



Watertown City Council
Monday, December 9, 2013
7:00 p.m.

Work Session Agenda

Discussion Item:

1. Arena Rehabilitation Project Update
Kurt W. Hauk, City Engineer

Entire Preliminary Master Plan is available on our website (116 pages)
Hardcopy is available upon request

City Comments to Preliminary Master Plan

Design Report Comments

- Add page numbers to the report. When we were discussing the report, it took some time to flip to the same section and find the same page without page numbers....it would just be a lot easier if page numbers were assigned.
- Guiding Principles – Para 3. – delete “occupants and students”. It would therefore read “...accessible to the community”. The focus on community is preferred.
- User Requirements
 - o Para 8. – Delete this paragraph. We prefer not to include mention of the second sheet of ice in this report.
 - o Para 13. – “Improved” should read “Improve”.
- The Trends
 - o Para 5. - 3rd to last sentence, change “have” to “having”.
 - o Para 6. A. – The City does not pay high demand charges for electricity usage at peak times as part of our Power Purchase Agreement and Tariff with National Grid. We want to minimize energy usage for the sake of minimizing costs and usage and to therefore maximize the amount of electricity we can sell back to National Grid, at our negotiated rate, when the hydro plant is generating power.
 - o Para 6. E. – Delete reference to “swimming pool water heating”. It’s mentioned as one of many applications so obviously there’s nothing wrong with that. But since we have no plans to utilize it for that purpose we thought it may be best to not include it.
- Structural Assessment Report – Under “Ice Rink” / “Brick Masonry Enclosure” delete the first “generally”. Also, under “Single Story Structure” / “Masonry Enclosure”, delete the first “generally”.
- Provide the Probable Cost of a completely New Arena serving the same functions as Options 1-3. The Opinions of Probable Cost are substantial enough that we feel we need a New Build Option for comparison. The question will certainly come up anyway.
- Change all references of “Privateers” to “Professional Hockey Team”. Except when it makes sense in the report talking in present tense about the team currently there
- On the Plan View layouts, change “Privateers” locker room label to “Main” locker room.
- We need to make sure there is adequate space behind the permanent bleachers for maintenance and welding repairs to the boards. We may be at too preliminary of a level to address this but it’s something to keep in mind for your design as we progress.
- Is anything proposed for the concrete floor or the headers and cooling system at this point?

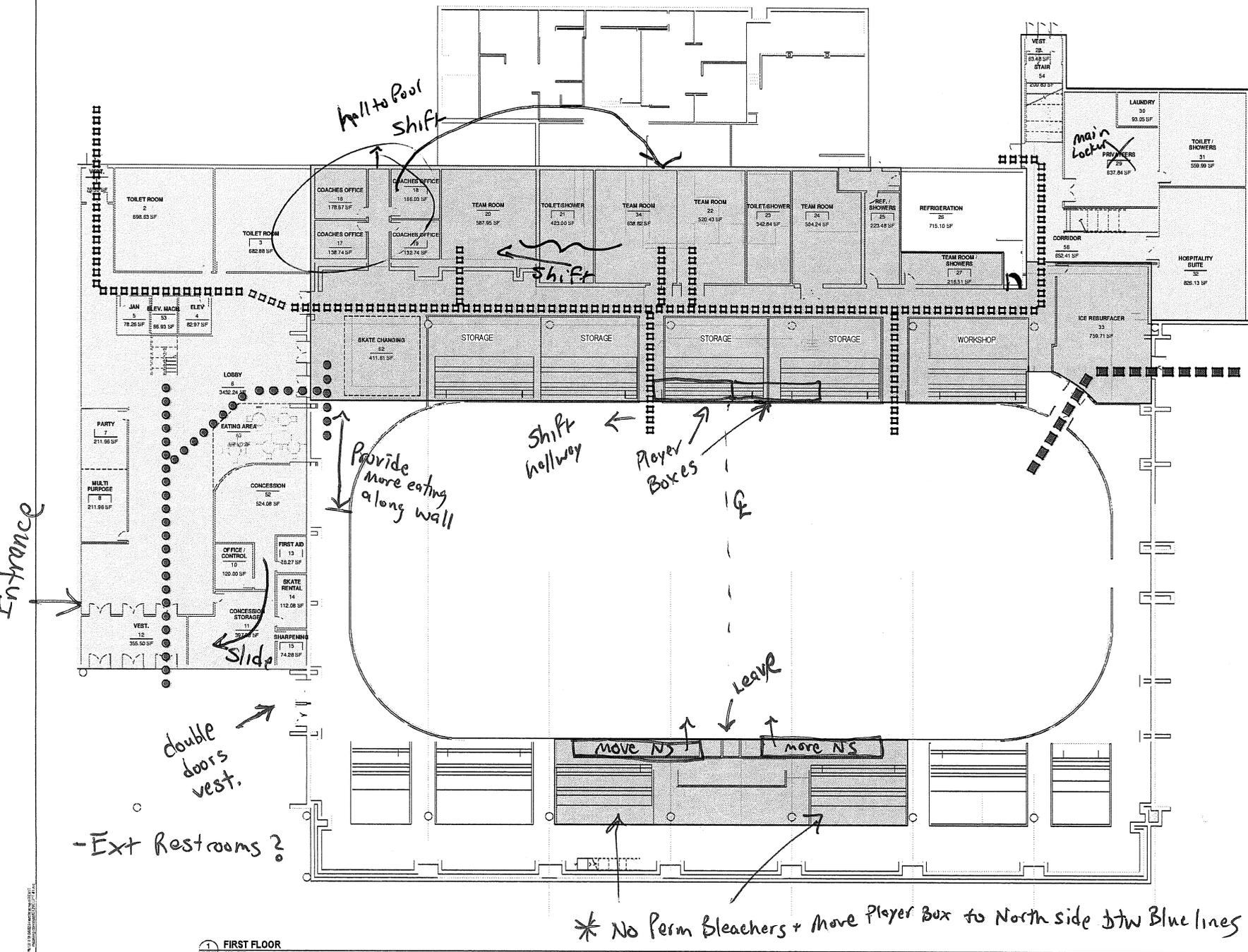
Layout Comments

- Office Space and layout for Option 1 is preferred for all three options if possible. Place the main office at the NW corner, and the conference room immediately south (with doorway to Main Office), followed by toilet room, and the rest of the offices.
- Change the “Aerobics Room” to a second “Multi Purpose Room” with partitions. We feel the room would be better justified this way. Also, the wall adjacent to the corridor can be a solid wall as opposed to a glass wall. This change would have to be reflected in the executive summary as well.
- Move the Maintenance Supervisor’s office to the mezzanine, as shown in Option 3, for all three Options.

- Swap the “Coaches Rooms” block with one of the “Team Room – Shower – Team Room” blocks. Also plan for a doorway into the Pool House at the end of the “Coaches Rooms” hallway.
- Shift the team benches to the northside of the rink, and between the blue lines. The Press Box, Score Table, and Penalty Box are ok as shown.
- Use removable bleachers on the south side of the rink in lieu of fixed bleachers.
- Option 1
 - Shift the main entrance from the south side to the west side of the building, facing William T. Field Dr. As a result of this reorientation, the concession storage, concession, etc. area could be slide south and westerly, to provide more eating area along the wall facing the ice.
 - Add a small vestibule to the existing double doors to the arena facing William T. Field Dr.
 - Add Exterior restrooms, similar to Option 2.
- Have you checked/overlayed the basemapping versus the building additions as far as utility conflicts? It could influence the layout of the additions slightly.

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- Consultants
- Legend
- □ □ □ □ □ □ □ PLAYERS
 - ● ● ● ● ● VISITORS
 - ■ ■ ■ ■ ■ ICE RESURFACER



1 FIRST FLOOR
 1/8" = 1'-0"

Revision	By	Date

Client/Project
 WATERTOWN
 ICE ARENA
 OFFICE
 Title
 OPTION 1 PLANS

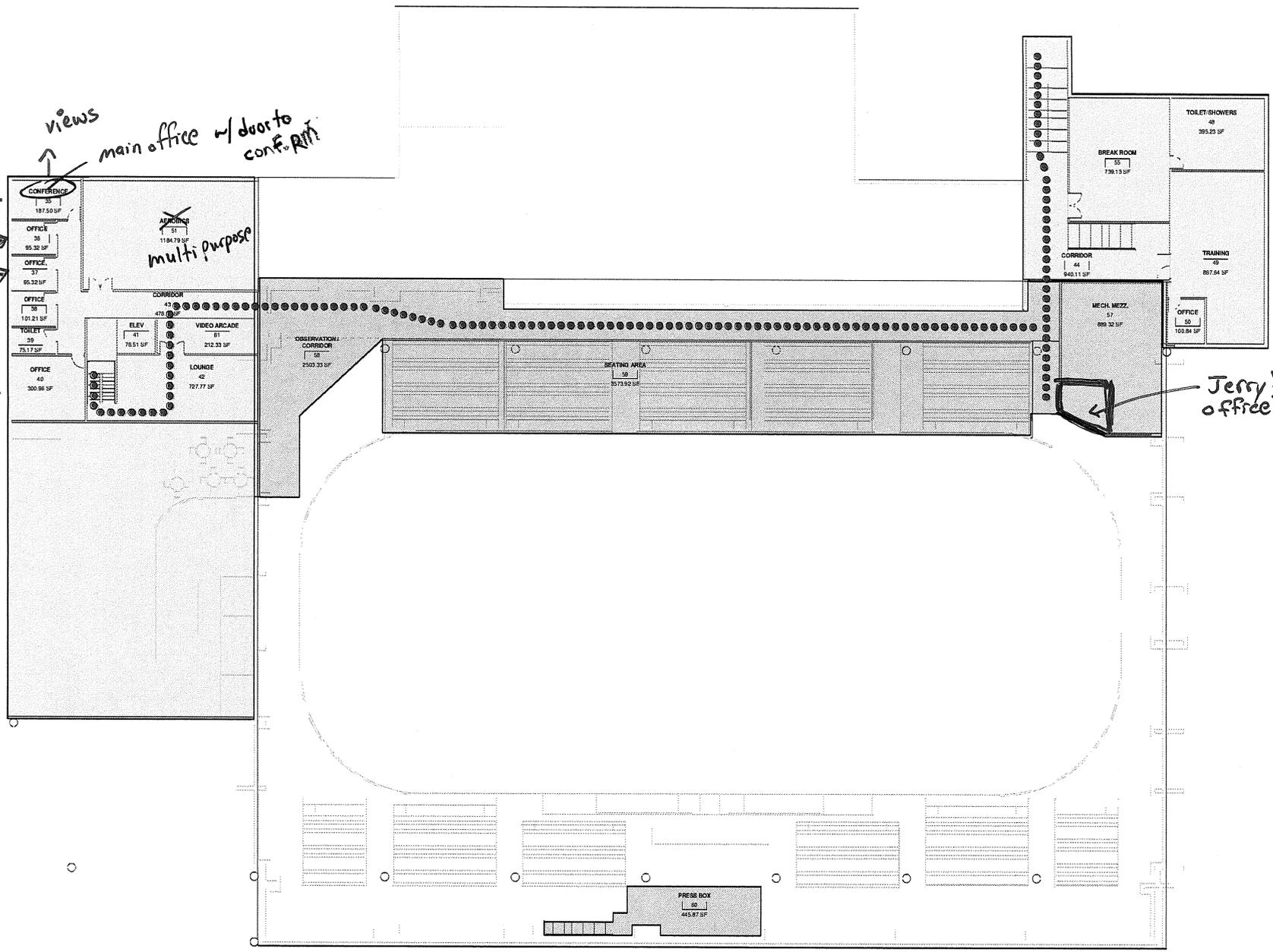
Project No. 191562004
 Scale
 Drawing No. Sheet
 Revision
 A101-01

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Consultants

Legend

- ▣▣▣▣▣▣▣ PLAYERS
- VISITORS
- ■ ■ ■ ■ ICE RESURFACER



San
bilet
mer
trikes

views
main office w/ doors to
CONF. RM

multi purpose

Jerry's
office

1 SECOND FLOOR PLAN
1/8" = 1'-0"

Revision	By	Date

Client/Project
WATERTOWN

ICE ARENA

OFFICE

Title
OPTION 1 PLANS

Prop'd No.	Scale	
10165004		
Drawn No.	Sheet	Revision

A102-01



City of Watertown

Preliminary Master Plan

Municipal Arena Renovation



October 30, 2013



Stantec



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EXECUTIVE SUMMARY

The City of Watertown Municipal Arena, originally built in the mid-1970's, has provided an adequate venue for a multitude of public events, both with ice and without. However, the facility was never designed to support the variety of events that it hosts and the infrastructure is reaching the end of its useful life. As such, the City has hired Stantec Consulting Services to develop a Master Plan to identify the opportunities and costs associated with providing improvements.

Stantec held a Design Charrette with representative staff from the City of Watertown. The Charrette discussed the different drivers for the project and the overall expectations of the City and end-users. Likewise, Stantec presented design trends in the ice arena industry and performed an overall physical assessment of the existing facility. The Charrette ultimately provided the guidelines for how the facility should be improved.

Stantec has since reviewed the materials developed during the Charrette and has developed a few concepts for the interior layout of the facility. Each layout is accompanied by an Opinion of Probable Cost and a description of the attributes of each. It is the intent of this Preliminary Master Plan to characterize these concepts in a manner that will allow the City's representatives to elicit feedback. This feedback will be used to develop a Final Master Plan that best meets the needs of the community and the arena's patrons.

The specific information contained herein identifies the original scope of work (as defined in the Request for Proposal), the guiding principles Stantec is utilizing to create the Master Plan (as gleaned from the Design Charrette), the expectations of those who will work in and/or utilize the facility, and the different concepts that have been developed to date. It should be noted that the concepts represent a range of budgets. As such, Option 1 is a 'low' cost option, Option 2 is the 'medium' cost option, and Option 3 is the 'high' cost option. Each option is intended to provide the desired functionality within the relative footprint. A comparison of the spaces associated with each option is included in Appendix F. It should be noted that the concepts provided are merely interior designs at this time. Stantec's intention is to allow form to follow function and, as such, will work on exterior elevations and options in the next design iteration.

Upon the completion of the City's review, Stantec will meet with the City to review the document and the associated comments. This feedback will be incorporated into the concepts to develop the next iteration in the design process. This next iteration will include details regarding the infrastructure utility systems (mechanical, electrical, plumbing and fire protection) and opportunities for sustainability, all of which will be based on the selected option.

INTRODUCTION

For the past 35+ years the City of Watertown Municipal Arena has been a successful multi-use facility hosting year-round events. Events include concerts, tradeshow, non-profit events and a semi-professional hockey team. The ice rink is also used for open public skating and by both local high school and youth hockey teams. To continue to provide quality recreational opportunities the City is seeking to rehabilitate the facility and implement enhancements to offer additional amenities.



With all of the variables available in making improvements to such a versatile facility Stantec has recommended the development of a Facility Master Plan to identify potential expansion and improvement opportunities. This all-encompassing master plan will not only assess discrete project scope items, previously identified by the City and past engineering studies, but will provide a holistic assessment of the existing facility and an overall plan to modify and grow the facility. This planning process will allow the Arena to keep pace with alternative service providers, a multitude of existing uses and ever-evolving needs. It will be important that the facility continue to contribute to the Greater Watertown community's quality of life.

SCOPE OF WORK

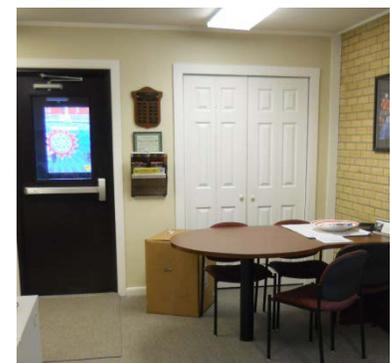
The masterplan study has involved key stake holders – Parks and Recreation Personnel, Maintenance and Engineering Staff. These representatives have obtained input from City Council members and Arena patrons. Together, this team has pursued developing the following key Masterplan elements:

1. **Roof System** – the existing roof is showing signs of deterioration and there are signs of leakage.
2. **Building Trusses** – the trusses have not been maintained and there is concern over their ability to meet the current code load requirements.
3. **Fire Suppression System** – the existing system has undergone several repairs and only serves the main arena.



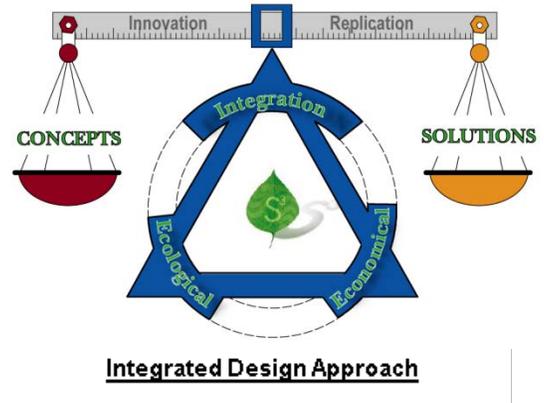


4. **Main Arena Concrete Floor** – the main arena floor is exhibiting signs of deterioration. There are concerns the in-floor piping and ductwork may be contributing to this condition.
5. **Locker Rooms** – the existing locker rooms are in need of renovation and expansion to accommodate larger events. An additional locker room is needed for the semi-professional hockey team and concert performers.
6. **Entrance Vestibule, Concession and Sign** – the existing entrance is not well-marked and provides limited space for gathering. The concession area is small and does not allow for ready access by patrons.
7. **Toilet Facilities** – the existing toilet rooms are in need of an upgrade. Additional toilet rooms are required and direct access from the exterior is needed to support outdoor events.
8. **Zamboni Access** – the existing melting pit does not function properly. Allowing the Zamboni to dump ice shavings outside will help to remedy this problem.
9. **Rear Parking Lot** – the existing parking lot is not adequate for large events. Expanding the parking and associated lighting is required.
10. **Administration Offices and Storage** – the existing offices were converted arena space and are too small. There needs to be an addition for formal offices and a dedicated toilet room for administration staff. Consideration should also be given for dedicated storage space and a party room.
11. **Mechanical Equipment Upgrades** – the existing mechanical systems should be evaluated for impacts due to the aforementioned improvements. Improvements should be based on energy savings and return on investment.
12. **Evaluation for Year-round Ice** – the existing facility should be evaluated for the potential of implementing year-round ice and the physical requirements to make this possible.



GUIDING PRINCIPLES

The key elements for the success of the project are centered around developing a plan that addresses the following overall principles as extracted from the Design Charrette (refer to meeting minutes in Appendix A):



1. **Versatility** – the facility must be configured in a manner to support a multitude of different events and end-users, both inside the arena and outdoors.
2. **Modernization** – many of the spaces within the facility have reached the end of their useful life and/or are not adequate to support the current activities.
3. **Accessibility** – the building should be physically and visually accessible to occupants, students, and the community.
4. **Longevity** – the existing building infrastructure needs to be updated to efficiently operate into the longterm future. This includes the building envelope, structure, equipment, and utility distribution systems.
5. **Pride** – the arena is the major entertainment venue for the surrounding community and there is an opportunity to make a visible statement on behalf of the City of Watertown and leave a positive impression on visitors.
6. **Sustainability** – the City of Watertown supports sustainability and will look to implement sustainable technologies where they are cost effective.
7. **Cost Control** – the budget for the project is limited and/or may not be available in one lump sum which may force a phased implementation approach; the plan must address this issue.
8. **Competitive** – an improved facility may be able to draw more events and/or participants away from other regional facilities.



USER REQUIREMENTS

The Municipal Arena is inhabited by the City's Recreation Department Staff and, likewise, is the home to a multitude of end-users and events. This was clearly demonstrated during the Design Charrette. Each of the inhabitants and end-users has expectations and/or requirements to adequately and efficiently improve the facility. In addition, being an ice arena, there are many trends and philosophies that should be considered for implementation in order to maintain a competitive edge with the skating community. The following is a summary of these different requirements:

THE STAFF

The arena houses the staff for the Parks and Recreation Department. This consists of up to 30 people including full and part time employees. The facility should be incorporated with a Break Room that can support the entire staff. The Administration Staff requires four (4) offices which could be located on a potential second floor. These offices should be co-located with a Conference Room and a dedicated Toilet Room. The Administration Staff are often visited by the public and, as such, should be located near the front of the facility. Likewise, a reception area should be located near the front door of the facility to greet visitors and receive deliveries. The Maintenance Staff requires five (5) dedicated lockers and should be located in the rear of the facility. The Maintenance Supervisor should have a private office also located in the rear of the facility. A restroom and showers are needed in this area to service 30 maintenance staff personnel.

THE EVENTS

As noted previously, the facility is used by a multitude of different groups throughout the year; both with ice and without. Not including the pool, the uses for the facility primarily include, but are not limited to, the following:

1. Ice-Based Activities which run from Mid-September through the end of March:
 - a. Semi-Professional Hockey (the Privateers)
 - b. High School Hockey (Boys and Girls)
 - c. Hockey Clubs & Tournaments
 - d. Recreation Hockey
 - e. Figure Skating
 - f. Public / Open Skating

2. Non-Ice Activities which run from April through Mid-September:

- a. Music Concerts (up to 10 annually)
- b. Boxing / Mixed Martial Arts
- c. Circus
- d. Senior Fair
- e. Roller Derby
- f. Italian American Festival
- g. Food Shows
- h. Demolition Derby
- i. Wrestling
- j. Fair (support facilities)
- k. Summer Recreation Program (on rainy days)



In order to support all of these different types of activities, under one roof, with and without ice, the expectations are wide and varied. To make this facility flexible and functional, and suit the needs of all of the users, the following should be considered for implementation:

1. Improve the size and overall space of the lobby area. Current lobby does not allow for the adequate flow and transition of people in and out of the arena. This is particularly evident during hockey tournaments with multiple teams with large equipment bags and at large concert venues.
2. Improve the size and quantity of the team rooms. The current team rooms are undersized and do not meet the standards for modern hockey facilities and team sizes. The quantity of team rooms can sometimes restrict the changeover from one team to another but probably equally as important does not address the needs of multi-gendered teams.
3. Improve the quality and quantity of the public toilet rooms. The current public toilet rooms are out dated and the limited quantity of toilet fixtures is an issue, particularly during larger events. Direct outdoor access to public toilet rooms for athletic field users is also a need that the existing facility does not provide.



4. Provide dedicated lounge area with restrooms and dressing rooms for concert performers. Currently the performers utilize a temporary trailer that is brought in for concert season.
5. Improve access and size of the concession stand. The existing layout does not allow for easy access nor provide adequate service to patrons during large attendance events. A vending machine area should be provided to facilitate concessions during low occupancy times where providing concessions service staff is not feasible.
6. Provide space for family activities including a party room and/or multi-purpose room. The arena is currently not set up to provide these types of services. This room could be designed with temporary divider walls to allow for one large room or multiple small rooms.
7. Provide built-in rigging for concert speaker systems and lighting. Currently it takes city electricians a few days per concert to prepare the rigging to support equipment. Electrical service tie-in should be above Zamboni room and be designed for more efficient set-up.
8. There has been some interest expressed for a second sheet of ice. However, the reduced participation in hockey makes this difficult to consider.
9. The building mechanical systems need improvement. The ice is kept at 22 degrees and is in good condition. However, the ambient air is typically only 10 degrees warmer than the outdoor temperature. The ventilation air for the arena is untempered outdoor air. Heated viewing would be welcomed. Likewise, there is little to no ventilation for the lobby area, toilet rooms, and locker rooms. Air conditioning is used during the summer but is not capable of handling the heat load during larger events on warm days.
10. Improve the separation of the spectators, players, and officials for hockey games. The intermingling of these factions during an intense game is a concern.
11. Improve the entrance and access to ticket sales. The main entrance is not clearly identified and patrons struggle to find access. Tickets should be available in a pre-lobby area however this arrangement needs to accommodate long indoor stacking lines during bigger events. Need to add an arena sign and potentially digital marquee.
12. Handicap accessibility must be addressed.





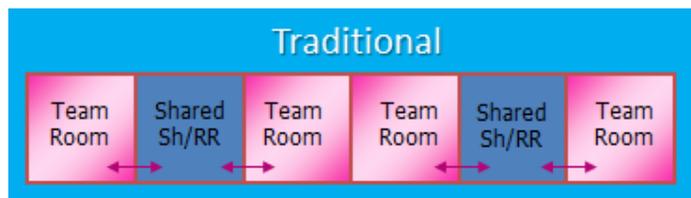
13. Improved the bleacher seating. Current seating is limited and has been a source of concern from a safety aspect, is not comfortable, and has viewing limitations in certain areas. Need to maximize seating potential for the arena.
14. Provide a space for eating and/or catering. There is currently no place dedicated to enjoying concessions.
15. Improve the lighting in the arena. The existing metal halide lamps work but do not offer the lighting levels required for television broadcasts. The City has received a grant from NYSERDA for this work.
16. Provide four (4) dedicated coaches rooms: semi-professional team, minor league hockey, high school hockey, and figure skating.
17. Provide a dedicated team room for the semi-professional hockey team.
18. Co-locate first aid station with skate rental and concession stand. These may be run by one individual during low occupancy periods.
19. Consider providing a small pro shop possibly integrating it into or near the concessions or reception area.
20. Provide locker room with toilet and shower for the referees. This will be a maximum of 3 to 5 people.

THE TRENDS

Stantec presented “What’s Hot on Ice” during the Design Charrette. This is a compilation of Stantec’s experience working with professionals and owners in and around ice arenas. This presentation has been utilized at conferences all over North America and was used to provide an overall perspective of the latest trends around the design and operation of ice arenas. Some of the key points identified during the presentation included the following:

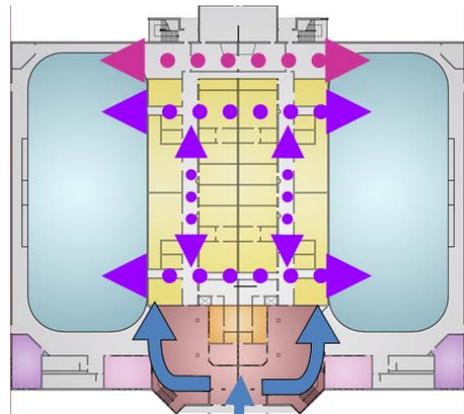


1. Locker Rooms – there are various options available for their location and access to toilet rooms and showers. The layout that lends itself best to Watertown’s arena is the Traditional arrangement combined with a dedicated semi-professional locker room and additional locker room space to accommodate multi-gender team issues. The traditional team room configuration co-locates two team rooms



centered on one toilet room with showers. As one team is on the ice, the other can be preparing to go out on the ice and vice versa.

2. The use of a low emissivity ceiling is recommended. This will save energy by minimizing the impacts of radiant heat on the ice and will capture heat that may be used to keep the spectators warm.
3. The dasher boards should be 42 inches high and include 4.5 foot high spectator shielding comprised of 5/8" tempered glass. The current glass is only 4 feet high and is comprised of 5/8" glass on the ends of the rink and 1/2" glass on the sides. The 1/2" glass has broken three (3) times in the recent past.
4. There should be consideration for the installation of synthetic practice ice. This is a plastic unrefrigerated ice that can be used for shooting and goalie practice year round. The City of Watertown has considered installing this previously but is not interested in pursuing.
5. It is important to keep the different occupant flows of an ice arena separated; there should not be crossover. The current arena configuration has spectators intermingling with players and, moreover, teams intermingling with other teams. The expectation should be to keep the spectators separated from the players, the teams to be separated from other teams, and the ice resurfacers to be separated from people in general. The bleacher configuration can be set up for back loading which allows the bleachers to be closer to the ice without have other spectators walking across the front row. Locker rooms will be set up to allow two (2) different access points to the ice. The ice resurfacers will have its own point of entry.
6. Sustainability is a continuous improvement opportunity for energy intensive ice arenas. Even though the City of Watertown has a low rate agreement with the local utility, which makes economics of energy-based changes more difficult to justify, there are still many opportunities that exist, including the following:

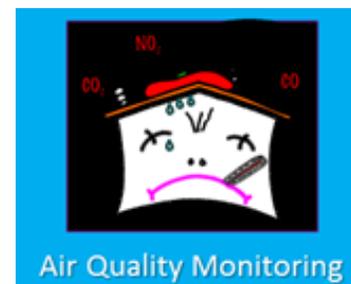


- a. Develop operating control strategies for building systems that minimize or eliminate the use of electricity during peak energy time of day which will help avoid high demand charges.

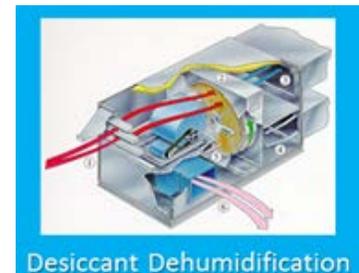


- b. Verify that the ice equipment is properly sized and energy-efficient. This can result in a 10 to 20 percent savings in the energy bill without compromising ice quality.

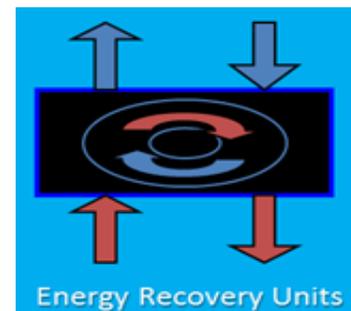
- c. For indoor facilities, maintaining air quality is critical, especially in arena spaces and locker rooms. Designing a variable flow rate ventilation system that allows the mechanical system to match the occupancy load can save energy without compromising air quality.



- d. A properly sized dehumidification system can save energy in the facility by reducing the refrigeration load on the ice, providing for a more comfortable environment for building users, minimize ice maintenance, and maintain a higher quality of air by keeping mold and mildew under control.



- e. Waste heat utilization from an ice rink refrigeration system can provide essentially free energy for a variety of facility heating needs. Waste heat can be used effectively for subsoil heating beneath the ice rink, snowmelt systems for melting the ice resurfacer shavings, domestic hot water preheat, building space heat, spectator bleacher heat, dehumidification reheat, swimming pool water heating, and water feature heating to mention a few applications.



- f. Lighting is another consideration. The fact that this arena is used for other purposes, including concerts, makes the use of natural lighting difficult without a means to control the light. However, the opportunities include:



- i. LED or Fluorescent lighting are dimmable and instant on at a significant energy savings over the existing metal halide lamps.
- ii. Multi-level lighting to match the event
- iii. Improved functionality and aesthetics.
- iv. Less maintenance with longer lamp life.



DESIGN OPTIONS

The design options that are available are based on several criteria, which include but are not limited to the following: site boundaries and requirements, infrastructure capacity and condition, and user requirements (as described previously). The following documents the existing conditions of each of these criteria and their respective opportunities for enhancing the Municipal Arena:

THE STRUCTURE

The Watertown Ice Rink and supporting structures include two separate structural systems. The Ice Rink building is an open floor plan, gable roof building and includes the following: a slab-on-grade concrete floor, brick masonry enclosure, steel truss roof structure supported on steel columns, open web joist purlins, and structural steel member bracing. A standing seam metal roof was installed over the purlins and was later coated with a urethane system. The building structure is founded on concrete spread footings and strip footings at the wall perimeter. The support building to the north is a single story flat roof building and includes the following: a slab-on-grade concrete floor, brick masonry enclosure, and a flat roof structure consisting of concrete plank on load bearing masonry walls. The building structure is founded on concrete strip footings for load bearing walls. Stantec performed the following to validate the integrity and capacity of the existing structure:

- Inspect and evaluate the existing roof trusses and support structure for maintenance and repair.
- Evaluate structure for roof loadings based on roof alternatives
- Make recommendations for required structural repairs or upgrades to structural members.

Visual Inspection Activities

The inspection consisted of a drawing review and visual observations. A detailed inspection of the Ice Rink roof deck was conducted at two locations using a lift for close access. The finding of the inspection is as follows:

- Ice Rink:
 - Slab-on-grade: The concrete slab overall in is good condition with only minor cracking and surface deficiencies typically located at the east end.
 - Brick Masonry Enclosure: The masonry enclosure is in good condition with isolated cracking in the brick masonry and impact damaged brick at corners generally at outside doors. Mortar joints were in good condition.



- Steel Truss Roof Structure, Bracing and Purlins: The steel truss roof structure and bracing is in very good condition with only deficiency being failed coating system.
- Steel Columns: The columns are in very good condition with only deficiency being the failed coating system.
- Metal Roof: The soffit of the metal roof is in good condition with similar paint coating failure. The top side of the metal deck exhibits urethane coating failure with exposed urethane foam.
- Lintels and Miscellaneous Metal: The steel lintels are in very good condition with only deficiency being the failed coating system.
- Single Story Structure:
 - Slab-on-grade: The concrete slab overall in is good condition with only minor cracking. The pit for Zamboni dumping exhibits moderate scaling.
 - Brick Masonry Enclosure: The masonry enclosure is in good-fair condition with isolated cracking in the brick masonry. Mortar joints are in good condition.
 - Roof Structure: The concrete plank soffit was in good condition with some minor staining at roof penetrations in the mechanical room.

Structural Analysis

The formal engineering analysis Stantec performed focused on the Steel Trusses, Purlins and Metal Deck for the Ice Arena. It also focused on the Pre-cast Planking for the One-Story Structure. The entire analysis, which is not complete, is included in Appendix G. However, the findings to date indicate that all members are adequate except for confirmation of the metal deck. Confirmation of this element is pending but in all likelihood will be replaced as part of the roof replacement, regardless.

THE SITE

The existing entrance to the building is nondescript with an unloading area adjacent to a relatively flat wall with many doors. Visitors are not provided with a clearly demarcated entry door. With reference to the sketch included in Appendix E, the arena's primary point of entry for patrons will be located at the southwest corner of the building facing traffic from William T. Field Drive. The building's new architecture will naturally draw visitors to the primary entrance and offer a sense of arrival. A new loading/unloading area would be incorporated at the entrance providing families and carpoolers a clear, safe and easily accessed point of destination.



The adjacent parking area to the south can be restriped with ninety degree parking (which may increase available parking) and also expanded/reconfigured along Field Drive. There is also an opportunity for additional parking (roughly seven spaces) at the southeast corner of the building. Anticipated parking totals for the southern lot will be refined as sketches progress and potential patron unloading areas are determined.

Arena users parking on the north side of the building will access a secondary pedestrian entrance located at the northwest corner of the addition. A new parking lot would be constructed within the lawn area between the site's existing access road and pool. A connection to the existing parking lot farther to the north would provide an alternate means of access to each area. In order to install the new parking lot, a secondary unloading area adjacent to the pedestrian entrance would be recommended.

A new parking area (approximately 40 spaces) with a separate building entrance is planned on the east side of the facility for staff, hockey players, Privateers and Event/Concert vehicles. This area is immediately to the east of the existing pool and to the west of the planned storage building. Controlled access to the existing park/picnic area to the north could be provided from the new parking lot. Additional parking could be incorporated along the easternmost property line adjacent to the chain link fence. This option will need to be explored as it may limit access to the back of the facility for larger vehicles.

Currently, parking for the facility is generally contained within two existing asphalt parking areas totaling approximately 184 striped spaces. Schematically, improvements to the site would yield approximately 308 parking spaces representing an increase of 184± spaces. As noted above, the total available number of future parking spaces will need to be refined as the building expansion options progress through final design.

ARENA CONCEPT – OPTION 1

Option 1 presents a solution that solves most of the operational challenges with the smallest footprint and cost. A detailed drawing of Option 1 can be found in Appendix B. The program spaces are kept compact yet meet the minimum requirements of the model program worksheet that was presented at the Design Charrette. A summary of this worksheet is included in Appendix A. A two level addition on the front and back of the existing building keeps the footprint compact yet provides the critical space associations needed for an efficient operation. This plan will work well and has appropriate space for 95% of the building functions but may pose some challenges during high occupancy events such as concert venues. It will be necessary to bring in temporary toilets to meet



the requirements for occupancies larger than approximately 2,500 people and this will need to receive the approval of local code officials. The primary features of Option 1 include the following:

Renovated Space

- **Team Rooms:** Four large non-dedicated team rooms that share common shower restrooms to function for normal team use for practice and games located immediately adjacent the rink with two independent access points to the ice to avoid team conflicts between periods and games. Multi-gender teams would have access to an additional smaller team room with showers located next to the existing refrigeration room. A large dedicated team room is part of a new back of the house addition which will be the home for the Privateers, a semi-pro team that operates from the arena.
- **Ice Resurfacer Room:** A new relocated ice resurfacer room provides adequate space for storing a backup ice resurfacer, a large snowmelt pit, access directly to outdoors and a location that keeps the ice resurfacer movements from endangering patrons and players at the back of the building.
- **Coaches Offices:** Four coaches offices located adjacent the team rooms near the new front lobby area provide desk, file and conference space for coaches of the semi-professional team, minor league hockey, high school hockey, and figure skating.
- **Referees Room:** A referee's room with restroom and shower is located near the back of the house by the existing refrigeration room with direct access to the rear parking lot.
- **Bleachers:** Permanent back loaded bleachers provided on the north side of the rink allow for better site lines on the ice, a walkway and viewing area along the back of the bleachers, and storage capacity below the bleachers if constructed with fire rated masonry. Along the south side of the rink a permanent bleacher arrangement is constructed in the center of the building which includes two smaller front loaded bleacher sections, relocated team, penalty and scorers boxes and the press box above and behind the column lines. Portable bleachers would be provided on each side of this bleacher arrangement that could be moved around for special events during the dry floor season.
- **Team Boxes:** Team, penalty and scorer's boxes would all be located to the south side of the ice sheet where they minimize the potential conflicts between the players and spectators. In addition this new location allows for much better site lines from the primary bleacher area on the north side of the rink.
- **Press Box:** The press box is relocated to the south side of the rink where it doesn't impact the spectator's site lines in the prime north side bleacher viewing



- area. The press box is also moved back from the rink to better accommodate viewing from the adjacent bleachers.
- **Skate Changing Area:** A skate changing area is provided near the new front lobby in the arena space to accommodate public skating sessions. We would anticipate benches with under-storage space for shoes and other belongings during the skating session.
 - **Storage:** An extensive storage space is generated beneath the permanent bleachers to accommodate a wide variety of users. This space can easily be compartmentalized to allow secure space for all storage needs.
 - **Workshop:** A dedicated workshop is provided under the permanent bleachers as well for area staff to keep tools and machines necessary for maintenance activities.
 - **Mezzanine:** A mechanical mezzanine is created over the ice resurfacer room to allow for indoor mechanical systems for easier maintenance.
 - **Heated Observation Corridor:** A heated observation corridor is created at the northwest corner of the rink which allows for unobstructed heated viewing of the activities in the arena. This area would be located adjacent to a video arcade and lounge area which are part of a new addition to the front of the arena.

New Back of House Two-Level Expansion:

- **Dedicated Locker-room:** A large dedicated locker-room for the Privateers complete with locker changing area, restroom and shower area and laundry room is provided on the lower level at the back of the house with direct access to the rear parking lot. The restroom/shower area would be designed to share with the Hospitality Suite during the summer dry floor season.
- **Hospitality Suite:** A permanent hospitality suite located on the lower level, which shares the Privateers restroom and shower space, will provide concert venues the needed space for performers. This space could also be used for other program activities when not in use for concerts.
- **Park and Recreation Maintenance Staff Area:** A second level park and recreation staff area includes a break room, training area, toilets and showers and an office for approximately 30 employees serving this function. The upper level would have direct access to the rear parking lot, the lower level via stairwell, and the upper level bleacher area.

New Front of House Two-Level Expansion:

- **Entry Vestibules:** Two entry vestibules are provided on the north and south side of the expansion with the primary entry on the south side which will be designed to clearly, visually define the front entry of the arena.



- **Office/Control:** A reception office will be located near the main entry which will be positioned to monitor patrons entering and leaving the facility. The reception office will be adjacent the service areas for concessions, first aid, skate rental and skate sharpening to allow for convenient multifunctioning during periods of low occupancy. The reception office will also serve as a ticketing station during events.
- **Concessions:** An expanded concessions area and concessions storage area is centrally located to serve concessions at a wide variety of events. We would anticipate that some vending equipment may be located adjacent the concession area to provide minimal concessions during low occupancy times when a concessions service attendant is not warranted.
- **Concessions Eating Area:** A concession eating area consisting of tables and chairs is located in the center of the lobby with adjacent viewing windows into the arena. This space could easily be converted to general lobby space when required by removal of the tables and chairs.
- **First Aid:** A small first aid station is located adjacent the arena with direct access into the arena space. Patrons requiring assistance can easily be moved into this space from the arena and rest there until further assistance arrives.
- **Skate Rental/Skate Sharpening:** Skate rental and sharpening is located adjacent to the concession area for ease of multifunctioning during slow times and this space could service rental customers directly in to the arena space through a direct access service window.
- **Party/Multipurpose:** A larger room designed to serve as a party room or multipurpose room is located in the lobby area. This room will be capable of subdividing into two smaller rooms with a movable wall that will add flexibility to its program use. The party rooms have become popular for catering birthday party events at ice arenas and only require tables, chairs and a small sink and countertop for servicing the party.
- **Lobby:** A large lobby allows for circulation, mingling and viewing the ice activities through large viewing windows located in the arena wall. Clear site lines allow for ease of way finding to the appropriate destination. A large staircase will clearly identify access to the second level where bleacher access, programming and operations staff, aerobics room, heated viewing, lounge and video arcade are located. Access will be provided from exterior parking lots to north and south entrance vestibules and an elevator will provide ADA access to the second level.
- **Toilet Rooms:** Large public restrooms are located on the north side of the lobby to service public needs. The restroom is sized for the normal occupancy loads for hockey and figure skating practice, games and events during the skating season and normal occupancy events during the dry floor season. Large occupancy



events will require additional outdoor portable toilets to be provided to meet the needs and code requirements. It is anticipated that these facilities may be located to the north of the permanent restrooms and have access directly from the restrooms. A temporary fence would need to be installed to provide security to the building.

- **Administrative Offices:** A second floor administrative office area is provided complete with one primary arena manager's office and three smaller support offices along with a small restroom and conference room. This area would be accessible to facility and parks and recreation customers from the second level.
- **Aerobics Room:** A room dedicated to aerobic exercise programs is located along the north end of the second floor of the building with glass walls and viewing into the access corridor as well as views to the park to the north.
- **Video Arcade:** A small video arcade is provided just off the second floor corridor for video machine play.
- **Lounge:** A heated second floor lounge area overlooking the lobby below and indirectly into the arena through the heated observation area will provide some rest and refuge for those in need. This area will include comfortable lounge chairs and lighting.
- **Corridor:** A second floor corridor for access to the back loaded bleachers will provide the primary access to spectator seating on the north side of the arena.

ARENA CONCEPT – OPTION 2

Option 2 presents a solution that solves most of the operational challenges with a mid-level footprint and cost. A detailed drawing of Option 2 can be found in Appendix C. The program spaces vary in size, in comparison to the other two options, but fall in the medium-to-large requirements of the model program worksheet that was presented at the Design Charrette. A two level addition on the front and back of the existing building provides the critical space associations needed for an efficient operation. This plan will work well and has appropriate space for nearly all of the building functions and should easily accommodate high occupancy events such as concert venues.

Renovated Space

- **Team Rooms:** Four large non-dedicated team rooms that share common shower restrooms to function for normal team use for practice and games located immediately adjacent the rink with two independent access points to the ice to avoid team conflicts between periods and games. Multi-gender teams would have access to an additional smaller team room with showers located next to the existing refrigeration room. A large dedicated team room is part of a new back



- of the house addition which will be the home for the Privateers, a semi-pro team that operates from the arena.
- Ice Resurfacers Room: A new relocated ice resurfacers room provides adequate space for storing a backup ice resurfacers, a large snowmelt pit, access directly to outdoors and a location that keeps the ice resurfacers movements from endangering patrons and players at the back of the building.
 - Coaches Offices: Four coaches offices located adjacent the team rooms near the new front lobby area provide desk, file and conference space for coaches of the semi-professional team, minor league hockey, high school hockey, and figure skating.
 - Referees Room: A referee's room with restroom and shower is located near the back of the house by the existing refrigeration room with direct access to the rear parking lot.
 - Bleachers: Permanent back loaded bleachers provided on the north side of the rink allow for better site lines on the ice, a walkway and viewing area along the back of the bleachers, and storage capacity below the bleachers if constructed with fire rated masonry. Along the south side of the rink a permanent bleacher arrangement is constructed in the center of the building which includes two smaller front loaded bleacher sections, relocated team, penalty and scorers boxes and the press box above and behind the column lines. Portable bleachers would be provided on each side of this bleacher arrangement that could be moved around for special events during the dry floor season.
 - Team Boxes: Team, penalty and scorer's boxes would all be located to the south side of the ice sheet where they minimize the potential conflicts between the players and spectators. In addition this new location allows for much better site lines from the primary bleacher area on the north side of the rink.
 - Press Box: The press box is relocated to the south side of the rink where it doesn't impact the spectator's site lines in the prime north side bleacher viewing area. The press box is also moved back from the rink to better accommodate viewing from the adjacent bleachers.
 - Skate Changing Area: A skate changing area is provided near the new front lobby in the arena space to accommodate public skating sessions. We would anticipate benches with under-storage space for shoes and other belongings during the skating session.
 - Storage: An extensive storage space is generated beneath the permanent bleachers to accommodate a wide variety of users. This space can easily be compartmentalized to allow secure space for all storage needs.
 - Workshop: A dedicated workshop is provided under the permanent bleachers as well for area staff to keep tools and machines necessary for maintenance activities.



- Mezzanine: A mechanical mezzanine is created over the ice resurfacers room to allow for indoor mechanical systems for easier maintenance.

New Back of House Two-Level Expansion:

- Dedicated Locker-room: A large dedicated locker-room for the Privateers complete with locker changing area, restroom and shower area and laundry room is provided on the lower level at the back of the house with direct access to the rear parking lot. The restroom/shower area would be designed to share with the Hospitality Suite during the summer dry floor season.
- Hospitality Suite: A permanent hospitality suite located on the lower level, which shares the Privateers restroom and shower space, will provide concert venues the needed space for performers. This space could also be used for other program activities when not in use for concerts.
- Park and Recreation Maintenance Staff Area: A second level park and recreation staff area includes a break room, training area, toilets and showers and an office for approximately 30 employees serving this function. The upper level would have direct access to the rear parking lot, the lower level via stairwell, and the upper level bleacher area.

New Front of House Two-Level Expansion:

- Entry Vestibules: Two entry vestibules are provided on the west (street) side of the expansion. These entranceways will be clearly, visually defined as the main entry points for the arena.
- Office/Control: A reception office will be located near the main entry which will be positioned to monitor patrons entering and leaving the facility. The reception office will stand alone from skate rental and concessions. The reception office will also serve as a ticketing station during events.
- Concessions: An expanded concessions area and concessions storage area is centrally located to serve concessions at a wide variety of events. We would anticipate that some vending equipment may be located adjacent to the concessions area to provide minimal concessions during low occupancy times when a concessions service attendant is not warranted.
- Concessions Eating Area: A concessions eating area consisting of tables and chairs is located in the center of the lobby with adjacent viewing windows into the arena. This space could easily be converted to general lobby space when required by removal of the tables and chairs.
- Pro Shop: A small pro shop is located adjacent to one of the open stairways with direct access into the arena lobby space. Patrons needing supplies or new equipment can easily obtain these items during an event.



- **First Aid:** A small first aid station is located adjacent the arena with direct access into the arena space. Patrons requiring assistance can easily be moved into this space from the arena and rest there until further assistance arrives.
- **Skate Rental/Skate Sharpening:** Skate rental and sharpening is located adjacent to the concessions area for ease of multifunctioning during slow times.
- **Party/Multipurpose:** A larger room designed to serve as a party room or multipurpose room is located adjacent to the lobby area. This room will be capable of subdividing into two smaller rooms with a movable wall that will add flexibility to its program use. The party rooms have become popular for catering birthday party events at ice arenas and only require tables, chairs and a small sink and countertop for servicing the party.
- **Lobby:** A large lobby allows for circulation, mingling and viewing the ice activities through large viewing windows located in the arena wall. Clear site lines allow for ease of way finding to the appropriate destination. Two staircases will clearly identify access to the second level where bleacher access, programming and operations staff, aerobics room, heated viewing, lounge and video arcade are located. Access will be convenient from exterior parking lots to north and south entrance vestibules and an elevator will provide ADA access to the second level.
- **Toilet Rooms:** Large public restrooms are located on the north and south side of the lobby to service public needs. The restroom is sized for normal occupancy loads for hockey and figure skating practice, games and events during the skating season and normal occupancy events during the dry floor season as well as large occupancy events. The toilet rooms on the first level and second level will be stacked. Separate toilet rooms will be located on the north side of the building will be accessed only from the outside of the facility. These rooms will be used during the warmer weather months and support the outside functions that occur at the arena and surrounding properties.
- **Administrative Offices:** An administrative office area is provided on the second level complete with one primary arena manager's office, three smaller support offices, a conference room, a small restroom and some administrative support / file space. This area would be accessible to facility and parks and recreation customers from the second level.
- **Aerobics Room:** A second level room dedicated to aerobic exercise programs is located along the south end of the building with glass walls and viewing into the access corridor as well as views to the south.
- **Video Arcade:** A small video arcade is provided just off the second level corridor for video machine play.
- **Lounge:** A heated lounge area on the second level overlooking the lobby below and with views directly into the arena through the heated observation area will



- provide some rest and refuge for those in need. This area will include comfortable lounge chairs and lighting.
- Corridor: A second level corridor for access to the back loaded bleachers will provide the primary access to spectator seating on the north side of the arena.

ARENA CONCEPT – OPTION 3

Option 3 presents a solution that solves what we understand to be all of the operational challenges with an expansive footprint and cost. A detailed drawing of Option 3 can be found in Appendix D. The program spaces vary in size, in comparison to the other two options, but fall in the larger sized requirements of the model program worksheet that we presented at the Design Charrette. A two level addition on the front and back of the existing building provides the critical space associations needed for an efficient operation. This plan will work well and has appropriate space for all of the building functions and should easily accommodate high occupancy events such as concert venues.

Renovated Space

- Team Rooms: Four large non-dedicated team rooms that share common shower restrooms to function for normal team use for practice and games located immediately adjacent the rink with two independent access points to the ice to avoid team conflicts between periods and games. Multi-gender teams would have access to an additional smaller team room with showers located next to the existing refrigeration room. A large dedicated team room is part of a new back of the house addition which will be the home for the Privateers, a semi-pro team that operates from the arena.
- Ice Resurfacer Room: A new relocated ice resurfacer room provides adequate space for storing a backup ice resurfacer, a large snowmelt pit, access directly to outdoors and a location that keeps the ice resurfacer movements from endangering patrons and players at the back of the building.
- Coaches Offices: Four coaches offices located adjacent the team rooms near the new front lobby area provide desk, file and conference space for coaches of the semi-professional team, minor league hockey, high school hockey, and figure skating.
- Referees Room: A referee's room with restroom and shower is located near the back of the house by the existing refrigeration room with direct access to the rear parking lot.
- Bleachers: Permanent back loaded bleachers provided on the north side of the rink allow for better site lines on the ice, a walkway and viewing area along the back of the bleachers, and storage capacity below the bleachers if constructed with fire rated masonry. Along the south side of the rink a permanent bleacher



arrangement is constructed in the center of the building which includes two smaller front loaded bleacher sections, relocated team, penalty and scorers boxes and the press box above and behind the column lines. Portable bleachers would be provided on each side of this bleacher arrangement that could be moved around for special events during the dry floor season.

- **Team Boxes:** Team, penalty and scorer's boxes would all be located to the south side of the ice sheet where they minimize the potential conflicts between the players and spectators. In addition this new location allows for much better site lines from the primary bleacher area on the north side of the rink.
- **Press Box:** The press box is relocated to the south side of the rink where it doesn't impact the spectator's site lines in the prime north side bleacher viewing area. The press box is also moved back from the rink to better accommodate viewing from the adjacent bleachers.
- **Skate Changing Area:** A skate changing area is provided near the new front lobby in the arena space to accommodate public skating sessions. We would anticipate benches with under-storage space for shoes and other belongings during the skating session.
- **Storage:** An extensive storage space is generated beneath the permanent bleachers to accommodate a wide variety of users. This space can easily be compartmentalized to allow secure space for all storage needs.
- **Workshop:** A dedicated workshop is provided under the permanent bleachers as well for area staff to keep tools and machines necessary for maintenance activities.
- **Mezzanine:** A mechanical mezzanine is created over the ice resurfacers room to allow for indoor mechanical systems for easier maintenance.

New Back of House Two-Level Expansion:

- **Dedicated Locker-room:** A large dedicated locker-room for the Privateers complete with locker changing area, restroom and shower area and laundry room is provided on the lower level at the back of the house with direct access to the rear parking lot. The restroom/shower area would be designed to share with the Hospitality Suite during the summer dry floor season.
- **Hospitality Suite:** A permanent hospitality suite located on the lower level, which shares the Privateers restroom and shower space, will provide concert venues the needed space for performers. This space could also be used for other program activities when not in use for concerts.
- **Park and Recreation Maintenance Staff Area:** A second level park and recreation staff area includes a break room, training area, toilets and showers and an office for approximately 30 employees serving this function. The upper



level would have direct access to the rear parking lot, the lower level via stairwell, and the upper level bleacher area.

New Front of House Two-Level Expansion:

- **Entry Vestibules:** Two entry vestibules are provided on the north and south side of the expansion with the primary entry on the south side which will be designed to clearly, visually define the front entry of the arena.
- **Office/Control:** A reception office will be located near the main entry which will be positioned to monitor patrons entering and leaving the facility. The reception office will stand alone from skate rental and concessions. The reception office will also serve as an exterior ticketing station during events.
- **Concessions:** An expanded concessions area and concessions storage area is centrally located to serve concessions at a wide variety of events. We would anticipate that some vending equipment may be located adjacent to the concessions area to provide minimal concessions during low occupancy times when a concessions service attendant is not warranted.
- **Pro Shop:** A small pro shop is located adjacent the concessions area with direct access into the arena lobby space. Patrons needing supplies or new equipment can easily obtain these items during an event.
- **Concessions Eating Area:** A concession eating area consisting of tables and chairs is located in the center of the lobby with adjacent viewing windows into the arena. This space could easily be converted to general lobby space when required by removal of the tables and chairs.
- **First Aid:** A small first aid station is located adjacent the arena with close indirect access into the arena space. Patrons requiring assistance can easily be moved into this space from the arena and rest there until further assistance arrives.
- **Skate Rental/Skate Sharpening:** Skate rental and sharpening is located adjacent the south entrance and near an arena entrance point.
- **Party/Multipurpose:** A larger room designed to service as a party room or multipurpose room is located adjacent to the arena and lobby areas. This room will be capable of subdividing into two smaller rooms with a movable wall that will add flexibility to its program use. The party rooms have become popular for catering birthday party events at ice arenas and only require tables, chairs and a small sink and countertop for servicing the party.
- **Lobby:** A large lobby allows for circulation, mingling and viewing the ice activities through large viewing windows located in the arena wall. Clear site lines allow for ease of way finding to the appropriate destination. A large monumental staircase will clearly identify access to the second level where



bleacher access, programming and operations staff, aerobics room, heated viewing, lounge and video arcade are located. Access will be convenient from exterior parking lots to north and south entrance vestibules and an elevator will provide ADA access to the second level.

- **Toilet Rooms:** Large public restrooms are located on the north side of the lobby to service public needs. The restroom is sized for the normal occupancy loads for hockey and figure skating practice, games and events during the skating season and normal occupancy event during the dry floor season as well as for large occupancy events. The toilet rooms will have a smaller toilet facility incorporated into the north end that can be isolated by a roll-up door. This feature serves a dual purpose: first, it will allow outdoor public use of the smaller toilet facility during the warm weather months; second, during large occupant venues the north end of the toilet rooms can be opened up and access from the interior for use by the patrons.
- **Administrative Offices:** An administrative office area on the second level is provided complete with one primary arena manager's office, three smaller support offices, a conference room, a small restroom and some administrative support / file space. The administrative offices are located such that they have direct views into the arena proper. This area would be accessible to facility and park and recreation customers from the second level.
- **Aerobics Room:** A room dedicated to aerobic exercise programs is located along the north end of the building on the second level with views to the north park area.
- **Video Arcade:** A small video arcade is provided just off the second level corridor for video machine play.
- **Lounge:** A second level heated lounge area overlooking the lobby below and with views directly into the arena through the heated observation area will provide some rest and refuge for those in need. This area will include comfortable lounge chairs and lighting.
- **Corridor:** A second level corridor for access to the back loaded bleachers will provide the primary access to spectator seating on the north side of the arena.

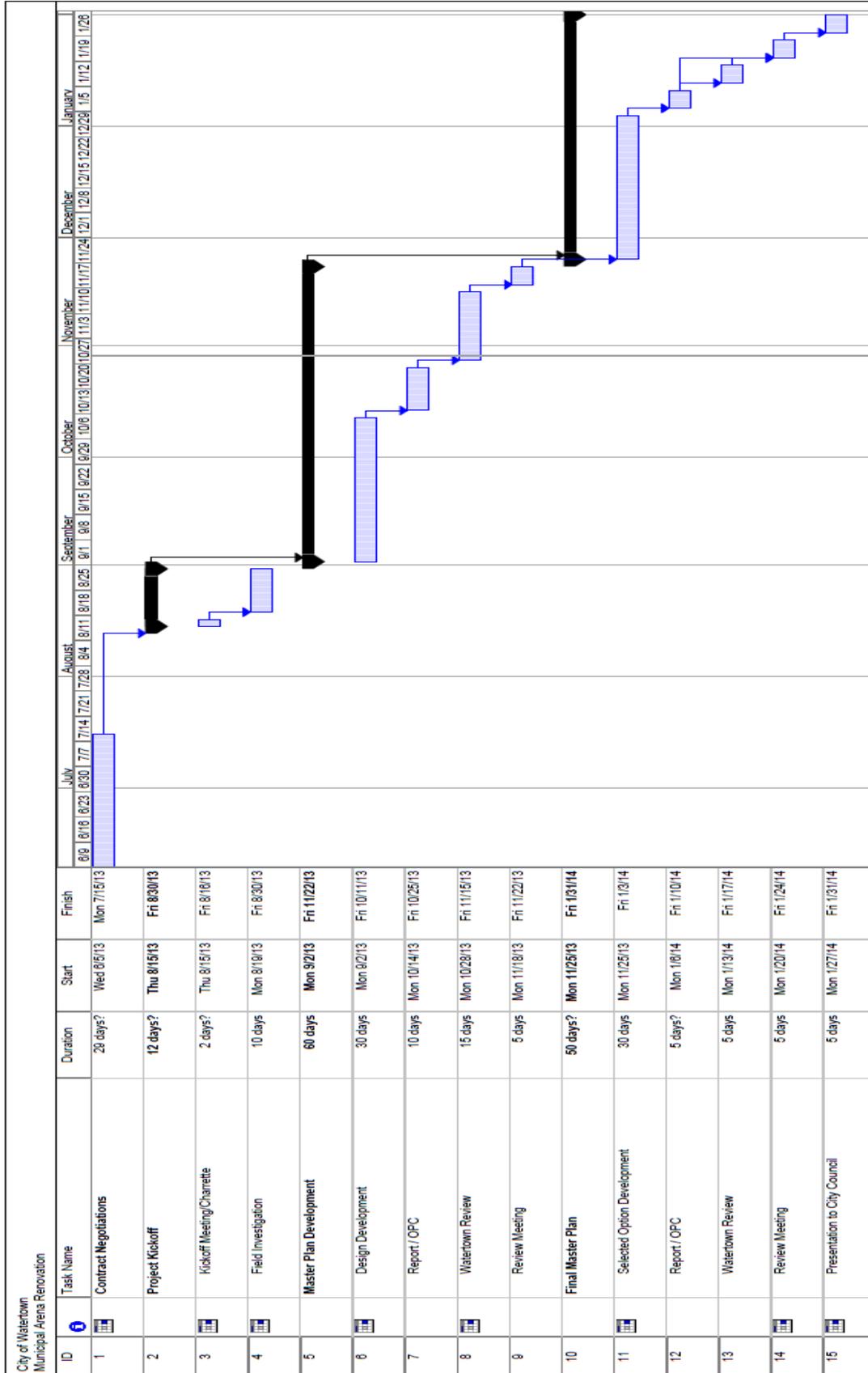


OPINION OF PROBABLE COST

SERVICES	OPTION 1			OPTION 2			OPTION 3		
	Square Feet	Cost/S.F.	Total Cost	Square Feet	Cost/S.F.	Total Cost	Square Feet	Cost/S.F.	Total Cost
Construction									
Building Additions	14179	\$ 225	\$ 3,190,275	17818	\$ 225	\$ 4,009,050	18046	\$ 225	\$ 4,060,350
Building Renovations	13050	\$ 175	\$ 2,283,750	13122	\$ 175	\$ 2,296,350	13222	\$ 175	\$ 2,313,850
Building Construction Sub-Total	27229		\$ 5,474,025	30940		\$ 6,305,400	31268		\$ 6,374,200
Existing Roof Replacement	41760	\$ 14	\$ 584,640	41760	\$ 14	\$ 584,640	41760	\$ 14	\$ 584,640
Site			\$ 300,000			\$ 300,000			\$ 300,000
Direct Cost Sub-Total			\$ 6,358,665			\$ 7,190,040			\$ 7,258,840
Contingency									
20% Contingency			\$ 1,271,733			\$ 1,438,008			\$ 1,451,768
3% Escalation			\$ 190,760			\$ 215,701			\$ 217,765
Total Construction Cost			\$ 7,821,158			\$ 8,843,749			\$ 8,928,373
Soft Cost									
7% Consultant Fee			\$ 547,481			\$ 619,062			\$ 624,986
3% Construction Management			\$ 234,635			\$ 265,312			\$ 267,851
15% FF&E			\$ 1,173,174			\$ 1,326,562			\$ 1,339,256
Total Soft Cost			\$ 1,955,289			\$ 2,210,937			\$ 2,232,093
GRAND TOTAL			\$ 9,776,447			\$ 11,054,687			\$ 11,160,467



PROJECT SCHEDULE



SECTION A

Meeting Notes



Stantec

Watertown Municipal Arena Building Upgrade Project Kickoff Meeting / Design Charrette

Stantec Project Number 191060204

Date/Time: 8/15-16/2013
Place: Watertown – Citibus Office
Next Meeting: TBD
Attendees: Erin Gardner, Jerome Romig, Kurt Hauk, Justin Wood, Stuart Shrauger, Gary Garwig, Mel Farmer, Roger Kelemecz, Jim Maland, Jeri Pickett
Absentees: Bill Pulse
Distribution: Attendees

Item:	Action:
1. The Team made introductions.	Stantec to Issue Contact List
2. The Team reviewed the Project Understanding as indicated in the RFP and Stantec's subsequent proposal; refer to the respective attachments in Tab A.	
3. The Team reviewed the Scope of Work and anticipated deliverables. Stantec intends to provide a Master Plan for the facility with the following documents: a. Description of Existing Conditions b. Prioritized List of Needs and Wants c. Options for Improvements d. Opinions of Probable Cost e. Recommended Schedule of Implementation f. Graphic Representation of Key Improvements	
4. The Team defined the uses for the facility: a. Ice runs mid-September to the end of March i. Semi-Pro Hockey (Privateers) ii. High School Hockey (boys/girls) iii. Recreation Hockey iv. Figure Skating Club v. Public Skating b. Concerts/Shows During non-ice period (ice isn't covered) i. Usually 8 – 10 Concerts ii. Shows every week: 1. Boxing / MMA 2. Circus 3. Senior Fair	

One Team. Infinite Solutions.

4. Roller Derby
 5. Italian American Festival
 6. Food Shows
 7. Demolition Derby
 8. Fair (including site)
 9. Wrestling
- c. Summer Rec Program uses arena when raining
 - d. Access to the Restrooms causes early closure of the facility
 - e. Year-round ice would force the concerts and shows to move to another site
 - f. JCC may build a community center:
 - i. No ice
 - ii. Indoor sports fields (turf)
 - iii. Would be on JCC property
 - iv. Potential bubble dome for tennis
 - g. There is a lot of work required between functions for setup by staff.
 - h. Potential for new bleachers due to previous safety incident in 2012
 - i. Pool was recently resurfaced; 3 pools in community total
 - j. Parking issues arise during Privateers Hockey, primarily during heavy snow periods, and during concerts.
 - k. A Pole Barn will be constructed in the North East corner of the property. A 50x100 Butler Building.
 - l. Some interest previously expressed in:
 - i. Indoor Tennis
 - ii. Second sheet of ice (city council not interested)
5. The Team discussed the Service Market:
- a. Reviewed the attached Service Competition Map within a 60 Mile radius. Refer to Tab B.
 - b. Patrons come from as far away as 60 miles typically for hockey and figure skating (including Ottawa)
 - c. Privateers draw people from beyond 60 miles
 - d. Concerts, Fairs, and MMA draw from beyond 60 miles including Syracuse and Canada
 - e. Typical users are within 30 miles (Clayton)
 - f. Most of competition is seasonal like Watertown but Cicero is year-round ice.
 - g. Hockey interest seems to have dropped due to costs
 - h. Some interest in outside rink but weather is issue
 - i. JCC has performed a study on regional ice rinks
6. The Team discussed the User's Expectations:
- a. People want the facility improved: lobby, restrooms,

Erin to provide
copy of the study

- concessions, locker rooms
- b. The ice is recognized as being premiere
- c. The arena is not set up well for family activities
- d. Belief that the facility will attract more people if improvements are made
- e. Concerts require dressing room and dedicated bathrooms for performers.
- f. Need a structure (rigging) to support concert performer's speaker systems. Currently it can take a few days of City electricians' time to setup the electric and rigging to support requirements.
- g. Not enough bathrooms to supports the quantity of people at concerts
- h. Efficiency of the ice is at maximum with 10minutes between changeover of events.
- i. Number of teams the arena can support is minimized by the number of available locker rooms.
- j. Was interest in a second sheet of ice until interest in hockey dropped (lacrosse is peaking)
- k. 28,000 people in City; draw from ~50,000
- l. A/C is used for summer events; issues with cooling with 2,000 people or more.
- m. CoRayVac Infrared Heating system only source of heating and keeps the facility about 10 degrees warmer than the ambient temperature; needs repair.
- n. No fresh air / ventilation for the lobby area
- o. Ventilation in the arena is untreated / raw outside air.
- p. Need to provide separation of the spectators, the players and the officials.
- q. Need better control of the entrances and ticket sales
- r. Need a larger, more inviting lobby
- s. Need to expand access to Concessions
- t. Restrooms need to be updated, better ventilation
- u. Need handicap accessibility
- v. Need to eliminate cross-traffic with the Zamboni
- w. New bleachers would help (sight, comfort, safety)
- x. Area for catering and eating would be helpful
- y. New Roof needed.
- z. Need new lighting. They have grant from NYSERDA for new lights. Existing Metal Halide works ok but long strike time. There are TV broadcasts to consider for light levels.
- aa. Need new showers and locker rooms
- bb. Would like large meeting room(s)
- cc. Heated viewing would be good.
- dd. Potential for bar area.
- ee. Currently bring in trailer for performers to change; pipe into sewer. Would like permanent changing rooms.
- ff. Potential to sub out the concessions

gg. City Council sets the rates. Currently \$70 per hour for kids and \$80 per hour for adults. Rest of events are based on contracts. The arena typically loses financially on an annual basis.

7. The Team viewed the "What's Hot on Ice" presentation:

- a. Need a designated Team Room that could be used as the Summer Concert Changing Room
- b. Entertainment area/room should be co-located with Skate Rental / Changing
- c. Local kids tend not to shower while travelers do.
- d. Need to walk in hallway to access showers (concern over kids walking around in towels)
- e. Privateers are contracted for a private room; High School would like it.
- f. High School, Minor hockey, and figure skating have been using the facility for 30 years.
- g. YMCA across the street has weight room and turf fields.
- h. Would like to make the sound system and power connections for concerts easier to assemble.
- i. A party room is of interest
- j. Acoustics of the facility aren't bad. (loud transformer vibration present)
- k. Low Emissivity Ceiling would be good to avoid impacts of radiant heat during the shoulder seasons.
- l. Ice is kept at 22 degrees; interior space usually 45 to 50 degrees to November and then tracks outdoor ambient temperature. Complaints it is too cold.
- m. There are humidity issues during shoulder seasons even though there is a desiccant system (stalagmites).
- n. Arena is 85 x 200 (NHL); Cicero is Olympic size.
- o. Zamboni is gasoline fueled; tried and didn't like the electric unit.
- p. City has hydrogenerator and is contracted to National Grid thru 2029. Sells power back to grid at 17.5 cents per kwh. They do not pay SBC charge but have been successful in getting NYSERDA incentives in the past.
- q. Stantec would like to get at least 2 years of previous utility bills
- r. Refrigerant is R-134; may have previously been ammonia based.
- s. Geothermal and other sustainable systems are difficult to economically justify due to the good rates the City gets for electric.
- t. Looking to establish a Maintenance Service Agreement once the project is complete. Current service provided out of Syracuse on as-needed basis.

Justin to provide
utility history

- u. Previous push for the installation of practice ice but it lost support.
 - v. Dasherboards are 20 years old. The board is 4 feet high and the glass is also 4 feet high. The glass is 5/8" at ends and 1/2" on the sides. It has broken 3 times over the years.
 - w. There is no curling.
 - x. Facility is used as an emergency shelter. There is not a standby generator but portable generators are available.
 - y. Refrigerant lines in the floor seem to be ok. There was one problem with the lines being air locked but don't seem to be compromised.
 - z. There is no air quality measuring currently taking place.
8. The Team reviewed and rated the Program Interest Survey. Refer to the attached documents in Tab C for a final summary of the priority ranking. The items ranked 1 and 2 (low) were determined not to be of interest to the City. The following comments were also noted:
- a. The staff at the arena consists of approximately 30 people (full time and part time). This is what a break room should be able to support.
 - b. Concessions serves the ice arena and outdoor events; not the pool.
 - c. Multipurpose room could be set up to be one large room that could be divided into smaller rooms.
 - d. Administration should consist of 4 offices plus one Conference Room. They also need dedicated bathrooms with a shower. This area should be located at the front of the building.
 - e. Maintenance needs 5 lockers and should be located in the back.
 - f. Outdoor accessible bathrooms should be 2 that are gas-station-like. This is for campers. Refer to Tab E for camper locations.
 - g. Ticket booth should be in a pre-lobby area.
 - h. Need 4 coaches rooms: Privateers, minor hockey, IHC high school, Figure Skaters.
 - i. Co-locate first aid with Skate Rental and Concessions
 - j. Concert power source tie-in should be above Zamboni room.
 - k. The site currently has 2 electric services (Ralph Green):
 - i. 480/277V for the Arena and Site lighting
 - ii. 208/120V mostly for the pool with some sprawl into the Arena.
 - l. Interest in a 200sqft Pro Shop
 - m. Need some vending machine area

Stantec

August 15, 2013
Watertown Municipal Arena Building Upgrade
Project Kickoff Meeting / Design Charrette
Page 6 of 7

- n. Press Box should be the same size as current.
 - o. First Aid is available to Life Guards; don't want dedicate room for them; need them on the pool deck.
 - p. Opportunities exist to locate mechanical equipment to the existing flat roof.
 - q. Need to keep sight of the sustainability opportunities (PV, etc). Not interested in PHEV charging stations.
 - r. Referees are 3 to 5 people and will all be in one room with toilets and shower.
 - s. Need a Municipal Arena Sign
 - t. Need a Digital marquee.
 - u. Need some space dedicated to the sale of beer. Currently bring in small trailer.
 - v. Someone needs to be located on the ground floor (Celia) for receiving people or packages.
9. The Team reviewed the seating options available. Refer to the attached seating chart for concerts in Tab D:
- a. Maximum seating for hockey is currently 1260.
 - b. Maximum seating for concerts is currently 3200. Arena has Maximum seating limit of 3074 posted in the facility.
 - c. With the current facility arrangement the City has received a quote for new bleachers that would expand seating to 1500 with having to reconfigure anything.
 - d. Being able to accommodate 4000 people would make the facility attractive to performers with larger notoriety.
10. The Team performed a Facility Condition Assessment. Refer to the attached Functional Ratings documents and an updated drawing of the existing facility in Tab E.
11. The Team reviewed Concepts developed during the evening of the 15th:
- a. The parking lot concept was able to accommodate up to 313 cars, not including handicap spots that will be required. Refer to the attached concept drawing in Tab F.
 - b. The building concepts were discussed and one of several sketches were reviewed in detail. Refer to the attached concept drawing in Tab G.
12. The Team reviewed the project schedule moving forward:
- a. Stantec will issue Meeting Minutes summarizing the events of the Charrette within 2 weeks.
 - b. Overall Master Plan should be completed by mid-winter with budgeting information available by mid-march.

Stantec to provide examples of indoor snowmelt pits

Jeri to issue Meeting Minutes

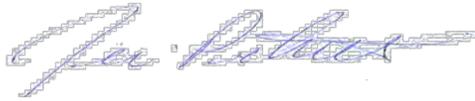
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- c. June 30th is annual budget approval
- d. Construction would be planned for April 1st, 2015 when arena is closed. September 15th is the start of the ice season and should be the end of construction in and around ice area. Arena would be closed during this period with other activities redirected to other places.

The meeting adjourned at 4:00PM on 8/15; 12:30PM on 8/16
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

STANTEC CONSULTING SERVICES INC.



Jeri Pickett, PE, LEED BD+C
Project Manager
jeri.pickett@stantec.com

Attachment:

- c. Team

Agenda



Stantec

Watertown Municipal Arena Building Upgrade Project Kickoff Meeting / Design Charrette Day 1 - August 15, 2013

Time:	Item:
8:00AM	Introductions
8:05AM	Review Project Understanding
8:20AM	Overview – Scope of Work & Deliverables
8:35AM	Definition of Facility Use <ul style="list-style-type: none">• Primary Building & Site Functions• Secondary Building & Site Functions
9:05AM	Service Market and User Expectations
9:35AM	Break
9:45AM	Visioning Exercise – “What’s Hot on Ice”
10:45AM	Visioning Exercise – Program Matrix Survey
11:45AM	Break for Lunch
1:00PM	Visioning Exercise – Program Matrix Survey (Continued)
2:00PM	Facility Condition Assessment
4:00PM	Data Review and Concept Development (Stantec Only)
6:00PM	Adjourn

Agenda



Stantec

Watertown Municipal Arena Building Upgrade Project Kickoff Meeting / Design Charrette Day 2 - August 16, 2013

Time:	Item:
8:00AM	Review of Day 1 Findings and Concepts
9:00AM	Break
9:10AM	Validation and Prioritization
10:10AM	Solitary Review (Watertown without Stantec)
10:40AM	Potential Problem Analysis / Brainstorming Session
11:40AM	Summary and Path Forward
12:00PM	Adjourn

TAB A



CITY OF WATERTOWN, NEW YORK

DEPARTMENT OF ENGINEERING

Suite 305, City Hall
245 Washington Street
Watertown, New York 13601

Tel. (315) 785-7740
Fax (315) 785-7829

RECEIVED

MAR 27 2013

STANTEC

March 22, 2013

STANTEC Consulting Services Inc.
ATTN: Mr. David Balthaser, PE
61 Commercial Street
Rochester NY 14614

Re: Fairgrounds Municipal Arena Building Upgrade Request for Proposals

Dear Mr. Balthaser,

The City of Watertown Engineering Department is requesting proposals for design of the rehabilitation of the Municipal Arena located at the Watertown Fairgrounds. A scope of work for the project is enclosed. The proposal should include the following:

1. Information on each key staff member: Proposed role, relevant experience, certifications and licenses.
2. Availability of key staff with a listing of current assignments that require 20% or more of their time.
3. A listing of proposed sub-consultants with the information outlined in #1 and #2 above.
4. Firm's experience with similar work completed in the last five years, with references.
5. Overall understanding of the project and confirmation of the ability to meet the required timeline listed in the scope of work.
6. A separate fee proposal should be provided in a separate sealed envelope. Fee proposals will only be opened for short listed firms. The fee proposal will be used as the starting point for negotiations of a final scope and fee for the selected firm.

Firms are to contact Justin Wood at (315) 785-7740, to schedule a walkthrough of the facility.

Proposals are due on 26 April 2013 at 4:00 PM at the City of Watertown Engineering Office, Suite 305.

Please contact me or Justin Wood at (315) 785-7740 with questions or for additional information.

Sincerely,

Kurt W. Hauk P.E.
City Engineer

Encl.
Cc: File

SCOPE OF WORK
FAIRGROUNDS MUNICIPAL ARENA BUILDING UPGRADES
3-22-2013

I. Project Description:

The Fairgrounds Municipal Arena is an approximately 43,000 SF facility that hosts many events year round. These events include concerts, trade shows, nonprofit events, and a semi-pro hockey team. The arena is also used for public ice skating and local high school and youth hockey teams. The City of Watertown is seeking to rehabilitate the existing structure and looking to expand the amenities offered to provide an enhanced facility more suited to year-round operations at a more intense level of usage.

There are four areas that require structural repair or upgrading to continue the long term use of the arena by the public. A brief description of each issue follows below.

1. Roof System: During heavy rain events combined with high winds, water drips onto the floor causing approximately twenty puddles of varying sizes on the floor. The puddles are mostly down the center of the building but not limited to that area. It is unclear if the situation is leakage of the roof system itself, a failure of the roof vent, or a combination of both. There has also been anecdotal evidence of water drips onto the skating rink during the winter months.

2. Roof Truss System: The roof trusses have not received any maintenance or upgrade since the original roof installation. The paint system is reaching the end of its service life. It is unclear if the current truss system would meet the load requirements of the current Building Code.

3. Fire Suppression System: The existing fire suppression system has undergone repairs several times during the last few years. The overall system has not been upgraded since its installation and it only services the main arena area.

4. Concrete Floor: The floor exhibits deterioration in several areas of the main arena. There is piping and ductwork cast into the floor that may be contributing to this situation.

There are several areas of the Fairgrounds Municipal Arena that are in need of rehabilitation or expansion to improve the operations and utilization of the facility. A brief description of each is listed below.

1. The four existing locker rooms are in need of renovation and three of the four require expansion to allow for greater flexibility when conducting multiple events. A fifth locker is required at the northeast corner of the building for use by a semi-pro hockey team and concert performers

2. The existing vestibule is not adequate as a gathering area. The lack of an overhead entrance sign creates confusion as to where the main entrance is.

3. There is a need to upgrade the existing toilet facilities and to add new restrooms at the southwest corner of the existing structure with access to the interior of the arena and also access from the outside sports fields to provide service to outdoor events during the summer.

4. To improve operations of the zamboni, access to the outside is necessary when the ice sheet is in place. Removal of two sections of wall and the addition of an overhead door would allow direct access to the outside from the ice rink area to dispose of ice shavings. This does not exist in the current configuration and ice build-up in the zamboni room is an issue.

5. Evaluate the open area on the east side of the arena for an expanded parking area with lighting. There is a pronounced lack of parking available during major events. This is especially pronounced during winter months when the fields are unavailable for parking due to snow.

6. Convert the existing office space into separate areas for storage and a party room. Provide new office space by expanding the northwest corner of the facility.

7. Evaluate existing mechanical equipment for replacement/upgrade as part of the complete renovation. Emphasis should be on life cycle costs and long term energy savings.

II. Project Scope:

1. Roof System:

- Evaluate the existing roof system, evaluate up to three (3) repair and replacement alternatives, and make one recommendation for its long term operation.
- Prepare a cost estimate for the recommended alternative.

2. Building Trusses:

- Inspect and evaluate the existing roof trusses and support structure for maintenance and repair.
- Evaluate structure for required roof loadings based on the recommended roof alternative.
- Make recommendations for required structural repairs, maintenance (to include repainting options), and required upgrades or replacement of any structural members.
- Prepare a cost estimate for the recommended work to the trusses and structural support system.

3. Fire Suppression System:

- Evaluate the building for the replacement of the fire suppression system for the areas currently serviced by the existing system. Various alternatives for replacing the existing system should be considered as required by code and use.

- Make recommendations for the replacement system which should incorporate the ability to expand the system to areas of the building currently not serviced by the existing system.
- Prepare an estimate for the cost of the recommended system.
- Provide an estimate of feasibility and cost to expand the recommended system to areas not serviced by the existing system.

4. Main Arena Concrete Floor:

- Evaluate the concrete floor for structural integrity, and identify areas requiring maintenance or repair due to spalling, delamination, severe cracking, etc.
- Evaluate the integrity of the ice rink PVC loops to determine areas of needed work.
- Provide an estimate of the cost to repair identified areas and the recommended repair treatments.

5. Locker Room Renovation:

- Renovate the four existing locker rooms.
- Evaluate the lower locker rooms for expansion by rearranging the outer hallway to provide shower facilities. Part of this may entail a relocation of the press box to improve the view and allow proper access and function to the expanded locker rooms.
- Evaluate the eastern upper locker room for expansion, possibly into the current party room area.
- Evaluate remaining space for incorporation of a small official's locker room.
- Evaluate the area in the northeast corner of the building to install a new locker room area to serve a dual purpose as a locker area for semi-pro hockey and also a dressing area for concerts. The locker room will be designed for a capacity of approximately 40 and have a separate outside entrance.
- Evaluate the existing drainage of the locker rooms and zamboni room.
- Provide recommendations and estimate.

6. Entrance Vestibule, Concession and Sign:

- Expand the area at the main entrance to provide a larger gathering area and provide for a large entrance sign overhead.
- Enclose both west side doors to provide double entry doors.
- Remove a wall and add a concession window to expand service to the main floor.
- Provide recommendations and estimate.

7. Toilet Facilities:

- Renovate the existing public restrooms and evaluate the layout to maximize the number of toilets.
- Provide an addition to the southwest corner of the building for a public restroom. This would be locked from outside access during interior events and locked to access from the interior during outdoor events.
- Provide recommendations and estimate.

8. Zamboni Room:

-Evaluate the removal of two walls (one interior, one exterior) and the installation of an overhead door for zamboni access to the outside. Provide recommendations and estimate.

9. Rear Parking Lot:

-Evaluate the area east of the arena for vehicle access and parking. Emphasis is on maximizing the number of spaces and providing adequate site lighting.

10. Administration Offices and Storage:

-Provide an addition to the northwest corner of the building, possibly in conjunction with the vestibule item, to provide new admin office space, and convert the existing office space to storage, a coach's room, and an area for small events like birthday parties or team/organization events.

-Include a designated restroom area for staff.

11. Mechanical Equipment Upgrades:

-In conjunction with all of the other tasks, evaluate and recommend upgrades to the current mechanical equipment emphasizing savings in lifecycle costs and long term energy savings.

12. Evaluation for Year-round Ice:

-Evaluate the existing slab floor for use as a year round ice rink. Make recommendations regarding energy usage, possible upgrades, or systems to retrofit the building, HVAC system and slab for year-round ice. Provide an estimate for the recommended system or upgrades

13. Design Reports:

-Prepare a preliminary design report incorporating the recommendations and deliverables listed in items #1 through #12. The report will include a preliminary cost estimate for each major item and an estimated construction timeline assuming all items are incorporated. From this list the City will outline the list of work items for continued consideration.

-Using the final list of work items from the City, a final Design Report will be prepared which will include a schedule for detailed design, bidding, and construction. It will also include an updated construction estimate. The report will assume all tasks are to be accomplished in a single arena rehabilitation project. The purpose of the schedule is to enable the City to determine feasible timeframes for the Municipal Arena to be shutdown to perform the work that will minimize the impact to operations.

III. Additional Design Tasks, Requirements and Information:

1. Upon review of the final design report, the City will determine the final scope for proceeding with final design of upgrades to the Municipal Arena. From that final scope the consultant will prepare a supplemental agreement for final design through the bidding phase of those items.

2. The consultant or a sub-consultant will have demonstrated experience with the design and rehabilitation of large commercial roof systems, as well as design of sports complexes of comparable size or larger.

3. The consultant or a sub-consultant will have demonstrated experience with the design and installation of fire suppression systems in large commercial structures.

4. A copy of the City of Watertown Ice Arena Study and the Watertown Arena Roof Inspection Report can be found on the City of Watertown website under the Projects tab at:

<http://www.watertown-ny.gov>

This information will serve as the basis to begin the process of feasibility and design.

5. Areas highlighted for certain proposed functions are for demonstration and illustration purposes only. Final dimensions, locations and arrangements will be determined during the design process.

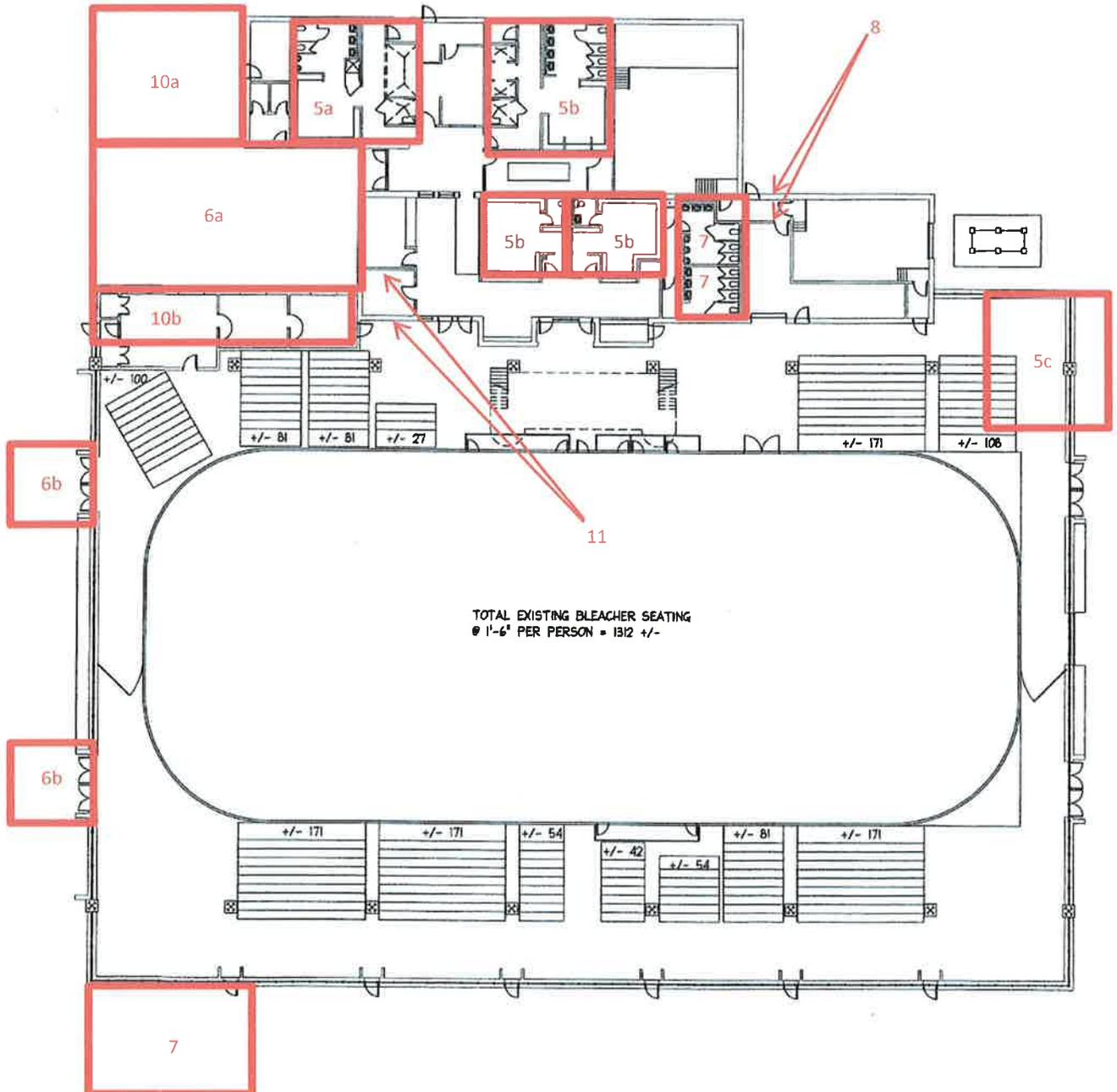
6. Firms desiring to submit a proposal are required to perform a site visit. The visit will be coordinated through the Engineering Department.

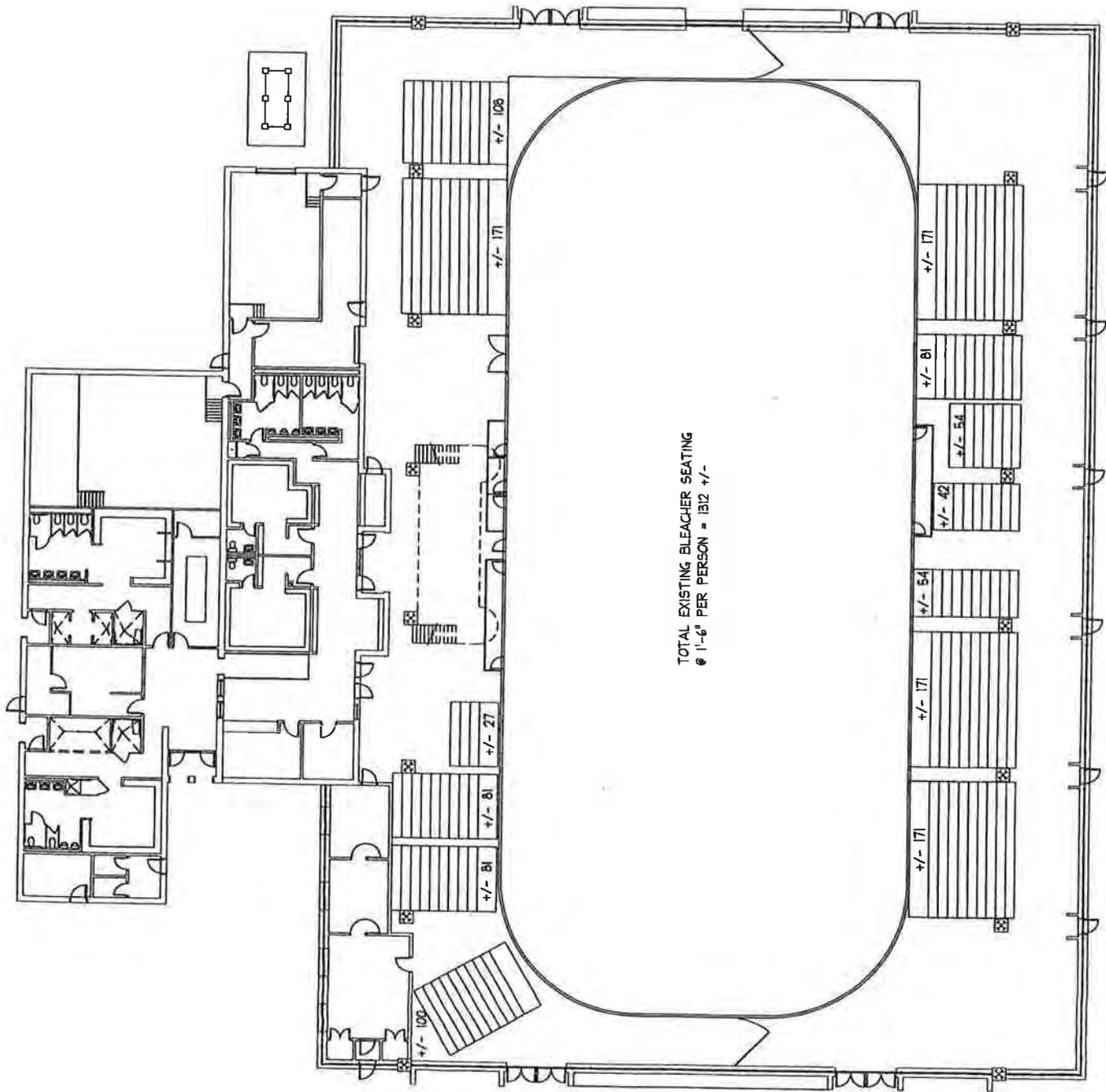
IV. Proposed timeline:

1. Proposals due to Engineering Department: 26 April 2013.
2. Professional services agreement for preliminary design approved by Council: 3 June 2013.
3. Project kickoff meeting: 14 June 2013.
4. Draft Design Report submitted: 22 November 2013.
5. Final Design Report submitted: 13 December 2013.
6. Supplemental Agreement approved by Council: 17 February 2014.

Watertown Arena Task Location Key

- 5a- Renovate Locker Room
- 5b- Renovate Locker Room and Evaluate for Expansion
- 5c- Add Locker Room
- 6a- Expand Main Entrance Vestibule
- 6b- Enclose West Entrance Doors
- 7- Renovate Toilet Facilities and add Restroom
- 8- Zamboni Access
- 10a- New Office Space
- 10b- Convert Existing Office Space
- 11- Remove Wall and add Serving Window





TOTAL EXISTING BLEACHER SEATING
 @ 1'-6" PER PERSON = 1312 +/-

PROPOSAL

Fairgrounds Municipal Arena Building Upgrade Masterplan Design Report

April 26, 2013



61 Commercial Street
Rochester, NY 14614
T: 585 475 1440
E: jeri.pickett@stantec.com



Prepared for the City of Watertown, New York



61 Commercial Street
Rochester, New York 14614
Ph: 585.475.1440
Fax: 585.272.1814
stantec.com

April 26, 2013

Mr. Kurt Hauk, PE, City Engineer
City of Watertown, Department of Engineering
Suite 305, City Hall
245 Washington Street
Watertown, NY 13601

RE: Request for Proposal: Fairgrounds Municipal Arena Upgrade – Masterplan Design Report

Dear Mr. Hauk:

Please accept this proposal and separate engineering fee proposal as Stantec's response to the City of Watertown's "Fairgrounds Municipal Arena Building Upgrade Request for Proposal" dated March 22, 2013.

The Stantec Team is pleased to present The City of Watertown with our qualifications and experience for masterplan design services for the rehabilitation of the Municipal Arena located at the Watertown Fairgrounds. During Stantec's site walk through and pre-proposal meeting it was apparent that the City of Watertown desired more than just a design report for this project and, as such, Stantec has built this proposal around a true facility masterplan effort, incorporating the design elements mentioned in the RFP into a Masterplan Design Report. We are equipped with and prepared to apply – from the outset of this work to its conclusion – the arena expertise and regional knowledge needed to accurately address the specific needs of this project. Our commitment to our public clients, responsiveness and broad expertise has facilitated our successful performance on projects throughout Upstate New York.

Why Stantec?

1. Stantec is **a leader in the parks and recreation industry** with a nationwide reputation in ice and aquatic arenas. We have a long history of successfully delivering public projects and we understand the special needs of this project. The firm's 100+ arena projects are located in 23 states from coast to coast. The majority of our projects have been done for municipalities. A number of our projects have been renovations of existing facilities, and a number of projects have been done for private sector clients.
2. Key Team Members – Stantec's **Jim Mayland has 30+ years of experience** with the **planning, design, and construction of park and recreational facilities** and will lead our ice arena consulting team.
3. Stantec **is currently a NYSEDA Technical Assistant** and we can help guide Watertown through potential funding options as we have for many other clients.
4. **Knowledge of renovation and expansion details** – Our extensive experience renovating and expanding ice arena facilities means we have a strong working knowledge of pitfalls and issues—and how to address them—associated with this type of project. Our project team will provide a comprehensive review, scrutinizing the details, to provide Watertown with an accurate, buildable design that meets your needs and budget.

Our team is very excited by the potential of this project and we know that we can provide you with the service this assignment requires. We look forward to the opportunity to offer our commitment and full attention to your project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeri Pickett".

Jeri Pickett, PE, LEED AP BD+C
Buildings Engineering Practice Lead
(585) 413-5341
jeri.pickett@stantec.com

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Firm Qualifications & Relevant Experience.....Tab 2

Project Team & Resumes.....Tab 3

Fee Proposal – Separate Sealed Envelope

PROJECT UNDERSTANDING AND APPROACH

PROJECT UNDERSTANDING

For the past 35+ years the City of Watertown Municipal Arena has been a successful multi-use facility hosting year-round events. Events include concerts, tradeshows, non-profit events and a semi-professional hockey team. The ice rink is also used for public skating by both local high school and youth hockey teams.

To continue to provide quality recreational opportunities the City has requested a facility Design Report for potential expansions and improvements. This all-encompassing design report, or “masterplan” will not only assess discrete project scope items identified by the City and past engineering studies, but will provide a holistic assessment in the form of a masterplan needed for the facility to keep pace with evolving needs and allowing the facility to continue to contribute to the Greater Watertown community quality of life.

SCOPE OF WORK

Stantec proposes a masterplan study that will involve key stake holders – Parks and Recreation Personnel, City Council members and the public to help shape and define the facility’s improvements. Key Masterplan highlights include:

- Creating a plan that includes both a compelling vision for the future and the practical elements needed to get there.
- Understanding and building on previous planning efforts; carefully considering a wide variety of options to capture opportunities.
- Robustly engaging the City of Watertown stakeholders to help maximize the community’s sense of ownership in Watertown and build consensus in developing the masterplan. Note that Stantec will work through the City of Watertown City Council and Parks and Recreation staff on this project. Stantec will not directly engage with the public.
- Focusing on recreation and leisure to maximize public use and potential revenues
- Incorporating sustainable design, where appropriate, into the masterplan to promote responsible stewardship of the environment. Stantec will provide an overview assessment of potential sustainable components appropriate for a facility of this type.
- Successfully collaborating with community partners to help maximize investment and create efficient operations.
- Schedule consideration for a long term phased construction approach.
- Establish opinion of probable construction cost estimates along with a prioritized “menu” of future upgrades.
- Assess facility “flows” and functionality versus current industry standards.
- Utilize “what’s hot on ice” planning tools.



As detailed in the request for proposal, specific facility scope upgrade items addressed by this Masterplan Design Report will include:

1. Roof System
2. Building Trusses
3. Fire Suppression System
4. Main Arena Concrete Floor
5. Locker Room Renovation
6. Entrance Vestibule, Concession and Sign
7. Toilet Facilities
8. Zamboni Access
9. Rear Parking Lot
10. Administration Offices and Storage
11. Mechanical Equipment Upgrades
12. Evaluation for Year-round Ice
13. Evaluate Alternative stage locations to maximize arena floor seating during performances.
14. Both preliminary and final Masterplan Design Reports will be provided

The preliminary masterplan will utilize workshop decision charrette and develop scope, construction schedules and opinion of probable costs ($\pm 35\%$) for the above scope items.

The final masterplan will incorporate final priority scope items, schedules, and costs as coordinated with the City.

PROJECT APPROACH

Stantec will be responsible to the City's vision for this project. Communication is critical to achieve this objective and to that end, we commit to a careful and collaborative planning effort. Active involvement and participation from all parties is welcomed and encouraged. Stantec will use a hands-on approach to encourage open and effective communication with the City's project team.

DESIGN WORKSHOP STARTS OUT PROJECT ON RIGHT FOOT

A successful experience re-visioning this facility will involve listening to concerns and ideas and distilling the input into a single solution. Our approach will involve a half-day workshop with the Watertown Project Team facilitated by Stantec. During the workshop, we will follow a scripted agenda to achieve goals and emphasize interaction and information exchange.



Through an open process of discussion and refinement, a sketch plan including the major design elements will emerge. Following the meeting, Stantec will email a draft sketch plan to meeting attendees. This will serve to confirm the key project components identified in the workshop.

Stantec recommends working with a designated "point person" from the City's project team. This person will handle day-to-day communication for the team. This appointment is essential to the project success and will facilitate timely decisions. The point person will channel questions and concerns between the City's team and the design team.

After the workshop, we will continue refining the plan and interacting with the Watertown Project Team to arrive at the final schematic design plan and a preliminary cost estimate.



Visual Listening Workshops: Visual listening is our way of creating a common language between architects and owner user groups with the goal of understanding the "style" and space types desired by you. Visual listening consists of posting a variety of interior and exterior architectural images on a wall to solicit your "likes" and "dislikes" regarding material, form, color, space and "style" among other things. This workshop can also include a more focused discussion on interior and exterior building materials with emphasis placed on first cost, operational cost, maintenance, aesthetics, and durability.

The following is an example of what a visual listening exercise may consist of for this project. As can be seen, we have included various attributes of the formal project as well as other concepts for your consideration. These by no means are final design elements but merely concepts that can and/or should be explored based on the input received during our site visit.

PRELIMINARY WATERTOWN ARENA TASK LOCATION KEY

POTENTIAL UPGRADES



Image Key



COST ESTIMATES PRIORITIZE NEEDS AND WANTS

The preliminary program cost estimates will enable the City of Watertown to identify construction costs and prioritize needs and wants. The cost estimate will serve as a check list that identifies features to be constructed immediately and features assigned for future inclusion or for inclusion as a construction alternate. A preliminary building cost estimate based on the schematic design will serve as a check against the budget.

MASTERPLAN DESIGN REPORT DELIVERABLES

The deliverables for the masterplan phase will include:

- Floor plans
- Building section and elevations
- Opinion of probable construction cost estimates
- Current building codes and energy codes
- Structural system and building material identification
- Building size, room sizes, door, and window opening locations
- Mechanical systems
- Electrical Power and lighting concepts
- Written report/ scope descriptions
- Rendering of shell concepts
- Internal flow diagrams
- Potential funding opportunities

PRESENTATION TO THE CITY

The summary report of the masterplan efforts will be presented to the City to narrow down the alternatives carried forward. Feedback and input will be received, and any critical issues or conflicts requiring decisions will be identified and discussed. It is anticipated that some revisions to the space programs will result and these modifications will be made prior to moving on to the next phase of work.

FUNDING AND PHASING OPTIONS

Meet with city staff to discuss funding and phasing options for the project. Stantec is currently a NYSEDA Technical Assistant and we can help guide Watertown through potential funding options as we have for many other clients. A thorough review of all options available should yield an option or combination of options that best suits Watertown's needs.

PROJECT SCHEDULE

Stantec is prepared to execute the project per the milestone schedule below and as outlined in the City's RFP.

- | | |
|---|-------------------|
| • Project Kick-Off Meeting | June 14, 2013 |
| • Draft Masterplan Design Report | November 22, 2013 |
| • Final Masterplan Design Report | December 13, 2013 |
| • Supplemental (Detailed Design)
(Approved by Council) | February 17, 2014 |

FIRM QUALIFICATIONS AND RELEVANT EXPERIENCE



Stantec has designed more than 150 ice rink projects nationwide.



New or renovated, indoor or outdoor—our team understands the comprehensive range of design and operation challenges that must be resolved to deliver successful facilities.

Stantec has specialized experience in the field of ice related facilities. Our work includes masterplanning, feasibility studies, site analyses, facility evaluation reports, renovation and repair, new facility design, and construction administration and inspection.

Our 150+ arena projects are in 23 states from coast to coast. Projects range from the largest outdoor refrigerated ice rink in the U.S. (the Minnesota John Rose Oval speed skating facility and bandy rink) to a four-sheet indoor ice arena complex (Phase One of the Schwan’s SuperRink in Blaine, MN) to collegiate facilities (for Iowa State University, the University of Wisconsin, and Lake Superior State University).

New or renovated, indoor or outdoor—our team understands the comprehensive range of design and operation challenges that must be resolved to deliver successful facilities.

Stantec has extensive experience designing new facilities and renovating existing facilities. We have designed ice systems using direct and indirect refrigeration. We have experience using geothermal ice systems and have designed innovative ice systems with dual power systems (electric and natural gas). Some engineering considerations we address are:

- Sub-soil conditions
- Groundwater table
- Ice floor frost control
- Concrete strength and quality
- Corrosion prevention inside slab
- Commercial vs. industrial ice refrigerant systems
- Refrigerant piping system
- Ice quality control
- Resurfacing efficiency
- Snow melt pit design
- Waste heat utilization
- Heating conditions
- Lighting options and efficiencies
- Atmospheric conditions
 - Ventilation
 - Dehumidification
- Operations and maintenance
- Additional arena uses

UNBIASED DESIGN

Since we are design consultants, not vendors or equipment suppliers, our design focuses on a quality ice system unbiased toward any one supplier’s system. Our designs are developed to encourage competitive bidding. We frequently see four to five bidders on a project. Our detailed specifications mean the bids received reflect an apples vs. apples comparison.



INDUSTRY INVOLVEMENT

We are a corporate member of the Ice Skating Institute, and the National Park and Recreation Association, at whose annual conferences we often make presentations. As pictured to the left, we presented our design for this innovative recreational skating concept at a recent national conference.

A recent example is our presentation “Breaking out of the Ice Age” that presented an innovative recreational skating concept, an outdoor multiuse refrigerated skate path, at the annual National Park and Recreation Association Conference, Athletic Business Conference and the Illinois Park and Recreation Association Conference. This involvement with the industry keeps us current with issues facing facility operators as well as up to date on state of the art design concepts.



SUSTAINABLE DESIGN CONSIDERATIONS

Electric power and natural gas fuel costs are rising, and are significant factors in the total annual operating costs for ice facilities. We pride ourselves on the energy efficiency of our ice system designs. Systems that minimize or eliminate the use of electricity during peak time help avoid high demand charges.

Properly sized, energy-efficient ice equipment can easily result in a 10 to 20 percent savings in the energy bill without compromising ice quality. As part of a feasibility process, we can evaluate the advantages and disadvantages of a variety of ice system options, if warranted.



For indoor facilities, maintaining air quality is critical, especially in arena spaces and locker rooms. Designing a flexible or variable flow rate ventilation system that allows the mechanical system output to match building occupancy loading can save a considerable amount of energy without compromising air quality.

A properly sized dehumidification system can save energy in the facility, provide a more comfortable environment for building users, minimize ice maintenance, and maintain a higher quality of air by keeping mold and mildew under control. Although the arena currently has a fairly new dehumidification unit, further analysis may be needed if and/or when the ice is utilized year-round.

Waste heat utilization from an ice rink refrigeration system can provide essentially free energy for a variety of facility heating needs. We have used waste heat effectively for subsoil heating beneath the ice rink, snowmelt systems for the ice resurfacer shavings, domestic hot water preheat, building space heat, spectator bleacher heat, dehumidification reheat, swimming pool water heating, and water feature heating to mention a few applications. We understand the limitations for waste heat and will guide you to good choices that won't overtax the ice system and negatively impact facility operations, including ice quality.

As mentioned previously we have a relationship with NYSERDA and have experience with obtaining energy rebates which will help you maximize your energy savings investment.

RELEVANT EXPERIENCE

The Stantec Team has all of the relevant practice areas applicable for providing professional services required for this project. Below, we have included an illustrative sampling of projects that contain the major work elements anticipated on this project. We are confident and trust you will find that these examples demonstrate our understanding of the necessary expertise required to successfully complete the scope of work.



Fergus Falls Community Arena Fergus Falls, Minnesota

The City of Fergus Falls was experiencing consistent growth of skating programs, and was in need of a new twin-sheet arena to replace their aging single-sheet facility. At the same time, the local school district was planning a major school reconstruction and expansion project, which included the abandonment of classroom space and the need for a large air conditioning plant. Close cooperation between the two groups allowed the construction of a new recreation facility that fits the needs of both and provides a unique sharing of features. The school district donated land adjacent to one of its school buildings and former classroom space was converted to team rooms and other arena support functions. A large ammonia-based refrigeration plant was designed by Stantec to provide ice rink cooling in the winter months and school air conditioning in the summer. An ice-building thermal storage system provides for simultaneous operation of both functions in the spring and fall.



Ice Arena Expansion New Hope, Minnesota

In 1977, the City of New Hope constructed a 2,500-seat, regulation-sized ice arena designed with expansion in mind. The City chose Stantec to design the addition of a regulation-sized practice sheet and to renovate the existing facility.

Skylights provide a warm, welcoming atmosphere in the new 500-seat arena. Combined, the two arenas support 12 locker rooms. A walking track, training room, youth hockey office, figure skating training room and a meeting room were also added. An existing elevator serves both sheets.

Other amenities include:

- An expanded entryway
- Improved resurfacers area
- Improved ventilation system
- Greatly expanded concession area
- Improved spectator area
- Improved sight lines that allow management to supervise both rinks from the administrative area



Bielenberg Sports Center Woodbury, Minnesota

This 118,400-square-foot facility includes two ice sheets and an air-supported field house, providing year-round recreational opportunities for the City of Woodbury and surrounding communities.

The Bielenberg Sports Center also includes a 48,600-square-foot air-supported field house, used for indoor soccer, football, softball, baseball, and track and field. A walking track circles the playing field's perimeter.

Outdoor features include 14 baseball fields, a play area, two picnic shelters and walking trails. Chain link fencing and backstops for eight new baseball and softball fields was provided, along with a fence surrounding the air-supported field house.

The original ice sheet was designed for year-round use. High- and low-level seating areas are provided for spectators using wheelchairs. The second rink's concrete floor allows the facility to be used for off-season events. A second lobby allows direct access to the new addition.

Currently, three separate 80-acre parcels are developing adjacent to the Bielenberg site. With Stantec's help, the school district planned for and is constructing one parcel as the new East Ridge Senior High School. The city is developing the other two parcels to house more fields and a large regional stormwater pond.



Packer and Riverside Arenas Austin, Minnesota

Stantec designed a new practice facility to help alleviate congestion, and renovated the existing arena's support spaces and refrigeration system.

The growth of girls' and boys' hockey put a crunch on ice time at the City of Austin's Riverside Arena. In addition, the arena suffered from inadequate team room space, and a 28-year-old rink refrigeration system that had reached the end of its useful life.

The new practice facility—Packer Arena—is used by City youth teams. With seating for 220 spectators, the 31,600-square-foot building features an attractive heated lobby with clear visibility into the arena, four team rooms, and an 85-by-200-foot ice sheet (standard National Hockey League size). The arena configuration allows the installation of basketball and volleyball courts during the non-ice season. Packer Arena's close proximity to Riverside Arena allows both buildings to operate with minimal staffing.

Packer Arena's geothermal-based refrigeration and heating system takes advantage of the earth's heating and cooling properties. This innovative technology saves the City about \$3,000 a month in electricity and natural gas costs, and qualified for a \$290,000 energy efficiency grant.

Riverside Arena improvements included renovating the existing team rooms, addition of two new larger team rooms, rest rooms, and shower rooms that are used by the high school teams. The rink refrigeration system was completely reconstructed using industrial quality components. This project had extremely tight time and budget considerations. Construction was completed in time and final costs were within budget.

William G. Mennen Sports Arena Morris County, New Jersey

The existing two ice sheets at Mennen Sports Arena were constructed in 1975 and 1984. The facility included a main rink with spectator seating for 2,500, and a practice rink with minimal seating. Ever-increasing public demand for ice time convinced the Morris County Parks Commission to hire Stantec to design a third ice sheet addition. In addition to the new facility design work, Stantec's contract scope included an energy study of the facility's rink refrigeration, mechanical, and electrical systems.

Stantec's energy study found that the existing facilities were consuming electricity at double the expected rate of similar facilities. The study recommended a staged approach to corrections, with the most critical items performed as part of the third arena construction and other items performed as funding becomes available.

The third ice sheet addition includes seating for 500 spectators, as well as support spaces such as team rooms, restrooms, and mechanical spaces. The addition complements the appearance of the existing brick-faced facilities, while incorporating innovations such as translucent wall panels to provide natural light, durable, and moisture resistant precast concrete structure, and a low-emissivity ceiling covering. Renovations were designed in the existing facility to improve traffic flow and modernize office spaces.





Braemar Ice Sheet Addition Edina, Minnesota

To accommodate the growing demand for ice time, the City of Edina expanded its existing two-sheet arena. Because the original facility was not designed with expansion in mind, Stantec’s architects faced multiple functional, structural and safety design challenges. To minimize grading and maintain service access, the new facility joins the short end of the west arena. Expansion joints allow the structures to respond independently to thermal changes. Roof renovations reinforce the existing roof, solve an existing drainage problem and enhance the connection with the new facility. Using ammonia as a refrigerant lowers operation costs and is environmentally friendly.

The four existing locker rooms were expanded, and four more were added to serve the new sheet. One of the existing resurfacer rooms was expanded to serve the addition. The third sheet’s concrete floor allows the facility to be used for dry-floor activities. Pre-cast concrete construction means lower maintenance time and cost.



Manhattan Square Park Rochester, New York

Stantec provided planning, design and resident project representation services, over multiple phases, to this 30 year old park in the heart of downtown Rochester. The design improvements balance revitalization of this hidden treasure with historical preservation. Sight lines are being improved to upgrade the visibility and address safety concerns. The original playground space was renovated through the addition of safety surfaces, interactive musical equipment and playground equipment. Many of the sharp angles and surfaces were altered to reflect the design. Throughout the design Stantec maintained key elements of the original design including the waterfalls and an ice rink.



Rochester Institute of Technology Hockey Arena: Locker Rooms, Rochester, New York

R.I.T’s Hockey program was promoted to NCAA Division 1 status which resulted in required improvements to their facilities. One such improvement, which was designed by Stantec, was an addition to house a new locker room facility for both the men’s and women’s teams. This included:

- Attached addition with separate entrance to the rink
- Team locker rooms and showers
- Coach office/ locker room
- Medical/ Rehab area
- Skate maintenance shop

Additional Arena Experience

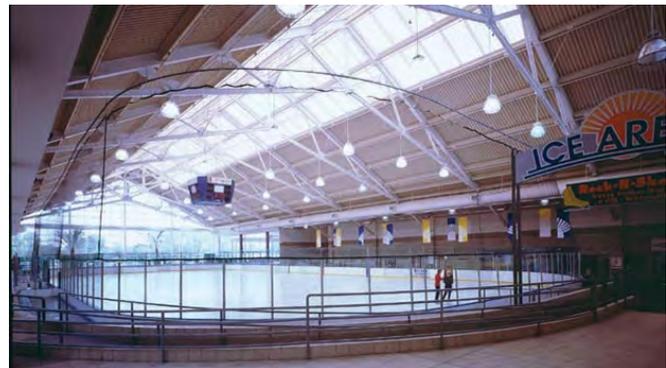
- ABERDEEN, SD *
- ALEXANDRIA, MN
- ALLEN COUNTY, IN
- AMES, IA, IOWA STATE UNIVERSITY
- ANNE ARUNDEL COUNTY, MD
- ANOKA, MN (2)
- ANTIOCH, CA *
- APPLE VALLEY, MN (2)
- ARMSTRONG COUNTY, PA
- ASPEN, CO (3)
- BALTIMORE, MD
- BLAINE, MN, SCHWAN'S SUPER RINK
- BOUNTIFUL, UT
- BROOKLYN PARK, MN
- CAMBRIDGE, MN *
- CEDAR RAPIDS, IA
- CERRO GORDO COUNTY, IA
- CHICAGO, IL - MILLENNIUM PARK
- CINCINNATI, OH
- CLAYTON, MO
- CLEVELAND, OH *
- COLORADO SPRINGS, CO
- COLUMBIA HEIGHTS, MN *
- COLUMBUS, OH *
- COON RAPIDS, MN
- CORALVILLE, IA
- COTTAGE GROVE, MN
- DODGE COUNTY, MN
- DOROTHY HAMIL ALENA, UT
- EAGAN, MN
- EAU CLAIRE, WI *
- ELKHART, IN
- FAIRMONT, MN*
- FARMINGTON, MN
- FORT WAYNE, IN
- FINDLAY, OH *
- FINDLAY UNIVERSITY, OH
- FLAGSTAFF, AZ
- FOREST LAKE, MN
- GLENVIEW, IL
- HASTINGS, MN (2)
- HOMEWOOD-FLOSSMOOR, IL
- HOPKINS, MN
- HUTCHINSON, MN
- INVER GROVE HEIGHTS, MN
- KANKAKEE, IL
- KETTERING, OH*
- LAKE TAHOE, CA - NORTHSTAR
- LANE COUNTY, OR
- LE SUEUR, MN (ICE FLOOR REPLACEMENT)
- LITTLE ROCK, AR - ALLTEL ARENA
- MADISON, WI*



Millennium Park in Chicago, IL



Iowa State University - Ames, IA



Coralville, IA



Packer Arena in Austin, MN

- MAMMOTH MOUNTAIN, CA
- MASON CITY, IA
- MENOMONIE, WI
- MILWAUKEE COUNTY, WI (2)
- MINNEAPOLIS, MN
- MINNETONKA, MN
- MONTGOMERY COUNTY, MD (2)
- MOORHEAD, MN
- MORRISTOWN, NJ
- MT. LEBANON, PA
- NASHVILLE, TN
- NEENAH, WI
- NEW BRIGHTON, MN*
- NILES, IL
- NORTHBROOK, IL
- OAKDALE, MN*
- OLMSTED COUNTY, MN
- PHOENIX, AZ
- PLEASANT PRAIRIE, WI
- PLYMOUTH, MN
- POTTSTOWN, PA
- RAMSEY COUNTY, MN
- RED LAKE FALLS, MN
- RENO, NV
- RICHLAND, WA*
- RIVER FALLS, WI - UNIVERSITY OF WISCONSIN
- ROCHESTER, MN*
- ROCKY RIVER, OH
- ROSEVILLE, MN
- SAULT STE. MARIE, MI - LAKE SUPERIOR STATE
- SOUTH LAKE TAHOE, CA - PARK AVENUE DEVELOPMENT
- SPRINGDALE, AR
- SPRINGFIELD, MO *
- SQUAW CREEK AT LAKE TAHOE, CA
- SUPERIOR, WI, UNIVERSITY OF WISCONSIN (REFRIGERATION SYSTEM)
- ST. LOUIS COUNTY, MO
- ST. PAUL, MN, COLLEGE OF ST. CATHERINE *
- ST. PETER, MN *
- ST. THOMAS ACADEMY, ST. PAUL, MN *
- STILLWATER, MN
- SUPERIOR, WI
- SUSSEX COUNTY, NJ *
- THIEF RIVER FALLS, MN
- TOPEKA, KS *
- TRUCKEE, CA
- VERONA, WI
- VICTORIA, MN
- WASHINGTON, D.C.
- WAUNAKEE, WI
- WAUKESHA COUNTY, WI
- WAUSAU, WI
- WICHITA, KS *
- WICHITA FALLS, TX *
- YORK, PA
- YOUNGSTOWN, OH *

** Study and/or Conceptual Drawings*



Alltel Arena in Little Rock, AR



Schwan's Super Rink in Blaine, MN



John Rose Oval - Roseville, MN



Milwaukee School of Engineering - Milwaukee, WI

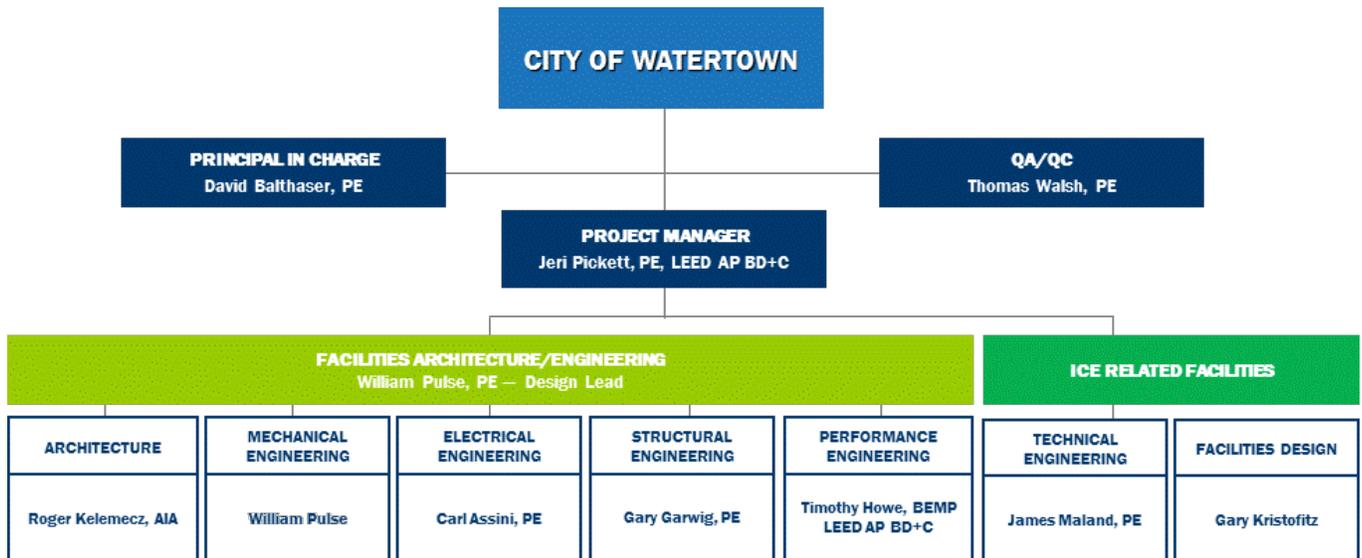
RECENT REPRESENTATIVE PROJECTS WITH REFERENCES

Project Name	Project Type	Contact	Phone
Manhattan Square Park Rochester, NY	New outdoor rink ice system and fountain design	JoAnn Beck - City of Rochester	(585) 428-6601
Coon Rapids, MN Arena	New arena 2-rink ice system design	Steve Gatlin - City of Coon Rapids	(763) 767-6458
Farmington, MN Arena	Refrigeration system replacement	Randy Distad - City Parks Director	(651) 280-6851
Bowie Arena	Ice system evaluation	Carrie Robinson - Arena Manager	(301) 809-3091
Ridgeland Common Arena	Condenser replacement/ New arena ice system design	Bill Hamilton - Park District of Oak Park	(708) 725-2300
Fergus Falls Arena	New 2-rink arena ice system design	Dan Edwards - City of Fergus Falls	(218) 332-5416
Baltimore Mt. Pleasant Arena	Ice system replacement	Gennady Schwartz - Chief of Capital Dev.	(410) 396-7948
Victoria, MN Arena	New arena ice system design	David Leschak - Perkins-Will Architects	(612) 851-5037
Washington D.C. Canal Park Rink	New outdoor rink ice system and fountain design	Sophie Robitaille - Olin Landscape Arch.	(215) 440-0030
Tinley Park Rink	New outdoor rink ice system and fountain design	Aimee Purcell - Teng Architects	(312) 616-4124
Hudson Park & Blvd Rink	New outdoor rink ice system design	Kerrie Harvey - MVA Assoc. Land. Arch.	(718) 243-2044
Washington D.C. Harbour Rink	New outdoor rink ice system and fountain design	Beth Miller - Gensler Architects	(202) 263-5427

PROJECT TEAM & RESUMES

Stantec has assembled a team of professionals with a high level of commitment, enthusiasm, and experience to meet the requirements of this project. We believe in building relationships with client groups and stakeholders based on trust, respect, and integrity of information. It is our goal to create a partnering process, which encourages clear and open communication between all team members. Our collective project knowledge and experience is the strength behind our organization and the reason we deliver successful projects.

Organization Chart



Jeri Pickett, PE, LEED AP BD +C, Project Manager – Jeri brings more than 24 years of diverse experience to Stantec. He has leadership and project management experience, electrical engineering design, cost estimating, and construction experience and consulting experience for private, commercial, government, institutional, and industrial clients. His experience as both a consultant and as an owner provides a unique and useful perspective. Jeri promotes and engages in sustainable and energy efficient consulting. Jeri will provide you with a clear, single-point of contact on the project, supported by Stantec’s in-house personnel.

James Maland, PE, Chief Recreational Facilities Engineer-Ice – Jim has 30 years of recreational facilities engineering, specializing in indoor and outdoor ice arenas, park planning, aquatic centers, and building site development. Jim is also a specialist in ice sheet design, including refrigeration and piping systems. His ice arena experience includes projects in more than 80 communities and 24 states nationwide. Jim works with clients to help them make design decisions that result in adaptable facilities geared toward maximizing revenues both on- and off-season. For most projects, Jim is involved in the formative decisions in the design process during conceptual planning and schematic design then uses his wealth of knowledge to supervise and oversee the final design and construction processes.

Thomas Walsh, PE, QA/QC – With a portfolio of work that ranges from state-of-the-art science buildings to education facilities, research facilities, and infrastructure upgrades, Tom brings the versatility, perspective, and commitment necessary to ensure our team achieves excellence across a wide variety of project types. Focusing on forming strong, content-based relationships with clients, Tom's work helps define the state-of-the-art in academic environments. Drawing from his 30 year knowledge of planning and design, Tom helps higher education clients chart courses for continued growth. His hands-on approach carries through to construction documentation and field administration to ensure that design intent is carried throughout the project's completion.

Roger Kelemecz, AIA, Architect – Roger brings over 28 years of experience to the Stantec Team. He is responsible for architectural and facilities design for many renovation and expansion projects. As a Senior Architect, he is responsible for projects from the conceptual phase through owner occupancy, including design and specification preparation, construction management, and final project closeout.

William Pulse, Senior Mechanical Engineer / Project Facilities Technical Lead – With more than 35 years of design engineering experience, Bill is responsible for engineering and project management for a wide range of projects as well as project scoping, budgeting, specifications, and construction coordination and review. Although his experience encompasses many areas, the focus of his project involvement has been industrial/process systems and the HVAC support of such systems.

Gary Garwig, PE, Structural Engineer – Gary is the project manager for various structural and building facade renovation projects and has experience in managing other condition survey and renovation projects. Mr. Garwig has extensive background in field investigation, structural evaluation and restoration of buildings. He has been involved on all project phases including investigation, evaluation, preparation of contract documents and support during construction.

Timothy Howe, LEED®AP, BEMP, Mechanical Engineer – Tim holds a Master's degree in mechanical engineering and he has been focusing on energy modeling and performance engineering and is providing assistance within the US and Canada on projects requiring this specialty. Tim has been working as a NYSERDA technical assistant facilitating energy efficient designs for A/E firms through the New Construction Program. This program includes energy studies of buildings through whole building analysis and custom measures.

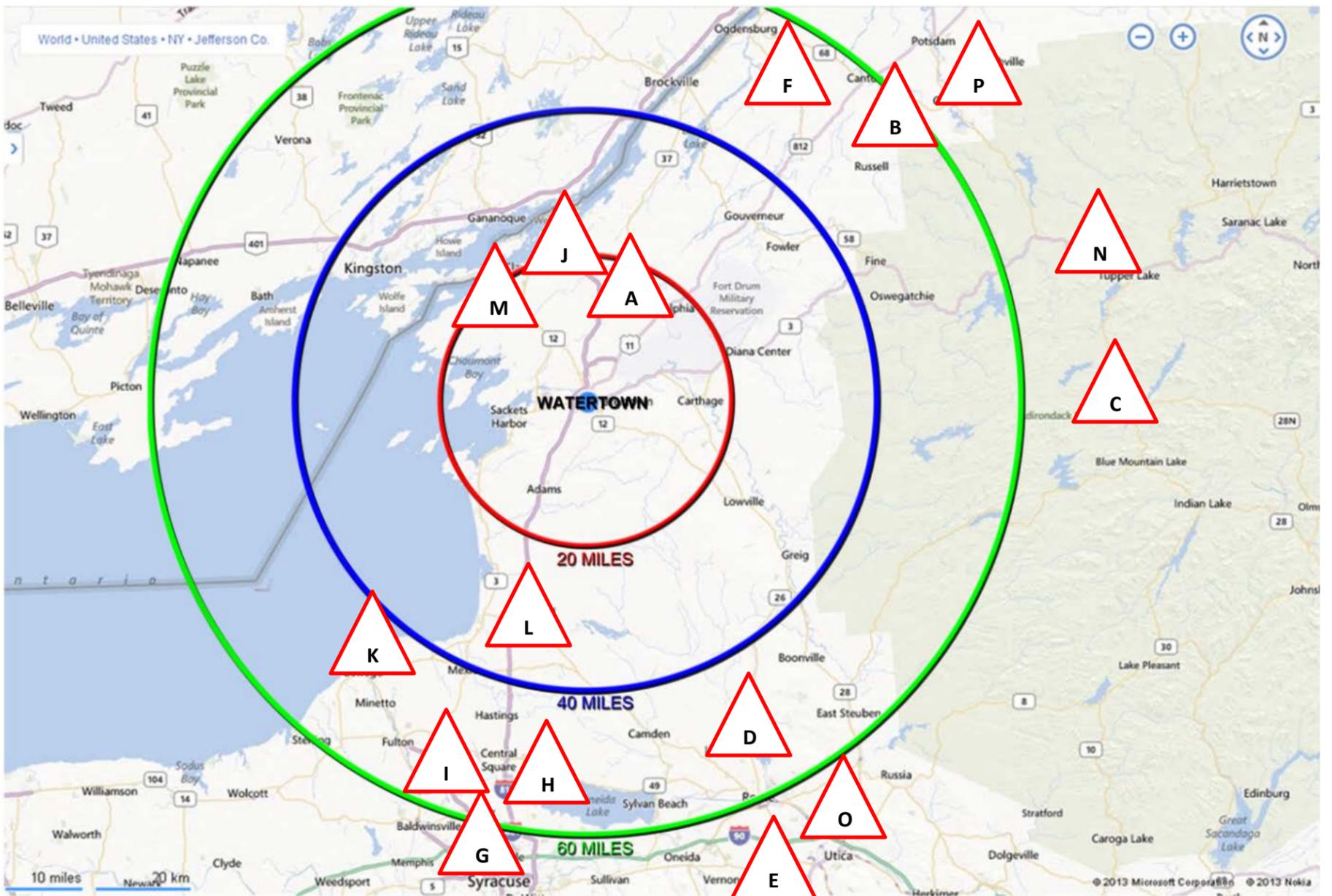
Gary D. Kristofitz, Civil Engineer – Recreation Facilities & Site Designer – Gary is a civil engineer with 29 years of experience, specializing in the design of recreational facilities. Gary's background as a construction manager and inspector in the firm's field operations group provides a strong foundation for designs that perform well once constructed. He has designed multifaceted recreational projects in more than 120 different communities. His responsibilities include ice system design, building site planning, park and outdoor recreational facility design, street and utility design, and project management and inspection.

KEY STAFF AVAILABILITY

Note that none of the above key project staff have long term assignments for the duration of this project amounting to more than 20% of their available time.

TAB B

Watertown Arena Service Competition Map



There are approximately 31 facilities in and/or around a 60 mile radius of the Watertown Municipal Arena (excluding Canada):

- A – Theresa Ice Rink (Theresa)
- B – Appleton Arena, Canton Recreational Pavilion, SUNY Canton Athletic & Recreation Center(Canton)
- C – Ice Shack (Long Lake)
- D – Kennedy Arena (Rome)
- E – Clinton Arena (Clinton)
- F – Lockwood Civic Center, Newell Memorial Dome (Ogdensburg)
- G – Clinton Square Ice Rink, Sunnycrest, Burnet Park Arena, Coca Cola Coliseum, Meacham Ice Rink, War Memorial, Tennity Ice Pavilion (Syracuse area)
- H – Cicero Twin Ice Arena (Cicero)
- I – Fulton Community Ice Arena (Fulton)
- J – Alexandria Bay Municipal Arena, Bonnie Castle Recreation Center (Alexandria Bay)
- K – Anthony Crisafulli Skating Rink, James Cullinan Skating Rink, Romney Field House, Campus Center Ice Arena (Oswego)
- L – Haldane Memorial Building Arena (Pulaski)
- M – Clayton Recreation Park Arena (Clayton)
- N – Tupper Lake Memorial Civic Center (Tupper Lake)
- O – Utica Memorial Auditorium (Utica)
- P – Pine Street Arena, Cheel Center Arena, Maxcy Hall Arena (Potsdam)

TAB C

PROGRAM INTEREST SURVEY

With Room Size Ranges

Watertown, NY Municipal Arena

August 15/16, 2013



Note - ADD CIRCULATION SPACE TO FIGURES BELOW - 10% to 15%

Program Elements	
ROOMS:	
Arena with Olympic Size Rink (100' x 200')	21,800 SF
Arena with Regulation Size Rink (85' x 200')	18,800 SF
Spectator Seating:	
1,317 (Existing Configuration)	10,200 SF
1,420 (Add seats to exist resurfacers area)	12,000 SF
1,790 (Add seats resurf area & end of rink)	14,700 SF
Other seating amount	
Entry Vestibule	Small 8 x 12 = 96 SF ; Large 10 x 30 = 300 SF
Covered Dropoff	Small 18 x 24 = 432 SF ; Large 34 x 50 = 1,700 SF
Heated Lobby Area	See below
Unheated Lobby Area	See below
Large Lobby Area	24 x 35 = 840 SF to 30 x 48 = 1,440 SF
Small Lobby Area	22 x 24 = 480 SF to 24 x 35 = 840 SF
Large Varsity/JV Team Rooms	22 x 26 = 572 to 24 x 30 = 720 SF EACH
Four Regular Team Rooms	16 x 18 = 288 SF to 20 x 24 = 480 SF EACH
Showers in All Team Rooms	100 to 160 SF EACH
Showers in Limited Team Rooms	120 to 200 SF EACH
Restrooms in All Team Rooms	100 to 150 SF EACH
Restrooms in Limited Team Rooms	200 to 300 SF EACH
Shared Team Restrooms	240 to 350 SF EACH
Free Weight Room	400 to 1,200 SF
Exercise Equipment Room	600 to 1,400 SF
Aerobic / Exercise Room	500 to 1,000 SF
Fitness Locker Rooms	350 to 800 SF EACH
Meeting Room (Class Room)	450 to 800 SF
Concessions (prepare foods on-site)	200 to 1,000 SF
Concessions (pre-prepared foods)	100 to 400 SF
Concessions Storage	100 to 300 SF
Vending Machine Area	100 to 300 SF
Eating Area	200 to 800 SF
Video Arcade	150 to 300 SF
Lounge Area	300 to 800 SF
Heated Observation Area	300 to 1,000 SF
Figure Skating Room	300 to 600 SF
Referee Changing Room - Basic	65 to 120 SF
Referee Room w/ Shower / Restroom	150 to 200 SF
Off-ice Training	750 to 3,000 SF
Multipurpose Room	600 to 1,200 SF
Party Room	300 to 800 SF EACH
Babysitting	300 to 600 SF
Daycare	400 to 1,200 SF
Playland Area	150 to 450 SF
Public Restrooms	250 to 650 SF EACH
Skate Changing Area	300 to 800 SF EACH
Minimal Arena Admin. Area (basic mgr office)	250 to 400 SF
Large Admin Area (mgr & staff offices, recep.)	500 to 3,000 SF
Separate Ticketing Area	15 to 120 SF
Coaches Room	65 to 120 SF EACH
First Aid Room	55 to 120 SF
Ice Resurfacers Room	275 to 500 SF
Refrigeration Equipment Room	400 to 600 SF
Mechanical Room	250 to 600 SF
Electrical Room	80 to 200 SF
Telephone/Computer Network Room	80 to 120 SF
Pro Shop - Minimal	100 to 300 SF
Pro Shop - Large	300 to 3,000 SF
Skate Rental Area	150 to 400 SF
Special Storage (Dasher boards)	400 to 600 SF
Press Box Area	60 to 200 SF
FEATURES	
Walking / Running Track	Add 5.5 to 8 ft. width track area where ex. corridors are not available
Standard Sound System	No space required - panels in office or mech/elec. room
Enhanced Sound System	High end systems may need a control room 100 SF or less
Energy Efficient Systems	No space required
Skate Sharpening	60 to 180 SF
Dehumidification	200 to 400 SF if unit is installed indoors
Air Conditioning	200 to 300 SF if unit is installed indoors
Electric Ice Resurfacers	No space required
Propane Ice Resurfacers	No space req'd. May need exter.station if nat. gas instead of propane
Conventional Ice System	No additional space required
Geothermal Ice System	No internal space. Add 2 to 3 acre exterior field for horizontal system
Filming Platforms	50 to 150 SF
Standard Lighting	No space required
Specialized Lighting	High end systems may need a control room 100 SF or less
Elevator & Elev. Equipment	150 to 250 SF
Hockey Bag Storage Area	300 to 600 SF

PROGRAM INTEREST SURVEY

Watertown, NY Municipal Arena

August 15/16, 2013

POTENTIAL PROGRAM ELEMENTS RATING (1=LOW, 5=HIGH)

ROOMS	RATING	Room Size (square foot)		COMMENTS
		Small	Large	
Arena with Regulation Size Ice Rink (85' x 200')	5	18,800	18,800	
1,260 (Existing seating configuration)	5	10,200	10,200	
1,500 (Seating based on current City seating proposal)	5	12,000	12,000	
Entry Vestibule (airlock with two sets of doors)	5	96	300	
Four Regular Team Rooms	5	288	480	Each
Additional Large Varsity Team Rooms	5	572	720	Combine end restroom with dual access to Multipurpose Rm
Shared Team Restrooms	5	240	350	
Meeting Room (Class Room)	5	450	800	
Concession (pre-prepared foods)	5	100	400	
Concessions Storage Room	5	100	300	
Eating Area	5	200	800	
Heated Rink Observation Area	5	300	1,000	
Referee Room w/ Shower / Restroom	5	150	200	
Multipurpose Room	5	600	1,200	
Party Room (Rentable for private parties)	5	300	800	Combine Party Rm with Multipurpose (Hospitality Rm)
Public Restrooms	5	250	650	
Skate Changing Area	5	300	800	
Large Admin. Area (mgr & staff offices, reception)	5	500	3,000	
Separate Ticketing Area	5	15	120	
Coaches Rooms	5	65	120	
First Aid Room	5	55	120	Locate by skate rental
Ice Resurfacer Room	5	275	500	
Refrigeration Equipment Room	5	400	600	
Mechanical (HVAC) Room	5	250	600	Small mechanical space needs for hot water and sprinkler (use rooftop units)
Electrical Room	5	80	200	
Telephone/Computer Network Room	5	80	120	
Pro Shop (Minimal)	5	100	300	
Skate Rental Area	5	150	400	Skate rental area should be by first aid
Press Box Area	5	60	200	
Break Room	5	150	300	
Enhanced Sound System	5			
Skate Sharpening Room	5	60	180	Locate at back of skate rental
Dehumidification	5	200	400	
Air Conditioning in rink space	5	200	300	
Conventional Ice Refrigeration System	5			
Standard Arena Lighting	5			
Specialized Arena Lighting	5			
Elevator & Elevator Equipment Room	5	150	250	
Standard Bleacher Seating on Benches	5			
Video screen in lobby	5			
2,000 (Additional seating with rearrange of ice resurfacer and broadcast booth)	4	15,500	15,500	
Heated Lobby Area	4			
Large Lobby Area	4	840	14,400	
Exhibit Storage Space	4			This is for trophy's etc.
Filming Platforms	4	50	150	Each
Small Lobby Area	3	480	840	
Aerobic/Exercise Room	3	500	1,000	
Video Arcade	3	150	300	
Lounge Area	3	300	800	
Energy Efficient HVAC Systems	3			
4,000 Ideal seating for expanded Concert Venue including flr	2			
Showers in All Team Rooms	2			
Restrooms in All Team Rooms	2			
Concession (prepare foods on-site)	2			

X NO

Figure Skaters Room	2
Covered Dropoff	1
Unheated Lobby Area	1
Free Weight Room	1
Exercise Equipment Room	1
Fitness Locker Rooms	1
Vending Machine Area	1
Referee Changing Room - Basic	1
Off-ice Training	1
Babysitting Room	1
Daycare	1
Playland Area	1
Minimal Arena Admin Area (basic manager office)	1
Pro Shop (Large)	1
Special Storage (dasher boards, etc.)	1
Walking / Running Track	1
Electric Ice Resurfacer	1
Propane Ice Resurfacer	1
Geothermal Ice Refrigeration System	1
Some Bleacher Seats with Backs	1

TAB D

STAGE

LEFT

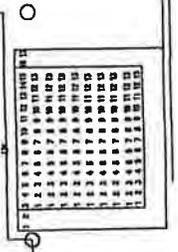
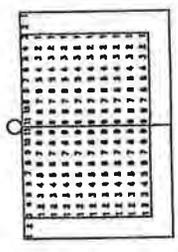
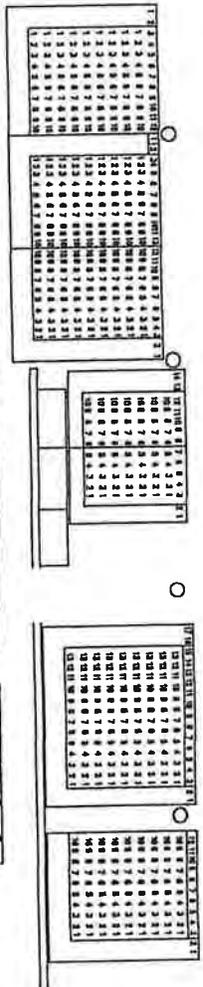
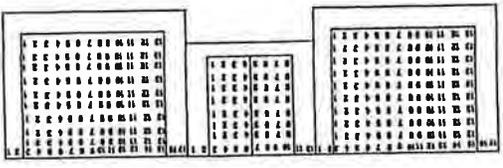
CENTER

RIGHT

Concessions & Restrooms

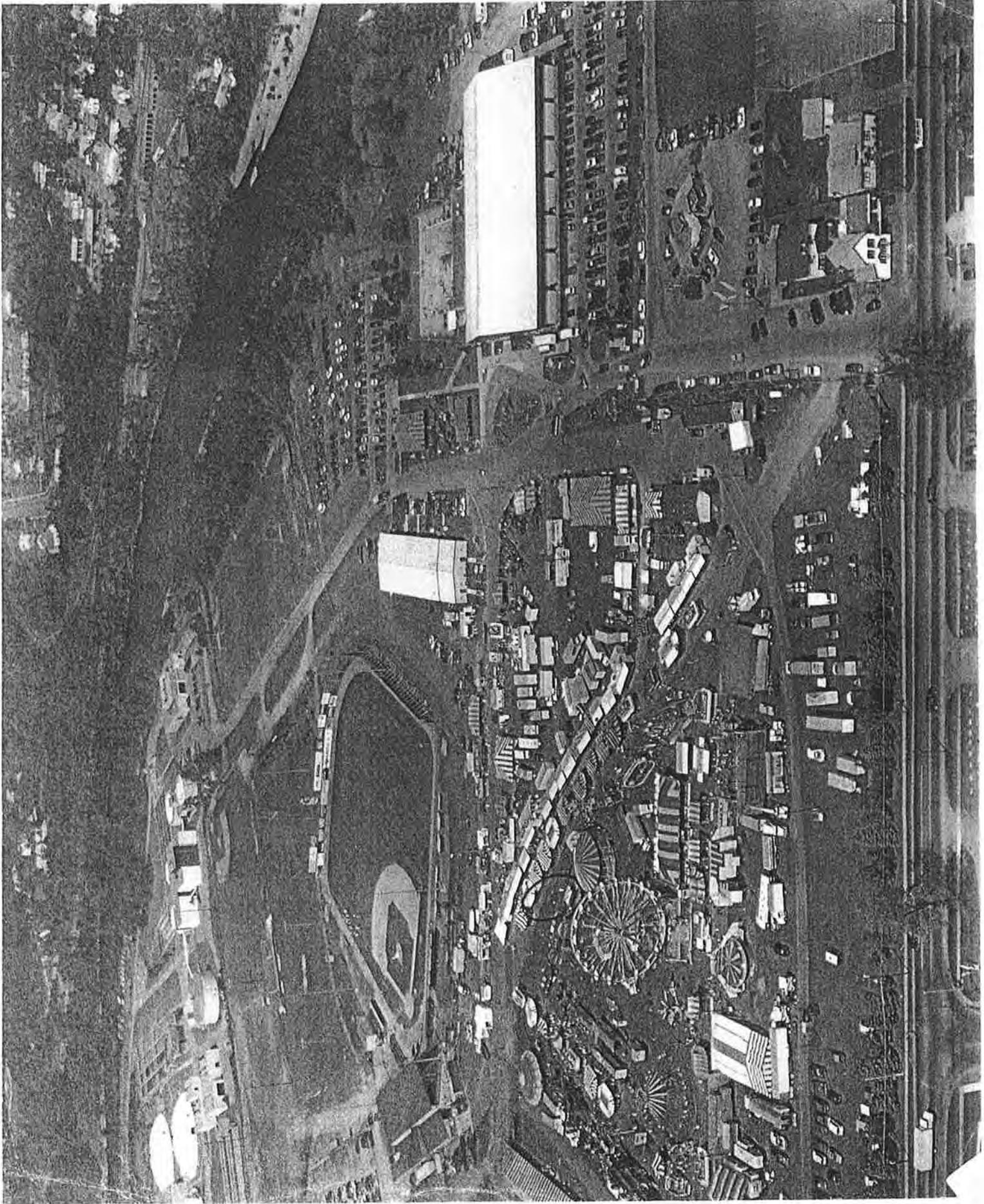
Park & Recreation Office

1	1	1
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44	44	44



TAB E

← CAMPING
AREAS.



Functionality Ratings

Fairgrounds Municipal Arena Building Upgrade

Watertown, NY



August 15/16, 2013

General Functionality Rating

Facility	Finding	Parking	Entrance	Team Rooms	Signage	Visual Impact	Diversity	Amenities	Zamboni Room	Ice Arena Floor	Concessions	Circulation	Landscaping	Safety	Maintenance	Total
Fairgrounds Municipal Arena	4	2	1	1	3	2	5	2	1	3	2	1	3	3	3	36

Note: Ratings are from 1 to 5 with 1 being the lowest and 5 the highest.

Specific Function, Ratings and Comments

Function	Functionality			Comments
	Lo	Med	Hi	
Management	X			<ul style="list-style-type: none"> - Cramped / Linear - Sight Line Issues - Loud - No Privacy - No Meeting Rooms <ul style="list-style-type: none"> - No Break Room - Need Staff Restrooms - Parking is Distant
Ticketing	X			<ul style="list-style-type: none"> - Booth near lobby for skating - Move booth for Concerts - Crowded - 4000 People in one hour - Security Checks Performed
Parking	X			<ul style="list-style-type: none"> - Not enough for large events - Safety Issues (muddy/uneven) - 1300 / 4 = 325 needed for hockey - Difficult for emergency vehicles - Summer parking in field no issues <ul style="list-style-type: none"> - Winter issues with snow
Spectators		X		<ul style="list-style-type: none"> - Handicap Issues - Press Box sightline interference - Cold
Skaters		X		<ul style="list-style-type: none"> - Hard to find doors - No where to hang out before events - Locker room sizes too small - Locker rooms smell
Performers	X			<ul style="list-style-type: none"> - Located in Trailer - No Restrooms - Buses park in muddy lot - No hospitality suite <ul style="list-style-type: none"> - Opportunity to decorate / express pride of the area (Ft Drum, TI, etc)

Staff	X		<ul style="list-style-type: none"> - No Break Room - No dedicated employee restrooms - No Meeting Rooms / Conference
Maintenance		X	<ul style="list-style-type: none"> - Opportunity for workshop area - Pole Barn will help alleviate needs
Staff Access		X	<ul style="list-style-type: none"> - Currently Park South East Corner - Walk along East well, enter Zamboni
Spectator Access	X		<ul style="list-style-type: none"> - Confusion on Entry Point - Not clear where to go / what door
Skater Access	X		<ul style="list-style-type: none"> - Confusion on Entry Point - Not clear where to go / what door - Opportunity to direct visiting team
Equipment Access	X		<ul style="list-style-type: none"> - Constant shuffling of equipment - Nothing has fixed home - Pole Barn will help with this
Ice		X	<ul style="list-style-type: none"> - Rain / Precipitation drips on ice - Infiltration or humidity issues - Interior ring of IR heating melts ice
Dasher Boards		X	<ul style="list-style-type: none"> - Showing Age (20 yrs +/-) - Bent - Broken welds - Netting works well - Tempered glass 4ft high - Store in arena currently / Pole Barn
Ice Equipment		X	<ul style="list-style-type: none"> - 10 years old +/-

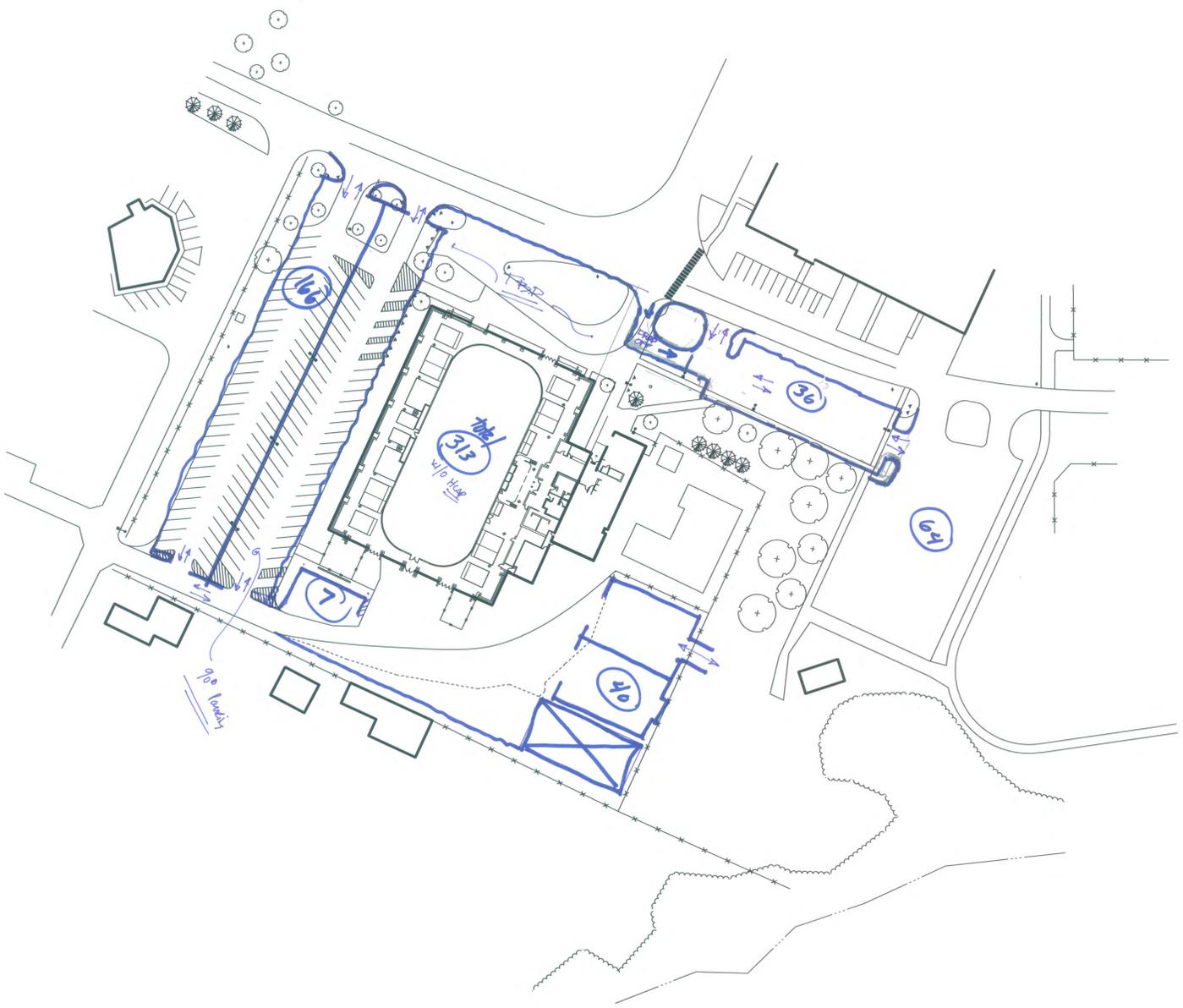
Setup for Performances	X	<ul style="list-style-type: none"> - Electrical setups can take days - Stage stored in arena currently - Pole barn will help with storage
Acoustics	X	<ul style="list-style-type: none"> - Transformer Vibration
Sound System	X	
Ice Resurfacer	X	<ul style="list-style-type: none"> - 8 yrs old; new one budgeted 2 years - Have 2 currently (1 backup) - Entrance issue - Like to colocate the 2 machines
Ice Maintenance	X	<ul style="list-style-type: none"> - Shave ice every day
Ice Shavings Disposal (snowmelt pit)	X	<ul style="list-style-type: none"> - Drive and Dump - Dump area is small with poor access - Prefer to dump outdoors over inside - Indoor is standard convention - Can use waste heat to melt snow <ul style="list-style-type: none"> - Currently use HW for showers which make them run cold
Ventilation	X	<ul style="list-style-type: none"> - Locker Rooms need it - Restrooms need it
Sports Lighting	X	<ul style="list-style-type: none"> - Noisy - HID; opportunity for fluorescent/LED - Brighter may be better with TV - Control strategy
Performance Lighting	X	<ul style="list-style-type: none"> - Performers bring their own - Need rigging for it

General Lighting	X	- Could use step lights for bleachers
Site Lighting	X	- Back area is dark - Wall packs are ok
Energy	X	- Smart drive was added to ice equipment; compressors don't run as much as before
Player Comfort	X	- Locker Space - Performers lounge area - Lack of restrooms
Spectator Comfort	X	- Cold - Bleachers are hard - Lack of restrooms - Concessions access is difficult
Concessions	X	- Lack of access - small area, cramped for workers - Way finding is not good - need to add stanchions to direct flow
Team Rooms	X	- Too small - Lack ventilation
Restrooms	X	- Old - Poor location - Lack ventilation - not enough
Scoring	X	- No issues - Opportunity for scoreboard at other end or center

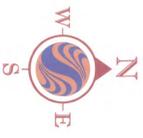
Broadcasting		X	<ul style="list-style-type: none"> - Good condition - Located too close to the ice blocking views - Space below box is dead space - Box is probably bigger than it needs to be
Storage	X		<ul style="list-style-type: none"> - No real storage area - Only place is over office area via a forklift - Need storage for equipment, concessions, Rec Program, First Aid
Energy Consumption		X	<ul style="list-style-type: none"> - Facility is 4th highest user in the City - Metered separately from the pool
Seating Capacity		X	
Skate Sharpening	X		<ul style="list-style-type: none"> - Too close to rental activities - Area should be separated - Area is too small
Referees		X	<ul style="list-style-type: none"> - Currently have dedicated room and shower
First Aid	X		<ul style="list-style-type: none"> - Do not have dedicated room for this currently
Water		X	<ul style="list-style-type: none"> - Hot water shortage due to snow melting but otherwise good
Sewer		X	<ul style="list-style-type: none"> - Trailers hook up for summer performers

Stormwater Drainage	X	- There is water leaking back into the south side doors of arena from roof runoff; door have heaved a bit
Neighborhood Issues	X	- Minimal vandalism; trash thrown into the pool - Restaurants to south have parking issues during large events
Swimming Pool	X	- Vandalism - one of three in City - have to close for concerts; need the restrooms
Emergency Access	X	- Over crowded parking - Snow bank issues - No issues in summer
ADA Access	X	- No Complaints but organizations have protested other areas of the city - No ADA evaluation has been done - Concerns over bathrooms and spectator seating
Building Envelope		- Opportunity for more ambient light penetration with translucent panels - Need control over ambient to keep facility dark for concerts
Solar Panels		- Interest of member of City Council

TAB F



- BUILD-OUT (FRONT)
+ BUILD-OUT (REAR)
+ HCAP SPACES



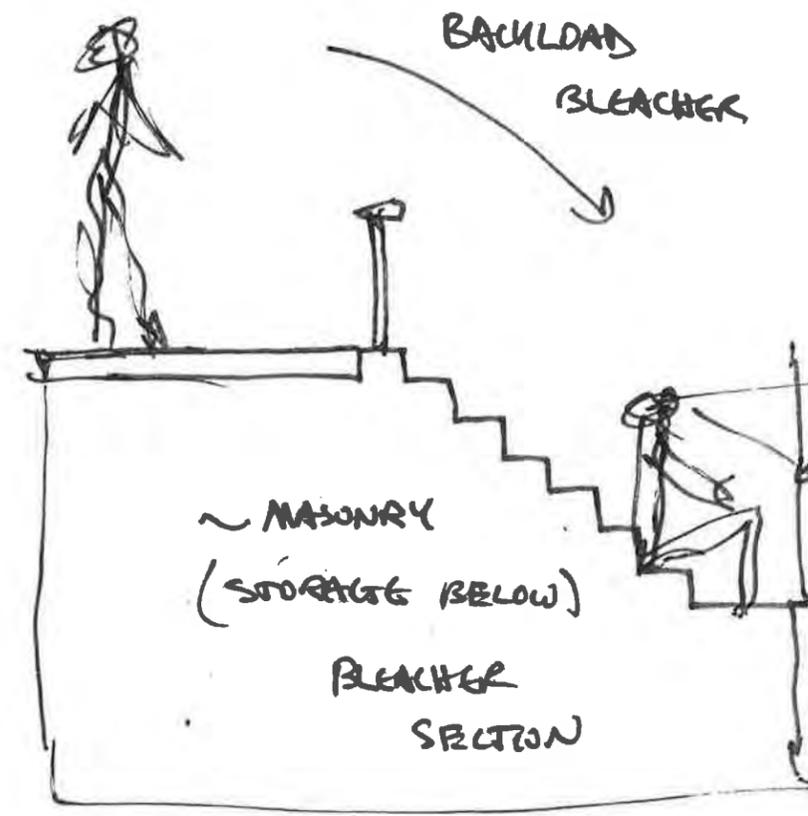
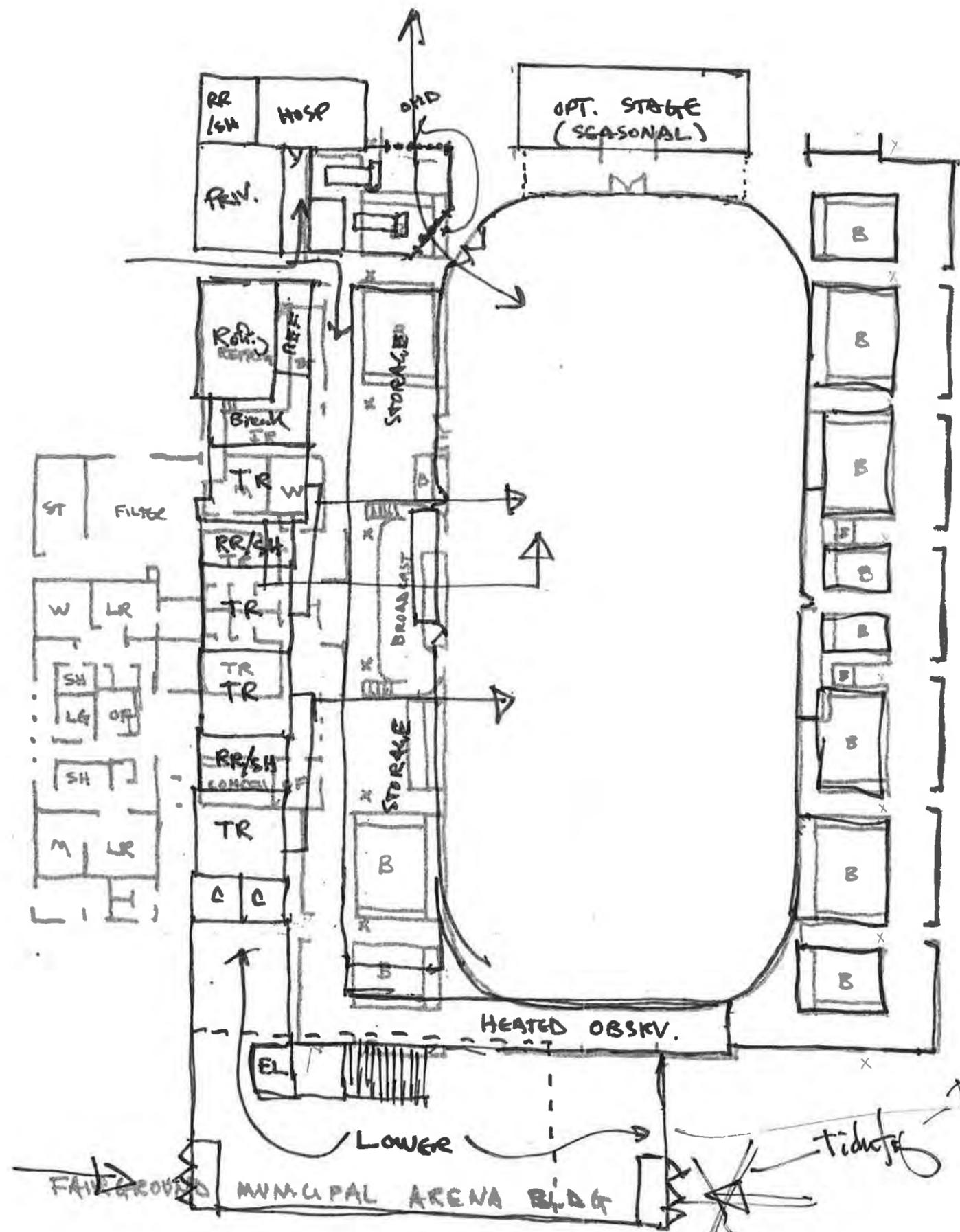
TAB G

LOWER FRONT

- ENTRANCE VESTIBULE
- MEETING ROOM
- CONCESSION
- EATING AREA
- PARTY ROOM
- PUBLIC RESTROOMS
- SKATE CHANGING
- TULUING
- FIRST AID
- SKATE RENTAL
- PRO SHOP
- LOBBY

UPPER FRONT

- HEATED OBSERVATION
- ADMIN
- AEROBIC EXERCISE
- VIDEO ARCADE
- LOUNGE



20
x 8
160

Dis ash a archil

out side 2 Pubs / M or W

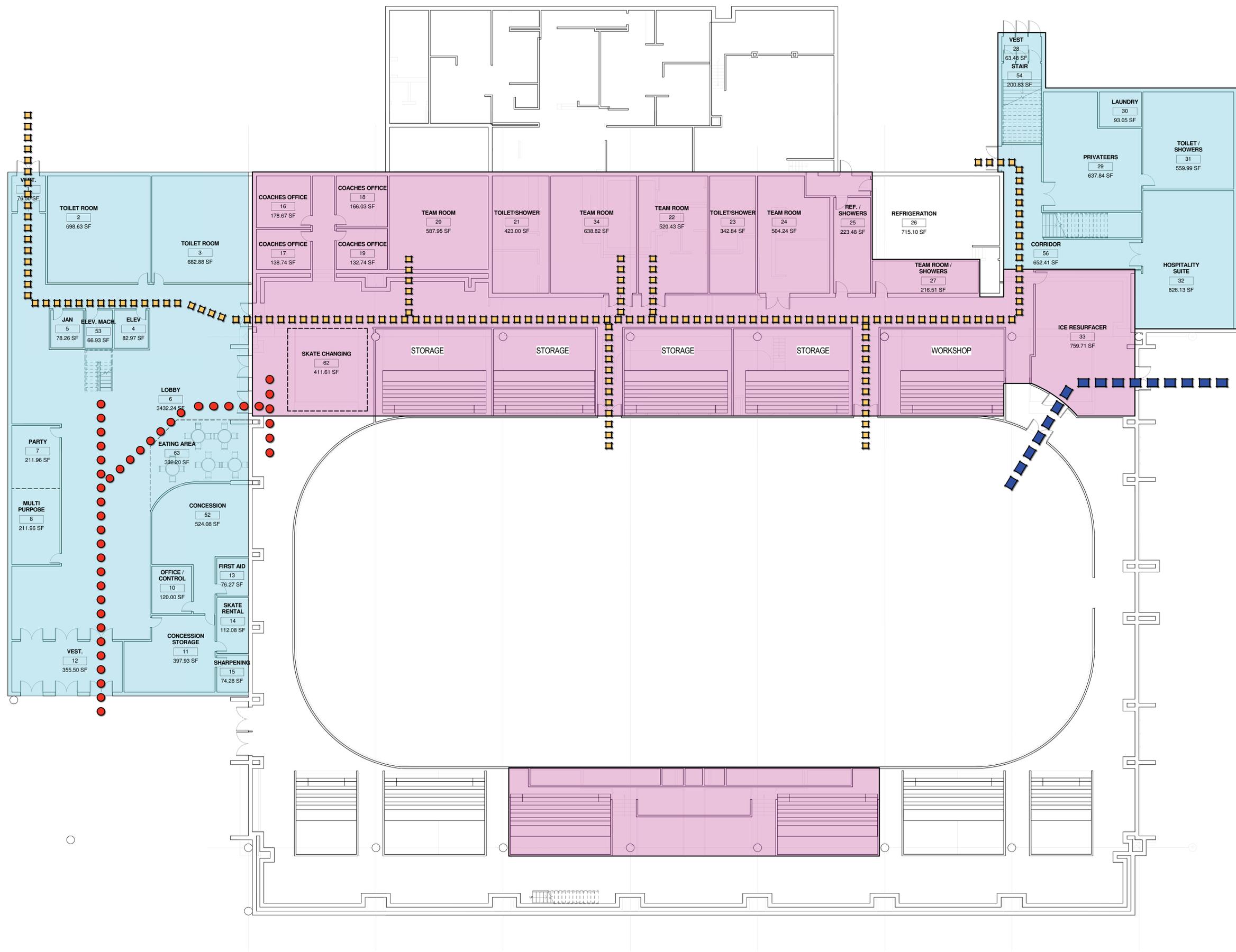
1" = 30'

SECTION B

Consultants

Legend

-  PLAYERS
-  VISITORS
-  ICE RESURFACER



1 FIRST FLOOR
 1/8" = 1'-0"

Revision	By	Appr	Y/M/AM/CD

ISSUED FOR DP AMENDMENT
 Issued By Appr Y/M/AM/CD
 File Name: [Name] Date: [Date] Date: [Date] Y/M/AM/CD

Client/Project
WATERTOWN
ICE ARENA
 OFFICE
 Title
OPTION 1 PLANS

Project No. 191060204 Scale
 Drawing No. Sheet Revision
A101-01

SECTION C

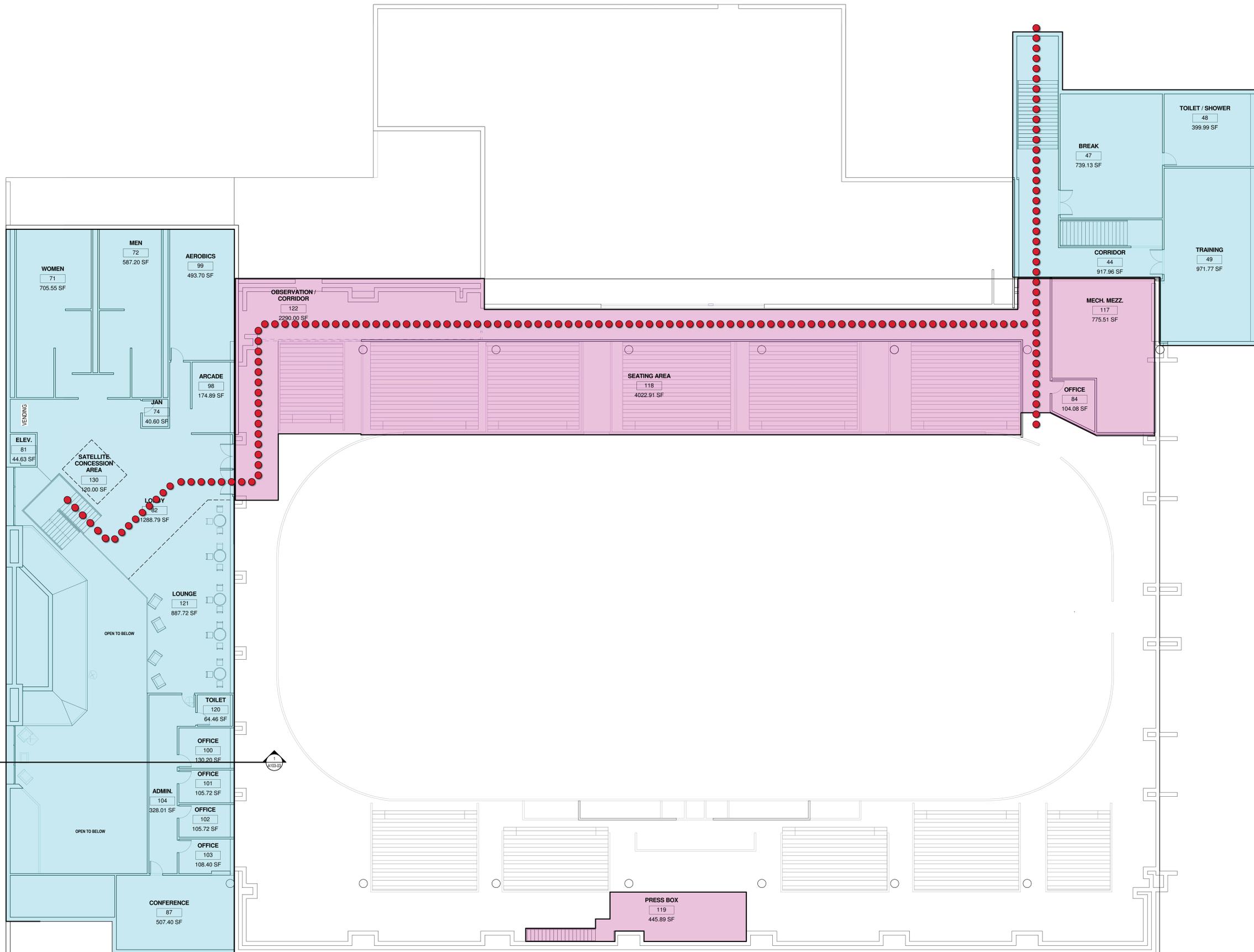
SECTION D

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Consultants

Legend

-  PLAYERS
-  VISITORS
-  ICE RESURFACER



1 SECOND FLOOR
 1/8" = 1'-0"

Revision	By	Appr	Y/M/DO

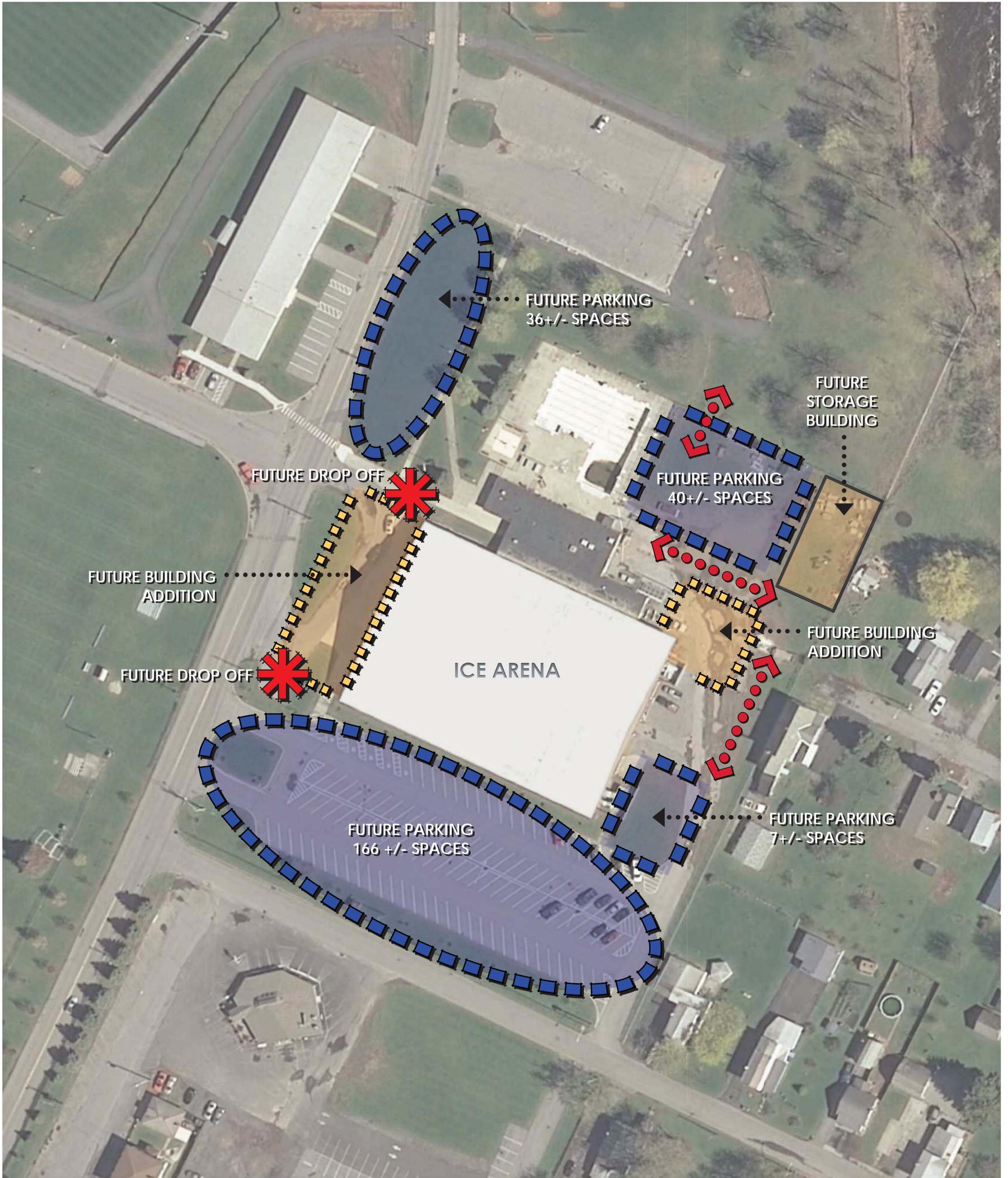
Permit-Seal

Client/Project
WATERTOWN
ICE ARENA
 OFFICE
 Title
OPTION 3 PLAN

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SECTION E



SECTION F

WATERTOWN ICE ARENA

PROGRAMMING SPACE ASSESSMENT



CHARRETTE - Program Interest Survey Results			OPTIONS		
Rating	Room Name	Room Size	No. 1	No. 2	No. 3
5	Arena with Regulation Size Rink (85' x 200')	18,800 SF			
5	Refrigeration Equipment Room	400 to 600 SF	715	715	715
5	Entry Vestibule (x3)	Small 8 x 12 = 96 SF; Large 10 x 30 = 300 SF	494	311	378
5	Skate Sharpening	60to 180 SF	74	84	60
5	Hospitality Suite	600 to 1,200 SF	826	826	826
5	First Aid Room	55 to 120 SF	76	124	119
5	Large Admin Area (mgr & staff offices, recep.)	500 to 3,000 SF	853	902	1187
5	Training Room (Class Room)	450 to 800 SF	867	838	838
5	Party Room (Multipurpose)	300 to 800 SF Each	422	581	500
5	Skate Changing Area	300 to 800 SF Each	411	465	465
5	Heated Observation Area (Lounge second floor) (Option 2 - shared with 2nd floor Lobby)	300 to 1,000 SF	727	966	887
5	Public Restrooms	250 to 650 SF Each	1176	2938	2952
5	Large Varsity/JV Team Rooms	22 x 26 = 572 to 24 x 30 = 720 SF Each	637	637	637
5	Eating Area	200 to 800 SF	392	844	842
5	Skate Rental Area	150 to 400 SF	112	352	345
5	Elevator & Elev. Equipment	150 to 250 SF	148	164	92
5	Separate Ticketing Area	15 to 120 SF	0	0	45
5	Concessions (pre-prepared foods)	100 to 400 SF	524	383	374
5	Concessions Storage	100 to 300 SF	397	274	150
5	Pro Shop - Minimal	100 to 300 SF	0	115	133
5	Break Room	150 to 300 SF	739	744	997
5	Spectator Seating:	10,200 SF	7779	7851	7851
5	Referee Room w/ Shower / Restroom	150 to 200 SF	223	223	323
5	Four Regular Team Rooms + Small Team Room	16 x 18 = 288 SF to 20 x 24 = 480 SF Each	2465	2465	2465
5	Shared Team Restrooms	240 to 350 SF Each	765	765	765
5	Ice Resurfacer Room	275 to 500 SF	759	759	759
5	Press Box Area	60 to 200 SF	445	445	445
5	Coaches Room	65 to 120 SF Each	614	614	614
4	Heated Lobby Area	See below			
4	Large Lobby Area	24 x 35 = 840 SF to 30 x 48 = 1,440 SF	3432	3169	4144
4	Exhibit Storage	Trophy Display			
3	Aerobic / Exercise Room * (Option 2 - shared with 2nd floor lobby)	500 to 1, 000 SF	1184	396	493
3	Lobby (Second Floor)	300 to 800 SF	476	2487	1408
3	Small Lobby Area	22 x 24 = 480 SF to 24 x 35 = 840 SF			
3	Video Arcade	150 to 300 SF	212	218	174
1	Vending Machine Area	100 to 300 SF			

Total Area	40,908	68,137	71,848	72,176
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Existing Area	40,908	40,908	40,908
Renovated Area (Pink)	13,050	13,122	13,222
New Area (Blue)	14,179	17,818	18,046

Opinion of Probable Cost	\$ 5,474,025	\$ 6,305,400	\$ 6,374,200
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SECTION G

Structural Analysis - INCOMPLETE

DESIGN CRITERIA, LOADING

Occupancy Category	III
<u>Roof Snow Load</u>	
Ground Snow Load	$P_g = 60 \text{ psf}$
Snow Exposure Factor	$C_e = 0.9$
Snow Load Importance Factor	$I = 1.1$
Flat Roof Snow Load	$P_f = 45.7 \text{ psf}$
Sloped Roof Snow Load - 26°	$P_s = 45.7 \text{ psf}$
Sliding Snow Load	$P_{\text{slide}} = 78.7 \text{ psf}$

Wind Design Data

Basic Wind Speed	$V = 90 \text{ mph}$
Wind Importance Factor	$I = 1.15$
Wind Exposure	C

Floor Live Loading Data (from existing drawings)

Live Load Roof	45 psf
Wind Load	12 psf to 21 psf

Seismic

Write-up pending

Primary Changes in the Building Code

Write-up pending

The Watertown Ice Rink and supporting structures include two separate structures systems. The Ice Rink building is on open floor plan, gable roof building and includes a slab-on-grade concrete floor, brick masonry enclosure, steel truss roof structure supporting on steel columns, open web joist purlins and structural steel member bracing. A standing seam metal roof was installed over purlins and was later coated with a urethane system. The building structure is founded on concrete spread footings and strip footings at the wall perimeter.

The support building to the north is a single story flat roof building and includes a slab-on-grade concrete floor, brick masonry enclosure and load bearing walls and a flat roof structure consisting of concrete plank on load bearing masonry walls. The building structure is founded on concrete strip footings for load bearing walls.

Watertown Municipal Arena
Interim Structural Analysis Report

The scope of the project includes the following project scope related to the structure include:

- Inspect and evaluate the existing roof trusses and support structure for maintenance and repair.
- Evaluate structure for roof loadings based on roof alternatives
- Make recommendations for required structural repairs or upgrades to structural members.

Structural Components descriptions

Ice Rink

Slab-on-grade:

Over the ice rink footprint, the slab cross-section is a 6" thick concrete slab, on 4" of insulation and 2" sand bed. Beneath the slab is a network of 4" diameter drainage piping. Outside of this the cross-section is a 4" thick concrete slab on 6" of porous fill. There is an expansion joint between the two different slab construction cross-sections.

Brick Masonry Enclosure

The rink building was enclosed in 1976 and the enclosure generally is generally constructed of a 4" cast-in-place concrete wall with brick masonry cladding both the interior and exterior surfaces. The upper portion of the wall consists of horizontal window bands above the wall system.

Steel Truss Roof Structure

There are eight (8) north-south column lines at 32 feet on-center spacing. Columns support two truss types (T-1 – interior trusses and T-2 – end trusses) spanning 125 feet. T-1 trusses consist of a W10 x 77 top cord and a W10 x 45 bottom cord while T-2 trusses consist of a W10 x 72 top cord and a W10 x 33 bottom cord. Various W10 members connect the two cords. Trusses provide a 20 feet clear height above the ice surface.

The roof trusses are braced by nine (9) truss braces spanning 21'-3" and consist of W8 x 17 members.

Steel Columns

Columns consist of a built-up section including one W24 x 100 and two (2) WT 12 x 50 and are 17 feet above finished floor

Purlins.

Purlins consist of 20 HG open web joists spanning 32 feet between column lines. A light gage framing system attaches the insulating panel to the bottom cord of purlins.

Watertown Municipal Arena
Interim Structural Analysis Report

Metal Roof

The roof consists of 24 gage, 1-3/4 V Seam.

Lintels

There are various steel lintels and masonry bond beams at wall openings.

Corrosion Protection

All structural steel and metal is painted with an unknown paint system.

Single Story Structure

Slab-on-grade:

The slab consist of a 4" thick concrete slab on 6"of compacted fill.

Brick Masonry Enclosure

The masonry enclosure generally is generally constructed of a 8" CMU wall with 4" masonry brick cladding.

Roof Structure

The roof structure consists of 8" concrete plank covered by a concrete topping sloped to roof drains.

Inspection Activities

The inspection consisted of a drawing review and visual observations. A detailed inspection of the Ice Rink roof deck was conditioned at two locations using a lift for close access. The inspection of the roof structure and roof deck required removal and resetting of the insulating panel covering the top truss cords, purlins and metal deck.

Watertown Municipal Arena
Interim Structural Analysis Report

Inspection Findings

Ice Rink

Slab-on-grade:

The concrete slab overall is in good condition with only minor cracking and surface deficiencies typically located at the east end.



Joint between insulated 6" slab and 4" slab at the perimeter.

Watertown Municipal Arena
Interim Structural Analysis Report

Brick Masonry Enclosure

The masonry enclosure is in good condition with isolated cracking in the brick masonry and impact damaged brick at corners generally at outside doors. Mortar joints were in good condition.



Impact damaged brick at openings

Watertown Municipal Arena
Interim Structural Analysis Report

Steel Truss Roof Structure, Bracing and Purlins

The steel truss roof structure and bracing is in very good condition with only deficiency being failed coating system. The top cord of the trusses and bracing and purlins beneath the insulating panel was found to be in good condition with a similar level of paint coating failure.



Open web steel joists above insulation panel with light corrosion on top cord.



Open web steel joists, top cord of steel truss above insulation panel with light corrosion on top cord.

Watertown Municipal Arena
Interim Structural Analysis Report



Truss and bracing with failed coating and rusting at bottom cord and bracing.

Watertown Municipal Arena
Interim Structural Analysis Report

Steel Columns

The columns were in very good condition with only deficiency being the failed coating system.



Typical column supporting interior truss

Watertown Municipal Arena
Interim Structural Analysis Report

Metal Roof

The soffit of the metal roof is in good condition with similar paint coating failure. It was reported that there is condensation at the ends of the season and sometimes rust staining on the ice surface but this condition is likely not an widespread issue based on the observations. The top side of the metal deck exhibits urethane coating failure with exposed urethane foam. With the coating failed, the urethane foam will tend to retain moisture and is a worse condition to the roof deck integrity than if no insulation was in place.



Metal deck above insulating panel with corrosion a peeled paint



Metal deck coated with urethane. Sound elevation with greater occurrence of failure.

Watertown Municipal Arena
Interim Structural Analysis Report

Lintels and Miscellaneous Metal

The steel lintels are in very good condition with only deficiency being the failed coating system. Bond beams were in good condition.



Corroded metal angle supporting metal enclosure

Watertown Municipal Arena
Interim Structural Analysis Report

Single Story Structure

Slab-on-grade:

The concrete slab overall in is good condition with only minor cracking. The pit for Zamboni dumping exhibits moderate scaling.



Pit with concrete scaling.

Watertown Municipal Arena
Interim Structural Analysis Report

Brick Masonry Enclosure

The masonry enclosure is in good condition with isolated cracking in the brick masonry. Mortar joints were in good condition. The expose CMU was also in good condition with the most severe defect being a $3/16'' \pm$ wide crack at a load bearing wall location.



CMU load bearing wall with vertical crack.

Watertown Municipal Arena
Interim Structural Analysis Report

Roof Structure

The concrete plank soffit is in good condition with some minor staining at roof penetrations in the mechanical room.



Mechanical Room with leakage at penetration in precast plank.



Precast plank subject to heavy snow loads

Watertown Municipal Arena
Interim Structural Analysis Report

Structural Analysis

Introduction

Ice Rink

The analysis focused on the following components:

- Steel Trusses
- Purlins
- Metal Deck

One-Story Structure

- Pre-cast Plank

Findings

Steel Truss Roof Structure

Members Checked:

Truss T-1

Top Cord - W10x 77

Bottom Cord – W10 x 45

Vertical Panel – W10 x 29

Truss T-2 Top Cord - W10x 72

Top Cord - W10x 72

Bottom Cord – W10 x 33

Vertical Panel – W10 x 29

Purlins

Checked purlin 4.08' from peak

Typical purlin

Metal Deck

Incomplete at the time of this interim report

Precast Plank

Checked 8" thick precast plank with 2" topping

Analysis Findings

All Items are acceptable except the metal deck has not been confirmed as of the time of this interim report.