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To: Jon Gumtow  
Stantec Consulting Services Inc.

From: Joshua Sulman, Melissa Curran  
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File: 2017 [REDACTED] Surveys  
Proposed Kohler Golf Course Project  
Sheboygan County, Wisconsin

Date: September 5, 2017

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**REFERENCE: 2017 [REDACTED] Surveys, Proposed Kohler Golf Course Project  
Sheboygan County, Wisconsin**

### **INTRODUCTION**

Stantec Consulting Services Inc. (Stantec) conducted botanical surveys for [REDACTED] in support of the proposed Kohler Golf Course Project (Project), located in Sheboygan County, Wisconsin. Stantec conducted targeted botanical surveys for [REDACTED] within the limits of construction for a proposed road access within the State Park-owned portion of the Project Area ("the survey area"). [REDACTED] is a State-listed Threatened plant species in Wisconsin.

Surveys were completed to document the location and number of individual plants within the proposed golf course access road footprint, within the State Park property. This memorandum presents the methods and results of this targeted survey effort.

### **PROJECT DESCRIPTION**

The Project Area consists of a 247-acre parcel located adjacent to Lake Michigan owned by Kohler Company, and a proposed easement area on a parcel owned by the State of Wisconsin. The State-owned parcel is located within Kohler-Andrae State Park and is adjacent to the south limits of the Kohler parcel. [REDACTED] has been documented on the proposed easement area and within the Kohler-owned property. Wisconsin listed plant species are not regulated on private property, and surveys conducted during the current effort were performed on state property only. Field investigations and plant counts were limited to areas within the design specifications provided by Kohler, for the proposed road access and associated construction/silt fence limits. Based on the results of a 2015 botanical survey, existing habitats in the survey area include dune, northern dry, dry-mesic and mesic forests, hardwood swamp/forested seep, alder thicket, and developed areas (existing roadways, infrastructure, and maintained turf) (Figure 1, attached). Within the survey area, the previously identified extent of [REDACTED] was localized in two areas of [REDACTED].

[REDACTED]

[REDACTED] WDNR recommends that the optimal survey time for [REDACTED] is from [REDACTED], when the species is flowering. In consultation with Endangered Resources staff at WDNR, Stantec determined a methodology to count all individual plants within the survey area. Individual flowering stems may be counted to determine the number of individuals; however, in some habitats, where flowering is suppressed due to canopy shading, heavy competition from other herbaceous species, or other factors, a count of vegetative individuals may be needed.

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## METHODS

Previous botanical surveys of the Project Area were completed by Stantec in 2014 and 2015 to document community types, floristic quality, invasive species, and the presence of rare plant species. Results of the 2014 Botanical Surveys were presented in a memo entitled "Botanical Surveys" dated October 31, 2014; however, the State-owned portion was not included in this investigation. The 2015 Botanical Survey focused on target rare plant species with results documented in a September 25, 2015 memo, which did include investigations of the State-owned portion, including the current survey area. The results of both the 2014 and 2015 investigations identified [REDACTED] as being broadly distributed within the [REDACTED] communities of the Project Area.

Previously collected data on the distribution of [REDACTED] within the survey area was used as a guide to focus efforts for the current targeted survey on two portions of the survey area where populations intersected the proposed construction limits. Additional individuals of [REDACTED] and other listed species, if observed, were documented and their locations recorded with GPS. Individual GPS points were recorded for single plants or small groups of plants within one-meter of each other. A GPS polygon was used to record the edges of dense populations. Photographs were taken of representative habitat areas and plant characteristics (Attachment A). The boundaries of the survey area were located in the field using GPS, and the boundary was staked and marked where it intersected the populations of [REDACTED]. Transects were then established for counting [REDACTED] individuals, oriented roughly east-west, or approximately perpendicular to the survey area boundary. Transects were laid out using linear open-reel fiberglass tape, spaced from 6 to 20 feet apart, depending on plant density. Visual counts of the number of [REDACTED] flowering stems, and of the total number of [REDACTED] stems, were made for each transect.

## RESULTS

[REDACTED] was previously documented in [REDACTED] communities. The [REDACTED] is the primary habitat for [REDACTED] which is characterized by a [REDACTED].

[REDACTED] surveys were conducted within the State-owned parcel on August 21 and 22, 2017 by Stantec botanist Joshua Sulman.

A total of 8,143 [REDACTED] plants were identified and recorded within the survey area: the North Unit contained 3,684 plants and the South Unit contained 4,459 plants (See Figure 1). Based on visual observations, we estimate greater than 121,000 total [REDACTED] plants located in suitable habitat on State Park property adjacent to the proposed access road. The number of individual stems counted, whether vegetative or in flowering condition, is summarized in Table 1. Appendix A contains representative photos of [REDACTED] in vegetative and flowering condition, and the transect sample layout used during the survey.

**Table 1: Stem Counts of [REDACTED] within Survey Area**

Unit	Flowering Stems	Flowering and Vegetative Stems
North Unit	2,383	3,684
South Unit	1,032	4,459
<b>Total</b>	<b>3,415</b>	<b>8,143</b>

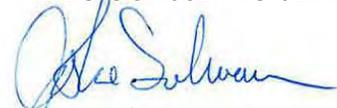
REFERENCE: 2017 [REDACTED] Surveys, Proposed Kohler Golf Course Project  
Sheboygan County, Wisconsin**CONCLUSION**

On August 21 and 22, 2017, Stantec conducted targeted botanical surveys within the proposed road within the State Park owned portion of the Project Area to quantify the number of [REDACTED] plants, a State-Threatened plant species. Transect surveys to access species populations were utilized to complete stem counts of both flowering and vegetative plants. A total of 8,143 plants were recorded within the proposed access road corridor on State Park owned land compared to the estimated total number of greater than 121,000 plants in that immediate area.

Numerous course and access road layouts were developed by Kohler to avoid and minimize impacts to wetlands, streams, cultural resources, and rare species. Measures to avoid and minimize [REDACTED] impacts included relocating the maintenance building to the north to avoid all impacts and shifting the access road to the west to minimize impacts.

If you have any questions, or require any additional information, please call me at (608) 469-8096 or Jon Gumtow at (920) 980-2800.

Sincerely,

**STANTEC CONSULTING SERVICES INC.**

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Attachments: Figure 1 – [REDACTED] Survey Map  
Attachment A - Photo Log

**One map page and three pages of photos were redacted since they contained information on species tracked by Wisconsin's Natural Heritage Inventory (NHI) program. This information is considered sensitive and is not subject to Wisconsin's Open Records Law (per s. 23.27, Wis. Stats.)**