National Endowment for the Humanities

Condensed Environmental Assessment

For

Lower Phalen Creek Project

Wakáŋ Tipi Center

CHA-268798-20

March 1, 2022

Condensed Environmental Assessment

The National Endowment for the Humanities (NEH) Condensed Environmental Assessment (Condensed EA) is appropriate when a project:

- Cannot be Categorically Excluded (CATEX),
- is unlikely to have significant impacts, and
- a detailed Environmental Assessment (EA) is not needed.

This format is appropriate if there are no extraordinary circumstances and the proposed project's involvement with or impacts to the environment are not notable in number or degree and do not rise to the level of a full Environmental Assessment (EA).

Resource guidance used in preparation of this form comes from NEH's National Environmental Policy Act (NEPA) Implementing Procedures, and incorporates the Council on Environmental Quality's regulations for implementing NEPA, and other federal statutes and regulations. Accordingly, this form meets the federal regulatory requirements for an EA.

To complete this form, you should describe the proposed project and provide information on potential impacts. Although some of this information may be based on your observations and existing environmental studies, additional research may be necessary. You must ensure consultation with federal, state, and local resource agencies responsible for specially protected resources prior to submitting this form to the NEH.

This form is not meant to be a stand-alone document. Rather, you should use it in conjunction with applicable orders, laws, and guidance documents, and in consultation with the appropriate resource agencies.

Attach an appendix with pertinent maps, data sources, correspondence, and completed studies to the completed Condensed EA.

Submit the EA through eGMS Reach for review. Once NEH completes its review, if there are no significant environmental impacts, additional instructions will be provided for completing the public notice and finalizing the EA and Finding of No Significant Impact (FONSI).

National Endowment for the Humanities

Condensed Environmental Assessment

Project Location:

Facility Name:	Wakáŋ Tipi Center, a Cultural and Environmental Interpretive Center at Bruce Vento Nature Sanctuary
Address:	Intersections of Kellogg Boulevard East, Commercial Street, and 4th Street East

City:	Saint Paul	County:	Ramsey	State:	MN

Recipient Information:

Facility Name:		Wakan Tipi Center			
Point of Contact:		Maggie Lorenz, Executive Director, Lower Phalen Creek Project			
Address:		804 Margaret Street			
City:	Saint Paul	State:	MN	Zip Code:	55106
Telephone Number:		(651) 370-2106			
Email:		mlorenz@lowerphalencreek.org			

Attachments to this Condensed EA:

Maps:
Figure 1. Location Map
Figure 2. Site Map
Figure 3. Site Layout
Figure 4. Air Quality Standards
Figure 5. Grading Plan Elevations

Attachments:
Attachment 1. Section 106 and Cultural Resources Documentation Attachment 2. USFWS letter on threatened and endangered species Attachment 3. Emails regarding floodplain elevation Attachment 4. Voluntary Response Action Plan (without Appendices)

Part I - General Project Identification

Proposed Action:

Describe the proposed project (the preferred alternative) in detail. List and briefly describe your proposed action (which must relate to the project purpose and need). Attach drawings/plans for the proposed action.

Lower Phalen Creek Project (LPCP) will lease and operate Wakáŋ Tipi Center, an approximately 9,000 square foot, one-story cultural and environmental interpretive Center located in the Bruce Vento Nature Sanctuary in St. Paul, MN. The City of Saint Paul will build and be the owner of the facility. The facility has three primary objectives: (1) to honor, accurately interpret, and educate the community about the rich and diverse cultural and natural history and features of the site and the Lower Phalen Creek corridor, (2) to honor the significance of Wakáŋ Tipi Cave as a Dakota sacred site, and (3) to create a gathering place and visitor facility for the community and guests in the area. Wakáŋ Tipi Center is designed to complement and support cultural and environmental interpretation programs for Bruce Vento Nature Sanctuary. It will be a welcoming, beautiful enhancement to the Sanctuary, both in terms of its minimal environmental impact and its visual appeal. It will provide a significant improvement to the Commercial and 4th Street corner, which is now asphalt pavement and highway overpasses. The Center will be a location for a variety of arts, cultural, educational, and environmental programs.

The property on which the Center will be sited is owned by the City of Saint Paul and is located at the intersections of Kellogg Boulevard East, Commercial Street, and 4th Street East (See Figures 1 and 2). The BVNS property consists of 27 acres of land that currently is zoned as municipal services (See Figure 3).

The redevelopment will include the new Center, temporary parking lot, and habitat enhancement work. Development activities will take place on an approximately 3.6-acre site bound by an active railroad along the Mississippi River to the south, Interstate 94 to the north, and Kellogg Boulevard to the west. The building will be an approximate 9,000 square foot, one-story slab on grade building with frost footings and 40- to 60-foot-deep helical piers for foundation support, a geothermal system for heating and cooling, and outdoor seating and landscape work. A parcel east of the Center will be used as a temporary parking lot. The project will include grading, grubbing, trenching, and other dirt work necessary to construct the Center.

This gathering place, as part of the Great River Passage Initiative, will offer a range of important and unique educational opportunities to learn about the Indigenous Peoples of Minnesota, our shared histories, and current urban ecology.

Purpose and Need:

Describe the problem that the project will address and the goals of the project. You may incorporate by reference information that is reasonably available to the public. Briefly describe the existing conditions on the project site, and the projected future conditions of the area impacted by the project. Identify any known sensitive environmental conditions. For example:

The area(s) which will be affected by the proposed action are identified in the attached map. This area consists of -- [add brief description of the environmental state of the area that will be affected by the location and operation of the project, focusing on those areas and resources that are potentially sensitive—the goal is to show the utility and need to identify actual place based environmental issues rather than compiling laundry lists of environmental resources that are not at issue by showing which environmental aspects the proposed activity may impact (aquifers, nesting areas, graves, sacred sites etc.)].

Lower Phalen Creek Project leadership has been working for over 10 years to restore the 27-acre former railroad switching yard and industrial area now known as Bruce Vento Nature Sanctuary (BVNS). BVNS includes the Wakáŋ Tipi Cave, which is a site of great cultural and historical importance to Native Americans in the region, especially the

Dakota people who have a large population in the St. Paul-Minneapolis metropolitan area. However, the history of the Wakáŋ Tipi Cave is little known and lacks publicly available and accessible information. A 2017 survey of local residents and park users revealed a need for an authentic Dakota interpretation of this site and a history and perspective of the area through an Indigenous perspective. The continued restoration of BVNS presents a unique opportunity to rebuild relationships within the Dakota community and preserve both cultural and ecological resources. LPCP intends to use Wakáŋ Tipi Center to educate the community about the sacred and cultural traditions of Indigenous communities and ways to care for the environment.

The project area currently consists of a dirt field last used possibly as a parking lot in the 1980s and an open sodded area within BVNS. Beginning in the early 2000s, clean-up efforts were initiated to remediate the industrial contamination and urban blight and to restore BVNS to its historic function as a sacred community gathering space for residents.

Wakáŋ Tipi Center will provide a community-driven, authentic space to honor the Wakáŋ Tipi Cave as a Dakota sacred site and interpret the culture and history of Dakota people in Saint Paul-Minneapolis area. The design of the Center was led by an Indigenous firm and incorporated the cultural and environmental priorities identified over the course of several meetings by a Dakota-led community pre-design workgroup. Through the design of the structure itself and the environmental education programming, Wakáŋ Tipi Center will seamlessly integrate with the Sanctuary and offer a space for cultural connections and healing through the arts and nature. Development of the Center will further these efforts. Use of the Infrastructure and Capacity Building Challenge Grant will advance the NEH's mandate to study, preserve, and share the best of America's history and culture.

Alternatives Considered:

Describe any reasonable alternatives, including the No-Action (or do nothing) alternative. You have discretion as to the number and breadth of alternatives. For example, the need to use existing infrastructure necessary to support a proposed action can be a basis for identifying a discrete number of alternatives. If there is consensus about the environmental aspects of the proposed action based on input from interested parties, you can consider the proposed action and proceed without consideration of additional alternatives.

Otherwise, you need to develop reasonable alternatives to meet project needs (42 U.S.C. § 4332(E)). When that alternative includes mitigation, include a brief discussion of those measures that avoid, minimize, reduce or eliminate, rectify or restore, or compensate for the impacts. If there are no other reasonable alternatives to the proposed action, please provide an explanation.

There are a limited number of sites possible for the proposed Wakáŋ Tipi facility due to the sensitive environment of Bruce Vento Nature Sanctuary and the intent to honor the Wakáŋ Tipi Cave. The site must be publicly accessible, in proximity to the Cave, and minimize impact to ongoing ecological restoration efforts, while providing a culturally authentic community gathering area, native habitat, meeting rooms, a gallery, and interpretive spaces to facilitate cultural healing, learning, and inspiration.

Explain in detail the reason for not selecting each non-preferred alternative.

No Action: The Wakáŋ Tipi Center is essential to the mission of Bruce Vento Nature Sanctuary. It is an integral par of the reclamation of ecologically and culturally valuable land near the Mississippi River. To fully restore BVNS means centering the history and culture of Dakota people and strengthening the link between the community and the land. The No-Action alternative denies this relationship and thereby reduces the Sanctuary's value to the community.

Alternative Location: Alternative locations close to the Wakan Tipi Cave were considered for the Center. One alternative considered was the site of a former Standard Oil Co. warehouse and office complex demolished in 2015.

The site is adjacent to BVNS to the north. The former Standard Oil Co. site is owned by the City of Saint Paul. Field inspection and analysis of soil borings revealed significant soil contamination. In addition, the Metropolitan Council, a regional governmental entity, holds a restrictive covenant over the property. The Council objected to plans for the Center because members of the public coming to the Center at that location could interfere with traffic and operations at their solid waste handling and wastewater treatment facilities. In addition, a joint interceptor sewer line runs under Commercial St, which is adjacent to the former Standard Oil Co. site, and the majority of sewage for the Twin Cites east metro area runs through this line.

Affected Environment:

Briefly describe the existing conditions on the project site. The description should summarize any site-specific conditions identified in Part II. Describe projected future conditions of the area impacted by the project. Identify any known sensitive environmental conditions. This information is required for all building renovations and new construction (including building additions, temporary facilities, and trailers). Include the total site acreage and existing land use in the vicinity of the project. For example:

The area(s) which will be affected by the proposed action are identified in the attached map. This area consists of -- [add brief description of the environmental state of the area that will be affected by the location and operation of the project, focusing on those areas and resources that are potentially sensitive—the goal is to show the utility and need to identify actual place based environmental issues rather than compiling laundry lists of environmental resources that are not at issue by showing which environmental aspects the proposed activity may impact (aquifers, nesting areas, graves, sacred sites etc.)].

The proposed project site is located at the northern end of Bruce Vento Nature Sanctuary. The building is located on 3.6 acres, with an adjacent 1.0 acre parcel for parking. BVNS sits east of St. Paul's urban core and is bounded by an active railroad to the south, Interstate 94 to the north, and Kellogg Boulevard, a major arterial road through St. Paul, to the west. The surrounding area has been developed since the late 1800s largely for commercial and industrial use, but current land uses include large-scale parking lots and residential neighborhoods.

Until 2005, when the City of St. Paul and Lower Phalen Creek Project purchased the land for restoration, the project site was largely vacant after periods of heavy industrial use. Investigations identified the presence of several hazardous materials due to the site's historic use as large-scale petroleum storage, railroad maintenance, and industrial fill. With multiple US EPA brownfield grants, some contaminated soils were removed, disposed of off-site, and replaced with clean soils (for the top 4 feet). BVNS is now under a restrictive covenant and undergoing a series of stabilization and restoration efforts. The proposed project site is currently a graded grassy area. The City of St. Paul owns the property and zoned it for municipal services.

The installation of the Center will complement the restoration efforts throughout the rest of BVNS. Adding native landscaping and the Indigenous-designed Center increases the value of the Sanctuary to the very diverse East Saint Paul community and Indigenous communities in the broader Twin Cities region. By returning the area to use as a community resource and Indigenous spiritual center, the BVNS is better able to reclaim the area from its historic use as an industrial waste site.

Part II – Environmental Consequences

1.0 Air Quality

Consult the EPA Green Book or your State or local government's environmental or natural resources offices to determine if your project site falls within an EPA air quality non-attainment area, with air quality worse than the National Ambient Air Quality Standards as defined in the Clean Air Act Amendments of 1970 (P.L. 91-604, Sec. 109).

	Yes	No
Is the project in an air quality nonattainment or maintenance area?	X	
If Yes, will the project:		
Exceed net total of threshold level for regulated air pollutants?		X
Increase cause major increase in the number vehicles to the site?		X
Emissions above applicable de minimis levels?		X
Does the project require an air quality analysis?		X
Does the project require an air quality analysis for construction impacts?		X

Remarks: The project is within three EPA air quality maintenance areas: carbon monoxide, PM-10, and sulfur dioxide (See Figure 4). Ramsey County was redesignated to maintenance status for the three NAAQS pollutants under the 1971 carbon monoxide and sulfur dioxide standards and the 1987 PM-10 standard. Redesignation for carbon monoxide, PM-10, and sulfur dioxide occurred in 1999, 1997, and 2002, respectively. The Center is anticipated to increase the number of vehicles onsite as it fulfills its function as a community amenity and gathering space.

Any air quality impact during construction will be temporary and will primarily comprise of emissions from diesel-powered construction equipment and dust. Construction site best management practices will be implemented in all phases of construction to satisfy permit requirements and minimize construction impacts. The project design process prioritized Indigenous voices and a conscientiousness toward environmental impact and this intent will carry through the build. Installing native landscaping and incorporating bird-safe design principles will cultivate ecological resources that improve air quality on site.

2.0 Water Quality

You may consult with your State or local government's environmental or natural resources offices for assistance in obtaining water quality information for your project.

Streams, Rivers, Watercourses & Jurisdictional Ditches	Yes	No
Are there Streams, Rivers, Watercourses or Ditches in/near the project area?	X	
Does the proposed action have the potential to impact water quality (including groundwater, surface water, or public water supply)?		X
Would there be an increase in stormwater?	X	
Is there any Wild or Scenic River in/near the project area?		X
Is there a Sole Source Aquifer in/near the project area?		X
Are there Streams, Rivers, Watercourses or Ditches in/near the project area?	X	

Does the proposed action have the potential to impact water quality (including groundwater, surface water, or public water supply)?		**X**

Other Waters	**Yes**	**No**
Are there any lakes or ponds in/near the project area?		**X**
Are there other surface/below surface waters in/near the project area?		**X**

Remarks: Part of the project site is located over the Phalen Creek, which is routed through a stormwater pipeline. BVNS is adjacent to the Mississippi River, a culturally, environmentally, and economically critical river of international significance. BVNS itself lies within a federally protected partnership park, the Mississippi National River and Recreation Area. Any development actions taken must comply with the environmental covenant to avoid releases of any contaminated soil into waterways and groundwater.

Although the proposed project will increase impervious area, measures will be taken to integrate the project into BVNS hydrology and is not anticipated to increase the pollutant loading of the runoff. At a minimum, the proposed project will incorporate any necessary on-site water quality and volume control best management practices. Designs will meet state and local water quality standards to obtain the necessary permits from Capitol Region Watershed District and Minnesota Pollution Control Agency. Incorporating native landscaping and restoring the natural ecology of the area will mitigate the additional impervious surface and improve on current conditions.

3.0 New/Unproven Technology

	Yes	**No**
Will action involve the use or purchase of new equipment/technology (such as new restoration techniques)?		**X**
Are the environmental impacts known?		**X**

Remarks: No new or unproven technology has been proposed for use in Wakáŋ Tipi Center. No environmental impacts are anticipated.

4.0 Cultural Resources

Results of Section 106 Research	**Yes**	**No**
Eligible or Listed Resources Present: Archaeology	**X**	
History/Architecture	**X**	

Project Effect	**Yes**	**N/A**	**SHPO/ NEH Approval Dates**
No Historic Properties Affected		**X**	
No Adverse Effect	**X**		SHPO concurrence pending
Adverse Effect		**X**	

Completed Documentation	**Yes**	**N/A**	**SHPO/ NEH Approval Dates**

Historic Properties Short Report	X		
Historic Property Report		X	
Archaeological Records Check/ Review	X		
Archaeological Phase I Survey Report		X	
Archaeological Phase II Investigation Repo		X	
Archaeological Phase III Data Recovery APE		X	
Eligibility and Effect Determination	X		
Memorandum of Agreement		X	

Describe all efforts to document cultural resources using the categories outlined in the remarks box. Include any additional Section 106 work required, such as mitigation or deep trenching.

Remarks: Concurrent with publication of this Environmental Assessment, LPCP, which has been delegated Section 106 consultation with the SHPO, has submitted a determination of No Adverse Effect, on behalf of NEH with the Minnesota State Historic Preservation Office. The final Section 106 determination will be published with this EA. Please refer to Attachment 1 for additional Section 106 information.

Section 106 consultation and a summary known archaeological and historical resources within and proximal to the proposed Center, a definition of the Area of Potential Effect (APE), and a determination of effect is included as Attachment 1.

5.0 Ecological Resources

Biotic Resources

Describe the various types of flora (plants), fauna (fish, birds, reptiles, mammals, etc), and habitat located in the project area. Indicate if the project will have any impact on these species or their habitat.

Remarks: Due to the project site's heavy historic industrial use, few native flora and fauna remain following European settlement. Pre-settlement vegetation types include a mixture of "oak openings and barrens," "big woods," and "river bottom forest," but the sawmill industry significantly reduced the number of old growth trees. Records indicate these species may have been white oak, bur oak, elm, cottonwood, ash, and maple
trees. Therefore, the proposed project is anticipated to have minimal impact on existing wildlife and habitat.
As the project will be highly integrated with ongoing restoration efforts in the BVNS area, native landscaping installations will contribute to ecological diversity and promote the return of pre-settlement species.

Threatened or Endangered Species

Are there listed species and/or designated critical habitat present in areas affected directly or indirectly by the project? Please review the FWS Critical Habitat resources.

Results of Section 106 Research	Yes	No
Is the project within the known range of any federal species?	X	
Does the project area contain any critical habitat?		X
Is Section 7 formal consultation required for this action?		X
Are there any State threatened or endangered species in the area?		X
Consultation with USFWS (Attach letter) **See Attachment 2**	X	
Consultation with State Agency (Attach letter) **Letter not required. See below.**		X

Remarks: A review of online resources and databases of the Minnesota Department of Natural Resources (MnDNR), and the U.S. Fish and Wildlife Service (USFWS) was conducted for the proposed project site. USFWS's Information for Planning and Consultation (IPaC) database and the Minnesota Department of Natural

Resources Natural Resource Heritage System (NHIS) were used to generate reports of potential threatened and endangered species which are known or expected to be in or near the project area. A site visit was conducted in July 2021 to evaluate the potential presence of each of these species.

Three federally threatened and/or endangered species are listed as having potential habitat within Ramsey County, Minnesota (Attachment 2): Northern long-eared bat (*Myotis septentrionalis*), Higgins eye pearlymussel (*Lampsilis higginsii*), and Rusty patched bumble bee (*Bombus affinis)*. USFWS has not defined critical habitat (areas that contain the physical or biological features that are essential for the conservation of species and that may require special management considerations or protection) for any of these three protected species.

The Northern long-eared bat is a forest-dependent species, generally relying on forest features for both foraging and roosting during the summer months (USFWS 2013). In particular, the Northern long-eared bat appears to be a forest interior species that requires adequate canopy closure for both roosting and foraging habitat. The wing morphology of the Northern long-eared bat makes it ideally suited for the high maneuverability required for gleaning-type foraging within a cluttered forest interior. Northern long-eared bats roost singly, or in colonies, underneath bark, in cavities, or in crevices of both live and dead trees (USFWS 2014). Cooler roost locations such as caves and mines may be used by non-reproductive females and males. In general, these bats are opportunistic in selecting roosts and using tree species that retain bark, provide cavities, or crevices. Rarely, Northern long-eared bats have been found roosting in structures such as barns and sheds; however, structures that may be used for roosting are likely located close to wooded habitat that would be used for foraging. Additionally, riparian areas are considered critical resource areas for many species of bats because they support higher concentrations of prey; provide drinking areas; and act as unobstructed commuting corridors. While Northern long-eared bat are typically associated with forest habitats, they also have been documented in agricultural settings where forest habitats are highly fragmented. Studies in landscapes dominated by agricultural activities have also found that Northern long-eared bat may use woodlots and riparian zones with very few acres of actual forest cover as traveling and commuting habitat. There are no know hibernacula or roost trees within the project area.

Higgins eye pearlymussel (*Lampsilis higginsii*) is an endangered freshwater mussel species without a defined critical habitat. The species occurs on larger rivers where it is usually found in areas with deep water and moderate currents. Its range includes the upper Mississippi River; the St. Croix River between Minnesota and Wisconsin; the Wisconsin River in Wisconsin; and the lower Rock River between Illinois and Iowa. In Johnson County, it is known along the Iowa River, which is over 5 miles (actually 290 miles) from the project area. Because the proposed action does not involve the Mississippi River, this species will not be affected by project activities. The proposed project will have no effect on this species.

The Rusty patched bumble bee is a federally listed endangered species. The species has exhibited a 92.5 percent relative abundance *decline* over the past decade. Its historical range covered the Upper Midwest, Northeast, as well as a corridor south into Georgia along the Appalachian Mountains. The general Minneapolis-St. Paul area is one of the last remaining places it is still documented. The Rusty patched bumble bee is known to nest below ground in woodlands or woodland edges and has a long foraging season, starting in early May in southern Iowa (queen emergence from hibernation) to late September or early October. According to the U. S. Fish and Wildlife Service (USFWS 2017a), queen hibernation occurs from October until May in small chambers in loose soil and/or leaf litter just a few centimeters below the ground or they use compost or rodent hills/mounds. Overwintering habitat is often in or near woodlands or woodland edges that contain spring blooming herbaceous plants, shrubs, and trees, which allows proximity to woodland spring blooming flowers, particularly spring ephemeral wildflowers – a critical early spring food source. Wooded areas are vital for nesting, spring emergence of queens, and spring ephemerals for foraging. Suitable foraging habitat (critical spring and fall floral resources, nesting habitat, and overwintering habitat) does not occur within the immediate project area. The proposed project will have no effect on this species.

The review of NHIS records found that no state-listed rare, threatened, or endangered species or rare ecosystems have been reported within the Center site. State-listed species reported within a one-mile radius of the Center include predominately aquatic species within the Mississippi River. Non-aquatic state-listed species within a one-mile radius of the Center are limited to the Peregrine falcon and the Rusty patch bumblebee. The review of important biological resource areas did not identify any Minnesota County Biological Survey (MCBS) sites of biodiversity significance, MN DNR native plant communities, or MN DNR Regionally Significant Ecological Areas (RSEAs) within the project site. The overall potential for rare species to occur within the project site is determined to be low due to that fact it has been extensive disturbed by past railroad and industrial development and relatively low diversity and habitat complexity.

References:

USFWS. 2017a. Conservation Management Guidelines for the Rusty Patched Bumble Bee (Bombus affinis). https://www.fws.gov/midwest/endangered/insects/rpbb/factsheetrpbb.html. Accessed July 2021.

USFWS. 2021. Fact Sheet: Rusty Patch Bumble Bee. Accessed July 2021.

USFWS. 2021. Fact Sheet: Higgins-eyed Pearly Mussell. Accessed July 2021.

USFWS. 2021. Fact Sheet: Northern Long-eared Bat. Accessed July 2021.

USFWS. 2021. Rusty Patched Bumble Bee Guidance for Surveyors and Researchers. https://www.fws.gov/midwest/endangered/insects/rpbb/surveys.html. Accessed August 2019 USFWS. 2021. Information for Planning and Consultation. Website accessed July 2021. https://ecos.fws.gov/ipac/location/index

6.0 Wetlands

	Yes	No
Are there wetlands in/near the project area?	X	

Total wetland area: 0.84 acre(s) Total wetland area impacted: 0 acres(s)

Wetland No.	Classification	Total Size (Acre)	Impacted Acres	Jurisdictional	Non-Jurisdictional	Comments
PEM1F	Freshwater Emergent Wetland	0.26	0	Yes		Wetland is within approximately 0.25 miles of project area
PUBFx	Freshwater Pond	0.25	0	Yes		Wetland is within approximately 0.25 miles of project area
PABHx	Freshwater Pond	0.14	0	Yes		Wetland is within approximately 0.25 miles of project area, but separated by Warner Road and will not face significant impact
PEM1A	Freshwater Emergent Wetland	0.19	0	Yes		Wetland is within approximately 0.25 miles of project area, but separated by Warner

						Road and will not face significant impact

Completed Documentation	Yes	No
Wetland Delineation Report		X
Conceptual Mitigation Plan (see remarks)		X
Mitigation Available		N/A

Individual Wetland Finding Alternatives that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):	Yes	No
Substantial adverse impacts to adjacent homes, business or other improved properties;		X
Substantially increased project costs;		X
Unique engineering, maintenance, or safety problems;		X
Substantial adverse social, economic, or environmental impacts,		X
The project not meeting the identified needs		X

If yes, and there is no State, local or USACE evidence that the location is not within a wetland, discuss measures to avoid, minimize, and mitigate wetland impacts. Make sure to include mitigation ratios.

Remarks: Minnesota DNR's National Wetlands Inventory interactive map and aerial satellite imagery revealed no wetlands within the project area. An analysis through the USDA Web Soil Survey identified the soil composition of the project area as entirely Udorthents, wet substratum soils (map unit 1027), which is a non-hydric soil.

Minnesota DNR's National Wetlands Inventory identified four small wetlands approximately 0.25 miles from the project area. The development will not impact these wetlands because they are far away from the Center and associated activities.

7.0 Floodplains

	Yes	No
Is the project located in a FEMA designated floodplain?	X	

Follow the instructions in the link above to look up your project site and generate a FIRMette. Attach other documentation in the appendix. For projects within the 100-year floodplain, NEH will integrate the E.O. 11988 8-step process as part of this EA

Remarks: The Center will be located within the FEMA 500-year floodplain. Minnesota Department of Natural Resources and the City of Saint Paul have determined that the 100-year floodplain elevation at the site is 706.9 (See Attachment 3). The first floor elevation of the Center is 712.0. All construction at the site will be above this elevation, with the exception of stormwater management facilities and geothermal heating pipes (See Figure 5). These storm water and geothermal heating features will not be damaged by flood water and will not affect the flow of flood water because they are constructed below the original grade of the site.

8.0 Coastal Areas

Review the National Oceanic and Atmospheric Administration (NOAA) Coastal Zone Management Act maps maps to determine if the project falls within a State's or Territory coastal zone. If the site is within the coastal zone, NEH will assist you with preparing a Negative or Consistency Determination will be submitted to the State Coastal Management Program office. The State determination will be incorporated into the impacts section. The State has up to 75 days to review and respond. A FONSI cannot be finalized until the CZMA process is completed.

	Yes	No
Is the project located in a Coastal Barrier Resource System?		X
Is the project located in a Coastal Zone?		X
Is the project consistent with the State's CZMP? (Attach coordination with State Agency to appendix)		N/A

Remarks: The Coastal Zone Management Act (CZMA) was enacted in 1972 to encourage coastal states to develop comprehensive programs to manage and balance competing uses of and impacts to coastal resources. As Minnesota's eligible coastal zone runs along the shore of Lake Superior, the project area does not trigger any required CZMA actions.

9.0 Energy and Natural Resources

	Yes	No
Will the project result in energy impacts during or after construction?		X
Will demand exceed supply?		X
Are scarce or unusual materials required for the proposed project?		X
Will the project change existing aircraft fuel consumption?		X
Are there parts of your project that are sustainable? (If yes, describe below)	X	

Remarks: Wakáŋ Tipi Center aims to feature Indigenous culture and values and that includes reflecting a sustainable, relationship with the environment in its physical design and structure. Accordingly, the project plans to develop renewable geothermal energy systems to power its facilities. The project will comply with Minnesota Rules Chapter 1323 Commercial Energy Code and Minnesota Statute 16B.325, the Sustainable Building 2030 Act which requires all state-funded projects in Minnesota comply with the SB 2030 Energy Standard.

10.0 Noise

	Yes	No
Will the project change the current noise levels?		X
Will the project create temporary (less than 180 days) noise impacts?	X	
Are there any sensitive noise receptors near and/or adjacent to the project area?		X

Remarks: The project site is located between a busy interstate highway and an active railroad within an urban developed area. Just west of the site is the main train station for the City of Saint Paul, another busy highway, and a baseball stadium for the local minor league team. As such, surrounding areas can exhibit high traffic noise during peak travel times and special events. Once completed, the project is not anticipated to increase current noise levels. Noise levels may increase temporarily during construction but will be limited through implementation of construction best management practices.

Lower Phalen Creek Project partners with the City of Saint Paul to reclaim and restore natural spaces on along Phalen Creek for the residents of East Saint Paul. Their efforts created Bruce Vento Nature Sanctuary and Swede's Hollow Park, which surround the project site. The stakeholder engagement throughout this process identified the community's desire to interpret these natural spaces through an Indigenous-centered lens, acknowledging the importance of intertwining these efforts to celebrate the environment and its original inhabitants, as a whole. Therefore, the project is intended to complement these sensitive areas and reflect the local community's values.

11.0 Compatible Land Use

	Yes	No
Will proposed action comply with local/regional development patterns for the area?	X	
Is the proposed action in or adjacent a Wildlife Refuge or Wilderness Area?		X
Will the project affect a Wildlife Refuge or Wilderness Area?		X

Remarks: The project site sits within Bruce Vento Nature Sanctuary and adjacent to one of the most racially and ethnically diverse communities in the City of Saint Paul, including large immigrant populations. Its mission to provide environmental and cultural interpretation reflects compatibility with the local development patterns and recent efforts by the City and Lower Phalen Creek Project to reclaim and restore the creek corridor.

12.0 Construction Impacts

Will construction of the proposed project:	Yes	No
Increase ambient noise levels due to equipment operation	X	
Degrade local air quality due to dust, equipment exhaust, or burning debris		X
Deteriorate water quality when erosion or pollutant runoff occur		X
Disrupt off-site and local traffic patterns		X

Remarks: Although the proposed construction activity may contribute temporary air, noise, vibration, water quality, traffic flow, and visual impacts for residents within the immediate vicinity, best management practices will be implemented in all phases of construction to minimize these short-term construction impacts. Diesel-powered, heavy construction equipment and associated activities will temporarily impact air quality, noise, and vibration. A robust Stormwater Pollution Prevention Plan (in development to be included with construction bid documents) will comply with Minnesota Pollution Control Agency rules and permits. The plan will describe required measures to control any potential water quality impacts resulting from erosion and sedimentation during construction. Best management practices include the use of silt fences along the project perimeter, inlet protection devices, rock construction entrances, noise abatement, and bare soils stabilization. Any temporary construction impacts would cease upon construction completion and minimized by best management practices throughout any construction activities.

Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project and to minimize access impacts to adjacent businesses and residences.

13.0 Solid and Hazardous Waste

	Yes	No
Is there an Environmental Due Diligence Audit (EDDA) for the Environmental Site Assessment (ESA) Phase I Report?	X	
If Yes, is ESA Phase II required/completed	X	

If Yes, is ESA Phase III required/completed	**X**	
What is the date of any building on the site? _____		**N/A**
Does the project require the use of land that may be contaminated?	**X**	
Will the proposed project generate solid waste?	**X**	
If Yes, are local disposal facilities capable of handling the additional waste?	**X**	

Remarks: A Phase I ESA was prepared by Landmark Environmental in August 2019, but it did not have an Environmental Due Diligence Audit. Phase II ESA studies were conducted by Landmark Environmental in 2019 and 2020. The studies found contaminated soil and groundwater in the project area. A Phase III ESA (Voluntary Response Action Plan) was completed by Landmark Environmental in May 2021 (See Attachment 4).

Soils at the building site were found to be contaminated with arsenic, volatile organic compounds (VOCs), add Poly cyclic aromatic hydrocarbons (PAHs) above state health risk-based standards. Groundwater in the area has concentrations of petroleum related VOCs above state standards. No contaminants were found above state standards in soil vapor samples, but samples will be collected again so that the project remains in compliance with the MPCA environmental covenant.

Soil remediation will likely be limited to shallow excavation of contaminated soils (to 4 feet in most areas or as required by the MPCA) and replaced with clean fill. This would be consistent with remediation efforts for similar contaminants elsewhere within the BVNS. The volume of contaminated soil it is expected to be approximately 1000 cubic yards. This waste will be handled in a manner approved by the MPCA.

Groundwater remediation will likely only be required if dewatering is necessary during construction of the building. Remediation would typically goal of monitoring have any groundwater discharge and disposal to the sanitary sewer system.

An Environmental Construction Contingency Plan will be completed and submitted to the Minnesota Pollution Control Agency to address any unexpected environmental issues that are encountered during remedial actions and redevelopment activities.

14.0 Socioeconomic Impacts

	Yes	No
Will the proposed action result in the relocation people, businesses or farms?		**X**

Number of relocations: Residences: 0 Businesses: 0 Farms: 0 Other: 0

Will the proposed action result in:	Yes	No
A change in business or economic activity in the project area	**X**	
An impact on local public service demands		**X**
Induced/Secondary impacts		**X**

Remarks: Wakan Tipi Center will be a local economic driver in a low-income area that will attract visitors to local business, create jobs, and encourage use of local parks and trails. The project will serve as an inclusive community gathering place that strengthens the East Side Saint Paul neighborhood and its sense of place. It will not displace any existing businesses, organizations, or institutions.

15.0 Environmental Justice (EJ)

	Yes	No
Are any low income or minority populations located within the project area?	X	
Will the project result in adversely high or disproportionate human health or environmental impacts to the low income or minority populations population?		X

Remarks: BVNS is located in Census Tract 344, which consists predominantly of the Sanctuary and single-family dwellings. Long a neighborhood of immigrants, the East Saint Paul area represents one of the largest percentages of minority and low-income populations in the state. East Side residents attending LPCP events break down racially into 30% Hmong, 13% African American, 12% Latino, and 5% Native American. These demographics show higher percentages of minority populations than the U.S., Minnesota, Ramsey County, and the City of Saint Paul. Additionally, East Side Saint Paul poverty rates increased to 55% in 2015, and the area has the second-highest vacancy rate among all Racially Concentrated Areas of Poverty in Minnesota (as per the most recent data available from the Minnesota Compass Saint Paul Great East Side Neighborhood Profile).

This project will not impact community services, features, or neighborhoods and no minority populations will be negatively affected. Rather, the proposed project is anticipated to benefit minority populations through the Center's function as a space of community gathering and celebration to encourage residents to honor and care for our natural places and the sacred sites and cultural value within them.

16.0 Farmland

Is this a new construction or expansion project that will convert undisturbed ground in an area that with potential prime farmland soils? If your new construction or expansion project site is identified as non-urban land, regardless of whether it is zoned for development, NEH will assist you with consulting the Natural Resource Conservation Services (NRCS) field offices for further designation in accordance with the Farmland Protection Policy Act. If your project site is identified as an urban area on a Census Bureau, USDA Important Farmland, or USGS Topographic map, no further review under this section is required.

	Yes	No
Is this a new construction or expansion project that will convert undisturbed ground?		X
Will the project affect any Agricultural Lands?		X
Is there any Prime Farmland (per NRCS) in the project area?		X

NRCS-AD-1006 Form score: **N/A**

Remarks: The project site sits over a former brownfield and currently classified as managed/natural grass land cover. Surrounding BVNS is developed urban area with no large-scale farmland resources. Soils within the project area are classified as Udorthents, wet substratum, 0 to 6 percent slope, which is not considered prime farmland, prime farmland if improved, or farmland of state-wide importance.

17.0 Cumulative Impacts

	Yes	No
When considered together with other past, present, and reasonably foreseeable future development projects on or off the airport, would the proposed project produce a cumulative effect on any of the environmental impact categories above?		X

Remarks: The project is not anticipated to have a cumulative effect on the environmental impact categories due to the existing developed nature of the site and lack of environmental resources within the project area. Rather, investment into the project site and surrounding areas will cultivate and enhance local environmental and cultural resources. Wakáŋ Tipi Center will be developed in tandem with the ongoing remediation and restoration of Bruce Vento Nature Sanctuary and incorporate environmental education into its programming to support conservation and preservation efforts.

Part III – Permits, Mitigation, Coordination and Public Involvement

PERMITS/MITIGATION

Permits

List all required permits, for the preparing the proposed project site and any zoning variances or changes. Indicate if any problems are anticipated in obtaining the permit

Remarks:

City of Saint Paul – General Building Permit
Capitol Region Watershed District – Stormwater Management Permit
Minnesota Pollution Control Agency – NPDES/SDS Construction Stormwater General Permit

Mitigation

Describe all mitigation measures for the proposed project. Include any impacts that cannot be mitigated or those that cannot be mitigated below threshold levels. Also, provide a description of any resources that must be avoided during construction.

Remarks:

Soil mitigation (remediation) will be necessary if contaminated soils are encountered during construction. Soil remediation will likely be limited to shallow excavation of contaminated soils (to 4 feet in most areas or as required by the MPCA) and replacement with clean fill. This would be consistent with remediation efforts for similar contaminants elsewhere within the BVNS. The volume of contaminated soil is expected to be approximately 1000 cubic yards. This waste will be handled in a manner approved by the MPCA.

Groundwater remediation will likely only be required if dewatering is necessary during construction of the building. Remediation would typically goal of monitoring have any groundwater discharge and disposal to the sanitary sewer system.

EARLY COORDINATION

List each agency coordinated with, the date coordination was sent, and if a response was received in the following table. Make sure to include a copy of the response in the appendix. For Instance, State Historic Preservation Office for Section 106 consultation, USDA Extension office for the NRCS-AD-1006, etc.

Resource Agency	Date Letter Sent	Date Response Received		
Minnesota SHPO	7/26/2021			
Tribal Government Agencies (12)	7/27/2021			
St. Paul Historic Preservation Commission	7/27/2021	7/28/2021		
US Fish and Wildlife Service		7/23/2021		
MNDNR/City of St. Paul (Floodplain issues)	10/20/2021	11/2/2021		

Remarks:

Draft EA posted on NEH's and LPCP website on September 22, 2021. No responses were received.

PUBLIC INVOLVEMENT

Some level of public involvement is encouraged for every Federal Action. **The level of public involvement should be commensurate with the proposed action.** Discuss any public involvement activities (legal notices, letters to affected property owners and residents, meetings, special purpose meetings, local papers newspaper articles, etc.), including the number of notices and the dates that have been or will be posted for this project.

Remarks: Lower Phalen Creek Project has incorporated public involvement from the start of the Wakáŋ Tipi Center project. Formerly a volunteer-led organization, LPCP has a long history of cooperation with local community groups and Dakota tribe members to push for equitable environmental restoration of East Saint Paul. The project has been well-publicized by articles in a variety of local news sources, including Indigenous outlets.

An interpretive center in the BVNS was envisaged in the Great River Passage, a master plan for Saint Paul's 17 miles of Mississippi river parklands, adopted by the Saint Paul Council in 2013. The vision was further developed by the engagement of 1,263 stakeholders that informed the creation and programming of Wakáŋ Tipi Center, including a community engagement survey conducted in 2017 in which community members called for more Dakota cultural programs. LPCP identified and met with 80-90 stakeholders representing a diverse array of LPCP community partners, business, art, cultural, educational, political, residential, and nonprofit organizations. An ethnically representative engagement team secured over 600 respondents to the survey, often through neighborhood district councils, community events, and LPCP activities. Over half of respondents were nearby residents and 14% were Indigenous, the latter constituting an outperformance of the service area proportion of 5%.

While the survey was primarily designed to elicit opinions about the Center's cultural programs, there were opportunities to discuss environmental issues. No concerns were expressed by the survey respondents.

The design of the Center was led by an Indigenous firm and informed by a Dakota-led community pre-design workgroup. The pre-design workgroup group met on five occasions in 2019, with a further meeting in 2021 to review design materials.

Public Controversy on Environmental Grounds

	Yes	No
Is the project anticipated to involve substantial controversy concerning community and/or natural resource impacts?		X

Remarks: The proposed project site resides within the limits of Bruce Vento Nature Sanctuary, an area currently undergoing remediation and restoration from a long history of heavy industrial use. Wakáŋ Tipi Center has been part of the broader BVNS vision from its inception and to date, no opposition to the project has been expressed.

Preparer Certification

I hereby certify that the information I have provided is complete and accurate, to the best of my knowledge:

Stuart Grubb, PG	**September 17, 2021**
Name	*Date*
Project Manager	***Emmons & Olivier Resources, Inc.***
Title	*Organization*

Recipient Certification (must be signed by an authorized official; may not be delegated to consultant)

I hereby certify that the information provided is complete and accurate to the best of my knowledge. I also recognize and agree that construction activity, including but not limited to site preparation, demolition, or land disturbance, is limited by 40 CFR §1506.1 - Limitations on actions until the NEH issues a final environmental decision for the proposed project(s) and until compliance with all other applicable NEH approval actions (e.g., all conditions of the grant award have been met) have occurred. All applicable Federal, State, and local permits required shall be obtained before proceeding with the proposed action.

Maggie Lorenz, Executive Director	**Lower Phalen Creek Project**
Name, Title, and Organization	

Having reviewed the above information, certified by the responsible official, the proposed projects warrant environmental processing as indicated below:

- [X] The proposed action has been found to qualify for a Condensed Environmental Assessment. The Finding of No Significant Impact is attached.
- [ ] The proposed development action exhibits conditions that require the preparation of a detailed Environmental Assessment.
- [ ] The proposed development action requires preparation of an Environmental Impact Statement.

	12/8/2021
Federal Preservation and Environmental Officer *National Endowment for the Humanities*	*Date*

This Environmental Assessment becomes a Federal document when approved by the Responsible NEH Official.

Figure 1. Location Map

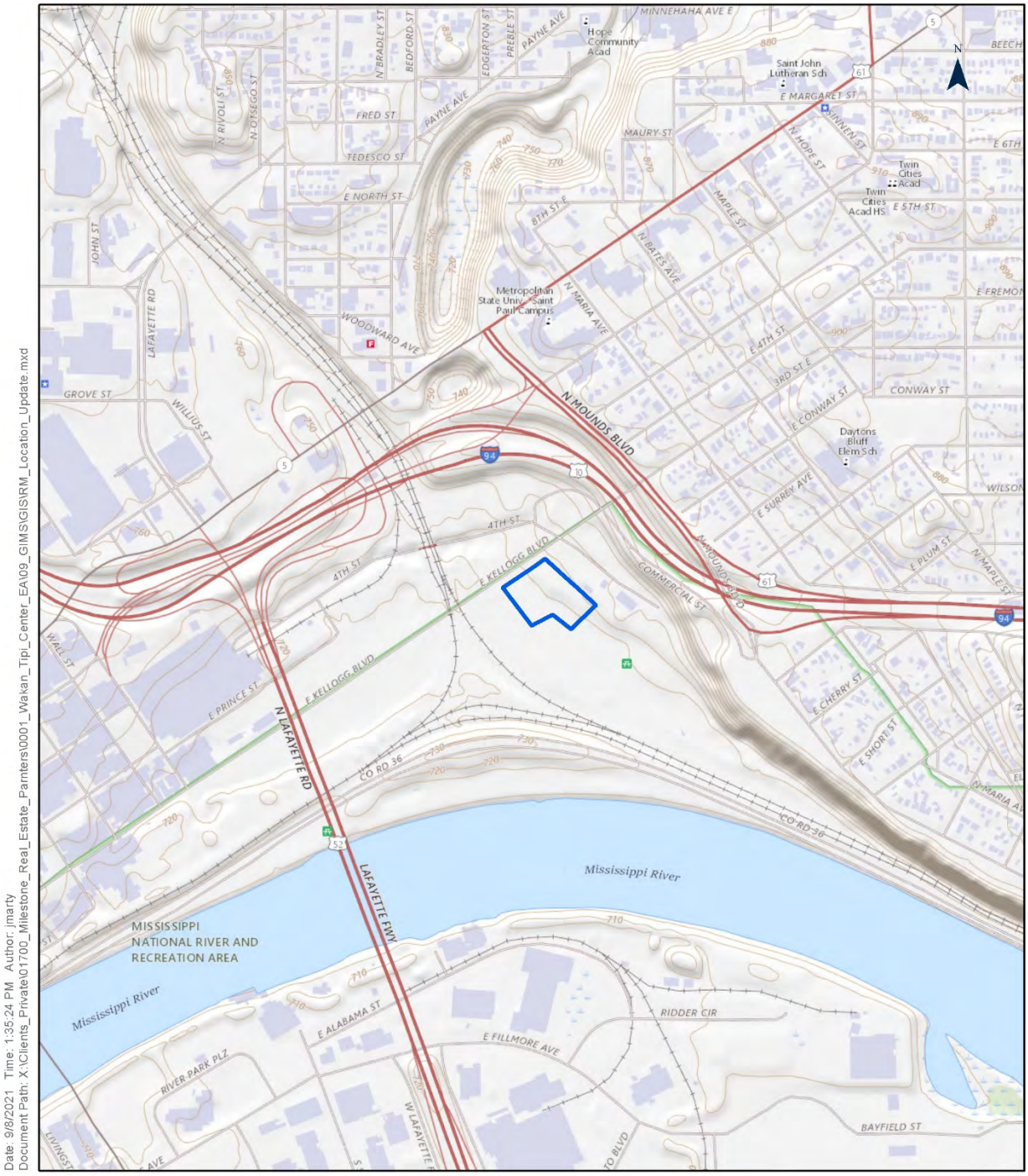
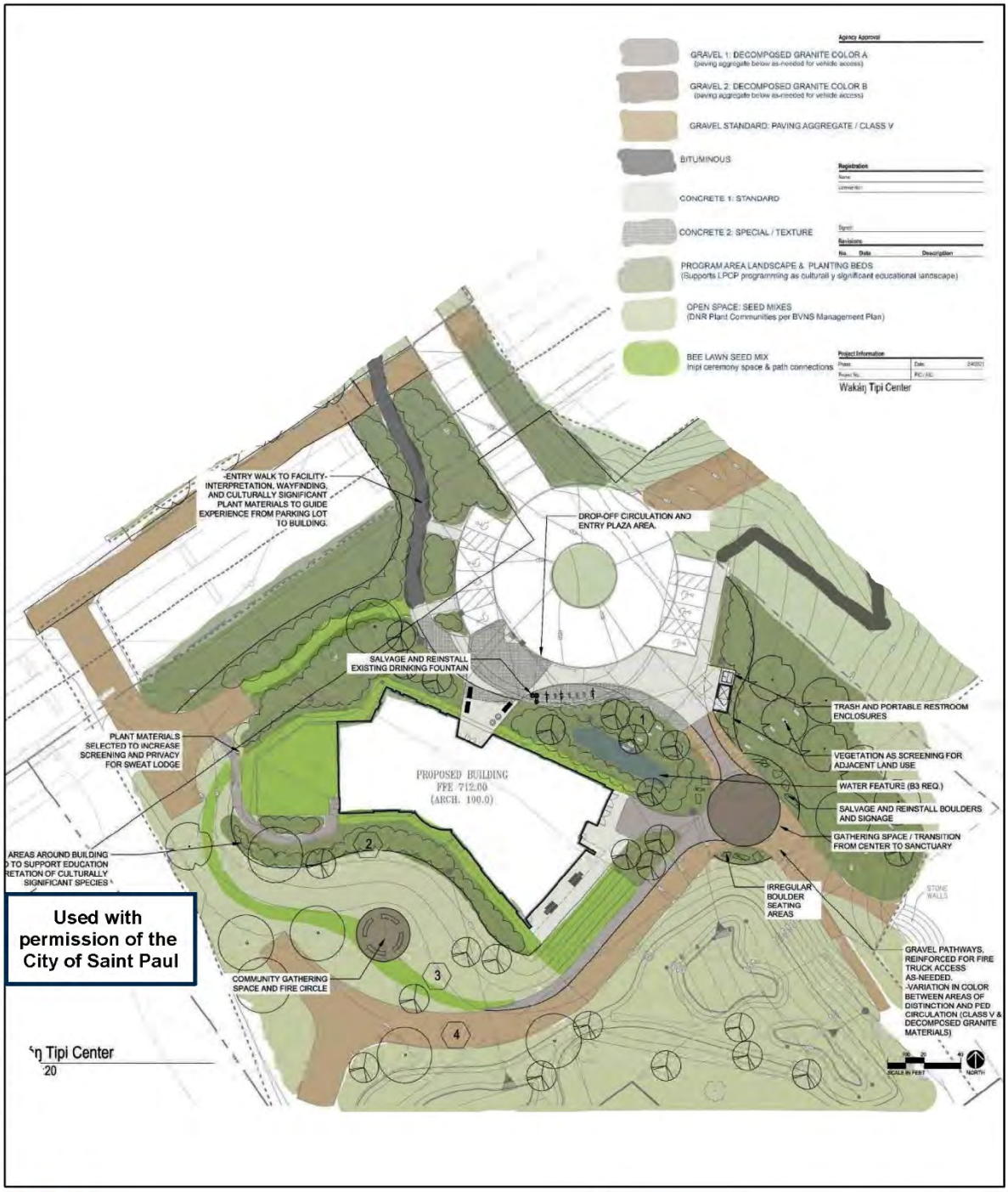


Figure 2. Site Map

Figure 3. Site Layout



Date: 7/30/2021 Time: 10:14:36 AM Author: jmarty
Document Path: X:\Clients_Private\01700_Milestone_Real_Estate_Partners\0001_Wakan_Tipi_Center_EA\09_GIMS\GIS\RM_Floodplain.mxd

EOR water ecology community

Wakan Tipi Center
Site Layout

Figure 4. Air Quality Standards

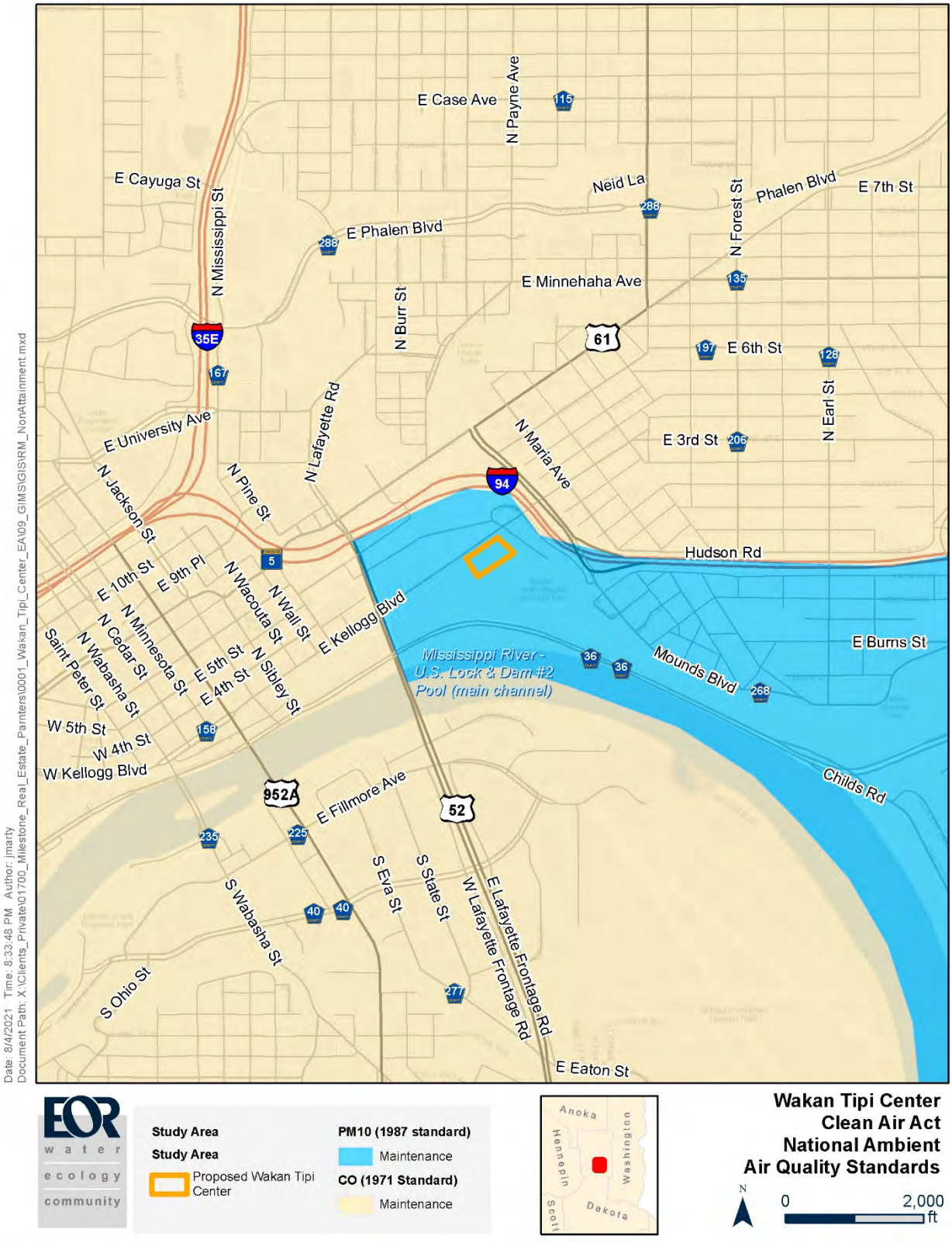
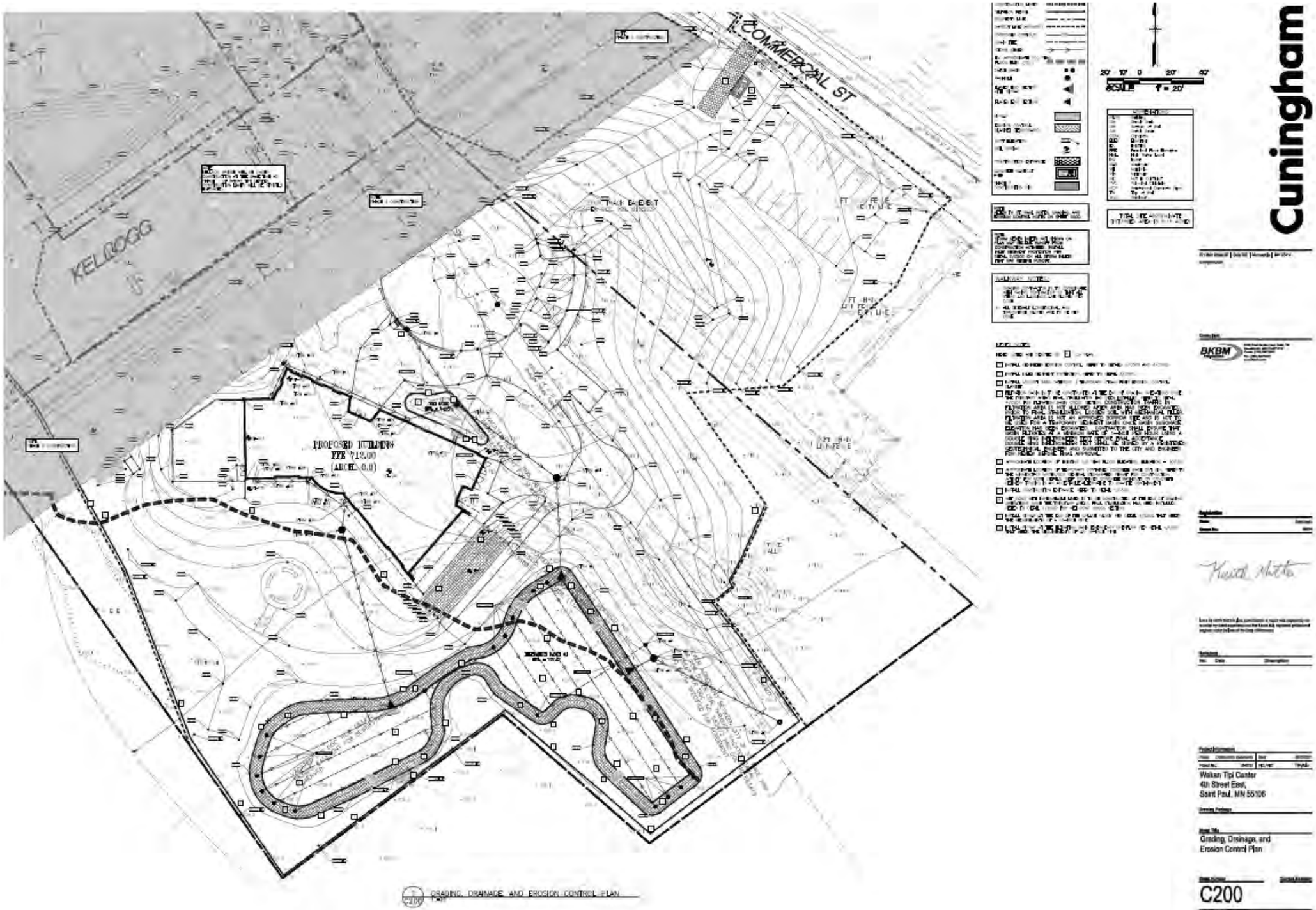


Figure 5. Grading Plan Elevations



Lower Phalen Creek Project
804 Margaret Street
Saint Paul MN 55106
651.370.2016
lowerphalencreek.org

September 20, 2021

Sarah Beimers
Environmental Review Program Manager
State Historic Preservation Office
Minnesota Department of Administration
50 Sherburne Avenue, Suite 203
Saint Paul, Minnesota 55155

RE: Wakan Tipi Center, Section 106 Review

Dear Ms. Beimers:

In 2020, the Lower Phalen Creek Project (LPCP) was awarded the National Endowment for the Humanities' (NEH) Infrastructure and Capacity Building Challenge Grant CHA-268798-20 to build and operate Wakan Tipi Center (WTC) at Bruce Vento Nature Sanctuary (BVNS) in Saint Paul, Minnesota. Because federal monies are involved, LPCP respectfully requests written concurrence from the Minnesota State Historic Preservation Office (MnSHPO) that our continuing undertaking complies with Section 106 of the *National Historic Preservation Act* (NHPA) of 1966 (16 U.S.C. 470f) and its implementing regulations found in 36 CFR Part 800. We are consulting with the MnSHPO on behalf of the NEH, which has delegated Section 10 responsibilities to LPCP. Our contact at NEH is Ann Piesen, whose contact information is provided in the delegation letter included as an attachment to this letter.

The WTC has three primary objectives: (1) to honor, accurately interpret and educate the community about the rich and diverse cultural and natural history and features of the site and the Lower Phalen Creek corridor, (2) to honor the significance of Wakan Tipi Cave as a Dakota sacred site, and (3) to create a gathering place and visitor facility for the community and guests in the area.

A 2017 survey of local residents and park users revealed a great desire for authentic Dakota interpretation of this site and a history and perspective of the area through an Indigenous lens. The design of the Center was led by an indigenous design firm and incorporated the priorities identified over the course of several meetings by a Dakota-led community pre-design workgroup. Consequently, the Center would provide a community-driven effort to honor the cave as a Dakota sacred site and interpret the culture and history of Dakota people in Saint Paul. Through the design of the structure itself – which incorporates bird-safe and green building principles and Dakota culture – and the environmental education programming, the Center will seamlessly integrate into the sanctuary and offer a space for cultural connections and healing through the arts and nature.

The WTC is designed to complement and support cultural and environmental interpretation programs for the BVNS. It will be a welcoming, beautiful enhancement to the sanctuary, both in terms of its minimal environmental impact and its visual appeal. It will provide a significant improvement to its location at the Commercial and 4th Street corner in Saint Paul, Ramsey County. The WTC will be a location for a variety of arts, cultural, educational, and environmental programs. The LCPC plans on

using an Infrastructure and Capacity Building and Challenge Grant from the National Endowment for the Humanities (NEH) to complete the first phase of the project.

We have retained the services of Emmons & Olivier Resources, Inc. to facilitate the Section 106 review of the project. As part of this effort, they have developed an archaeological and cultural resources overview of the project, which I have attached for your review. This overview includes: 1) a project summary; 2) the Area of Potential Effect for the project; 3) a review of properties listed on or eligible for inclusion on the National Register of Historic Places which identified one listed and three potentially eligible properties within the indirect APE defined for the project; 4) a determination of effect for the four properties; and 5) recommendations for the project. In addition to the overview and assessment, the technical memorandum includes a number of documents that support the conclusions and recommendation developed in the review: project overview maps, project plans, designation letter, reports of previous reviews and summaries pertinent to the project, and support and consultation letters from Native American tribes and organizations, the National Park Service, the City of St. Paul, and adjacent neighborhood and business associations.

The overview has incorporated many of the issues and concerns you identified in our previous meeting regarding the project. It has also benefitted from consultation with Dr. Dan Ott from the National Park Service, who was solicited – and has agreed to serve – as a consulting party for the project. It has also involved consultation with twelve Native American tribal historic preservation offices and/or governments. Consultation is on-going with other tribes and governments identified by the Tribal Assistance Portal or who have been involved with the development of the project since its inception and will continue until the preparation of the Finding of No Significant Impact for the Environmental Assessment is complete. Consultation letters and responses are included with the overview technical memorandum.

I have prepared a package of material for your review of the project. This material includes:

- Request of Project Review by the State Historic Preservation Office (SHPO) form (previously submitted on July 27, 2021)
- A cultural and archaeological resources overview technical memorandum which includes a description of the proposed Area of Potential Effect, summary of cultural and archaeological resources within and proximal to the proposed WTC, and a determination of effect statement which has been developed in consultation with the Federal Preservation Officer from the NEH, tribal groups, and the National Park Service
- NEH Delegation Letter

Please let me know if you have any additional comments or questions. Thank you for your previous contributions and insights regarding the potential effects to historic properties.

Gratefully,

Maggie Lorenz
Executive Director
mlorenz@lowerphalencreek.org

Please mail the completed form and required material to:

State Historic Preservation Office
203 Administration Building
50 Sherburne Ave
St. Paul, MN 55155

DEPARTMENT OF ADMINISTRATION

Request for Project Review by the State Historic Preservation Office (SHPO)

◉ This is a new submittal
○ This is additional information relating to SHPO Project #: _____

DATE: 7/27/2021

I. GENERAL PROJECT INFORMATION

Project Title: Wakan Tipi Center

Project Address (or Location): Intersections of Kellogg Boulevard East, Commercial Street, and 4th Street East

City / Township (circle one): St. Paul Zip: 55106 County: Ramsey

Legal Description: Township 29N Range 22E E/W (circle one) Section 32 Quarter-section _____

II. PROJECT CONTACT INFORMATION

Project Contact Name: Bill Martin, CEP, RPA Title: Senior Environmental Planner

Company/Agency: Emmons & Olivier Resources, Inc.

Street Address: 1002 Quartz Avenue Phone Number: 515.230.9588

City: Boone State: IA Zip: 50036 Email: bmartin@eorinc.com

III. FEDERAL AND/OR STATE INVOLVEMENT

Federal Agency (if applicable): National Endowment for the Humanities
(Agency providing funds, licenses, or permits)
Permit or Project Reference #: CHA-268798-20

State Agency (if applicable): _____
(Agency providing funds, licenses, or permits)
Permit or Project Reference #: _____

Local Agency (if applicable): _____

(Continued on Reverse Side)

Please refer to the **Instructions for Completing the Request for Project Review Form.** Submit one *Request for Project Review* form for each project. Project submittals will not be accepted via fax or e-mail. For questions regarding the SHPO review process, please visit our website or contact Kelly Gragg-Johnson, Environmental Review Specialist, at 651-201-3285 or kelly.graggjohnson@state.mn.us.

IV. PROJECT DESCRIPTION AND BOUNDARIES

A) REQUIRED FOR ALL PROJECTS

☑ Write a detailed description of the proposed project. (See attached.)

See attached document.

☑ Attach a map of project location, with project area(s) clearly marked. Road names must be included and legible.

B) Architecture

Are there any buildings or structures within the project area? ○ Yes ◉ No

If **No**, continue to the Archaeology section below. If **Yes**, submit all of the following information:

☐ List all buildings and structures within the project area and the year they were built. (See attached.)

☐ Photographs of ***each*** building and structure located within the project area, along with a photo key. Include streetscape images, if applicable. All photographs must be clear, crisp, focused, and taken at ground level. Aerial photos are insufficient.

☑ List known historic buildings or structures located within the project area (i.e., individual properties or districts which are listed in the National Register or which meet the criteria for listing in the National Register). (See attached.)

C) Archaeology

Does the proposed undertaking involve ground-disturbing activity? ◉ Yes ○ No

If **No**, this form is complete. If **Yes**, submit all of the following information:

☑ Attach the relevant portion of a 1:24000-scale USGS topographic map (photocopied or computer generated) ***with the project boundary marked***.

☑ Description of current and previous land use and disturbances: (See attached.)

The project area is a 3.1-acre area is within the Bruce Vento Nature Sanctuary and is currently used as public open space. It was a former railroad yard that was reclaimed and remediated in the early 2000s.

☑ Any available information concerning known or suspected archaeological resources within the project area. (See attached.)

See attached summary docment.

memo

Project Name |	Wakan Tipi Center, St. Paul, Ramsey County, Minnesota	**Date** |	9.17.21
To / Contact info |	Maggie Lorenz, Lower Phalen Creek Project		
Cc / Contact info |	Mary Kay Palmer, Milestone Real Estate Partners, LLC, Mark Kahn, Kahn Solutions Group, LLC, and Chris Stark, City of St. Paul Department of Parks and Recreation		
From / Contact info |	Bill Martin, CEP, RPA, Senior Environmental Planner and Stuart Grubb, PG, Senior Geologist, Emmons & Olivier Resources, Inc.		
Regarding |	Desktop Cultural Resources Review and Assessment, Wakan Tipi Center, St. Paul, Ramsey County, Minnesota		

Introduction

Lower Phalen Creek Project (LPCP) in partnership with the City of St. Paul (City) intends to build and operate Wakan Tipi Center (Center) at the northern end of the Bruce Vento Nature Sanctuary (BVNS) in Saint Paul, Minnesota. The Center has three primary objectives: (1) to honor, accurately interpret and educate the community about the rich and diverse cultural and natural history and features of the site and the Lower Phalen Creek corridor, (2) to honor the significance of Wakan Tipi Cave as a Dakota sacred site, and (3) to create a gathering place and visitor facility for the community and guests in the area. The Center is designed to complement and support cultural and environmental interpretation programs for the BVNS. It will be a welcoming, beautiful enhancement to the sanctuary, both in terms of its minimal environmental impact and its visual appeal. It will provide a significant improvement to its location, which is now asphalt pavement and highway overpasses. The Center will be a location for a variety of arts, cultural, educational, and environmental programs.

Because a Infrastructure and Capacity Building and Challenge Grant from the National Endowment for the Humanities (NEH) would be used to complete the first phase of the project, compliance with Section 106 of the *National Historic Preservation Act* is required. This cultural resources overview and assessment was developed to facilitate the Section 106 review of the proposed action by the federal agency, the MnSHPO, tribal historic preservation offices, and other consulting parties. It included reviewing existing literature for previous cultural resource work completed within the BVNS and surrounding areas; a review of documents for documented buildings, structures, and landscapes; a review of project plans as it relates to developing an understanding of the extent and scope of the proposed undertaking and its effect on historic and potentially historic archaeological and cultural resources; and a review of other ancillary environmental reports (Phase I and II environmental site assessments, geotechnical reports, and other environmental reviews) prepared for the project.

Bill Martin, CEP, RPA with Emmons & Olivier Resources, Inc. (EOR) prepared this document to assist with the planning and consultation process required under the *National Environmental Policy Act* and the *National Historic Preservation Act*. Mr. Martin meets the Secretary of Interior's Standards for performing cultural resource reviews and has close to 40-years' experience conducting Section 106 reviews for a wide range of project scopes for a variety of state, federal, and private concerns. He has advanced degrees in both anthropology and landscape architecture. Martin was aided in this analysis by Mr. Stuart Grubb, PG – a professional geologist with EOR who conducted analysis and planning for the BVNS in the early 2000s and who is very familiar with the site's history and soils as a result of that experience. Mr. Grubb has extensive experience in geomorphology, contaminant sites, and urban soils. Additionally, this review and assessment

was developed in consultation with Dr. Dan Ott – a cultural resource specialist with the National Park Service.

This overview includes a number of exbibits that support the conclusions and recommendations presented in this document:

This document is designed to facilitate the Section 106 review of the proposed action. It includes: 1) defining the Area of Potential Effect; 2) identifying historic resources within the Area of Potential Effect (APE); and 3) providing an assessment of project effects to historic or potentially historic properties. It also provides a summary of various parties who have been consulted regarding the potential effects. Project Location and overview maps are provided for reference in Exhibits 1A-1D.

The Undertaking

The LCPC has an offer of up to $520,000 in Infrastructure and Capacity Building and Challenge Grant from the NEH to complete the first phase of the project (the total project costs is an estimated $8.3 million) (Exhibits 2-4). The NEH has determined that their involvement defines the proposed action as an undertaking in accordance 36 CFR § 800.3. The NEH has delegated the LPCP to consult with the Minnesota State Historic Preservation Office (MnSHPO) and any party who may be interested in the project. Consultation will be integrated into the Environmental Assessment prepared for the project as part of the NEH's responsibilities under the *National Environmental Policy Act*. Ann Piesen Federal Preservation Office, National Endowment for the Humanities, is the federal agency contact for the project (Exhibit 5). She can be contacted at 202.606.8576 or at FPO@neh.gov.

The Center would be constructed on the northern portion of the BVNS, and a temporary parking lot east of the Center that would be used during the construction of the Kellogg Boulevard Bridge project is owned by the City. The property is located at the intersections of Commercial Street and 4th Street East and underneath the East Kellogg Boulevard bridge. The BVNS property consists of approximately 27 acres of land that currently is zoned as municipal services.

The building will be an approximate 9,000 square foot, one-story slab on grade building with frost footings and 40- to 60-foot-deep helical piers for foundation support, a geothermal system for heating and cooling, new parking, outdoor seating, and landscape work. An existing parking lot to the northwest will be expanded to the southwest. The project would be connected to existing water, telecommunication, sewer, natural gas, stormwater, and electrical systems. It will include grading, grubbing, trenching, and other dirt work necessary to construct the Center. Approximately 1,000 cubic feet of contaminated soil will need to be removed and disposed at a certified facility. Staging, stock piling, and storage will be on-site. Most of the connecting infrastructure would be to the north underneath Kellogg Boulevard, though the gas and sewer lines would run to the east to Commerce Street through areas covered with fill and associated with the temporary parking lot. Piping and wiring would be placed in narrow slot trenches no more than 18 to 24 inches wide and installed with a mechanical ditcher or small trackhoe.

The installation of the temporary parking lot east of the proposed Center would involve grading of recently deposited fill originating from areas outside the BVNS to create an ADA-compliant entrance into the facility.

Context Summary

As shown in Exhibits 1B-1D, the Center would be situated on a 3.6-acre parcel within the BVNS. BNSF formerly operated a railroad maintenance facility on the BVNS. Standard Oil Company and the former St. Paul & Duluth Railroad operated aboveground petroleum storage facilities. Pintsch Compressing Company also operated a manufactured gas plant adjacent to the Property. All of these operations were abandoned decades ago. Significant portions of the Property also have been filled, and this fill material contains varying amounts of brick, glass, coal fines, slag, and concrete.

The temporary, 1.0-acre parking lot previously supported a mix of uses including approximately eleven homes built on un-platted properties, and four buildings built by the Standard Oil Company. The 36,800 square foot, four-story warehouse was demolished in 2015. At the time, the concrete building slab was covered with fill as part of a reclamation effort (The slab would be partially impacted by development of the temporary parking lot and utility/sewer line installation.). Based

on the 1903 Sanborn map, it is hypothesized that the warehouse building was originally used for product barreling. Later, the warehouse was leased as space for other types of wholesale distribution — predominantly wholesale fruit. In approximately 1994, this area was purchased by an individual who used the warehouse building for storage of heating, ventilation and air-conditioning equipment. In 2000, it was acquired by Venture Real Estate, LLC, a development corporation planning to redevelop the property and adjacent parcels as housing. Various investigations identified historic fill soils impacted with arsenic, lead, mercury, and polycyclic aromatic hydrocarbons. Remedial actions were conducted in 2010, including excavation of 1,340 cubic yards of impacted soil from hot spots and pre-existing stockpiles. Soil was cleaned to recreational standards in the top four feet. Another 1,600 cy of impacted fill soil was excavated, consolidated on-site, and capped by four feet of clean fill. Impacted soil was left on-site below four feet ground surface and an environmental covenant was filed on March 19, 2013.

For areas north of the Center and Kellogg Boulevard where new utilities for the Center would be placed and connected to the main lines, the 1885 to 1890 Sanborn maps show a portion of a building and boiler storage and Phalen Creek on the north side of this area. From 1903 to 1910, there is a building on the south side of the area labeled pipe, woodware, stove and furnace storage. Historical air photos show much of the area as vacant and wooded between 1937 and the 1980s. A portion of this area was cleared and possibly used for parking in the 1980s. A stockpile of material also was observed in 2004, which may be associated with the BVNS cleanup.

The detailed history of the development of the BVNS and its associated land-use and developmental history presented in *Lower Phalen Creek Literature Search for Historical Archaeological Potential, St. Paul, Ramsey County, Minnesota. Submitted to the City of St. Paul Division of Parks and Recreation and the Trust for Public Land – Midwest Region, St. Paul* is incorporated into this review by reference.

The prehistoric and early historic overview of the immediate area presented in *Determination of Eligibility of Carver's Cave (21RA27) and Dayton's Bluff Cave (21RA28), Bruce Vento Nature Sanctuary Projects, St. Paul, Ramsey County, Minnesota* and *Indian Mounds A Sacred Place Of Burial: Cultural Landscape Study and Messaging Plan* is also incorporated into the review by reference.

Area of Potential Effect

Pursuant to 36 CFR § 800.4(a)(1) and commensurate with the level of funding being provided by the NEH for the proposed undertaking, the APE includes two discontiguous areas (see Exhibits 1B, 1C, 1D, 2, 3, and 4 for construction details):

- The building site, utility lines and connections, and temporary parking lot (direct APE); and
- The area around Wakan Tipi and Dayton's Bluff caves south of the Center (indirect APE).

Consequently, the APE for the referenced project is defined as:

- The direct APE is defined as the 3.6-acre building site immediately south of Kellogg Boulevard;

- A 1.0-acre temporary parking lot to the east of the building site that will be used during planned roadway (direct APE);
- Ground north of Kellogg Boulevard where utilities would be placed and connected to the main lines (this area also corresponds to where the permanent parking facility would be located after completion of the bridge construction project) (direct APE);
- A 250-foot indirect APE around the Center building site; and
- A buffer around Wakan Tipi Cave (also referred to in the historical literature as Carver's Cave and identified as Site 21RA27 with the Minnesota Office of the State Archaeologist) and Dayton's Bluff Cave (Site 21RA28) (indirect APE).

The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

Future phases for the Center are outside the scope of NEH support and are not included in the APE for the undertaking. Future work is likely to include an additional parking lot north of Kellogg Boulevard, which is tentative scheduled for the 2024 or 2025 timeframe, pending separate funding and other administrative details. The City will begin renovation of the Kellogg Boulevard bridge deck and piers in 2022 and will be using the Center's future parking lot parcel as staging area for the bridge project. LPCP and the City intend to construct additional parking lot in 2024 or 2025 once the bridge project is complete. Installation of the parking lot is not considered part of this undertaking, though utility lines and connection would occur in this area and are defined as part of the NEH's APE.

Identification of Historic Properties

Based on the review of the existing and available literature of previous archaeological and cultural resources studies (summarized below), four (n = 4) historic or potentially historic properties are located within the indirect APE defined for the project: St. Paul Depot, Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment (XX-RRD-NPR001), Wakan Tipi Cave (Site 21RI27), and Dayton's Bluff Cave (Site 21RI28) (Table 1).

The area in and around the Center has been subject to intense, systematic archaeological and cultural resources inventories, archaeological testing programs, architecture and historical resource inventories and documentation, and nomination of historic properties to the National Register for a variety of developments, planning, and transportation initiatives. This previous work as resulted in the recording of such diverse as prehistoric archaeological resources to industrial archaeological sites to railroad corridors and associated facilities in the general area. The following section provides a chronological review of previous investigations conducted within or immediately outside the APE and a summary of identified archaeological and cultural resources as a result of these investigations. Select reports and documents which have a direct bearing on this project and which were used to complete this summary are found at the end of the document.

No archaeological resources, historical resources, or historic properties would be directly affected or altered by the construction of the Center itself or associated utilities. As mentioned above, a concrete slab associated with a destroyed Standard Oil building would be partially removed to establish the necessary grade to create an ADA-compliant entrance off the temporary parking lot east of the Center.

Table 1. Summary of Identified Archaeological and Historical Resources – Wakan Tipi Center.

Property	Eligibility Status	Relationship to Project	Comments
St. Paul Depot (RA-SPC-5225; RA-SPC6907)	Listed	Within 250-foot indirect APE	Development of the Center would not affect the setting, feeling, association, materials, workmanship, design, and location of this property – No adverse effect.
Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment (XX-RRD-NPR001)	Likely eligible	Within 250-foot indirect APE	Development of the Center would not affect the setting, feeling, association, materials, workmanship, design, and location of this property – No adverse effect.
Wakan Tipi Cave (Site 21RI27)	Eligible	Within discontiguous indirect APE – 1,200 feet southeast of Center	Existing measures plus increased monitoring would protect this likely property – No adverse effect.
Dayton's Bluff Cave (Site 21RI28)	Likely eligible	Within discontiguous indirect APE – 1,100 feet southeast of Center	Existing measures plus increased monitoring would protect this likely property – No adverse effect.
Concrete slab	Not eligible	Within temporary parking lot	No effect – No additional work or stipulations should be required.

The immediate project area has been intensively inventoried for cultural and archaeological resources by specialists who meet the Secretary of Interior's Standards on several different occasions for several different project scopes. No archaeological, historical, or other types of cultural resources are reported within the defined direct APE for this project. Recent geotechnical and environmental site assessment investigations within the proposed Center indicated 10 to 12 feet of recent fill associated with reclaimed railyard covers the proposed site. Mapped soils are limited to Udorthents, wet substratum. No standing buildings or structures occur within the APE, and none are recorded with the MnSHPO within the immediate project area.

Authorized by the NHPA and administered by the National Park Service in collaboration with the MnSHPO, Division of Cultural Affairs, the National Register is the official list of the country's

historic places worthy of preservation and recognition. In Ramsey County, over 100 properties are currently listed on the National Register, including eight properties with a 0.5-mile buffer of the proposed Center. The St. Paul Depot National Register Property is within the defined indirect APE of the proposed Center. Other listed properties in the general area outside the Center APE include the Lower St. Paul Historic District, the Brunson House, the Muench House, the Eudd View Fields, Schomstein Grocery and Station, Seventh Street Improvement Arches, and the Glesen-Hauser House. None of these historic properties would be directly or indirectly affected by the proposed action. Nearby recorded buildings and structures include several railroad bridges (RA-SPC-7115, RA-SPC-7716, RA-SPC-7128, and (RA-SPC-7129) 700 feet north of the proposed Center and several roadways and railroad grades south of the proposed development. Additionally, the recently defined and potentially historic StPS&TF / Omaha Road Railroad Corridor Historic District (XX-RRD-CNW001) is located immediately outside the defined indirect APE for the Center and would not be affected by its development.

Remediation Studies – 2001-2004

The first investigation was performed by the Section 106 Group in 2003 and 2004 for activities associated with the reclamation and clean-up activities within the then proposed BVNS. This included an initial literature review that provided a detailed land-use history of the BVNS and identification of over 20 potential cultural resources with likely structural remains and/or archaeological signatures. The second phase consisted of archaeological testing and monitoring of highly contaminated areas that had potential cultural resources identified during the initial literature review. In addition, Wakan Tipi and Dayton's Bluff Caves were described and assessed in terms of their archaeological site potential and as Traditional Cultural Properties.

The initial literature review demonstrated the BVNS had the potential to yield intact archaeological deposits, with the greatest potential existing in those areas where properties, specifically the Sanford Sawmill, Ames and Hoyt Sawmill, North Star Brewery, the Jacob Schmidt home and brewery workers' housing, shanties near the brewery, and the lime house and/or pop bottling facility. As a result of the exhaustive literature review prepared for the remediation effort at the BVNS, a plan map of the project area with historical structure locations, planned soil remediation areas, and proposed development areas was generated using ESRI ArcView 8.1. Corners of structures were selected on the ArcView map, and the points' x- and y-coordinates were downloaded into a Trimble Pro XR/XRS Global Positioning Systems unit. The GPS unit was then used to locate and mark these features in the field prior to excavation, thereby effectively locating historical structures for testing.

As shown in Exhibit 6, none of the archivally identified structures, buildings, and remains associated with the early industrial development of the BVNS are within the defined APE for the current undertaking. A review of Sanborn plats, historical aerial orthographic photographs, maps, and other documents showed that the Center was covered with portions of a large switching yard and that rails and supporting infrastructure was removed sometime in the 1970s through 1980s prior to site remediation. The proposed Center was not subject to subsurface investigations during the 2003-2004 investigations of the BVNS property, as no potential archaeological signatures were identified in this portion of the BVNS during the archival and literature review of the project and no wetland reconstructions were planned for this area.

Wakan Tipi Cave (Site 21RA27) and Dayton's Bluff Cave (Site 21RA28) are two traditional cultural properties that are located within the BVNS, and both sites were included in the cultural resources investigations associated with the reclamation efforts at the then-proposed BVNS. Dayton's Bluff Cave is a reported rock art site located approximately 1,500 feet south, southeast of the southern edge of the direct APE. Because the presence of rock art could not be established during the 2003 investigation of the property, it remains unevaluated in terms of its potential listing on the National Register of Historic Places. Because of its ceremonial and social importance to the Dakota and because of its association with Dakota religious practices, Wakan Tipi Cave was evaluated as eligible on the National Register of Historic Places as a Traditional Cultural Property under criteria A and C. It is also important of its association with Exploration and British and Colonial Exploration of the West themes. This important site is located approximately 1,800 feet south, southeast of the southern edge of the APE. Dayton's Bluff Cave has not previously been evaluated in terms of its potential eligibility for listing on the National Register. For purposes of this project, the NEH has determined that the site is potentially eligible for listing as a Traditional Cultural Property under Criteria A and C. During various meetings, members of the Dakota nation and other Native American groups and governments have not expressed any concerns about direct or indirect effects on these two properties as a result of the development of the Center.

2018 Inventory

The second investigation was conducted by Hess, Rosie, and Company in 2018 for the Bruce Vento Regional Trail Bridge project. No above-ground historical resource was reported within the Center APE as a result of the 2018 study. This study did involve some limited subsurface testing within portions of the current APE, but no archaeological resources were identified. Soils consisted of fill zones mixed with railroad yard debris (cinders, clinkers, unidentifiable metal objects). The results of the archaeological inventory can be found in Exhibit 7.

2020 Cultural Landscape Assessment

Recently, the St. Paul Department of Parks and Recreation sponsored a cultural landscape study and messaging plan to assist with the management of a number of important burial sites on the bluffs along the Mississippi River and its tributaries. While area within the Center is not included in the landscape assessment, the area covered by the plan is immediately east of the APE on the bluff above river bottom. This study provides recommendations on opportunities to enhance interpretation and physical connections between the Wakan Tipi Center and the cemetery at Indian Mounds. The results, interpretations, and recommendations presented in *Indian Mounds A Sacred Place Of Burial: Cultural Landscape Study and Messaging Plan* are incorporated into this document by reference. The Indian Mound Park Mound Group (Site 21RA010) has recently been listed on the National Register as part of this landscape initiative. The site is perhaps the best-preserved mound group in the Minneapolis-Saint Paul area. It is located approximately 4,800 feet south, southeast of the Center. Additionally, The Dayton's Bluff site (Site 21RA005) is a well-known but poorly documented mound group located on the high bluffs approximately 1,150 feet south, southeast of the southern edge of the Center. Neither archaeological site would be directly or indirectly affected by the proposed action.

2021 Minnesota Department of Transportation Review

In June 2021, the Minnesota Department of Transportation (MnDOT) prepared a technical memorandum as part of the Section 106 review for various components associated with the Kellogg Boulevard Bridge Replacement project, which includes much of the direct APE (the Center itself, utility corridors and connections, and the temporary parking lot east of the Center) defined for the current project area under review in this document. Based on the review of the existing literature, they concluded the following:

- There are no known archaeological sites within the Kellogg Boulevard Bridge project APE;
- Although the areas within the APE have high site potential based on the landscape based on MnModel 4 Landscape Suitability Model, the area has been significantly disturbed by development and railroad construction. It is unlikely that an intact significant site would be affected by planned bridge replacement activities; and
- Identified historical resources within the Kellogg Boulevard APE include:
    - Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment
    - StPS&TF / Omaha Road Railroad Corridor Historic District
    - Lowertown Historic District
    - St. Paul Union Depot

MnDOT cultural resources specialists recommended a determination of No Historic Properties Adversely Effected and no additional work (see Exhibit 8).

Determination of Effect and Recommendations

The Center would be placed on the northern end of the BVNS in areas associated with the historical railroad switching yard and petroleum product distribution site. Based on recent geotechnical investigations, the area is covered with up to 12 feet of recent fill. Fill zones overlay sands, mucks, and regolith to a depth of at least 20 feet. Construction of the Center itself and utility lines into the facility would not affect any standing buildings or structures.

Archaeological Resources

Based on a review of historic maps and plats, geotechnical studies, and review of previous work done in the BVNS, there is a very low potential for historic-period, contact, or precontact archaeological signatures within the immediate footprint of the facility or the connecting telecommunication, sewer, natural gas, water, stormwater, and electrical systems based on:

- The area has been extensively and repeatedly impacted by the development and reclamation of the former railroad yard since at least the 1890s and continuing up to the early to mid-2000s. Any archaeological signatures, layers, or deposits have been removed, dislocated, or scattered as a result of these various activities;
- Previous archaeological, historical, and archival investigations have failed to identify any potential archaeological or historical resources in this area;

- Soils are heavily modified soils consisted of Udorthents overlying wet substratum. Previous archaeological investigations and recent geotechnical bores verify mapped soil conditions; and
- This conclusion is supported by the recent MnDOT cultural resources review of the Kellogg Boulevard project area.

The temporary parking lot and natural gas and sewer lines to the east of the Center would not affect any significant archaeological resources. This is based on:

- The area has been remediated up to four feet, and clean fill covers much of the area, with no potential for intact, subsurface archaeological layers, signatures, or deposits; and
- This conclusion is supported by the recent MnDOT cultural resources review of the Kellogg Boulevard project corridor.

Historical Resources

The historic St. Paul Depot National Register Property is located immediately west of the Center and includes not only the depot but waiting platforms, docks, and rail grades into and out of the Depot property. The property was originally listed on the National Register in the last 1980s and included only the art deco depot building, which is located over 0.5 miles west of the Center. In 2018, the property boundary was expanded as a result of various efforts associated with the expansion and modernization of the transportation corridors in St. Paul. Based on the National Register nomination form which provides boundaries for the enrolled area, the historic property is defined as over 40 acres in size, with only a small portion of the rail grade leading into the Depot proximal to the Center. (The main depot is over 0.5 miles west of the Center.) The western edge of the Center and the eastern edge of the defined National Register property boundary are approximately 150 feet from each other. Construction of the Center would not adversely affect the feeling, setting, workmanship, association, materials, location, and other aspects of integrity that contribute to its significance. The portion of this property that is proximal to the proposed project is an active rail grade lacking substantial buildings and structures and has been modified as part of normal operations of the rail line. It is a contributing element to the overall property.

The potential Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment is located immediately northwest of the Center and north of the St. Paul Depot property boundary starting at the East Kellogg Boulevard Bridge and continuing roughly 14 miles east, northeast. The historic property – originally constructed by the LS&M Railroad in 1868 – has previously been evaluated as eligible for listing on the National Register under Criterion A because of its association with the railroad development. Project activities would not directly or indirectly affect attributes or contributing elements that contribute to the significance of this potential historic property and district. The only resource associated with this likely historic property within the indirect APE is the extant railroad roadway, which has previously been evaluated as a contributing element.

The concrete slab associated with the recently destroyed, former Standard Oil warehouse – which would be partially removed to establish the desired grade – is not associated with a previously recorded and evaluated building. It was subject to arson in the mid-2010s, and it was razed and the

site cleaned up in or around 2015. The slab is not a significant cultural resource for the following reasons:

- The building's integrity of feeling, setting, association, workmanship, material, and other required attributes has been greatly diminished with its destruction and removal.

Wakan Tipi and Dayton's Bluff Caves

In terms of indirect affects, the entire BVNS has been systematically and intensively inventoried for cultural and archaeological resources for two projects. While no cultural or archaeological resources have been identified within the immediate APE, three potentially historic properties important to the traditional cultural practices of the Dakota people occur over 1,000 feet south of the proposed facility within the sanctuary: Wakan Tipi Cave and Dayton's Bluff Cave. Installation of the Center and potential increased visitation to the BVNS as a result of programming and events at the center would not adversely affect these properties due to the following factors:

- Construction of the Center would not involve ground in or near these two sites;
- The BVNS remains under a protective Conservation Easement that affords permanent protection to these sites from further development;
- Existing protective measures (establishment of deep-root native vegetation, steel bars over the entrances of caves and recesses) already exist that limit access to these resources and protect them from further harm;
- Previous development of the area has removed potentially sensitive and significant contact and pre-contact artifacts, based on previous archaeological testing and investigations;
- The area is covered with deep-rooted native vegetation that obscures surface artifacts and any other potential signature in the unlikely event they have survived development of the area;
- Existing recreational trails – which were originally and purposively placed away from the resources – would receive the majority of use, with no additional trails to be constructed as part of this initiative;
- Construction of the Center would provide workspace for LPCP personnel to be on-site and to monitor visitor activities;
- With its low profile and surrounding prairie vegetation which masks and soften views from these resources to the Center, the Center has been designed in such a way as not to visually intrude or affect these two resources;
- Interpretative signage and exhibits would present the significance and sacredness of the Wakan Tipi Cave to Native Americans and would discourage and redirect visitors to other areas away from these resources.

Consultation

Planning and development of the Center has been conducted over a 10-year period, and many groups (Native American tribes and governments, neighborhood associations, state and local officials, National Park Service) have been intimately involved with the development and design of the property (Exhibits 9 and 10). While acknowledging the importance of Wakan Tipi Cave and the general area, none have expressed concerns regarding adverse effects on any listed or potentially eligible property.

As part of the Section 106 process, the following non-tribal parties were invited to participate:

- The St. Paul Heritage Preservation Commission was invited to participate in the review of the project. Because no historic property would be adversely affected in their view, they decided not to participate; and
- The Mississippi National River and Recreation Area, National Park Service, was invited to participate because of their past involvement with the BVNS and its immediate mission to promote and protect natural and cultural resources within. The Acting Superintendent designated Dan Ott, PhD, Cultural Resource Program Manager, as the cultural resources liaison for this consultation (see Exhibit 10).

Using the U.S. Department of Housing and Urban Developments Tribal Directory Assistant Tool portal and including several groups not identified using the portal but who have been involved with the development of the Center, tribal officials and Tribal Historic Preservation Officers from the following tribes and nations were invited into the Section 106 review and consultation for the project (see Exhibit 9):

Apache Tribe of Oklahoma	Cheyenne and Arapaho Tribes, Oklahoma	Flandreau Santee Sioux Tribe of South Dakota
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	Iowa Tribe of Kansas and Nebraska	Menominee Indian Tribe of Wisconsin
Lower Sioux Indian Community in the State of Minnesota	Prairie Island Community in the State of Minnesota	Santee Sioux Nation, Nebraska
Upper Sioux Community, Minnesota	The Ho-Chunk Nation	Shakopee Mdewakanton Sioux Community

Many of these groups have been involved with the development of the Center since its inception, and many were involved with the preparation of *Indian Mounds A Sacred Place Of Burial: Cultural Landscape Study and Messaging Plan*, which provides specific recommendations for the development of the Center as it relates to the continued protection and interpretation of the site. These recommendations have been integrated into the project design. The identified Tribes have either declined or not responded to be a consulting party for this undertaking, However three Tribal Historic Preservation Offices have responded to the invitation to participate in the consultation process (see Exhibit 9). These parties will continue to be notified about preparation of the NEPA Environmental Assessment being prepared for the project.

Conclusions

Based on reviews of existing cultural resource reports and documents; an examination of soil data presented in various environmental reviews for both the BVNS remediation efforts and Wakan Tipi Center; and long-term consultation with neighborhood and other civic associations, tribal representatives and governments; and federal and state officials, this review has shown:

- Areas that would be directly affected by construction related activities have been systematically and intensively disturbed over the past 125 years with railroad and industrial development in this part of St. Paul, including utility connections;
- No archaeological resources have been identified during previous two intensive Phase I archaeological inventories within areas that will be developed for the Center;
- A 2021 MnDOT cultural resources review for the Kellogg Boulevard Bridge project – which included much of the direct APE defined for this undertaking – supports the conclusions developed in this review;
- The development of the temporary parking lot east of the Center would necessitate the removal of a concrete slab foundation associated with a building that was previously subject to arson, razed, and reclaimed (this slab is not a significant cultural nor historical resource.);
- The St. Paul Depot National Register Property and Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment are within the 250-foot indirect APE defined for the project. The Center would not adversely affect the materials, setting, association, feeling, workmanship, or other attributes that contribute to the significance of these two properties;
- Existing conservation easements and protective measures ensure the Wakan Tipi and Dayton's Bluff caves would not physically be affected by potential increase in traffic to the BVNS as a result of the opening of the Center;
- Incorporating Native American perspectives and cultural references – coupled with a low profile design integrated into a native prairie planting – neither the Wakan Tipi nor Dayton's Bluff caves would be visually affected by the opening and operation of the Center; and
- Since its inception, LPCP staff and board of directors have worked with Native American tribal representatives and governments, local neighborhood and civic associations, and federal and state officials to ensure both the Wakan Tipi and Dayton's Bluff caves would not only be protected but positively affected by increased awareness of this important and cultural significant area (see Exhibit 10).
- The proposed action would not result in any reasonably foreseeable effects caused that may occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5 (a)(1)), as the area in and around the Center is actively managed for natural and recreation values and is under a permanent conservation easement. In addition, it would not result in the change character (36CFR 800.5 (a)(2)(iv)) or and introduce visual, atmospheric, or audible elements that would affect historic properties (36CFR 800.5(a)(2)(v)) (The area is an active, dynamic urban environment with an eclectic range of architectural styles and persistent, intense automobile and railroad traffic and concomitant noise.).

Recommendations

Because no property listed on or eligible for listing on the National Register would be adversely affected – either directly or indirectly – by the development of the proposed Center, we recommend a Determination of No Adverse Effect for the proposed action. This is based on the following:

- No archaeological resources would be directly affected by the proposed action;
- The proposed undertaking would not affect the feeling, setting, association, workmanship, materials, design or location that contribute to any of the identified historical resources (St.

Paul Depot or the Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment); and

- Existing protective measures in tandem with long-term consultation with Native American groups and governments, local civic and neighborhood associations, and local, state, and federal officials resulting in a thoughtful design of the Center are sufficient to ensure the Wakan Tipi and Dayton's Bluff caves are not indirectly and negatively affected by the opening and operation of the Center.

The National Park Service and several Native American tribes have agreed with the assessment that the development of the Center would not adversely affect any significant archaeological or cultural resource or property.

Although highly unlikely, if human remains are found during construction or maintenance activities, all activity that might disturb the remains shall cease and may not resume until authorized by local law enforcement or the Minnesota State Archaeologist Office, in accordance with Minnesota Code.

References Consulted for Review

Archaeological Monitoring And Phase I/II Archaeological Survey and Evaluation for the Bruce Vento Nature Sanctuary at Lower Phalen Creek, St. Paul, Ramsey County, Minnesota, 2004, prepared by Michelle Terrel and Andrea Vermeer, The Section 106 Group, for the City of St. Paul, Division of Parks and Recreation.

Lower Phalen Creek Literature Search for Historical Archaeological Potential, St. Paul, Ramsey County, Minnesota. Submitted to the City of St. Paul Division of Parks and Recreation and the Trust for Public Land – Midwest Region, St. Paul, 2001, Michelle Terrel, Submitted by The 106 Group to the City of St. Paul, Division of Parks and Recreation and the Trust for Public Land – Midwest Region, St. Paul.

Bruce Vento Bridge Project: Phases I/II Survey Of Cultural Resources, 2018, prepared by Rachel Peterson and Charlene Rosie, Hess, Rosie, and Company, with contributions from Christina Harrison, Archaeological Research Services, for the City of St. Paul.

Determination of Eligibility of Carver's Cave (21RA27) and Dayton's Bluff Cave (21RA28), Bruce Vento Nature Sanctuary Projects, St. Paul, Ramsey County, Minnesota, 2004, Michelle Terrel, Submitted by The 106 Group to the City of St. Paul, Division of Parks and Recreation.

Indian Mounds A Sacred Place Of Burial: Cultural Landscape Study and Messaging Plan, 2020, Submitted by Quinn Evans Architect, Ten x Ten, and Allies, LLC to the City of St. Paul, Division of Parks and Recreation

2019 and 2020 Phase II Environmental Investigation Wakan Tipi Center (Bruce Vento Nature Center & Former Interpretive Center) Intersections of Kellogg Boulevard East, Commercial Street, and 4th Street East Saint Paul, Minnesota, January 2021, report submitted to the Lower Phelan Creek Project and the City of St. Paul by Landmark Environmental, Inc.

National Register Form for the St. Paul Union Depot, 2014. NPGallery Asset Detail (nps.gov) – Accessed on July 21, 2021.

Multiple Properties Inventory Form for the Saint Paul, Stillwater & Taylors Falls/Chicago, Saint Paul, Minneapolis & Omaha Railroad Corridor Historic District. Manuscript on file at the Minnesota State Historic Preservation Office.

Archaeological Site forms for Sites 21RA005, 21RA027, 21RA028, and 21RA048. OSA Portal (mn.gov) – Accessed on July 20, 2021.

Architectural Forms for RA-SPC-7115, RA-SPC-7116, RA-SPC-7128, and RA-SPC-7129. On file at the Minnesota State Historic Preservation Office.

Web Soil Survey, Web Soil Survey - Home (usda.gov), Accessed on July 21, 2021.

Tribal Directory Assistance Tool, TDAT (hud.gov), Accessed on July 19, 2021.

Historic Districts and Sites: Online Tools – Interactive Map of Local State and National Districts and Sites -- Historic Districts and Sites | Saint Paul, Minnesota (stpaul.gov). City of St. Paul, Accessed on July 17, 2021

Exhibit 1 – Project Location and Overview Maps

Exhibit 1A – Location Map

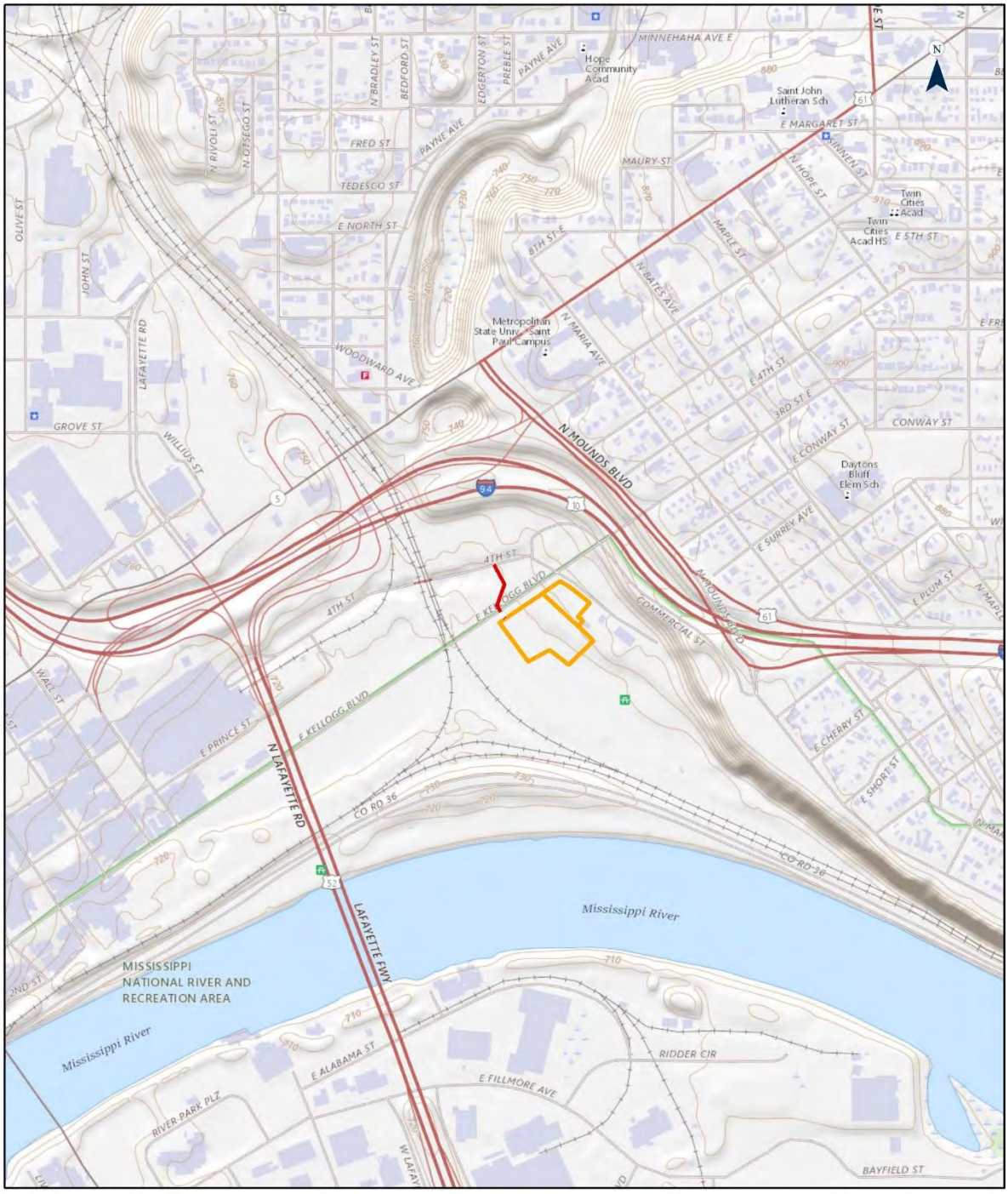


Exhibit 1B – Overview Map showing Direct and Indirect APEs and Previously identified Cultural Resources

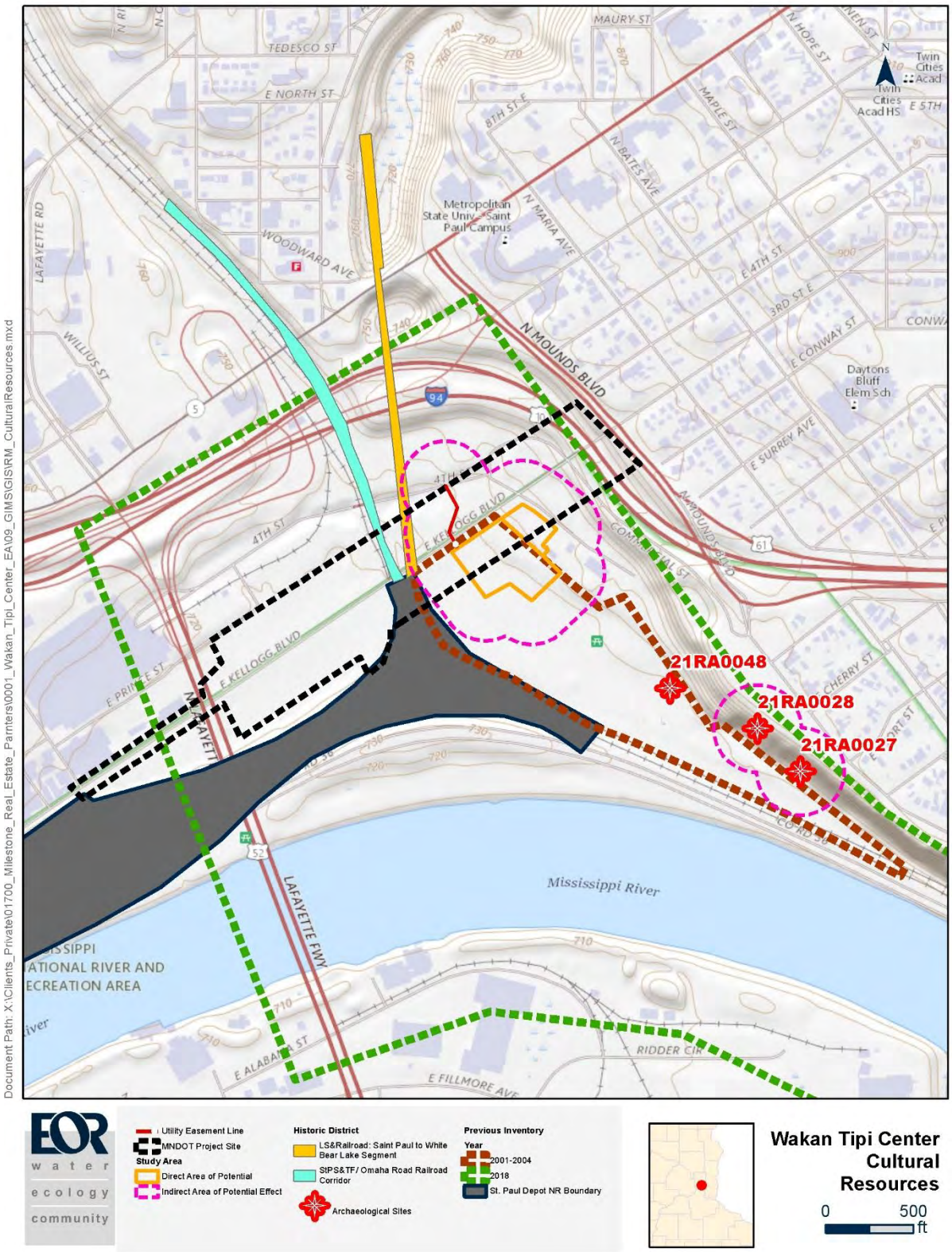


Exhibit 1C – – Overview of Direct APE and Associated Project Components

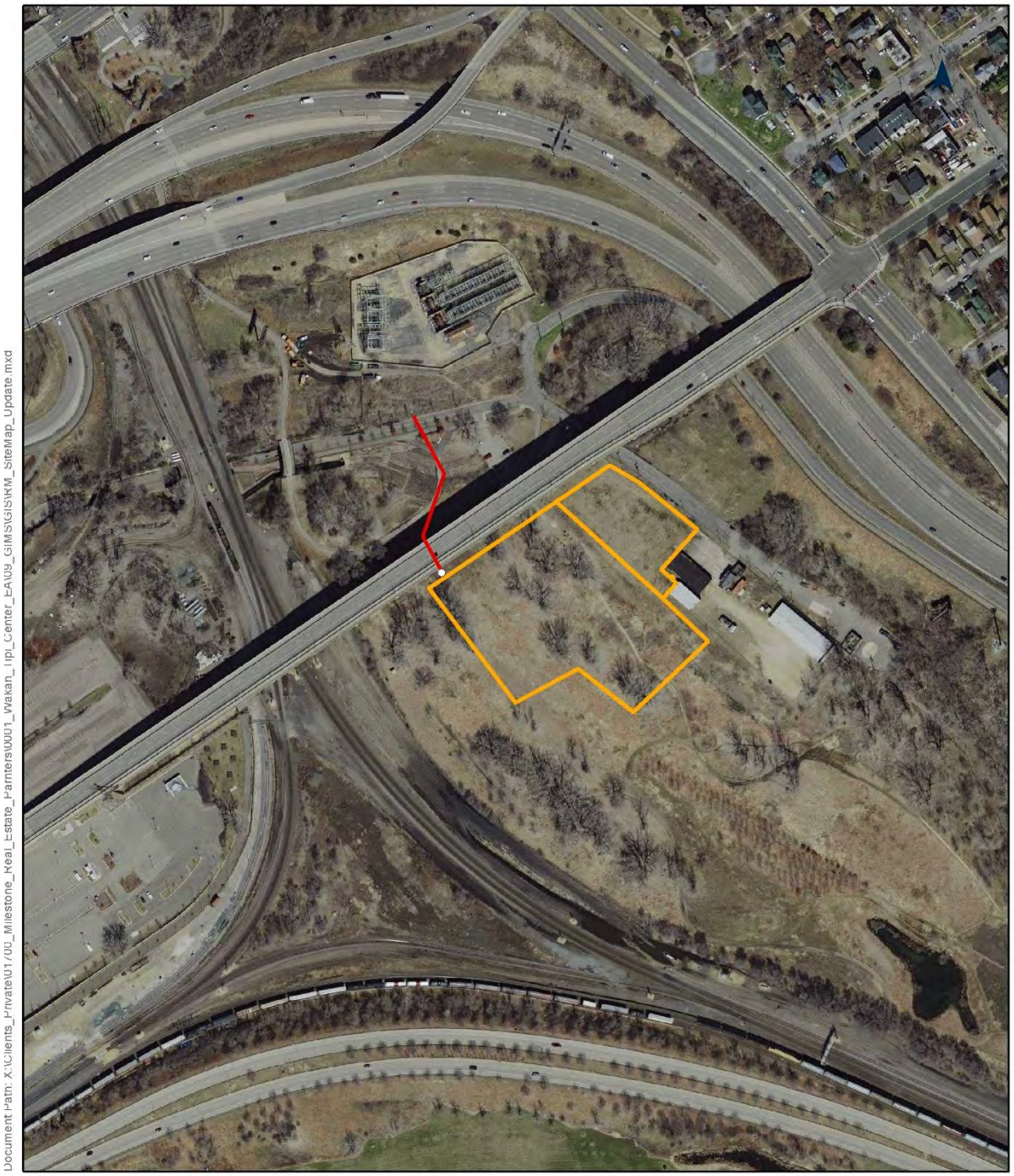
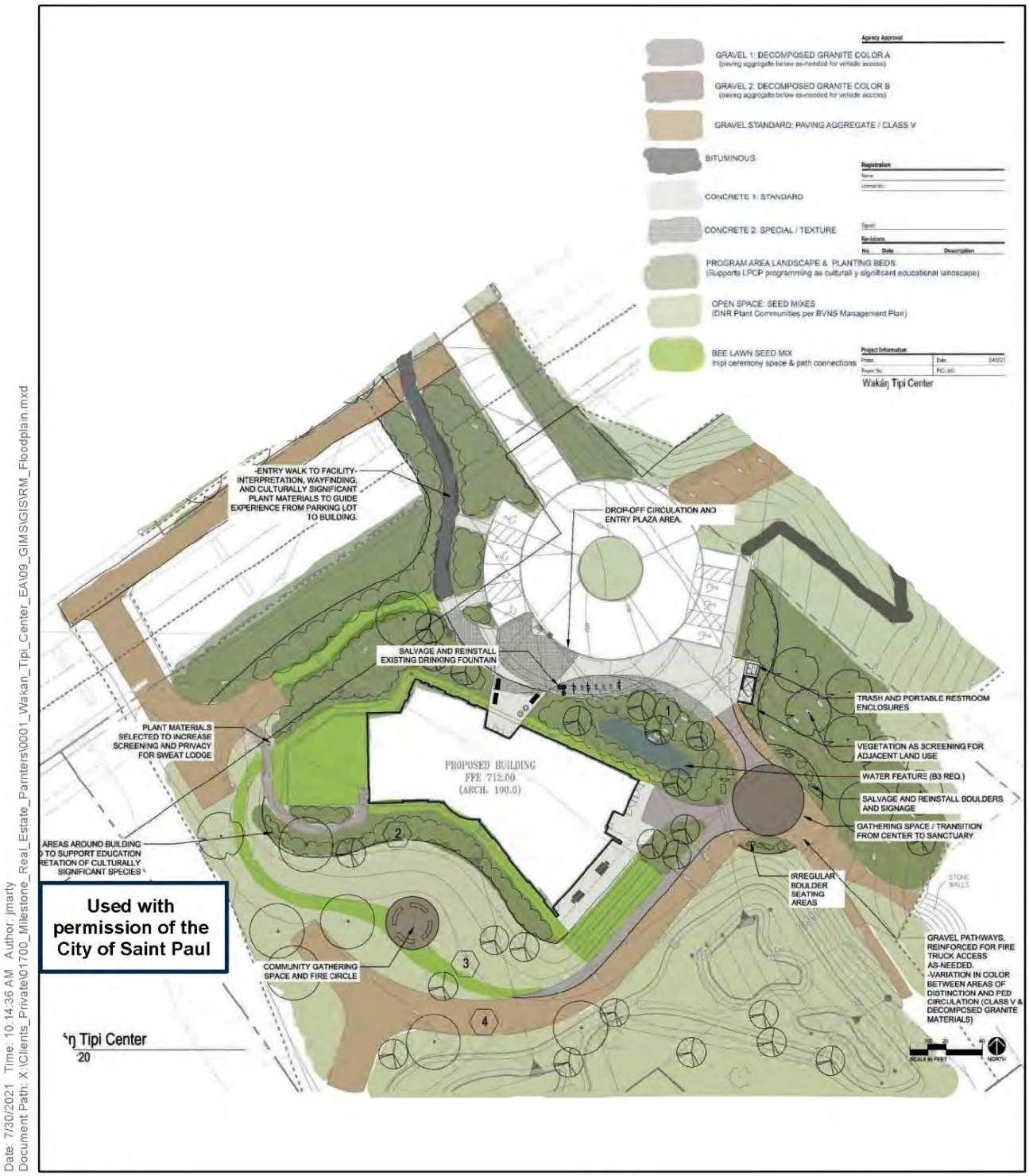


Exhibit 1D – Site Layout



Wakan Tipi Center
Site Layout

Exhibit 2 – Project Construction Plans (Under Separate Cover)

Exhibit 3 – Cut-and-Fill Plan (also provided Under Separate Cover)

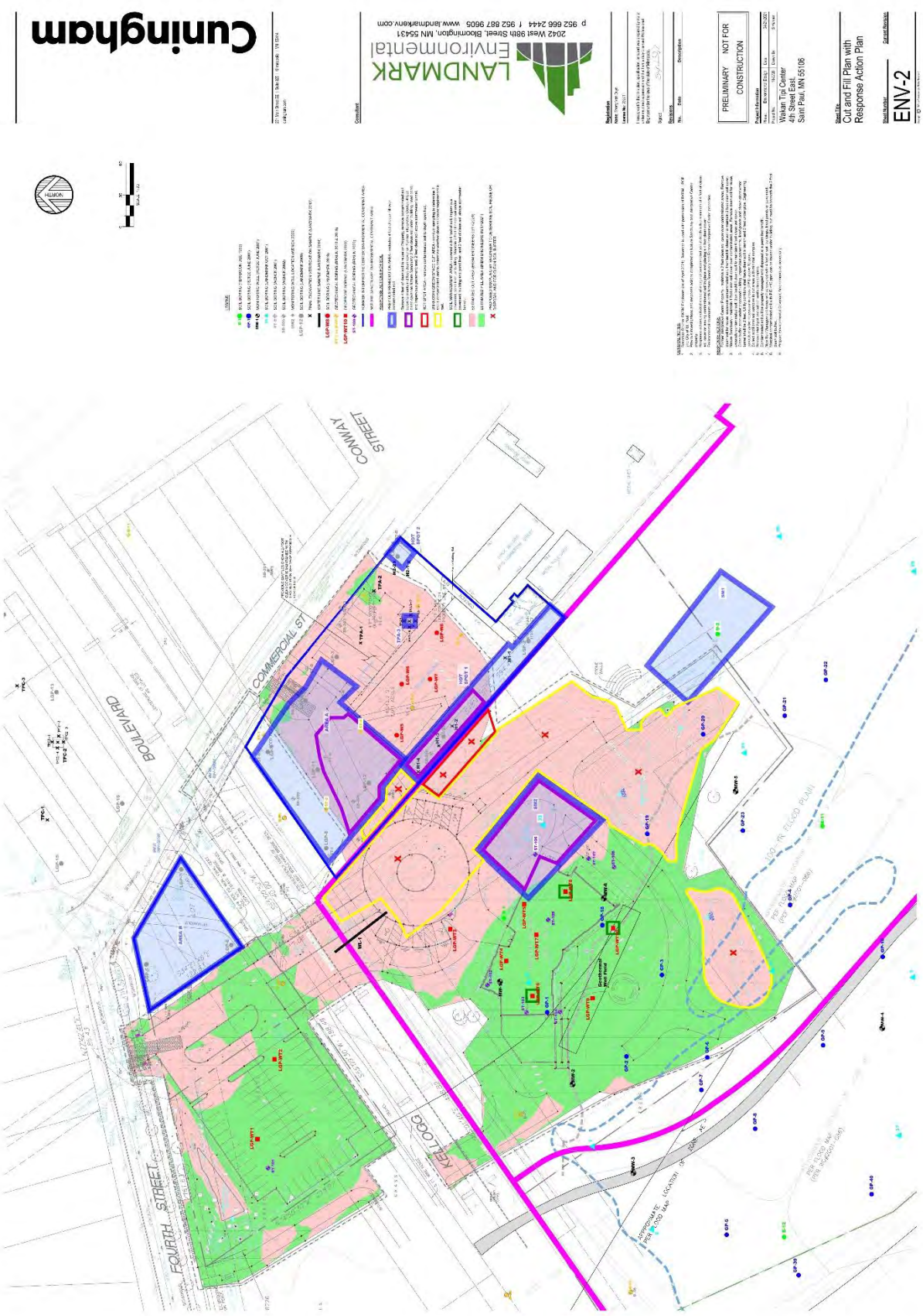

Cuningham
LANDMARK Environmental
2042 West 98th Street, Bloomington, MN 55431
p 952 666 2444 f 952 867 9805 www.landmarkenv.com
PRELIMINARY NOT FOR CONSTRUCTION
Wakan Tipi Center
4th Street East.
Saint Paul, MN 55106
Cut and Fill Plan with Response Action Plan
ENV-2
COMMERCIAL ST
CONWAY STREET
BOULEVARD
FOURTH STREET
KELLOGG

Exhibit 4 – Utility Plan (also provided Under Separate Cover)

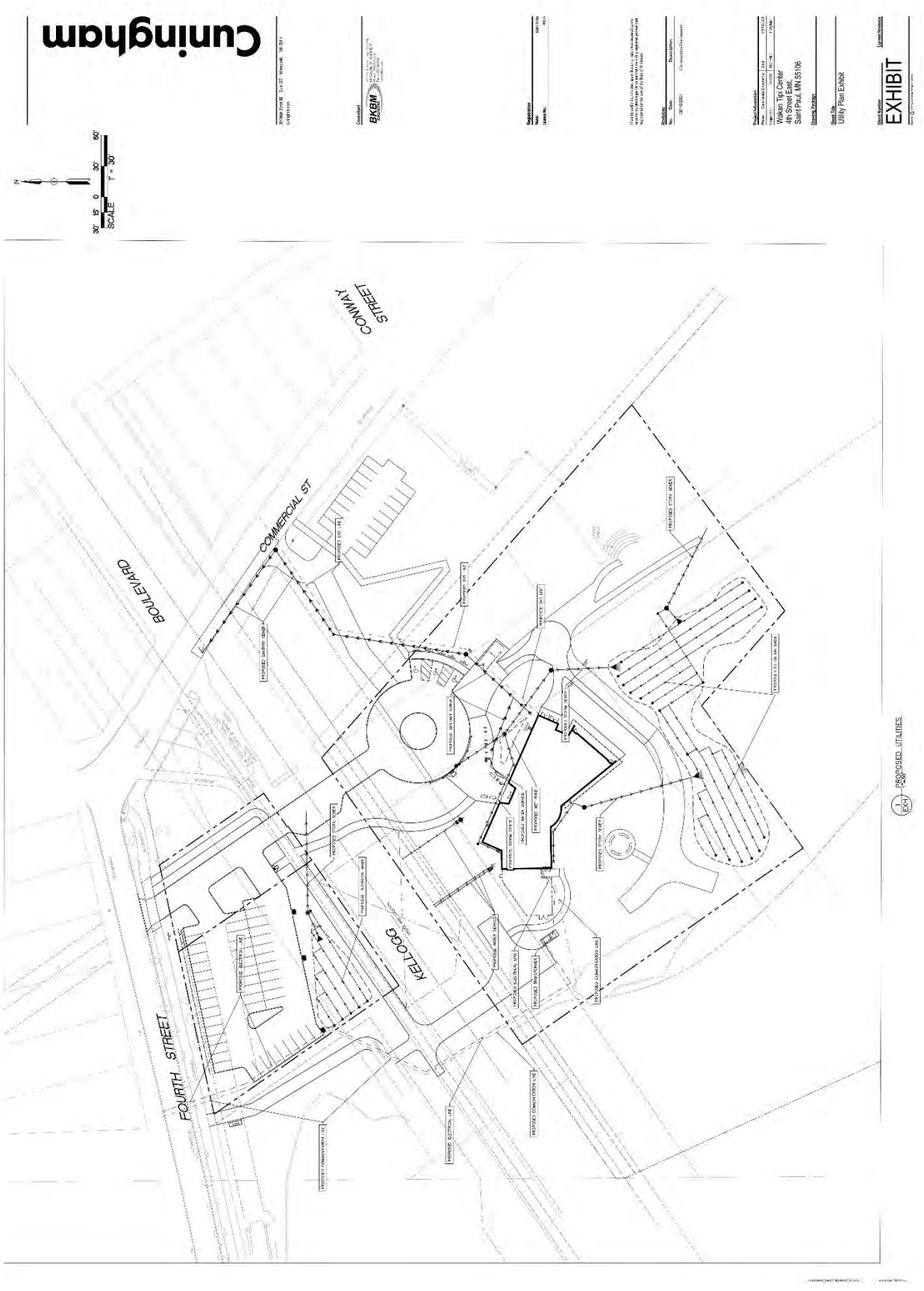

Cunningham
BKBM ENGINEERS
Project Information
Waiken Tip Center
4th Street East,
Saint Paul, MN 55106
Sheet Title
Utility Plan Exhibit
Sheet Number
EXHIBIT
SCALE
1" = 30'
BOULEVARD
COMMERCIAL ST
CONWAY STREET
KELLOGG
FOURTH STREET
1 EXH PROPOSED UTILITIES

Exhibit 5 – National Endowment for the Humanities Delegation Letter

NATIONAL ENDOWMENT FOR THE HUMANITIES

OFFICE OF GRANT MANAGEMENT

Notice of Delegation of Authority Section 106 Consultation under the National Historic Preservation Act (NHPA), National Endowment for the Humanities Infrastructure and Capacity Building Challenge Grants, and Sustaining Cultural Heritage Collections Programs

Dear NEH Award Recipient,

After reviewing your organization's funded grant application, the National Endowment for the Humanities (NEH) has identified construction, alteration, renovation, or ground disturbing activities in your project that represent an "undertaking" under the National Historic Preservation Act (NHPA) (54 USC 300101 *et seq*). Consequently, NEH needs to conduct further review and consultation under Section 106 of the NHPA (Section 106) (54 USC § 306108) prior to releasing NEH funds.

Historic properties include any district, site, building, structure, or object that **is eligible for or listed on the National Register of Historic Places (NRHP)**. NEH has determined that the following activities constitute an undertaking subject to Section 106 review: 1) all new construction and facility expansion projects; 2) alteration and renovation projects where exterior changes to the building façade or surroundings may be made (including roof, windows, and parking lots); 3) projects where interior renovations may be made to a building that is over fifty (50) years old, or is historically, architecturally, or culturally significant; and 4) ground disturbances (such as grading, other site preparation or archeology).

Under Section 106, NEH must assess the potential effects of undertakings on historic properties in your project, and notify and consult with all interested parties**, before you commence work on the project. You may, however, conduct architectural and engineering planning, and acquire necessary licenses, permits, and other approvals before NEH completes its Section 106 review.**

The NHPA regulations 36 CFR §800.2(c)(4) allow recipients or their authorized representatives – instead of the Federal funding agency – to initiate the Section 106 compliance consultations when authorized to do so by the Federal agency. **Therefore, NEH hereby authorizes your organization to initiate the Section 106 process directly with the State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer (TPHO) in your district. Your organization may not transfer this delegation of responsibility to any other agency or party.** Although NEH makes every effort to notify respective SHPO/TPHOs that your organization is authorized to initiate Section 106 consultations, please present this letter as part of your consultation request. As part of this process, your organization will initiate the Section 106 process, identify historic properties and an assessment of adverse effect (36 CFR §§ 800.3 through

800.5) to the SHPO/THPO. The SHPO/THPO will concur or disagree in writing with the finding.

Your organization may independently perform the Section 106 work and consultation described in 36 CFR §§ 800.3 through 800.5 on behalf of the NEH, except when there is a:

1. Consultation with federally recognized Indian tribes in accordance with federal requirements for government-to-government consultation;
2. Dispute that cannot be resolved within 90 calendar days, regardless of the nature (designation of Area of Potential Effect, suitability of consulting parties, phased identification, eligibility, and effects determinations). The NEH shall be involved in the resolution in accordance with 36 CFR Part 800;
3. Consultation for projects where a recipient and SHPO have determined that adverse effects to historic properties are unavoidable;
4. Resolution of adverse effects through a Memorandum of Agreement (MOA) or Programmatic Agreements, where there is a dispute regarding the resolution of adverse effects; or
5. Potential for anticipatory demolition, removal, or abandonment as specified in Section 110(k) (54 USC §306113) of the NHPA.

In any of the circumstances above, your organization must notify NEH through eGMS Reach and coordinate Section 106 activities with me. In accordance with 36 CFR §800.2(c)(2)(ii)(B) and (C), NEH will ensure that it conducts all consultations with Indian Tribes in a sensitive manner respectful of tribal sovereignty and the government-to-government relationship between the Federal Government and Indian Tribes. This letter, therefore, is not intended to modify or limit such requirements nor mandate that Indian Tribes consult with recipients or provide information if the Indian Tribes conclude that consultation should be directly with NEH.

Your organization may use your non-federal matching funds to hire consultants to complete the Section 106 process and other related historic preservation responsibilities. In many cases, doing so is helpful and may streamline the process. Your organization's staff conducting Section 106 activities and any consultants your organization hires to conduct Section 106 activities must have qualifications that meet the Secretary of the Interior's (SOI) Professional Qualifications Standards (Qualifications).

It is important to remember that physical work cannot be initiated on the project until NEH notifies the recipient organization that the Section 106 process is complete. You must upload all documentation and correspondence with the SHPO/THPO and other consulting parties into eGMS Reach. Information regarding the Section 106 process, resources, and contact information for appropriate SHPO/TPHO can be found at /insert name of NEH Section 106 page once available/.

If you have any questions about your and NEH's Section 106 responsibilities, please contact Ann Piesen, the NEH Federal Preservation Officer, at 202.606.8576, or via email at FPO@neh.gov.

Sincerely,

Ann Piesen
Federal Preservation Officer

Exhibit6 – Project Plans with Identified Cultural Resources During Cultural Resources Investigations – Remediation Project – 2001-2004

(Light Green = Fill Areas and Light Pink = Cut or Graded Areas)

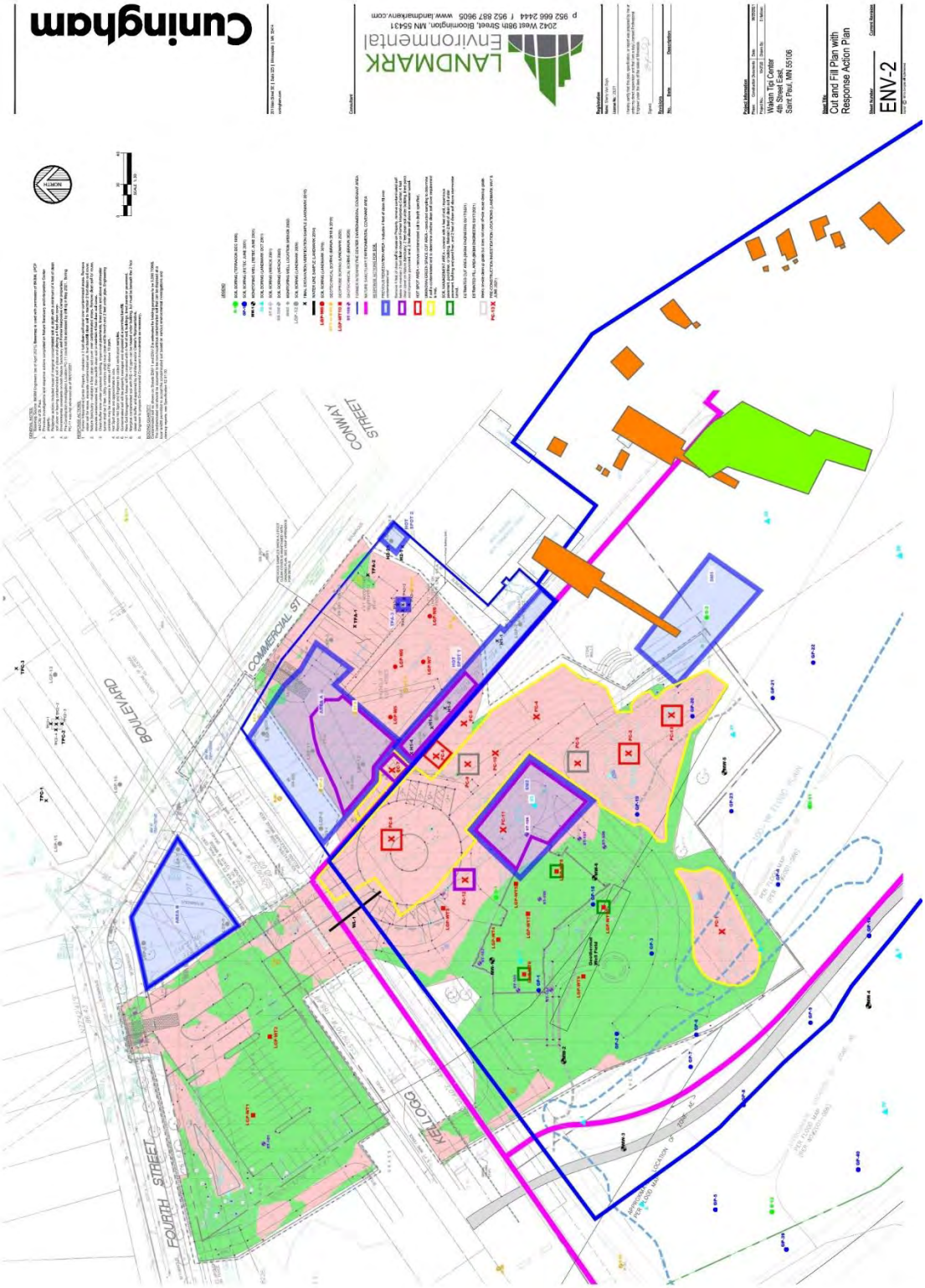

Cunningham
LANDMARK Environmental
2042 West 98th Street, Bloomington, MN 55431
p 952 666 2444 f 952 887 9605 www.landmarkenv.com
Wakan Tipi Center
4th Sheet East
Saint Paul, MN 55106
Cut and Fill Plan with Response Action Plan
ENV-2
COMMERCIAL ST
COMWAY STREET
BOWLEWARD
FOURTH STREET
KELLOGG

Exhibit 7 – 2018 Archaeological Inventory Report

Supplementary Phase II Cultural Resources Review for the Proposed Bruce Vento Trail and Bridge Connection Project
Saint Paul, Ramsey County, Minnesota

Christina Harrison, Archaeology Research Services
August 2018

Introduction

In 2005, the of Saint Paul Parks and Recreation Board, along with the Lower Phalen Creek project with the National Park Service, initiated a task force to explore the range of options available to provide a direct connection across Warner Road and the active rail lines of the Canadian Pacific Railway and Soo Line Railroad from the Bruce Vento Nature Sanctuary (BVNS) to the Mississippi River. A consensus-based approach was utilized to explore viable connection options and public meetings were held to develop final recommendations. A range of stakeholders participated in the task force, meetings, and discussions and specific goals were identified.

The 2005 task force and its design objectives were then the basis of a 2010 Request for Proposal (RFP) issued by the City of Saint Paul upon which RLK/ Rosales + Partners were issued a notice to proceed in April 2011. The 2011 work efforts included a preliminary bridge design and choosing a location of the crossing which complied with the existing regulations. Public meetings were held on the project and, for the great majority of the stakeholders, the preliminary design was considered a satisfactory plan to create the connection as it had originally been envisioned by the 2005 task force. As outlined in the January 2012 Final Report for Preliminary Bridge Design and Due Diligence for the Bruce Vento Bridge Connection, the bridge placement and design had been established based upon the known parameters and restrictions of regulatory agencies. However, in spite of the efforts to faithfully pursue the ideas and plans outlined in the 2005 report, it was clear that further improvements would be needed and there was also the need for an environmental review. Therefore, in February of 2016, Westwood Professional Services entered into a Consultant Services Agreement with the City of Saint Paul to provide Phase I predesign data collection and Phase II design services for an undertaking described as "a trail and bridge construction project proposed for the Bruce Vento Sanctuary and an adjacent segment of the Soo Line Railroad."

Invited to participate in the undertaking as the principal historian and cultural resources expert, Hess, Roise and Company (Hess Roise) drafted a project understanding and proposal which in part will be quoted below. Maps of the project area and its vicinity are found in Exhibits A-C (pages 7–9). As indicated by the maps, the proposed undertaking will link the existing Bruce Vento Regional Trail and the BVNS to the Mississippi River Trail, also known as the Samuel H. Morgan Regional Trail, in Saint Paul. The connection will join two regional trails and allow a long-sought pedestrian/bicycle connection between the East Side Neighborhoods and the Mississippi River.

As emphasized in the 2012 Final Report for the Preliminary Bridge Design and Due Diligence review for the Bruce Vento Bridge Connection, it is critical that, prior to the finalizing of a final design, a Section 106/Environmental Assessment (EA) review be processed to allow the relevant agencies to comment on the potential cultural impacts the preliminary design may elicit, i.e. the Canadian Pacific Railway and Soo Line Railroad, Metropolitan Airports Commission (MAC), Department of Natural Resources (DNR), and Ramsey County. Prior to obtaining permits of concurrence and progression on design development of the bridge, it is also critical to obtain concurrence from any other stakeholders who may consider this bridge and trail connection impactive to the cultural resources of the Native American community.

Previous Survey Work

The scope of this investigation along with the most important research questions and appropriate responses are probably best understood in the context of information already known, much of it acquired through previous research within the project area, which is well described in the final report on the 2004/2005 investigations, "Archaeological Monitoring and Phase I/II Archaeological Survey and Evaluation for the Bruce Vento Nature Sanctuary at Lower Phalen Creek, St. Paul, Ramsey County, Minnesota."

This report described the results archaeological monitoring and Phase I and II archaeological investigations conducted at the BVNS during November and December of 2003 and January of 2004 by The 106 Group Ltd. (The 106 Group). The development of the BVNS will involve environmental cleanup followed by the restoration of vegetation, the creation of wetlands, and recreational trails. Partial funds for the BVNS project are being provided by the National Park Service (NPS) and the Environmental Protection Agency (EPA). Under federal law, therefore, the project's potential effects on historic properties must be documented. To expedite this process, the NPS has agreed to comply with the Section 106 process through the execution and implementation of a Programmatic Agreement (PA) between itself and the Minnesota State Historic Preservation Office (SHPO). The EPA has also indicated that it would like to participate in the PA. As part of this agreement, the federal agencies shall ensure that prior to any potential effects, the City of St. Paul shall identify and evaluate potential historic properties pursuant to 36 CFR Part 800.4, Identification of Historic Properties, in consultation with SHPO.

The Lower Phalen Creek acquisition area is a 27.43-acre area located in Saint Paul, Ramsey County, Minnesota, north of the Mississippi River near Dayton's Bluff, in Section 32, T29N, R22W, and in Section 5, T28N, R22W. The project area is located within the Central Lakes Deciduous East archaeological sub-region. Anne Ketz, M.A. served as the Principal Investigator. The objective of the archaeological fieldwork was to determine whether intact archaeological resources survive within the BVNS project's area of potential effect (APE) and, if so, whether those resources are eligible for listing on the National Register of Historic Places (NRHP). The APE for archaeology is defined as all areas of proposed subsurface impact or other potential ground-disturbing activities associated with soil-remediation activities and the development of the nature sanctuary as described in the Voluntary Response Action Plan (VRAP) and the Natural Resource Management Plan (NRMP).

During the archaeological investigation for the BVNS project, one archaeological site was identified within the project area. The evaluation and proposed treatment of Carver's

Cave/Wakan Tipi (21RA27) and Dayton's Bluff Cave (21RA28) are addressed in separate documents. The 106 Group concluded that Site 21RA48 (North Star Brewery, house, and caves) is eligible for listing on the NRHP under Criterion A for its association with the development of the late nineteenth-century brewing industry in Saint Paul. It therefore recommended the avoidance of this site and consultation with the SHPO regarding its future treatment. It also recommended archaeological monitoring of the construction of the wetlands within the sanctuary due to the high potential for additional undocumented associated archaeological features to exist within the project area.

Supplementary Phase II Fieldwork and Analysis

Considering archaeological monitoring of construction work in progress to be a less accurate method to assess an areas archaeological potential, it was also determined that soil borings should be completed in selected areas. As planned, soil borings for bridge supports were conducted by American Engineering and Testing (AET) and monitored and inspected by ARS staff. Test locations, methods, and results are documented in an appended report prepared by AET.

As shown by that report, the results of the monitoring proved largely negative. All that was found was a scatter of concrete fragments and some ash and cinders—all of it from the recent use of the area. In spite of these results, due to the known presence of cultural evidence elsewhere in the vicinity, ARS, in consultation with SHPO and the Office of the State Archaeologist, decided that shovel testing would be warranted in the area that would be impacted by the proposed trail between the wetlands and the western end of the project wherever the soil appeared undisturbed enough to have archaeological potential. Tests were placed at approximate 10-meter intervals as shown on the following map.

Supplementary Phase II Cultural Resources Review—Vento Trail and Bridge Connection Project—Page 4

Vento Trail Shovel Tests: Cultural Evidence

ST 1

0-10cm	White ware fragment
10-20cm	2 charcoal fragments; blue plastic bottle cap fragment
20-30cm	2 bottle fragments, brown and clear glass respectively; bottle/jar cap fragment - black plastic; 4 charcoal fragments
30-40cm	3 charcoal fragments
40-50cm	4 charcoal fragments
50-60cm	10 charcoal fragments; part of clear glass bottle neck
60-70cm	16 charcoal fragments

ST 2

0-10cm	Chunk of red brick
10-30cm	More than 80 small rock fragments in loose disturbed soil

ST 3

10-20cm	Metal can fragment; bottle fragment - clear glass
20-30cm	4 bottle fragments of clear glass; piece of white ware; piece of bent iron wire

ST 4

0-10cm	3 metal fragments; 2 clear bottle glass fragments - one very worn
10-20cm	Square chunk of red brick; 5 rusted metal can fragments; 2 bottle fragments (one clear, one brown glass); piece of window glass; decorated glazed white ware (edge piece)
20-30cm	2 plastic jar lid fragments
30-40cm	One-inch metal screw

ST 6

10-20cm	Piece of window glass; piece of decorated brick tile
30-50cm	Concentration of cinder fragments

ST 9 (6-8-2016)

10-20cm	Charcoal fragment; fragments of red brick tile, pressed glass, clear glass jar or bottle
20-30cm	2 bottle neck fragments of clear glass; 2 pieces of window glass
30-40cm	Round nail; window glass fragments
40-50cm	2 slate and window glass fragments; green bottle glass
50-60cm	31 metal fragments; pieces of window glass and white ware

ST 10 (6-18-2016)

0-10cm	Fragments of a metal can and red brick
10-20cm	Clear window glass and brown bottle glass fragments
20-30cm	Pieces of pressed glass and red brick panel; round nail fragment; 4 pieces of window glass
30-40cm	Red brick fragment

40-50cm	Round nail fragment; piece of window glass
ST 11	
10-20cm	Piece of rusted iron plate; green bottle glass fragment
20-30cm	Pieces of brick tile and clear window glass
30-40cm	Pieces of brick tile and green window glass; white ware and clear glass jar fragments
40-50cm	White glass bowl; brown glass bottle; white ware fragments; chunk of coal
ST 12	
10-20cm	White ware and red brick fragments; 2 pieces of clear plate glass
20-30cm	White ware rim; glass bottle fragments - brown glass
30-40cm	Piece of clear window glass
ST 16	
10-20cm	Window glass; piece of coal; metal washer
ST 18	
10-20cm	3 brick fragments; piece of pressed glass; metal can fragment
ST 19	
10-20cm	Jar fragment of thick glass; window glass fragments
ST 21	
20-30cm	5 brick fragments; 2 pieces of thick white ware; 2 small window glass fragments; scatter of small cinder fragments

Emmons & Olivier Resources, Inc.

1002 Quartz Avenue Boone, Iowa 50036 515.230.7044 / www.eorinc.com

Exhibit A: General Location Map

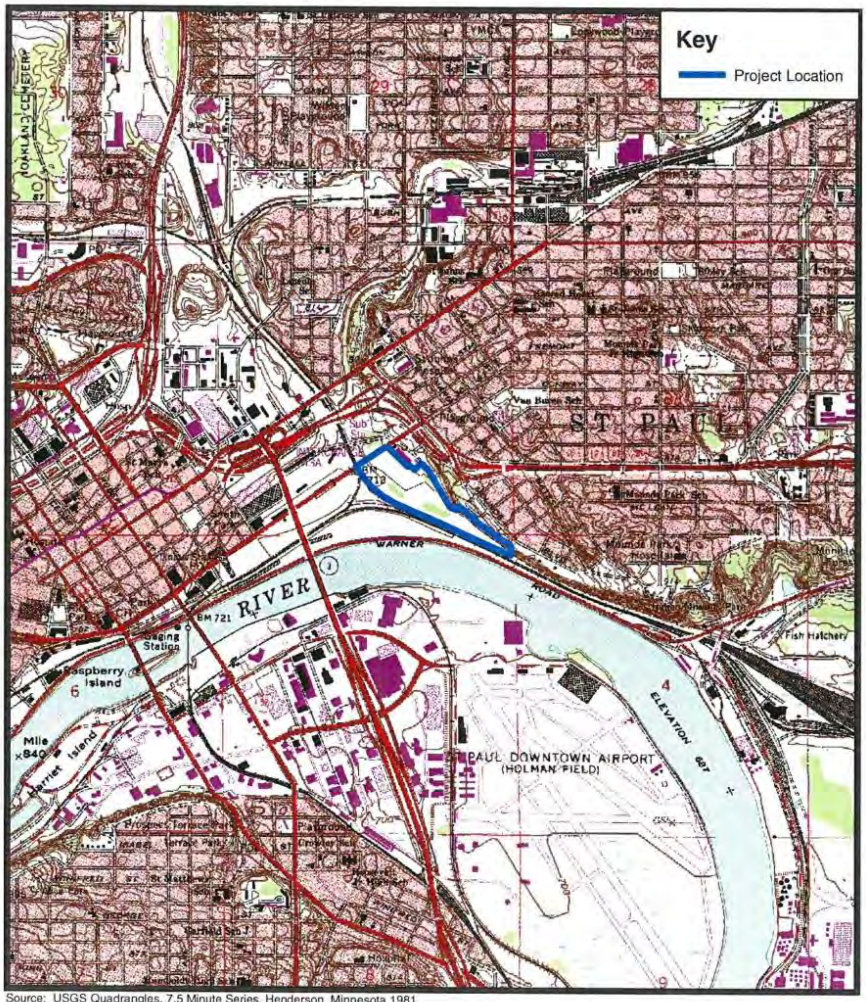
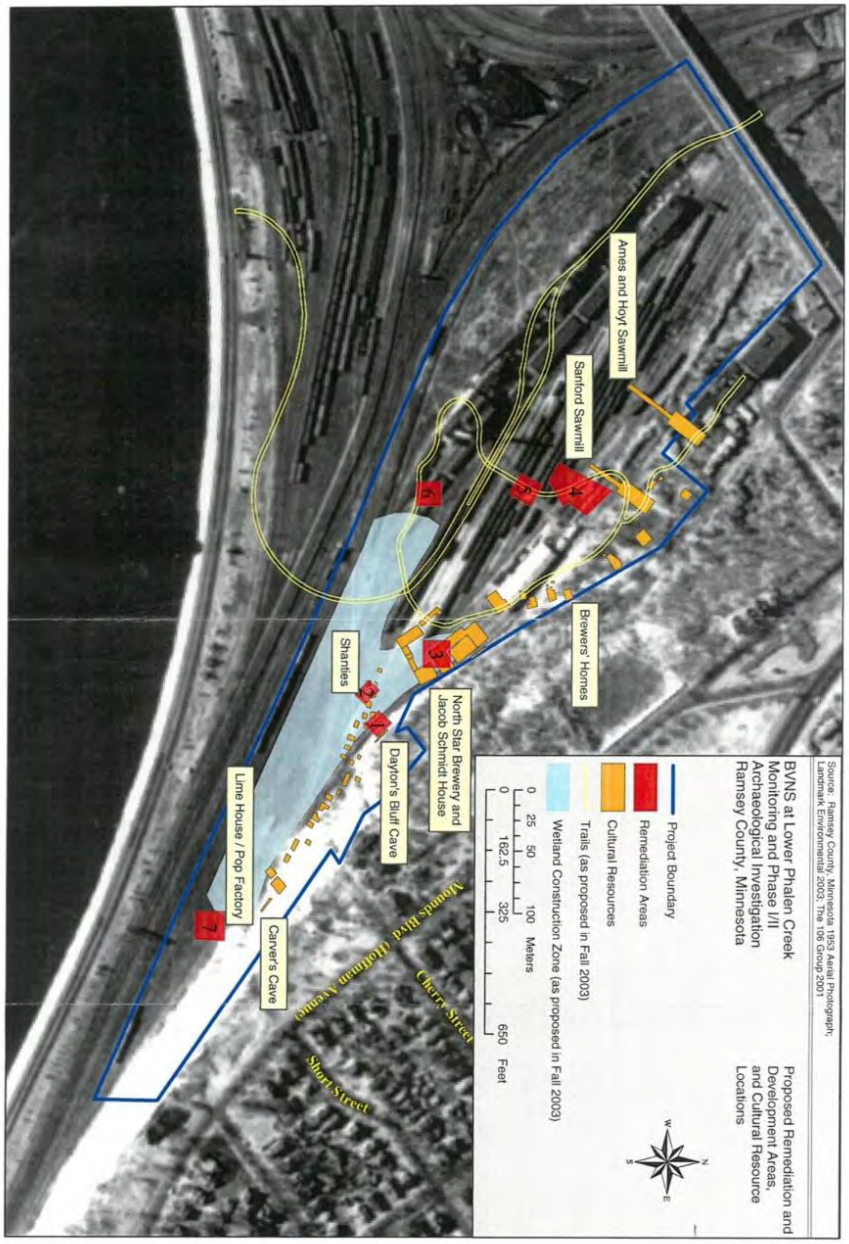
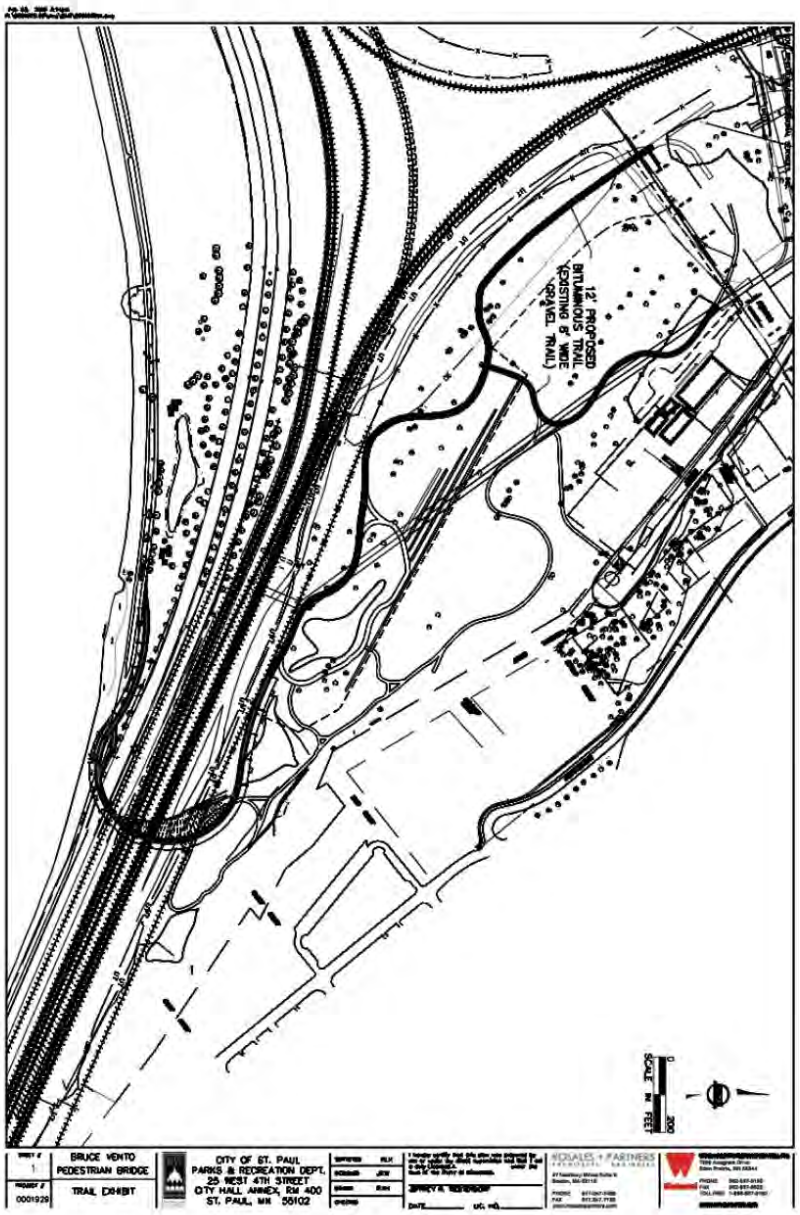


Exhibit B: Proposed Remediation and Development Areas and Known Cultural Resources



Supplementary Phase II Cultural Resources Review—Vento Trail and Bridge Connection Project—Page 8

Exhibit C: Proposed Trail Alignment



Supplementary Phase II Cultural Resources Review—Vento Trail and Bridge Connection Project—Page 9

Appendix

Report on Subsurface Exploration for Archaeological Purposes
American Engineering Testing
May 12, 2016

AMERICAN ENGINEERING TESTING, INC.

CONSULTANTS
* ENVIRONMENTAL
* GEOTECHNICAL
* MATERIALS
* FORENSICS

May 12, 2016

Westwood Professional Services, Inc.
7699 Anagram Drive
Eden Prairie, MN 55344

Attn: Jeff Westendorf

RE: Subsurface Exploration for Archaeological Purposes
Bruce Vento Trail Bridge
St Paul, Minnesota
AET No. 01-06824

Dear Mr. Westendorf:

This letter report presents the results of the subsurface exploration that we performed for the referenced project. This work is being performed per our April 8, 2014 proposal, which was incorporated into our Professional Services Agreement dated April 10, 2014. The final scope performed consisted of sixteen standard penetration test borings using a 3-inch diameter outside diameter split-spoon sampler and preparation of this data report.

The test borings were completed in the field on May 3 and 4, 2016. The logs of the test borings are attached. The boring locations are graphically shown on Figures 1 and 2. The Ramsey County coordinates determined by GPS ("submeter" accuracy) appear on the logs. The surface elevations were referenced to the top hut of Hydrant 8593 located on the west side of the TH52 Lafayette Bridge, shown on the St. Paul surveyor's website as elevation 11.97 feet (St. Paul datum).

The boring logs contain information concerning soil layering, soil classification, geologic description, and moisture condition. Relative density or consistency is also noted for natural soils, which is based on the standard penetration resistance (N-value). We refer you to the standard sheet entitled "Exploration/Classification Methods" for details on the drilling and sampling methods, the classification methods, and the water level measurement methods. Data sheets concerning the Unified Soils Classification System, the descriptive terminology, and the symbols used on the boring logs are also attached.

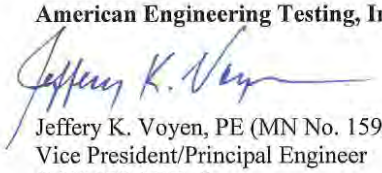
550 Cleveland Avenue North | St. Paul, MN 55114
Phone 651-659-9001 | Toll Free 800-972-6364 Fax 651-659-1379 | www.amengtest.com | AA/EEO

Note that a 3-inch outside diameter (O.D.) split-spoon sampler was used to gain more sample (intended for archaeological purposes). This samples is larger than the typical 2-inch O.D. sampler used for conventional standard penetration test sampling. Therefore, the N-values shown are greater than that which would be found using the smaller diameter sampler.

The laboratory testing program consisted of water content tests on cohesive samples retrieved. The test results appear on the borings logs, opposite the samples upon which they were performed.

Within the limitations of scope, budget, and schedule, our services have been conducted according to generally accepted geotechnical engineering practices at this time and location.

Authored By,
American Engineering Testing, Inc.



Jeffery K. Voyen, PE (MN No. 15928)
Vice President/Principal Engineer
(651) 659-1305 direct
(612) 961-9186 cell
jvoyen@amengtest.com

Attachments:

- Figure 1 – Boring Locations, North Side
- Figure 2 – Boring Locations, South Side
- Subsurface Boring Logs
- Exploration/Classification Methods
- Boring Log Notes
- Unified Soil Classification System

AMERICAN ENGINEERING TESTING, INC.	**Project:** Archaeological Exploration, Bruce Vento Trail Bridge St. Paul, Minnesota		**AET No.:** 01-06824
	Subject: Boring Locations, North Side		**Date:** 5/11/2016
	Scale: 1" = 40'±	**Prepared By:** AS	**Checked By:** JV	**Figure 1**

AMERICAN ENGINEERING TESTING, INC.	**Project:** Archaeological Exploration, Bruce Vento Trail Bridge St. Paul, Minnesota		**AET No.:** 01-06824
	Subject: Boring Locations, South Side		**Date:** 5/11/2016
	Scale: 1" = 49'±	**Prepared By:** AS	**Checked By:** JV	**Figure 2**

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-1 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **12.3** Ramsey Co. Coordinates: N **157915** E **580917**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, pieces of glass and bituminous, dark brown	FILL	20	M	SS	23					
2											
3	FILL, mostly silty sand, a little gravel and clayey sand, pieces of bituminous, ashes/cinders, trace roots, dark brownish gray and dark brown		28	M	SS	24					
4											
5			26	M	SS	23					
6											
7			45	M	SS	24					
8	SAND, a little gravel, fine to medium grained, brown, moist, dense (SP) (possible fill)	COARSE ALLUVIUM OR FILL									
9			33	M	SS	23					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**9:33**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/11/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-2 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **9.3** Ramsey Co. Coordinates: N **157874** E **580980**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel, ashes/cinders, trace roots, black	FILL	14	M	SS	20					
2											
3			8	M	SS	23					
4	FILL, mostly sand, a little gravel, pieces of wood, trace roots, light brown, a little black										
5			2	M	SS	18					
6											
7			2	M	SS	21					
8											
9			2	M	SS	16					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**10:08**	**10.0**	**8.0**	**9.8**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/11/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-3 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **9.2** Ramsey Co. Coordinates: N **157845** E **581050**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel, pieces of concrete and bituminous, ashes/cinders, black, a little brown	FILL	14	M	SS	24					
2											
3	FILL, mostly sand with silt, a little gravel, reddish brown		14	M	SS	24					
4	FILL, mostly sand, a little gravel, brown										
5	FILL, mixture of clayey sand and sand, a little gravel, trace roots, black and brown		11	M	SS	18					
6											
7	No recovery from 6' to 8' (pushed rock)		19	M	SS	0					
8	SAND, a little gravel, fine to medium grained, light brown, moist, loose (SP) (possible fill)	COARSE ALLUVIUM OR FILL	7	M	SS	24					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**10:47**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/11/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-4 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **14.5** Ramsey Co. Coordinates: N **157824** E **581121**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, pieces of bituminous and glass, ashes/cinders, dark brown and black	FILL	30	M	SS	20					
3			50	M	SS	24					
5			30	M	SS	22					
7			28	M	SS	22					
9	FILL, mostly sand, a little gravel and clayey sand, reddish brown, a little brown		15	M	SS	20					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**11:33**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/11/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-5 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **11.3** Ramsey Co. Coordinates: N **157810** E **581195**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, pieces of concrete and bituminous, trace roots, dark brown	FILL	9	M	SS	23	17				
2	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark dark gray, a little brown										
3	FILL, mostly silty sand, a little gravel, pieces of bituminous and glass, ashes/cinders, black, a little brown		16	M	SS	24					
4											
5	FILL, mostly sand with silt and gravel, dark brown and brown		27	M	SS	20					
6	FILL, mostly sand with silt, a little gravel, reddish brown										
7			18	M	SS	24					
8	FILL, mostly clayey sand and silty sand, a little gravel, lean clay and sand, grayish brown, a little light brown and dark brown						17				
9	FILL, mostly sand, a little gravel, light brown		7	M	SS	22					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**12:17**	**10.0**	**8.0**	**9.9**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-6 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **11.1** Ramsey Co. Coordinates: N **157824** E **581256**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, pieces of concrete and bituminous, dark brown	FILL	15	M	SS	24					
2											
3	FILL, mostly silty sand, a little gravel and clayey sand, pieces of bituminous and ashes/cinders, trace roots, black, a little brown		24	M	SS	24					
4	FILL, mostly sand with silt, a little gravel, reddish brown										
5	FILL, mostly sand, a little gravel, light brown		13	M	SS	22					
6											
7			11	M	SS	24					
8											
9			9	M	SS	24					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**1:46**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-7 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **10.5** Ramsey Co. Coordinates: N **157797** E **581268**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark brownish gray	FILL	7	M	SS	22	40				
2	FILL, mostly sandy lean clay, a little gravel and silty sand, trace roots, dark gray and dark grayish brown						15				
3	FILL, mostly silty sand, a little gravel, pieces of bituminous, ashes/cinders, black		26	M	SS	22					
4											
5	FILL, mostly sand, a little gravel, trace roots, light brown		6	M	SS	18					
6											
7			6	M	SS	24					
8											
9			9	M	SS	24					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**1:00**	**10.0**	**8.0**	**9.5**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-8 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **15.7** Ramsey Co. Coordinates: N **157808** E **581294**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, apparent cobbles, pieces of concrete, dark brown, a little brown	FILL	31	M	SS	22					
3	FILL, mostly clayey sand, a little gravel and silty sand, pieces of bituminous, ashes/cinders, trace roots, black		32	M	SS	18					
5			33	M	SS	24					
7	FILL, mostly silty sand, a little gravel and clayey sand, pieces of bituminous, trace roots, black		47	M	SS	24					
9	FILL, mostly sand, a little gravel, silty sand and clayey sand, light brown		8	M	SS	20					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**2:33**	**10.0**	**8.0**	**9.8**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-9 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **15.8** Ramsey Co. Coordinates: N **157747** E **581308**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel and clayey sand, trace roots, ashes/cinders, black and dark brown	FILL	23	M	SS	24					
2											
3			35	M	SS	24					
4											
5			49	M	SS	24					
6											
7			62	M	SS	24					
8	SILTY SAND, a little gravel, fine to medium grained, reddish brown, a little brown, moist, dense (SM) (possible fill)	COARSE ALLUVIUM OR FILL	35	M	SS	22					
9											
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/4/16**	**3:29**	**10.0**	**8.0**	**9.9**		**None**	
BORING COMPLETED: **5/4/16**								
DR: **DS** LG: **JM** Rig: **70**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/11/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-11 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **11.2** Ramsey Co. Coordinates: N **157433** E **581243**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, ashes/cinders, trace roots, brownish gray, a little dark brown	FILL	15	M	SS	20	13				
2											
3	FILL, mostly clayey sand, a little gravel and silty sand, pieces of bituminous, ashes/cinders, trace roots, dark brownish gray		18	M	SS	22	10				
4											
5	FILL, mostly sand, a little gravel, light brown		61	M	SS	18					
6											
7			46	M	SS	24					
8											
9			24	M	SS	22					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**11:55**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-12 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **10.3** Ramsey Co. Coordinates: N **157432** E **581173**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, pieces of plastic, trace roots, dark grayish brown	FILL	16	M	SS	20	17				
2	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, reddish brown						9				
3	FILL, mostly silty sand, a little gravel, trace roots, reddish brown		50	M	SS	24					
4	FILL, mostly sand, a little gravel, light brown										
5			43	M	SS	20					
6											
7			24	M	SS	20					
8											
9			14	M	SS	22					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**11:20**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL GDT 5/12/16

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AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-13 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **11.3** Ramsey Co. Coordinates: N **157461** E **581164**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark grayish brown	FILL	23	M	SS	24	14				
2											
3	FILL, mostly silty sand with gravel, a little clayey sand, ashes/cinders, dark grayish brown		46	M	SS	24					
4											
5	FILL, mostly clayey sand, a little gravel and silty sand, reddish brown, a little dark brown		52	M	SS	18	10				
6	FILL, mostly sand, a little gravel, light brown										
7			44	M	SS	24					
8											
9			15	M	SS	20					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**12:35**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

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AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-14 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **10.4** Ramsey Co. Coordinates: N **157457** E **581108**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, pieces of bituminous, trace roots, dark grayish brown, a little brown	FILL	18	M	SS	20	16				
2							9				
3	FILL, mostly sand with silt, a little gravel, grayish brown		34	M	SS	22					
4	FILL, mostly sand, a little gravel, grayish brown										
5			63	M	SS	22					
6											
7			34	M	SS	18					
8											
9			18	M	SS	18					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**10:25**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

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AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-15 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **10.9** Ramsey Co. Coordinates: N **157504** E **581038**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark brownish gray	FILL	25	M	SS	22	12				
2											
3	FILL, mostly silty sand, a little gravel and clayey sand, dark grayish brown		54	M	SS	20					
4											
5	FILL, mostly clayey sand, a little gravel and silty sand, dark grayish brown, a little dark brown		33	M	SS	22	11				
6	FILL, mostly sand, a little gravel, trace shells below 8', grayish brown										
7			19	M	SS	24					
8											
9			13	M	SS	18					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**9:50**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-16 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **10.9** Ramsey Co. Coordinates: N **157528** E **580976**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark brownish gray	FILL	20	M	SS	20	17				
2											
3	FILL, mostly silty sand with gravel, a little clayey sand, pieces of bituminous, trace roots, dark grayish brown, a little brown and black		27	M	SS	22	12				
4											
5	FILL, mostly sand, a little gravel and clayey sand, pieces of glass, light brown, a little dark brown		50	M	SS	24	10				
6	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark brownish gray, a little dark brown										
7	FILL, mostly sand, a little gravel, light brown		37	M	SS	20					
8											
9			14	M	SS	22					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**9:12**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET-CPT+WELL.GDT 5/12/16

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AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET No: **01-06824** Log of Boring No. **SB-17 (p. 1 of 1)**

Project: **Archaeological Exploration, Bruce Vento Trail Bridge; St. Paul, MN**

Surface Elevation **11.3** Ramsey Co. Coordinates: N **157548** E **580904**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel and silty sand, trace roots, dark brownish gray	FILL	18	M	SS	20	20				
2											
3	FILL, mostly silty sand with gravel, a little clayey sand, dark brownish gray		28	M	SS	24					
4											
5			24	M	SS	20					
6	FILL, mostly sandy lean clay, a little gravel, trace roots, dark brownish gray and brown						19				
7	FILL, mostly sand, a little gravel, brown		31	M	SS	24					
8											
9			10	M	SS	20					
10	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' 3.25" HSA	**5/3/16**	**8:38**	**10.0**	**8.0**	**10.0**		**None**	
BORING COMPLETED: **5/3/16**								
DR: **DS** LG: **JMM** Rig: **1C**								

AET_CORP W-COORDINATES 01-06824.GPJ AET+CPT+WELL.GDT 5/12/16

03/2011 01-DHR-060

EXPLORATION/CLASSIFICATION METHODS

SAMPLING METHODS

Split-Spoon Samples (SS) - Calibrated to N_{60} Values

Standard penetration (split-spoon) samples were collected in general accordance with ASTM: D1586 with several primary modifications. The ASTM test method consists of driving a 2" O.D. split-barrel sampler into the in-situ soil with a 140-pound hammer dropped from a height of 30". **For this testing, a 3" O.D. sampler was used.** The sampler is driven a total of 18" into the soil. After an initial set of 6", the number of hammer blows to drive the sampler the final 12" is known as the standard penetration resistance or N-value. Our method uses a modified hammer weight, which is determined by measuring the system energy using a Pile Driving Analyzer (PDA) and an instrumented rod.

In the past, standard penetration N-value tests were performed using a rope and cathead for the lift and drop system. The energy transferred to the split-spoon sampler was typically limited to about 60% of its potential energy due to the friction inherent in this system. This converted energy then provides what is known as an N_{60} blow count. AET's drill rigs incorporate an automatic hammer lift and drop system, which has higher energy efficiency and subsequently results in lower N-values than the traditional N_{60} values. By using the PDA energy measurement equipment, we are able to determine actual energy generated by the drop hammer. With the various hammer systems available, we have found highly variable energies ranging from 55% to over 100%. Therefore, the intent of AET's hammer calibrations is to vary the hammer weight such that hammer energies lie within about 60% to 65% of the theoretical energy of a 140-pound weight falling 30". The current ASTM procedure acknowledges the wide variation in N-values, stating that N-values of 100% or more have been observed. Although we have not yet determined the statistical measurement uncertainty of our calibrated method to date, we can state that the accuracy deviations of the N-values using this method are significantly better than the standard ASTM Method. **Note that N-values are higher than normal using the 3" O.D. sampler.**

Disturbed Samples (DS)/Spin-up Samples (SU)

Sample types described as "DS" or "SU" on the boring logs are disturbed samples, which are taken from the flights of the auger. Because the auger disturbs the samples, possible soil layering and contact depths should be considered approximate.

Sampling Limitations

Unless actually observed in a sample, contacts between soil layers are estimated based on the spacing of samples and the action of drilling tools. Cobbles, boulders, and other large objects generally cannot be recovered from test borings, and they may be present in the ground even if they are not noted on the boring logs.

CLASSIFICATION METHODS

Soil classifications shown on the boring logs are based on the Unified Soil Classification (USC) system. The USC system is described in ASTM: D2487 and D2488. Where laboratory classification tests (sieve analysis or Atterberg Limits) have been performed, accurate classifications per ASTM: D2487 are possible. Otherwise, soil classifications shown on the boring logs are visual-manual judgments. Charts are attached which provide information on the USC system, the descriptive terminology, and the symbols used on the boring logs.

The boring logs include descriptions of apparent geology. The geologic depositional origin of each soil layer is interpreted primarily by observation of the soil samples, which can be limited. Observations of the surrounding topography, vegetation, and development can sometimes aid this judgment.

WATER LEVEL MEASUREMENTS

The ground water level measurements are shown at the bottom of the boring logs. The following information appears under "Water Level Measurements" on the logs:

- Date and Time of measurement
- Sampled Depth: lowest depth of soil sampling at the time of measurement
- Casing Depth: depth to bottom of casing or hollow-stem auger at time of measurement
- Cave-in Depth: depth at which measuring tape stops in the borehole
- Water Level: depth in the borehole where free water is encountered
- Drilling Fluid Level: same as Water Level, except that the liquid in the borehole is drilling fluid

The true location of the water table at the boring locations may be different than the water levels measured in the boreholes. This is possible because there are several factors that can affect the water level measurements in the borehole. Some of these factors include: permeability of each soil layer in profile, presence of perched water, amount of time between water level readings, presence of drilling fluid, weather conditions, and use of borehole casing.

SAMPLE STORAGE

Unless notified to do otherwise, we routinely retain representative samples of the soils recovered from the borings for a period of 30 days.

BORING LOG NOTES

DRILLING AND SAMPLING SYMBOLS

Symbol	Definition
AR:	Sample of material obtained from cuttings blown out the top of the borehole during air rotary procedure.
B, H, N:	Size of flush-joint casing
CAS:	Pipe casing, number indicates nominal diameter in inches
COT:	Clean-out tube
DC:	Drive casing; number indicates diameter in inches
DM:	Drilling mud or bentonite slurry
DR:	Driller (initials)
DS:	Disturbed sample from auger flights
DP:	Direct push drilling; a 2.125 inch OD outer casing with an inner 1½ inch ID plastic tube is driven continuously into the ground.
FA:	Flight auger; number indicates outside diameter in inches
HA:	Hand auger; number indicates outside diameter
HSA:	Hollow stem auger; number indicates inside diameter in inches
LG:	Field logger (initials)
MC:	Column used to describe moisture condition of samples and for the ground water level symbols
N (BPF):	Standard penetration resistance (N-value) in blows per foot (see notes)
NQ:	NQ wireline core barrel
PQ:	PQ wireline core barrel
RDA:	Rotary drilling with compressed air and roller or drag bit.
RDF:	Rotary drilling with drilling fluid and roller or drag bit
REC:	In split-spoon (see notes), direct push and thin-walled tube sampling, the recovered length (in inches) of sample. In rock coring, the length of core recovered (expressed as percent of the total core run). Zero indicates no sample recovered.
SS:	Standard split-spoon sampler (steel; 1.5" is inside diameter; 2" outside diameter); unless indicated otherwise- 3" OD sampler was used on this project
SU	Spin-up sample from hollow stem auger
TW:	Thin-walled tube; number indicates inside diameter in inches
WASH:	Sample of material obtained by screening returning rotary drilling fluid or by which has collected inside the borehole after "falling" through drilling fluid
WH:	Sampler advanced by static weight of drill rod and hammer
WR:	Sampler advanced by static weight of drill rod
94mm:	94 millimeter wireline core barrel
▼:	Water level directly measured in boring
▽:	Estimated water level based solely on sample appearance

TEST SYMBOLS

Symbol	Definition
CONS:	One-dimensional consolidation test
DEN:	Dry density, pcf
DST:	Direct shear test
E:	Pressuremeter Modulus, tsf
HYD:	Hydrometer analysis
LL:	Liquid Limit, %
LP:	Pressuremeter Limit Pressure, tsf
OC:	Organic Content, %
PERM:	Coefficient of permeability (K) test; F - Field; L - Laboratory
PL:	Plastic Limit, %
q_p:	Pocket Penetrometer strength, tsf (approximate)
q_c:	Static cone bearing pressure, tsf
q_u:	Unconfined compressive strength, psf
R:	Electrical Resistivity, ohm-cms
RQD:	Rock Quality Designation of Rock Core, in percent (aggregate length of core pieces 4" or more in length as a percent of total core run)
SA:	Sieve analysis
TRX:	Triaxial compression test
VSR:	Vane shear strength, remolded (field), psf
VSU:	Vane shear strength, undisturbed (field), psf
WC:	Water content, as percent of dry weight
%-200:	Percent of material finer than #200 sieve

STANDARD PENETRATION TEST NOTES

(Calibrated Hammer Weight)

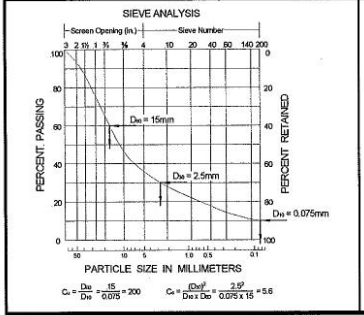
The standard penetration test consists of driving a split-spoon sampler with a drop hammer (calibrated weight varies to provide N_{60} values) and counting the number of blows applied in each of three 6" increments of penetration. If the sampler is driven less than 18" (usually in highly resistant material), permitted in ASTM: D1586, the blows for each complete 6" increment and for each partial increment is on the boring log. For partial increments, the number of blows is shown to the nearest 0.1' below the slash.

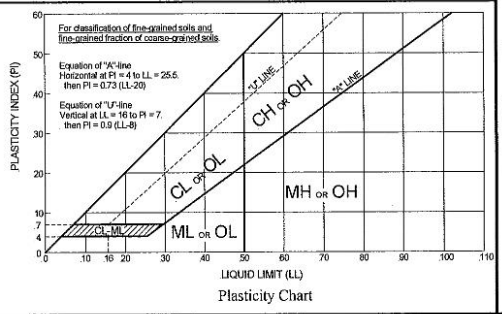
The length of sample recovered, as shown on the "REC" column, may be greater than the distance indicated in the N column. The disparity is because the N-value is recorded below the initial 6" set (unless partial penetration defined in ASTM: D1586 is encountered) whereas the length of sample recovered is for the entire sampler drive (which may even extend more than 18").

UNIFIED SOIL CLASSIFICATION SYSTEM
ASTM Designations: D 2487, D2488

AMERICAN ENGINEERING TESTING, INC.

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]				Soil Classification: Group Symbol	Soil Classification: Group Name[B]
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[C]	Cu≥4 and 1≤Cc≤3[E]	GW	Well graded gravel[F]
			Cu<4 and/or 1>Cc>3[E]	GP	Poorly graded gravel[F]
		Gravels with Fines more than 12% fines[C]	Fines classify as ML or MH	GM	Silty gravel[F,G,H]
			Fines classify as CL or CH	GC	Clayey gravel[F,G,H]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines[D]	Cu≥6 and 1≤Cc≤3[E]	SW	Well-graded sand[I]
			Cu<6 and/or 1>Cc>3[E]	SP	Poorly-graded sand[I]
		Sands with Fines more than 12% fines[D]	Fines classify as ML or MH	SM	Silty sand[G,H,I]
			Fines classify as CL or CH	SC	Clayey sand[G,H,I]
Fine-Grained Soils 50% or more passes the No. 200 sieve (see Plasticity Chart below)	Silts and Clays Liquid limit less than 50	inorganic	PI>7 and plots on or above "A" line[J]	CL	Lean clay[K,L,M]
			PI<4 or plots below "A" line[J]	ML	Silt[K,L,M]
		organic	Liquid limit–oven dried / Liquid limit – not dried <0.75	OL	Organic clay[K,L,M,N] / Organic silt[K,L,M,O]
	Silts and Clays Liquid limit 50 or more	inorganic	PI plots on or above "A" line	CH	Fat clay[K,L,M]
			PI plots below "A" line	MH	Elastic silt[K,L,M]
		organic	Liquid limit–oven dried / Liquid limit – not dried <0.75	OH	Organic clay[K,L,M,P] / Organic silt[K,L,M,Q]
Highly organic soil			Primarily organic matter, dark in color, and organic in odor	PT	Peat[R]





Plasticity Chart

Notes

[A]Based on the material passing the 3-in (75-mm) sieve.

[B]If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C]Gravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay

[D]Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

[E]$Cu = D_{60} / D_{10}$, $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

[F]If soil contains ≥15% sand, add "with sand" to group name.

[G]If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H]If fines are organic, add "with organic fines" to group name.

[I]If soil contains ≥15% gravel, add "with gravel" to group name.

[J]If Atterberg limits plot is hatched area, soils is a CL-ML silty clay.

[K]If soil contains 15 to 29% plus No. 200 add "with sand" or "with gravel", whichever is predominant.

[L]If soil contains ≥30% plus No. 200, predominantly sand, add "sandy" to group name.

[M]If soil contains ≥30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N]PI≥4 and plots on or above "A" line.

[O]PI<4 or plots below "A" line.

[P]PI plots on or above "A" line.

[Q]PI plots below "A" line.

[R]Fiber Content description shown below.

ADDITIONAL TERMINOLOGY NOTES USED BY AET FOR SOIL IDENTIFICATION AND DESCRIPTION

Grain Size

Term	Particle Size
Boulders	Over 12"
Cobbles	3" to 12"
Gravel	#4 sieve to 3"
Sand	#200 to #4 sieve
Fines (silt & clay)	Pass #200 sieve

Gravel Percentages

Term	Percent
A Little Gravel	3% - 14%
With Gravel	15% - 29%
Gravelly	30% - 50%

Consistency of Plastic Soils

Term	N-Value, BPF
Very Soft	less than 2
Soft	2 - 4
Firm	5 - 8
Stiff	9 - 15
Very Stiff	16 - 30
Hard	Greater than 30

Relative Density of Non-Plastic Soils

Term	N-Value, BPF
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	Greater than 50

Moisture/Frost Condition (MC Column)

D (Dry): Absence of moisture, dusty, dry to touch.

M (Moist): Damp, although free water not visible. Soil may still have a high water content (over "optimum").

W (Wet/ Waterbearing): Free water visible intended to describe non-plastic soils. Waterbearing usually relates to sands and sand with silt.

F (Frozen): Soil frozen

Layering Notes

Laminations: Layers less than ½" thick of differing material or color.

Lenses: Pockets or layers greater than ½" thick of differing material or color.

Peat Description

Term	Fiber Content (Visual Estimate)
Fibric Peat:	Greater than 67%
Hemic Peat:	33 – 67%
Sapric Peat:	Less than 33%

Organic Description (if no lab tests)

Soils are described as *organic*, if soil is not peat and is judged to have sufficient organic fines content to influence the Liquid Limit properties. *Slightly organic* used for borderline cases.

Root Inclusions

With roots: Judged to have sufficient quantity of roots to influence the soil properties.

Trace roots: Small roots present, but not judged to be in sufficient quantity to significantly affect soil properties.

01CLS021 (07/08) AMERICAN ENGINEERING TESTING, INC.

Exhibit 8 – 2021 MnDOT Cultural Resources Review for the Kellogg Boulevard Bridge Project

DEPARTMENT OF TRANSPORTATION

Preliminarily Section 106 Findings Memo

Date: 06/08/2021

To: George Gause, Saint Paul Heritage Preservation Supervisor

From: Renee Barnes and Maggie Jones, Historians, MnDOT Cultural Resources Unit

RE: Kellogg Boulevard/Third Street (S.P. 164-158-028)

The professionally qualified staff (as per 36 CFR 61, Section 106) in the Minnesota Department of Transportation (MnDOT) Cultural Resources Unit (CRU) have reviewed the above-referenced Federal Highway Administration (FHWA) undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 306108 (formerly known as Section 106 of the National Historic Preservation Act [54 USC 300101 et seq.]) and its implementing regulations, 36 CFR 800, and as per the terms of the 2015 Section 106 Programmatic Agreement between the FHWA, the U.S. Army Corps of Engineers (Corps), MnDOT, and the Minnesota State Historic Preservation Office (SHPO).

Project Description

This project will reconstruct Kellogg Boulevard / Third Street retaining walls, approach roadway, and Bridge Nos. 62080 and 62080A over Union Pacific Railroad, BNSF Railway, Bruce Vento Nature Sanctuary, Commercial Street, and Interstate (I-94). The preliminary project limits extend from Broadway Street to Mounds Boulevard. The project involves demolition of the current structure and reconstruction of piers, abutments, beams, bridge deck, railings, parapets and approach roadways. Traffic operations on the existing bridge have been restricted from four-lane capacity to three traffic lanes and one six-foot wide sidewalk due to structural deficiencies. The proposed bridge will accommodate four traffic lanes and 12-foot wide shared bicycle/pedestrian facilities in both eastbound and westbound directions. Traffic signal and intersection accommodations for the proposed Gold Line bus rapid transit (BRT) will also be included in this project. Excavation will be required to construct foundations and for storm utilities.

Area of Potential Effects

As defined in 36 CFR 800.16, the area of potential effects (APE) is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The APE includes areas of physical alteration and ground-disturbing activities; visual, audible, and atmospheric changes during and after construction. The APE encompasses the proposed construction limits including staging areas and a 300-foot buffer around bridge construction for potential vibratory effects (Figure 1).

Figure 1: Area of Potential Effects

Consultation

Per 36 CFR 800 and existing agreements between FHWA and certain tribes, our unit invited the following groups to consult on the Section 106 process: Fort Peck Tribes, Lower Sioux Indian Community, Prairie Island Indian Community, Santee Sioux Nation, Shakopee Mdewakanton Sioux Community, Sisseston Wahpeton Oyate of the Lake Traverse Reservation, Turtle Mountain Band of Chippewa, Upper Sioux Community and the Saint Paul Heritage Preservation Commission.

Identification and Evaluation

CRU staff reviewed information on known historic properties (i.e., those determined eligible for or listed on the National Register), significant state sites, and burials/cemeteries, including databases maintained by SHPO, Office of the State Archaeologist (OSA) (including the unrecorded historic cemeteries database), and the Minnesota Indian Affairs Council (MIAC).

Archaeology

There are no known archaeological sites within the APE. MnModel 4 Landscape Suitability Model was used to assess the potential for archaeological sites. Although the areas within the APE have high site potential based on the landscape, the area has been significantly disturbed by development and railroad construction. It is unlikely that an intact significant site is within the APE, it is our unit's recommendation that no survey is warranted.

Architecture History

The APE has previously been surveyed for architecture/history properties. There are no bridges of historic age within the APE. Dayton's Bluff Historic District is a Local Heritage Preservation District adjacent to the project area, however, the historic district is outside of the APE. Figure 2 details the boundaries of the four historic properties within the APE (Figure 2).

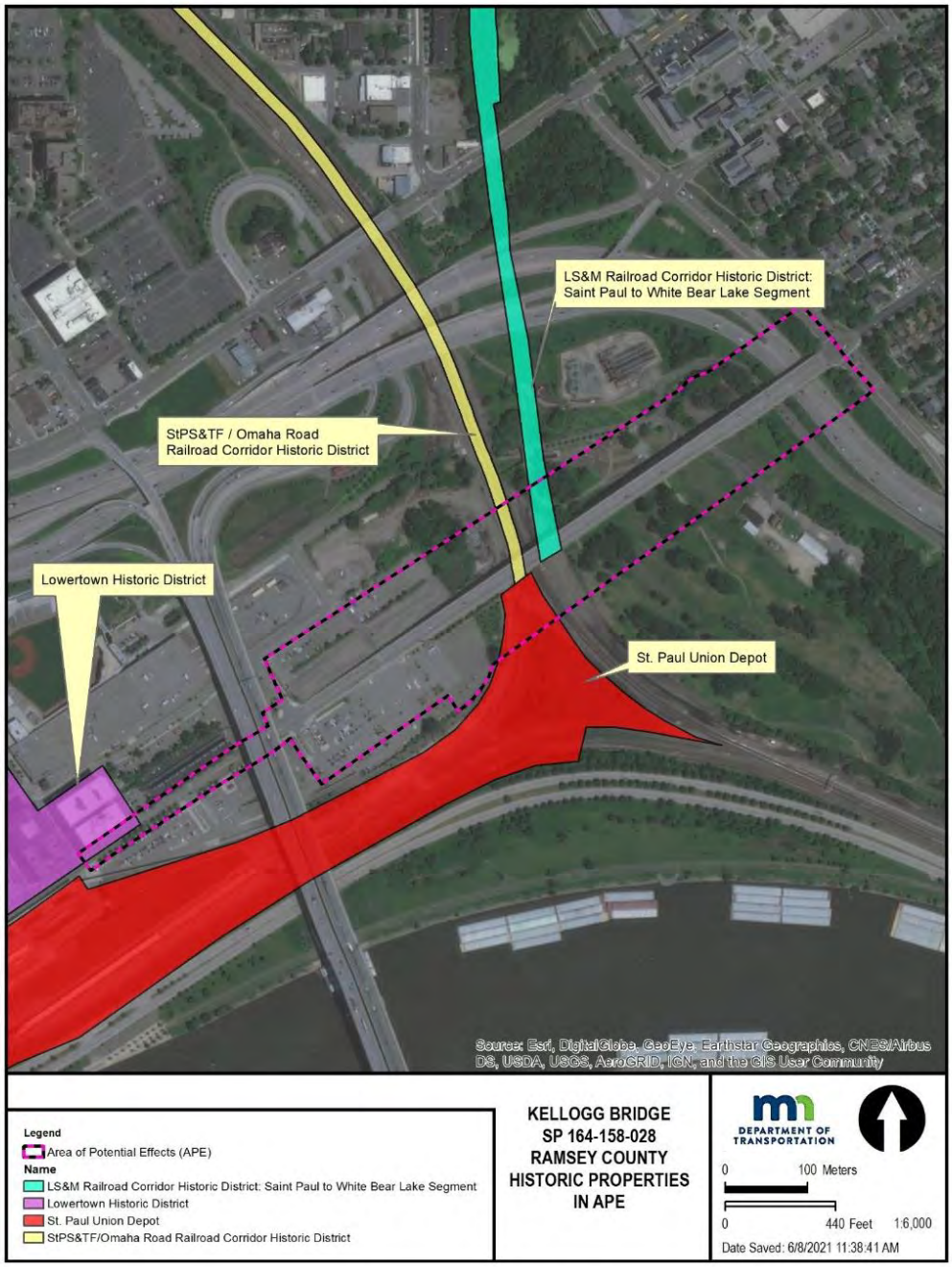


Figure 2: Historic properties in APE

Table 1: Historic Properties in the APE

Inventory Number	Historic Property Name	Eligibility
XX-RRD-CNW001	StPS&TF / Omaha Road Railroad Corridor Historic District	Eligible
RA-SPC-4580	Lowertown Historic District	National Register Listed; Local Heritage Preservation District
RA-SPC-5225; RA-SPC-6907	St. Paul Union Depot	National Register Listed; Contributing to Lowertown Historic District
XX-RRD-NPR001	Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment	Eligible

Saint Paul, Stillwater & Taylors Falls / Chicago, Saint Paul, Minneapolis & Omaha Road Railroad Corridor Historic District (StPS&TF/Omaha Road Historic District) is an approximately 15-mile-long railroad corridor running roughly northeast-southwest between the Saint Paul Union Depot (RA-SPC-5225, RA-SPC-6907) and Stillwater Junction, southwest of Stillwater. The only resource within the APE is the extant railroad roadway which is contributing.

The StPS&TF/Omaha Road Historic District is eligible for inclusion in the National Register under Criterion A in the area of Transportation. It meets the Railroad MPDF registration requirements for a railroad corridor historic district as a railroad that made an early connection between Saint Paul and Chicago and as a Granger Railroad, providing transportation for agricultural products from southern Minnesota to terminal markets in Saint Paul, Chicago, and Omaha. The period of significance begins in 1871, when the railroad was completed between Union Depot and Stillwater Junction, and extends to 1957 when the Omaha Road ceased to operate independently and formally merged with the Chicago & Northwestern.

Lowertown Historic District (RA-SPC-4580) covers 16 blocks located on the eastern edge of downtown Saint Paul, north of the Mississippi River. The district contains primarily late 19th- and early 20th-century warehouses and wholesale buildings constructed for railroad-related businesses. The commercial buildings serve a utilitarian function but were often designed by prominent architects to convey the prominent styles of the time, including Italianate, Queen Anne, Richardsonian Romanesque, Beaux Arts, and Classical Revival. The Lowertown Historic District was listed in the National Register in 1983 and is significant under Criterion A in the areas of Commerce, Industry, and Transportation for being the site of a major railroad hub and the location of Saint Paul's

warehouse and wholesaling district during the late 19th and early 20th centuries. Lowertown is also significant under Criterion C in the areas of:

- Architecture, for its collection of commercial buildings, many designed by nationally recognized architects;
- Community Planning, for the grid street platting and design and grade changes made to accommodate the needs of the growing warehousing area, and for the placement of Mears (formerly Smith) Park; and
- Landscape Architecture for Mears (Smith) Park which has been maintained since the block's conversion to a park in the 1870s.

The historic district's period of significance extends from 1870 to 1923, the construction dates of the earliest and last contributing resources within the district, respectively. Character-defining features include the design of the contributing properties, which have simple block massing with a variety of applied styles; a grid street pattern; sloping topography toward the river; and Mears (formerly Smith) Park as the nucleus and visual center—all "dramatic street patterns and grade changes which were made in the 1870s." While the roadways and sidewalks provide a physical framework for the historic district, they have been rebuilt or reconstructed numerous times since the end of the period of significance and no longer maintain integrity of material, design, or workmanship. Additionally, Lowertown was designated a City of St. Paul Local Heritage Preservation District in 1984.

St. Paul Union Depot (RA-SPC-5225; RA-SPC-6907) was constructed between 1917 and 1926 at the southern edge of downtown St. Paul and overlooking the Mississippi River, the Saint Paul Union Depot (Union Depot) is a five (5)-story, limestone-clad, Neoclassical style railroad depot that is now a multimodal facility. Union Depot was originally listed in the National Register in 1974 and the boundary was increased in 2014. The property has statewide significance under Criterion A in the areas of Transportation, Commerce, and Industry and under Criterion C in the areas of Architecture and Engineering. In the areas of Transportation, Commerce and Industry, Union Depot characterizes St. Paul's early 20th-century buildings which reflected the importance of railroad transportation in the early growth, expansion, and prosperity of the quickly growing commercial center. In the area of Architecture, Union Depot is significant for its use of the Neoclassical style, which was prevalent in public and governmental buildings between the World Wars. In the area of Engineering, Union Depot is significant for the construction of the train deck and yards. The period of significance extends from 1917, the year construction began, to 1963 when Union Depot's use as a transportation hub and passenger depot declined.

Character-defining features of Union Depot include the Neoclassical design elements, vaulted interior passenger concourse, a semi-circular front approach, train deck, elevated rail yards, connection to the rail yards, and significant grading and placement on sloping topography toward the Mississippi River. Another character-defining feature is the setting and prominent placement of Union Depot within the Lowertown neighborhood, illustrating the relationship of Union Depot to St. Paul as a vibrant commercial center in the early 20th century. Union Depot contributes to the Lowertown Historic District, discussed above. It is also located within the boundaries of the locally designated Lowertown Heritage Preservation District.

The **Lake Superior & Mississippi (LS&M) Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment (XX-RRD-NPR001) e**xtends from a wye junction just east of Union Depot (RA-SPC-5225, RA-SPC-6907) in downtown Saint Paul to the 1935 White Bear Lake Depot (RA-WBC-0121). The historic property, originally built by the LS&M Railroad in 1868, is an approximately 11-mile segment of a 155-mile-long railroad corridor that ran from Saint Paul to Duluth's port on Lake Superior in 1870.

The LS&M Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment is eligible for inclusion in the National Register under Criterion A in the area of Transportation as an early segment of what became the primary rail connection between the navigable waterways of the Mississippi River and Lake Superior and as an important railroad connection between downtown Saint Paul and the summer tourism industry of White Bear Lake. The LS&M Railroad Corridor Historic District meets the registration requirements in the Railroad MPDF. Within the Project APE, the only resources are the railroad roadway, which is contributing.

Preliminary Assessment of Effects

The Project is anticipated to have **No Adverse Effect** on the **Saint Paul Union Depot.** The historic property would not be physically affected by the Project, nor would any Project elements visually effect the transportation/multimodal character of the historic property. Vibration will not affect the rail-related resources within the APE. The Project would not alter any of the characteristics that qualify the historic property for inclusion in the National Register or diminish the historic property's integrity of location, design, setting, materials, workmanship, feeling, or association.

The Project is anticipated to have **No Adverse Effect** on the **StPS&TF / Omaha Road Railroad Corridor Historic District.** The potential bridge footings are within the boundary of the historic district. The project will introduce a new bridge within the viewshed of the historic district, but the change is minimal from the current condition. Vibration will not affect the rail-related resources within the APE. The Project would not alter any of the characteristics that qualify the historic property for inclusion in the National Register or diminish the historic property's integrity of location, design, setting, materials, workmanship, feeling, or association.

The Project is anticipated to have **No Adverse Effect** on the **Lowertown Historic District**. The historic property would not be physically affected by the Project, nor would any Project elements visually effect the of the historic property. Vibration related to bridge footing construction will be over 600 feet from the district and has no potential to effect the historic district. The Project would not alter any of the characteristics that qualify the historic property for inclusion in the National Register or diminish the historic property's integrity of location, design, setting, materials, workmanship, feeling, or association.

The Project is anticipated to have **No Adverse Effect** on the **Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment**. The potential bridge footings are within the boundary of the historic district. The project will introduce a new bridge within the viewshed of the historic district, but the change is minimal from the current condition. Vibration will not affect the rail-related resources within the APE. The Project would not alter any of the characteristics that qualify the historic property for inclusion in the National Register or diminish the historic property's integrity of location, design, setting, materials, workmanship, feeling, or association.

Preliminary Findings

The proposed work includes reconstruction of infrastructure that has existed in this location for many decades and the essential physical features of the historic properties within the APE will not be affected. The proposed work will not diminish any of the seven aspects of integrity that convey the historic significance for the properties listed above. As such, it is the preliminary finding of MnDOT CRU that the undertaking will have no adverse effect to those properties. This finding is based on the condition that our unit will review plans at 30/60/90 percent completion to ensure any project modifications do not result in any substantive changes, meaning those that would create an adverse effect on historic properties.

Exhibit 9 – Tribal Invitation Letters

NATIONAL ENDOWMENT FOR THE HUMANITIES

OFFICE OF GRANT MANAGEMENT

July 27, 2021

Name
Title
Affiliation
Mailing Address
Email

Re: National Endowment for the Humanities invitation to be a consulting Party for the proposed Wakan Tipi Center at the Bruce Vento Nature Sanctuary, located at the Intersection of Kellogg Boulevard East, Commercial Street, and 4th Street East, Saint Paul, Ramsey County, Minnesota

Dear Ms./Mr./Chairwoman/Chairman/Chairperson:

The National Endowment for the Humanities (NEH) has awarded the Lower Phelan Creek Project (LPCP), a with a $5200,000 Challenge Infrastructure and Capacity Building matching grant (CHA-268798) for a Wakan Tipi Center at the Bruce Vento Nature Sanctuary.

In accordance with 36 CFR. 800.10, the intent of this letter is to invite the **Tribe/Nation** to become a consulting party under Section 106 of the National Historic Preservation Act (Section 106) of 1966, as amended, 16 U.S.C. § 470. In accordance with 36 CFR §800.2(c)(2)(ii)(B) and (C), NEH will ensure that it conducts all consultations with Indian Tribes in a sensitive manner respectful of tribal sovereignty and the government-to-government relationship between the Federal Government and Indian Tribes.

The Challenge grant recipient, Lower Phalen Creek Project, intends to build and operate Wakan Tipi Center at Bruce Vento Nature Sanctuary located at the Intersection of Kellogg Boulevard East, Commercial Street, and 4th Street East, Saint Paul, Ramsey County, Minnesota. The facility has three primary objectives: (1) to honor, accurately interpret and educate the community about the rich and diverse cultural and natural history and features of the site and the Lower Phalen Creek corridor, (2) to honor the significance of Wakan Tipi Cave as a Dakota sacred site, and (3) to create a gathering place and visitor facility for the community and guests in the area. Wakan Tipi Center is designed to complement and support cultural and environmental interpretation programs for Bruce Vento Nature Sanctuary. It will be a welcoming, beautiful enhancement to the sanctuary, both in terms of its minimal environmental impact and its visual appeal. It will provide a significant improvement to its location at the Commercial and 4th Street corner (Saint Paul, Minnesota), which is now asphalt pavement and highway overpasses. The center will be a location for a variety of arts, cultural, educational, and environmental programs.

A 2017 survey of residents and park users revealed a great desire for authentic Dakota interpretation of this site and a history and perspective of the area through an Indigenous lens. The design of the Center was led by an indigenous design firm and incorporated the priorities identified over the course of several meetings by a Dakota-led community pre-design workgroup. Consequently, the Center will provide a community-driven effort to honor the cave as a Dakota sacred site and interpret the culture and history of Dakota people in Saint Paul. Through the design of the structure itself – which incorporates bird-safe and green building principles and Dakota culture – and the environmental education programming, the intent of the Wakan Tipi Center is to seamlessly integrate into the sanctuary and offer a space for cultural connections and healing through the arts and nature. Enclosed in this letter is:

- A cultural and archaeological resources review which includes a description of the proposed Area of Potential Effect, summary of cultural and archaeological resources within and proximal to the proposed WTC, and a determination of effect statement which has been developed in consultation with the Federal Preservation Officer from the NEH
- Project Site Plat

NEH, a funding agency, is required by regulation to identify and assess the effects of any proposed actions on historic properties. If any proposed action will have an adverse effect on historic resources, NEH works with the appropriate parties to seek ways to avoid, minimize, or mitigate any adverse effects. Additionally, the Section 106 regulations require NEH to consider the views of the public on preservation issues when making final decisions that affect historic properties.

Please advise NEH as to whether the **Tribe/Nation** wishes to join in this consultation. If you wish to be a consulting party, please include in your response a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties that might be affected by the referenced project. The NEH will respect the confidentiality of the information that you provide to the fullest extent possible. Please submit your response to me by August 31, 2021, at apiesen@neh.gov. Should you have any questions I can also be reached by phone at 202-606-8576.

Sincerely,

Ann E. Piesen, MCP
Federal Preservation Officer
National Endowment for the Humanities

Enclosure

Groups who received invitation letter:

Mr. Bobby Komardley, Chairman Apache Tribe of Oklahoma P.O. Box 1330 Andarko, OK 73005	Mr. Max Bear, Tribal Historic Preservation Officer Cheyenne and Arapaho Tribes, Oklahoma 700 Black Kettle Boulevard Concho, OK 73022	Mr. Anthony Reider, Chairperson and Mr. Gary Kills A Hundred, Tribal Historic Preservation Officer Flandreau Santee Sioux Tribe of South Dakota P.O. Box 283 Flandreau, SD 57028-0283
Mr. Andrew Wek, President and Mr. Michael Blackwolf, Tribal Historic Preservation Officer Fort Belknap Indian Community of the Fort Belknap Reservation of Montana 656 Agency Main Street Harlem, MT	Mr. Tim Rhodd, Chairperson and Mr. Lance Foster, Tribal Historic Preservation Officer Iowa Tribe of Kansas and Nebraska P.O. Box 283 3345 B Thrasher Road White Cloud, KS 66094	Ms. Joan Delabreau, Chairwoman and Mr. David Grignon, Tribal Historic Preservation Officer Menominee Indian Tribe of Wisconsin P.O Box 910 Keshena, WI 54135-0910
Mr. Robert Larsen, President Lower Sioux Indian Community in the State of Minnesota P.O. Box 308 Morton, MN 56270	Ms. Shelley Buck, Chairperson and Mr. Noah White, Tribal Historic Preservation Officer Prairie Island Community in the State of Minnesota 5636 Sturgeon Lake Road Welch, MN 55089	Mr. Roger Trudell, Chairperson and Mr. Duane Whipple, Tribal Historic Preservation Officer Santee Sioux Nation, Nebraska 425 Frazier Avenue, Suite 2 Niobrara, NE 68760-8605
Mr. Kevin Jensvold, Chairperson and Ms. Samantha Odegardi, Tribal Historic Preservation Officer Upper Sioux Community, Minnesota P.O. Box 147 Granite Falls, MN 56241-0147	The Ho-Chunk Nation William Quackenbush, THPO PO Box 667 Black River Falls, WI 54615 Tel: 715.284.7181 Fax: 715.284.7449 Email: bill.quackenbush@ho-chunk.com	Leonard Wabasha, Cultural Resources Director Shakopee Mdewakanton Sioux Community Leonard Wabasha, Cultural Resources Director Leonard Wabasha culturalresources@shakopeedakota.org

Exhibit 10 –Consultation and Support Letters for the Wakan Tipi Center Project

TRIBAL HISTORIC PRESERVATION OFFICE
Prairie Island Indian Community, Dept. of Land & Environment
5636 Sturgeon Lake Road, Welch, MN 55089
Phone (651) 385-2554

Maggie Lorenz
Executive Director &
Wakaŋ Tipi Center Director
Lower Phalen Creek Project
www.lowerphalencreek.org

August 31, 2021

Dear Mrs. Lorenz,

The Prairie Island Tribal Historic Preservation Office at Prairie Island Indian Community writes this letter in support of the Wakan Tipi Visitor Center building project. The planning and design process has been inclusive of both Indigenous perspectives and residential input since the inception.

The Prairie Island Indian Community has appreciated the opportunity for its THPO's to serve as a Lower Phalen Creek Project pre-design committee members and Wakan Tipi Steering Committee members. These processes have been both productive and garnered inclusive dialogue surrounding the planning and development of this important project.

The Mdewakanton Dakota recognize Wakan Tipi (aka Carvers Cave in Bruce Vento Nature Sanctuary) and the associated burial mounds (at what is now Indian Mounds Regional Park) as a sacred place and there has been diligent and sensitive steps taken in consideration of this fact, especially during design and future interpretation. It is our belief this project can serve as a catalyst for many Dakota to reconnect to their cultural heritage and learn more on their traditional world view.

The Prairie Island Tribal Historic Preservation Office proudly supports and recognizes the Indigenous-inclusive planning and design process of Wakan Tipi Visitor Center project. If we can answer any questions or include additional testimony, please contact me at the information provided.

Respectfully,

Noah White
Tribal Historic Preservation Officer
Prairie Island Indian Community

Tribal Historic Preservation Office
Upper Sioux Community
5722 Travers Lane
Post Office Box 147
Granite Falls, MN 56241
320.564.3853
thpo@uppersiouxcommunity-nsn.gov

Maggie Lorenz
Executive Director &
Wakan Tipi Center Director
Lower Phalen Creek Project

August 31, 2021

Dear Ms. Lorenz,

This letter is in support of the Wakan Tipi Visitor Center building project and the efforts that have been taken to include Indigenous perspective and input for a project associated with one of our ancient and sacred sites.

Four years ago, when I started in this position there was already outreach taking place from Lower Phalen Creek to the Upper Sioux Community Tribal Historic Preservation Office and our elders requesting our input and participation. At the time my office was not able to participate but we have followed the process and the progress that has been made. This past year we have been able to take a more active role by participated in planning meetings and I've personally joined the Wakan Tipi Steering Committee.

Wakan Tipi, the burial site on the bluffs above and other associated sites in the area are recognized as a sacred place by the Upper Sioux Community Tribal Historic Preservation Office. We know the importance of Dakota people reclaiming our sites and creating places to gather in our homelands to share culture, history, and traditions. This project will be a place we can reconnect to sacred sites, the land, and our relatives.

Pidamaya ye,

Samantha Odegard

Samantha Odegard
Tribal Historic Preservation Officer
Upper Sioux Community

Tribal Historic Preservation Office
Lower Sioux Indian Community
P.O Box 308 | 39527 Reservation Hwy 1
Morton, MN 56270

Maggie Lorenz
Executive Director &
Wakaŋ Tipi Center Director
Lower Phalen Creek Project
www.lowerphalencreek.org

August 31, 2021

Dear Mrs. Lorenz,

The Lower Sioux Tribal Historic Preservation Office at Lower Sioux Indian Community writes this letter in support of the Wakan Tipi Visitor Center building project. The planning and design process has been inclusive of both Indigenous perspective and residential input since the inception.

The Lower Sioux Indian Community has appreciated the opportunity to serve as a Lower Phalen Creek Project board member and Wakan Tipi Steering Committee member. In both capacities I have seen productive and inclusive dialogue surrounding the planning and development of this important project.

The Mdewakanton Dakota recognize Wakan Tipi as a sacred place, there has been diligent and sensitive steps taken in consideration of this fact, especially during design and future interpretation. It is our belief this project can serve as a catalyst for many Dakota to reconnect to their cultural heritage and learn more on their traditional world view.

The Lower Sioux Tribal Historic Preservation Office proudly supports and recognizes the Indigenous-inclusive planning and design process of Wakan Tipi Visitor Center project. If we can answer any questions or include additional testimony, please contact me at the information provided.

Respectfully,

Cheyanne St. John
Lower Sioux Indian Community
Tribal Historic Preservation Office

United States Department of the Interior

NATIONAL PARK SERVICE
Mississippi National River and Recreation Area
111 E. Kellogg Blvd., Suite 105
St. Paul, Minnesota 55101-1256

IN REPLY REFER TO:

1.A.2

August 26, 2021

Ann Piesen
Federal Preservation Officer
National Endowment for the Humanities
400 7th Street SW
Washington DC 20506

RE: NEH invitation to be a NHPA 106 Consulting Party for the proposed Wakan Tipi Center at the Bruce Vento Nature Sanctuary

Dear Ms. Piesen

Thank you for your August 23, 2021 invitation to the National Park Service (NPS)- Mississippi National River and Recreation Area (MNRRA) be an NHPA 106 Consulting Party on the NEH's Wakan Tipi Center Undertaking. NPS accepts your invitation to be a Consulting Party. The Bruce Vento Nature Sanctuary is located within the MNRRA corridor and our agency has long supported Lower Phalen Creek Project's restoration and interpretive efforts at the site.

Given the limited extent of the NEH's federal undertaking associated with the larger project, NPS recommends that NEH assess the effects of the project against already identified historic properties on file with SHPO around the immediate project site, as well as undertake a reasonable level of archaeological study for the potential ground disturbances associated with the project. We suggest that NEH consider the impacts of the project on Carver's Cave / Wakan Tipi / 21RA28 as a previously determined NR-eligible Traditional Cultural Property, and to seek concurrence from traditionally association Dakota nations on the potential effects of the project on that TCP. While this property is not in the immediate vicinity of the Wakan Tipi Center, its inclusion in a discontiguous Area of Potential Effect would seem to be a reasonable and good faith consideration given the goals and tribal orientation of the Lower Phalen Creek Project's efforts throughout the Wakan Tipi Center's long planning process.

Thank you again for inviting our agency to consult on this important project. We look forward to reviewing materials associated with the Undertaking and further discussing the project with you, the Applicant, and other consulting parties as necessary. If you have questions or would like to discuss the contents of this letter, please feel free to contact our Cultural Resource Program Manager, Dr. Dan Ott at daniel_ott@nps.gov or 651-293-8452

Sincerely,

CRAIG HANSEN
Digitally signed by CRAIG HANSEN
Date: 2021.08.26 14:46:14 -05'00'

Craig Hansen
Acting Superintendent

MINNESOTA
INDIAN AFFAIRS COUNCIL

161 Saint Anthony Ave Ste 919
Saint Paul, MN 55103

March 9, 2020

Saint Paul Neighborhood Star Board
15 Kellogg Blvd. West
Saint Paul, MN 55106

Dear Saint Paul Star Board Members

On behalf of the Minnesota Indian Affairs Council (MIAC), it is our pleasure to send this letter of support for Lower Phalen Creek Project's development of Wakan Tipi Center at Bruce Vento Nature Sanctuary in Saint Paul. The land within the borders of the City of Saint Paul holds many important stories and spaces as the homelands of the Dakota people.

The Wakan Tipi Center project seeks to honor, protect, and elevate the stories of one such place, Wakan Tipi, a sacred site and burial site for Dakota people dating back thousands of years. Lower Phalen Creek Project's work to honor this site, restore and care for Saint Paul's urban green space, and promote cultural understanding and healing at this site is valued by the eleven tribal nations that comprise MIAC.

Our mission at MIAC is to protect the sovereignty of the eleven Minnesota tribes and ensure the wellbeing of all American Indian citizens throughout the state of Minnesota. The programming and exhibits that will be provided at Wakan Tipi Center align with our mission and goals.

We are enthusiastic in our support of this project and look forward to visiting Wakan Tipi Center when it is completed.

Pidamayado,

Robert Larsen
President Lower Sioux
Chair, Minnesota Indian Affairs Council

May 8, 2019

Via Email

Maggie Lorenz
Lower Phalen Creek Project
804 Margaret Street
Saint Paul, MN 55106
mlorenz@lowerphalencreek.org

Dear Lower Phalen Creek Project:

I write on behalf of the Prairie Island Indian Community (the "Tribe"). The Tribe supports the development of the Wakan Tipi Center (the "Center").

The Center provides a valuable opportunity to have a cultural and environmental interpretive center near the sacred Dakota site, Wakan Tipi Cave. The Center will be a place to share Dakota culture with all, including Indigenous people who may not be familiar with their own history, in a space designed to honor the unique environmental, cultural and sacred resources surrounding Wakan Tipi Cave. The Center can also provide a place to bring together scholars and community members to discuss foundational documents in the making of U.S. history, such as the history of treaties with Indigenous communities.

We are excited about the opportunity that the Center will create for further collaboration between the Prairie Island Community and Lower Phalen Creek Project.

Sincerely,

Shelley Buck

Shelley Buck
Tribal Council President
Prairie Island Indian Community

5636 Sturgeon Lake Rd • Welch, MN 55089
(651) 385-2554 • 800-554-5473 • Fax (651) 385-4180 • TTY 800-627-3529 Deaf or Hearing Impaired

Payne-Phalen COMMUNITY COUNCIL

567 Payne Avenue, St. Paul MN 55130 www.paynephalen.org 651-774-5234 district5@paynephalen.org

March 18, 2020

VIA EMAIL

Michelle Swanson Program Administrator
Neighborhood Star Grant Program
c/o St. Paul Planning & Economic Development Department
25 West 4th Street, 1400 City Hall Annex
St. Paul, MN 55102

RE: Application for Neighborhood Star Grant for Wakan Tipi by the Lower Phalen Creek Project

Dear Ms. Swanson:

I am writing to you on behalf of the Payne-Phalen Community Council to support the application by the Lower Phalen Creek Project for the Wakan Tipi Center at Bruce Vento Nature Sanctuary.

The East Side of Saint Paul, where Lower Phalen Creek Project is based, is the ancestral home to Dakota people and has been a gateway for immigrants to our community for hundreds of years. The work to honor this area, protect our urban green space and promote understanding of its sacred character to Dakota people is highly valued by the Payne-Phalen Community Council. We consider this project a crucial connection not only within the fabric of St. Paul's green spaces, but also as a crucial connection across cultures and across generations of people - past, present, and future.

We appreciate you including this letter in the packet of materials for consideration of this application. And we thank you in advance for taking the position of the Payne-Phalen Community Council into full consideration as you make your decision.

Please feel free to contact me if you have any questions or require further clarification.

Sincerely,
<jb.auto-signature>

Jack Byers
Executive Director

cc. Neighborhood Star Board
Council President Amy Brendmoen, Ward 5
CM Nelsie Yang, Ward 6
CM Jane Prince, Ward 7
Austria Castillo, Program Manager
Bill Dermody, St. Paul PED
Athena Hollins, Board President
Maggie Lorenz, Executive Director, Lower Phalen Creek Project

dayton's bluff
COMMUNITY COUNCIL

MANY CULTURES.
BUILDING THE FUTURE.

To advance equity and enhance quality of life through partnerships and community engagement

March 4, 2021

Ms. Maggie Lorenz
Executive Director
Lower Phalen Creek Project
Via email: mlorenz@lowerphalencreek.org
Dear Maggie:

On behalf of the Dayton's Bluff District 4 Community Council, it is my pleasure to send this letter of support regarding Lower Phalen Creek Project's plans for Wakan Tipi Center at Bruce Vento Nature Sanctuary in Saint Paul, Minnesota!

The City of Saint Paul includes many uniquely important spaces and green spaces. The East Side of Saint Paul, where Lower Phalen Creek Project is based, is the ancestral home to Dakota people and has been a gateway for immigrants to our community for hundreds of years. Your work to honor this area, protect our urban green space and promote understanding of its sacred character to Dakota people is valued by the Dayton's Bluff Community Council.

The Dayton's Bluff Community Council is committed to efforts that support the building of a more inclusive and equitable community for all!

I wish you success with your plans and look forward to visiting Wakan Tipi Center when it is completed.

Lissa

Lissa Jones-Lofgren, Interim Executive Director

Bill Martin

From: Gause, George (CI-StPaul) <George.Gause@ci.stpaul.mn.us>
Sent: Wednesday, July 28, 2021 9:29 AM
To: Bill Martin
Cc: Piesen, Ann
Subject: RE: Section 106 Section Consultation -- Wakan Tipi Center

Ms. Piesen & Mr. Martin,

Thank you for the invitation to be a consulting party for the proposed Wakan Tipi Center at the Bruce Vento Nature Sanctuary in Saint Paul, Minnesota. I have reviewed the packet which explains the program to create a gathering place and visitor facility for the community and guests in the area that would have an indigenous perspective while honoring the sacred site.

After reviewing the APE, it appears that no historic properties would be affected by the proposed action. The site is also isolated from the Lowertown and Dayton's Bluff areas of Saint Paul.
The Saint Paul Heritage Preservation Commission does not require to be a consulting party for this project.

Let me know if you have any questions.

SAINT PAUL
MINNESOTA

George Gause
Historic Preservation Supervisor
Pronouns He/Him
Planning & Economic Development
25 4th Street West, ste 1400
Saint Paul, MN 55102
P: 651-266-6714
george.gause@ci.stpaul.mn.us

Mission and Vision: It is the mission of the City of Saint Paul to integrate equity and inclusion into how we approach all our work.

Our vision is to be committed to building an equitable and inclusive city that will shift culture in city processes and policies, eliminate structural inequities, and ensure timely and relevant access to services, resources, support and opportunity to every person in Saint Paul.

From: Bill Martin <bmartin@eorinc.com>
Sent: Tuesday, July 27, 2021 2:25 PM
To: Gause, George (CI-StPaul) <George.Gause@ci.stpaul.mn.us>
Cc: Piesen, Ann <apiesen@neh.gov>
Subject: Section 106 Section Consultation -- Wakan Tipi Center

1

Think Before You Click: This email originated **outside** our organization.

Mr. Gause

The Lower Phelan Creek Project is proposing to construct the Wakan Tipi Center at the Bruce Vento Nature Sanctuary south of Kellogg Boulevard. I have been retained by the LPCP to facilitate the Section 106 review for the project. The Minnesota State Historic Preservation Office suggested that we reach out to your organization and invite you into the consultation process.

The attached material provides project background information and other pertinent details regarding the project. If you need additional material or information to facilitate to review, please let me know.

Thank you for your time and attention to this request.

Bill Martin, CEP, RPA
Senior Environmental Planner
515.230.9588, bmartin@eorinc.com

EOR Iowa: water | ecology | community
1002 Quartz Avenue
Boone, Iowa 50036
www.eorinc.com

For the sake of your overall happiness and well-being, please do not feel obligated to respond outside your regular work hours.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
4101 American Blvd E
Bloomington, MN 55425-1665
Phone: (952) 252-0092 Fax: (952) 646-2873
http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: July 23, 2021
Consultation Code: 03E19000-2021-SLI-1901
Event Code: 03E19000-2021-E-05768
Project Name: Wakan Tipi Center

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq*.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq*.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS IPaC website at regular intervals during project planning and implementation

for updates to species lists and information. An updated list may be requested through the ECOS IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Please refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **No Effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats

Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or

- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed, please use the northern long-eared bat determination key in IPaC. This tool streamlines consultation under the 2016 rangewide programmatic biological opinion for the 4(d) rule. The key helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. No further review by us is necessary. Please visit the links below for additional information about "may affect" determinations for the northern long-eared bat.

NLEB Section 7 consultation

Key to the NLEB 4(d) rule for federal actions that may affect

Instructions for the NLEB 4(d) assisted d-key

Maternity tree and hibernaculum locations by state

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination

While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

Minnesota

Minnesota Department of Natural Resources - Endangered Resources Review Homepage

Email: Review.NHIS@state.mn.us

Wisconsin

Wisconsin Department of Natural Resources - Endangered Resources Review Homepage

Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- Migratory Birds

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
4101 American Blvd E
Bloomington, MN 55425-1665
(952) 252-0092

Project Summary

Consultation Code: 03E19000-2021-SLI-1901
Event Code: 03E19000-2021-E-05768
Project Name: Wakan Tipi Center
Project Type: DEVELOPMENT
Project Description: Lower Phalen Creek Project (LPCP) intends to build and operate Wakan Tipi Center (WTC) at Bruce Vento Nature Sanctuary (BVNS) in Saint Paul, Minnesota. The WTC has three primary objectives: (1) to honor, accurately interpret and educate the community about the rich and diverse cultural and natural history and features of the site and the Lower Phalen Creek corridor, (2) to honor the significance of Wakan Tipi Cave as a Dakota sacred site, and (3) to create a gathering place and visitor facility for the community and guests in the area. The WTC is designed to complement and support cultural and environmental interpretation programs for the BVNS. It will be a welcoming, beautiful enhancement to the sanctuary, both in terms of its minimal environmental impact and its visual appeal. It will provide a significant improvement to its location at the Commercial and 4th Street corner in Saint Paul, Ramsey County, Minnesota, which is now asphalt payment and highway overpasses. The WTC will be a location for a variety of arts, cultural, educational, and environmental programs.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.952155250000004,-93.07486735,14z

Counties: Ramsey County, Minnesota

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered

Insects

NAME	STATUS
Rusty Patched Bumble Bee *Bombus affinis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9383 General project design guidelines: https://ecos.fws.gov/docs/tess/ipac_project_design_guidelines/doc5967.pdf	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Least Bittern *Ixobrychus exilis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6175	Breeds Aug 16 to Oct 31
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Willow Flycatcher *Empidonax traillii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

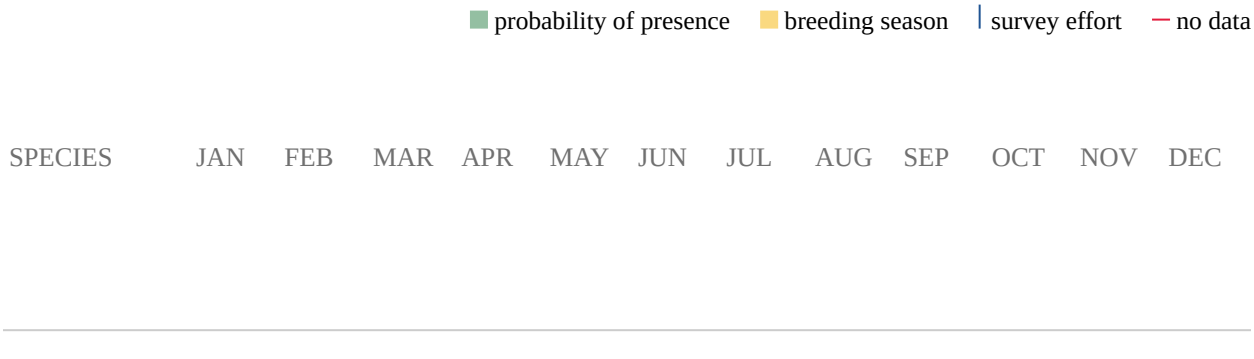
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

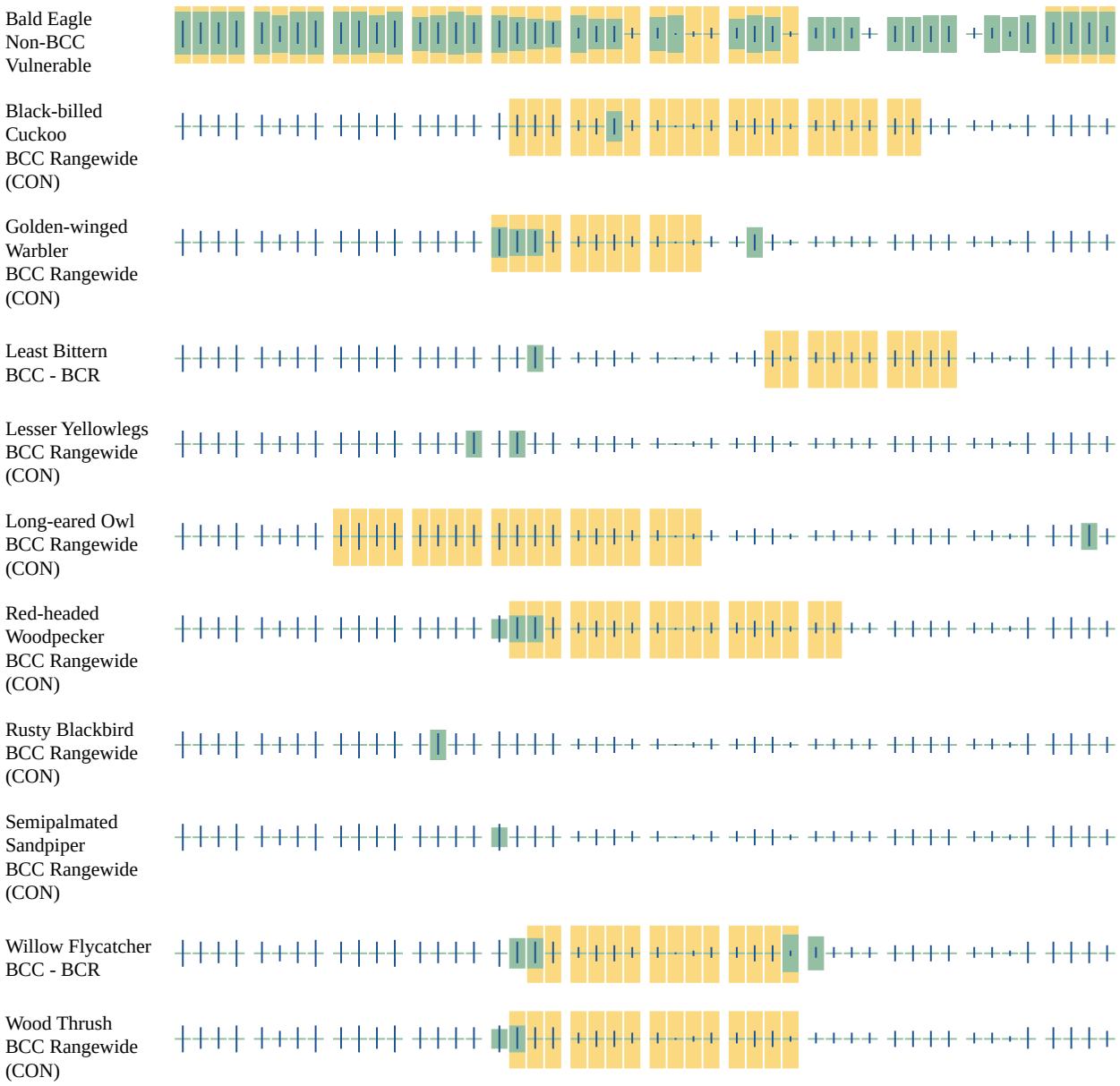
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

ATTACHMENT 3

From:	Keith Matte
To:	Mark Kahn
Cc:	Sam Olbekson; Stark, Christopher (CI-StPaul); marykay.palmer@milestonerepartners.com
Subject:	RE: St Paul - FIRM Zone A - Wakan Tipi project
Date:	Monday, November 2, 2020 8:20:58 AM

I do not see a reason for a LOMA now. I think we follow the first suggestion.

Keith Matte P.E.(MN, ND, WI)
Associate

BKBM Engineers
Direct: 763-843-0446 | Main 763-843-0420

From: Mark Kahn <mark.kahn@kahnsolutions.com>
Sent: Friday, October 30, 2020 5:17 PM
To: Keith Matte <kmatte@bkbm.com>
Cc: Sam Olbekson <sam.olbekson@fullcircleplanning.com>; Stark, Christopher (CI-StPaul) <christopher.stark@ci.stpaul.mn.us>; marykay.palmer@milestonerepartners.com
Subject: RE: St Paul - FIRM Zone A - Wakan Tipi project

Keith,

If the City is not requiring a LOMA now, then do we just table this? Or is there any reason to apply for a "LOMA for a portion of land (based on a metes and bounds survey including only land above the BFE)."?

Many thanks,

Mark

Mark Kahn
Principal | Kahn Solutions Group LLC
3435 Washington Drive West, Suite 105 | Eagan, MN 55122
651-440-6050 (cell)
mark.kahn@kahnsolutions.com

Partnering with Milestone Real Estate Partners LLC
http://www.milestonerepartners.com/mark-kahn.html

From: Keith Matte <kmatte@bkbm.com>
Sent: Friday, October 30, 2020 2:28 PM
To: Mark Kahn <mark.kahn@kahnsolutions.com>; Sam Olbekson <sam.olbekson@fullcircleplanning.com>
Subject: FW: St Paul - FIRM Zone A - Wakan Tipi project

Fyi.

Keith Matte P.E.(MN, ND, WI)
Associate

BKBM Engineers
Direct: 763-843-0446 | Main 763-843-0420

From: Saunders-Pearce, Wes (CI-StPaul) <wes.saunders-pearce@ci.stpaul.mn.us>
Sent: Friday, October 30, 2020 2:27 PM
To: Keith Matte <kmatte@bkbm.com>; Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Strauss, Ceil C (DNR) <ceil.strauss@state.mn.us>
Cc: Norton, Mary (CI-StPaul) <Mary.Norton@ci.stpaul.mn.us>; Stark, Christopher (CI-StPaul) <christopher.stark@ci.stpaul.mn.us>
Subject: RE: St Paul - FIRM Zone A - Wakan Tipi project

Hi Keith

You don't need to adjust the map. However, a Letter of Map Amendment (LOMA) can be requested after the structure is built in order to administratively remove it from the Special Flood Hazard Zone. A LOMA is a letter from FEMA stating that an existing structure or parcel of land that has not been elevated by fill (i.e. the as-built structure or parcel of land is on natural grade) would not be inundated by the base flood.

Alternatively, the project team could apply for a LOMA for a portion of land (based on a metes and bounds survey including only land above the BFE).

Please stay in touch on plans for the geothermal aspect of the project, if that will be located within the base flood area. We'd want to ensure any equipment that's within the floodplain is flood resistant, anchored and any controls or portions that could be damaged by flood waters are elevated above the Regulatory Flood Protection Elevation or floodproofed.

Kindly,

Wes Saunders-Pearce
Water Resource Coordinator | City of Saint Paul

From: Keith Matte <kmatte@bkbm.com>
Sent: Monday, October 26, 2020 3:00 PM
To: Saunders-Pearce, Wes (CI-StPaul) <wes.saunders-pearce@ci.stpaul.mn.us>; Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Strauss, Ceil C (DNR) <ceil.strauss@state.mn.us>
Cc: Norton, Mary (CI-StPaul) <Mary.Norton@ci.stpaul.mn.us>; Stark, Christopher (CI-StPaul)

<christopher.stark@ci.stpaul.mn.us>
Subject: RE: St Paul - FIRM Zone A - Wakan Tipi project

Think Before You Click: This email originated **outside** our organization.

Will be still need to have a LOMAR done to adjust the Firm Zone A?

Keith Matte P.E.(MN, ND, WI)
Associate

BKBM Engineers
Direct: 763-843-0446 | Main 763-843-0420

From: Saunders-Pearce, Wes (CI-StPaul) <wes.saunders-pearce@ci.stpaul.mn.us>
Sent: Monday, October 26, 2020 2:28 PM
To: Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Strauss, Ceil C (DNR) <ceil.strauss@state.mn.us>
Cc: Norton, Mary (CI-StPaul) <Mary.Norton@ci.stpaul.mn.us>; Stark, Christopher (CI-StPaul) <christopher.stark@ci.stpaul.mn.us>; Keith Matte <kmatte@bkbm.com>
Subject: RE: St Paul - FIRM Zone A - Wakan Tipi project

Thanks Suzanne.

I believe the only flood inundation areas mapped by CRWD relate to the Trout Brook Storm Sewer Interceptor based on an uncalibrated hydrologic and hydraulic model of the urban sewer-shed. I do not believe CRWD has prepared any river-related floodplain modeling or mapping.

Using the backwater elevation for that location is consistent with the line shown on the ALTA as a Base Flood Elevation. It seems appropriate for the project team to move forward accordingly.

Kindly,

Wes Saunders-Pearce
Water Resource Coordinator | City of Saint Paul

From: Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>
Sent: Monday, October 26, 2020 8:51 AM
To: Saunders-Pearce, Wes (CI-StPaul) <wes.saunders-pearce@ci.stpaul.mn.us>; Strauss, Ceil C (DNR) <ceil.strauss@state.mn.us>
Cc: Norton, Mary (CI-StPaul) <Mary.Norton@ci.stpaul.mn.us>; Stark, Christopher (CI-StPaul) <christopher.stark@ci.stpaul.mn.us>; Keith Matte <kmatte@bkbm.com>
Subject: RE: St Paul - FIRM Zone A - Wakan Tipi project

Wes,

I would check with the Capitol Region Watershed District to see if they have a 1% elevation for this area. If they don't, I would use the backwater from the Mississippi River (706.9 NAVD88 at this location.

Suzanne

From: Saunders-Pearce, Wes (CI-StPaul) <wes.saunders-pearce@ci.stpaul.mn.us>
Sent: Tuesday, October 20, 2020 11:46 AM
To: Strauss, Ceil C (DNR) <ceil.strauss@state.mn.us>; Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>
Cc: Norton, Mary (CI-StPaul) <Mary.Norton@ci.stpaul.mn.us>; Stark, Christopher (CI-StPaul) <christopher.stark@ci.stpaul.mn.us>; Keith Matte <kmatte@bkbm.com>
Subject: St Paul - FIRM Zone A - Wakan Tipi project

Hello Ceil and Suzanne

I'm working with some colleagues on the Wakan Tipi project; an interpretive center proposed at the Bruce Vento Nature Sanctuary in St. Paul. See attached FIRMETTE. The structure is proposed near the FIRM Zone A boundary. The consultant provided a map which shows the FIRM Zone A boundary as well as a showing the boundary near the 707 contour line. See attached ALTA.

Suzanne, are you aware of any authoritative linework (e.g. from the DNR, maybe the inundation mapping?) which would establish a BFE for this area? If so does it match what is shown on the ALTA?

Ceil, what method would you suggest if there is no BFE already established for this area? (Additionally, this project may include a geothermal component that crosses into the floodplain area. Would this be handled with any special requirements?)

We're happy to discuss this in a virtual meeting if that is preferable, however and as always, time is of the essence for this project.

Thanks for your input and hopefully you're both well these days.

Kindly,

Wes Saunders-Pearce
Water Resource Coordinator | City of Saint Paul

LANDMARK Environmental

Voluntary Response Action Plan

Wakan Tipi Center (Bruce Vento Nature Sanctuary & Former Interpretive Center)
Intersections of Kellogg Blvd. East, Commercial St., and 4th St. East
Saint Paul, Minnesota
MPCA Nos. VP12073 and VP25510

Prepared for:

Lower Phalen Creek Project and
City of Saint Paul

May 2021

Landmark Environmental, LLC
2042 West 98th Street | Bloomington, MN 55431 | Phone: 952-666-2444 | www.landmarkenv.com

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Figures

Appendices

1.0 Introduction

Landmark Environmental, LLC (Landmark) prepared this Voluntary Response Action Plan (VRAP) on behalf of the Lower Phalen Creek Project (LPCP) and the City of Saint Paul (City) for property that will support the Wakan Tipi Center located at the intersections of Kellogg Boulevard East, Commercial Street, and 4th Street East in Saint Paul, Minnesota (Property). The Wakan Tipi Center is located on property known as the Bruce Vento Nature Sanctuary (Nature Sanctuary) and next to the Former Bruce Vento Interpretive Center (Former Interpretive Center) shown on **Figures 1A** and **1B**. A portion of the Former Interpretive Center property will be used for a temporary parking lot and access to the Wakan Tipi Center during construction of the Kellogg Bridge when the planned parking lot is inaccessible. This VRAP describes the proposed response actions (RAs) specifically related to soil at the Property and the Former Interpretive Center, based on the results from the previous investigations and RAs and taking into account the planned future use of the Property.

The RAs will be completed in accordance with the conditions and requirements included in the Bruce Vento Nature Sanctuary Environmental Covenant and Easement (Nature Sanctuary Covenant) recorded on January 16, 2007, and the Bruce Vento Former Interpretive Center Environmental Covenant (Former Interpretive Center Covenant) recorded on March 19, 2013.

Landmark requests that the Minnesota Pollution Control Agency (MPCA) Voluntary Investigation and Cleanup (VIC) Program and Petroleum Brownfields (PB) Program review and approve this VRAP. Following implementation of the VRAP and submission of the Response Action Implementation Report, Landmark requests on behalf of LPCP and the City, that the VIC Program review the report and issue a No Further Action letter for soil and soil vapor and the PB Program issue a Petroleum No Action letter for soil and soil vapor.

1.1 Introduction

The VRAP has been prepared in preparation for the redevelopment of the Property for recreational park use with a new interpretive center building, parking, utilities, and landscaping. The proposed building will use a foundation piling system for the one-story building. Available select redevelopment plans are included in **Appendix A**.

The following reports have been prepared by Landmark for Wakan Tipi Center on behalf of LPCP and the City:

- *Phase I Environmental Site Assessment, Wakan Tipi Center, Saint Paul, Minnesota. Prepared by Landmark, August 2019. (2019 Phase I ESA Report)*
- *Work Plan for Wakan Tipi (Bruce Vento Nature Sanctuary and Former Interpretive Center, Phase II Environmental and Geotechnical Investigation). Prepared by Landmark, October 21, 2019. (2019 Work Plan)*
- *Work Plan for Wakan Tipi (Bruce Vento Nature Sanctuary and Former Interpretive Center) Phase II Environmental and Geotechnical Investigation) – NEW LOCATION. Prepared by Landmark, December 3, 2020. (2020 Work Plan)*
- *2019 and 2020 Phase II Environmental Investigation for Wakan Tipi Center. Prepared by Landmark and dated February 2021. (2019 and 2020 Phase II Investigation Report).*

The MPCA approved the 2020 Work Plan in a letter dated December 15, 2020, and the 2019 Work Plan in a letter dated November 21, 2019.

Multiple previous investigations and RAs have been complete on portions of the Property and relevant excerpts of the reports and correspondence are included in **Appendix B** and in the Landmark 2019 Phase I ESA Report prepared by Landmark. Each of the reports and correspondence listed below were prepared for either the larger Nature Sanctuary or the Former Interpretive Center, which includes the Property; the summary provided in the 2019 Phase I ESA Report pertains to the Property only.

Bruce Vento Nature Sanctuary (Nature Sanctuary)

- *VRAP, Bruce Vento Nature Sanctuary (Nature Sanctuary), St. Paul, MN, Prepared by Landmark, December 2001.*
- *Approval Letter of Nature Sanctuary VRAP by MPCA PB Program, January 2002.*
- *Approval Letter of Nature Sanctuary VRAP by MPCA VIC Program, February 2002.*
- *Approval Letter of Nature Sanctuary Contingency Plan for Environmental Issues by MPCA VIC Program, February 2002.*
- *RA Implementation Report, Nature Sanctuary, St. Paul, MN, Prepared by Landmark, March 2005.*
- *Petroleum Release Site File Closure, MPCA PB Program, April 2005.*

- *Completion of Voluntary Response Actions for Petroleum Contamination Site letter: Dayton's Bluff Yard, BNSF #3 (Sanctuary), MPCA PB Program, April 2005.*
- *No Further Action letter of the Sanctuary Response Action Implementation Report, MPCA VIC Program, December 2005.*
- *Work Plan for Drinking Fountain Water Line Installation at the Nature Sanctuary and Interpretive Center, prepared by Landmark, October 8, 2014.*
- *Work Plan Approval Letter, MPCA, November 4, 2014.*
- *Soil Management Summary for Drinking Fountain Water Line Installation at the Nature Sanctuary and Interpretive Center, prepared by Landmark, December 5, 2014.*

Lowertown Depot, 293 Commercial Street, St. Paul (Area A)

- *Preliminary Subsurface Investigation and Work Plan for Additional Investigation, Former Standard Oil Warehouse Property, 293 Commercial Street, St. Paul, MN, prepared by Wenck, January 2002.*
- *Voluntary Response Action Plan, Former Standard Oil Warehouse Property, 293 Commercial Street, St. Paul, MN, Prepared by Wenck, March 2002.*

Former Bruce Vento Interpretive Center (Identified as Areas A, B, C on Figure 2). The Former Interpretive Center is composed of 3 separate parcels named Areas A, B, and C. Area A will be the temporary parking lot and access to the Property until the permanent parking lot is constructed after construction of the Kellogg Bridge. Areas B and C are not anticipated to be part of the redevelopment.

- *Phase I ESA Report, Multiple Parcels at Commercial Street and East 4th Street, St. Paul, MN, prepared for the Trust for Public Land, Prepared by Wenck, April 2008.*
- *Supplemental Phase II Investigation Report, Bruce Vento Interpretive Center, St. Paul, MN, prepared by Landmark, February 2009.*
- *VRAP, Bruce Vento Interpretive Center, St. Paul, MN, prepared by Landmark, October 2009.*
- *Environmental Contingency Plan (ECP), Bruce Vento Interpretive Center, St. Paul, MN, prepared by Landmark, October 2009.*
- *Approval Letter with Comments for the Interpretive Center VRAP by MPCA PB Program, December 2009.*

- *Conditional Approval Letter with Comments for the Interpretive Center VRAP by MPCA VIC Program, December 2009.*
- *RA Implementation Report, Bruce Vento Interpretive Center, Prepared by Landmark, January 2011*
- *No Further Action Letter for Soil, MPCA, VIC Program, April 8, 2013*

Electronic copies of Landmark's 2019 and 2020 Phase II Investigation Report, Work Plans, and 2019 Phase I ESA Report for the Property have been submitted to the MPCA VIC and PB Programs for review.

The findings from the 2019 Phase I ESA Report are discussed in Section 1.2, and the 2019 and 2020 Phase II Investigation Report results are summarized in Section 1.3 of this VRAP. Excerpts of the relevant previous investigations and RAs are included in **Appendix B**.

This VRAP describes the RAs that will be necessary to implement the redevelopment plans. An Environmental Construction Contingency Plan (ECCP) and a Site Safety Plan (SSP) will be prepared and submitted under separate cover to the MPCA for review prior to the start of the RAs and redevelopment activities.

1.2 Background and Phase I Summary

The Property is owned by the City and used primarily for the Bruce Vento Nature Sanctuary located at the intersections of Kellogg Boulevard East, Commercial Street, and 4th Street East. The Nature Sanctuary property consists of 27 acres of land that is currently zoned as municipal services. The Former Interpretive Center property consists of 1.85 acres in 3 parcels named Areas A, B, and C. The Wakan Tipi Property is technically a subset of the Nature Sanctuary however Area A of the Former Interpretive Center will be used for temporary parking and access to the interpretive center. The Property, as shown in **Appendix A** is 3.567 acres and the limits have changed several times since the 2019 Phase I ESA Report was prepared; however, the Phase I ESA Report addressed a larger area.

The general Property vicinity has been developed since the late 1800's for commercial/industrial and public uses. The Bruce Vento Nature Sanctuary, Former Interpretive Center, the Minnesota Department of Natural Resources (DNR) Conservation Easement and general project area are shown on **Figure 1B**.

Nature Sanctuary

BNSF formerly operated a railroad maintenance facility on the Nature Sanctuary. Standard Oil and the former St. Paul & Duluth Railroad operated aboveground petroleum storage facilities. Pintsch Compressing Company also operated a manufactured gas plant adjacent to the Property. All these operations were abandoned decades ago. Significant portions of the Property also have been filled; this fill material contains varying amounts of brick, glass, coal fines, slag, and concrete.

As previously stated, multiple investigations and RAs were conducted at the site that included removal of one drum of asbestos containing material (ACM) comingled with debris and excavation of contaminated soil. A total of 8,743 tons of contaminated soil was removed from eight hot spot areas to a maximum depth of four feet and disposed of off-site. A total of 7,350 tons of marginal soil was placed at-depth on the Property and a restrictive covenant relating to this marginal soil was filed on the deed. Following remediation, trails and a wetland were constructed, and the area seeded along with other restoration activities, as shown in **Appendix B**. **Figure 2** includes the northern third of the Nature Sanctuary that includes the proposed Wakan Tipi Center building and access road. Small-scale construction oversight related to the water line construction was conducted in 2014 in compliance with the Environmental Covenant (See the Work Plan for excerpts of the work in the Nature Sanctuary in **Appendix B)**. In addition, a geotechnical investigation was conducted in 2018 for the proposed reconstruction of the Kellogg Bridge, boring logs and locations related to that investigation are included in **Appendix B**.

Former Interpretive Center

The Former Interpretive Center property previously supported a mix of uses including approximately eleven homes built on un-platted properties, and four buildings built by the Standard Oil Company. The 36,800 square foot, four-story warehouse was demolished in 2015, with the exception of the basement slab and foundation. Based on the 1903 Sanborn map, it is hypothesized that the warehouse building was originally used for product barreling. Later, the warehouse was leased as space for other types of wholesale distribution — predominantly wholesale fruit. In approximately 1994, this part of the Property was purchased by an individual who used the warehouse building for storage of heating, ventilation, and air-conditioning equipment. In 2000, the Property was acquired by Venture Real Estate, LLC, a development corporation planning to redevelop the Property and adjacent parcels as housing.

Various investigations identified historic fill soils impacted with arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). RAs were conducted in 2010, including excavation of 1,340 cubic yards (CY) of impacted soil from hot spots and pre-existing

stockpiles. Soil was cleaned to recreational standards in the top four feet as shown in **Figure 2**. Another 1,600 cy of impacted fill soil was excavated, consolidated on-site, and capped by four feet of clean fill. Impacted soil was left on-site below four feet below ground surface and an environmental covenant was filed on March 19, 2013. Groundwater investigations were not conducted. A No Further Action letter for soil was issued by the MPCA on April 8, 2013. Report excerpts are included in **Appendix B**.

Proposed Wakan Tipi Center Permanent Parking Lot

In the 2019 Phase I ESA, the proposed permanent parking lot north of Kellogg Bridge (referred to in the Phase I as Parcel C) on **Figure 1B** included the following history: The 1885 to 1890 Sanborn maps show a portion of a building and boiler storage and Phalen Creek on the north side. From 1903 to 1910, there is a building on the south side of the parcel that is labeled pipe, woodware, stove and furnace storage. Historical air photos this parcel as vacant and wooded between 1937 and the 1980's. A portion of the parcel was cleared and possibly used for parking in the 1980's. A stockpile of material also was observed in 2004, which could have been attributed to the Nature Sanctuary cleanup.

1.3 Phase II Investigation Summary and Results

Landmark conducted two separate Phase II Investigations in 2019 and 2020. The 2019 Phase II Investigation was conducted on the Former Interpretive Center property because at that time, the proposed interpretive center building was planned to be construction there. In 2020, because of the proximity to the Metropolitan Council's wastewater disposal station and significant truck traffic, the proposed Interpretive Center building was moved to the Nature Sanctuary property. The 2020 Phase II Investigation was conducted on the proposed permanent parking area and in the new location of the proposed Interpretive Center building. The following summarizes the recent soil, groundwater and soil vapor investigations:

2019 Phase II Investigation

Landmark completed the 2019 field work portion of the Phase II Investigation on November 19, 2019, and December 6, 2019. Landmark conducted the environmental investigation and Braun Intertec (Braun) conducted the geotechnical investigation at the former location of the Wakan Tipi Center building on the Former Interpretive Center property. The 2019 Phase II Investigation included an assessment of soil, soil vapor and groundwater at the Property.

Braun's geotechnical borings were advanced with the use of a hollow-stem auger on November 19, 2019, and Landmark was onsite to collect environmental soil samples from Braun's two geotechnical borings (ST-6 and ST-7). Landmark returned on December 6, 2019, to advance three Geoprobe borings and one hand auger boring for the

collection of soil, soil vapor, and groundwater samples. Borings advanced with the Geoprobe and hand auger are labeled with the prefix "LGP-W" (Landmark Geoprobe-Wakan Tipi) and are numbered LGP-W5 through LGP-W8.

Landmark hired Mobile Environmental Sampling & Analysis (MESA), as the Geoprobe drilling company. Geoprobe borings were advanced to depths ranging from 5 to 20 feet below ground surface (bgs).

Soil Sampling Results

Soil samples are labeled according to location and depth. For instance, sample LGP-W6/1-3 is a sample collected at boring LGP-W6 from one to 3 feet bgs, or sample ST-6/3-5 is a sample collected at geotechnical boring ST-6 from 3 to 5 feet bgs. A total of six soil samples (one sample from each Geoprobe boring, one sample from the hand auger, and one sample from both borings ST-6 and ST-7) were submitted to Pace Analytical Services, LLC (Pace) for laboratory analysis of Resource Conservation and Recovery Act (RCRA) metals, PAHs, diesel range organics (DRO), and volatile organic compounds (VOCs). Most soil samples submitted for laboratory analysis were collected from shallow fill material from one to 5 feet bgs, with the exception of one deeper sample collected at boring ST-7 where that soil sample was collected from 9 to 11 feet bgs.

The following is a summary of results from the 2019 Phase II Investigation soil sampling:

- All detected RCRA metals were reported at concentrations below the applicable residential soil reference values (RSRVs), recreational SRVs (Rec SRVs), industrial SRVs (ISRVs), and soil leaching values (SLVs) in the six samples submitted to Pace with the exception of arsenic in samples LGP-W6/1-3 and ST-7/9-11. Arsenic was reported in sample LGP-W6/1-3 at 11.2 milligrams per kilogram (mg/kg), which exceeds the Rec SRV of 11 mg/kg and the RSRV of 9.0 mg/kg, but is below the ISRV of 20 mg/kg. Arsenic was reported in sample ST-7/9-11 at 8.0 mg/kg, which exceeds the Tier 1 SLV of 5.8 mg/kg, but is below the RSRV of 9 mg/kg.

- VOCs were not detected above laboratory method detection limits (MDLs) in the five soil samples submitted to Pace for laboratory analysis of VOCs with the exception of sample ST-7/9-11, which had six reported petroleum VOCs detections. All VOCs detections reported in sample ST-7/9-11 had detections reported below applicable MPCA criteria.

- All six soil samples submitted for laboratory analysis were analyzed for DRO. DRO was not detected above laboratory MDLs in any of the submitted samples

with the exception of samples LGP-W5/1-3 (5.7 mg/kg), LGP-W6/1-3 (9.7 mg/kg), and ST-7/9-11 (6,910 mg/kg). The MPCA does not list a specific action level for DRO. Rather, the MPCA compares the organic headspace values with a petroleum action level of 10 parts per million (ppm), as well as, the Unrestricted Excess Fill criteria of 100 mg/kg with no field screening indications of contamination. As shown above and in **Appendix B**, the shallow soil samples submitted for laboratory analysis at borings LGP-W5 and LGP-W6 had reported DRO concentrations well below 100 mg/kg with no field screening indications of contamination. Sample ST-7/9-11 had a reported DRO concentration of 6,910 mg/kg with elevated photoionization detector (PID) readings and a hydrocarbon odor observed. All reported DRO concentrations were "T6-flagged" in the Pace laboratory reports indicating that "high boiling point hydrocarbons are present in the sample."

- PAHs, which are calculated as the benzo(a)pyrene (BaP) equivalent (eq.), were detected in four out of the six soil samples submitted to Pace for analysis. Sample ST-6/9-11 was the only sample that had a reported BaP equivalent that exceeded applicable MPCA criteria. Sample ST-6/9-11 had a reported BaP equivalent concentration of 41.9 mg/kg, which exceeds the current ISRV of 23 mg/kg.

Soil Vapor Sampling Results

Soil vapor samples were collected from two Geoprobe borings, LGP-W6 and LGP-W8, which were located within the former proposed building footprint. The soil vapor samples were collected at 3 to 5 feet bgs. Soil vapor samples were collected using pre-evacuated stainless-steel Summa canisters provided by Pace and samples were analyzed at Pace for VOCs by U.S. Environmental Protection Agency (EPA) Method TO-15. The samples were compared to the MPCA action criteria of thirty-three times the Industrial Intrusion Screening Values (33X I-ISVs).

The following is a summary of results from the 2019 Phase II Investigation soil vapor sampling:

- Of the 23 VOCs detected in the soil vapor samples, all VOCs were reported at concentrations well below the applicable MPCA action level of 33X I-ISVs. In addition, no VOCs were reported above the MPCA action criteria of thirty-three times the Residential Intrusion Screening Values (33X R-ISVs).

Groundwater Sampling Results

A groundwater sample was collected from Geoprobe boring LGP-W6. Groundwater was observed at 14.5 feet bgs at boring LGP-W6. A groundwater sample was collected at 15

to 20 feet bgs after installing a temporary 1-inch diameter PVC well equipped with a 5-foot long, 10-slot screen set from 15 to 20 feet bgs. The groundwater sample is labeled according to location and the depth of the screen interval. For example, groundwater sample LGP-W6/15-20 was collected with the temporary well screen positioned from 15 to 20 feet bgs. The groundwater sample collected at boring LGP-W6 was analyzed at Pace for DRO and VOCs.

The following is a summary of results from the 2019 Phase II Investigation groundwater sampling:

- Groundwater sample collected from boring LGP-W6 (15-20') and petroleum impacts were detected. DRO was reported at 970 micrograms per liter (ug/L), which exceeds the Minnesota Department of Health (MDH) health based value (HBV) of 200 ug/L, the HBG value of 50 ug/L and the MPCA's proposed surface and non-surface water discharge limits for contaminated groundwater discharges of 200 ug/L. Six petroleum-related VOCs were reported in sample LGP-W6/15-20. All reported VOCs concentrations were reported below MDH criteria and groundwater discharge criteria with the exception of naphthalene. Naphthalene was reported at 110 ug/L, which exceeds the MDH health risk limit (HRL) and health based guidance (HBG) of 70 ug/L and the MPCA's proposed surface and non-surface water discharge limits for contaminated groundwater discharges of 20 ug/L.

2020 Phase II Investigation

Landmark completed the 2020 field work portion of the 2020 Phase II Investigation on December 17, 2020. The 2020 Phase II Investigation included an assessment of soil, soil vapor and groundwater at the Property.

Landmark hired MESA, as the Geoprobe drilling company. MESA advanced ten Geoprobe borings for the collection of soil, soil vapor, and groundwater samples. Borings advanced with the Geoprobe are labeled with the prefix "LGP-WT" (Landmark Geoprobe-Wakan Tipi) and are numbered LGP-WT1 through LGP-WT10. Borings were advanced to depths ranging from 5 to 15 feet bgs.

Soil Sampling Results

Soil samples were collected between zero to 10 feet bgs and are labeled according to location and depth. For instance, sample LGP-WT1/1-3' is a sample collected at boring LGP-WT1 from 1 to 3 feet bgs. A total of ten soil samples (one sample from each Geoprobe boring) were submitted to Pace for laboratory analysis of RCRA metals, PAHs, DRO, and VOCs. In addition, one soil sample, labeled SP-1, was collected from the soil

stockpile generated from conducting the Geoprobe borings. The majority of soil samples submitted for laboratory analysis were collected from shallow fill material from 0 to 4 feet bgs, with the exception of one deeper sample collected at boring LGP-WT9/8-10' where the geothermal wells are proposed.

The following is a summary of results from the 2020 Phase II Investigation soil sampling:

- All detected RCRA metals were reported at concentrations below the applicable RSRVs, Rec SRVs, ISRVs, and SLVs in the 11 samples (one sample from each Geoprobe boring and 1 sample from the stockpile) submitted to Pace with the exception of arsenic in samples LGP-WT3/0-2', LGP-WT4/1-3', LGP-WT5/1-3', LGP-WT6/1-4', LGP-WT8/1-3', and LGP-WT10/1-3'. Arsenic was reported at 6.4 mg/kg in sample LGP-WT3/0-2', 6.8 mg/kg in sample LGP-WT6/1-4', and 6.2 mg/kg in sample LGP-WT10/1-3'; all of which exceed the SLV of 5.8 mg/kg, but are below the RSRV of 9 mg/kg. Arsenic was reported at 13.6 mg/kg in sample LGP-WT4/1-3', 13.8 mg/kg in sample LGP-WT5/1-3', and 18.4 mg/kg in sample LGP-WT8/1-3'; all of which exceed the RSRV of 9 mg/kg and the Rec SRV, but are below the ISRV of 20 mg/kg.

  Two samples were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) for lead for landfill disposal purposes. Samples LGP-WT6/1-4' and LGP-WT9/8-10' reported TCLP lead results of less than 0.5 mg/L and 3.9 mg/L. These results indicate that the soil is non-hazardous.

- All of the submitted soil samples were analyzed for VOCs, with the exception of samples LGP-WT1/0-2', LGP-WT3/0-2', and LGP-WT7/1-3'. VOCs were not detected above laboratory MDLs in samples LGP-WT2/0-2' and LGP-WT4/1-3'. Samples LGP-WT5/1-3', LGP-WT6/1-4', LGP-WT8/1-3', LGP-9/8-10', LGP-10/1-3', and SP-1 all had analyzed reported petroleum-related VOCs detections. All reported VOCs detections were reported below applicable MPCA criteria with the exception of benzene and naphthalene. Benzene was reported at 0.10 mg/kg in sample LGP-WT6/1-4', 0.21 mg/kg in sample LGP-WT9/8-10', 0.047 mg/kg in sample LGP-WT10/1-3', and 0.044 mg/kg in sample SP-1. All of these reported concentrations exceed the Tier 1 SLV of 0.017 mg/kg for benzene. Naphthalene was reported at 15.5 mg/kg in sample LGP-WT9/8-10' and 35.9 mg/kg in sample SP-1. The reported naphthalene concentration in sample LGP-WT9/8-10' exceeds the RSRV of 10 mg/kg, but is below the Rec SRV of 24 mg/kg and the ISRV of 28 mg/kg. The reported naphthalene concentration in sample SP-1 exceeds the ISRV of 28 mg/kg.

- All 11 soil samples (one sample from each Geoprobe boring and one sample from the stockpile) were submitted for laboratory analysis for DRO. DRO was detected above laboratory MDLs in all of the submitted samples with the exception of sample LGP-WT3/0-2'. As previously stated, the MPCA does not list a specific action level for DRO. Rather, the MPCA compares the organic headspace values with a petroleum action level of 10 ppm, as well as the Unrestricted Excess Fill criteria of 100 mg/kg with no field screening indications of contamination. DRO was reported in samples LGP-WT1/0-2' (25.4 mg/kg), LGP-WT2/0-2' (11.6 mg/kg), LGP-WT4/1-3' (23.9 mg/kg), LGP-WT5/1-3' (40.2 mg/kg), LGP-WT6/1-4' (610 mg/kg), LGP-WT7/1-3' (37.5 mg/kg), LGP-WT8/1-3' (68.3 mg/kg), LGP-WT9/8-10' (241 mg/kg), LGP-WT10/1-3' (89.7 mg/kg), and SP-1 (165 mg/kg). Sample LGP-WT9/8-10' and sample SP-1 were the only submitted soil samples that had observed petroleum/coal tar odors. All shallow soil samples submitted for laboratory analysis had no observed odors; however, debris such as cinders, slag, clinkers, concrete, and brick were observed in shallow fill soils across the Property. All reported DRO concentrations were "T6-flagged" in the Pace laboratory report indicating that "high boiling point hydrocarbons are present in the sample." The reported DRO concentration in sample LGP-WT6/1-4' was also "T7-flagged" in the Pace laboratory report indicating that "low boiling point hydrocarbons are present in the sample."

- PAHs, which are calculated as the BaP equivalent, were detected in all 11 soil samples submitted to Pace for analysis. The reported BaP equivalents reported in samples LGP-WT1/0-2', LGP-WT2/0-2', LGP-WT3/0-2', LGP-WT4/1-3', and LGP-WT5/1-3' had a reported BaP equivalent below applicable MPCA criteria. The BaP equivalent was reported at 9.4 mg/kg in sample LGP-WT6/1-4', 3.2 mg/kg in sample LGP-WT7/1-3', 2.6 mg/kg in sample LGP-WT8/1-3', 22.2 mg/kg in sample LGP-WT9/8-10', 2.6 mg/kg in sample LGP-WT10/1-3', and 5.0 mg/kg in sample SP-1. The reported BaP equivalent concentrations in samples LGP-WT6/1-4', LGP-WT7/1-3', LGP-WT8/1-3', LGP-WT9/8-10', LGP-WT10/1-3', and SP-1 exceeded the RSRV and Rec SRV of 2 mg/kg but were below the ISRV of 23 mg/kg.

Soil Vapor Sampling Results

Soil vapor samples were collected from 5 of the Geoprobe borings (LGP-WT4, LGP-WT5, LGP-WT6, LGP-WT7, and LGP-WT8) located within the proposed building footprint. The soil vapor samples were collected at 2 to 4 feet bgs due to the shallow groundwater elevation. Soil vapor samples were collected using pre-evacuated stainless-steel Summa canisters provided by Pace and samples were analyzed at Pace for VOCs by

EPA Method TO-15. The samples were compared to the MPCA action criteria of 33X I-ISVs).

The following is a summary of results from the 2020 Phase II Investigation soil vapor sampling:

- Of the 20 VOCs detected in the soil vapor samples, all VOCs were reported at concentrations below the applicable MPCA action level of 33X the I-ISVs. In addition, no VOCs were reported above the MPCA action criteria of 33X R-ISVs.

Groundwater Sampling Results

Groundwater samples were collected from two of the Geoprobe borings (LGP-WT9 and LGP-WT10) that were located within the area where the proposed geothermal wells will be located. Groundwater was observed at approximately 4.5 to 5.5 feet bgs at all the Geoprobe borings. Sample LGP-WT9/5-10' was advanced to 10 feet bgs and a temporary 1-inch diameter PVC well was positioned from 5 to 10 feet bgs for the collection of a groundwater sample. Groundwater sample LGP-WT10/4-9' was sampled by the same methods as LGP-WT9/5-10'. Both groundwater samples were submitted to Pace for analysis of DRO, as well as VOCs by EPA Method 8260.

The following is a summary of results from the 2020 Phase II Investigation groundwater sampling:

- Groundwater samples LGP-WT9/5-10' and LGP-WT10/4-9' were analyzed for DRO. DRO was not reported above laboratory MDLs in sample LGP-WT10/4-9'; however, DRO was reported at 1,300 ug/L in sample LGP-WT9/5-10' which exceeds the MDH HBV of 200 ug/L, the MDH HBG of 50 ug/L, and the MPCA's proposed discharge limits for both surface and non-surface water for contaminated groundwater discharges at 200 ug/L.

- VOCs were not reported above laboratory MDLs in sample LGP-WT10/4-9'; however, five petroleum-related VOCs were reported above laboratory MDLs in sample LGP-WT9/5-10'. All reported VOCs concentrations were reported below applicable MDH criteria and MPCA groundwater discharge criteria except for benzene, ethylbenzene and naphthalene. Benzene was reported at 19.1 ug/L in sample LGP-WT9/5-10' which exceeds the MDH HRL and HBG of 2.0 ug/L, the MPCA proposed discharge limits for contaminated groundwater discharges for non-surface water discharge of 2.0 ug/L, surface water discharge of 5.0 ug/L and NPDES discharge of 2 ug/L. Ethylbenzene was reported at 7.9 ug/L in sample LGP-WT9/5-10' which exceeds the MPCA proposed discharge limits for

contaminated groundwater discharges for non-surface and surface water discharge of 5.0 ug/L. Naphthalene was reported at 267 ug/L which exceeds the MDH HRL and HBG of 70 ug/L and the MPCA's proposed surface and non-surface water discharge limits for contaminated groundwater discharges of 20 ug/L.

2.0 Response Actions

This section describes the proposed RAs, based on the results from the previous investigations, response actions and proposed redevelopment plans. The VRAP proposes cleanup goals, summarizes environmental issues to be addressed as part of the VRAP implementation, and explains elements of the proposed RAs necessary to obtain approval from the MPCA, based on the redevelopment plans and taking into account the planned future use of the Property.

2.1 Redevelopment Plan

Redevelopment plans are included in **Appendix A** and **Figure 3** shows the redevelopment layout. LPCP and the City plan to redevelop the Property for recreational use as an interpretive center for the Bruce Vento Nature Sanctuary with associated parking, stormwater management, utilities and landscaping.

The building will be located on the Nature Sanctuary. Because of the proposed reconstruction of the Kellogg Bridge, a phased approach to construction is necessary. A temporary gravel parking lot and bituminous walking path will be constructed on the Former Interpretive Center property to access the building and the park with the remaining area of the Former Interpretive Center as open green space and seeded. After the bridge is constructed, the permanent bituminous parking lot will be constructed north of the Kellogg Bridge. Both temporary and permanent access roads connect to a bituminous round-about with Americans with Disability Act (ADA) parking and concrete sidewalks to the building.

The proposed 9,150 square foot building will use a foundation piling system (auger cast concrete pilings) for the one-story above-grade building, minimizing excavation under the building. The elevation of the building will increase by 4 feet from the existing elevation. The building includes conference rooms, an auditorium, offices, a large open gallery in the center and restrooms.

Utilities include water, sanitary sewer, and electrical. The building will be heated and cooled through a geothermal well system. Stormwater management includes several lined filtration ponds.

The geothermal system includes installation of 20 vertical wells to about 250 feet deep depending on bedrock depth. Each well would be 5-inch diameter HDPE pipe, grouted, and installed in accordance with MDH requirements. The area of the well field would be approximately 180 by 20 feet and located in back of the Interpretive Center (on the river side). The geothermal system includes a closed loop system, circulating a 30% propylene

glycol solution through each well. The borings are then piped together at 6 feet below grade and brought into the building with 2 sets of pipes (4 total). Details are included in the mechanical drawings in **Appendix A**.

Earthwork will be required to regrade the site, construct the proposed building, and install underground utilities and stormwater ponds. Cut and fill maps included in Appendix A, shows a cut of up to 5 to 6 feet for the Former Interpretive Center property and in the area of the round-about. There are 4 stormwater ponds with the south pond excavation at 2 to 3 feet, the southeast ponds at 3 to 4 feet and up to 9 feet for the higher elevation pond next to the round-about. The new building area, southwest of the new building, and permanent parking area includes filling. It is estimated that approximately 10,000 CY will be cut and 5,000 CY will be filled with approximately 5,000 CY excess.

2.2 Chemicals of Concern and Cleanup Objectives

The proposed cleanup goals for the Wakan Tipi Center will be consistent with the previous recreational cleanup of the Nature Sanctuary completed in 2003/2004 and the Former Interpretive Center cleanup completed in 2010 with some exceptions:

- Cleanup for the Former Interpretive Center property will be reduced from cleanup in the top 4 feet to 2 feet which will require an amendment to the Environmental Covenant.

- Cleanup on the Nature Sanctuary property will be for contaminated soil within the top 4 feet except for the following:

    - Only 2 feet of clean soil buffer will remain under the proposed building, under impervious pavement including concrete and asphalt, under the stormwater pond liners and on top of the Phalen Creek Stormwater Tunnel. The structure of the tunnel requires a minimum of 2 to 3 feet of cover during construction and is currently covered with 8 to 12 feet of soil. Cuts in the tunnel area range from 1 to 7 feet.

Based upon the results of the previous investigations and RAs, the following are chemicals of concern (COCs): PAHs (calculated as BaP eq.), lead, mercury, arsenic, petroleum products measured as DRO and PID.

Based on the proposed future land use as an interpretive center and parking as part of the Nature Sanctuary with public access generally limited to trails, the cleanup goals for accessible soil (in the top 4 feet of the Nature Sanctuary and 2 feet for the Former

Interpretive Center) are the Rec SRVs for each of the COCs, with the exception of DRO with a cleanup goal at 200 mg/kg, which is consistent with the cleanup goals for the Nature Sanctuary and Former Interpretive Center. The previous cleanup goal for DRO for accessible soil (in the top 4 feet) was based on field screening measurements with a PID above 10 ppm. A comparison of analytical results for DRO compounds to headspace screening for the Nature Sanctuary indicated that a DRO concentration of 200 mg/kg (approximately the lowest reported laboratory concentration of DRO corresponding to a soil sample with a headspace greater than the action level of 10 ppm is proposed as a cleanup goal for accessible soils.

Appendix B includes a table that summarizes previous soil analytical and field screening results to show that the clean soil buffer of 2 feet is met on the south side of the Former Interpretive Center. This table also shows limited data in other areas that will be cut as part of the redevelopment plan. Additional sampling will be proposed in those areas.

No cleanup goals are proposed for soils at depths greater than 4 feet on the Nature Sanctuary property (and two feet under pavement, buildings, liners) and two feet on the Former Interpretive Center property because of the existing Environmental Covenants and amendment to the Former Interpretive Center Environmental Covenant. Any future redevelopments that will require deeper excavations, an additional VRAP will be prepared.

As previously stated, during the first round of soil vapor investigation, no VOCs in soil vapor samples were reported above the applicable MPCA action criteria. As a result, no soil vapor related RAs are proposed at this time. However, a second round of non-heating season sampling will be conducted. In addition, an additional 4 feet of soil will increase the depth of soil under the proposed building.

Based on the results of the previous investigations, the depth to groundwater ranges from 4 feet in the proposed building location and 17 feet under the Former Interpretive Center. Taking into account the redevelopment plans, groundwater may be encountered during construction but will not be used in the future once the redevelopment has been completed. If dewatering is needed during utility or pond excavations, the water will be discharged to the sanitary sewer with a permit from the Metropolitan Council Environment Services (MCES).

For all remaining environmental issues associated with the redevelopment, field screening and contingency sampling will be conducted in accordance with the VRAP and ECCP.

2.3 Response Actions

The proposed RAs generally consist of the following elements and are described in more detail in the following sections and shown on **Figures 4A and 4B**:

- A SSP will be prepared prior to implementing the RAs.

- Non-building materials, including asphalt, will be removed, recycled or disposed of prior to redevelopment activities. Recyclable materials (e.g., clean concrete) present in the soil and fill material will be segregated from the soil and transported off-site for reuse where possible.

- Soil RAs include the excavation of soil at one suspected Hot Spot at the following location as shown in **Figures 4A and 4B**:

  Hot Spot 1A – Possible arsenic and PAH contaminated soil extending from the Former Interpretive Center onto the Nature Sanctuary that is planned to be cut 2 to 3 feet. Soil samples will be collected in this area to determine if this area is contaminated and to define the limits and maintain the cleanup goal of 4 feet of clean cover in this area. An estimated 300 CY is estimated in this area assuming 6 feet of excavation and backfilling with 4 feet of clean soil.

- Soil RAs in three areas include the removal and reuse of clean soil followed by removal of contaminated soil below 4 feet or to groundwater whichever comes first, then replacement of clean soil to maintain the clean soil buffer:

  - **Former Interpretive Center north of former Lowertown Depot building**: this area includes a cut ranging from 2 to 6 feet. The top 4 feet is clean soil and will be removed and reused on site. The soil below is expected to be contaminated. A portion of this area included placement of marginally contaminated soil in 2010, the rest is anticipated to be contaminated from previous investigations. A 2-foot clean soil buffer will be replaced after contaminated soil is removed to maintain the new lower grade. Approximately 350 CY of contaminated soil is estimated in this area.
  - **Former Interpretive Center Hot Spot 1**: the previous RA included removal of the top 4 feet of contaminated soil and placement of 4 feet of clean soil. The cut in this area ranges from 2 to 6 feet. The top 4 feet is clean soil and will be removed and reused on site. The soil below is contaminated and will removed. A 2-foot clean soil buffer will be placed

after contaminated soil is removed to maintain the new lower grade. Approximately 150 CY of contaminated soil is estimated in this area.

- **Nature Sanctuary Soil Management Area 2 (SMA2)**: in 2003/2004 4 feet of soil was placed over LS-33 (0.5 – 2'). LS-33 reported concentrations of BaP eq. at 4.4 mg/kg and arsenic at 26 mg/kg exceeding the recreational and industrial SRVs. The cut in this area ranges from 2 to 9 feet. The top 4 feet is clean soil and will be removed and reused on site. The soil below is contaminated and will be removed. A 4-foot clean soil buffer will be placed after contaminated soil is removed to maintain the new lower grade. Approximately 850 CY of contaminated soil is estimated in this area.

- Soil RAs in three new Soil Management Areas include two SMAs under the proposed building and one south of the proposed building that are in areas of fill or under the building. The redevelopment plan caps these areas and no contaminated soil is planned to be excavated or disposed:

  - Under the proposed building:
    - **LGP-WT6(1-4')**: DRO concentration of 610 mg/kg, PID of 2.3 ppm and BaP eq. at 9.4 mg/kg (DRO Clean up goal 200 mg/kg, Rec SRV for BaP eq. at 2 mg/kg). This location will have 4 feet of cover and the building.
    - **LGP-WT8 (1-3')**: arsenic concentration of 18.4 mg/kg and BaP eq. concentration of 2.6 mg/kg (Rec SRV at 11 mg/kg [arsenic] and 2 mg/kg [BaP eq.]). This location will have 2 to 3 feet of cover and the building.
  - South of the proposed building in area of geothermal well field:
    - **LGP-WT10 (1-3')**: BaP eq. concentration of 2.6 mg/kg and benzene of 0.047 mg/kg (Rec SRV at 2 mg/kg for BaP eq. and SLV for benzene at 0.017 mg/kg.). This location will have 3 to 4 feet of clean fill over it.

- Areas with proposed cuts with limited soil investigation data will require additional soil sampling as shown on **Figure 4B**:
  - The large area with the round-about and 3 stormwater ponds have cuts ranging from 1 to 9 feet. Additional sampling will be necessary to properly manage excavated soil in this area to determine if the soil is contaminated and requires disposal or meets on site cleanup goals and can be reused as clean cover. This area will need to determine if the soil in the top 4 feet of final grade meets the cleanup goals.

- The south stormwater pond includes a cut of about 2 feet. The soil excavated from this area will need to be determined if it meets onsite cleanup goals and can be reused elsewhere on the property or will require disposal as contaminated. The top 2 feet under the stormwater pond liner will need to be sampled to determine if it meets the 2-foot clean buffer.
- The area northwest of the Former Interpretive Center Hot Spot 1 includes a cut of 4 to 5 feet. This soil will require sampling to verify it meets on site cleanup goals or will require disposal. Soil in this area needs to meet the 2-foot clean soil buffer.
- The volume of contaminated soil can be estimated after additional sampling is completed in these areas.

- Non-hazardous contaminated soil with PID concentrations less than 10 ppm will be reused under the proposed building. A 2-foot clean buffer will be maintained directly under the building. It is anticipated that up to 700 CY may be able to be placed below the building at depth.

:

- Soil that is excavated may meet the definition of unregulated fill criteria, as described in the *MPCA's Best Management Practices for the Off-Site Reuse of Unregulated Fill*, dated February 2012 (See **Appendix C**). If such soil or fill is encountered and properly characterized, it may be used onsite or transported off-site to another commercial/industrial property for reuse. All excavated soil will be properly characterized prior to reuse off-site. The excavated soil will be field-screened and sampled for the COCs in accordance with applicable MPCA sampling guidelines (See **Appendix D**). In the event the sampling results indicate that soil does not meet the MPCA's definition of unregulated excess fill, the soil will be reused on-site or transported off-site to a permitted landfill.

- If dewatering is needed (contaminated groundwater or water collected in the contaminated soil excavations from a precipitation event, for example), the water will be discharged to the sanitary sewer with a permit from the MCES.

- Standard dust and runoff control measure will be implemented during redevelopment and RA implementation activities.

- The MPCA-approved ECCP will be implemented during subsurface redevelopment and RA implementation activities. RAs include responding to environmental contingencies including underground storage tanks, wells, asbestos or other environmental issues in accordance with the ECCP.

2.4 Soil Excavation, Management and Disposal

Soil Excavation

As part of redevelopment, it is anticipated that excavation within the proposed building footprint will be limited because this area will be filled with 4 feet of soil, as shown in **Figure 4B** and in **Appendix A**. The temporary parking lot on the Former Interpretive Center Property will be cut from approximately 1 to 6 feet. The area in between the proposed building and the Former Interpretive Center property will be cut between 1 to 9 feet for the round-about and stormwater ponds. The permanent parking lot and area southwest of the building will be filled from 1 to 4 feet. It is anticipated that excavation of utility corridors will be conducted to a maximum depth of approximately 8 feet bgs. As previously mentioned, a total cut of 10,000 CY is anticipated with 5,000 CY of fill and an excess of 5,000 CY. All excavation and backfilling work will be completed using standard construction equipment (backhoes, loaders, and dump trucks).

Contaminated Soil Excavation and Disposal

Excavated contaminated soil and fill material will be stockpiled on site or direct-hauled. Soil, debris and recyclable materials will be segregated and stockpiled separately. Contaminated soil stockpiles will be securely covered with covers anchored at the end of each day. Landmark personnel will be onsite to direct soil excavation and segregation of soil, fill material and debris, to document excavation findings and to conduct field screening of excavated materials, as required. Landmark personnel will also field screen excavated and underlying soils for evidence of impacts (e.g., organic vapor concentrations using a photoionization detector, odor, discoloration, and presence of chemical containers or regulated asbestos containing material). If screening results indicate the presence of impacted soils, the VRAP and ECCP will be implemented.

Excavated soils containing debris, or with other visual or olfactory evidence of contamination or with PID results in excess of 10 ppm will be sent off-site for disposal at a permitted landfill in accordance with applicable MPCA guidelines. Waste profile sample analytical reports will be submitted for approval to the disposal facility.

Verification Sampling

Sampling of stockpiled soils will be conducted according to applicable MPCA guidelines and according to acceptance criteria determined by the landfill. Sidewall and floor samples from the excavations will be collected, field screened and, based on the field screening results and the depth of the excavations, analyzed for the COCs in accordance with applicable MPCA guidelines shown in **Appendix D**. Because soil excavations will be limited to meeting clean soil buffer of either 2 or 4 feet, less floor samples are proposed in these areas than required by MPCA guidance. In addition, sidewall samples

will not be collected in areas where 4 feet of clean soil is removed followed by removal of contaminated soil to maintain the appropriate buffer zone. Documentation will be provided showing maintaining the buffer zone. Additional excavation will not be completed should floor samples below the buffer zone fail cleanup goals; the results will document remaining soil left in place and managed by the environmental covenant. Areas with minimal previous sampling highlighted on **Figures 4A and 4B,** will include collecting samples of cut material for documentation on either reuse or disposal and in remaining fill to document a buffer zone is maintained. This sampling will be conducted either prior to or during the RA.

Off-Site Reuse of Unregulated Fill

Excavated soil and fill material free of visual impacts, staining, odors and debris, with PID results not exceeding background levels and with soil concentrations below applicable RSRVs may meet the criteria for unregulated fill. In order to document this, additional samples may be collected from these soils for RCRA metals, DRO and PAHs. Existing sample data from the previous investigations and RAs will also be used to compare with the applicable cleanup criteria. The sampling frequency and analytical parameters for the unregulated fill will be reported to the MPCA. Soils that meet the definition of unregulated fill may be used as needed to prepare the Property for redevelopment, including backfilling construction and utility excavations. Additional soils meeting the definition of unregulated fill may be used off site.

Placement of onsite or offsite clean fill material will be required to prepare the Property for redevelopment, including backfilling utility excavations. The sampling frequency and analytical parameters for unregulated fill will be in accordance with MPCA guidance, if any excavated soil needs to be transported offsite.

2.5 Environmental Construction Contingency Plan

As previously stated, an ECCP will be completed to address any unexpected environmental issues that are encountered during RA and redevelopment activities. Potential COCs will be field screened and sampled according to the ECCP during redevelopment activities. A copy of the ECCP will be submitted to the MPCA for review under a separate cover.

2.6 Site Safety, Run-off Control and Dust Control

Possible short-term risks include the risk of the workers coming into direct contact with contaminated soil, construction equipment and potential inhalation exposure of VOCs. Standard MPCA recognized surface water run-off and dust control procedures will be

implemented, as necessary, during earthwork activities. Onsite workers will operate under the updated SSP when dealing with potential unexpected hazardous materials. Upon request, the updated SSP will be submitted to the MPCA prior to implementation of RAs and any redevelopment activities.

2.7 Institutional Controls

An amendment will be prepared for the Former Interpretive Center property to document the change from the 4-foot clean soil buffer zone to a 2-foot buffer zone on Area A. An amendment may need to be prepared for the Nature Sanctuary for the reduction of clean soil buffer from 4 feet to 2 feet under impervious pavement, the building, storm water pond liners and above the Phalen Creek Stormwater Tunnel, however that is allowed in current MPCA guidance.

2.8 Response Action Implementation Report

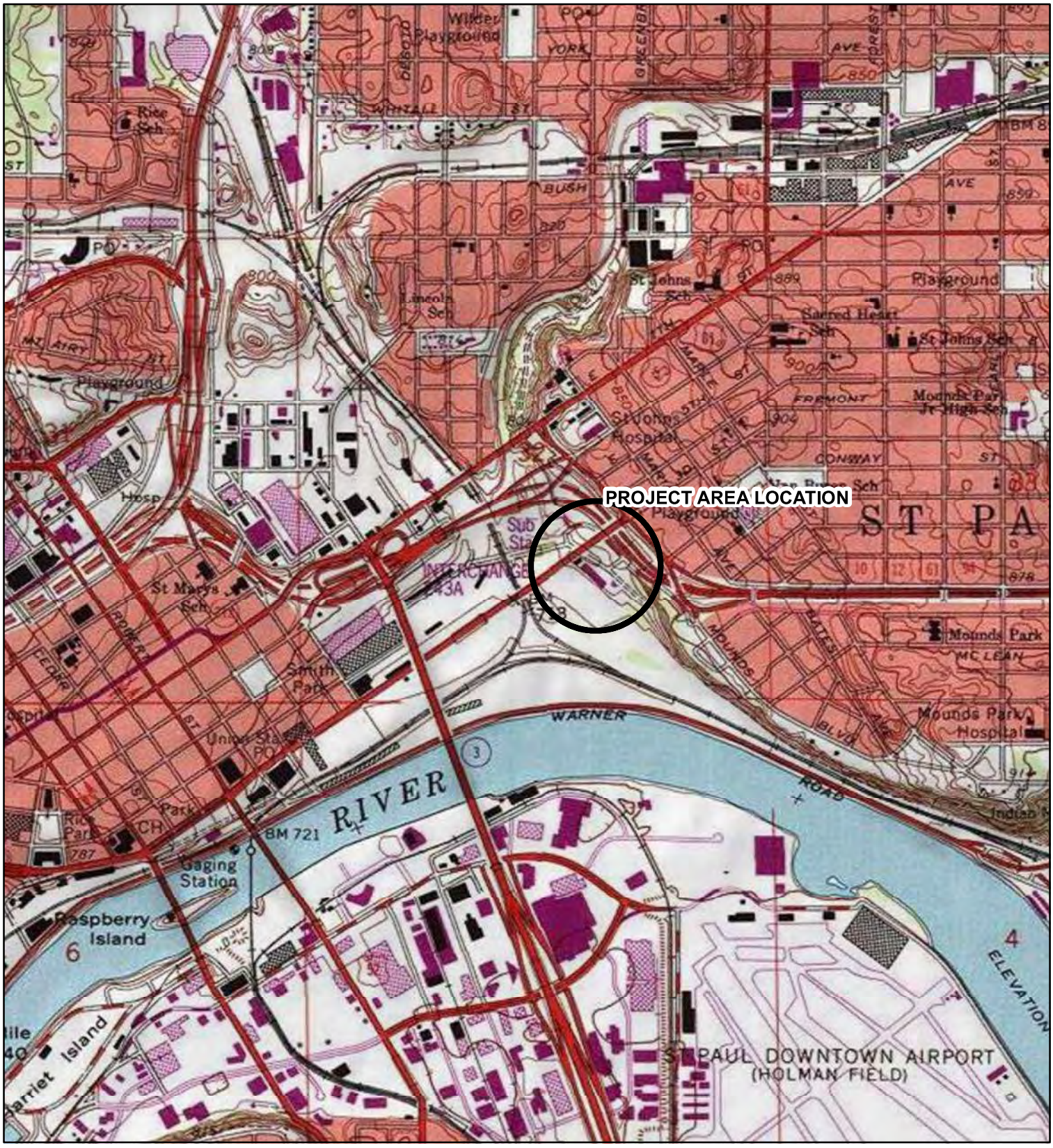
Upon completion of the proposed RAs, a report summarizing the RA and any analytical results will be submitted to the MPCA for review and approval. The RA Implementation Report will include the following: (1) data, results, and record drawings of the RAs (soil excavation and placement); (2) documentation of end disposition (disposal) of soil; (3) follow-up actions, if any; (4) discussion of any changes in the RAs with a discussion of why the changes were necessary; (5) discussion of any difficulties encountered during the implementation, which may alter or impair the effectiveness of the RAs and (6) spatial data requirements. Following review of the RA Implementation Report, the MPCA VIC Program is requested to issue a No Further Action Letter and the MPCA PB Program is requested to issue a Petroleum No Action letter.

2.9 Schedule

The following VRAP implementation schedule is anticipated; MPCA staff will be notified of schedule changes:

Submit VRAP to the MPCA	May 2021
Submit ECCP to the MPCA	May 2021
MPCA Reviews and Approves Reports	Within 30 Business Days
Begin Redevelopment Activities	August or September 2021
Construction of the Permanent Parking Lot	2023
Submit RA Implementation Report	within 60 Days Following RA Completion

Figures



F:\GIS\Client\CSP-City of St. Paul\2017-Phalen\Projects\Figure 1 Work Plan.mxd

0 700 1,400 2,800 Feet

1 inch = 1,500 feet

N

Figure 1A

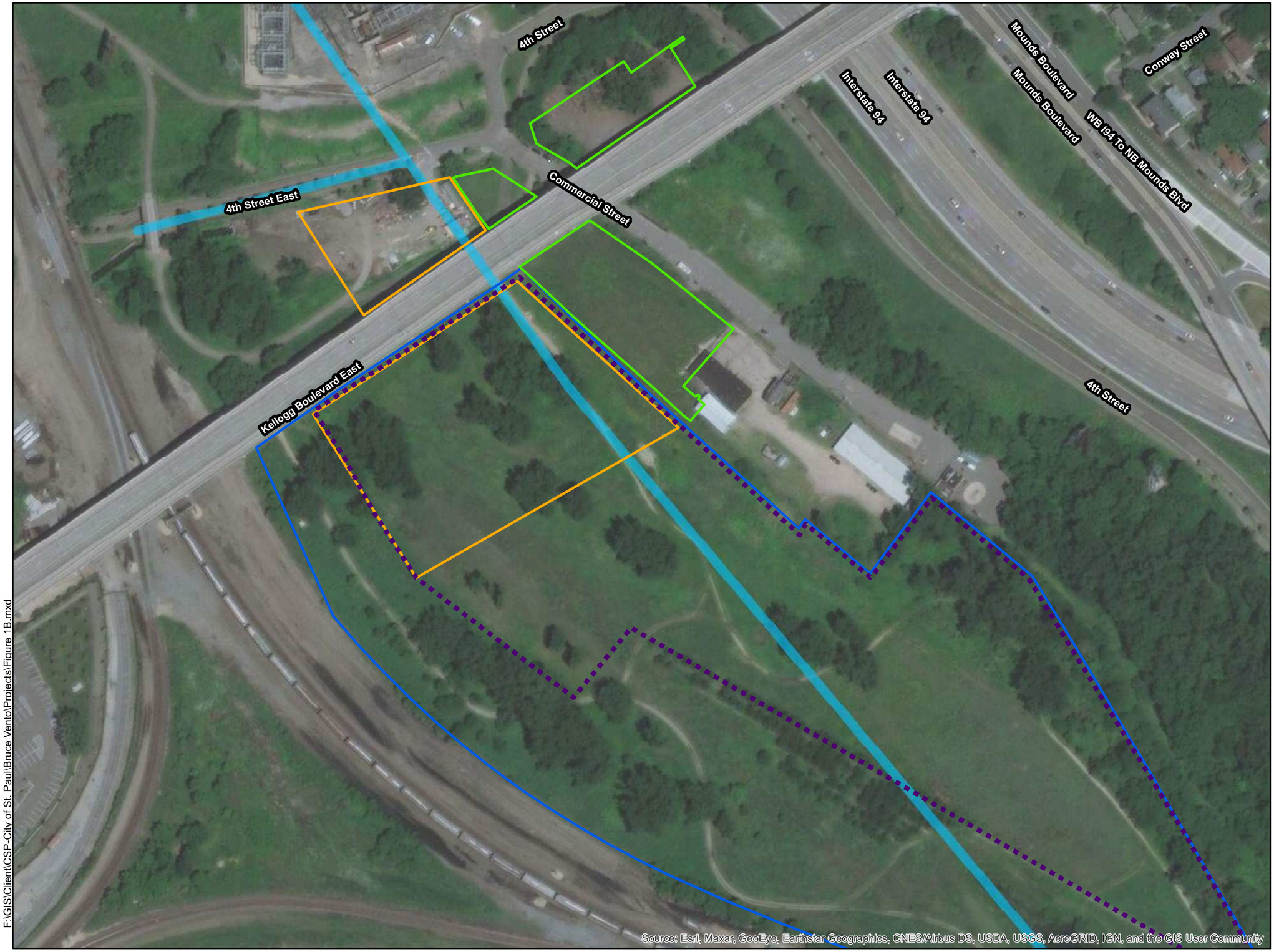
PROJECT AREA LOCATION
Wakan Tipi Center
St. Paul, Minnesota

LANDMARK ENVIRONMENTAL, LLC

FIGURE 1B

PROJECT AREA AND COVENANT AREAS
Proposed Wakan Tipi Center
Saint Paul, Minnesota

LANDMARK ENVIRONMENTAL, LLC



Legend

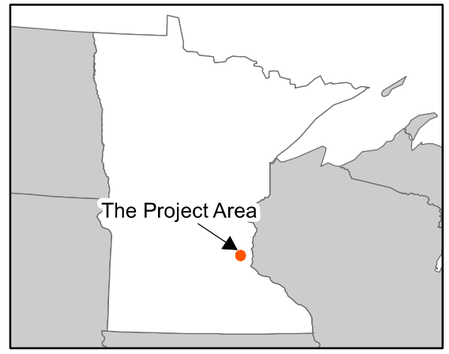
- Proposed Wakan Tipi Center
- Bruce Vento Former Interpretive Center (Environmental Covenant)
- Bruce Vento Nature Sanctuary (Environmental Covenant)
- Approximate DNR Conservation Easement
- Approximate Location of Phalen Creek Storm Water Tunnel

Notes
Ramsey county parcels and road shapefiles were provided by Ramsey County online. Location of Phalen Creek Storm Water Tunnel Approximated from PDF documents provided by the City of Saint Paul.

0 75 150 300 Feet

1 inch = 150 feet

N



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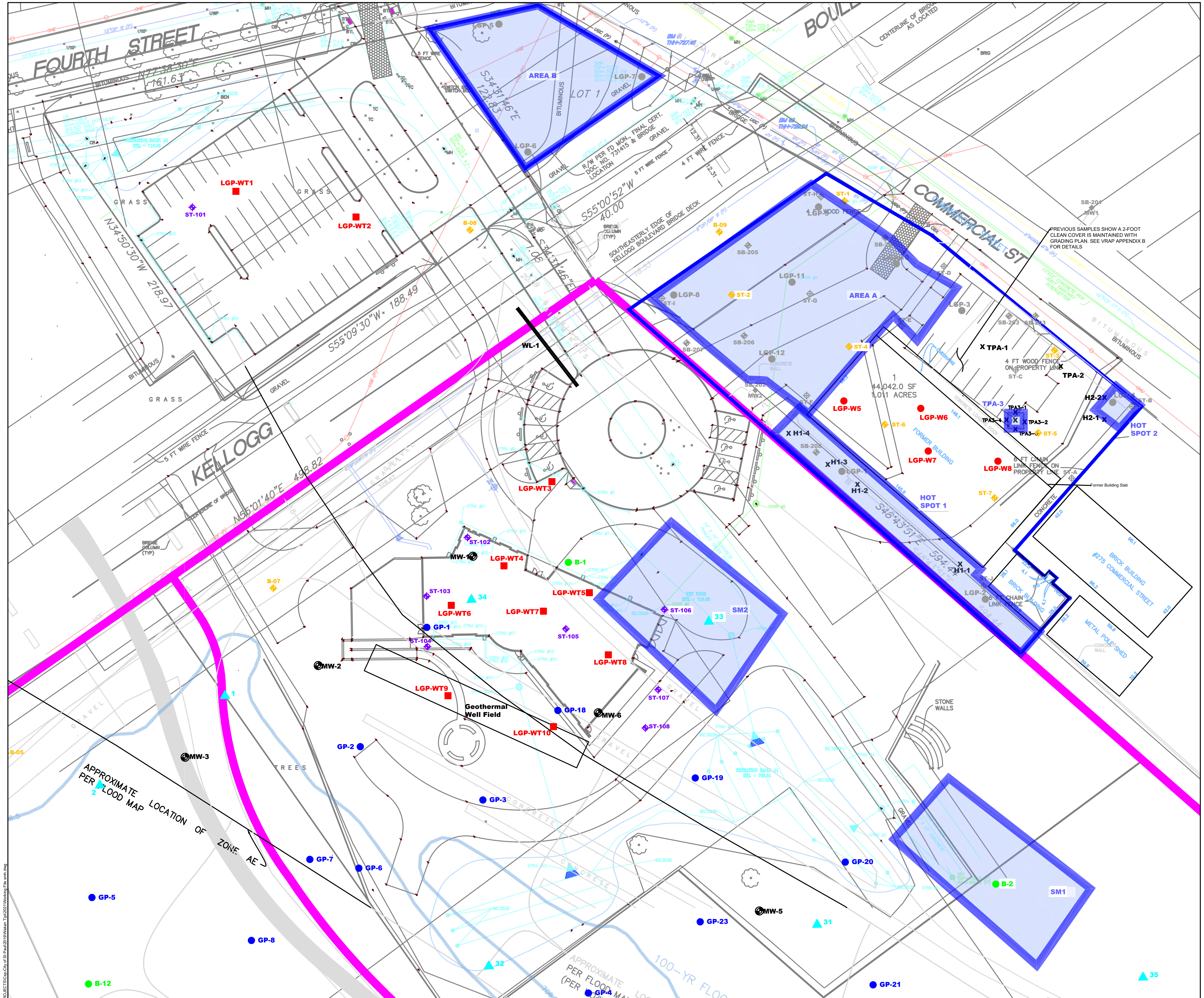

LEGEND

- B-1 SOIL BORING (TERRACON DEC 1999)
- GP-1 SOIL BORING (RETEC JUNE 2001)
- MW-1 MONITORING WELL (RETEC JUNE 2001)
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- NATURE SANCTUARY ENVIRONMENTAL COVENANT AREA

RESPONSE ACTIONS FOR SOIL

- PREVIOUS REMEDIATION AREA - includes 4 feet of clean fill over contaminated soil

PREVIOUS SAMPLES SHOW A 2-FOOT CLEAN COVER IS MAINTAINED WITH GRADING PLAN. SEE VRAP APPENDIX B FOR DETAILS

GENERAL NOTES:

1. Basemap Source: BKBM Engineers (as of April 2021). Basemap is used with permission of BKBM, LPCP and City of St. Paul.
2. Previous investigations and response actions completed on Nature Sanctuary and Interpretive Center property.
3. Response actions included reuse of marginal contaminated soil at depth with a minimum of 4 feet of clean soil cover or leaving contaminated soil in place and placing a 4 foot clean cover.
4. Environmental covenants on both Nature Sanctuary and Former Interpretive Center properties.

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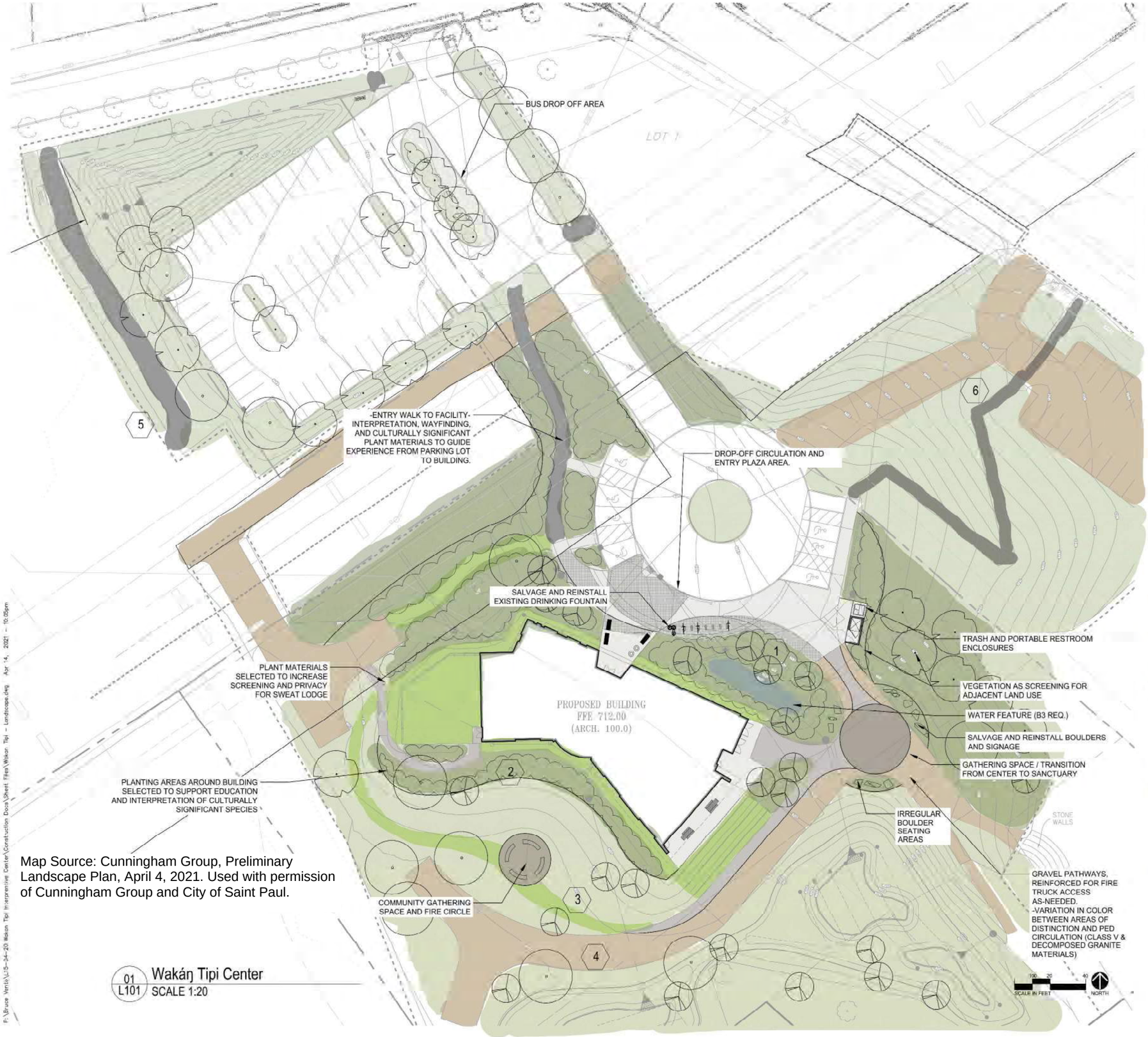
SCALE 1:60

Figure 2

PROJECT AREA LAYOUT WITH INVESTIGATION LOCATIONS
Wakan Tipi Center
St. Paul, Minnesota

LANDMARK ENVIRONMENTAL, LLC



01 L101 Wakáŋ Tipi Center
SCALE 1:20

Map Source: Cunningham Group, Preliminary Landscape Plan, April 4, 2021. Used with permission of Cunningham Group and City of Saint Paul.

LEGEND

- CONSTRUCTION LIMITS
- PROPERTY LINES
- EXISTING TREE
- PROPOSED OVERSTORY TREES

KEYNOTES

1. PRIMARY EDUCATIONAL AND OUTDOOR CLASSROOM AREAS
2. PLANT MATERIAL SELECTED TO ENHANCE BIRD HABITAT FOR VIEWING
3. SEEDING AND RESTORATION WITHIN SITE LIMITS SUPPORTS VEGETATION COMMUNITIES:
   - FFS59 FLOODPLAIN FOREST SYSTEM
   - UPS23 SOUTHERN MESIC PRAIRIE
   - UPS24 SOUTHERN MESIC SAVANNA
4. TEMPORARY FIRE TRUCK ACCESS PATH DURING BRIDGE CONSTRUCTION. AREA RESTORED TO UPS23 TARGET PLANT COMMUNITY WHEN COMPLETE
5. REALIGNED TRAIL CONNECTION
6. TEMPORARY LOT, ROAD, & SIDEWALK DURING BRIDGE CONSTRUCTION

CUNINGHAM GROUP
Cuningham Group Architecture, Inc.
201 Main St. SE, Suite 325, Minneapolis, MN 55414
www.cuningham.com

SAINT PAUL MINNESOTA
Parks and Recreation Department
400 City Hall Annex
25 West Street
Saint Paul, MN 55102

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Printed Name: XXXXXX
Signature:
Date: XX/XX/XXXX License #: XXXXX

DRAFT NOT FOR CONSTRUCTION

FIGURE 3
Proposed Development Plan
Wakan Tipi Center
Saint Paul, MN

- GRAVEL 1: DECOMPOSED GRANITE COLOR A (paving aggregate below as-needed for vehicle access)
- GRAVEL 2: DECOMPOSED GRANITE COLOR B (paving aggregate below as-needed for vehicle access)
- GRAVEL STANDARD: PAVING AGGREGATE / CLASS V
- BITUMINOUS
- CONCRETE 1: STANDARD
- CONCRETE 2: SPECIAL / TEXTURE
- PROGRAM AREA LANDSCAPE & PLANTING BEDS (Supports LPGP programming as culturall y significant educational lanoscape)
- OPEN SPACE: SEED MIXES (DNR Plant Communities per BVNS Management Plan)
- BEE LAWN SEED MIX Inipi ceremony space & path connections

Agency Approval
Registration
Name:
License No.:
Signed:
Revisions
No. Date Description

Project Information
Phase: Date: 2/4/2021
Project No.: PIC / ASC:
Wakáŋ Tipi Center

Drawing Package
DD
Sheet Title
Preliminary Landscape Site Plan

Sheet Number L001
Current Revision

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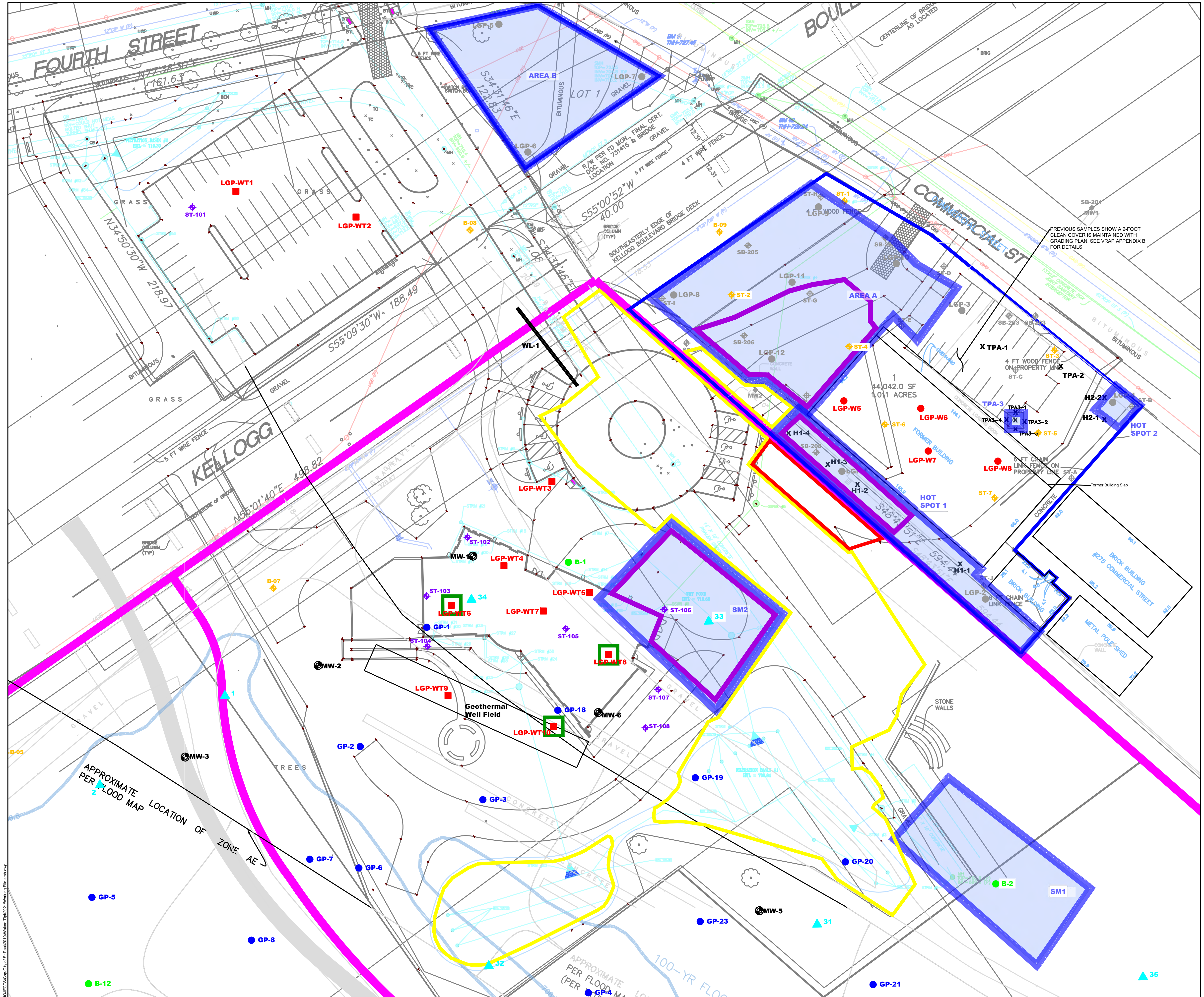

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- NATURE SANCTUARY ENVIRONMENTAL COVENANT AREA

RESPONSE ACTIONS FOR SOIL

- PREVIOUS REMEDIATION AREA - includes 4 feet of clean fill over contaminated soil
- Remove 4 feet of clean soil to reuse on Property, remove contaminated soil below to maintain 2 foot clean cover on Former Interpretive Center; 4 feet clean cover on Nature Sanctuary; 2 feet clean soil under building, lined pond, and impervious pavement; and, 2 feet clean soil above stormwater tunnel.
- HOT SPOT AREA - remove contaminated soil to depth specified.
- UNKNOWN GREEN SPACE CUT AREA - conduct sampling to determine if soil is contaminated and to determine whether clean soil cover requirement is met.
- SOIL MANAGEMENT AREA - covered with 4 feet of soil, impervious pavement, pond liner, or building. Maintain 2 feet of clean soil under pavement, building and pond liner, and 2 feet of clean soil above stormwater tunnel.

GENERAL NOTES:

1. Basemap Source: BKBM Engineers (as of April 2021). Basemap is used with permission of BKBM, LPCP and City of St. Paul.
2. Previous investigations and response actions completed on Nature Sanctuary and Interpretive Center property.
3. Response actions included reuse of marginal contaminated soil at depth with a minimum of 4 feet of clean soil cover or leaving contaminated soil in place and placing a 4 foot clean cover.
4. Environmental covenants on both Nature Sanctuary and Former Interpretive Center properties.

RESPONSE ACTIONS:

1. Former Interpretive Center Property - maintain a 2 foot clean soil cover over contaminated areas. Remove clean soil for reuse, excavate contaminated soil, then backfill clean soil to maintain 2 foot clean soil cover.
2. Nature Sanctuary - maintain 4 foot clean soil cover over contaminated areas. Remove clean soil for reuse, excavate contaminated soil, then backfill clean soil to maintain 4 foot clean soil cover.
3. Clean buffer zone under proposed building, impervious pavements, lined ponds and above stormwater tunnel shall be 2 feet. Utility corridors shall have clean soil in trench and 2 feet under pipe. Engineering controls may be necessary in areas of PID above 10 ppm.
4. Collect additional soil samples in cut areas with minimal samples.
5. Remove Hot Spot and collect verification samples.
6. Contaminated soil will be properly managed and disposed at a permitted landfill.
7. New Soil Management Areas will be covered with 4 feet of soil, buildings, lined ponds or pavement.
8. Marginal contaminated soil with PID <10 ppm can be reused under building, but must be beneath the 2 foot clean soil buffer.
9. Prepare Environmental Covenant Amendments as necessary.

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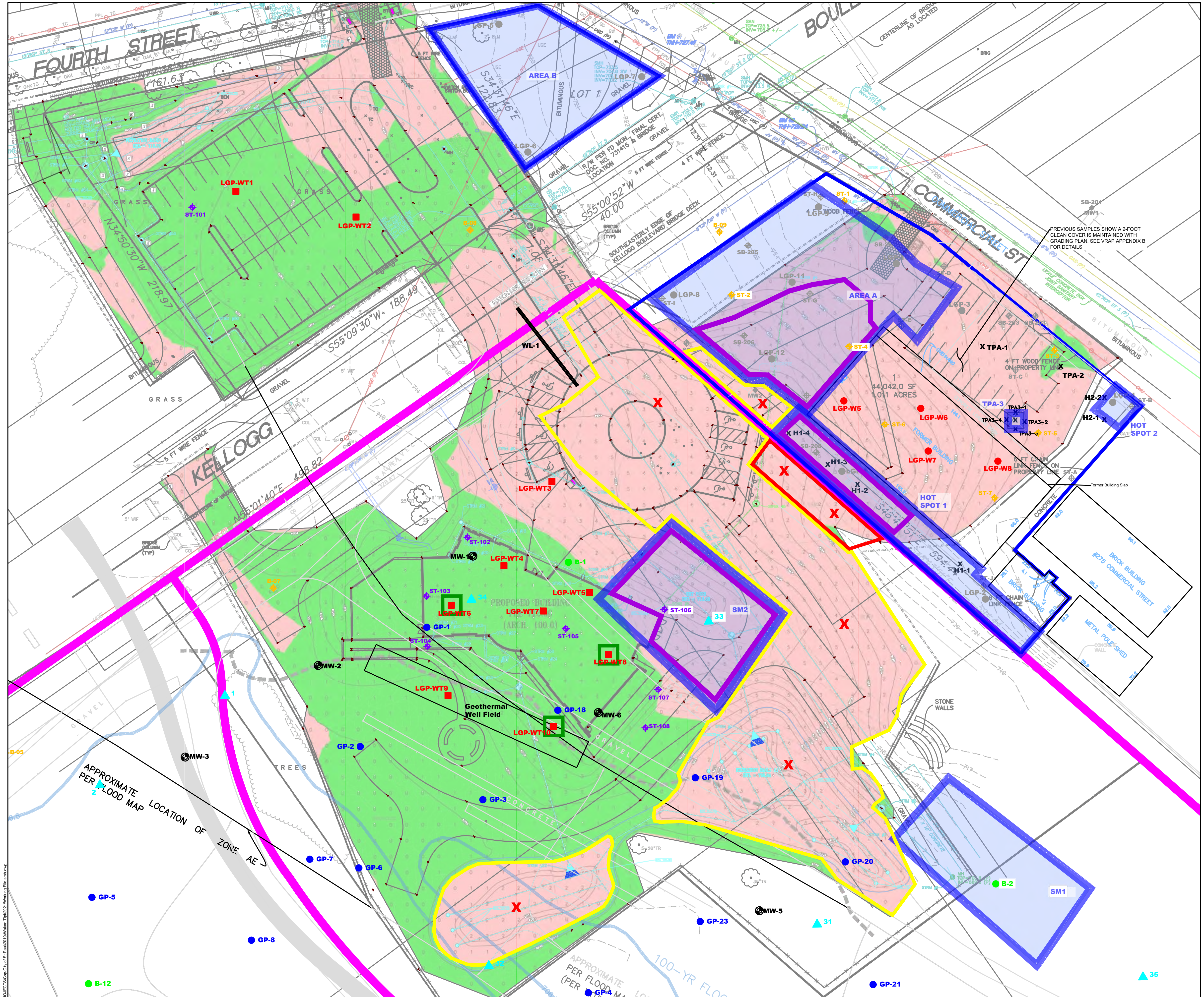
Figure 4A

PROPOSED DEVELOPMENT AND RESPONSE ACTION PLAN
Wakan Tipi Center
St. Paul, Minnesota

LANDMARK ENVIRONMENTAL, LLC



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RESPONSE ACTIONS FOR SOIL

- PREVIOUS REMEDIATION AREA - includes 4 feet of clean fill over contaminated soil
- Remove 4 feet of clean soil to reuse on Property, remove contaminated soil below to maintain 2 foot clean cover on Former Interpretive Center; 4 feet clean cover on Nature Sanctuary; 2 feet clean soil under building, lined pond, and impervious pavement; and, 2 feet clean soil above stormwater tunnel.
- HOT SPOT AREA - remove contaminated soil to depth specified.
- UNKNOWN GREEN SPACE CUT AREA - conduct sampling to determine if soil is contaminated and to determine whether clean soil cover requirement is met.
- SOIL MANAGEMENT AREA - covered with 4 feet of soil, impervious pavement, pond liner, or building. Maintain 2 feet of clean soil under pavement, building and pond liner, and 2 feet of clean soil above stormwater tunnel.
- ESTIMATED CUT AREA (BKBM ENGINEERS 03/17/2021)
- ESTIMATED FILL AREA (BKBM ENGINEERS 03/17/2021)
- X PROPOSED SAMPLING BY ENGINEER TO DETERMINE SOIL REUSE OR DISPOSAL AND FOR CLEAN SOIL BUFFER

GENERAL NOTES:

1. Basemap Source: BKBM Engineers (as of April 2021). Basemap is used with permission of BKBM, LPCP and City of St. Paul.
2. Previous investigations and response actions completed on Nature Sanctuary and Interpretive Center property.
3. Response actions included reuse of marginal contaminated soil at depth with a minimum of 4 feet of clean soil cover or leaving contaminated soil in place and placing a 4 foot clean cover.
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RESPONSE ACTIONS:

1. Former Interpretive Center Property - maintain a 2 foot clean soil cover over contaminated areas. Remove clean soil for reuse, excavate contaminated soil, then backfill clean soil to maintain 2 foot clean soil cover.
2. Nature Sanctuary - maintain 4 foot clean soil cover over contaminated areas. Remove clean soil for reuse, excavate contaminated soil, then backfill clean soil to maintain 4 foot clean soil cover.
3. Clean buffer zone under proposed building, impervious pavements, lined ponds and above stormwater tunnel shall be 2 feet. Utility corridors shall have clean soil in trench and 2 feet under pipe. Engineering controls may be necessary in areas of PID above 10 ppm.
4. Collect additional soil samples in cut areas with minimal samples.
5. Remove Hot Spot and collect verification samples.
6. Contaminated soil will be properly managed and disposed at a permitted landfill.
7. New Soil Management Areas will be covered with 4 feet of soil, buildings, lined ponds or pavement.
8. Marginal contaminated soil with PID <10 ppm can be reused under building, but must be beneath the 2 foot clean soil buffer.
9. Prepare Environmental Covenant Amendments as necessary.

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SCALE 1:60

Figure 4B

CUT AND FILL PLAN WITH RESPONSE ACTION PLAN
Wakan Tipi Center
St. Paul, Minnesota

LANDMARK ENVIRONMENTAL, LLC

Table 1
Verification of Meeting Clean Soil Buffer
Wakan Tipi Center, Saint Paul

Area and Proposed Clean Soil Cover or Buffer	Previous Sample Location	Proposed Cut (feet)	Depth of Previous Analytical Sample (feet)	Meets Recreational SRV or DRO 200 mg/kg Cleanup Goal	Field screening or other notes	Maintains Minimum 2 foot cover	Recommendations
Former Interpretive Center Buffer of 2 feet Clean Cover Proposed	LGP-3	0-1	0-4, 6-12	Yes, Yes		Yes	No additional sampling necessary
	TPA-1	0-1	0-4	Yes		Yes	
	ST-C	0-1	5-7.5, 7.5-10, 10-12.5	No Lead 1,120 mg/kg (5-7.5) DRO 640 mg/kg (10-12)	No shallow sample, but other samples nearby	Yes	
	TPA-2	0-1	0-4	Yes		Yes	
	ST-5	0-1	Not Analyzed		Other samples nearby	Yes	
	TPA3-1	0-1	0-4	Yes	No indications of contamination	Yes	
	TPA3-2	0-1	0-4	Yes		Yes	
	TPA3-3	0-1	0-4	Yes		Yes	
	TPA3-4	0-1	0-4	Yes		Yes	
	LGP-W5	5	1-3 clean	Yes	Boring only to 3 ft	Unknown	
	LGP-W6	4	1-3	Yes, Arsenic 11.2	7.5 (black, odor)	Yes	
	LGP-W7	4	2-4	Yes	clean until 7 ft, then slab, end of boring	Yes	
	LGP-W8	1	2-4	Yes	clean until 5 feet, slab at 5 feet, end of boring	Yes	
	ST-6	5	3-5	Yes	slab at 5 feet, contaminated soil/gw at 17 ft	Unknown	
	ST-7	1	9-11	No	slab at 5 feet, contaminated below slab high PID	Yes	
	NW Corner						
	SB207	2	2.5-4.5, 5-7	5-7' DRO 160, lead 1030	Shallow sample only analyzed for BTEX	Yes, likely	No additional sampling necessary
	SB202 (MW2)	5	7.5-9.5	No, As 31, BAPeq 4.92	No shallow sample. 1-4' dark brown sandy silt, 4-6' brown sand with coal.	Unknown	Additional sampling necessary. Likely contaminated at 4 feet. Excavate additional 2 feet and backfill.
Bruce Vento Nature Sanctuary Areas Under Building, Pavement, Liners or on top of Phalen Creek Stormwater Tunnel Buffer of 2 feet Clean Cover Proposed	LS-33	8-9	0.5-2	No, arsenic 26, BAP 4.4	No deeper samples. Soil Management Area 2. Covered with 4 feet of clean soil in 2003	Unknown	Remove top 4 feet of clean soil, remove contaminated soil and dispose.
	LGP-WT3	3-4	0-2	Yes	No deeper samples. Soil is brown sand to 4 ft. Slag pieces observed at 5 feet.	Yes down to 4 feet. Likely no below 5 feet.	Field screen in area during construction, if indications show potential contamination either dispose as contaminated or sample.
Bruce Vento Nature Sanctuary Buffer of 4 feet Clean Cover Proposed	WL-1	1-3	0-4	Yes, Arsenic 13.5 (slightly over).	BAP eq, lead, mercury met cleanup goals. No indications of contamination at 5 -7 ft during construction	Yes	Portion of area paved. No additional sampling unless field screening indicates contaminated soil.
	GP19	1	No samples analyzed		None available. Likely did not sample because no indications.	Unknown	Additional sampling necessary for soil reuse or disposal and to determine if cover will be maintained.
	GP20	2					
	LS32	1-2	0.5-2	Mobile results meet for lead, hg, as and PAHS	Deeper samples not collected	Unknown	Additional sampling necessary for soil reuse or disposal and to determine if cover will be maintained.