

Staff Report

**STEVEN L. SCHAIKER PLAZA ICE SKATING RIBBON STATUS REPORT**

July 9, 2024

**BACKGROUND:**

The development of a downtown plaza has been discussed by City Council for many years. More recently, questions have arisen regarding the status of the project since it appears the construction is taking longer than anticipated. **The purpose of this report is to identify a significant issue that has influenced the timely completion of the project and will require City Council direction.**

As a reminder, the companies involved in this project include:

DESIGN		CONSTRUCTION	
Confluence, Inc.	Project Lead / Landscape Architect	Henkel Construction	General Contractor
B32	Ice System Consultant	Everything Ice	Ice System Contractor
Aquatic Design	Water Feature Consultant	Jordison Concrete	Concrete Subcontractor for Everything Ice
Studio Melee	Project Architect	Rink Systems	Dasher Board Subcontractor for Everything Ice
Terracon	Geotechnical Engineer		

The project began with the demolition of the existing parking lot and construction of a new parking lot on the north side of 6th Street across from City Hall and west of First Christian Church. Other activities included adding parking spaces along the west side of Clark Ave.; constructing a building to house two restrooms, mechanical equipment, and a skate rental area; installation of utilities; and components of the spray pad.

As construction progressed, crews began working on the ice-skating ribbon which included adding subgrade heat below the ice ribbon; pouring a colored concrete border around the ribbon; running piping from the building to the ice ribbon; and installing insulation, rebar, tubing, and wire mesh to be encapsulated in the concrete.

The 6,000 square feet of concrete for the ice-skating ribbon was to be poured as one monolithic slab. This was a difficult pour as the contractor needed to ensure the concrete would be placed under, around, and in between all of the rebar, tubing, and wire mesh, and had to be completed as one continuous pour without stopping.

Because of the potential difficulty, a pre-pour meeting was held on November 9, 2023, to discuss the specifics and ensure everyone was in agreement with what was to be done. This meeting included representatives from Confluence, B32, Henkel, Everything Ice, Terracon, Jordison Concrete, Manatt's

(concrete supplier), and City of Ames. Topics of discussion included, but was not limited to, the thickness of concrete over tubing, concrete design mix, absolute acceptance parameters for concrete, screeding techniques, concrete finish (medium broom), and curing/protection requirements. The concrete was poured on December 15, 2023.

City of Ames representatives inspected the concrete in February and noticed the following deficiencies:

- Inconsistent finish.
- Rough finish in areas.
- Rippled surface with peaks and valleys in some areas.
- Bird baths.
- Stone pop outs.
- Voids on surface.
- One dasher board anchor at an angle and protruding above the concrete.

**These concerns were expressed to Henkel Construction, Everything Ice, and Confluence. At subsequent meetings, all three parties agreed with City staff that the surface was unacceptable and it needed to be corrected.**

**It should be remembered that during the non-winter months, the ice ribbon will be utilized for a variety of individual and group activities. Therefore, the City's concern with the quality of the surface is related to more than aesthetics. Due to the uneven and rough surface, safety issues arise for users of this area. Additionally, holes and voids in the concrete surface create concerns for further surface deterioration caused by the freeze/thaw cycles.**

In addition, Henkel engaged the services of Terracon to perform non-destructive testing of several locations of the ice-skating ribbon to determine if there are issues with the concrete below the surface as well. The City will not receive a final report until the week of July 8th.

### **OPTIONS:**

**Initial conversations about options to correct the surface resulted in Everything Ice recommending grinding down the concrete surface and then applying an epoxy with sand to fill holes and then a Methyl Methacrylate (MMA) coating system. However, after staff reviewed a local facility that had this coating installed and discovered the significant labor-intensive requirements to maintain the recommended coating, it was determined that this product was not an appropriate solution.**

**Another option under consideration is to remove and replace the existing concrete, tubing, etc. On March 27, 2024, Henkel Construction indicated that it was willing to proceed with a no cost change order to remove and replace the concrete. The City then sent a letter to Henkel on April 3, 2024, along with a no cost change order to sign and return. Henkel has not yet signed the letter, but rather has offered another surface coating option for the City to consider.**

The two options for City Council to consider are detailed below including pros and cons.

### **OPTION 1 - REMOVE AND REPLACE THE EXISTING ICE RIBBON**

This would include removing the existing concrete, tubing, rebar, mesh, etc. and replace it with all new materials.

### Pros

- The City will receive a homogenous, concrete ice ribbon surface, with no overlay products required, as originally expected
- The City will receive a surface that is safer, more durable, and aesthetically pleasing than what currently exists
- The City will receive a surface that is not subject to the same level of ongoing maintenance responsibilities as is required if overlay products are used

### Cons

- Delays completing the project for possibly up to twenty-four months, should there be a protracted conflict with Henkel to resolve the issue. Therefore, skating may not occur until November of 2026 or later
- Repouring the concrete could result once again in an unacceptable surface
- There is uncertainty that a new ice subcontractor can be identified by Henkel to do this work
- If a new ice subcontractor is found, they may not agree to use the project equipment and refrigeration system that is currently installed

## **OPTION 2 - GRIND THE EXISTING SURFACE AND INSTALL AN OVERLAY OF CEMENTITIOUS MATERIALS**

Henkel has continued to research multiple products and is now supporting the recommendation of the manufacturer's representative for Euclid Chemical products which includes a series of applications that include five products (Qwikstich, Euroweld, Euco Re-Cover, Kurex Dr. Vox, and Baracade WB244) with up to two applications of Euroweld and up to four applications of Euco Re-Cover as the best solution for fixing the surface.

### Pros

- Avoids excessive delays to complete the project, skating could occur as early as November 2024
- Maintains the surface look of concrete
- Could mitigate the City's risk to incur future maintenance/replacement costs related to the overlay material system should Henkel agree to provide an upfront monetary contribution to the City to cover these expected costs. (Henkel has offered \$50,000 towards this purpose, which the City staff believe is not sufficient.)
- Work could be done prior to the plaza being opened for public use

### Cons

- Provides a surface with numerous layers of varying materials which were not specified by the City
- Requires on-going maintenance including surface repairs as needed, sealing the surface every three-five years, and potentially redoing the surface layer every 15 years

- This system of applications as well as the main product, Euco Re-Cover, have never been applied on an outdoor, uncovered, refrigerated ice surface
- The recommended company to apply the various applications has no prior experience with the main product
- The manufacturer of the Euclid products will not write a letter to the City stating the recommended combination of applications nor their own product, Euco Re-Cover, are appropriate for use under or over a refrigerated slab

**It should be noted that a mock-up of just one layer of Euco Re-Cover was installed on a small section of the ice-skating ribbon at the Plaza so staff could observe how it is applied as well as how it looks. Unfortunately, the applicators had great difficulty applying the recommended material and could not create an acceptable finish during this test case. Henkel and the manufacturer's representative were not present during this mock-up and are confused as to what happened since the product did not perform as advertised. Therefore, Henkel is proposing to do another mock-up with the manufacturer's representative present. Henkel still believes this is the best solution to fix the ice-skating ribbon surface.**

#### **STAFF COMMENTS:**

As with any project, the City strives for the highest quality results. There is agreement among the City staff, Confluence, and Henkel that the current ice-skating ribbon surface is "unacceptable" and does not meet the quality standards that residents expect from City facilities. The question remains as to what the best course of action is to correct this problem. As is evidenced by the list of pros and cons for each of the two options, this will not be an easy decision. **It is imperative to identify a solution that corrects the problems identified with the ice ribbon surface, minimizes ongoing maintenance/replacement costs to the City, and provides a safe environment for our users for many years.**

Council has two options to consider. Option 1 will provide the City with what it expected to receive in the first place, but could delay the project for as long as two years, and there is no guarantee that Henkel can hire a contractor to complete the ice ribbon work. Option 2 provides a quicker project completion date, but uses a combination of products that has never before been applied on a refrigerated ice slab that would have allowed us to verify its long-term viability for the project. Therefore, both options come with significant risks to the City.

**Because Confluence and City staff lack the necessary concrete expertise in regards to this unique situation to make a decision regarding how to best correct the deficiencies, it is recommended that the next step is to hire a third-party concrete expert to review the situation and provide a recommendation as to the best option for the project.**

**Staff approached Henkel about its willingness to pay for this additional consultant. Not only is Henkel unwilling to pay for this consultant, it indicated that it "do[es] not believe hiring an additional 3rd party is the best option for moving forward." Therefore, "Henkel does not support and will not pay for it."**

#### **ATTACHMENT(S):**