natural Resources	Public Water Work Permit	In process
Pollution Control Agency	Section 401 waiver or certification	In process

Unit of Government	Type of Application	Status
State Historic Preservation Office	Historic consultation & review	In process
City of Minneapolis	Building permit	To be completed
City of Minneapolis	Sidewalk closure permit	To be completed
Minneapolis Park and Recreation Board	Sidewalk closure permit	To be completed

Note: Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19**.**

9. Land use (See EAW Figures 4A and 4B)

For more information, see EAW Figures 4A and 4B, and Attachment 1: EA, Sections 3.3.6 and 5.3.

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

The proposed Project is located on the east bank of the Mississippi River at the Upper St. Anthony Falls in Minneapolis, Hennepin County, Minnesota. Also located at the Upper St. Anthony Falls is the St. Anthony Falls Lock and Dam, owned and operated by the USACE, the St. Anthony Falls Hydroelectric Project owned and operated by Xcel Energy, and the proposed Crown Mill Hydroelectric Project owned by Crown Hydro LLC, an unconstructed project.

The area in the vicinity of the Project was once a significant grain milling area and was the initial location of General Mills and Pillsbury. Today the proposed Project would be located in the mixed-use urban landscape of Minneapolis with land use in the vicinity consisting largely of historic buildings used for commerce, industry, apartments and hotels. Numerous outdoor recreation areas are located on both banks of the Mississippi River in the vicinity of the proposed Project including the Mississippi National River and Recreational Area (MNRRA) and the Mississippi Central Riverfront Regional Park. However, there are no recreation facilities or opportunities directly within the proposed Project boundary.

One completed residential project is located within the vicinity of the proposed Project is a condominium property consisting of 79 units, and is located approximately 100

feet northeast of the proposed Project boundary. Two residential projects are currently under construction within the vicinity of the proposed Project boundary, which include the A-Mill Artist Lofts and the Mill and Main apartments. The Mill and Main apartments is a 342 unit property located approximately 60 feet west of the proposed Project boundary.

No prime or unique farmlands exist on or near the site.

ii. Plans: describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

According to the 2000 City of Minneapolis's Comprehensive Plan, as amended in 2011, is the land use is determined to be "Transportation," "Communication/Utility" and "Parks/Open Space" along the river area and "Industrial and Commercial" above the river. A map of the recreational areas within the Central Mississippi Riverfront Regional Park can be found in Section 3.3.6 of Attachment 1: EA. Planned land use for the area identified by the City of Minneapolis Comprehensive Plan is designated as an Activity Center, Urban Neighborhood, and Park and Open Space. The 2011 Amended City of Minneapolis Comprehensive Plan considers many of the Plans identified in Attachment 1: EA, Section 5.3. Other applicable plans include the Marcy Holmes Neighborhood Master Plan and the MNRRA Comprehensive Management Plan.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Per the City of Minneapolis Community Planning and Economic Development Planning Division, the area included in the proposed Project are zoned primarily C3A Community Activity Center District, and are within the MR Mississippi River Critical Area Overlay, the SH Shoreland Overlay and the UA University Area Overlay Districts. The proposed Project intake lies within an area zoned I1 (Light industrial district). The proposed Project penstock, turbine, and generator would lie within an area zoned C3A. The proposed Project discharge would lies within an area zoned R1A (Single family district—low density).

These parcels are also in the Saint Anthony Falls Historic District. This property is not located in the 100 or 500 year flood plain, but it is located in Flood Zone X.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The proposed Project is compatible and consistent with the existing zoning. No impacts would occur to floodplains, shoreland or the Mississippi River Critical Area as a result of the proposed Project. The proposed Project would be compatible with existing parkland and open space uses as defined in the City of Minneapolis' Comprehensive Plan. As

proposed, the Project would utilize existing historic infrastructure built in 1881 to restore the hydropower capability.

The proposed use is a *multiple-family, dwelling five (5) units or more.* ln the C3A Community Activity Center District, MR Mississippi River Critical Area Overlay, SH Shoreland Overlay and UA University Area Overlay Districts a *multiple-family, dwelling five (5) units or more* is a permitted use. The proposed Project would be consistent with construction of residential units in the Urban Neighborhood District as it would serve those residents directly.

The Marcy Holmes Neighborhood Master Plan and found no inconsistencies with the Project. Additionally, the project Proposer consulted with the Marcy Holmes Neighborhood Association during planning for proposed Project.

The MNNRA Comprehensive Management Plan, a landscape-level planning document, has been reviewed for consistency with the proposed Project. Specific actions called for in the plan that are relevant to the proposed Project include:

Action: Balance and integrate sustainable use and resource preservation needs
Propose Project: The proposed Project would provide a sustainable source of renewable power.

Action: Preserve and restore natural appearance of shorelines and bluffs; protect habitat; protect historic areas; preserve economic resources; provide setbacks and screen new uses with vegetation
Proposed Project: The majority of the proposed Project would be underground and within existing infrastructure, and is anticipated to have a negligible effect on local shorelines.

Action: Emphasize river-related and river-enhancing uses; minimal change to existing development (i.e. some riverfront improvement)
Proposed Project: The proposed Project would restore a historic use and uses existing structures.

Action: Balance resource protection and use; increase pollution reduction efforts; preserve biological diversity; protect cultural and economic resources; facilitate and coordinate research
Proposed Project: The proposed Project would provide a renewable source of energy to local residents with no anticipated pollutant emissions and minimal effects on biological diversity.

Action: Provide a continuous linear open space and trail where practical; acquire sensitive areas and emphasize resource protection
Proposed Project: The proposed Project does not include changes to existing trails or open space.

Other relevant comprehensive plans and natural resource management plans have also been reviewed for their compatibility with the proposed Project. These are listed in Attachment 1: EA. Section 5.3; no inconsistencies have been found with these plans.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

No potential incompatibility is anticipated between applicable plans and the proposed Project, so mitigation measures have not been proposed.

10. Geology, soils and topography/land forms

See Attachment 1: EA, Section 3.3.1

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

The Project overlays a geological area which is discussed in Attachment 1: EA, Section 3.3.1.1. Bedrock of the area ranges in elevation from 788 to 805 feet above mean sea level, and depths to bedrock range from 8 to 56 feet below grade. The uppermost bedrock encountered is the Platteville Formation, which is composed of a somewhat fractured dolomitic limestone. Persistent saturated conditions exist in the underlying St. Peter Sandstone, where water level elevations are near river level and fluctuate with river levels (approximately 750 feet). No hazards to ground water are anticipated related to the proposed construction.

Some karst conditions in the Platteville Formation are known in the vicinity of the site, where a feature known as Chute's Cave is located. The location of the cave is generally under Main Street SE, and a small area under the existing A-Mill.

The proposed Project is located within the Mississippi River Gorge. This gorge is about 1,000 feet wide and is bounded by steep bluffs up to 200 feet high. The bluffs are capped by a 35-foot-thick hard limestone formation. Beneath the limestone is approximately five feet of softer shale, which in turn is underlain by a thick formation of very poorly cemented sandstone. The sandstone is easily disturbed and easily eroded. This alluvial outwash material is of glacial origin; erosion of the sandstone occurs very rapidly when it is subjected to flowing water. Shorelines upstream of St. Anthony Falls are stabilized from erosion by retaining walls, rock, and vegetation; there is no substantial shoreline erosion in this area.

The proposed Project is not anticipated to disturb Chute's Cave as no blasting or drilling is planned to occur associated with this project near this resource.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

The general soil profile of the building site is urban and generally consists of 2 to 22 feet of debris and rubble-laden fill underlain by native granular soils. The county soil survey has been recently updated, as reported by the Natural Resources Conservation Service. The current soil survey classifies the soils within the Project boundary as D29B in the area northeast of Main Street (Urban land-Hubbard, bedrock substratum complex, 0-8 percent slopes), and D37F southwest of Main Street to the Mississippi River (Dorset, bedrock substratum—Rock outcrop complex, 25-65 percent slopes).

The proposed Project does not involve above-ground soil excavation or grading. The proposed Project will involve underwater excavation as referenced in Attachment 1: EA, Section 2.2.1. Sediment removal work at the intake structure will be conducted behind a cofferdam or similar retaining structure; the absence of flowing water at the outlet will allow sediment to be removed using conventional silt curtain techniques. The volume of sediment material to be removed at the intake structure is estimated to be 500 cubic yards.

Reactivation of the outlet structure will also require the removal of sediment and debris that has accumulated since the A-Mill ceased operation. An estimated 150 cubic yards will be removed from the bottom of the existing tailrace tunnel to allow installation of the box culvert outlet tunnel. In addition, approximately 100 cubic yards of sediment will be removed from the submerged concrete apron at the outlet, in the form of a wedge approximately 10 feet wide by five feet deep at the outlet and tapering up to the existing tailrace channel bed in a generally trapezoidal shape.

No additional impacts are anticipated to soils in the area due to limited construction and use of existing infrastructure for operation of the project.

For additional information, see Attachment 1: EA Section 3.0 and 3.3.1

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

11. Water resources

See Attachment 1: EA Section 3.3.2

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below:

i. Surface water – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

The proposed Project would be located at St. Anthony Falls on the Mississippi River at river mile (RM) 854 in Minneapolis. The DNR Public Waters Inventory number for the Mississippi River within the Project boundary is 27-3 P, and is referred to as "U.S. Lock & Dam #1". Based on information located on the 2014 Minnesota Pollution Control Agency online Surface Water Data Access Center, the Mississippi River has known impairments due to the presence of mercury and PCBs in fish tissue, as well as fecal coliform bacteria. No additional impaired waters exist within a one-mile radius of the proposed Project boundary. A search of the Minnesota Pollution Control Agency Special Waters database identified no special designations of the waters within one mile of the Project site.

The Mississippi River experiences significant variations in flows caused by seasonal precipitation and runoff within the nearly 19,680 square-miles drainage area upstream of the proposed Project. The U.S. Geological Survey (USGS) maintains streamflow gage number 05288500 on the Mississippi River near Anoka, Minnesota, approximately 11 miles upstream from the Project. Flow records are available for water years 1932 to 2013.River flows are highest in the spring months (April-June), which reflects snow melt runoff, and lowest in winter months (December-February) due to snow and ice accumulation. Attachment 1: EA, Figure 3-1 provides minimum, maximum, and average monthly flows at USGS gauge number 05288500 for 1931-2013. The USGS has established a new 3-season stream gage 05288670 at the raw water pump station named 'Mississippi River abv 37th Ave. NE in Fridley, MN' (USGS Stream Gage Monitoring Data). As of March 2015, stage information is currently available, but discharge data will not be available until a stage-discharge relation is established at the site.

ii. Groundwater – aquifers, springs, seeps. Include: **1)** depth to groundwater; **2)** if project is within a MDH wellhead protection area; **3)** identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

(1) Depth to groundwater is approximately 50 feet deep.

(2) The proposed project is not within a MDH wellhead protection area, as defined by

MDH-provided maps available on the agency website.

(3) There are no wells located within the project boundary. This was confirmed via the Minnesota Department of Health's County Well Index.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

The proposed Project does not produce wastewater.

(1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

Not applicable

(2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.

Not applicable

(3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

Not applicable

ii. Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

The majority of the Project footprint is proposed to be within the A-Mill Artist Lofts residential building, and quantity and quality of runoff patterns are anticipated to be unaffected by the proposed Project, which uses existing underground infrastructure. Local runoff would be directed through the Minneapolis municipal sewer system, where the immediate receiving water is the Mississippi River. This proposed Project construction will disturb less than an acre of land, so an NPDES/SDS Construction Stormwater Permit is not required.

Because the proposed Project is entirely in-water or underground and does not propose to alter the existing aboveground landscape, there are no anticipated stormwater discharges associated with the proposed Project. During permitted in-water work for construction of the proposed Project, BMPs such as sediment fencing would be used to control sedimentation.

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The proposed water appropriation will be from the Mississippi River, at a planned usage rate of up to 200 cfs. Water use is anticipated to occur 24 hours per day, year-round. The purpose of the water use is to support the generation of power in the hydroelectric facility.

The project Proposer plans to coordinate with Northern States Power Company (Xcel Energy) to monitor spillway flow (pool elevation) and to proportionately share Project inflow reductions if necessary to hold the pool elevation during periods of low river flow. Xcel Energy is a party to the Mississippi River Low Flow Management Plan (MRLFMP) that governs low river flow situations; the project Proposer has agreed to join as a party to the MRLFMP as well.

Additionally, the project Proposer will accept a proportional share of the aesthetic flow regime that is established by Xcel Energy's Aesthetic Flow Adequacy Plan (AFAP) for the St. Anthony Falls Project. The AFAP was approved by the Federal Energy Regulatory Commission (FERC) in December 2005 and is currently in process. Current license requirements for the St. Anthony Falls Project provide for an approximately 100-cfs minimum spillway flow to meet aesthetic considerations during certain periods of the day. The project Proposer expects that the details of this future arrangement, together with appropriate monitoring and communications requirements, will be addressed as part of license conditioning for the Project, including any potential increase in minimum flow as required by FERC.

No wells are proposed as part of this project. This project will not connect to a municipal water supply and is not anticipated to require expansion of municipal water infrastructure. No other uses are planned associated with the project.

iv. Surface Waters

(1) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will

occur in the same minor or major watershed, and identify those probable locations.

The proposed Project does not involve any draining, filling, or new inundation of wetland habitats. The proposed Project construction would require removal of approximately 750 cubic yards of accumulated sediment around the intake and outlet structures, along with implementation of BMPs to minimize effects of this sediment removal on the Mississippi River. Sediment removal is described in Section 2.2.1 of Attachment 1: EA, and BMPs including silt fences, sediment control logs, dewatering bags and floating silt curtains are planned to be used at the at both the intake structure and tailrace. Construction of the proposed Project will also require the removal of twelve small trees that are embedded in the existing masonry walls of the tailrace, as well as eight trees in the vicinity of the intake structure.

(2) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The Project will modify local hydraulics in the outlet channel below the tailrace. This area, a dedicated tailrace channel formed by previous uses of the A-Mill facility, will receive up to 200 cfs of flow when the Project is operating at full capacity, and local water levels will increase between 0.5 and 1.0 feet when the Project is operating. This localized rise effect is projected to become negligible where the channel joins the river. A small quantity of sediment not removed during Project construction is expected to be flushed downstream over time as the channel is returned to active use. Once in operation, consistent flows from the proposed Project might modestly increase DO levels in the outlet channel because Project outflows will introduce aerated water into the current tailrace channel.

12. Contamination/Hazardous Materials/Wastes

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

Excavation of sediments in the riverbed upstream of the intake and downstream of the outflow is proposed. No contamination or potential environmental hazards are known to be on or in close proximity to the proposed Project site. Due to the long history of industry (railroad, grain mills, manufacturing, etc.) both in this area and upstream, it is possible that contaminated sediments may be encountered during construction. A Sediment Testing Plan has been developed by the project Proposer in consultation with Minnesota Pollution Control Agency staff which identifies a process to determine if contamination exists on-site and, if identified, the proper handling and disposal of contaminated sediments. In order to determine if the sediments are contaminated, sediment samples will be obtained and tested in advance of construction in order to properly plan and perform the excavation and handling of material. Potential contaminants of concern may include PCBs, heavy metals, and chlorinated compounds, as well as many others.

b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

Construction debris will be generated by the proposed Project primarily in the area of the intake structure. The debris will consist primarily of concrete and steel. No chemicals or hazardous materials are anticipated in that location. Construction-related non-hazardous clearing and grubbing, and building material debris will be collected in dumpsters and transferred to a demolition debris-permitted landfill by contracted waste haulers. No significant construction debris is anticipated at the outlet structure and tailrace channel.

c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

Hazardous materials will not be used or stored on the site during the proposed Project construction. Small amounts of lubricants and hydraulic fluid will be stored on-site during operation of the facility. These materials will be stored in designated areas in the A-Mill Building basement where spillage will not flow into drains. If deemed necessary, special drains may be installed in the drop shaft to keep any spilled oil or hydraulic fluid from being drained or pumped into the river.

d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal.

Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Hazardous wastes will not be generated or stored on the site during the proposed Project construction or operation.

13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features)

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

See Attachment 1: EA Sections 3.3.3, 3.3.4 and 3.3.5

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA) and/or correspondence number (ERDB) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

The Natural Heritage Letter is included as Figure 5 in Appendix 1: EAW Figures. For full discussion of this item, see Attachment 1: EA, Section 3.3.5.1.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

See Attachment 1: EA, Section 3.3.5.2

During the Environmental Assessment development, the northern long-eared bat was proposed for listing as a threatened species and was included in the environmental analyses. The proposed Project would result in the removal of a total of twenty small trees in the intake structure area and outlet structure area. This wooded habitat is potential habitat for northern long-eared bats. Since the tree clearing is planned to occur during late summer/fall, there is the potential to affect the northern long-eared bat. However, while northern long-eared bats can be found throughout Minnesota, no occurrences of this species have been reported in the proposed Project vicinity. In addition, Section 7 consultations with the US Fish and Wildlife Service (USFWS) would take place as part of the US Army Corps of Engineers 404 permit process; these

consultations would take into account the new guidance provided by the USFWS concurrent with the new listing of the northern long-eared bat as a threatened species.

Due to the potential presence of bat species in the area, as discussed in Attachment 1: EA, Section 3.3.5, a bat avoidance plan will be developed by the project Proposer and will be incorporated as a condition of the DNR Public Water Work Permit. Conditions of this plan will be developed with DNR staff and will build upon environmental measures included in Attachment 1: EA, Sections 2.2.4.3 and 3.3.5.2.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

See Attachment 1: EA Sections 3.3.3.2 regarding measures to avoid, minimize, and mitigate effects to fish. See Attachment 1: EA Section 3.3.5.2 regarding measures to avoid, minimize and mitigate effects to bat species of concern.

14. Historic properties

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

The project Proposer has consulted with the SHPO regarding the Area of Potential Effects for the proposed Project and has researched SHPO files and other appropriate data sources to develop a list of historic properties within the proposed Project area. (This list of properties is included in Attachment 1: EA, Table 3-10). As described in EA Section 3.3.7 , the proposed Project construction and operation is expected to have no adverse effects within the APE.

Additionally, Project design and approach is consistent with development guidelines and requirements provided by the 2012 St. Anthony Falls Historic District Design Guidelines. These Guidelines specify that historic infrastructure features such as those used for Project purposes should be retained or incorporated into a project, and that "the adaptive reuse of waterpower infrastructure for interpretive purposes is encouraged." By restoring the original use of the A-Mill waterpower infrastructure, the proposed Project is ensuring that these historic features will be preserved.

More information can be found in Attachment 1: EA, Section 3.3.7, Figure 3-8 and Table 3-10. Correspondence with the State Historic Preservation Office can be found on Figure 6 of Appendix 1: EAW Figures.

15. Visual

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

See Attachment 1: EA, Section 3.3.8

16. Air

a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

The proposed Project will not have direct operational emissions of air pollutants. However, indirectly it is anticipated that the proposed Project could help to offset emissions due to the potential reduction of power needed from other combustion-driven electric generating facilities to support the residents at the Pillsbury A-Mill Artist Lofts. The proposed Project does not require a Minnesota Pollution Control Agency Air Emissions Permit.

b. Vehicle emissions – Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

The proposed Project would create a small amount of fugitive emissions from construction equipment exhausts during the estimated five-month construction phase. However, these emissions are expected to be small and intermittent, such they will not be a significant threat to air quality in the project area, which is currently meeting all national and Minnesota Ambient Air Quality Standards.

c. Dust and odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

The proposed Project would create a small amount of dust and odors from construction equipment operation during the construction phase. Although minimal, sources of dust and odors may be present during construction. The sources of these odors and dust would be primarily from construction equipment used for the demolition of existing infrastructure. As most of the proposed Project-related construction is contained underground, the quantity, duration, and intensity of dust and odor production is expected to be minimal.

Above-ground odors and dust will be minimized through the use of water-spraying of construction areas and solid barriers to control the dispersal of the odors and dust that could occur from wind.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

The proposed Project is expected to generate noise during the five-month construction phase and is anticipated to be completed by late fall. Daily hours of construction will follow regulatory & construction permit regulated times, which are currently expected to be the following:

- Monday-Thursday: 5:30 AM - 6:00 PM
- Friday: 5:30 AM - 4:00 PM
- Saturday: 7:00 AM - 3:00 PM

Noise will be primarily produced by the construction machinery on-site. All machinery is equipped with back-up alarms for safety purposes, which would likely be the producers of the loudest noise on the construction site (97-112 decibels).

Construction equipment would be running sporadically during the construction of the hydropower system. The project Proposer anticipates using tracked skid steer loaders, small excavators, personnel/material lifts and electrically powered demolition equipment in the tunnel, shaft and tailrace areas. Working in that environment is very confined and likely will not accommodate more than one or two pieces of equipment to be used simultaneously in any of the underground spaces.

Construction of the various features of work for the hydropower system will involve demolition of the existing concrete. This will involve engine driven concrete saws, jack hammers and other pneumatic tools. Air compressors and generators are anticipated to be used to power equipment and will be staged at the street level.

18. Transportation

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

   The proposed Project does not include any parking spaces and is not anticipated to generate increases in average daily traffic. Construction activities will require minor amounts of traffic, but this will be short term and temporary, and be completed within

approximately five months. Construction equipment will be stored on-site of the Pillsbury A-Mill, and no adverse effect to neighboring property is expected. Construction workers will also make use of the on-site parking and neighboring streets when they arrive for shifts. Little increased demand for neighborhood parking spaces is expected.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 *(available at:* Minnesota Department of Transportation Access Management Resources /*http://www.dot.state.mn.us/accessmanagement/resources.html)* or a similar local guidance.

Road and sidewalk closure will be minimal, and will be in relation to loading and unloading of construction equipment and the Project infrastructure during the construction of the facility. No long term road or sidewalk closure will occur as a result of the Project. Temporary construction related will be coordinated with the City of Minneapolis and/or the Minneapolis Park and Recreation Board. Temporary road closures will be coordinated with the City of Minneapolis Public Works department to minimize effects to area residents and visitors.

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

The construction contractor will work with the City of Minneapolis regarding management of traffic during construction of the proposed Project. This may include temporary road signage and/or flaggers to direct traffic for short term disruptions. These disruptions are not anticipated to extend beyond October of 2015.

19. Cumulative potential effects

Note: Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items.

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

The proposed Project has the potential to affect aquatic habitats, water resources, terrestrial habitat resources, and aesthetic resources in the immediate vicinity of proposed Project facilities, as well as those habitats downstream of the project to the maximum extent of modeled hydraulic effect. As a result, the geographic boundary for EAW cumulative effects assessment for each of these effects is defined as the Mississippi River from the Hennepin Avenue Bridge (upstream of St. Anthony Falls) to the 10th Avenue Bridge (downstream of St. Anthony Falls).

Based on the term of an original FERC hydropower license, which informs the length of operation of the hydroelectric facility, the temporal scope for EAW cumulative effects assessment is 30-50 years in the future.

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

Reasonably foreseeable future projects that could affect the geographic assessment area are limited, because in-river infrastructure is largely developed and new dams on the Mississippi River are not likely to occur within the assessment timeframe. The following projects may interact in the future with the A-Mill Project:

- St. Anthony Falls Hydroelectric Project, Xcel Energy (currently licensed and operating):

The St. Anthony Falls project is operated as a run-of-river project with an installed generating capacity of 12.4 megawatts. It generates about 79,518 MWh of electricity annually, and supplies part of the energy needs of Xcel Energy's local customers. The St. Anthony Falls project is located on the left bank of the Mississippi River, in the direct vicinity of the A-Mill Project. Although the St. Anthony Falls project is currently operating and represents part of existing environmental conditions, operations and flows for the St. Anthony Falls project may change following the results of the aesthetic flow study currently under way.

- Crown Mill Hydroelectric Project, Crown Hydro Company (licensed, but unconstructed):

The proposed Crown Mill project would be operated as a run-of-river project that would generate an estimated 16,650 MWh of electricity annually. The Crown Mill project proposes to excavate and restore an existing headrace canal, intake tunnel, and tailrace canal and use the existing reservoir and Upper St. Anthony Falls dam. As currently licensed, the Crown Mill project would be located on the right bank of the Mississippi River, opposite the A-Mill Project.

- Symphony Hydroelectric Project, Symphony Hydro, LLC – (proposed, not licensed)

The proposed Symphony project would be a run-of-river project with an installed generating capacity of 17 MW, and would generate about 18,000 MWh of electricity annually. Concrete bulkhead and turbine generators would be constructed inside the current St. Anthony Falls Lock. However, correspondence from the Corps of Engineers suggests that this project may be incompatible with lock operations and Corps of Engineers operational responsibilities, calling its feasibility into question.

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for

significant environmental effects due to these cumulative effects.

Most potential environmental effects of the Project are related to construction (e.g., short-term water quality effects related to sediment removal) and are of short duration, and therefore unlikely to interact with potential future projects to create cumulative effects. These effects are addressed in resource areas presented above.

Permanent or long-term effects that may contribute to a potential for cumulative effects are related to the hydraulic effects of the A-Mill Project, potential fisheries effects, water quality, potential terrestrial habitat effects, and aesthetic resources. Each is considered below.

- Aquatic Resources

Construction and operation of the Project would result in a small loss of fish resulting from entrainment and turbine mortality (approximately 130 small fish annually). High natural mortality levels are expected for fish in smaller size classes, and small fish are more abundant proportionally to the larger fish population of the Upper Mississippi River. In previous environmental documents, FERC has previously determined that the operation of the unconstructed Crown Hydro Project would not result in any significant cumulative effect on fisheries in the geographic and temporal areas of cumulative effects analysis for the A-Mill Project (FERC 1997). Operational changes at St. Anthony Falls Hydroelectric Project are likely to increase spillway flows, which are not anticipated to adversely affect aquatic resources, limiting the potential for cumulative effects. As a result, the construction and operation of the proposed Project is not anticipated to contribute significantly to cumulative potential effects on aquatic.

- Water Resources

The Project has potential to affect water quality in the assessment area through construction activities and altered hydraulics associated with operation. Implementation of appropriate BMPs and other environmentally protective measures will minimize adverse effects to water quality as a result of Project construction. As documented in Attachment 1: EA, each of these effects will be short term and limited in scope and degree, and therefore do no present a risk of contributing to cumulative effects.

Project operations will be run-of-river, and will not alter Mississippi River pool elevations or result in water fluctuations except directly below the outlet structure, an area that would not be affected by any foreseeable future project. Therefore, the project is not anticipated to contribute to cumulative potential effects.

- Terrestrial Habitat Resources

Project construction will require removal of eight trees (average diameter of approximately 15 inches) in the vicinity of the intake structure, and twelve small trees (average diameter of less than 12 inches) in the vicinity of the outlet structure. Construction of the project is estimated to take approximately five months, with most major construction activities completed before fall. This wooded habitat is potential habitat for northern long-eared

bats. Since the tree clearing is planned to occur during late summer/fall, there is the potential to affect the northern long-eared bat. However, while northern long-eared bats can be found throughout Minnesota, no occurrences of this species have been reported in the proposed Project vicinity. Therefore, the project is not anticipated to contribute to cumulative potential effects.

- Aesthetic Resources

The proposed Project consists almost entirely of underground or underwater facilities, with no alteration to views or aesthetic resources and therefore no potential for future cumulative effects resulting from construction.

Flows at St. Anthony Falls also represent an important aesthetic resource, one under current evaluation as part of Xcel Energy's aesthetic flow adequacy study. The project Proposer has agreed to accept a proportional share of the spillway flow requirements resulting from Xcel's study. Because flows resulting from this study will be specifically designed to provide for the protection of this important aesthetic resource, any flow changes resulting from the proposed Project and reasonably foreseeable other projects are not expected to result in adverse effects, cumulative or otherwise.

20. Other potential environmental effects

If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

No additional environmental effects are anticipated, and none have been identified by agencies or other stakeholders.

RGU CERTIFICATION

*The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature Date

Title