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**ST. LOUIS ICE CENTER PROJECT  
FINAL ENVIRONMENTAL ASSESSMENT  
APPENDICES**  
Maryland Heights, St. Louis County, Missouri



**Lead Agency:**  
US DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE  
Omaha, Nebraska

**State LWCF Agency:**  
Missouri Department of Natural Resources – LWCF Management Section  
Jefferson City, Missouri

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### **STEP 3C: PROPOSAL FOR A PUBLIC FACILITY IN A SECTION 6(F) AREA**

**1. Describe the purpose and all proposed uses of the public facility such as types of programming, recreation activities, and special events including intended users of the new facility and any agency, organization, or other party to occupy the facility. Describe the interior and exterior of the facility, such as office space, meeting rooms, food/beverage area, residential/lodging area, classrooms, gyms, etc. Explain how the facility will be compatible with the outdoor recreation area. Explain how the facility and associated uses will significantly support and enhance existing and planned outdoor recreation resources and uses of the site, and how outdoor recreation use will remain the primary function of the site. (The public's outdoor recreation use must continue to be greater than that expected for any indoor use, unless the site is a single facility, such as a swimming pool, which virtually occupies the entire site.)**

The St. Louis Ice Center (SLIC) is an ice sport public facility to be constructed in Creve Coeur Lake Memorial Park that will offer new outdoor recreational opportunities not currently offered within the Park. The SLIC will fulfill an immediate need for ice skating facilities within St. Louis County and the surrounding area. In addition to helping grow the game of ice hockey the public facility will offer other outdoor recreation such as figure skating, speed skating, ice dancing, synchronized skating and more. Additionally, during the off-season the facility will offer indoor field hockey, floor hockey, indoor lacrosse, indoor soccer and in-line skating. All of these uses are under-served in the community as there are not enough facilities to handle current demand, let alone future growth of outdoor recreational activities such as these.

The public facility will consist of four sheets of ice, three indoor and one outdoor. The event center ice sheet will have a 3,200 seating capacity, a training center ice sheet will have a 700 seating capacity, and the two other sheets will have a 200 to 400 seating capacity. Also included in the facility are a restaurant area that overlooks two of the ice sheets serving as a community gathering space, locker rooms, a pro shop, training facilities, injury rehabilitation facilities, public restrooms, concession areas, mechanical/storage rooms, a kitchen, a hospitality room and office space for facility management. The facility will have 298,000 square feet of floor space within a building footprint of 251,000 square feet. See **Attachment A – Site Development Plan.**

The exterior of the building will consist of reinforced load bearing tilt-up concrete for the rink portion. The lower portions of the building will consist of shorter concrete walls (tilt or concrete masonry unit). The roof will be mechanically fastened and consist of a white thermoplastic polyolefin (TPO) roof system with two layers of insulation. Other building finishes consist of canopy roofing, prefinished sheet metal gutters and downspouts and prefinished sheet metal fascia. The parking pavement will consist of 3 inches of asphalt over 8 inches of stone base for 836 parking spots and 4 inches of asphalt over 10 inches of stone base for drive lanes.

The facility is proposed on a 40-acre site within Creve Coeur Lake Memorial Park, which contains 2,114 acres. This park already has outdoor athletic fields, more than 17 miles of trails, a 320 acre lake, a restaurant, disc golf course, a corporate picnic site, a tree top adventure course and numerous picnic sites, shelters and playgrounds.

A multi-purpose ice sports public facility will enhance the many outdoor program offerings already established in this large regional park. The public facility will offer year-round ice sport use, especially during inclement weather and during the area's challenging summer temperatures and humidity. This public facility will enhance the many outdoor recreation opportunities already established in this park such as:

- The parking lot will serve as a trail head for the new Fee Fee Greenway Trail being established by Great Rivers Greenway (GRG). It is currently under construction and will lie just to the east and south of the proposed SLIC. There will be designated parking at the SLIC for trail users to help promote trail usage.
- Hockey tournaments, figure skating, and other ice sport events will bring people to the Park from a broader region around St. Louis. Participant families and fans would use the outdoor recreational resources available near SLIC including Creve Coeur Lake, picnic sites, the Fee Fee Greenway Trail, and the adjacent disc golf course. Teams would also take advantage of the outdoor activities between games and during other down times. Current construction plans call for a 1km walking/biking trail to encircle the facility and tie directly into the Fee Fee Greenway Trail.
- Currently, the disc golf course to the south of the proposed project site is being partially relocated and renovated due to the construction of the Fee Fee Greenway Trail. The users of the disc golf course have written letters of support for SLIC because the proposed parking lot would support their course and the improvements required to the course as part of their relocation will drive greater participation in this sport.

The SLIC will create a net gain in outdoor recreation benefits in Creve Coeur Lake Memorial Park by offering new outdoor recreational opportunities that currently do not exist within the park and by providing those opportunities in an area of the park that is basically unused for outdoor recreation. The new outdoor recreational opportunities include ice hockey, figure skating, synchronized skating, skating lessons, in-line skating, floor hockey, field hockey, and other outdoor recreational opportunities. In addition, an indoor rink will be used to accommodate recreational activities other than ice sports during the summer months.

Currently, the proposed site for SLIC offers very little opportunity for outdoor recreation. It is a mowed field located just south of an active railroad line. In the middle of the site is a maintenance shed and a gravel road that connects the shed to Marine Drive. A small portion of the site is currently used as a disc golf course; however, as noted above, that activity is being relocated as a result of the construction of the Fee Fee Greenway Trail.

The SLIC facility will include an outdoor skating sheet. During months when the weather is too warm to support ice, the outdoor rink will be used for floor hockey, field hockey, lacrosse, in-line skating or such along with playing host to summer camp activities that are currently offered in the park, but don't have protected space. It will also host public monthly outdoor music concerts throughout the summer and the parking lot will be used for outdoor activities, including farmer's markets and food truck events sponsored by St. Louis County Parks and a municipality.

The SLIC will also encourage people to take advantage of outdoor recreational opportunities year-round, especially during the colder winter months when park usage is lower than in the warmer months of the year. Ice sports are considered outdoor recreational activities under the LWCF program but the climate of the St. Louis region and the accompanying winter rains will not support outdoor rinks for the length of the hockey season. Therefore, indoor rinks are necessary in the St. Louis region to support the year-round demands of ice sport enthusiasts.

**2. Indicate the exact location of the proposed public facility and associated activities on the site's Section 6(f) map. Explain the design and location alternatives considered for the public facility and why they were not pursued.**

**See Attachment B – Project Location.** Five possible locations were analyzed for the SLIC. The site chosen for the project is located at: 13750 Marine Ave., just east of Hwy 141. The other locations that were analyzed include: St. Louis County Park ground located along the Page Extension Freeway, just west of the 141 Highway, along River Valley Road (Levee site); the Golfport site located at 3250 Creve

Coeur Mill Road; the Sportport site located at 12525 Sportport Road; and the Queeny Park site at 550 Weidman Road and 1675 South Mason Road.

The challenges for the Levee site include the fact that the property is located directly adjacent to the levee. This poses a number of significant problems including the existence of an under-seepage berm that restricts subsurface penetrations on site; storm water quantity and quality engineering requirements is considerably restricted due to the under-seepage berm; the levee district may require all subsurface construction to be a specific distance from the toe of the levee, which would leave little or no room for the development; consultation with the Corp of Engineers would be required due to potential wetland impacts and proximity of the site to the Missouri River. This location is not recommended for necessary utility connections; sanitary and water connections would have to extend great distances to accommodate these needs; soils in this area tend to be highly plastic, silt and silty clays; and access to this location is poor because it is off of a two-lane road.

The challenges for the Golfport site include the site being privately owned and currently zoned Non-Urban, which would require the site to be rezoned; the site currently sits at an existing grade of 440' which would require five to seven feet of fill to bring elevation up to an appropriate level and to accommodate for storm detention requirements; storm quantity requirements may require the construction of a significant detention basin or design an underground detention system; there are Ameren UE overhead lines on the property and they have a very wide easement of 275 feet and the soils in this area tend to be highly plastic, silt and silty clays. Additionally, inquiries were made to the current land owner about a purchase of the property, but the Foundation was unable to agree to terms with the land owner.

The challenges for the Sportport site include the site being owned by the City of Maryland Heights but privately controlled by an individual tenant and the soils in this area tend to be highly plastic silt and silty clays. Inquiries were made by the Foundation to the tenant controlling the site about use of some of the property; however, the Foundation was unable to agree to terms with this tenant, making it economically infeasible.

The Queeny Park site has its own set of challenges. Most notably, this site would result in poor traffic flow and circulation. The site is served by Weidman and Mason Roads with the nearest four lane road being Manchester Road, approximately 0.65 miles south of Queeny Park. To facilitate improved traffic flow, lane widening along either Weidman or Mason Road would likely be necessary and would add substantive project cost. The Foundation was not able to locate an area of land large enough to meet the minimum 40-acre size requirement within Queeny Park. Queeny Park has rolling topography and suitable land for development is not as abundant as at the previous sites mentioned. The internal traffic circulation would be poor and would likely have adverse impacts on the park experience of park users.

**3. Explain who will own and/or operate and maintain the facility? Attach any 3<sup>rd</sup> party leases and operation and management agreements. When will the facility be open to the public? Will the facility ever be used for private functions and closed to the public? Explain any user or other fees that will be instituted, including the fee structure.**

St. Louis County will retain ownership of the property, will own the proposed public facility, and will enter into a lease agreement with the St. Louis Legacy Ice Foundation (the Foundation) to operate the facility. The Foundation plans to engage a locally-owned rink management company to manage the internal programming, operations and maintenance of the SLIC. This operator has extensive background in managing recreational ice sports facilities in St. Louis and other markets and has years of best practices experience managing and operating ice rinks in our challenging climate with wide temperature and humidity level swings.

The lease and management agreements have not yet been drafted. Any such agreement will clearly indicate that the leased/concessioned area is to be operated by the lessee/concessionaire for public outdoor recreation purposes in compliance with provisions of the Land and Water Conservation Fund

(LWCF) Act and implementing guidelines, including but not limited to: (1) the area will be identified as publicly owned and operated as a public outdoor recreation facility in all signs, literature and advertising, and is operated by a lessee as identified in the public information to eliminate the perception that the area is private; (2) all fees charged by the lessee/concessionaire to the public must be competitive with similar private facilities; and (3) compliance with all Civil Rights and accessibility legislation is required and compliance will be indicated by signs posted in visible public areas and statements in public brochures. The lease and management agreements will reserve the right to periodically review the performance of the lessee/concessionaire and terminate the agreement if its terms and the provisions of the grant agreement, including maintenance, public use and accessibility, are not met.

As a publicly financed project, the plan is to have SLIC be managed by the Foundation, a 501(c)(3) organization. Once the initial agreement has expired, the facility will revert back to the public, under the ownership of St. Louis County.

The Ice Center will be used predominately for outdoor recreation activities open to the general public. The facility will be open year round for the following types of activities: public skate, stick and puck, learn-to-skate, learn-to-play, adult and youth leagues, summer camps, hockey practice and games, tournaments, figure skating, indoor field hockey, floor hockey, in-line skating and many other recreational activities that would be well served by having a covered area in which to play. Twenty-five percent of the ice time will be dedicated to public skating sessions, freestyle skating, skating lessons, open stick and puck sessions, and dry floor. An additional thirty-seven percent of the time will be devoted to camps and clinics, as well as youth, high school, and adult hockey leagues. Ice time will also be reserved for hockey for people with disabilities, figure skating, and synchronized skating.

In exchange for their contribution to the facility, the Blues will use two percent of the ice time. They will skate on weekdays from 10 am to 12 pm when no one would otherwise be using the facility due to work and school schedules. Their practices will be open to the public so anyone can come and watch. Moreover, they will only occupy one rink, leaving the other three rinks available for public use. College teams and an amateur hockey team will also use the rink, but again the majority of their ice time will be on weekdays before 3 pm when demand for the ice is lowest and the other rinks are available. The Ice Center will charge reasonable fees and will not require memberships so that it remains accessible to the public.

**See Attachment C - Proposed Ice Usage Breakdown** for further details.

## STEP 5: SUMMARY OF PREVIOUS ENVIRONMENTAL REVIEW

### 1. Date of environmental review(s), purpose for the environmental review(s) and for whom they were conducted.

Over the past 20 years a number of environmental reviews have been conducted for various transportation projects at Creve Coeur Lake Memorial Park. The dates, projects, and the agency or organization conducting the reviews are listed below:

- 1995. Final Supplemental Environmental Impact Statement Page Avenue Extension.
- 2001. In-house Environmental Assessment of Spoil Pit Development, Creve Coeur Lake Memorial Park. Saint Louis County Department of Parks & Recreation.
- 2001. In-house Environmental Assessment of Proposed Concrete Batch Plant, Creve Coeur Lake Memorial Park. Saint Louis County Department of Parks & Recreation.
- 2002. Howard Bend Environmental impact Statement Draft Purpose and Need. Prepared for US Army Corps of Engineers, St. Louis District. Prepared by MACTEC Engineering and Consulting, Inc. Under contract with the Howard Bend Levee District.
- 2003. Creve Coeur Lake Memorial Park Master Plan. Developed by Parsons-Brinkerhoff for Saint Louis County Department of Parks & Recreation.
- 2004. Environmental Assessment for Requesting Conversion Transfer of 4(f) and 6(f) Lands. Conducted by Saint Louis County Department of Parks & Recreation.
- 2005 Howard Bend Floodplain Final Environmental Impact Statement.
- 2006. Environmental Assessment for Creve Coeur Lake Memorial Park Requesting Conversion Transfer of 6(f) Lands. In-house Saint Louis County Department of Parks & Recreation.
- 2007. Howard Bend Land Use Plan Implementation Program.
- 2008. Maryland Heights Expressway EIS.
- 2010. Creve Coeur Lake Memorial Park-LWCF 6(f) Conversion for Page-Olive Connector/Creve Coeur Mill Road Realignment (LWCF Project 29-00292. Saint Louis County Department of Parks & Recreation.
- 2010. Olive & 141 Connector EA prepared by MACTEC Engineering and Consulting, Inc..
- 2013. McKelvey Woods Trail Wetland Delineation Phase II. Conducted for the US. Army Corps of Engineers, St. Louis District by Burn & McDonnell Engineering Company, Inc. Under contract with the City of Maryland Heights. (Note: this trail is part of GRG's Fee Fee Greenway).
- 2015. Comprehensive Plan and Updates. City of Maryland Heights.
- 2015. St. Louis Ice Center Study. Created by Generator Studio, ARCO Construction, Castle Construction, Canlan Ice Sports, and Double Eagle Sports, LLC.
- 2017. Waters of the United States Delineation, St. Louis Ice Center. Conducted for ARCO Construction Company by Geotechnology, Inc.
- 2017. Stormwater Management Facilities Report: Detention Volume – Howard Bend Levee District. Conducted for ARCO Construction Company by Stock & Associates Consulting Engineers, Inc.
- 2017. Traffic Impact Study by Crawford Bunte Brammeier Transportation Engineers and Planners.
- 2017. Evaluation of Project Area for Potentially Suitable Bat Habitat by Amec Foster Wheeler.
- 2017. Phase I Cultural Resource Survey by Amec Foster Wheeler.



## **2. Description of the proposed action and alternatives.**

Saint Louis County Department of Parks and Recreation (SLCDPR) is requesting permission for a public facility to be constructed and operated on Section 6(f) land at Creve Coeur Lake Memorial County Park. The proposal would consist of a public recreational facility with four sheets of ice designed to support numerous recreational activities. Proposed activities would include but not be limited to: public ice skating, public learn-to-skate and learn-to-play programs, figure skating, in-line skating, field hockey, floor hockey and all levels of developmental hockey. As envisioned, the facility would attract local, regional and national events ranging from disabled or sled hockey, special needs hockey, U.S. National Figure Skating Championships and so forth. These events could be held due to the number of ice sheets and the total seating capacity of over 4,000 spectators. Office space, concessions, a restaurant, training facilities, rehabilitation areas and a pro-shop would be included in the SLIC.

The cost to construct the SLIC is estimated to be in excess of \$55 million. Approximately 60% of the the project's financing will come via Industrial Revenue Bonds with limited backing from St. Louis County. The remaining 40% of the financial requirements are secured via private donations and the project is fully funded. A not-for-profit 501(c)(3), governed by a Board of Directors, will steward operations of the facility with day-to-day activities executed by the aforementioned rink management firm.

Five sites were reviewed as possible locations for the proposed development as identified in the SLIC study, of which four were in the City of Maryland Heights. The five locations were:

- County Park land located at 13750 Marine Avenue, just east of Highway 141;
- County Park land located along the Page Extension Freeway, just west of Highway 141 along River Valley Road;
- Golfsport site located at 3250 Creve Coeur Mill Road;
- Sportport site located at 12525 Sportport Road; and
- Queeny Park site located at 550 Weidman Road and 1675 South Mason Road.

Some of the criteria used to determine site location included:

- The use of public land as compared to purchasing private property;
- Existing transportation amenities;
- Existing utilities or nearby connections;
- Existing location in reference to the Howard Bend Levee District and the levee itself;
- The existing possibility of wetlands;
- Flooding and flood water considerations;
- Stormwater management strategies;
- Sub-surface ground saturation and ground water movement; and
- Cost to construct based on engineering, grading and ground work needs.

Based on the findings it was determined by the developers that the Marine Avenue site was the preferable site. The other sites would have provided significant constraints relative to topography, construction costs and traffic challenges, which would have restricted the ice rink development.

## **3. Who was involved in identifying resource impact issues and developing the proposal including the interested and affected public, government agencies and Indian tribes.**

The SLIC study was developed by Generator Studio, ARCO Construction, Castle Construction, and St. Louis Legacy Ice Foundation. The LWCF Proposal Description and Environmental Screening Form was completed by St. Louis Economic Development Partnership. An informational public meeting was held in January 2017 (see item 7 below).

**4. Environmental resources analyzed and determination of impacts for proposed actions and alternatives.**

See above number 2.

**5. Any mitigation measures to be part of the proposed action.**

Initial studies of the proposed project indicate the following mitigation measures:

- Possible wetland mitigation (pending review of a wetlands delineation report by the U.S. Army Corps of Engineers);
- Bio-swales to collect and move stormwater runoff;
- Detention basins to detain runoff;
- The possibility of using porous pavement;
- The possibility of installation of rain gardens throughout the parking areas; and
- The use of BMP as part of the Storm Water Pollution Prevention Plan.

The proposed site consists of approximately 40 acres.

**6. Intergovernmental Review Process. Was this proposal reviewed by the appropriate State, metropolitan, regional and local agencies, and if so, attach any information and comments received about this proposal.**

Missouri Department of Natural Resources, Land Water Conservation Fund Management Section.  
Missouri State Historic Preservation Office.

**7. Public comment periods (how long, when in the process, who was invited to comment) and agency response.**

The St. Louis County Department of Planning held an informational public meeting on January 25, 2017 regarding the proposed development. Notification of the meeting included postcards mailed to nearby property owners, park signage, a County website notice, email notification sent to County website subscribers as well as open space organizations. Presentations were given by the SLCDPR, the Partnership, and the Foundation prior to opening up the meeting for public comments. A total of 42 individuals provided comments during the meeting: 25 spoke in favor of the development, and 17 spoke in opposition. Representatives from regulatory agencies and other interested agencies were not in attendance at this meeting.

The Draft EA was issued for public comment on June 22, 2017 for a 30-day comment period that closed on July 22, 2017. The Draft EA was made available at [www.stlpartnership.com/icecenter](http://www.stlpartnership.com/icecenter). Printed copies were also made available from the St. Louis Economic Development Partnership for a printing cost of \$30.00. Over 2,700 comments were received with approximately 78 percent in favor of the project and 22 percent against.

**8. Any formal decision and supporting reasons regarding degree of potential impacts to the human environment.**

N/A

**9. Was the proposed LWCF federal action and/or any other federal actions analyzed/reviewed in any of the previous environmental reviews? What was analyzed and what impacts were identified? Provide specific environmental review document references.**

Most of the above mentioned environmental documents (see Item 1 above) do not take into account the specific location of the proposed project area (except the McKelvey Woods Trail Wetland Delineation Phase II). Most of the studies listed in Item 1 refer to Page Avenue, Howard Bend Levee District, Maryland Heights Expressway and the Olive-Highway 141 Connector. Most of the reference to environmental studies and reviews, listed above, is in reference to the many highway projects that have occurred in and around Creve Coeur Lake Memorial Park. The location of the proposed project was included in several recent reviews involving bat roost tree habitat, cultural resources, floodplains, and traffic flow and circulation.

## STEP 6: ENVIRONMENTAL SCREENING FORM (ESF)

### Part A. Environmental Resources

<b>A. ENVIRONMENTAL RESOURCES</b> Indicate potential for adverse impacts. Use a separate sheet to clarify responses per instructions for Part A on page 9.	<b>Not Applicable-</b> Resource does not exist	<b>No/Negligible Impacts-</b> Exists but no or negligible impacts	<b>Minor Impacts</b>	<b>Impacts Exceed Minor</b> EA/EIS required	<b>More Data Needed to Determine Degree of Impact</b> EA/EIS required
1. Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.				<b>X</b>	
2. Air quality			<b>X</b>		
3. Sound (noise impacts)			<b>X</b>		
4. Water quality/quantity				<b>X</b>	
5. Stream flow characteristics	<b>X</b>				
6. Marine/estuarine	<b>X</b>				
7. Floodplains/wetlands				<b>X</b>	
8. Land use/ownership patterns; property values; community livability		<b>X</b>			
9. Circulation, transportation				<b>X</b>	
10. Plant/animal/fish species of special concern and habitat; state/federal listed or proposed for listing		<b>X</b>			
11. Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.	<b>X</b>				
12. Unique or important wildlife/ wildlife habitat	<b>X</b>				
13. Unique or important fish/habitat	<b>X</b>				
14. Introduce or promote invasive species (plant or animal)		<b>X</b>			
15. Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc. <i>Most conversions exceed minor impacts. See Step 3.B</i>				<b>X</b>	
16. Accessibility for populations with disabilities	<b>X</b>				
17. Overall aesthetics, special characteristics/features		<b>X</b>			
18. Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. Attach SHPO/THPO determination.		<b>X</b>			
19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure		<b>X</b>			
20. Minority and low-income populations	<b>X</b>				
21. Energy resources (geothermal, fossil fuels, etc.)		<b>X</b>			
22. Other agency or tribal land use plans or policies	<b>X</b>				
23. Land/structures with history of contamination/hazardous materials even if remediated	<b>X</b>				
24. Other important environmental resources to address.	<b>X</b>				

## **Part A. Environmental Resources Explanations**

### **1. Geologic resources, soils, bedrock, slopes, streambeds, landforms, etc.**

The proposed action to develop the SLIC will impact the soils and landforms of the 6(f) property in question. The proposed development is located in the Missouri River floodplain and is within the 100-year flood of Creve Coeur Lake and Creve Coeur Creek. Alluvial deposits within the project area are at a depth of greater than 60 feet. The water table is at a depth of two to four feet most of the year according to the Natural Resource Conservation Service (NRCS) (formerly known as the Soil Conservation Service) Soil Survey of St. Louis County and St. Louis City, 1979.

The ground is relatively flat with a slight decrease in elevation along the eastern and northern portions of the project area. The soils located on the site are identified as Peers, silty clay loam by the Natural Resource Conservation Service (NRCS). This soil is identified as a hydric soil in St. Louis County. As described the soil is located on nearly flat ground and is somewhat poorly drained. Permeability is moderate, and surface runoff is slow.

The project site is located at a grade elevation of 448 feet. The 100-year flood elevation of Creve Coeur Lake and Creve Coeur Creek is 450 feet. The entire project site is considered a FIRM (Flood Insurance Rate Map) Zone AE, meaning it has a probability of flooding in any given year of 1%. This is considered a high risk of flooding under the National Flood Insurance Program. The entire project area and portions of roadways leading to the site were inundated in July 2015, January 2016 and again in May 2017 after substantial amounts of rainfall.

To reduce the risk of flooding most of the project site will be elevated with two to five feet of fill. This will raise the elevation to at least one foot above the 100-year flood elevation. Fill will be obtained from the onsite constructed retention basins. An estimated 195,000 cubic yards of fill will be used from the project site. Constructed retention basins will provide compensatory storage to offset the volume of water displaced by filling.

Checking historical aerial photos revealed the project area has been cleared of woody vegetation since at least 1937 and has been in some form of agriculture since that time. Recent Park Department management has been the seasonal mowing of the site to maintain it as an open field.

Surface bedrock, slopes, streambeds or landforms do not exist on the proposed project site.

### **2. Air Quality.**

The development of the SLIC will have a negative impact on the air quality of the immediate area. With the development of the proposed SLIC, more vehicles will be traveling the roadways thus increasing emissions and lowering air quality. According to the Missouri Department of Natural Resources (MDNR) the air quality in the metro area has improved since 2000 but work still needs to be done to reduce ozone. In July 2012, USEPA designated the metro-St. Louis area as a marginal non-attainment area for ozone. The area had until December 2015 to attain the 2008 ozone standard but this will not be determined until 2017. Ozone is created by chemical reactions between oxides of nitrogen and volatile organic compounds in the presence of sunlight. Emissions from motor vehicle exhaust, gasoline vapors along with some other sources are the major contributors to ozone. Breathing ozone can trigger a variety of health problems and can have harmful effects on sensitive vegetation and ecosystems.

According to the proposed ice center plan the facility will have parking available for 1,037 vehicles plus an adjacent 268 existing spots. The spectator seating attendance for the four ice rinks is a combined at over 4,000 people. If at maximum capacity three spectators would travel together to the facility in one vehicle this would represent slightly over 1,367 vehicles on the nearby roadway traveling to the facility. This number would represent a maximum attendance for each of the four ice rinks and is expected to occur less than eight to ten times annually based upon event scheduling and forecasted attendance. It is unknown at this time how many vehicles will be traveling the roadways to access the facility in any given day; however, a traffic study is currently underway to assess impacts. The operation of the vehicles to attend activities at the ice center would increase vehicle emissions and reduce air quality. The potential impact of increased vehicle traffic will be mitigated due to the location of the SLIC at the edge of the Park at a main Park entrance.

In addition, air quality will decrease during the construction of the facility as a result of grading and construction activity.

### **3. Sound (noise impacts).**

Noise levels will temporarily increase as a result of the proposed ice center being constructed. The temporary and short-term increase in noise generated as a result of the construction of the new facility will impact the surrounding passive park land. Other noise generated by the ice facility will be long term such as: vehicle noise on the park roads leading to the facility, and the operation of the facility itself. The increases in noise as a result of the proposed project can be attributed to:

- Project site grading with heavy equipment during construction;
- Overall construction of the facility, parking lots, building, etc;
- Operation of the ice facility with compressors, and other equipment could increase the outside noise level around the facility; and
- Road noise will increase as more vehicles will be out on the roadways traveling to the ice center.

The nearby receptors that could be impacted by these activities include:

- A residential house at 3404 Creve Coeur Mill Road, approximately 480 feet northwest of the project site that fronts Route 141 near the southeast quadrant of the Route 141 and Marine Avenue intersection.
- A pavilion (Tremayne Shelter) near Creve Coeur Lake on the west side of Marine Avenue approximately 510 feet west of the project site.
- Creve Coeur Disc Golf Course to the south of the project site.

At the residence, construction noise would attenuate to 65.3 dBA at the receptor. This would not exceed HUD noise guidelines, but would exceed the USEPA guideline of 55 dBA. However, construction-related noise impacts would be intermittent and temporary and would occur during daytime hours. Given the temporary and intermittent nature of this construction noise, and the fact that the house is located within noise effects of Route 141, construction noise impacts are expected to be minor.

The Tremayne Shelter in the Park is 510 feet to the west and based on straight line noise attenuation, construction noise would attenuate to 64.8 dBA at this receptor. This would not exceed HUD noise guidelines, but would exceed the USEPA guideline. However, as stated above, these impacts would be intermittent, temporary and during weekday daytime hours.

The Creve Coeur Disc Golf Course is adjacent to the project site to the south. Several of the holes on the course are being relocated as part of this project and the course would be closed during the grading operations on site; therefore, the disc golf course would not be affected by the construction noise of earth moving equipment.

There is also the potential for indirect noise impacts associated with an increase in construction related traffic and the transport of construction equipment to site. Noise impacts from construction related traffic are expected to be minor as construction-related traffic would utilize major arterial roadways as much as possible and likely would not have a noticeable increase on traffic volume and consequently traffic noise in the vicinity of those major roadways.

Operational noise from heating and cooling equipment on the north side of the SLIC could be expected to create a noise level of approximately 75 dBA at 50 feet. Based on straight-line attenuation, the noise from this equipment would attenuate to approximately 51 dBA at the residence. Therefore, there would be no operational noise impact at the residence.

the nearest noise-producing mechanical equipment to the Tremayne Shelter would be a ground-mounted outdoor condenser on the west side of the building. This evaporative condenser operating at full fan speed could be expected to create a noise level as high as 87.5 dBA at 50 feet. Based on straight-line attenuation, the noise from this equipment would attenuate to approximately 62.3 dBA at the shelter,

which would be below the HUD guideline of 65 dBA, but it would still be above the USEPA suggested guideline of 55 dBA. However, objects in the field and topography would cause further noise attenuation. It is not expected that this condenser would cause disruption of the use of the shelter. This condition could be further mitigated by providing a barrier wall around the condenser unit to provide a break in the noise path to the shelter.

The Creve Coeur Disc Golf Course would not be in the path of noise created by the ground-mounted condenser on the west side of the building. The roof-mounted condenser on the north side of the building is further from the disc golf course than it is from the residence. Therefore, there are no operational noise impacts on the disc golf course.

Noise impacts from traffic related to the operation of the SLIC would not exceed FHWA noise abatement criteria.

#### **4. Water quality/quantity.**

The proposed ice center development and parking areas will cover most of the 40 acre site. Much of this acreage will consist of impervious materials roadways, parking lots, roofs, etc. The remaining acreage represents lawn, retention basins, and bio-retention. The development of the proposed project with its parking for over 1,000 vehicles could impact the quality and quantity of runoff. Oils, vehicle fluids, salts, and trash could impact the quality of water leaving the development site as runoff or being detained on site.

Based on information provided by the U.S. Geological Survey (USGS), a one-inch rain storm will generate 27,154 gallons of runoff on one acre of impermeable surface. Considering the size of the proposed development, a one-inch rain event would generate approximately 651,696 gallons of runoff (or, roughly the volume of an Olympic-sized pool). Retention basins located in low permeable soils with a high water table will hold water for a considerable amount of time. Bio-retention is a depressed landscape feature which stores, filters, and infiltrates stormwater runoff. Bio-retention is an attractive Best Management Practice (BMP) on many developments because it can be tucked into greenspace such as curb islands, landscaping and planter boxes.

The project site currently slopes to the north and east. The proposed ice center development will be divided into multiple sub-basin watersheds: each tributary to a bio-retention basin, and then to retention lakes. To manage runoff, three constructed retention basins will provide compensatory water storage to offset the volume of water displaced by filling. The main retention lake will be interconnected to a secondary "finger lake" immediately west of Marine Avenue. From the second retention lake, an enclosed storm sewer discharge pipe will convey runoff to Creve Coeur Creek. Upstream of the on-site retention lake, bio-retention basins will be utilized to provide water quality treatment and volume reduction for proposed impervious surfaces. The site will be designed such that parking lots will sheet flow into bio-retention basins along their perimeter, and roof drains will "bubble up" into bio-retention basins. Private sewers will then convey stormwater from the bio-retention basins to the on-site retention lakes for storage.

#### **5. Stream flow characteristics.**

Runoff generated on the site currently moves to the north and east of the project area to a detention basin. The runoff then discharges to a wooded wetland that begins on the project area and extends into adjoining properties. Off-site runoff moves into a drainage moving to the east and eventually entering Fee Fee Creek. Surface flowing streams do not exist on the project site.

As previously stated, the proposed ice center development will be divided into multiple sub-basin watersheds: each tributary to a bio-retention basin, and then to retention lakes.

#### **6. Marine/estuarine.**

Marine or estuarine habitats do not exist on or in the vicinity of the project site.

## 7. Floodplain/wetlands.

The project site is located within the Missouri River floodplain. The Howard Bend 500-year levee protects the area from Missouri River floodwaters. However, the site is within the 100-year flood of Creve Coeur Lake and Creve Coeur Creek. The area recently experienced two greater than 100-year floods in July 2015, January 2016 and again in May 2017. The project site and roads leading to the site were inundated. To counter the occurrence of the proposed project being within the 100-year flood zone the site will be raised with two to five feet of fill. This action will bring the project area one foot above the 100-year flood. Roadways leading to the development will be inundated and impassible in a 100 year flood. No actions have been recommended to raise the elevations of any of the roadways serving the immediate project area.

The City of Maryland Heights is an approved municipality to administer the Federal Flood Insurance Program per FEMA. As such, Maryland Heights has ordinances in place under which to review and administer any proposed development within the regulatory floodplain as defined by FEMA Flood Insurance Rate Maps. Specifically, floodplain permits and flood studies are required for any changes via the removal or filling of earth within the designated floodplain. Development within the floodplain must demonstrate a no "net rise" to the stream or river floodway conveyance area, if applicable. A stormwater management study was conducted by Stock & Associates Consulting Engineers, Inc. in March 2017 for the proposed ice center development. In a letter dated March 28, 2017 from Horner & Shifrin, the Howard Bend Levee District has granted approval of the project hydraulics as it relates to compensatory storage and compliance with the stormwater master plan. Information regarding the proposed stormwater management features of the project site is included in Item 4 above.

The 2013 McKelvey Woods Trail Wetland Delineation Phase II report identified two wetlands within the project area. This trail is part of GRG's Fee Fee Greenway. The delineation was conducted for the US Army Corps of Engineers, St. Louis District by Burn & McDonnell Engineering Company, Inc. The work was carried out under contract with the City of Maryland Heights and the Great Rivers Greenway. This trail is part of GRG's Fee Fee Greenway and traverses a portion of the project area. The wetland delineation was only carried out along the course of the proposed trail and not the entirety of the proposed project site. Other wetlands exist in the northeast corner of the property but are outside of the developed area.

In January 2017, Geotechnology completed a Waters of the United States (WOUS) delineation of the proposed development site for ARCO Construction Company. WOUS may include lakes, rivers, streams, wetlands, and similar waters that possess a connection to traditional navigable waters. The US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) was reviewed to obtain information pertaining to NWI-mapped wetlands and waterbodies in the project area. NWI-mapped wetlands do not appear in the project area. The closest NWI-mapped wetlands are west adjacent to Creve Coeur Lake and Creve Coeur Creek and east adjacent to a tributary of Louisville Creek. See **Attachment D – Wetlands** for more details. During the delineation, Geotechnology identified a 0.13-acre forested wetland on the eastern side of the project area. The forested wetland exists within a depression of a drainage area that discharges to a stream system that is present on the east adjoining property. Streams were not identified. Although two emergent wetlands were identified on the western portion of the site, the US Army Corps of Engineers (USACE) has verified that these wetlands are not considered jurisdictional wetlands due to their recent development. The facility development plan does not impact the 0.13-acre forested wetland or the 0.11-acre emergent wetland (identified in the 2013 Phase II delineation report); therefore, a Section 404 permit will not be required. As a result, the USACE prepared a "No Permit Required" letter, which can be found in Appendix I or the St. Louis Ice Center Draft Environmental Assessment.

## **8. Land use/ownership patterns; property values; community livability.**

Presently the project site is maintained as a mowed field with a small storage shed and a gravel drive connecting the shed to Marine Avenue and does not exhibit active recreational use. The open field is mowed seasonally to restrict woody growth. The site is used on an occasion for special event parking. The Fee Fee Greenway Trail, which is currently under construction, will pass through the project site and will connect residential areas to the east to Creve Coeur Lake Memorial Park. This multi-use asphalt trail is the only other planned action proposed on the project site and will be tied into the SLIC with an asphalt path so as to allow Fee Fee Greenway Trail users access to restrooms and concessions which are not readily available.

Creve Coeur Lake Memorial Park offers a variety of recreational activities and diversity of land uses. Listed below are some, but not all, of the activities and land uses that can be found in the park:

- The Quarry at Crystal Springs 18-hole golf course and a driving range;
- Soccer fields and ballfields;
- Biking and pedestrian trails;
- Boat rentals for the lake;
- Bike rentals for the trails;
- Fishing;
- Picnic sites and shelters;
- Go Ape Zip Line and Treetop Adventure;
- Boating, rowing, sailing and windsurfing;
- Passive areas;
- Natural areas;
- Wetlands, woodlands and prairie areas; and
- A 300-acre natural lake (an old oxbow of the Missouri River).

All of the above activities and land uses make up the 2,100 acre park.

The proposed development would not impact any of the above-mentioned recreational activities.

The listed recreational facilities would benefit from the proposed development, attracting additional attendances and usage as a result of SLIC.

The proposed development will occur on a 40-acre site that is part of Creve Coeur Lake Memorial Park. The site is in the north central portion of the park adjacent to Marine Avenue. The site is seasonally mowed by staff of SLCDPR to maintain its openness. Land use outside of the project area and the park would include residential areas in the higher elevation upland areas. While agriculture is the primary land use within the Missouri River floodplain, nearby private development proposals hope to develop over 1,500 acres in the immediate area next to Creve Coeur Lake Memorial Park. The developments may include residential, commercial and light industrial.

Land ownership would remain with SLCDPR. The property would be leased to a not-for-profit organization, which would oversee the construction and be responsible for the operation of the SLIC.

No private residential or industrial sites exist near the proposed project site. Some commercial sites including the golf course, bike rental, soccer fields and a commercial nursery are located in the vicinity of the proposed project. The project is not expected to have an impact on the property values of the surrounding private properties.

## **9. Circulation, transportation.**

The proposed SLIC project is located approximately 940 feet south of Highway 141 (aka the Maryland Heights Expressway). This highway forms a major connection with I-64 to the south and I-70 to the north, both of which are major interstates linking St. Louis and St. Charles counties. In addition, Highway 364 (Page Avenue) provides a crucial link between I-270 and Highway 141 as well as a link between St. Louis and St. Charles Counties. These roadways increase the service area of the ice facility and provide improved access. The proposed SLIC will also be served by two secondary roads leading to the site,



Dorsett Road and Marine Avenue. Both of these roads are two lane roads and serve the east side of Creve Coeur Lake Memorial Park and the proposed ice center. Currently, there are no known traffic improvements planned or proposed for Marine Avenue. Traffic would increase within Creve Coeur Lake Memorial Park as a result of the proposed ice center; however, most of the traffic to and from the public facility is expected to enter and leave the Park at the adjacent entrance at the intersection of Marine Avenue and Highway 141. Listed below are average weekday traffic counts for 2015 at various locations in and around Creve Coeur Lake Memorial Park as provided by the Missouri Department of Transportation (MoDOT) and St. Louis County Department of Transportation (SLCDOT):

<u>LOCATION</u>	<u>Average Weekday Traffic (AWT)</u>
Marine Ave. south of Highway 141 (at project site)	5,670
Highway 141 south of Highway 364 (Page Ave.)	28,243
Highway 141 between I-70 and Highway 364	40,306
Marine Ave. north of Dorsett Rd.	8,130
Dorsett Rd. east of Marine Ave.	5,440
Marine Ave. south of Dorsett Rd.	6,100
Creve Coeur Mill Road between Hwy. 141 and Hwy. 364	5,780

A traffic study was conducted for the proposed ice center development.

There is a need to provide separate left-turn lanes at each of the proposed entrances. Based on the distance between the entrances, a three-lane cross section is recommended along Marine Avenue (one lane in each direction plus a two-way left-turn lane) between the proposed south entrance and the proposed north entrance.

Traffic volumes simulating operating conditions for the proposed SLIC were developed using current (2017) volumes. All intersections listed above are expected to operate at acceptable levels of service (LOS D or better) during both the weekday PM peak hour and the Saturday evening event peak hour, except the westbound approach of Creve Coeur Mill Road North during the weekday PM peak hour. This approach could be improved by lane reassignment re-striping at the intersection, which could improve the level of service to LOS C during the PM peak hour. This westbound approach is an existing condition and the additional traffic from the proposed SLIC is not expected to have an impact on the westbound approach during the PM peak hour.

Traffic volumes simulating future (2037) operating conditions for the proposed SLIC were developed at the intersections listed above. All intersections off of Marine Avenue to the proposed SLIC will operate at overall acceptable levels (LOS D or better) during the weekday PM and Saturday evening event peak hours. The westbound approach of Creve Coeur Mill Road North at Route 141 could be re-striped to allow for two westbound left-turn lanes to improve the operation of that approach. As with the 2017 conditions, minor signal timing adjustments could also be made for the 2037 conditions to provide additional southbound left-turn green time to minimize the southbound left-turn delays and queues, while still providing desirable levels for northbound Route 141.

**10. Plant/animal/fish species of special concern and habitat, state/federal listed or proposed for listing.**

Most of the proposed site consists of old field herbaceous growth. The site has been open and used for various agriculture practices since at least 1937. Current management over the past few years has been a seasonal mowing to keep woody growth from invading the site. Some of the old field herbaceous species would include but not be limited to the following species: Johnson grass, Virginia wild rye, goldenrod, fescue, fleabane, blackberry, poison ivy, thistle, vetch, white sweet clover, white woodland aster, chicory, ragweed, red clover, as well as other species.

The boundary of the project site on the north, east and south is lined with woody vegetation as a combination of trees and shrub species. The woody corridor is made up of a combination of mature and immature species. Some of the woody species found along the project site boundary would include but not be limited to the following species: silver maple, box elder, elderberry, honey locust, hackberry, black

walnut, white ash, Kentucky coffee tree and basswood. Other species growing in the corridor include bush honeysuckle, autumn olive and Siberian elm. The wooded corridor provides a travel lane for more mobile wildlife to reach other portions of the park.

Two wetlands as identified in the McKelvey Woods Trail Wetland Delineation Phase II study exist on the proposed site. This trail is part of GRG's Fee Fee Greenway. Only the proposed trail route was delineated and not the entire project area for wetlands. One of the wetlands is along the south east corner of the project area the other wetland is located on the central portion of the eastern boundary. Both sites are highly degraded as a result of seasonally mowing. The floristic display is not very well developed. The forested wetland exists within a depression of a drainage area that discharges to a stream system that is present on the east adjoining property. The forested wetland is dominated by box elder (*Acer negundo*) and American elm (*Ulmus americana*) trees. Hydric soils and wetland hydrology were observed within the wetland. The surrounding forested riparian corridor is dominated by box elder, American elm, silver maple (*Acer saccharinum*), honey locust (*Gleditsia triacanthos*), and bush honeysuckle (*Lonicera maackii*). Generally, trees within this area are relatively young with the majority under 8 inches diameter at breast height (dbh). However, a few, mature cottonwood (*Populus deltoides*) species are present. Some of the herbaceous species found in the wetlands include the following species: narrow leaved cattails, sedges, bulrush and other species. Ponded water was observed in the vicinity of the emergent wetlands in the western portion of the site in December 2016 (following a precipitation event). It should be noted that the eastern quarter of the proposed site is lower in elevation and shows a greater concentration of bulrush and sedge species. Evidence does exist of surface water pooling across the proposed site.

The project area represents beneficial wildlife habitat for many common species of wildlife found in the park and the surrounding area. The site could provide some valuable forage habitat for bats. As part of the Fee Fee Greenway Trail proposal a bat roosting survey was conducted along the route of the trail which traverses the project area. The area where the trail traverses the proposed development does not have any trees growing along the trail route. However, good bat roosting trees do exist adjacent to the development. Indiana bats and Northern Long Eared bats both are federally and state endangered species and both occupy select trees during the summer months. Trees with flakey bark or trees with hollow cavities or old mature trees would be beneficial to both species of bats. Both species would utilize the field and wetlands as hunting areas for insects. Because of the relative small size of the project area and the lack of quality habitat other federally and state endangered species would not be found on the project area. No known plants or fish species exist on the project site that would be considered of special concern.

**11. Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.**

No unique habitats exist on the project site. The site consists of an old field community primarily with herbaceous vegetation with minimal plant development and diversity. Two degraded wetlands are found on the site. But they support minimal plant diversity and lack a constant hydrology. The entire site is mowed seasonally to reduce woody growth.

**12. Unique or important wildlife/wildlife habitat.**

As previously mentioned (see item 10 above) the Indiana bat and the Northern Long Eared bat, both federally and state endangered species may occupy some of the surrounding trees and utilize some of the open field to forage for insects. A habitat evaluation was conducted in the spring of 2017, which determined that the project area is not an important habitat for the two endangered species. The proposed development site contains two small emergent wetland habitats in the western portion of the proposed site, a forested wetland in the eastern portion of the proposed site, and an emergent wetland in the eastern portion of the proposed site as identified in the referenced wetland delineation reports. The closest NWI-mapped wetlands are west adjacent to Creve Coeur Lake and Creve Coeur Creek and east adjacent to a tributary of Louisville Creek. Ponded water was observed in the area of the two non-jurisdictional wetlands during the December 2016 site visit. The project area is utilized by a host of wildlife but these species would not be classified as unique or important wildlife with the exception of the two endangered bat species. The older field habitat of the project area represents a habitat that is not very common in the 2,100 acre park.

### **13. Unique or important fish/habitat.**

No permanent water is found on the project site so fish and their habitat do not exist on site.

### **14. Introduce or promote invasive species (plant or animal).**

The following invasive species can be found in the project area: Johnson grass, white and yellow sweet clover, fescue, thistle, red clover, Korean clover, crown vetch, callery pear and other species as well. The proposed ice facility would encompass the 40 acre site. The proposed development should not introduce nor promote invasive species. Landscape plans can be reviewed for possible threats to native landscapes.

### **15. Recreation resources, land, parks, open space, conservation areas, recreation trails, facilities, services, opportunities, public access, etc.**

The proposed ice center will provide a recreational opportunity that does not exist in the St. Louis area. The four ice rinks will allow for tournament opportunities that do not exist in the area today. The ice center will not take away or have a direct negative impact on recreational resources that are found in the park or the immediate surrounding area. The proposed facility will occupy a site that currently supports very little use. Any potential impact on open space within the Park is mitigated by the location of the facility at the edge of the park along a neighboring railroad line.

The development will provide ice skating and other recreational opportunities for the general public, especially during winter months when outdoor activities can be limited by challenging weather.

The SLIC would create a net gain in outdoor recreation benefits in Creve Coeur Lake Memorial Park by offering additional outdoor recreational opportunities that currently do not exist within the park and by providing those opportunities in an area of the park that is basically unused for outdoor recreation. SLIC will provide new outdoor recreational opportunities including ice hockey, figure skating, synchronized skating, skating lessons, in-line skating, floor hockey, field hockey, and other outdoor recreational opportunities via use of an outdoor rink that is part of the project.

Currently, the proposed site for the public facility offers very little opportunity for outdoor recreation. It is a mowed pasture field located just south of an active railroad line. In the middle of the site is a maintenance shed and a gravel road that connects the shed to Marine Drive. A small portion of the site is currently used as a disc golf course; however, as noted above, that activity will be relocated as a result of the construction of the Fee Fee Greenway Trail.

As noted above, SLIC will include an outdoor skating sheet and an outdoor athletic area. During months when the weather is too warm to support ice, the outdoor rink will be used for floor hockey, field hockey, lacrosse, in-line skating or such along with playing host to summer camp activities that are currently offered in the park, but don't have protected space. It would also host a local municipality's monthly outdoor music concerts throughout the summer and the parking lot would be used for outdoor activities, including farmer's markets and food truck events sponsored by St. Louis County Parks and a municipality.

SLIC would also encourage people to take advantage of outdoor recreational opportunities year-round, especially during the colder winter months when park usage is lower than in the warmer months of the year. Ice sports are considered outdoor recreational activities under the LWCF program but the climate of the St. Louis region will not support outdoor rinks for the length of the ice hockey and ice sport seasons. Therefore, indoor rinks are necessary in the St. Louis region to support year-round recreation.

### **16. Accessibility for populations with disabilities.**

The proposed St. Louis Ice Center will be constructed to meet ADA specifications. The conceptual plans identify handicapped parking spaces and facilities of benefit inside the ice rinks. Additionally, two of the rinks are being equipped with special dasher board and ice entry systems that will allow for the disabled,

such as sled hockey players, to have ADA-type access to the ice as well as being accommodating to those hockey players and ice skaters with special needs (see <http://www.gatewaylocomotives.org/>).

## **17. Overall aesthetics, special characteristics/features.**

**See Attachment E – Project Rendering** for more details. The visual landscape of an area is formed by physical, biological and man-made features that combine to influence both landscape identifiability and uniqueness. Scenic resources within a landscape are evaluated based on a number of factors that include scenic attractiveness, integrity and visibility. Scenic attractiveness is a measure of scenic quality based on human perceptions of intrinsic beauty as expressed in the forms, colors, textures and visual composition of each landscape. Scenic integrity is a measure of scenic importance based on the degree of visual unity and wholeness of the natural landscape character. The varied combinations of natural features and human alterations both shape landscape character and help define their scenic importance. The subjective perceptions of a landscape's aesthetic quality and sense of place is dependent on where and how it is viewed.

Scenic visibility of a landscape may be described in terms of three distance contexts: (1) foreground, (2) middleground and (3) background. In the foreground, an area within 0.5 mile of the observer, individual details of specific objects are important and easily distinguished. In the middleground, from 0.5 to 4 miles from the observer, object characteristics are distinguishable but their details are weak and tend to merge into larger patterns. In the distant part of the landscape, the background, details and colors of objects are not normally discernible unless they are especially large, standing alone, or have a substantial color contrast. In this assessment, the background is measured as 4 to 10 miles from the observer. Visual and aesthetic impacts associated with a particular action may occur as a result of the introduction of a feature that is not consistent with the existing viewshed. Consequently, the character of an existing site is an important factor in evaluating potential visual impacts.

The location of the proposed project is in a portion of Creve Coeur Lake Memorial Park that is not used for recreation. Presently the proposed site consists of an old field that is seasonally mowed for maintenance. In the middle of the site is a maintenance shed and a gravel road that connects the shed to Marine Drive. No active recreational opportunities exist at this old field. The site may be used by the occasional birder or botanist or other form of nature study but this is unconfirmed and there are multiple other areas in the park that support these passive recreation activities. The topography around the proposed site is relatively flat and consists of a mixture of open space (grass areas) and trees. Existing scenic attractiveness is minimal and scenic integrity of the site is low.

The building would be one story with a mezzanine, with a maximum height of the parapet roof of roughly 50 feet from the ground. The exterior of the building would be concrete and glass with a varied roof line. Other building finishes would consist of canopy roofing over the outdoor rink. An asphalt parking lot with spaces for 1,037 cars would be located on the proposed site. Additional parking may be provided west of Marine Avenue adjacent to an existing parking area. The grounds around the facility would include maintained lawn and landscaped areas consisting of a variety of trees, shrubs, and herbaceous planting.

Currently, the 40-acre site is located at the northern edge of the park and is bounded by: Marine Avenue and an existing parking lot on the west; the Southern Pacific Railroad on the north; Creve Coeur Lake Memorial Park and a golf driving range to the south; and a tributary to Creve Coeur Creek to the east. The proposed building would present a visual contrast to the existing undeveloped landscape. There would be a moderate visual change in the landscape at the foreground viewing distance due to the change from the natural landscape. The greatest impact would be experienced by users of the Fee Fee Greenway Trail as the building and parking area could decrease the aesthetic quality of this short portion of the trail. However, the trail would also encourage access to the public facility as there will be an asphalt connector to the trail and bike parking outside the SLIC. In more distant views, the facility would likely merge with the existing roadways and surrounding development which would minimize visual intrusions.

Photos of the existing project site can be found in **Attachment F – Existing Project Site Photos**.

**18. Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc.**

A cultural resources survey was conducted in April and May 2017. The survey concluded that the project site is not eligible for listing on the National Register of Historic Places due to a lack of potential for intact, subsurface material. No further archeological work is needed. The SHPO concurred with this finding in a letter dated June 20, 2017.

**19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure.**

The St. Louis Ice Center will be operated by a not-for-profit organization, thus, the facility will not generate tax revenues. The exception to this would be any merchandise or food sold would have to pay sales taxes. As stated in the St. Louis Ice Center Development Plan the development will have the following economic benefits:

- 970 one-year construction jobs.
- \$29.1 million in new labor income.
- \$34 million in value added to St. Louis County's economy.
- The ice complex when it is fully up and running will create 156 jobs, nearly \$7 million in labor income and nearly \$22 million in value added to the county's economy annually.

The 156 jobs created in the local economy will cover the gamut of jobs both full-time and part-time; professional and non-professional. Some of the positions to be created by the St. Louis Ice Center and other impacted employers would include but not limited to the following:

- General manager
- Office manager
- Sales & marketing manager
- Sales coordinator
- Program manager
- Program coordinator
- Janitorial services
- Concession manager
- Cooks & servers
- Pro shop supervisor
- Reception clerks
- Store clerks

According to the ice plan study the expected direct spending resulting from SLIC will be \$11,100,000 and total spending of \$20,100,000. The proposed ice facility study addresses infrastructure and maintenance by setting aside funds for preventive maintenance activities, repairs, and maintenance expenses which also include all costs to keep the facility clean, safe and secure.

**20. Minority and low-income populations.**

The following information is provided by the US Census Bureau, 2015 American Community Survey 5-Year Estimates for 2011-2015 for the City of Maryland Heights:

<b>Subject</b>	<b>Number</b>
Population	27,401
Median Age	35.2
Racial Composition	
White	69.0 %
Black or African American	11.0 %

Asian	13.5 %
Hispanic/Latino	6.1 %
Median Household Income	\$58,911
Persons Below the Poverty Level	9.0 %

The following information is provided by the US Census Bureau, 2015 American Community Survey 5-Year Estimates for 2011-2015 for St. Louis County:

Subject	Number
Population	1,001,327
Median Age	40.2
Racial Composition	
White	69.6 %
Black or African American	23.3 %
Asian	3.8 %
Hispanic/Latino	2.7 %
Median Household Income	\$59,755
Persons Below the Poverty Level	10.9 %

The construction of SLIC will not negatively impact minorities or low income populations. The facility could provide some benefits by providing jobs.

## 21. Energy resources (geothermal, fossil fuels, etc.).

The current commitment of energy resources (mainly gasoline and diesel fuels) near the project site is related to vehicular access to Creve Coeur Lake Memorial Park. Energy use is influenced by park usage demand, which influences local traffic flow patterns.

Construction of the proposed project will require indirect consumption of energy for processing materials, construction activities, and maintenance and operation of the proposed facility. Energy consumption by vehicles in the area may increase during construction due to possible traffic delays.

The project includes provisions for improved bicycling and walking (Fee Fee Greenway Trail), thereby encouraging travel by these non-motorized and non-energy consuming modes of transportation.

The uniqueness of the SLIC and the recreational demand for it will increase the consumption of fossil fuels as more vehicles are driven to the site. The proposed project will increase fossil fuel consumption as determined by the following:

- Construction equipment (i.e. earth movers, dozers, loaders);
- Construction vehicles (i.e., delivery trucks, construction workforce);
- Operation of the site (i.e., HVAC equipment, ice chillers, electrical use); and
- Travel to and from the site by users of the facility.

The extent of energy use at the proposed site is not known; however, the increased energy consumption is expected to be minor.

## 22. Other agency or tribal land use plans or policies.

The Great Rivers Greenway District (GRG) and the City of Maryland Heights are currently beginning Phase II construction of the Fee Fee Greenway Trail, a multi-purpose trail that, as planned, will traverse a portion of the project area. GRG is a tax sponsored agency supported by the citizens of St. Charles and St. Louis Counties and the City of St. Louis. When complete, the trail will connect residential areas in Maryland Heights to the east of Creve Coeur Lake Memorial Park to the park.

SLCDPR will be constructing and managing a 13-field outdoor soccer complex about ½ of a mile west of the proposed SLIC. It is anticipated that this complex will be completed in 2017.

The City of Maryland Heights is currently seeking private development for over 1,800 acres known as the Maryland Park Lake District. As planned the area would include commercial, light industrial, residential and recreation development. This development is next to the proposed site.

**23. Land/structures with history of contamination/hazardous materials even if remediated.**

No known hazardous materials are known to occur on the project site. Upon review of historic aerial photos, no structures have been built or have existed on the site as far back as 1937. The site has been a mowed field and agricultural crop field since ownership by SLCDPR.

**24. Other important environmental resources to address.**

Other resources to address are not anticipated at this time.

**Part B. Mandatory Criteria Explanations**

B. MANDATORY CRITERIA If your LWCF proposal is approved, would it...	Yes	No	To be determined
1. Have significant impacts on public health or safety?		X	
2. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands, wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (E.O. 11990); floodplains (E.O 11988); and other ecologically significant or critical areas.		X	
3. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?		X	
4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?		X	
5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?		X	
6. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?		X	
7. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office.(Attach SHPO/THPO Comments)		X	
8. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.		X	
9. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?		X	
10. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?		X	
11. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?		X	
12. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?		X	

**2. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands, wilderness areas, wild or scenic rivers, national natural landmarks; sole of principal drinking water aquifers, prime farmlands; wetlands; floodplains; and other ecologically significant or critical areas.**

The proposed project will impact the floodplain of Creve Coeur Creek. The project site is below the 100-year flood zone of Creve Coeur Lake and Creve Coeur Creek. To facilitate project construction, 24 acres of land will be elevated with two to five feet of fill so that the proposed facility is one foot above the 100-year flood. Even with that rise in elevation all of the roads leading to the facility will be inundated with a 100-year flood. The project area is a mowed field and does not exhibit high diversity or a high quality resource.

**3. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources?**

The proposed project has raised concerns with some of the public in that it proposes to place a building on land that is currently open space within Creve Coeur Lake Memorial Park. However, as discussed previously, the land being considered for this project was not formerly used and is not actively being used for outdoor recreation. Other public entities and individuals have expressed their support of the project stating that it will provide more active recreation opportunities in Creve Coeur Lake Memorial Park and that some of this will be outdoor recreation. The project is also projected to increase the outdoor recreation experience throughout other areas of the park.



Recently the city of Maryland Heights announced it would entertain private development proposals on the Maryland Park Lake District which encompasses 1,800 acres near the project site. This development area is protected from floodwaters of the Missouri River with a 500-year levee. The city is weighing the effects of developing this land or leaving it for agriculture and open space.

**4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?**

One of the issues of the proposed project is constructing the facility one foot above the 100-year flood of Creve Coeur Creek. There have been two recent 100-year floods in the vicinity of the project area leaving part of the site inaccessible for a brief period of time. There is concern that as more development occurs in the Creve Coeur Creek watershed, it could have cumulative effects on the 100-year floodplain and could contribute to additional flood concerns. However, all future development in this floodplain will need to meet the overall floodplain management plan as administered by the City of Maryland Heights, the organization that administers the flood insurance program for the Creve Coeur Creek floodplain. As previously stated, a stormwater management study was conducted by Stock & Associates Consulting Engineers, Inc. in March 2017 for the proposed ice center development. In a letter dated March 28, 2017 from Horner & Shifrin, the Howard Bend Levee District has granted approval of the project hydraulics as it relates to compensatory storage and compliance with the stormwater master plan.

**5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?**

The proposed project could lead to future cumulative actions. The extent of these potential future effects is not known and cannot be exactly determined. However, the cumulative impacts are not expected to create long-term adverse cumulative effects nor are they considered to be substantial.

**6. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?**

The development of the proposed project will increase traffic on adjacent roadways through and adjacent to Creve Coeur Lake Memorial Park. The increase in traffic could have the following impacts:

- Increased congestion in the park;
- Reduced air quality;
- Increased noise; and
- Increased risk of vehicular accidents and public safety.

The proposed project is just south of Highway 141, a four-lane divided highway. The project site was chosen in part because of its close proximity to a major arterial highway in order to facilitate traffic flow and access. Highway 141 is the type of transportation facility that is consistent with a development such as the proposed SLIC.

**8. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.**

Surveys conducted within the project area did not find suitable habitat for the gray bat, and impacts on this species are not anticipated. Therefore, the project would have no effect on the gray bat.

Of the woodlots identified within the surveyed project area, no woodlots were designated as potentially suitable bat habitat based on the presence of potentially suitable roost trees and the forest community composition. The existing woodlots contained too dense of an understory to allow bats to move through the forest for foraging. While there was one potentially suitable bat roost tree located in the area of scattered trees in the southern portion of the project area, the overall community composition in the area did not have suitable tree species and community structure to support suitable summer bat habitat (trees with exfoliating bark, cracks, crevices, and/or hollows). The nearest larger blocks of forest are located approximately 1.6 miles to the southeast of the project area along the hillsides above the Missouri River valley.

Based on the lack of available potentially suitable bat habitat and less favorable forest community structures, tree clearing for the SLIC would have no effect on roosting or foraging habitat for the Indiana and northern long-eared bats.

Due to frequent mechanical disturbances at the site within the decurrent false aster growing period, it is unlikely that this species is present within the project area. Within Missouri, this species is presently only known to occur in St. Charles County. In addition, large tracts of available potential habitat are located in the areas surrounding the project site. In consideration of these factors, the project would have no effect on habitat for the decurrent false aster.

## Environmental Reviewers

**The following individual(s) provided input in the completion of the environmental screening form.**

Steve Coates  
Amec Foster Wheeler  
NEPA Specialist

Karen Boulware  
Amec Foster Wheeler  
NEPA Specialist

Michael Roark  
Geotechnology, Inc.  
NEPA Specialist

**The following individuals conducted a site inspection to verify field conditions.**

Robin Ledford  
Geotechnology, Inc.  
Wetlands Biologist  
April 13, 2017

Vince Warner  
Amec Foster Wheeler  
Archeologist  
May/June 2017

**ATTACHMENTS:**

Attachment A – Site Development Plan

Attachment B – Project Location Map

Attachment C – Proposed Ice Usage Breakdown

Attachment D – Wetlands

Attachment E – Project Rendering

Attachment F – Existing Project Site Photos

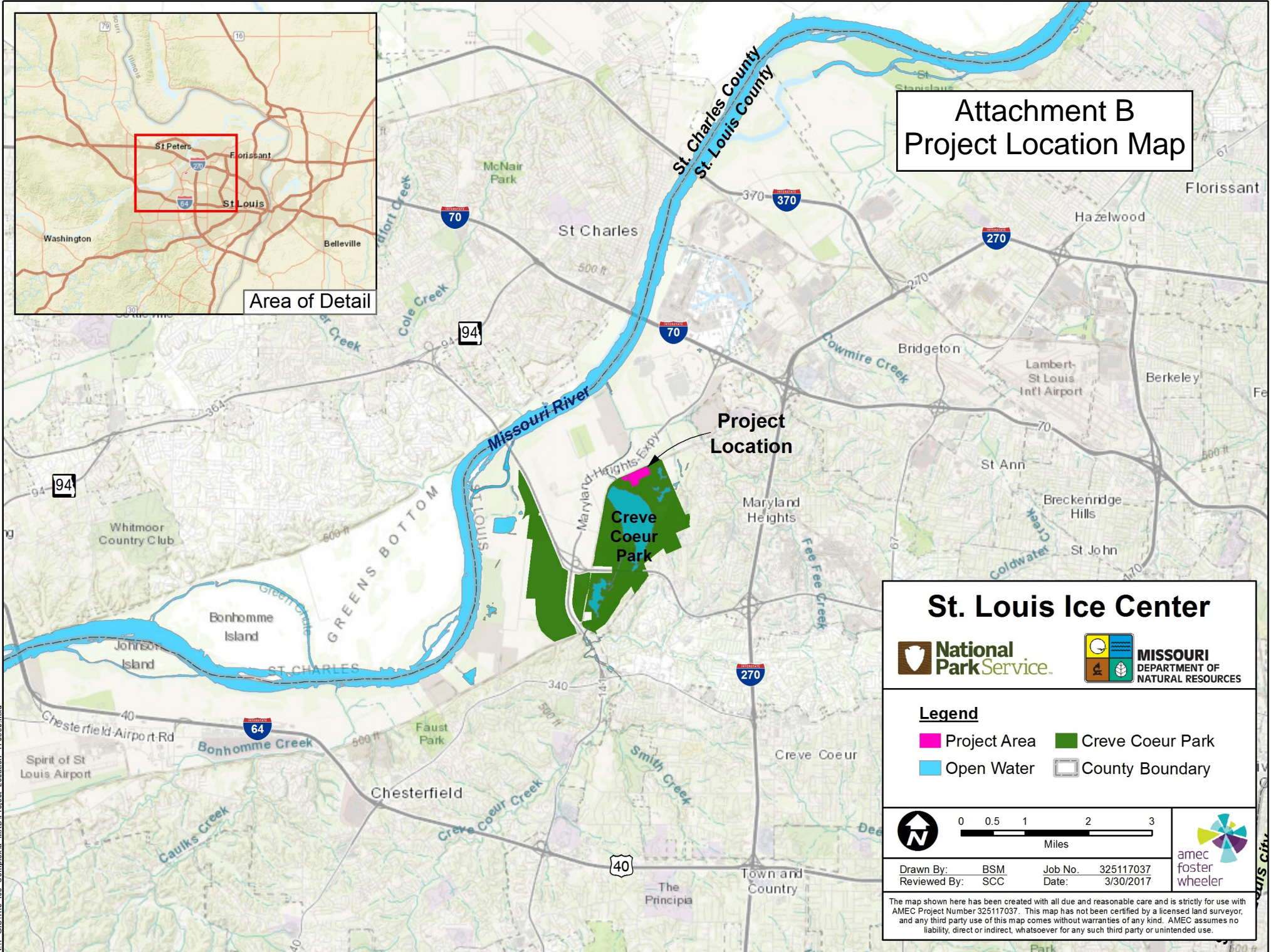
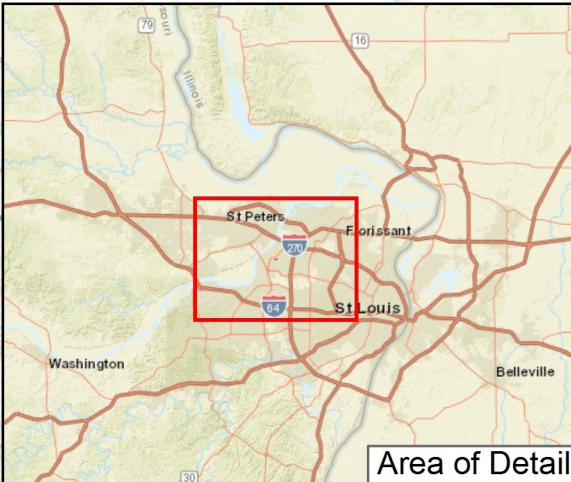


# Attachment A - Site Development Plan





# Attachment B Project Location Map



**St. Louis Ice Center**

- Legend**
- Project Area
  - Creve Coeur Park
  - Open Water
  - County Boundary



Drawn By: BSM      Job No.: 325117037  
 Reviewed By: SCC      Date: 3/30/2017



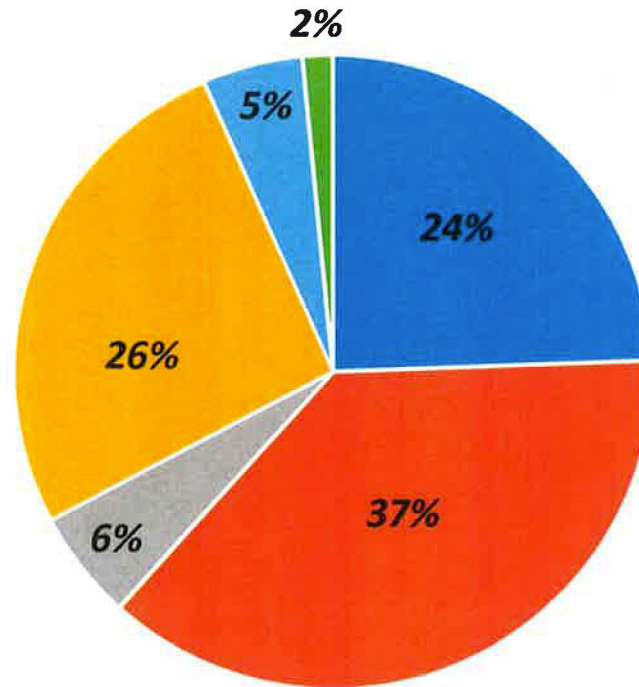
The map shown here has been created with all due and reasonable care and is strictly for use with AMEC Project Number 325117037. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. AMEC assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.



## Attachment C - Proposed Ice Usage Breakdown

Category	# Hours Used	As % Of Total	Description For Category
Open Public Use	2,956	24%	Public skating sessions, freestyle skating, learn-to-skate, learn-to-play, stick & puck and DRY FLOOR
Public Programs & Leagues	4,507	37%	Camps/clinics, Youth, high school and adult hockey leagues
Tournaments & Public Events	673	6%	Tournaments & showcases for figure skating, synchronized skating and ice hockey
Amateur & College Teams	3,170	26%	USHL and 5 teams from two universities with over 70% of ice used during off-peak M-F 8am-3pm
Private Use	614	5%	Disabled hockey, figure skating, synchronized skating and private teams/events
NHL Blues	185	2%	10am-12pm Monday through Friday off-peak (as needed) practice sessions during NHL season
<b>TOTAL FACILITY HOURS</b>	<b>12,105</b>		

As % Of Total



- Open Public Use
- Public Programs & Leagues
- Tournaments & Public Events
- Amateur & College Teams
- Private Use
- NHL Blues



# Attachment D - Wetlands

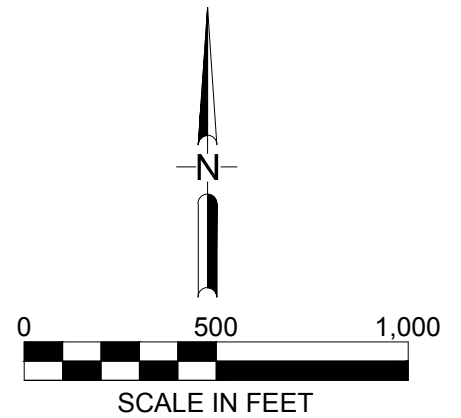


## NOTES

1. Plan adapted from 2015 aerial imagery courtesy of East-West Gateway Council of Governments and field reconnaissance performed by Geotechnology, Inc.
2. Site Features shown approximate only.

## LEGEND

- Non-Jurisdictional Wetland
- Jurisdictional Forested Wetland
- Wetland Identified by Others



Drawn By: WAH	Ck'd By:	App'vd By:
Date: 4-14-17	Date:	Date:



St. Louis Ice Center  
Maryland Heights, Missouri

## SITE LOCATION AND TOPOGRAPHY

Project Number  
J025325.02

PLATE 1



Attachment E - Project Rendering





## Attachment F - St. Louis Ice Center – Existing Project Site Photos

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Photo 1 – View to the east from the site. Taken from east of Marine Ave near the west end of the site.



Photo 2 – View to the northwest from the site. Taken from east of Marine Ave near the east end of the site.



## Attachment F - St. Louis Ice Center – Existing Project Site Photos

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Photo 3 – View to the northeast. Taken from east of Marine Ave near the middle of the site.



Photo 4 – View to the northeast. Taken from west of Marine Ave.

