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2015

Preliminary Site Analysis for Shakopee Ice Arena

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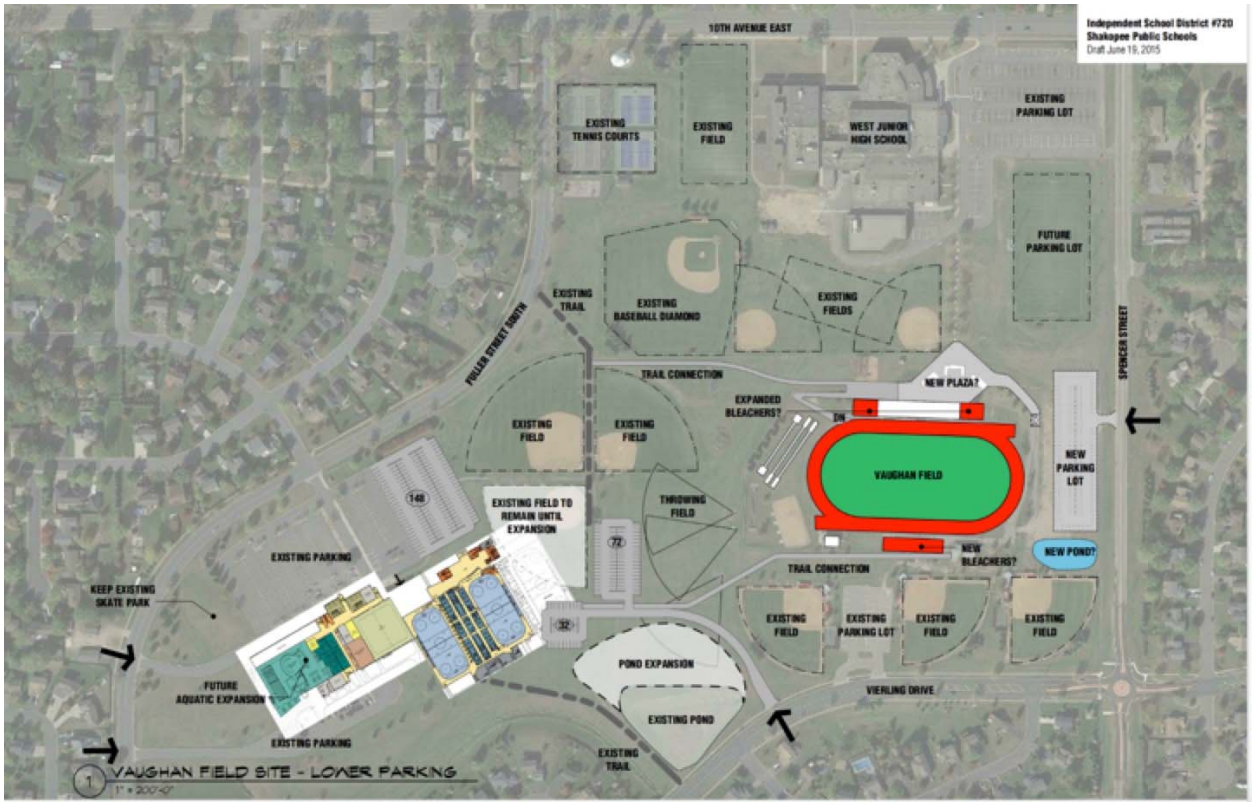
June 24, 2015

INTRODUCTION

The City of Shakopee is considering the placement of a new ice arena. Based on discussions with the City and the School District, two sites are being considered. Both options would allow the 2-sheets of ice to be constructed now and allow room to build a third sheet of ice in the future.

This preliminary site analysis considers the improvements necessary to place the building in the two locations. Therefore, analysis of grading, storm water, utilities, parking, drives, and pedestrian improvements, loss of existing facilities, and compatibility are included for review and consideration. Cost estimates for each site will also be provided.

Site 1 – Build onto the current Community Center



Grading

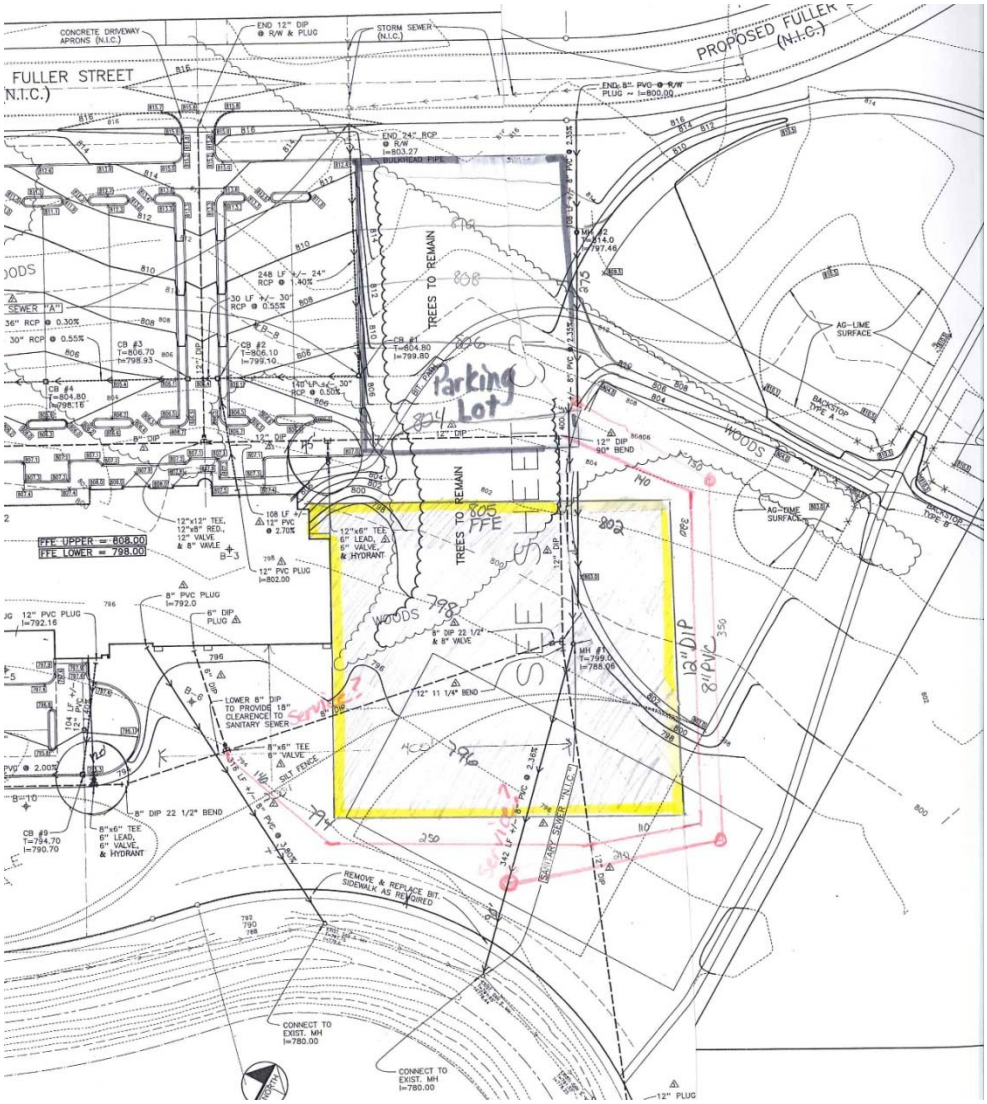
The ice arena would be connected to the community center on the northeast end. There is approximately 8 feet of elevation difference from the northeast corner (elevation 802) to the southwest corner (elevation 794). The concept plan has the ice sheets 3 feet lower than the entry. Based on grades within the proposed parking area and adjacent Community Center, an entry elevation of 805 is assumed. Subtracting the 3 feet difference equals an elevation of 802 for a majority of the building. Therefore, the building would require approximately 25,000 CY of fill.

Storm Water

The site naturally drains to the ditch located south of the proposed ice arena. However, expansion of this ponding area is limited. There is room to expand the pond to the east of the site by nearly double. Therefore, we would propose to route the parking lot expansion areas, the roof drainage and a majority of the site drainage toward the east pond.

Utilities

An 8" sanitary sewer and an 8" and 12" water main cross directly under the proposed ice arena. All of these pipes will need to be re-routed around the building area. A sketch of the re-routed pipes is shown below. The pipes located under the building will need to be removed or abandoned in place with concrete fill. There may be an opportunity to use a portion of the water and sanitary sewer pipe as service pipes for the ice arena.



Parking, Drives and Pedestrian Improvements

Parking for the ice arena would consist of expansion of the existing parking lot north of the ice arena as well as a 700-foot drive and two parking areas off of Vierling Drive. This would provide sufficient parking at this time; however, if the third sheet of ice becomes necessary, the smaller parking area would need to be removed and relocated (loss of $85,000 investment).

The plan calls for a trail connection from Vaughan Field to the proposed ice arena. The trail would be approximately 1,500 feet.

Loss of Existing Facilities

The ice arena and associated parking improvements as shown would warrant the removal of the existing skate park and a ball field. Currently there are no options on the site to relocate them.

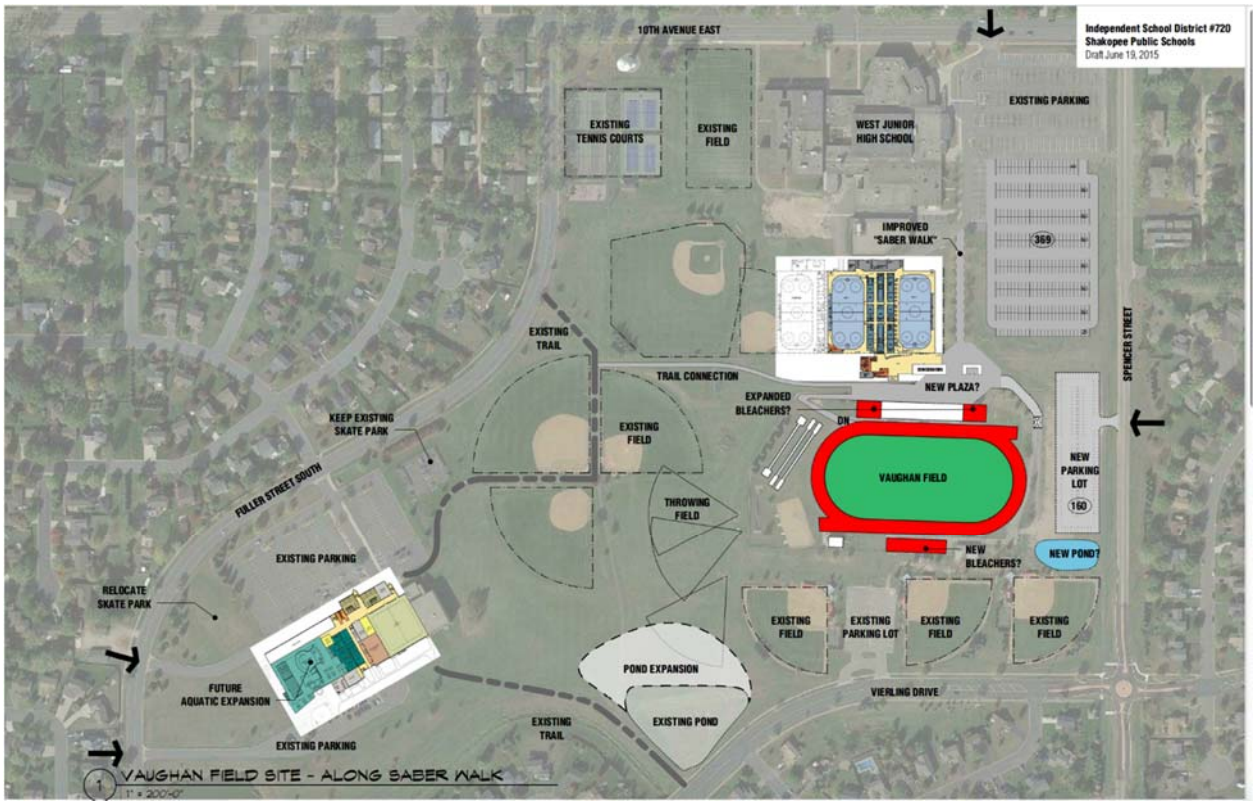
Compatibility/Placement

Having the ice arena adjacent to the Community Center allows for sharing of parking areas and easy access by the public to both facilities. This is convenient for families with school age children, it allows for the children to be at hockey or figure skating lessons while the parent can be utilizing the Community Center facilities. Also, with the Community Center and Ice Arena adjacent to each other it creates a dynamic recreational hub for the City of Shakopee. The exact ice arena placement should be studied in more detail to see if it can be located in such a way to minimize the amount of fill required. If the ice arena can be located further east it will minimize the amount of fill and help with constructability by minimizing the impact on the existing Community Center.

Site Improvement Costs

Removal of skate park	$ 15,000
Abandon and relocate sanitary sewer	$ 42,000
Abandon and relocate water main	$ 60,000
Fill material for building	$ 250,000
Construction of Parking Lot expansion	$ 267,000
Construction of drive and two new parking areas	$ 305,000
Trail connection from Vaughan to ice arena	$ 45,000
Excavation of ponding area	$ 50,000
Restoration	$ 120,000
TOTAL SITE COST	**$1,154,000**

Site 2 – Build directly south of West Junior High School



Grading

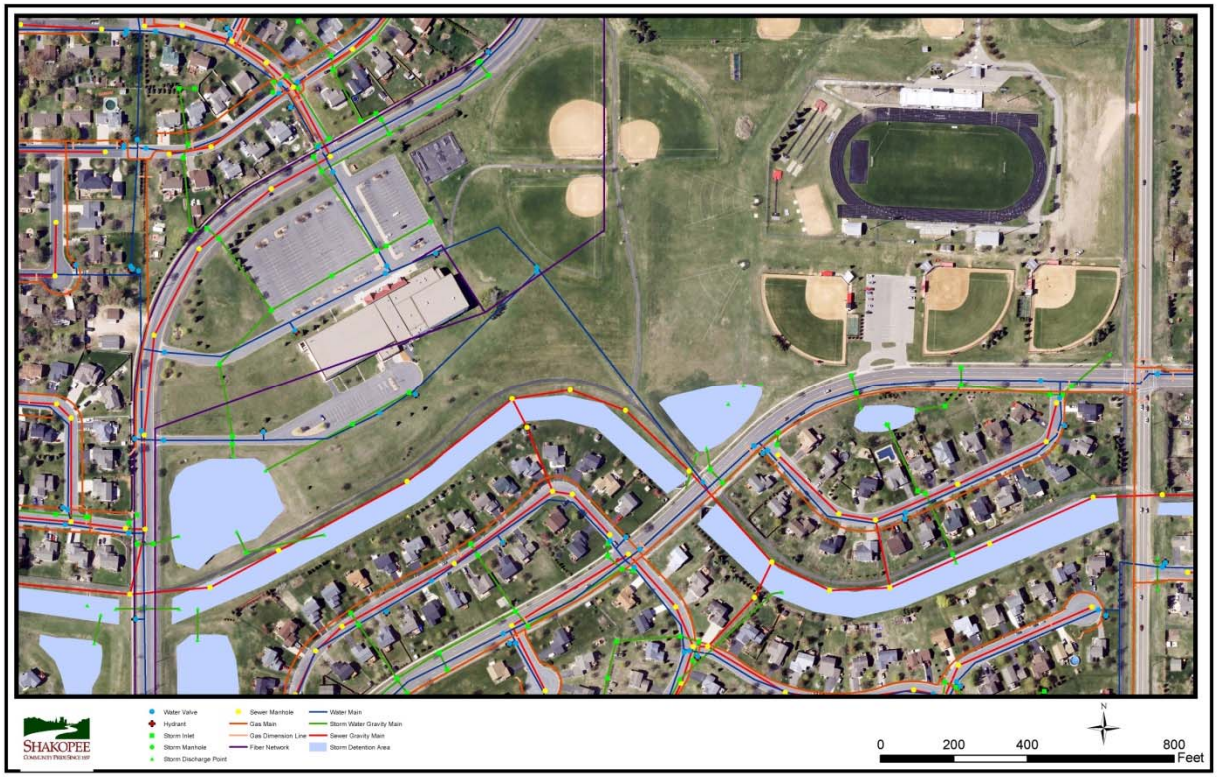
The ice arena would be located directly south of West Junior High School. Currently, two ball fields overlapped with a multi-purpose field exist in this area. We do not currently have contour information in this location, however given the existing field, assume that the site is relatively flat. Therefore, excavation would be minimal and the building elevation could be set to balance the earthwork.

Storm Water

Storm water ponding will be required for the parking lot expansion as well as the ice arena building and site. It appears that a ponding area could be located west of Spencer Street between the two new parking areas. Further analysis of the City's Comprehensive Storm Water Management Plan will be required to ensure overflow and receiving body options.

Utilities

Based on the utility layout provided by the City, it appears that no utilities exist in the proposed ice arena location. We will need to extend sewer and water to the site to service the ice arena.



Parking, Drives and Pedestrian Improvements

The existing parking lot between West Junior High School and Spencer Street would be expanded to the south for an additional 369 stalls. Additional connections to Spencer Street would need to be discussed with the City. The plan also calls for the improvement of Saber Walk. This would allow pedestrian connection from West Junior High School and the parking area to the new plaza area of the ice arena.

Loss of Existing Facilities

The ice arena and associated parking improvements as shown would warrant the removal of two existing ball fields with overlapping multi-purpose field as well as a practice football field. Currently there are no options on the site to relocate them.

Compatibility/Placement

Having the ice arena located near West Junior High School would provide a convenience for students and school programs; however, may be problematic for public entrance on school property. It does allow for sharing of parking areas and easy access by the public. Also, the site appears to be dimensionally restrictive from North to South. The building placement will require additional study to insure the building can fit properly to maintain proper clearances for fire and service access.

Site Improvement Costs

Extension of Utilities to the site	$ 50,000
Construction of Parking Lot expansion	$ 655,000
Saber Walk Improvement	$ 10,000
Plaza/Lighting	$ 100,000
Excavation of ponding area	$ 50,000
Restoration	$ 35,000
TOTAL	**$ 900,000**

CONCLUSIONS AND RECOMMENDATIONS

The City of Shakopee is considering the placement of a new ice arena. Based on the cost analysis, it appears that Site 2 is the most cost effective; however, the City will have to balance the cost with the loss of facilities, compatibility of the site, and operations.