

# ENVIRONMENTAL ASSESSMENT WORKSHEET

The Environmental Assessment Worksheet provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit or its agents to determine whether an Environmental Impact Statement should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. If a complete answer does not fit in the space allotted, attach additional sheets as necessary. The complete question as well as the answer must be included if the EAW is prepared electronically. **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** St. Paul Cogeneration, L.L.C.

Wood-Fired Combined Heating and Power Generation Facility

2. **Proposer:** Saint Paul Cogeneration, L.L.C.

**Contact Person:** Michael J. Burns

**Title:** Vice President of Operations and Engineering

**Address** 76 West Kellogg Boulevard

**City, State, ZIP:** St. Paul, MN 55102-1611

**Phone:** 651-297-8955

**Fax:** 651-221-0353

**E-Mail:** michael.burns@districtenergy.com

3. **RGU** Minnesota Env. Quality Board

**Contact person:** Suzanne Lamb Steinhauer

**Title:** Energy Facilities Planner

**Address** 658 Cedar St., 3<sup>rd</sup> floor

**City, state, ZIP:** St. Paul, MN 55155

**Phone** 651-296-2878

**Fax:** 651-296-3698

**E-mail** suzanne.steinhauer@state.mn.us

4. **Reason for EAW preparation** (check one)

EIS scoping  Mandatory EAW  Citizen petition  RGU discretion  Proposer volunteered

**If EAW or EIS is mandatory give EQB rule category subpart number** 4410.4300 Subpart 3 **and subpart name** Electric Generating Facilities

5. **Project Location County:** Ramsey

**City/Township:** Saint Paul

SE ¼ of the NW ¼ of **Section 6 Township**28 North **Range** 22 West

**Attach each of the following to the EAW:**

- County map showing the general location of the project;
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);
- Site plan showing all significant project and natural features.

6. **Description**

**a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.**

St. Paul Cogeneration, L.L.C. proposes to construct a combined heat and power plant that will convert wood waste and oat hulls and/or other agricultural wastes into electricity, while simultaneously providing energy for its heating and cooling operation. The proposed plant capacity will provide up to 25 megawatts of electricity to the local utility grid. The project will also convert an existing coal-fired boiler to natural gas.

**b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will**

**cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.**

#### Project Overview

St. Paul Cogeneration, L.L.C. (SPC), a partnership between District Energy St. Paul (DESP) and Trigen-Cinergy Solutions L.L.C., proposes to construct and own a biomass combined heat and power plant. Combined heat and power is often referred to as cogeneration. The new plant, expected to be completed by the fourth quarter of 2002, will convert approximately 30,000 tons of wood waste (wood waste and/or oat hulls and/or other agricultural wastes) per month into electricity, while simultaneously providing steam energy for District Energy St. Paul's (DESP) heating and cooling operation. The new plant will be constructed adjacent to DESP's existing buildings in downtown St. Paul. The project site has been used to generate steam and electricity since the beginning of the 20<sup>th</sup> century. Natural gas will be available as a backup fuel and the project will also convert one of DESP's existing coal-fired boiler to natural gas.

The proposed facility will produce 28.5 megawatts (MW) of electricity. Approximately 3.5 MW will be used to run auxiliary equipment within the plant including the boiler, turbine, fans, pumps, and cooling tower. Xcel Energy Inc. will buy 25 MW of the power production. Under terms of a 20-year contract with Xcel Energy (formerly Northern States Power Company), the plant capacity will be 25 megawatts of electricity for the local utility grid, enough annual energy to supply approximately 20,000 homes. There will be a total combined electric and thermal capacity of 98 MW. The thermal energy generated by the project will supply approximately 80 percent of the annual needs of the DESP system, reducing the need for the coal, oil and natural gas that currently fuel the DESP facility.

#### Project Elements

The proposed project will consist of a fuel handling system, a boiler, air pollution control equipment, steam-turbine generator and other ancillary equipment. In addition, the fuel source for DESP's existing boiler number four will be converted from coal to natural gas. The process flow diagram is illustrated in Figure 1 and the Site Plan in Figure 5.

#### *Fuel Handling Equipment*

Blended wood waste will be delivered to the plant site in semi-trailer trucks and/or dump trucks that back up into an unloading hopper. The wood waste is then conveyed into a storage silo. The wood waste in the storage silo will be reclaimed using an internal screw auger and transferred to a belt conveyor that feeds the boiler.

#### *Boiler*

The wood fired boiler is an overfeed stoker type. The wood waste is fed into a pneumatic distributor that disperses the fuel horizontally over the grate. Ignition of the fuel occurs when the fuel is suspended above the grate. The preheated combustion air is introduced into the furnace section both up through the grate and through fire air ports. The furnace section is a gas-tight enclosure formed by welding the waterwall tubes into a continuous membrane. The surface of the waterwall absorbs heat from furnace gases to produce steam. The flue gas from the furnace section enters a heat recovery section.

#### *Steam Turbine Generator*

The turbine is a packaged industrial steam turbine mounted on a pad complete with gear box, generator, and ancillary equipment. Steam enters the turbine at a rate of 325,000 pounds per hour (lb/hr) and a pressure of 1250 pounds per square inch gauge (psig) and a temperature of 950° F. The turbine consists of many stages of rotating blades and stationary vanes. As the hot, high-pressure steam flows through the turbine the steam expands, driving the blades. The pressure of the steam drops dramatically to 2

inches mercury (in HgA) which corresponds to 1 pound per square inch actual (psia) and is in a vacuum.

The power produced is input through a gearbox into an electrical generator which makes the electricity. The steam turbine rotates at 5300 revolutions per minute (rpm) which is reduced to 1800 rpm through gear reduction in the gearbox. The generator is an 1800 rpm, 4-pole generator, approximately 35 MW, 13,800 volts, 3 phase, 60 hertz unit.

The turbine has one controlled extraction providing steam to DESP at the rate of 215,000 lb/hr at 15 Psig, 190° F. The turbine also has one uncontrolled extraction that provides steam to DESP at the rate of 22,000 lb/hr at 150 Psig, 520° F. Both steam flows are used for heating of downtown buildings in St. Paul.

#### *Air Pollution Control Equipment*

The proposed project will exhaust through the tallest existing stack at the facility, Stack Number 1. The top of the stack is 180 feet above Kellogg Boulevard. This stack currently serves existing facility Boilers 2, 3, and 4. This stack is 16 feet in diameter and can handle any additional exhaust that would be produced by the proposed project. The operation of the wood fired boiler will displace some of the operation of the existing facility boilers so there will be only a moderate increase to the stack exhaust flowrate.

The boiler's combustion process will emit some ash in the flue gas; however, a mechanical collector and an electrostatic precipitator will control the particulate emissions. In addition, NO<sub>x</sub> emissions will be controlled by Selective Non-Catalytic Reduction (SNCR).

SNCR consists of injection of urea into the boiler, beyond the combustion zone, and relies on a chemical reaction between urea and flue gas nitric oxide (NO) to control NO<sub>x</sub> emissions. The SNCR system consists of a urea storage tank, pipes and nozzles, circulation heaters, compressors, and injection jets.

The 50% solution of urea that is used as a reagent to reduce NO<sub>x</sub> emissions from the boiler will be stored in a 15,000 gallon reinforced fiberglass tank. The chemical storage tank is a closed top vertical tank supplied with a level indicator, manway, vent, internal down pipe, external fill pipe, isolation valves, and other related equipment. The storage tank will be placed in a plastic "tub" to provide adequate secondary containment. The storage tank will be placed under a roof in order to minimize the precipitation that is collected in the secondary containment area.

The urea solution will be delivered by truck and transferred into a storage tank. The urea solution will be maintained at 80 degrees F through the use of heaters and circulation pumps. The urea solution will be fed into the boiler flue gas through a feed system of metering pumps and injector nozzles.

#### *Ash Handling System*

The particulate matter (primarily ash) that is collected by the electrostatic precipitator and the mechanical dust collector will be conveyed to an ash silo. Bottom ash from the boiler will be collected and conveyed to the ash silo. The collected material will be disposed of at an off-site solid waste disposal facility or reused as a soil enhancer.

#### *Ancillary Equipment*

Steam exhausting from the turbine is cooled in ancillary equipment consisting of a condenser and cooling tower. The cooling tower pumps cool water into the condenser which cools the steam and converts it to liquid which is pumped back to the boiler. Warm water exiting from the condenser is returned back to the cooling tower where it is cooled by blowing air through the water with fans.

The neutralizing tank is part of the wastewater treatment system in which wastewater with high or low pH is neutralized prior to disposal in the public sewer. The demineralized water tank is for storage of process water that has been purified prior to use in the plant boiler and turbine systems. The urea tank is used to store an aqueous solution of urea that is used to reduce the nitrogen oxide emissions from the new boiler.

Other ancillary equipment includes a steam jet air ejector and a gland steam condenser. The steam jet air ejector utilizes steam injected through venturis, which draws out air that has leaked into the condenser. This helps maintain a vacuum inside the condenser and helps to produce electricity efficiently. The gland steam condenser condenses steam that is allowed to leak past the gland seals on the rotating shaft of the turbine. The gland seals are pressurized with steam, which provides the sealing action to keep the steam inside the rotating turbine from leaking out. A small amount of steam is allowed to leak out of the gland seal to remove condensing moisture inside the gland seal. This mixture of steam and moisture must be further cooled and condensed in the gland seal condenser and pumped back to the boiler.

#### Construction and Operation Methods

The construction will consist of engineering, design, procurement of equipment, site preparation, excavation below grade, placement of the boiler and turbine generator foundations, placement of the boiler, installation of plant equipment and supporting structures, and plant start-up and testing.

Based on previous subsurface investigations at the site, petroleum contaminated soils may be encountered during the excavation of the boiler building foundation. The construction contractor will be responsible for monitoring the excavation of the soils, collecting soil samples and determining the volume of contaminated soil. The contractor will prepare an Excavation Report that will be submitted to the Minnesota Pollution Control Agency.

#### Construction Timing and Schedule

Construction is scheduled to commence in early 2001 and be completed by December 2002. The construction activities include major engineering, procurement of equipment and construction/start-up activities.

#### **c. 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 this project is to supply electricity to Xcel Energy (NSP) and heat to the existing district energy system that serves downtown St. Paul and neighboring areas. The proposed wood-fired cogeneration system will provide the following benefits to Xcel ratepayers, DESP customers as well as local and state economies:

- Improving the thermal efficiency by cogeneration of electric production and district heating and cooling;
- Reducing the dependence on fossil fuels;
- Ensuring a diverse supply of fuel for electric generation;
- Consuming approximately 275,000 tons of locally generated wood waste annually, thereby keeping energy dollars in the local economy and eliminating the need to dispose of wood waste at a demolition landfill;
- Providing an estimated 100 local building trade construction jobs during the construction process.

#### **d. Are future stages of this development including development on any outlots planned or likely to happen? Yes No**

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

*Off-site fuel processing facility*

St. Paul Cogeneration, L.L.C. (SPC) is evaluating whether the existing wood fuel suppliers will be capable of supplying the quantity and quality of wood fuel necessary for the project. SPC plans to submit a request for proposal to potential suppliers of wood waste in 2001. SPC expects a combination of long- and short-term fuel contracts with a combination of potential suppliers will be needed to meet their delivery and quality requirements for approximately 30,000 tons per month of wood fuel.

If the existing infrastructure is unable to meet the demand of the proposed facility, then St. Paul Cogeneration, L.L.C. may design and construct a central processing facility for the wood fuel to ensure a reliable and homogeneous fuel supply. If constructed, a fuel processing facility would require environmental review and the environmental impacts of this facility would be assessed at that time.

*Transmission Line*

SPC has applied to Xcel Energy for an interconnection to the Xcel system. The interconnection will supply up to 25 megawatts of electric power to Xcel Energy. The ownership of the transmission system will change from SPC to Xcel Energy prior to leaving the site. Electric energy will be delivered to Xcel Energy via a transmission or distribution system to be designed, engineered, permitted, constructed, and operated by Xcel Energy. Xcel Energy will be responsible for the permitting of the power transmission line and the final design.

Plans for the transmission line will not be made final until mid 2001. The preferred interconnection transmission design will connect the facility to Xcel Energy's High Bridge Power Plant or their Upper Levee substation through dual underground 13.8 kV line circuits.

Other options or variations may include the following:

- The transmission line will change voltages from 13.8 kV to 115 kV through a step up transformer located within the facility boundary and remain underground; **or**
- The transmission line will change voltages to 115 kV through a step up transformer located within the facility boundary, and follow an overhead route to the nearest Xcel pole

**e. 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.**

**7. Project magnitude data**

**Total project acreage** 1.4 acres

**Number of residential units:** unattached N/A attached N/A maximum units per building N/A

**Commercial, industrial or institutional building area (gross floor space): total square feet**

15,375 square feet

**Indicate areas of specific uses (in square feet):**

**Table 7.1**  
**Areas of Specific Uses**

Type of Use	Square Footage	Acres
Generation Building	15,375 (total)	0.35
Boiler Building	8,250	
Wood Storage Area	3,000	
Wood Receiving Area	4,125	
Existing Well House	390	0.01
Chemical Storage Tanks Outside of Generation Building (including demineralization, neutralization, and ash)	1,330	0.03
Coal Receiving Area	315	0.01
Electrical Transformers	1,150	0.03
Driveway, Parking Area, sidewalks, impervious areas	37,335	0.86
Asphalt between generation facility, tanks, storage areas and transformers	5,000	0.11
Utility corridor (the underground transmission line will pass underneath the storage tanks, landscaped area, and driveway)	5,100	0.12
<b>Total Area</b>	<b>65,995</b>	<b>1.52</b>
Building height (above grade)*	100 feet	
▪ Top of boiler building	162 feet	
▪ Top of electrostatic precipitator	183.6 feet above top of existing boiler building (uses existing stack)	
▪ Stack height		

8. **Permits and approvals required. List all known local, state and federal permits, approvals 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.**

**Table 8.1**  
**List of Required Permits, Approvals, and Notifications**

Unit of Government	Type of Application	Status
<b>Federal</b>		
U.S. Fish and Wildlife Service	Threatened and Endangered Species Review	Completed
<b>State of Minnesota</b>		
Environmental Quality Board	Environmental Assessment Worksheet	This document
Minnesota Pollution Control Agency (MPCA)	Air Permit: Major Modification Application including BACT Analysis	Application submitted in November 2000.

Unit of Government	Type of Application	Status
	NPDES Storm Water Pollution Prevention Plan	Applied for
	Oil and Chemical Storage Requirements	Tank registration permits will be applied for as needed.
	Spill Prevention, Control and Countermeasure Plan	In progress
Metropolitan Council Environmental Services (MCES)	MCES Industrial Waste Water Discharge (includes Water Quality Transmittal Form)	The current Industrial Discharge Permit (No. 0474) expired November 30, 2000DESP has notified MCES of the additional wastewater from the project.
Minnesota Department of Natural Resources	Natural Heritage and Nongame Research information review	Completed
	Water appropriations permit	To be applied for if needed
Minnesota Department of Health	Plant Plumbing Review	To be applied for
Minnesota Historical Society	Cultural Resources Review	Completed (included in Appendix A)
Minnesota State Board of Electricity	Electrical Inspection (inspected locally using a local form for St. Paul)	To be applied for
<b>City of St. Paul</b>		
	General Building Permit	To be applied for
	Grading Permit	To be applied for
	Demolition Permit	To be applied for
	Electrical Permit	To be applied for
	Fence Permit	To be applied for
	Plumbing/Commercial Permit	To be applied for
	Structure Inspection	To be applied for
	Warm Air/Ventilation Commercial Permit	To be applied for
	Special Condition use permit	To be applied for
	Site plan submittal to planning commission	To be submitted
<b>Construction Specific</b>		
Floodplain	Site plan submittal to planning commission	To be submitted
Xcel Energy Inc.	Easement and/or Interconnect Agreement	Applied for by St. Paul Cogeneration, LLC on 6/20/00
Minnesota Pollution Control Agency	General Storm-Water Permit for Construction Activity including a Temporary Erosion and Sediment Control Plan and Permanent Erosion and Sediment Control Plan	Will be applied for by construction contractor

9. **Land use. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.**

### Current Land Use

The site is located at the river bluffs between downtown St. Paul, Minnesota and the Mississippi River. The property address is 76 Kellogg Boulevard in St. Paul, Minnesota. The site is an irregularly shaped parcel that is used primarily as a paved parking area. There are two small concrete block buildings present at the property that were originally constructed to house water wells. One of the wells was abandoned and sealed in October 1993, while the other well is still in use as an emergency back-up water supply. The building with the abandoned well is now used as a storage building for equipment such as wire reels, lawnmower, and electric boxes. There are two 30,000-gallon underground fuel oil storage tanks and one 300-gallon aboveground diesel fuel storage tank present at the site. DESP also has a coal receiving area, a woodpile, a wood auger unit, and an ash silo on the property. An electrical transformer that is owned by Northern States Power Company is located on the property.

A chilled water tank owned and operated by DESP is located to the west of the site. The Minnesota Science Museum is also located to the west of the site. River bluffs, Kellogg Boulevard, and the St. Paul Public Library are located to the north of the site. The existing District Energy Facility and the Ramsey County Building are located to the east of the site. Railroad tracks, Shepard Road, and the Mississippi River are located to the south of the facility. The site is shown on the Ramsey County Highway Map and US Geological Survey 7.5-minute quadrangle map in Figures 2 and 3 as well as the aerial photograph in Figure 4. Figure 5 is a site plan for the project. Figure A St. Paul zoning map is provided in

### Past Land Use

The following description of past land use is based on the findings of a February 2000 Phase I Environmental Assessment that was conducted by ENSR for Trigen Energy Corporation. These findings are based on reviews of Sanborn, Hopkins, Nirenstein and Rascher maps, aerial photographs and Polk and Cole's City Directories. In addition, DESP personnel were interviewed.

DESP has been the owner of the project site since 1983. NSP owned this property between 1907 and 1983. Between 1885 and 1903, small buildings described as "shanties" were located on the property. The existing DESP plant was built in 1905 and began providing steam heating to downtown St. Paul in 1906. The DESP plant was fitted with electric generating equipment in 1906. At that time, the plant was coal and oil fired. The plant was renovated in 1962 at which time the current Boilers 2 and 3 were installed along with the existing stack and ash system. The plant remained primarily coal fired. Boiler 4 was added in 1967. The plant was purchased by DESP from NSP in 1981 and modified to be a hot water heating facility. Modifications were completed in 1983.

The two concrete block buildings that house the water wells were constructed around 1973. The coal dump and ash silo were first listed on a 1969 Sanborn map. A general storage building was present on the property from 1926 to sometime between 1957 and 1969. Northern States Power Company was listed as the owner of the general storage building.

### Previous Environmental Investigations

In addition to the Phase I Environmental Assessment conducted by ENSR in February 2000, there were two other environmental investigations. In 1992 contaminated soils were discovered during a geotechnical investigation for the construction of the chilled water storage tank located to the west of the existing DESP plant. Some of the soils exhibited petroleum odors, and the laboratory results indicated that oil and grease, Volatile Organic Chemicals (VOCs), and diesel range organics (DRO) were present in some of the soil samples. Approximately 1,080 cubic yards of soil were excavated and transported off site for thermal treatment. Remediation was completed in June 1993. A record of the investigation and remediation can be found under MPCA Leak site permit No. 6098.

In 1997, petroleum impacted soils were encountered during excavation work for a utility trench. Soils sample analysis indicated the presence of DRO and gasoline range organics (GRO) in the soils. Approximately 258 tons of contaminated soil were excavated and treated at a thermal treatment facility. The remediation was performed under MPCA Spill#25060/LEAK#0001014 (non-tank) and the release file was closed on May 29, 1997.

Zoning

All land related to the project is owned by DESP and will be leased to St. Paul Cogeneration, L.L.C. A St. Paul zoning map is attached for reference in Figure 7. According to the St. Paul zoning map, the site is zoned B-5 (Central Business-Service District). According to the St. Paul Zoning Code (*City of St. Paul Legislative Code, Chapter 65 Zoning Code River Corridor*), the southern part of the proposed project site is zoned RC-2 (Flood fringe District), and the northern part of the project site is zoned RC-4 (Urban Diversified District). The “RC” designations are map overlay districts, designed to provide the city with comprehensive flood control and bluff management tools. Please refer to Figure 6 for the approximate location of the RC-2 and RC-4 zone boundary.

Uses permitted within the B-5 zone include public utility steam plants and other facilities with similar manufacturing uses. According to the St. Paul Zoning Code, River Corridor, standards for uses permitted in the flood fringe district (RC-2) require that all structures be elevated on fill so that the lowest floor is at or above the regulatory flood protection elevation. The regulatory flood protection elevation is defined as “that elevation not less than one foot above the water surface profile associated with the regional flood plus any increase in flood heights attributable to encroachments on the floodplain”. Any structure not elevated on fill or floodproofed will only be permitted upon the application and issuance of a Special Condition Use Permit by the planning commission.

Land to the north of the proposed project site is zoned B-5, land to the east and west is zoned B-5, RC-2, and RC-4 respectively. Land to the south is zoned RC-2.

Depending upon whether final design specifications call for elevating the building or other floodproofing, the project may require a Special Condition Use Permit from the city of St. Paul.

10. **Cover types. Estimate the acreage of the site with each of the following cover types before and after development:**

**Table 10.1  
Site Coverage Before and After Proposed Project**

	<b>Before</b>	<b>After</b>		<b>Before</b>	<b>After</b>
Types 1-8 wetlands	0	0	Lawn/landscaping	0	0
Wooded/forest	0	0	Impervious surfaces	1.4	1.5
Brush/Grassland	0	0	Other (Gravel)	0.1	0
Cropland	0	0			
			<b>TOTAL</b>	<b>1.5</b>	<b>1.5</b>

If **Before** and **After** totals are not equal, explain why: Not Applicable

11. **Fish, wildlife and ecologically sensitive resources**

- a. **Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.**

A portion of the project site is located in the 100-year flood plain of the Mississippi River. The majority of the project site is paved and there is no vegetation present. It is expected that wildlife

resources at the project site consist of the occasional presence of representatives of typical mammals, birds, reptiles and amphibians expected to use the floodplain habitat. It is also expected that urban wildlife populations such as pigeons, sparrows, starlings etc. are present at the site.

Fish species that may be present in the Mississippi River consist of walleye, bigmouth buffalo, white bass, black crappie, bluegill sunfish, crappie, flathead catfish, freshwater drum, largemouth bass, northern pike, sauger, smallmouth bass, smallmouth buffalo, white crappie, white sucker, carp, and channel catfish.

The major human-related factors that have influenced biological communities in the vicinity of the project are loss of habitat and introduction of contaminants. Over the years, the loss of vegetation and increased urban development near the Mississippi River have reduced habitat and changed water quality. Metals and organic contaminants are of greatest concern in the urban areas. Variability in annual stream discharge can also affect biological community structure, and streamflow variability can affect the distribution of organisms. Habitat loss and introduction of contaminants due to the proposed project are not anticipated to be significant.

Storm water that is collected in the three on-site storm drains flows into the Mississippi River, located approximately 600 feet to the south of the property. Impacts from the storm water will be minimized using Best Management Practices. Refer to item 17 for more details on Best Management Practices for storm water.

- b. Are any state-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site?**

Yes  No

**If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number: ERDB 20001095.**

The Minnesota Department of Natural Resources (DNR) Natural Heritage Program and the US Fish and Wildlife Service (USFWS) were asked to provide a review of the proposed project for known occurrences of federal- and state-listed threatened and endangered species and other significant features. The DNR Heritage Program Response letter dated June 26, 2000, and the USFWS response letter dated June 29, 2000 are included in Appendix A.

The DNR Natural heritage Program reviewed an approximate one-mile radius around the proposed project location for any rare plant or animal species or other significant features. The DNR found 4 known occurrences of rare species or natural communities in the area searched. The following species were listed in the response letter from the DNR:

**Table 11.1  
DNR Natural Heritage Listed Species**

Common Name	Scientific Name	Status
Bat Concentration (Big Brown Bat, Northern Myotis)	Eptesicus Fuscus	Not given
Dry prairie (Sand Gravel Subtype)		Not given
Northern Myotis	Myotis Septentrionalis	Special Concern
Peregrine Falcon	Falco Peregrinus	Threatened

The USFWS response indicated that they had no objections to the proposed project.

**Describe measures to minimize or avoid adverse impacts.**

Since blacktop and gravel currently cover the site for the proposed project, disruption to sensitive ecological resources should be very minimal. The letter from the DNR indicates that based on the location and nature of the proposed project, any known occurrences of rare features will not be affected by the project. According to the response letter of the USFWS Twin Cities Field office, there are “no objections” to this project as reviewed under the authority and in accordance with provisions of the Fish and Wildlife Coordination Act, the National Environmental Policy Act, the Fish and Wildlife Service’s Mitigation Policy, the Endangered Species Act of 1973, as amended, and executive Orders 11988 and 11990.

12. **Physical impacts on water resources. Will the project involve the physical or hydrologic alteration — dredging, filling, stream diversion, outfall structure, diking, and impoundment — of any surface waters such as a lake, pond, wetland, stream or drainage ditch?**  Yes  No

**If yes, identify water resource affected and give the DNR Protected Waters Inventory number(s) if the water resources affected are on the PWI: Describe alternatives considered and proposed mitigation measures to minimize impacts.**

13. **Water use. Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)?**  Yes  No

Dewatering may be necessary during construction. The construction contractor will make that determination.

**If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.**

Dewatering may be necessary during construction. If the volume of water from dewatering activities exceeds 10,000 gallons per day, a temporary water appropriations permit will be applied for and obtained from the DNR prior to such appropriation. Necessary permits for the discharge of such water will also be obtained. The construction contractor will obtain these permits.

Samples of ground water will be inspected for any signs of contamination during the dewatering activities. The contractor will immediately notify St. Paul Cogeneration, LLC if contaminated ground water is encountered. The contractor will obtain the necessary permits and approvals to treat and/or dispose of the ground water in accordance with all federal and state rules.

The new plant will require connection to the public water supply for its make up and cooling water demand. It is estimated that the water demand for the new plant will be approximately 111 million gallons per year. The new plant will connect to the existing water main, either along Shepard Road or along Kellogg Boulevard. The final interconnection decision will be made by the City of St. Paul.

No wells will be installed or abandoned in connection with this project. There is one abandoned water well and one active water well present at the site. The active water well present at the site (MN UN.NO. 2134002) is being used for back-up process water for the existing District Energy Plant

adjacent to the east of the site. Under the Permit to Appropriate Ground Water # 73-1386 the permit holder may use water at a rate of 600 gallons per minute, not to exceed 77.8 million gallons per year. The well has a reported depth of 220 feet. There have been 18,300 gallons of water used from the active well in the last 3 years. It is used as an emergency source, only for equipment protection in the event that city water supply is unavailable. The well will remain a standby emergency source. The other wells were sealed in 1993 (October 6 and 12, 1993).

14. **Water-related land use management district. Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district?**  Yes  No

A portion of the proposed project site is located within the 100-year floodplain.

**If yes, identify the district and discuss project compatibility with district land use restrictions.**

The southern portion of the property is located within the 100 year flood plain and is zoned RC-2 (Flood Fringe District), as well as B-5 Central Business-Service District. The base flood elevation as referenced in the National Geodetic Vertical Datum of 1929 is approximately 708 feet. The approximate floodplain boundary is shown on Figure 5. According to the City of St. Paul Legislative Code (Chapter 65 Zoning Code--River Corridor), the planned project is compatible with permitted uses in the B-5 zoning district (public utility steam plant). The proposed project is also compatible with the requirements for the flood fringe district. Based on the final design of the plant, a Special Condition Use Permit may be required.

15. **Water surface use. Will the project change the number or type of watercraft on any water body?**  
 Yes  No

**If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.**

16. **Erosion and sedimentation. Give the acreage to be graded or excavated and the cubic yards of soil to be moved: 1.5 acres; Approximately 1,400 cubic yards**

**Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.**

Erosion and sedimentation are expected to be minimal. A sedimentation/erosion control plan will be submitted to the city as required by chapter 65 of the St. Paul Zoning Code and Minnesota Rules.

17. **Water quality: surface water runoff**  
a. **Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.**

**Before Project:** DESP is currently completing a Storm Water Pollution Prevention Plan and is applying to the MPCA for coverage under the Storm Water General Industrial Permit. At this time Best Management Practices (BMPs) are being implemented to prevent pollution to the storm water runoff. Areas that are currently exposed to storm water include a coal loading area, wood shavings pile and a diesel oil storage tank. The loading/unloading ramp for chemicals/oil is also uncovered and there is a possibility of contact with storm water in the event of a spill or leak. There are a number of

other BMPs in place to prevent contamination of storm water at DESP. Examples of current BMPs include:

- the coal receiving area loading area is swept every other day;
- ongoing training for response to spills or leaks in the loading/unloading area is being implemented; and
- visual inspections of the grounds are performed on a regular basis to ensure cleanliness and proper functioning of equipment.

An example of spill response is the covering of all nearby storm drains with magnetic covers in the event of a spill or leak to contain and prevent spread of the contaminant to storm water and ultimately the receiving waters. Complete listings of all BMPs are contained in detail in the Storm Water Pollution Prevention Plan.

**After Project:** Runoff is expected to decrease upon completion of the project. The runoff quality will improve with the proposed project due to the majority of exposed materials being enclosed during construction. After construction occurs, there will be very little impervious surface remaining on the facility property. The existing wood shaving area will be eliminated and incorporated into a covered unloading garage. The coal unloading area will be in the same location but will now be enclosed between the current building and the newly constructed boiler building. Coal will not come into contact with rainwater because of the construction on all sides. The diesel fuel tank would tentatively be moved indoors to the new fuel storage area.

The neutralizing tank is part of the wastewater treatment system in which wastewater with high or low pH is neutralized prior to disposal. The demineralized water tank is for storage of process water that has been purified prior to use in the plant boiler and turbine systems. The urea tank is used to store an aqueous solution of urea that is used to reduce the nitrogen oxide emissions from the new boiler. These tanks will be constructed with secondary containment to prevent any spill or leak from reaching the storm drains. The Best Management Practices and Storm Water Plan would be revised and maintained accordingly with the permit for areas that will remain in contact with storm water.

- b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.**

**Receiving Waters:** All site runoff is currently diverted into three storm sewers, which drain directly into the Mississippi River. The Mississippi River will continue to be the destination of the runoff during and after construction but the storm sewer locations may be altered due to the building construction.

Storm water runoff is not expected to have a significant impact on the receiving water quality because storm water (prior to collection in the storm drains) will flow over impervious materials including the parking lot and building roofs that are maintained in relatively clean condition, reducing the likelihood of contamination.

**18. Water quality: wastewaters**

- a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.**

The primary source of industrial wastewater is the cooling water that is not recycled but conveyed into the sanitary sewer. Other sources of wastewater include equipment washing and domestic wastewater from plant employees.

The volume of cooling water, domestic waste and industrial waste sent to the sanitary sewer was approximately 67,100 gallons per day between July 1999 and March 2000. Approximately 84% of the wastewater is cooling water, 15% is industrial waste in the form of cooling tower blowdown

and 1% is domestic wastewater.

The proposed project is expected to increase the daily volume of wastewater from 67,100 gallons per day to 124,100 gallons per day. The additional wastewater will result from boiler makeup water blowdown and cooling tower water blowdown.

- b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.**

Stormwater management procedures are described in Item 17. There will be no on-site treatment of wastewater.

- c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.**

DESP currently maintains a Metropolitan Council Environmental Services Industrial Discharge Permit (Permit Number 0474) that was issued by the Metropolitan Council for discharge to the public sewer within St. Paul. The permit requires quarterly reporting and semi-annual sampling.

Wastewater from the new plant will be discharged into the Metropolitan Wastewater Treatment Plant (Metro Plant) in St. Paul. The Metro Plant is the largest wastewater treatment plant in Minnesota and has a capacity of 250 million gallons per day. The plant is operated by the Metropolitan Council Environmental Services. The wastewater that is generated by the new plant will be discharged directly into the sanitary sewer. The impact of the additional wastewater on the Metro Plant will be minimal, less than 0.05% of daily throughput.

- d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.**

Not Applicable.

**19. Geologic hazards and soil conditions**

- a. Approximate depth (in feet) to ground water:** 5 feet minimum 8 feet average  
**to bedrock:** 0.5 feet minimum 7 feet average

**Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.**

There are no sinkholes, shallow limestone formations or karst conditions present at the site. The uppermost bedrock present at the site consists of the St. Peter sandstone, a fine to medium grained quartz sandstone. Its thickness at the site is approximately 95 to 97 feet. It is underlain by the Prairie Du Chien Dolomite. The sensitivity of the Prairie Du Chien Aquifer to Pollution at the site location is moderate. This means that the travel time for water borne contaminants at the land surface to reach the Prairie du Chien aquifer is estimated to be years to decades.

- c. Describe the soils on the site, giving NRCS (SCS) classifications, if known. Discuss soil**

**granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.**

The Soil *Survey of Washington and Ramsey Counties, Minnesota* (United States Department of Agriculture Soil Conservation Service in cooperation with the Minnesota Agricultural Experiment Station, 1980), classified the soils at the site as Urban Land. This class is characterized with more than 90% of the surface covered by buildings, asphalt, concrete or other impervious surfaces.

According to previous investigations performed at the property, the soils at the site consist of 0 to approximately 9 feet of mainly poorly graded sand with silt and gravel fill (SM, SP-SM, SP). This fill is underlain by the St. Peter Formation of sandstone.

The granularity of the soils at the property varies from silty to gravelly; therefore the potential for groundwater contamination varies. The shallow depths to groundwater would tend to increase the potential for contaminants to reach the groundwater. However, most of the site will be paved after construction of the plant is completed which would minimize the potential for groundwater contamination.

20. **Solid wastes, hazardous wastes, storage tanks**

- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.**

Solid waste produced during construction will be disposed of off-site. The contractor will be responsible for solid waste disposal. The solid waste will include normal construction debris such as scrap wood, plastics, wallboard, packing material, cardboard, scrap metals and electrical wires. Recycling of construction waste material will be the responsibility of the contractor. No hazardous waste is expected to be encountered during construction. However, if hazardous material is encountered during the construction, it will be the responsibility of the contractor to dispose of such material according to all applicable rules and regulations.

Ash that is generated from the combustion of the wood fuel will be collected in the ash silo. The ash will be disposed at an off-site solid waste disposal facility or reused as a soil enhancer.

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.**

The existing DESP facility is currently classified as a "Very Small Quantity Generator" of hazardous wastes. The wastes include fluorescent lights, lubricating oil, mineral oil, ethylene glycol, and batteries. After the project is completed, the facility is expected to remain a "Very Small Quantity Generator" of hazardous wastes with minimal increases in the amount of wastes identified above.

- c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.**

There are two 30,000-gallon diesel underground storage tanks (USTs) that are used to supply backup fuel to the existing boilers in the building adjacent to the proposed boiler building. The USTs are constructed of fiberglass and were installed in 1983. DESP completes daily inventory control on the USTs and has not identified any loss of fuel.

In addition to the two USTs, there is an existing double wall 300-gallon aboveground diesel storage tank. The cavity between the inner and outer walls of this tank is regularly tested by DESP for leakage. Emergency response measures for the existing tanks are identified in the facility's *Spill Prevention, Control and Countermeasure Plan*.

The 50% solution of urea that is used as a reagent to reduce NOx emissions from the boiler will be stored in a 15,000 gallon reinforced fiberglass tank. The chemical storage tank is a closed top vertical tank supplied with a level indicator, manway, vent, internal down pipe, external fill pipe, isolation valves, and other related equipment. The storage tank will be placed in a plastic "tub" to provide adequate secondary containment. The storage tank will be placed under a roof in order to minimize the precipitation that is collected in the secondary containment area. The urea solution will be delivered by truck and transferred into the storage tank. The urea solution will be fed into the boiler flue gas through a feed system of metering pumps and injector nozzles.

In the event of a spill, operations personnel will follow the procedures listed in the chemical spill recovery plan. Urea is a mild acid with a pH between 6 and 7. The spill response will be similar to the existing procedures for a water treatment chemical spill. The existing procedure for water treatment chemical spills is for plant personnel to contain the spill, notify supervisors of the spill, call the emergency response company, notify the applicable local and state agencies, oversee clean-up operations, and file follow-up reports.

21. **Traffic. Parking spaces added** 0. **Existing spaces (if project involves expansion)** N/A.

**Estimated total average daily traffic generated**

During Construction Activities: 10 trucks per day between the hours of 7:00 a.m. to 5:00 p.m.  
After Construction Completion: 2-3 semi-trailer or dump trucks per hour (6:00 a.m. to 10:00 PM)

**Estimated maximum peak hour traffic generated (if known) and time of occurrence**

During Construction Activities: Peak traffic from this project would occur when construction employees arrive and leave the project location at 7:00 a.m. and 5:00 p.m. The volume of traffic depends on the number of construction workers assigned to the project.  
After Construction Completion: 2-3 trucks per hour between 6:00 a.m. and 10:00 p.m.

**Provide an estimate of the impact on traffic congestion on affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.**

This project will have minimal impacts on the regional transportation system.

22. **Vehicle-related air emissions. Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.**

No significant air quality impacts are anticipated from vehicle-related air emissions.

23. **Stationary source air emissions. Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting**

**chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.**

Source and Quantity of Air Emissions

The air emissions from this project are from the exhaust gas from the boiler. The boiler will use an electrostatic precipitator (ESP) to control emissions of particulate matter and selective non-catalytic reduction (SNCR) to control NOx emissions. The boiler will be capable of combusting wood waste; a mixture of oat hulls and/or other agricultural wastes; and natural gas. Ancillary heating and cooling equipment is operated electrically. The wood waste will be received in an enclosed area and particulate emissions are expected to be minimal.

The following table lists potential emissions for criteria pollutants (a group of common air pollutants regulated by the U.S. Environmental Protection Agency) and hazardous air pollutants from the new boiler. The potential emissions that are listed are worst case with controls.

**Table 23.1  
Potential Air Emissions**

<b>Pollutant</b>	<b>Potential Emissions, tons per year</b>	<b>Fuel</b>
Nitrogen Oxides	412.68	Wood and 30% oat hulls
Particulate Matter	74.05	Wood waste
Particulate Matter less than 10 microns	74.05	Wood waste
Carbon Monoxide	740.48	Wood waste
Sulfur Dioxide	37.67	Wood waste
Volatile Organic Compounds	11.82	Wood waste
Lead	0.08	Wood waste
Total Hazardous Air Pollutants (HAPs)	17.49	Wood waste
Highest Single HAP (Hydrochloric Acid)	6.03	Wood waste

The emissions were derived from manufacturer's information; AP-42, EPA Compilation of Air Pollutant Emission Factors, Review Draft, Section 1.6, Wood Waste Combustion in Boilers, Dated 9/99; and AP-42, Table 1.4-2, Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion.

The proposed facility will be in compliance with National Ambient Air Quality Standards (NAAQS) and federal Prevention of Significant Deterioration (PSD) Increments based on air dispersion modeling analyses for carbon monoxide, nitrogen dioxide and particulate matter less than 10 microns. The emissions from other pollutants are below the significant emission thresholds for PSD and have minimal impacts on air quality.

Greenhouse Gases

The burning of wood waste will produce greenhouse gases, but the effect of greenhouse gases resulting from combustion will be less than would result from the natural decomposition of the wood used to fuel the project. During combustion, all of the carbon in the wood fuel is converted to carbon dioxide (CO2), and the hydrogen is converted to water (H2O). If the wood were allowed to decay naturally in a landfill, most of the carbon would still oxidize to carbon dioxide, but there would be some methane (CH4) produced and released into the atmosphere. Methane produced by decay has a greater greenhouse effect than the carbon dioxide. By preventing the formation and release of methane gas,

combustion of wood causes a net reduction in greenhouse gas emissions compared to the decay of that material in a landfill.

Current Permitting Status

This project is considered a major modification according to Minnesota Rules 7007.1500 and the New Source Review (NSR) Prevention of Significant (PSD) program (40 CFR 52.21). The existing DESP facility currently operates under MPCA Permit Number 2024-85-OT-3 that was issued on July 18, 1985. This facility submitted a Title V Operating Permit application in 1995 to the Minnesota Pollution Control Agency. A Title V Operating Permit has not been issued to date.

24. **Odors, noise and dust. Will the project generate odors, noise or dust during construction or during operation?**  Yes  No

**If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)**

Dust

Construction of the facility is expected to generate dust. Construction operations will involve spraying the construction areas and traffic lanes with water to suppress dust. A street washing program performed on a routine basis will also help alleviate the problem of dust and dirt on local streets. These dust prevention measures will prevent fugitive dust from being generated in objectionable quantities.

During operation, sources of dust include wood unloading, truck traffic and the ash silo. Wood unloading will occur indoors and trucks will travel on a paved surface.

Odors

It is not anticipated that significant odors will be generated during construction or operation.

Noise

Labno Environmental conducted an environmental noise assessment at the facility on August 23 and 25, 2000. During the site visit, noise propagation to four sites near the plant was evaluated. The four sites included the James J. Hill Library, the Science Museum, Harriet Island, and a residential area on Eagle Street (west of the site). The background sound level at each of the locations was also determined. These measurements were then compared to the Minnesota noise standards to determine if the sound level at each site was below the limits of the current noise standards. The last part of the evaluation was a prediction of the noise threshold for the new installation.

**Table 24.1  
Noise Standards (from MN Noise Pollution Control Rules, MN Rules 7030.0040)**

Noise Area Classification	Daytime (7 a.m. to 10 p.m.)		Nighttime (10 p.m. to 7 a.m.)	
	<b>L50</b>	<b>L10</b>	<b>L50</b>	<b>L10</b>
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

dB(A) Decibels, A- weighted scale  
L<sub>10</sub> Sound pressure level which is exceeded 10 percent of the time period  
L<sub>50</sub>: Sound pressure level which is exceeded 50 percent of the time period

The findings from this evaluation are as follows:

1. During the monitoring period, the sound levels at all four sites were below the limits of the current Minnesota noise standards.
2. DESP should be able to increase operations without affecting sound levels at the areas monitored in this evaluation.
3. The two primary concerns regarding noise from the new boiler facility at the DESP facility are the location and sound level of any new equipment.
4. The attenuation provided by the river bluff and Science Museum building was very significant for the library and residential areas.
5. There are no natural barriers between DESP and the Harriet Island site across the river but the sound attenuation from distance and the atmosphere is significant.
6. The expected sound levels from the diesel trucks delivering wood to the facility should not be at nuisance levels at any of the areas studied.

Construction Noise

During construction, there will be noise from the trucks and earthmoving equipment. In addition, the Occupational Safety and Health Administration (OSHA) requires vehicle back up alarms on vehicles that have an obstructed rear view. The table below estimates the average noise levels associated with the construction phases of the project. The noise levels are standardized to a reference distance of 50 feet from the equipment. There are no sensitive receptors at this distance. An estimated sound level for the backup alarm is approximately 97 dBA.

**Table 24.2  
Sound Levels of Construction Activities at 50 feet**

Activity	Sound Level
Ground Clearing	84 ± 6 dBA
Excavations	89 ± 6 dBA
Foundations	78 ± 3 dBA
Erection of Structures	85 ± 5 dBA
Finishing (i.e. Paving)	89 ± 6 dBA
Vehicle Backup alarms	98 . + 15 dBA*

\* Vehicle backup alarms can produce nuisance noise levels during construction. Depending on the specific type used on a vehicle the sound level will range from 83 to 113 dBA at 50 feet. This noise rating is based on manufacturer data on vehicle backup alarms.

Construction noise is unavoidable, but the effects of excessive sound levels can be minimized by acting to limit nuisance noise. The specific actions include the following:

- Require contractors to comply with Minnesota Noise Rules for vehicles. MN Rule §7030.1040 states limits for motor vehicles with a manufacturer’s gross vehicle weight rating of more than 10,000 pounds.
- Require contractors to have truck mufflers working properly.
- Limit construction activities to daytime hours of 7:00 am to 10:00 p.m. or even the normal workday of 7:00 am to 5:00 p.m.
- Use a vehicle reverse signal alarm that has a variable sound level so that the alarm is audible above the surrounding noise level but not excessively noisy.

Operations Noise

Operating noise from the project will come from building ventilation fans, an induced draft fan, and the cooling tower (running water). Noise from the boiler stack is not expected to be significant, since the diameter of the existing stack ensures that the escape velocity from the stack, and the resultant noise, is low. Noise from the facility is expected to be relatively constant during the operating hours of the plant.

In addition to the noise generated by the new facility, the only other new noise source for operations is diesel trucks bringing wood waste into the facility. Approximately 3 trucks per hour will be entering the facility between 6:00 am and 10:00 p.m. A typical sound level for these trucks is 83 dBA at 50 feet. For comparison, the artificial sound level created for this study was 82 dBA at 242 feet. Given that the trucks will be operating at the lower level of the facility, there will be significant attenuation for all sensitive receptor sites by either distance or barriers as shown in the noise study. Therefore, the trucks delivering wood waste to the facility should not produce nuisance noise at the potentially sensitive receptors.

Project management for the new facility has committed to a sound level of 60 dBA at 50 feet, for all outdoor equipment. The table below gives a prediction of worst case scenarios for new equipment locations if the manufacturer achieves a sound level of 60 dBA at fifty feet. These predictions are based on conditions where the equipment is placed as close as possible to the receptor with no attenuation from barriers or the atmosphere. Predicted sound levels include ambient, or background, noise.

**Table 24.3  
Sound Levels Scenarios for New Equipment**

Area	Comment	Predicted Sound Level	Standard
Museum	Attenuation based on a distance of 12 feet from source.	72.5 dBA	L50 = 75
Library	Attenuation based on a direct line of sight at 175 feet from source	49.0 dBA	L50 = 65
Houses	Attenuation based on a direct line of sight at 475 feet from source.	40.5 dBA	Nighttime L50 = 50
Park	Attenuation based on a direct line of sight of 1100 feet from source and atmosphere.	33.0 dBA	L50 = 65

**25. Nearby resources. Are any of the following resources on or in proximity to the site?**

**Archaeological, historical or architectural resources?**  Yes  No

**Prime or unique farmlands or land within an agricultural preserve?**  Yes  No

**Designated parks, recreation areas or trails?**  Yes  No

**Scenic views and vistas?**  Yes  No

**Other unique resources?**  Yes  No

**If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.**

Harriet Island and the St. Paul Yacht Club are located across the river to the south of the property. Harriet Island is a park located on the south side of the Mississippi River (opposite Lambert's Landing), directly across from St. Paul's downtown business district. The St. Paul Yacht Club is also located on the south side of the river, east of the Harriet Island Park. The proposed project is not anticipated to have significant impacts to either the park or Yacht Club.

Architectural plans for the proposed project are not yet final, but will be influenced by input from a series of community meetings and outreach done by the project developers. Architecturally, there are three primary considerations that will influence the physical form of the new facility.

1. Urban Design and Fit Within the City Context: The final project design will reinforce fundamental urban design aspects of downtown Saint Paul and respect the urban location of the facility.

2. Architectural Intent and Response to Physical Components of the Power Plant: The final design of the facility will integrate the functional requirements of the power plant with deliberate design features.
3. Community Asset Beyond Basic Infrastructure: Design for the facility will include elements that can be used by the larger community, such as interpretive exhibits. The building will be used as learning experience for new infrastructure technologies and share programmatic experiences with visitors to the nearby Science Museum.

26. **Visual impacts. Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks?**  Yes  No  
**If yes, explain.**

The proposed project will be located south of Kellogg Boulevard with most of the plant at an elevation significantly lower than the street level. Therefore most of the plant will be blocked from view from Kellogg Boulevard. Some of the proposed building, however, will be visible from Kellogg Boulevard. Their visual impact will be similar to the impact of the adjacent buildings. The plant will be visible from across the river to the south. Because it will be located adjacent to an existing, similar facility, significant visual impacts are not anticipated.

Because the exhaust gas will have little particulate matter, plumes or vapor clouds should not be visible from exhaust stacks for much of the year. On some occasions, particularly in cold weather conditions, a visible water vapor plume from the cooling tower and exhaust stacks may be visible. The impacts will be similar to those of the existing DESP plant.

With respect to facility lighting, the goal is to minimize the industrial spill lighting and use lighting to highlight educational and architectural aspects of the facility. The fuel receiving and process areas of the new building will be lighted in a manner similar to the lighting of the current building. Consequently, the visual effect of the lighting should be similar to that at the existing DESP facility. The design work by the architects is not yet complete, but lighting of the newly constructed spaces will be considered in that process and will strive to conform to that of nearby buildings.

27. **Compatibility with plans and land use regulations. Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency?**  Yes  No **If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.**

The proposed project is subject to regulations set forth by the City of St. Paul's Zoning Code as described in Items 9 and 14 of this EAW. No conflicts are anticipated and compatibility with these plans is further discussed in Item 9 and 14. St Paul Cogeneration, L.L.C. will incorporate design concepts that are approved by the St. Paul Riverfront Corporation.

28. **Impact on infrastructure and public services. Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project?**  Yes  No. **If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)**

The new plant will require additional connections to the city water, sanitary sewer, and natural gas line. Water that will be used primarily in the cooling water system will be drawn from a new connection to the water main along Shepard Road. The wastewater that is generated from the new plant will be conveyed to the sanitary sewer. The additional natural gas will come from a new

connection to the existing or upstream gas main. The route of the gas connection is shown in Figure 5.

In addition, a power transmission line will be installed to connect the facility to the electric grid. St. Paul Cogeneration, LLC has applied to Xcel Energy (Northern States Power Company) for an interconnection to the NSP system. The interconnection will supply up to 25 megawatts of electric power to Xcel Energy. Xcel Energy will be responsible for the permitting of the power transmission line. The type of connection has not been finalized, but options are generally discussed in response to question 6d. All options currently under consideration fall under the threshold for mandatory environmental review.

29. **Cumulative impacts. Minnesota Rule part 4410.1700, subpart 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to cumulative impacts (or discuss each cumulative impact under appropriate item(s) elsewhere on this form).**

A possible fuel processing facility is discussed in question 6d. There are no other known future projects that would interact with the project and cause cumulative projects.

30. **Other potential environmental impacts. If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.**

There are no other known environmental impacts of the project.

31. **Summary of issues. Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW. List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.**

Noise – The project must comply with all state and local noise standards during operation and construction. Limiting the hours of construction and ensuring that contractors use equipment that is in good working order will mitigate construction noise impacts. Operations noise is not expected to increase significantly from the existing plant noise, and is mitigated by the location of the facility.

Transmission Route – Plans for the electric transmission line to connect the facility with the electric power grid have not been finalized. Transmission facilities will be owned and operated by Xcel Energy. In all the options being considered, the line will be under the threshold for mandatory environmental review.

Urban location – Since this is a cogeneration facility, and not just a generation facility, the facility needs to be located near a thermal host. The plant design respects the urban location of the facility. The location of the facility is in keeping with the city's zoning code.

Fuel processing facility – There is not currently enough information to assess the potential environmental impact of a fuel processing facility. Should such a facility be planned, the proposed facility will need to undergo environmental review at the time of proposal.

Air emissions – The facility must meet all applicable emissions and air quality standards. Specific air quality impacts will be addressed by the MPCA during the permit process. No significant impacts are expected.

**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 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

**Environmental Assessment Worksheet** was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or [www.mnplan.state.mn.us](http://www.mnplan.state.mn.us)