Proposed Shooting Star Resort and Casino
Biological Diversity Summary
Star Lake, Minnesota

August 2, 2017

1. CURRENT CONDITIONS

a. Known biological diversity

The MnDNR GeoSpatial Commons was queried for natural resources-related geodatabases and shapefiles. Among the many data sources consulted were several displaying field survey results from the Minnesota County Biological Survey (MCBS). No native plant communities mapped by the MCBS were documented on or near the project site. The nearest MCBS-mapped native plant communities are approximately 2.5 miles from the site and include mesic hardwood forests and marshes. Wetlands and upland hardwood forests have been documented and described for the project site, but they have not be included in MCBS survey results.

The DNR database of MCBS Sites of Biodiversity Significance does not include any areas on the project site. The closest mapped area is approximately two miles from the site and is rated "below the minimum biodiversity significance threshold." The next nearest site is the location of the above-reference MCBS native plant communities with mesic hardwood forest and marshes. That area is rated as "moderate biodiversity significance." The DNR databases of Regionally Significant Ecological Areas applies to the seven-county metropolitan Twin Cities area and does not include Otter Tail County.

A DNR sensitive shorelines database was reviewed. The geographic scope of the database is the northcentral portion of the state and does not include Otter Tail County. No conservation easements are known from the project area. A DNR and BWSR database of conservation easements documents that the nearest are over 6 miles away from the site. Databases of wildlife lakes and migratory waterfowl feeding and resting areas show no formally DNR-designated areas within the project area. This does not mean that Star Lake lacks wildlife and waterfowl habitat, merely that no areas have been formally designated as defined in state statutes and regulations.

Star Lake is rated a DNR Lake of Biological Significance. There are four components that are evaluated to determine that rating: aquatic plants, fish, amphibians, and birds. Only one of these components needs to be rated outstanding for the lake to be considered a Lake of Biological Significance. Star Lake is rated moderate for aquatic plants; outstanding for fish; unranked for amphibians, and high for birds. The outstanding rating for fish could due to one or more factors including populations of walleye, northern pike, tullibee, overall native fish community or fish-based Index of Biological Integrity (IBI). The high rating for birds is likely due to colonial water bird nesting areas, particularly the Red-Necked Grebe. Potential impacts to fisheries and water birds, and mitigation measures, are described in detail below. The project is not expected to have negative impacts on the natural resources that contribute to Star Lakes rating as a Lake of Biological Concern.

1. Fish

Star Lake is managed by the Minnesota DNR as a Walleye-Panfish lake with a good walleye population sustained by the help of regular fry stocking. Lake surveys show that there is a strong population of large sunfish, and the DNR has implemented a reduced limit on sunfish to 10 per person with the goal of protecting the good population of larger sunfish.

There are largemouth bass and crappies present, but they are not as abundant as walleye and sunfish.

Northern Pike numbers are well above the lake class range, and the size is below the average size for this lake class. This means that the reproduction and recruitment is actually too good; more

pike are being reproduced than are needed. The over-abundant pike in the 15-19 inch size range would compete directly with Walleyes, Bass, and Crappies for food (Yellow Perch and White Sucker forage), and would target the Tullibee population more than what is necessary. In other words, the current over-abundant pike population reduces the carrying capacity for walleyes.

There is a Tullibee population in Star Lake that is on the extreme west edge of the Tullibee range in Minnesota. Tullibees are identified as having deep, clear, cold, and infertile lakes as their preferred habitat type.

No fish species or their habitats were specifically listed in the MN DNR response or in the USFWS IPAC report.

2. Plants

Plant species observed are common to row cropped agricultural land (soybeans were the last row crop species observed), pasture land, farmstead pioneer woodland (aspen, cottonwood, box elder, etc.), and a mown grass lawn.

Outside of the row crop land, typical vegetation included smooth brome and other common species of farmland areas. The mown lawns were bluegrass and other turf species along with common dandelion.

Within the eastern portion of the footprint of the proposed project there are approximately 3 acres of planted shelterbelt trees that included White Spruce trees; approximately 8 acres of pioneer woodland that included trembling aspen, box elder, slippery elm, and red oak trees; and the eastern approximately 4 acres were Northern Hardwoods that included American basswood, bur oak, red oak, trembling aspen, white birch, and a few sugar maple trees. The first designs avoided the Northern Hardwood forest with a proposed impact to Basin 18 and Basin 4 (both degraded due to row crop farming and intense pasture). During the Sequencing dialogue, it was required that these proposed wetland impacts be avoided; that resulted in the moving of the facility eastward farther into the Northern Hardwood forest.

Reed canary grass and other common plant species found in farm fields were observed in the wetlands, along with some sedge and common cattail farther down slope. There were some black ash trees (a common pioneer species) observed along the edges of the wetlands.

There was a 250 to 400 foot (most was approximately 350 feet) wide band of thick common cattail monoculture taller than 7 feet observed from the identified shoreline to the open water portion of the lake. Plant species observed in this area were almost entirely common cattail with no other species because the cattail is highly aggressive displacing all other vegetation. Wild rice was outside this stand of common cattail, and was likely displaced by this cattail.

Outside (beyond) the common cattail in open water is a stand of wild rice. This wild rice is hundreds of feet into the lake from the identified lakeshore edge. According to DNR data, and a 2016 MPCA inventory of wild rice waters, Star Lake is considered a wild rice lake, but it has no calculated acreage of wild rice within the lake. The south bay and western arm of Star Lake are known wild rice habitats. Although Star Lake is near the western edge of the current natural wild rice range, aerial photograph interpretation suggests there may be over 500 acres of potential wild rice occurrence or habitat in the south bay of the lake, and over 100 acres in the western arm of the lake. The majority of the remainder of the lake is likely too deep for the establishment of

wild rice plants. A 2007 DNR survey of wild rice harvesters reported 3,421 harvest trips statewide, and only 3 trips in Star Lake.

The Minnesota DNR Natural Heritage Program has records of two special concern plant species occurring at Star Lake. Creeping juniper and long-stalked chickweed were documented on the shore of Star Lake in 1949. Both occur in sandy habitats such as sand dunes or sandy shorelines. There are no records of these species after 1949 in the project vicinity, so it is unknown if populations remain.

3. Mammals

Since the current land use is mostly farmstead, mown grass, row crop farmland and old pasture (including old pasture pioneer trees), there are a limited number of mammals that would utilize this habitat.

Mammal species that likely use this area would include whitetail deer, pocket gopher, vole species, mole species, mouse species, woodchucks, raccoons, skunk, red squirrels, gray squirrels, chipmunks, and possibly porcupine. It is possible that there could be a black bear, gray wolf, or mountain lion that might wander through the area; however it is unlikely that any of these species would inhabit this area. Coyote or fox are more likely, but still somewhat rare.

The project site is located within the range of two federally-threatened mammals, northern long-eared bat and gray wolf. No records are known to indicate that these species are actually found on the site. No state-listed mammals were identified in the project area by the DNR.

4. Birds

Birds that are most likely to inhabit this property would be the typical barnyard species such as barn swallows, purple martin, sparrows, bluebirds, pigeons, grackles, red-winged blackbirds, crows, and ravens. It was undetermined whether or not the homes had bird feeders, or what kind. There might have been finches, hummingbirds, cardinals, or possibly orioles, depending on what kind of bird food in the feeder. Woodpeckers and chickadees are common to woodland areas. Bald eagles, osprey, seagulls, and turkey vultures are common to the lakes region.

Predatory birds such as hawks and owls would likely occasionally hunt food in farmstead areas and row cropped fields.

Ground nesting pheasants or turkeys are unlikely to frequent the habitat within the footprint of the project as the row crops and mown lawns go to near the wetland edges with minimal tall grass habitat between the farmed/occupied areas and the wetlands.

Waterfowl species that would be in the South Arm on the lake side of the common cattails would include Canada geese, mallards, wood ducks, bluewing teal, greenwing teal, ringnecks (ringbills), lesser scaup, goldeneyes, coots, buffleheads, and possibly greater scaup. It is unclear whether or not canvasbacks and redheads pass through the area.

Canada geese, mallards, and sandhill cranes might land in the row-cropped field to feed. If there were flooded conditions in the row cropped fields, there might be mallards, wood ducks, bluewing teal or greenwing teal; they would not likely be in the wetlands identified within the footprint of the project as those wetlands had tall reed canary grass.

No federally or state-listed birds were identified in the project area by the DNR or the USFWS IPAC database. Over 20 species of migratory birds were noted by IPAC as potentially occurring on the site. This record is based on range maps of migratory birds rather than site-specific observations.

5. Wetlands

The wetland types on the entire property include approximately 7½ acres of Seasonally Flooded Basin (Type 1, PEMA), approximately 13¼ acres of Fresh (Wet) Meadow (Type 2, PEMB), approximately 12 acres of Shallow Marsh (Type 3 / 4, PEM1C/F), approximately 28 acres of Deep Marsh (Type 4/5, PEMF/UBG), and approximately 1 acre of Shrub Carr (Type 6, PSS1B). Reed canary grass was by far the most common plant species along with pinkweed, lake sedge, Canada bluejoint grass, fowl bluegrass, barnyard grass, stinging nettle, beggartick, common cattail, narrow-leaved cattail, spikerush, lambsquarter, red osier dogwood, sandbar willow, black willow, green ash, and black ash.

There is a thick stand of common cattail several hundred feet wide between the open water and the shoreline, resulting in a very thick buffer.

Wild rice is known to occur in the south and west portions of Star Lake. Aerial photograph interpretation suggests there may be over 500 acres of potential wild rice occurrence or habitat in the south bay of the lake, and over 100 acres in the western arm of the lake. The majority of the remainder of the lake is likely too deep for the establishment of wild rice plants.

b. Previous land use and relationship to biological diversity

The current land use on the land where the proposed project is located has been mostly agricultural for decades. The Tribal Trust Land is directly adjacent to old pasture land and a cattle watering hole is immediately adjacent to the wetland where the proposed project is located. This historic land use undoubtedly reduced native biodiversity below presettlement conditions. Row crops and pasture land typically support fewer plant and animal species compared to native ecosystems. This reduction in biodiversity results from soil tillage, drainage, land clearing, introduction of exotic species, repeated intensive grazing and use of agricultural chemicals.

The wetlands within the proposed footprint of the project have been degraded from agricultural row crop farming and concentrated livestock practices. Sedimentation, nutrient enrichment, and physical compression by hooves have resulted in the strong presence of reed canary grass and other high nutrient-tolerant species such as sandbar willow, black ash, and some common cattail.

Ditching and draining has occurred on the subject property as well, further degrading the wetlands present.

Concentrated livestock pasture with barns has likely contributed to the nutrient load in Star Lake. The DNR website for transparency of water shows that the western end of the South Arm plus the pond to the west of the property were both of less clear water than the rest of Star Lake. This less transparent water was likely driven by nutrient load from the previous land use on this property and the row crop agricultural land use on this property and other properties that adjoin the South Arm.

Increased nutrient loading within an ecosystem drives aquatic plant communities toward species that thrive on high amounts of nutrients. Species that thrive on high amounts of nutrients include reed canary grass, common cattail, and blue-green algae; as these species expand, they out-compete other plant species for living space and reduce bio-diversity.

The increased nutrient load also likely caused the common cattail stand to expand. Instead of mixed dominance of multiple species, it is a near monoculture of common cattail. Reed canary grass is another common species on the property where wetlands were located.

Nutrient input to the lake affecting water quality may have already altered the occurrence and abundance of wild rice in Star Lake. It is possible that prior to intensive livestock use alongside Star Lake and the row crop farming, the wild rice bed may have been larger (and the common cattail stand would likely have been smaller).

c. Published /known DNR concerns/comments

According to the IPAC listing for Otter Tail County, the Gray Wolf and the Northern Long-Eared Bat (NLEB) are the two species that are identified; the status for both of them are "Threatened" under the federal Endangered Species Act.

The Gray Wolf might possibly pass through the area; however, the site offers limited resources for wolves.

While the NLEB is listed for Otter Tail County, the Minnesota map of the occurrence of NLEB shows that there are no townships where Roost Trees or Hibernacula (caves, etc. where they over-winter) have been reported.

The DNR has noted that Star Lake has supported a colonial waterbird nesting area for Red-Necked Grebes and that disturbance during the breeding season can interfere with nesting success.

Two state-special concern plant species were documented at an unspecified location near Star Lake in 1949. While these species may be rare, they are not formally protected under state or federal statutes. Creeping juniper is described in detail elsewhere; the shelterbelts and pioneer woodlands would have displaced any that might have been present, and the sand dune habitat was not observed in the proposed project site location. Long-stalked Chickweed is identified as being found in sand dunes or near stream banks of rocky or sandy soil; these conditions were not observed at the site location.

Bald eagles may nest or forage in the area. Although no longer covered by state and federal endangered species regulations, bald eagles are protected by federal statutes including the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Disturbance from construction activities could disrupt eagle nesting, and tree cutting could negatively impact nests.

Development along lakeshores can negatively impact fish and wildlife habitat and water quality. The DNR noted concern about shoreline development and suggested mitigation measures to minimize impacts.

General threats to wild rice from development that are relevant to this project may include alteration of hydrology, recreational boating, water quality and turbidity as identified by a DNR report on

natural wild rice in Minnesota. The DNR has not commented on specific impacts from this project to wild rice.

2. PROPOSED ACTIONS

a. Development of resort/casino

1. Size and nature of development

The proposed project (project) is a resort with a gaming facility, hotel, restaurants, a conference center, supporting offices and storage spaces, RV Park with a support building, and associated parking. In addition, there will be potable water treatment and storage facilities, and wastewater treatment ponds with the wastewater treatment system. The primary gaming facility/hotel/conference center will be constructed on filled wetlands at the site that are tribal trust land.

The proposed project is mostly within an area where there had been multiple barns, houses, out buildings, parking areas, and outdoor equipment parking areas. There was mown grass lawns around the home sites, along with gravel driveways and parking areas.

The current plan is to substantially re-grade the site so that water will flow into stormwater ponding areas instead of sheet-flowing into Star Lake. This will allow any nutrient or sediment to be processed in the stormwater ponding areas designed to reduce the nutrient load that would get into Star Lake.

2. Proposed wetland filling

The proposed project calls for the impact of the identified wetlands on the site. These wetlands are identified as either Seasonally Flooded Basins (Basin 6 and Basin 19), 0.34 acres of the total or Fresh (Wet) Meadow wetlands (Basin 3 and Basin 5), 7.06 acres of the total. Most of the wetland acreage is in Basin 5.

The proposed project has gone through several versions that originally had more wetland impacts in order to include more of the footprint of the project within previous farmland to minimize the impact to the trees. During the Sequencing discussion, impacts to wetlands to the west of the current footprint were avoided, but that resulted in the footprint of the building moving farther to the east and into more of the trees.

3. Conversion of row cropped area to hay/natural prairie

The past land use of the row cropped fields was soybeans with a likely rotation that included corn, alfalfa, and possibly wheat or oats. The proposed land use of the agricultural land on the property is to change to entirely alfalfa hay with the former agricultural fields near Star Lake changed to a Native Prairie Upland Buffer, some mown lawn, a stormwater ponding area, and an area of Native Prairie as natural landscaping.

b. Potential direct impacts

1. Fish

Since the footprint of the proposed project is inland from the identified shoreline, and no docking facilities are planned, direct impacts to fish are not anticipated.

2. Plants (including trees)

Within the planned project area, the plant species that would be impacted would include the standard agricultural field weeds, old pasture weeds, and old field grasses such as smooth brome, timothy, orchard grass, and reed canary grass.

During the management of the vegetation on the property, agricultural weeds such as thistle are expected to be eliminated. In the areas where the native prairie is planted, management strategies will be in place to help shift the plant community away from the cool season grasses (such as smooth brome, Kentucky bluegrass, and so on) to warm season grasses (such as big bluestem, Indiangrass, switchgrass, and various other species that would be best suited for this area.

In the zones between the agricultural fields and the wetlands, there was tall goldenrod, Canada goldenrod, bull thistle, Kentucky bluegrass, and smooth brome.

In the areas where there is good naturally existing vegetation (such as goldenrod, and other naturally existing species), the existing plant community will be left alone (except for spot spraying/treatment of undesirables such as thistle).

In the pioneer woodland, tree species included trembling aspen, cottonwood, box elder, and some red oak. In the hardwood forest area to the east, there were American basswood, red oak, bur oak, white birch, trembling aspen, and some sugar maple trees.

There is a shelterbelt of approximately 3 acres of what appears to be planted white spruce and other shelterbelt trees that would be removed. There is another zone of pioneer woodland that is approximately 8 acres that would be removed. Of the Northern Hardwood forest, approximately 17.1 acres would be removed, with the remaining left along. Some of this area identified as hardwood forest was pastureland that was "reclaimed" by the forest after the livestock pasturing was stopped.

The proposed project will not affect water levels in the lake, so will not negatively impact wild rice through altered hydrology.

The wetland plants currently living in the wetlands to be filled will be lost as buildings will be constructed in their former locations. Reed canary grass is the most prominent plant species that would be eliminated during the proposed project. Other species would include some sandbar willow, black ash saplings, lake sedge, stinging nettle, giant reed grass, black willow, fowl bluegrass, Canada bluejoint grass, and common cattail. The common cattail that was observed in part of Basin 5 was not nearly as tall as the thick stand in the zone from the shoreline out toward the open water of the lake.

The planned outlet for the stormwater ponding area and the path through the cattails to reach the wild rice would provide opportunities for plants other than cattail to develop.

A small increase in recreational boating may have some direct impacts to aquatic plants, including wild rice, from propellers striking plants, wave action, or disturbing lake sediments.

The shift in land use to Native Prairie will be beneficial for wildlife including pollinators as there will be forbs of varying types that flower at varying times throughout the year.

3. Mammals

Black bears, gray wolves, and mountain lions would be so rare of an occurrence that the change in land use impact would appear to be minimal. It is more likely for coyotes or fox to be in the area; if there is increased habitat for waterfowl or bird feeders for birds, there might be more coyotes and fox than there would have been previously when this property was a farmstead and row-cropped farmland.

With the addition of the Native Prairie, it is expected that there would be an increase in vole, mole, and mouse species, which would in turn attract more owls, hawks, and other predators. Currently, the row crop farming and the mown lawns leave less habitat for the small mammals.

With the proposed removal of some trees, there would be habitat removed for red squirrel, gray squirrel, chipmunk, porcupine, skunk, and raccoon. The removal of habitat for skunk and raccoon would benefit the nesting success of waterfowl and other ground nesting birds such as pheasants.

There will be some habitat loss for whitetail deer.

There will be some raccoon hollows and some squirrel nests in trees that would be removed due to the project. Raccoons are predators to waterfowl nesting as they eat bird eggs when they are available; raccoons are considered to be one of the primary problem factors for the Red-Necked Grebe, according to MnDNR information.

4. Birds

For the typical songbirds that would come into bird feeders, there would be only a temporary impact until the bird feeders and buildings are built to replicate the buildings and bird feeders that would have been present previously.

For woodland birds such as woodpeckers and chickadees, there would be a temporary impact until the planted landscaping trees grow.

The larger birds (bald eagles, osprey, seagulls, and turkey vultures) would not be impacted as they search for food over the water and along the edges of habitat. With a greater amount of Native Prairie vegetation, there would be more small mammals that might attract bald eagles and turkey vultures; since there is no plan to significantly alter the vegetation out from the shoreline, there would be little to no impact on the bald eagles and seagulls.

Predatory birds such as hawks and owls would have a similar habitat in which to hunt with the planned campus configuration. There would be fewer adult trees to roost in, but more light posts on which to roost for hunting purposes.

Nighthawks and bats would be attracted to the insects that fly around the lights.

It is likely that the pheasant and turkey population within the footprint of the project would be similar if not increase as the planned Native Prairie would provide nesting habitat that was absent in the mown lawn and row crop field condition that previously existed.

With increased nesting cover and a pathway to the open water (from the wild rice harvesting path through the several hundred feet thick stand of cattails), it is expected that nesting pairs of "puddler" waterfowl would use the Upland Buffer of Native Prairie vegetation to nest. When hatched, the chicks would follow the hen to the open water or to one of the stormwater ponds. Mallards, Canada geese, greenwing teal, bluewing teal, along with possibly pintails or gadwall might use the footprint of the project, especially if ground nest predators such as raccoons are controlled.

The loss of row cropped fields might reduce a food source for geese, mallards, and sandhill cranes, however there are many other nearby agricultural fields.

Wild birds and waterfowl will likely use the Native Prairie for nesting and hiding their young chicks from danger. They will likely use the stormwater ponding area for raising their young.

The addition of stormwater ponds (especially the large one proposed for the southwestern portion of the site) would likely become a roosting area for Canada geese and mallards as they have learned to avoid hunters by roosting in farmyard and pasture areas and urban golf courses.

5. Wetlands

The wetlands to be filled will be directly impacted and their functions and values to the project site will be lost.

If wetlands within the footprint of the project were "avoided," there still would be impact to them as the immediate watershed to a number of them would be starved due to planned stormwater routing and they would eventually dry up.

The existing wetlands that will remain at the site have reduced stormwater attenuation due to historical impacts and the nutrient uptake is anticipated to be moderate.

c. Potential indirect impacts to the following

1. Fish

While there might be some warming of water within stormwater ponds, this warming is anticipated to be dissipated as the water passes through the hundreds of feet thick stand of common cattail.

2. Plants (including trees)

The plan is to increase the Upland Buffer significantly from the minimal distance that it was to a much larger width of non-mown vegetation with areas of managed native prairie species. At the current time, there was not any native prairie habitat observed, so there would be an ecological benefit to the area.

Within the Upland Buffer and the other areas that are planned to be planted to Native Prairie, there will be management toward Warm Season grasses (such as big bluestem, Indiangrass, and switchgrass), and management away from Cool Season grasses (such as smooth brome, Kentucky bluegrass, etc.). This would result in a reduction in cool season grasses; there is an abundance of cool season grasses in the area.

A shift in row crop farming practices to hay field practices would reduce the amount of herbicide spraying as the fast-growing hay species such as alfalfa would out-compete weedy species for light thus reducing the need for spraying herbicides. Since there would be no commodity yield crops, the need for spraying the various types of herbicides would not be needed; therefore, it is likely that there would be a greater number of macroinvertebrates within a hay field as compared with a row-cropped field. These macroinvertebrates would become food for various critters such as birds, bats, and small mammals.

3. Mammals

With the proposed loss of trees there would be a reduction in habitat for raccoons, wood chucks, red squirrels, gray squirrels, chipmunks, and skunks. The chipmunks would likely make homes in and around the buildings, but the others would be temporarily impacted until the landscape trees grow. There is other woodland habitat in and around the subject property outside of the footprint of the site where these mammals would be able to live.

Small mammals such as mice, voles, and moles would be able to live in the Native Prairie areas as there would be plenty of seeds for them and the cover is thick enough for them to hide. Predators such as foxes, coyotes, hawks, and owls are likely to be attracted to the edges between mown grass and Native Prairie to find these small mammals as food.

It is likely that there would be more small mammals within hay fields in comparison to row cropped fields as there would likely be more food and living space cover for them.

There might be some small mammals within reed canary grass basins that would lose habitat cover; however the planned Native Prairie areas would mitigate those lost habitat areas.

4. Birds

With the planned increase in non-mown Upland Buffer, there will be much more nesting habitat for waterfowl and other birds.

There would be a temporary loss of roosting and nesting area within trees until the planted trees grow large enough to be used by birds. Some birds will likely roost on light poles.

Indirect impacts to birds from the conversion of row crop land to hay would include Canada geese feeding areas, and other birds that would utilize the row crop fields for feeding on the insects such as grasshoppers that would live in the hay fields.

Indirect impacts to birds from the loss of wetlands would include as source of insects such as mosquitoes, which are common to reed canary grass ponds; however there are many other wetland areas on the property that will be left undisturbed.

5. Wetlands

Basin 4 had been within an area of concentrated livestock activity, and is likely contributing a nutrient load to Star Lake from previous nutrient enrichment. Much of this wetland was reed canary grass with common cattail in the deeper middle portion. Decreased stormwater flows into this basin due to regrading are anticipated to correspondingly decrease flows from the basin to Star Lake, thus decreasing nutrient inputs into Star Lake.

Basin 18 was a farmed wetland that sometimes is avoided by row cropping activity. This area was avoided in the plan, and will be allowed to restore itself as there would not be row crop farming activity in and around it each year.

3. REGULATORY CONTROLS

a. MnDNR

The Minnesota Department of Natural Resources has regulatory jurisdiction that relates to biodiversity in several ways. The MnDNR has authority over state-listed endangered species and permits that affect public waters and public water wetlands. Furthermore, the DNR is responsible for management of game and non-game wildlife. This project will not require public water permits and will not impact state-listed threatened or endangered species.

b. USFWS

The US Fish and Wildlife Service administers the federal Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. No impacts are anticipated to federally-threatened or endangered species or to eagles. A small area of potential nesting habitat for migratory birds will be affected. Impacts can be minimized by avoiding land clearing during the active nesting season or conducting a nest survey prior to construction and avoiding nests.

c. BWSR

The Minnesota Board of Water and Soil Resources oversees implementation of the Minnesota Wetland Conservation Act (WCA). The Local Governmental Unit (LGU) for WCA is Otter Tail County. Together the agencies will review the wetland permit application and will require the project to minimize and avoid wetland impacts as practical and require compensatory mitigation of offset unavoidable impacts.

d. US Army Corps of Engineers

The Corps of Engineers implements Section 404 of the Clean Water Act that regulates impacts to federally protected waters including wetlands. As with the state WCA, the wetland application will be reviewed by the Corps will require the project to minimize and avoid wetland impacts as practical and require compensatory mitigation of offset unavoidable impacts.

e. MPCA

The Minnesota Pollution Control Agency oversees water quality, and one component directly relates to biodiversity. The MPCA administers a sulfate standard of 10 parts per million (mg/L) concentration in wild rice waters. The standard is undergoing revision through a formal rulemaking process. However, no changes to sulfate levels in Star Lake are anticipated from this project.

4. MITIGATION MEASURES

a. Avoidance of permanent direct impacts to lakeshore/OTC shoreline setbacks other than stormwater outlet construction.

b. "Dark Sky" lighting to reduce the influence of lighting on waterfowl migrations.

c. Stormwater ponding areas that are designed to collect sediment and remove nutrients before water flows into Star Lake, helping to reduce the nutrient load of Star Lake. Therefore, there is no anticipated impact to wild rice from alterations of water quality or increase of sulfate.

d. The proposed project will manage and treat wastewater to prevent discharge of nutrients, sediments and contaminants into Star Lake. Therefore, there is no anticipated impact to wild rice from alterations of water quality or increase of sulfate.

e. Ducks Unlimited and the Minnesota Waterfowl Association could be teamed with to help develop an effective strategy for the development of a possible "roosting area waterfowl sanctuary" in part of the South Arm of Star Lake to help hold waterfowl in the area for area hunters. This works well in Thief Lake and the Mud-Goose Lake area for holding waterfowl within the region.

f. Pheasants Forever can be teamed with to develop strategies for the best way to create pheasant reproduction habitat and control predators in ways that are in line with the overall configuration of the project.

g. Work with OTC to examine the possibility of creating a waterfowl sanctuary area where they could roost without being bothered by hunters, thereby holding them in the area longer.

h. Bluebird nesting boxes (2 of them near each other) could be installed so that competitor birds can use one box, which would keep others from taking the second nearby box allowing the bluebirds to use it.

i. *As a mitigation strategy, raccoons can be trapped and removed from the area using the best methods for the situation. This would reduce one of the biggest threats to Red-Necked Grebes, waterfowl, and other birds.*

j. Wood duck houses could be installed to increase wood duck nesting success.

k. Providing nesting platforms for the Common Loon and also for the Red-Necked Grebe as both of them prefer to nest on islands or areas that are directly accessible from swimming water.

l. *Provide bird feeders of various types for the various types of birds: thistle for finches, jams/jellies for orioles, sunflower seed mix for a variety of birds, suet feeders for wood peckers and chickadees, and nectar for humming birds.*

m. *Provide bat houses for natural insect control.*

n. *Provide Osprey or Eagle nest platforms on the tops of some of the light poles.*