

La Crosse Memorial Pool

Facility Evaluation, Programming, and Option Analysis

**REPORT
October 14, 2016**



Submitted by the Isaac Sports Group, LLC



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INTRODUCTION

The 78-year-old Memorial Pool in La Crosse has continued to deteriorate to the point that the facility closed in summer 2016 by the City Council. Preliminary assessments by City of La Crosse Parks, Recreation and Forestry Department suggested that the pool required significant repair or major renovation to bring the pool up to code and provide a safe swimming environment for the community. The City of La Crosse Parks, Recreation and Forestry Department hired Burbach Aquatics, Inc. (BAI) to provide a technical analysis of Memorial Pool and determine the needs and cost effectiveness of repair, renovation, or total replacement of an equivalent pool at the Memorial Pool site.

The initial technical assessment Phase I-Step 1 of the BAI study (dated June 2016) was reported to City Council on May 12th, 2016 and thereafter the Council voted to close the pool as well as approve \$80,000 in further study to rehabilitate or replace Memorial Pool at its current site. The City also hired John Kovari, Ph.D. of the UW-Lacrosse Department of Political Science and Public Administration to conduct a Memorial Pool City-wide Public Opinion Survey. Overall, the survey found significant and strong support for Memorial Pool and its preservation.

Grandview-Emerson Neighborhood Association (GENA) is strongly and proactively supportive of the efforts to preserve an aquatic facility at the Memorial Pool site that will provide expanded aquatic and community activity and continue to provide and enhance the quality of activities for neighborhood's youth and family. Memorial Pool can also be an important factor in maintaining and increasing property values in the surrounding neighborhoods. An important part of GENA's support of Memorial Pool has included working with the City of La Crosse Historic Preservation Commission to secure Historic Landmark status for Memorial Pool. The engagement with the Historic Preservation Commission includes the discussion of the best and most practical ways to recognize the historic importance and impact of Memorial Pool in a newly designed modern and sustainable aquatic facility.

GENA has hired the Isaac Sports Group, LLC (ISG) to provide an independent analysis of the existing Memorial Pool and explore upgraded program options leading to design and amenity updates to Memorial Pool while preserving the historic nature and role of the original La Crosse Municipal Pool within the fabric of community life.

The ISG scope included the following:

- Review of the Initial Phase I of the Burbach Study and analysis
- Independent review of Memorial Pool, including bringing in outside engineering expertise from the pool industry
- Further research on the history of Memorial Pool and relevant history and current status of WPA and PWA pools in the State of Wisconsin and nationally
- Independent development and analysis of repair, renovation, and replacement options
- Identification of community aquatic needs and opportunities, to gauge support for building an updated programming and recreational model for a new Memorial Pool

- Develop initial design options for basic renovation and replacement that can support the expanded aquatic programming model to meet community needs and opportunities within a historic framework
- Provide cost estimates for renovation and replacement, comparing and contrasting cost projections with BAI estimates
- Provide initial analysis of the potential financial and budgetary impact from a Memorial Pool renovation or replacement
- Work with GENA to engage community and provide materials and information needed to continue the campaign to preserve and enhance an aquatic facility at Memorial Pool

The mission of the GENA Memorial Pool Committee, enhanced by the support of ISG, is to provide resources that complement the analysis being done by the City and the Parks and Rec Department in time to assist with the Capital Improvement Planning process for 2017 as well as provide information for the Mayor's Memorial Pool Committee that has yet to meet. This collaboration will hopefully result in the best and most cost effective options that will positively impact and benefit the neighborhoods of La Crosse and the City. ISG will help GENA further develop the strategy needed to create an aquatic facility at Memorial Pool that serves the neighborhood and community for generations to come.

METHODOLOGY

ISG used a wide variety of resources, meetings, and methods to review the Burbach Aquatics Memorial Pool study and analyze community needs, opportunities, and options for Memorial Pool. The ISG Project Team includes the following individuals:

Stu Isaac	ISG-Project Leader
Duane Proell	ISG-Technical, Management, and Programming Input

The study process began with initial conference calls with members of the Grandview-Emerson Neighborhood Association and a detailed review of the Burbach Aquatics, Inc. Preliminary Report of the Technical Evaluation of the Memorial Swimming Pool dated June 13, 2016. This report covered Phase I-Step #1 of the Burbach Scope of Services.

Stu Isaac, ISG Project Leader, conducted an initial site and discovery visit to La Crosse on August 11, 2016. This site visit included the following meetings and inspections:

- Meetings with members of the Grandview-Emerson Neighborhood Association Pool Committee
- Meeting with Jeannine Serrano, Head Swimming Coach at the YMCA
- Meeting with Jay Odegaard, Superintendent of Recreation and Park Facilities (with Jeannine Serrano)
- Site visit and inspection of Memorial Pool, with Pool operator and maintenance staff

On August 16, 2016 Duane Proell of ISG conducted up a follow up pool inspection and meetings with key GENA Memorial Pool Committee members. An engineer from Myrtha Pools USA was able to accompany Duane on this site visit to evaluate the integrity of the pool tank and determine viability of new options for renovation of the pool tank.

Following these initial site visits and research ISG conducted a more complete historic review of Memorial Pool and other Depression era WPA and PWA pool projects around the country and in Wisconsin. This review included interviews with leading experts in pool history. This historic review also included an update on the current status of these pools in Wisconsin.

Supplementary research was also conducted on the usage and financial history of Memorial Pool. Additional, base-level data on use, revenue, maintenance, and expenses for Memorial, as well as the two other La Crosse Pools (Northside & Erickson), has been requested from the City by GENA leadership but was estimated by the Parks Department as costing \$1,702 to make available via Public Records Request at the time of this report.

ISG also reviewed the results of the Memorial Pool Public Opinion Survey conducted by John Kovari, PhD of the University of Wisconsin-La Crosse. Findings of this survey have been incorporated into this report as relevant.

Follow up engagement with GENA leadership was ongoing, including discussion and review of meetings of the Historic Preservation Commission, the Planning Commission, City Council, and

GENA Memorial Pool Committee meetings. During this phase ISG also consulted with leading aquatic design and engineering firms servicing the Wisconsin market, including Water Technology, Inc. and USAquatics. These consultations included discussion of repair, renovation, and replacement options, costing, and examples of comparable facilities in the market. ISG also consulted with leading pool contractors on current pool construction costs in the market. This included discussions with The Pool Company, one of the four designated pre-approved contractors of Burbach Aquatics.

REVIEW OF BURBACH AQUATICS, INC. STUDY

Burbach Aquatics, Inc. completed and submitted the preliminary report of the technical evaluation of Memorial Pool in June, 2016. The purpose of this BAI technical evaluation is

“to inventory the existing condition of the municipal facility including the pools and building, provide comment on each of the facility categories, list recommended improvements necessary to restore the facility to good repair and/or meet the significant Code requirements of the Wisconsin Department of Public Health, Division of Environmental Health, Swimming Pool and Spa Program (The Code) and the Americans with Disabilities Act (ADA); provide Opinions of Probably Construct Costs and present a summary of recommendations.” [Text from BAI report]

The City engaged BAI to analyze and develop facility improvement plans and options that would achieve a high probability of a 25-year projected life span, focusing on maintaining the “status quo of the facility with a preference for renovation in lieu of complete replacement.” [Text from BAI report]

Technical Evaluation

ISG believes that the BAI technical evaluation of the current facility is accurate and thorough in terms the following items:

- Condition of the pool mechanical systems
 - Inadequacy of current scum gutter drains draining to storm drain and not recirculating
 - Lack of surge tank required for circulation of scum gutter drains
 - Inadequacy of current flow and turnover rates of pool
- Source of water loss
 - Scum gutter water draining directly to sewer
 - Leakage of actual pool tank
 - Pipe and mechanical system leakage
- Condition of pool piping
- Condition of pool tank
- Interior and Exterior condition of Bathhouse
 - Electrical
 - Plumbing
 - Roof
 - ADA access
 - Functionality
- Condition of Deck
 - Lack of Deck drains
- Code issues requiring pool and bathhouse updates
 - Pool Code issues
 - Safety issues
 - ADA issues: Both bathhouse and pool accessibility and safety

- Evaluation of diving boards and diving-well depth and requirements
- Need for new pool mechanical building or space
- Electrical System issues

ISG has utilized this research by BAI and built on the technical info to develop an updated analysis and additional options for renovation and replacement using relatively new technology not considered by BAI in its analysis.

Limitations of Burbach Study

The recommendations in the BAI report must also “meet the aquatic...needs of the Community with the limiting parameter of maintaining the same size and type of facility.” [Text from BAI report] This limitation of scope of the first step of the BAI study restricts the exploration of alternate options that could be both more cost effective and better meet the needs of the community and drive more facility use. This focus results from the initial scope limitation of Phase I of the BAI study as well as limited research on the history of Memorial Pool and other pools of the era. Options outside of this limitation that could help achieve more cost effective renovation or replacement of the pool in the current design include:

- Renovation of existing pool using new technology
- Options of more modern water handling and energy management technology
- Downsizing the pool and bathhouse in a renovation project (support for this option shown in survey)
- Total replacement of the pool with a smaller more cost effective pool (support for this option shown in survey)
- Incorporation of new features and amenities that better meet current aquatic needs and trends and allows for future enhancements to amenities and programs
- Ways to capture the historic features and relevance of Memorial Pool without incurring significant restoration costs
- Opportunities to reduce annual and long term operational and maintenance costs in addition to the elimination of water loss mentioned in the BAI report

Recent technology developments in tank renovation such as the Myrtha Renovation system could also more cost effectively rebuild the pool tank with greater assurance of water tightness and long term lifespan of another twenty-five years and beyond. This Myrtha type technology would also significantly reduce the annual start up maintenance needed in opening the pool each summer as well as the long term maintenance costs of the pool, reducing the overall cost of ownership.

The Burbach Report points out that maintaining the marble walls of the pool is an inefficient process and would not insure the integrity and water tightness of the pool for twenty-five years. Maintaining the history of the pool also does not argue for the preservation of the marble walls. Replacement with concrete/gunnite walls indicated in the BAI analysis will require regular and ongoing patching and likely resurfacing at least twice during the next twenty-five years. The alternate tank renovation options such as the Myrtha Renovation would better withstand Wisconsin winters, provide easier cleaning during the opening of the pool, and significantly reduce maintenance costs.

Three important mechanical system options; including new filters, new controls, and new power management technology; can also be evaluated to reduce operating costs and reduce the total square footage needed in a new pool mechanical building. These energy, water, and space saving options cost more than their standard equivalent components and usually pay for themselves in reduced operating costs within two to three years in a year round pool. In a seasonal pool such as Memorial Pool the payback period is usually three to four times longer but do still provide annual cost savings and environmentally important conservation. These options are worth identifying and exploring during the next phase of development.

Additional analysis and discussion of these options can be found in the Design, Cost, and Financial Impact sections of this report.

Second Step of the Burbach Scope of Services

The recommendations of the BAI Report include a recommendation not to make decisions based solely on this first step of the study. The BAI report correctly states:

“The second Step of the (BAI) Professional Service agreement will address new and different type of uses for outdoor facilities, develop site layouts which will be more efficient and similar in size...combine assets of the present facility with construction to greatly increase the profitability and service levels, prioritize the City’s anticipated swimming pool needs and address the financial profile of a modern facility” [Text from BAI report]

This second step will be coordinated with the recently appointed Mayor’s Pool Committee and is likely to address not only Memorial Pool but broader community aquatic needs and opportunities. A significant part of this second step in the Burbach scope is to facilitate the meetings and deliberations of this committee. We anticipate that the second step of the Burbach study will identify many of the same aquatic programming and activity needs that we address in this report and that it is highly probable that many of the same options and solutions will be explored and recommended.

Recommendations and Options

The recommendations in the BAI report correctly identify that mere repairs to Memorial Pool will require the City to “continue a high level of funding every season just to keep the facility operating.” Specific costing analysis of the BAI study will be referenced in the Cost section of this report.

The BAI report mentions that the pool can be reconstructed, replacing marble art-deco panels, which will require ongoing panel replacement over the next 25 years and additional maintenance over this period. For this reason, BAI recommends the total replacement of the pool vessel. This recommendation does not take into consideration newer technology, such as Myrtha Renovation. Key advantages of Myrtha Renovation include the following:

- More cost effective reconstruction of the pool tank
- Elimination of significant maintenance of the pool tank over the next 25 or more years

- Integration of new gutter systems and the recommended replacement of piping and inlets into the Myrtha renovation system
- Reduction in the overall renovation cost of the pool
- Allows some simple cost effective reconfiguration of the dimensions of the existing cross to better support programming in the pool

ISG agrees with BAI that the repair option is not a viable option. ISG also agrees that a replacement option is a viable option based on the cost of renovation compared to the cost of renovation, but this is more based on the potential of a replacement option to include a smaller more modern pool design that can better provide a wide range of community aquatic programs and activities in a smaller and more cost effective design. This redesign and efficient down-sized design was not an option to be considered into Phase I of the BAI report. ISG does not think a total replacement of the full 9,925 square foot water area is cost effective or that it provides any additional important features activities than a newly designed smaller pool footprint can provide.

ISG concurs that the following changes are necessary in any renovation of Memorial Pool:

- Replacement of deep hopper bottom (of the pool's deep end) with a Myrtha Renovation.
- The gutter system must be replaced for safety, water cleanliness, and water conservation. The cost of this can also be reduced as part of the new technology pool tank renovation options.
- Replacement of the deck is appropriate, with the installation of a deck drain system a critical part of the deck replacement.
- ISG agrees that the option of a vinyl pool liner is not a viable alternative for a long term solution.

The renovation of the bathhouse is necessary, as BAI indicates. BAI is correct in recommending that the pool mechanical system in the current bathhouse be abandoned and a new mechanical building constructed. This will reduce the cost of renovating the deteriorating floor over the basement mechanical space and allows for more efficient use of space in a renovated bathhouse. As BAI indicates, the bathhouse is structurally sound except for some roof elements. Based on the seasonal use of the bathhouse, the cost of renovation of the bathhouse could be further reduced with a roof and wall structure that is not fully sealed or insulated, increasing air circulation throughout the bathhouse. Ironically, the original bathhouse of the Municipal Pool was an open air ventilated structure. There are many good examples of very cost effective covered open air bathhouse structures that could retain the historical Municipal Pool façade.

It is important to note that the requirements for additional toilet facilities based on pool square footage code requirements may be reduced with the downsized pool renovation or replacement options addressed in this ISG report.

The BAI recommendations include the mention of addition recreational facilities and amenities to drive increased pool attendance. Facility features that support current organized programming, such as swim lessons, and create opportunities for new and inclusive programs such as aquatic fitness, swim team, lap swim, and recreation need to be explored. These features and programs are critical components driving increasing attendance and overall benefits to

neighborhood and city residents. ISG hopes that the next phase of the BAI report and the work of the Mayor's Pool Committee will address the organized aquatic program elements as well as the recreational activities mentioned in the BAI report.

It will be necessary to have both the enhanced recreational features and the enhanced programming to increase revenue and to create an overall operating business model to improve Memorial Pool. Critical to this enhanced programming and attendance is the addition of a pool heater in any renovation or replacement option. The operational cost of a pool heater may well be offset by water savings and other energy efficiencies in new system technology, although the Burbach report does not address these operating cost variables in this phase of their report.

More specific review of the BAI report is referenced in other sections of this report in comparative references to additional options for the preservation of an aquatic facility at Memorial Pool.

HISTORY RESEARCH AND REVIEW

The history and historic significance of the La Crosse Municipal Pool (rededicated as the Veterans Memorial Pool in 1948) includes design, construction, and social elements. The study of the pool's history indicates that its biggest impact was its very important central role in the social and recreational life of the City. In addition to being the "...most popular rec center for La Crosse's young people..." the pool lived up to one its most important objectives to "Secure safe swimming for La Crosse youngsters and adults" to "end the early drowning toll in this vicinity." [Quotes from newspaper articles from 1938]. Understanding all of these elements in the history of the Municipal Pool will help determine how best to recognize, honor, and preserve this history in a pool that better meets the needs of today's community.

HISTORIC CONTEXT

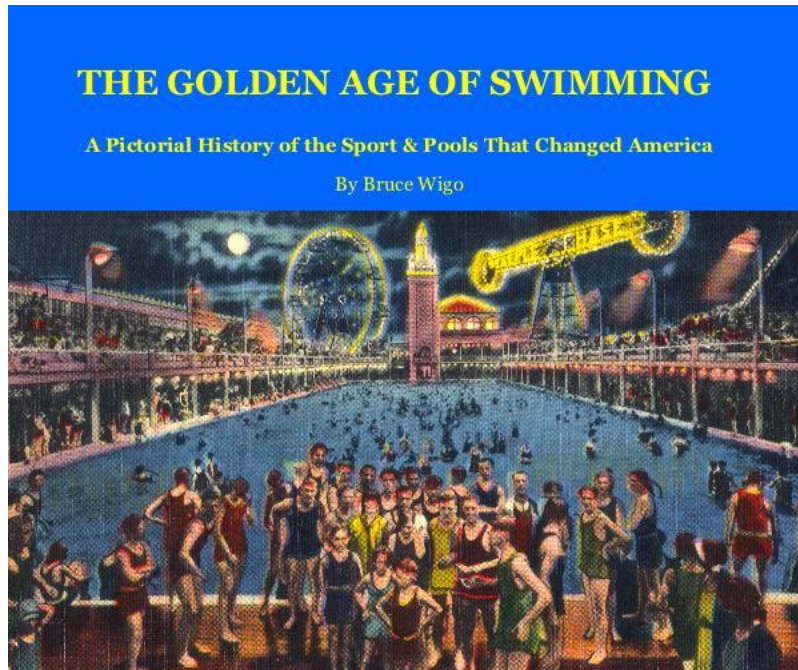
The late 1920s and the 1930s were a golden age of swimming pool building and use in the United States. The driving force behind the rapid increase in building of pools was a combination of factors. The national awareness of the high drowning rate is one key factor, which was as high as 10 to 11 drownings per 100,000 per year (now down to 1.2 per 100,000 today). The other factor was the need for community meeting places that could be used by the entire family. The pool building in the late 1920s was driven by private pools and clubs.

The biggest surge in building, which initiated a wholesale change in the direction of recreational facilities, particularly pools, began in 1933 with the establishment of New Deal public works projects funded by a combination of the Civil Works Administration (CWA: 1933 to 1934), the Public Works Administration (PWA: 1933 to 1944), the Works Progress Administration (WPA: 1935 to 1943 and renamed the Work Projects Administration in 1939), and the Civil Conservation Corp (CCC: 1933-1942). Pools were a very important part of the WPA and PWA programs, strongly encouraged by President Franklin D. Roosevelt. FDR was an avid supporter of the benefits of swimming for therapy, fitness, and recreation and was an avid swimmer himself, utilizing pools as an important therapy tool for the management of his polio. In fact, FDR initiated the building of the White House indoor pool in the West Wing in 1933 through public donations, many just pennies from children around the country. One of the most famous pool repurposing projects in the country was in 1970 when this White House pool became the Presidential briefing/media room, which it still is today.

Noted swimming historian and President of the International Swimming Hall of Fame, Bruce Wigo, describes the role of the new pools of the 1930's as follows:

"The pools built during the Depression provided an integral part of community life and a very healthy and inexpensive activity and meeting place for all members of the community. The pools were so popular during this era that they regularly drew more people than movies and other popular entertainment and activities of the era. The support of the WPA and PWA helped change the overall nature of public recreation and led the way in publicly funded recreation facilities and activities for generations to come"

In addition to the interview we conducted with Bruce Wigo, his book, The Golden Age of Swimming: A pictorial History of the Sport & Pools that Changed America is a great asset in understanding the role of pools and aquatics in this era and its impact on future recreational facilities and public policy.



Another great historical reference and social commentary is the book Contested Waters: A Social History of Swimming Pools in America by Jeff Wiltse.

During this period, hundreds of pools were built through WPA and PWA funding, quite a few of which still exist today, often in a remodeled or modernized format. Most of the pools were funded by the WPA, with a smaller number of pools funded through PWA. These pools were a wide architectural and building mix, but what they did share was their modern designs and systems that met the needs of a wide range of citizens and served as important and central elements in the overall fabric of life in their communities.

BUILDING OF THE MUNICIPAL POOL

The Historic Landmark Nomination Form for the Municipal Pool provides a good summary of the five-year process to initially propose, approve, fund, design, and build the pool. The pool was funded jointly by the City of La Crosse and the PWA (45% of total cost). Additional funding for the further development of the City Fairgrounds area was also provided by the WPA.

It is important to remember that the initial support for the pool was provided by the Junior Association of Commerce, the Jaces (evolved into current day Jaycees) at the time. The Jaces raised \$3,000, \$500 through a nautical show and \$2,500 through private donations, to fund the initial campaign and development for the pool. The Jaces helped lead the proactive community

based campaign for the pool, including a torch light parade/campaign. The campaign also received active support from the American Legion and the Boy Scouts with active support from the La Crosse Tribune. It is important to keep this historic support from the private sector in mind and its relevance to today as the Grandview-Emerson Neighborhood Association leads a new community based initiative to preserve a pool at the site of the historic Municipal Pool.

The cross design of the pool is purportedly to remember those that have drowned in the waters around La Crosse, although no mention of this fact appears in the many articles of the time. The news coverage does mention the eight-month period it took the City Common Council to decide on the shape of the pool, choosing between oval, ovoid, rectangular, circular and cross shapes.

The construction of the bathhouse of brick was not distinctive in any architectural fashion, but is typical of the basic public construction of the time. Many of the WPA and PWA pools had more elaborate architectural designs and building materials. The bathhouse was initially an open roof structure which included baskets (another hot topic of Common Council discussion between baskets and lockers) for clothing and simple spaces to support the public use of the pool.

The pool was promoted at the time as “modern in every respect.” The modern elements included the early use of underwater lighting in the deep end. The actual pool tank/walls were made of art marble, which was not extensively used at the time or at any time for pool construction. While this was distinctive, it also required ongoing maintenance and resealing as the seams and joints were a continuing source of leaking. Marble pool walls soon disappeared from large public pools, being used in the future mostly for high end small private club or hotel pools.

The pool decks, pool enclosure (fencing) and other aspects of the site were not remarkable or unique in any significant way.

ROLE OF THE POOL IN THE COMMUNITY

There is no doubt that the pool fulfilled its promise to become a central meeting and activity space in the community and help make the residents of the community more water safe. By its second year in 1939 the pool hosted over 46,896 attendees through its turnstiles. Attendance continued to be high throughout its early years. As two other pools were built in La Crosse neighborhoods and the features and amenities (or lack of such as a pool heater) and the pool did not keep up with aquatic program and use trends the attendance dropped to a total attendance of 5,864 during the shortened summer season of 2015. The demand, potential, and need for a neighborhood pool still exists in the community, but the features and conditions of the current pool do not meet this need and demand.

In 1948 the Municipal Pool was rededicated as the Veterans Memorial Pool as part of the overall dedication of the Park. Its role as a Memorial to those La Crosse citizens who gave their lives in World War II was never fully realized and little on site reference to this important memorial role exists. In today’s environment the opportunity exists to enhance this role as a broader Veterans Memorial in a City that could use more public memorials to veterans.

HERITAGE PRESERVATION COMMISSION

In its August 25, 2016 meeting the Heritage Preservation Committee addressed the historic designation of the Veteran's Memorial Municipal Pool and how the Commission would review proposed changes and updates to the structure. The letter from the Commission to Steve Carlyon, Director of La Crosse Parks, Recreation, and Forestry follows:

PRESERVING THE HERITAGE OF MUNICIPAL POOL

Within the framework of support from the Heritage Preservation Commission the preservation of Memorial Pool needs to balance the historic preservation of its role in La Crosse community life and history with the needs of a pool for the next generation that is “modern in every respect.” Following are some suggestions to preserve the key elements of the pool while allowing a significant renovation or replacement with a pool best suited to meet the needs of today’s and tomorrow’s residents in a cost effective and sustainable model.

- Retain front entrance and façade of current bathhouse in any new or renovated bathhouse
- Maintain PWA recognition plaque in prominent place in facility
- If the Myrtha style “Renovaction” or a complete rebuild of pool walls is executed, we recommend utilizing several of the marble pool wall panels for mounting of historical record of Municipal/Memorial Pool
 - Historic timeline, story, & photos
 - Depict how pools effect saving lives and enhancing neighborhood livability
 - This element of the project can be supported by private donors and community organizations
 - These pool wall plaques can also be used to recognize donors in the pool, from the Jaces in the 1930s to the donors and supporters of today helping make the preservation and enhancement of Memorial Pool a reality
- Use underwater light lenses for window portholes in the bathhouse to show unique features of original pool
- Return bathhouse to modern open-air seasonal design, both recapturing its initial feel and reducing cost of overall renovation
- Enhance recognition of Veterans at building entrance and front walkway and engage veterans groups and representatives in the process
 - Could include free use of the pool by veterans-which has been effective in other Veterans Memorial Pools around the country

WPA and PWA POOLS IN WISCONSIN

As part of the historical overview of Municipal Pool, an initial survey of known WPA and PWA pools in Wisconsin was conducted. Although this may not be totally inclusive and further research on their current states would require visits and additional research, it does provide an overview worth considering as part of the plan for preservation, renovation, or replacement of Memorial Pool.

Following is the survey of Wisconsin pools built with the help of federal funding during the 1930s and their current state.

Carver Park Pool, Milwaukee

- Built in 1940
- WPA funding
- Current status: Pool demolished and turned into a splashpad as part of Carver Park redevelopment

McGovern Park Pool, Milwaukee

- WPA, CWA funding
- Demolished in 1997-1998 based on deterioration and reduced use-turned into lawn area with bathhouse repurposed as community center building as part of overall park

Scott Park Pool, Omro, WI

- Built in 1938
- WPA, CWA
- Now demolished

Sheridan Park Pool, Cudahy, WI

- WPA, CCC
- Currently opened and fully renovated



Badger Park Pool, Shullsburg, WI

- WPA
- Currently open and renovated within original design



Greenfield Swimming Pool, West Allis, WI

- WPA
- Currently replaced and now operating on site as Cool Waters Family Aquatic Park



Hoyt Park Swimming Pool, Wauwatosa, WI

- Built in 1939
- WPA
- Still open and renovated

Historic photos



Hoyt Park Renovated



Kosciuszko Park Pool and Bathhouse, Milwaukee

- Pool built in 1939
- Bathhouse built in 1943
- Renamed Pelican Cove and renovated and remodeled



Municipal Pool, River Falls, WI

- Built in 1937
- CWA, PWA, WPA
- Still in use and renovated

GOALS OF GRANDVIEW-EMERSON NEIGHBORHOOD ASSOCIATION

The Grandview-Emerson Neighborhood Association is committed to providing preserving and enhancing the quality of life in the neighborhood through a wide range of services, amenities, facilities, and programs. For 78 years Memorial Pool has been a very important component of the quality of life in the surrounding neighborhoods and the overall La Crosse community. GENA is committed to preserving a pool at the site of the current Memorial Pool. The Association is striving to work with the City to provide a cost effective aquatic facility that incorporates modern aquatic elements that will enhance the benefits for all residents of the neighborhood while maintaining references to the historic elements and role of the pool in community life.

The objectives that contribute to this overall goal include the following elements:

- Provide a safe, clean, and accessible aquatic environment for all ages and abilities
- Enhance swim lessons and other water safety programs to continue to support the historic role of teaching children and adults to swim and making the community water safe
- Provide recreational activities that appeal to all residents
- Expand organized aquatic programming for all residents, including lap swimming, summer rec swimming and diving team, aquatic fitness, and other aquatic programming
- Expand partnership use programs with community and neighborhood organizations, including the private and public schools, day care facilities, camps, the YMCA, senior organizations, and health care providers
- Provide a family friendly and multi-generational environment that encourages neighborhood youth and families to spend extended summer days at the pool, restoring its position as an important community activity center
 - This includes both the aquatic and the dry side/pool deck amenities offered at a renovated or new pool
- Enhance the visibility and recognition of Memorial Pool's role as Veteran's Memorial in the City of La Crosse.
- Support and enhance property values in the neighborhood that contribute to the City-wide neighborhood revitalization efforts

The intent of GENA is to work closely with the City to integrate the programs and features of a new Memorial Pool with the overall City master aquatic vision, potentially complementing any future year-round City aquatic center and integrating with programs offered at the two other neighborhood pools in La Crosse. GENA also recognizes how important the preservation and enhancement of Memorial Pool is to the overall La Crosse goals of neighborhood revitalization.

The Neighborhood Association recognizes the importance of its role in supporting the preservation of a pool at the current site. This role includes building community support, providing important input, and ultimately providing resources to support the project. GENA can also play a role in engaging and energizing resident support in volunteer efforts in support of pool programs, enhancement of the facility amenities, exterior beautification, and even enhancement of the Veterans Memorial aspect of the facility.

REVIEW OF MEMORIAL POOL PUBLIC OPINION SURVEY

The City hired John Kovari, PhD. of the University of Wisconsin-La Crosse Department of Political Science & Public Administration to conduct a survey of public opinion about Memorial Pool and its future within the context of overall City needs. The survey was able to further breakout the opinions of residents in the immediate Memorial Pool neighborhoods as well as the opinions of overall City residents. The survey was conducted in August 2016 and the results reported in September 2016. Specific findings of this survey with respect to residents' preferences and priorities of pool features and amenities have been taken into account in the programming and design sections of this ISG Study. The survey results also show significant support for the renovation or replacement of Memorial Pool. This support is logically higher among residents in the Memorial Pool area but the support for Memorial Pool is strong throughout the City.

While there is no need to present the entire survey report as part of this analysis, there are several key items that are relevant to this study.

- Support for a Replacement Pool of some type
 - Overall respondents:
 - 71.4% favor some version of a pool to replace Memorial Pool
 - 51.2% favor a restoration or replacement pool at the current location
 - 72% of the respondents favoring some type favor the current location
 - Memorial Pool area respondents:
 - 65.7% very or somewhat concerned about closing
 - 20.8% not concerned
- Support for Allocating Funds to Reopen Memorial Pool
 - Overall respondents:
 - 55.5% strongly or somewhat strongly agree with allocating funds
 - 30.3% somewhat or strongly disagree
 - 14.1% express no opinion
 - Memorial Pool area respondents:
 - Express increasing support of allocating funds
 - Median strength of agreement score increases by over 10%
- Concern about Memorial Pool Closing
 - All respondents:
 - 49.2% very or somewhat concerned about closing
 - 23.1% not concerned
 - Memorial Pool area respondents:
 - 65.7% very or somewhat concerned about closing
 - 20.8% not concerned
 - Respondents outside the Memorial Pool area
 - 48.4% very or somewhat concerned about closing
- Program and Feature Preferences and Priorities
 - Swimming lessons is identified as the top priority-65.4%

- This finding strongly supports the need for a heated pool
- Outdoor pool is preferred by 62.7% of respondents
- Diving Boards preferred by 54.3%
- Other key features include the following:
 - Lap swim lanes
 - Shade structures
 - Lounge chairs
 - Play features such as slides
 - Zero or beach entry area

Overall Takeaways from Survey Report Relevant to this ISG Analysis:

The survey results indicate the importance of some updated version of Memorial Pool both to GENA neighborhood residents and to overall City residents. It is important to note that the needs indicated a wide range of programs from recreation and leisure needs to swim lessons and exercise programs. These preferences show a balance of youth and adult use. It is also important to note that among those supporting some type of replacement there is support for a smaller more cost effective pool option. All of these elements and options are incorporated into programs, designs, and options discussed in this report.

The survey also identifies significant support for project collaboration between the City and other private and public entities and organizations. While the survey includes collaboration in discussions of a new aquatic center, the support for collaboration is relevant to Memorial Pool and all Parks and Recreation programming in the future. Community collaboration in Memorial Pool will be important in optimizing the facilities and programming in a new Memorial Pool.

PROGRAMMING and USE

OVERALL PROGRAMMING

Whether discussing recreational use or organized programming, the heating of the pool to average water temperatures in the 81-82 degree range (compared to the 65-76 degree range reported at Memorial Pool in the past) will be critical to the success of programs and the significant increase in attendance and use. The facility design should also provide for pool configurations that can provide concurrent programs and activities, such as the availability of lap lanes that do not interfere or limit key programs or access to the key recreational features of the pool.

IMPORTANCE OF NEIGHBORHOOD POOLS IN COMMUNITY AQUATIC PROGRAMS

GENA understands that a successful neighborhood pool should also complement and integrate with the overall aquatic goals and vision of the City. The optimum aquatic program for a city is a combination of accessible neighborhood outdoor pools and a centrally located year-round multi-pool aquatic center. A city aquatic center is a critical asset to the health, fitness, recreation, and sport programs for city residents, but neighborhood pools provide the initial contact with aquatic lifestyles that create the interest and feeder programs to ultimately support the programming at a year-round aquatic center. The most successful programs provide integrated program planning and execution of the neighborhood pool and aquatic center programs, activities, and schedules. The well-integrated program creates complementary support and results in the ultimate success of both the neighborhood pool and the aquatic center.

Optimum Aquatic Programming

- Outdoor neighborhood pools
 - Access to neighborhood children by bike and walking
 - Introductory and entry level programs:
 - Swim lessons
 - Diving lessons
 - Entry level/recreational competitive swim
 - Aquatic Fitness
 - Fun outdoor holiday activities such as July 4th, Memorial Day, etc
 - Family friendly features and recreation (many that can be moved indoors)
 - Pool climbing wall
 - Inflatable obstacle course features
 - Log roll
 - Slack balance line
 - And more
 - Shade and lounge deck features
 - Lap swimming
 - Lifeguard and first aid certification courses
 - Overall: Provide positive aquatic experience for all ages to provide incentives and basic skills to encourage participation in year round aquatic programs, fitness,

teams, lessons and recreation offered in year round public and private aquatic centers and pools

- Year-round Aquatic Center: Enhanced Year-round Programming and Recreation
 - Educational Programs:
 - Swim lessons: Youth, adult, special needs, private, group
 - Lifeguard, first aid, CPR, AED, WSI certification
 - Fitness Programs:
 - Round the clock access to public lap lanes
 - Aquatic fitness for all ages, intensities, and goals
 - Deep and shallow water
 - Water running and walking
 - Cross training for multiple sports
 - Personal training
 - Senior Programming
 - Special needs
 - Aquatic Therapy and Rehab
 - Competitive Team Programs and Events:
 - Year round swim teams-YMCA and USA Swimming
 - Facility access as needed for HS and middle school swimming and diving
 - Winter Recreation or entry level team
 - Pre-team programs
 - Special needs programming such as Special Olympics, Paralympics, Wounded Warriors or other veteran's programs
 - Diving Team
 - Masters Swimming program & Triathlon training
 - Other aquatic sports, including water polo and synchronized swimming
 - Swim lessons
 - Diving lessons
 - Entry level/recreational competitive swim
 - Aquatic Fitness
 - Recreation
 - Organized programs
 - Scuba
 - Canoe/Kayak/Paddle Board
 - Water basketball and volleyball
 - Inner tube water polo
 - Underwater hockey
 - And more
 - Open Access Programming
 - Free swim hours
 - Family swim hours
 - Recreational features such as pool climbing wall,
 - Scuba

- Canoe/Kayak/Paddle Board

Advantages of the Well-Designed Neighborhood Outdoor Pool

- Often provides the first aquatic experience for children at the youngest age
- Provides the opportunity for youth to get to the pool by walking or bikes, fostering greater use
- Creates a family friendly environment for “hanging out” at the pool in the summer, building an aquatic lifestyle that leads children and adults to be much more active in aquatic programs year-round and creating a central meeting place for the neighborhood
- Cost effective way for the City to introduce aquatic programs at the earliest ages and at introductory levels
- Strong neighborhood aquatic programs and activities help drive increased usage, attendance, and program participation of year-round community aquatic programs
- Employment of local youth
- Maximize initial exposure to competitive swimming and diving experiences at the summer pool, increasing participation in entry level recreation oriented summer teams and providing a feeder program for middle school, high school, and year round club swim teams

Indoor Aquatic Center Integration with Neighborhood Pools and Programs

While a central year-round aquatic center can provide additional aquatic programming and recreation for all ages, it draws strength from the neighborhood pool. The aquatic center can also help encourage greater use of the neighborhood pools.

- Aquatic Center programs should have satellite programs that take advantage of the outdoor fun and recreational environment of the neighborhood outdoor pool
- Staffing and management of neighborhood pools and the aquatic center should be integrated to achieve economies of scale, reducing overlap, and providing the overall program to support strengthening the aquatic management team to benefit all programs.
- During the summer, neighborhood pool programs should incorporate use of the aquatic center for special programs, reward recognition, and other incentive and motivating activities. It can also provide use of the indoor center pools during bad weather to help provide greater benefit and continuity for the programs at the neighborhood pools.

The best practice community and city aquatic programs in the country have an integrated combination of outdoor neighborhood pools and centrally located multi-purpose aquatic center. No consideration of an aquatic center for La Crosse would be complete without this understanding and the analysis of how a new aquatic center would complement and optimize the existing neighborhood pools and how the neighborhood pools can help drive the success and sustainability of a city aquatic center and its programs. The next phase of ISG research will include more detailed examples of this synergy of neighborhood outdoor and community wide year-round aquatic centers.

GENA PROGRAM RECOMMENDATIONS

During the research phase of this study the GENA Memorial Pool Committee has offered the following program and feature recommendations based on input from neighborhood constituents:

- Inclusion of lap lanes for swim fitness, swim teams, masters teams, and meets
- Summer Rec Swimming and Diving Team: including swim meets
- Youth camp programs
- Multi-generational facilities and programs: young children to seniors
- Aquatic exercise
- Recreational Facilities
- Warm-water
- Easy accessibility, including ramps, stairs, and zero entry if possible
- Function deck space including shade and lounge areas and chairs
- Many children have their first competitive swimming and diving experience at the summer pool, participating in the very recreationally oriented low pressure summer team environment
 - These neighborhood summer teams become the feeder teams for the growth of stronger year-round swimming and diving and increases the opportunities for participation
 - These programs provide the basis for long term growth in both numbers and quality of city and school swim team programs

This GENA input has been included in ISG program and design considerations, with ISG input on enhanced programs, current and emerging aquatic trends, new facility features and amenities, and broad based observations of community needs.

RECREATIONAL PROGRAMMING

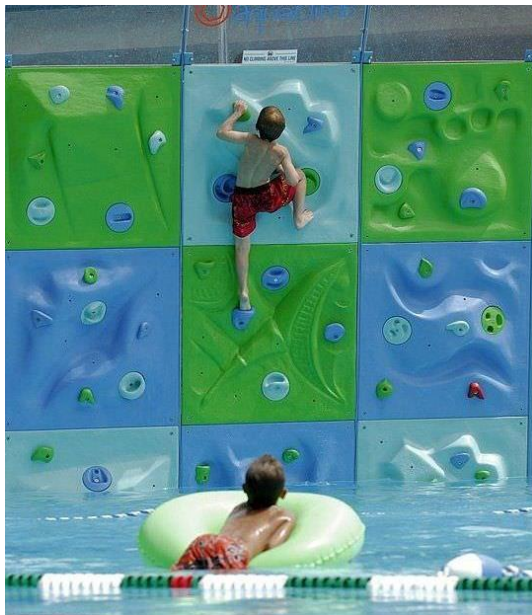
The initial instinct for any pool recreational features is to include slides and other permanent and costly recreational features. While these are useful, it is also important to explore other flexible and moveable recreational features that can provide a greater variety in more cost effective ways. The identification of recreational amenities appropriate for Memorial Pool should also consider the features and amenities available at the other La Crosse pools to provide some differentiation and eliminate unnecessary overlap. Ultimately, the goal of recreational amenities is to create a fun environment at the pool. The fun aspects of recreation at the pool should also provide incentives to users, especially the children and youth, to learn to swim and continue to improve their swimming skills to make the most of the fun aspects of the pool. This incentive leads to the growth of all aquatic programs in the community, from introductory competitive programs, through swim teams and on to adult swimming, aquatic fitness, and ultimately a lifelong healthy aquatic and fitness lifestyle.

Open Swim and Rec Activities

Key cost effective features and amenities can include many elements. For cost and budget purposes these features can be phased in. Many of these features can be moved from pool to pool. If a year-round aquatic center is eventually built in La Crosse many of these elements can also be used during the school year at the indoor pools or shared with other outdoor pools.

The following are possible recreational features and amenities proven to be very popular at community pools. All of these features combined are still less expensive than one large waterslide.

- Aquatic Climbing Walls:
 - Can be enhanced and modified to create new options.
 - Can be easily moved and can be used indoors or at other pools when not used at Memorial
 - Appeals to wide range of ages
- Inflatable features and obstacle courses (WIBITS brand name)
- Log rolling
- Water Basketball-already have baskets at Memorial
- Water Volleyball
- Slack-Line
- Diving: diving boards can provide instructional classes and competitive opportunities, but often their greatest use is recreational
- Deck Space: Critical to the pool environment, fostering increased use and “hanging out at the pool”
 - Includes lounge chairs and Shade



Climbing Wall



Inflatables (WIBITS)



Log Rolling



Slack Line



Water Basketball



Water Volleyball



Diving-Fun



Deck Space



Shade Structures

The opportunity exists to also include some other aquatic features like a play structure or small slide depending on budget, with the ability to phase these features in. Examples of fun play features can include elements such as these:



Organized Recreational Activities

While the open rec time at the summer neighborhood pool is still the most important feature, the offering of some organized recreation based programs are important to the overall aquatic program and community benefit. These types of programs also support growth in year-round aquatics as well as providing opportunities to work with partner community organizations. Some of these programs, such as paddling, can provide initial instruction, particularly early in the summer season when bodies of water are still cold, providing opportunities to teach key aquatic lifestyle skills. These include:

- Kayak, canoe, and paddle boarding (modern, best-practice indoor pools offer these classes and activities)

- Obstacle course races using WIBITS
- Scuba can be offered for initial instruction, but most of these programs are offered at indoor pools, but the option exists at the outdoor pools
- Fun events
 - “Dive-In Movies”
 - Holiday festivities and activities
 - Birthday and other parties and social events
 - Additional events that do not require additional equipment
 - Triathlon or other multiple-stage competitions involving swimming or water sports



Kayak Class



Paddle Boarding Class



AQUATIC PROGRAMMING

Learn to Swim

Swim lessons are a critical component for any and all aquatic facilities. In the case of Memorial Pool, swim lessons have a historic importance to the building of the original Municipal Pool. Swim lessons are the gateway to water safety and establish the tools and skills to participate in aquatics as a lifelong activity. Swim lessons at neighborhood pools are the first step in this lifelong healthy lifestyle.

In the past, the swim lessons at Memorial have dropped to very low numbers, largely because of cold water and ever decreasing scheduling and access. The learn to swim program at Memorial will be enhanced by a redesigned pool with warm-water, a wide range of shallow water depths, and enhanced ease of access to the water. The increased recreational and program activities will

also provide increased incentive to young children and youth to swim and improve their swim skills. Expanded schedule and access are also critical to the growth of the learn to swim program. A wider range of class types and times might include:

- Mid-morning classes
- Later afternoon classes for children participating in other summer camp and program activities
- After-work adult classes
- Offering of private and semi-private lessons
- Lessons for special needs children and adults
- Lesson partnerships with community organizations

Swim lessons in warmer water and a wider range of classes can significantly enhance enrollment and revenue. The swim lesson revenue in 2015 was only \$865. Growth of learn to swim programs in an updated pool can be at least ten-fold (see financial impact analysis).



Summer Recreation Swim Team

Neighborhood pools are the perfect environment for entry level summer recreational swim teams. For example, the proposed Option #1 Renovation includes 5 x 25 yard lap lanes for the opportunity to develop a neighborhood swim team. The Option #2-New Replacement pool concept includes 6 x 25 yard lap lanes. Such neighborhood swim teams exist in surrounding towns, but not currently in the City of La Crosse, and could also be a program offered at the other La Crosse neighborhood pools. As mentioned earlier in the section on the advantages of neighborhood pools, it is important to again recognize the importance of these neighborhood teams.

- Many children have their first competitive swimming and diving experience at the summer pool, participating in the very recreationally oriented low pressure summer team environment
 - These neighborhood summer teams become the feeder teams for the growth of stronger year-round swimming and diving and increases the opportunities for participation
 - These programs provide the basis for long term growth in both numbers and quality of city and school swim team programs

In addition to the Summer Swim Team, swim lessons, rec swim team, masters swim program, and lap swim programs can also make use of pool time in the mornings



Lap Swim

The reconfiguration of Memorial Pool to accommodate lap lanes also provides the opportunity for fitness swimming throughout the day as well as adult fitness swim and even the opportunity for a Masters swim program, perhaps in conjunction with the YMCA or other organizations and opportunity for triathlete swim training. The configuration of the pool to allow access to lap lanes throughout the day without interfering with key programs and access to recreational facilities is very important.

Educational and Water Safety Programs

Finding lifeguards to meet pool needs is a national issue. The cost of training and certifying guards and the competition with other hourly job opportunities has created shortages. Enhanced programming at Memorial Pool can include lifeguard, first aid, CPR and other courses, perhaps in conjunction with the YMCA or the school system. Not only is this an important community service, but it helps provide the additional lifeguards needed by the City.



Aquatic Fitness

Aquatic fitness activities and classes are currently the realm of the YMCA in La Crosse. The opportunity to include some aquatic fitness in neighborhood pools, especially in a reconfigured Memorial Pool, would enhance the benefits to the community and involve many more individuals in active and fitness oriented lifestyles. These programs can also be offered either in conjunction with the YMCA or as a precursor to a broader aquatic fitness program for a future

La Crosse Aquatic Center. Although any aquatic fitness program at Memorial Pool would start slowly, the following programs can eventually be offered as part of an overall City aquatic program. Any programs offered would be an improvement over the current lack of programs and may draw participants from across the City.

- Aquatic fitness ranging from traditional aqua-aerobics to more aggressive programs such as Aqua Zumba and other aquatic versions of dry land fitness programs
- Water walking and water running
- Cross-training
- Disabled and special needs aquatic fitness programs
- Veteran programs, building on the legacy of the Veterans Memorial Pool
- Youth fitness and fun activities related to summer day camp or partner activities
- Senior specific programs
- Sport program lessons such as diving and synchronized swimming

EXAMPLES OF AQUATIC FITNESS PROGRAMS



Special Needs Programming

Reconfiguration of the pool and upgraded pool access can also provide the opportunity to utilize Memorial Pool for expanded special needs programming in conjunction with current special needs program providers.

EXAMPLES OF SPECIAL NEEDS AQUATIC PROGRAMMING



RENOVATION and REPLACEMENT DESIGN CONCEPTS

Based on the technical analysis by Burbach and the follow up ISG analysis, we agree with BAI that a repair option is not cost effective or likely to provide the long term benefits necessary to maintain Memorial Pool. We will focus on 2 options: Option #1 - renovation and Option #2 - replacement.

OPTION #1 - RENOVATION

Pool Reconfiguration

The BAI report focused on a traditional, restoration-type renovation option utilizing a rebuilding of the pool vessel with concrete/gunnite construction. It also maintained the current configuration and design of Memorial Pool. The renovation of all the related components, including mechanical systems, gutters, deck replacement, mechanical building, bathhouse, and code requirements are all impacted by any reconfiguration of the current Memorial Pool.

In order to better accommodate programming recommendations and options with the simplest and most cost effective renovation option we recommend the following:

- Simple reconfiguration shortening the cross section of the pool from 110' to 75' to create five x 25 yard lap lanes suitable for lap swimming, summer rec team, and mid depth recreational activities.
 - Lap lanes for lap swim, summer team, and mid depth recreational activities
 - Does not interfere with deep water or shallow water activities
- Ramp access and wide stairs into the shallow water area-enhanced access for all ages

Impact of Reconfigurations

- Reduce the overall square footage of the pool by 14% (1,400 square feet)
- Reduces the overall cost of renovation and slightly reduces the bathroom fixtures needed to meet code
- Reduces annual operating costs (see financial section of report)
 - Volume of water decreases by 15%, or almost 50,000 gallons less than the current 339,577 gallons volume
 - Reduces renovation costs, requiring slightly smaller pool filter and mechanical systems and heater and reducing annual operating costs
- Reductions do not negatively impact any usage elements of the pool and actually enhance programming potential while also expanding usable pool deck space
- Reduces annual operating costs (see financial section of report)

Reconfiguration Designs

The rough reconfiguration of the pool is shown below with an aerial view and simple sketch of updated dimensions. The next phase of ISG services would include more detailed conceptual sketches.

Myrtha Pool Renovation System

The Myrtha Pool Renovation system is an option worth considering compared to traditional concrete/gunite/plaster construction. Initial inspection of Memorial Pool by a Myrtha engineer indicated good structural integrity of the current pool walls to accommodate the water tight Myrtha system. The existing base wall does not need to be watertight for the Myrtha Renovation System to work. Key elements of this process include the following:

- Placement of a PVC coated stainless steel plate over existing walls to create a water tight tank guaranteed for 15 years (life expectancy is well over 25 years)
- Eliminates need for annual painting and concrete touch ups, cleans easily and better withstands the Wisconsin winters.
- Non-porous materials eliminate damage from any water absorption eliminating damage to the pool tank
- Lower cost than rebuilding the entire pool tank vessel
- Integrates with a new gutter system linked to recirculation system
- Easily accommodates the reconfiguration of the pool shape

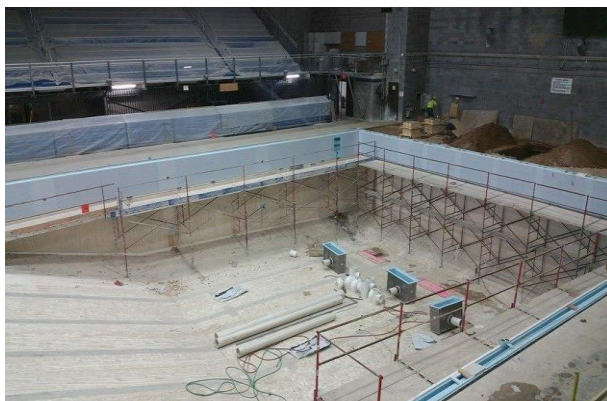
IMAGES OF MYRTHA RENOVATION



Before



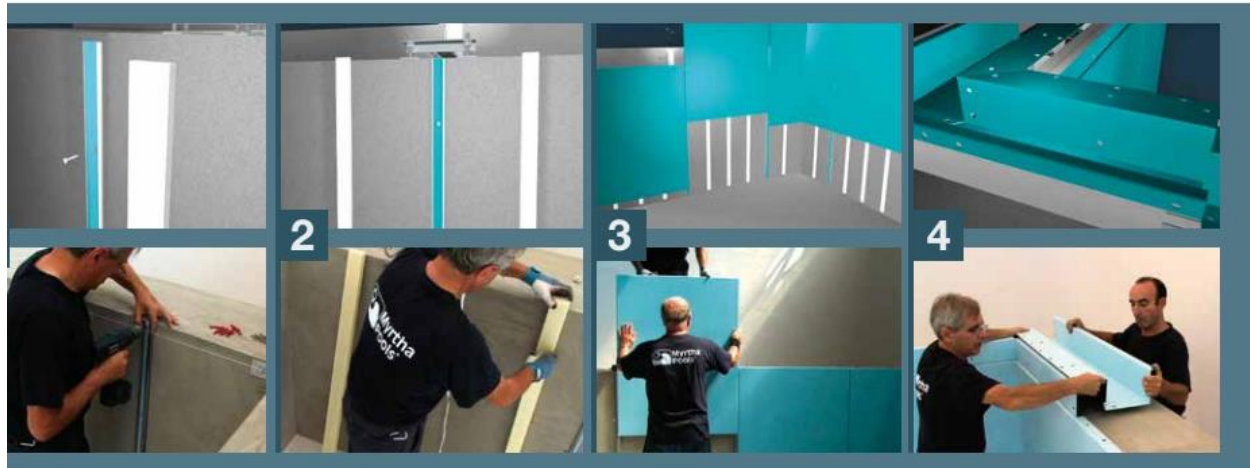
After



The Process

The Installation Process

The RenovAction installation process is both simple and fast, without the possibility of mistakes or delays in the renovation work.



Rail Installation

The existing surface of the pool is normally left untouched. Stainless steel rails are aligned and fixed to the pool wall prior to panel installation.

Spacers Installation

High density spacers are installed between each rail to avoid any bending of the panel. The spacers allow for precision of installation. They are glued between the concrete wall and the panel, once fixed in place, they are trimmed off with the use of a high temperature electric cable.

Panels Installation

Wall panels are inserted into the previously-aligned rails. Special corner pieces are manufactured, which are the starting point for the RenovAction installation.

Overflow Gutter Installation

The overflow gutter is installed on steel supports, which are anchored to the existing concrete. The gutter is manufactured with Myrtha stainless steel and is able to be installed at adjustable heights and with a sloping angle.

Mechanical System Renovation

The mechanical systems of the pool need to be totally replaced. The 14% downsizing of the pool will reduce the costs of the replacement mechanical systems. The replacement of the systems also provides the opportunity to explore the latest state of the art technology and its applicability, return on investment, and capital cost repayment timeframe. It also provides the opportunity to evaluate technology that minimized environmental impact and conserves energy and water. While these savings are only realized in the shorter 100-day maximum operating season and the return on investment and payback cycle is spread out over a longer period of time, new technology and premium systems are worth exploring, resulting in reduced annual operating costs and long term maintenance.

Mechanical system technology upgrades include the following:

- Regenerative Media Filters to replace traditional high rate sand filters
 - Requires 30-35% less space in mechanical room, resulting in reduced construction costs
 - Utilizes 80-85% less water than that used by traditional high rate sand filters (current type filters at Memorial Pool) during backwashing. This would result in

- approximately 75,000 to 100,000 gallons of less water usage and water to sewer during a summer season compared to traditional sand filters
- Less replacement water means lower heating and chemical usage and bills
- Premium cost of 25% to 40% over high rate sand filters with payback cycles ranging from four to five years for an outdoor seasonal pool
- High efficiency heaters
- Variable Frequency Drives (VFDs)
 - Provide energy monitoring and management of pump speeds and electrical usage resulting in 20% to 30% savings in electrical costs
 - Incentives or rebates for installation of VFDs are often available from utility companies

OPTION #2 NEW POOL DESIGN AND REPLACEMENT

The exploration and evaluation of replacement pool designs allows the creative design of a modern multi-purpose pool that can adapt over time to the changing needs of the community. Such a pool can better meet the needs of the neighborhood and the overall La Crosse community in a smaller more cost effective footprint that would work well on the site of the current Memorial Pool. It would also allow the restoration and preservation of the existing historic bathhouse while creating an historic link to the original 1938 pool concept of “modern in every respect” in its current historic location. A new replacement pool design could offer the features and amenities to provide the full range of recreational and aquatic programs and activities identified in this report and identified in the community research.

A new pool design can include the following features:

- Estimated square footage pool space of approximately 7,000 square feet, a 30% savings of 2,925 square feet from the current size of 9,925 square feet
- Pool volume can decrease by an additional amount, resulting in potential range of 200,000 to 220,000 gallons, roughly a 38% reduction in total volume of water
 - Resulting in further mechanical system and operational cost savings
- Six X 25 yard lap lanes
- Ramp and/or zero entry and stair access
- Differentiated pool spaces to support wide range of concurrent recreational programming and access
 - Allowing wider availability of lap lanes throughout the day
- Wide range of cost effective and moveable recreational features that can be phased in as budget allows
 - Attract greater age range of users and abilities
 - Flexibility to utilize amenities in different pools throughout the year
 - Less expensive than larger permanent structures that have less programming and activity flexibility
- Aquatic rec and leisure features
- Expanded deck space and family and shade areas

The Bathhouse can also be renovated in more cost effective ways. Current use patterns of pools show fewer Pool users utilizing traditional locker room spaces. The smaller pool size also reduces the code required bathroom fixtures and spaces. Based on these two factors, the actual bathhouse can be downsized slightly and the space use more effectively.

An updated modern multi-purpose recreational pool design can fit well within the existing Memorial Pool site with an increase in overall deck space. The next phase of ISG services would include more detailed conceptual concepts of a new replacement pool. The following site layout provides an example of how a new pool of approximately 7,000 square feet of water surface area with all of the amenities and features listed could fit on the current site.

BENCHMARK NEW POOL COMPARISONS

Examples of new public community pools built in Wisconsin in the last two years in the 7,000 to 7,400 square foot range provide examples of the type of pools that can fit onto the site and provide the features and amenities to meet the programming, recreational, and overall goals of the neighborhood aquatic center.

The costs of these pools are higher than you would expect at the Memorial site because they include site-specific work and construction costs not needed at Memorial - including parking lot, traffic access, site prep, site work, totally new bathhouse, and other initial construction costs. These two benchmark projects also include expensive, larger slide elements that would not be necessary in a new pool in Memorial Pool. These examples are not proposed or recommended as designs for a new Memorial Pool but are referenced as an idea of potential concepts that could work at the Memorial Site with costing examples for reference. Use of the images is courtesy of Water Technology, Inc.

Merrill Municipal Aquatic Center: Merrill, WI

- 7,400 square feet
- Completed in 2016
- Total cost \$4,500,000
- Main features (areas highlighted in yellow would not be required at Memorial)
 - 6 x 25 yard lap lanes
 - 1 and 3meter diving boards
 - Climbing wall
 - Inflatable floating rec features (WIBITS)
 - Water Basketball
 - Spray Features
 - Play Structures
 - Family and kiddie slides with separate run-outs
 - Two body slides



Sunset Pool Replacement: Elkhorn, WI

- 7,420 square feet of water space
- Completed and opened in 2015
- Total cost: \$4,370,000
- Main Features (areas highlighted in yellow would not be required at Memorial)
 - 6 x 25 yard lap lanes
 - 2 x 1 meter diving boards
 - Water basketball
 - Spray features
 - Play structures
 - Tot slide
 - Drop slide





PROJECT COST ESTIMATES

ISG has developed project cost estimates have been developed for Option #1 Renovation and Option #2 Replacement. The costing analysis has been conducted in several ways. ISG has reviewed the Burbach cost estimates and used several of their cost assumptions and reduced their cost estimates proportionately to the reduction in size of updated renovation and replacement pools. We have also prepared a side by side line item costing analysis and used cost estimates for each element developed through discussions with pool designers and engineers and pool contractors working in the region.

We consulted with Water Technology, Inc. (based in Beaver Dam, WI), USAquatics (based in Delano, MN), and The Pool Company, a national pool construction company on BAI's short list of approved pool contractors. Finally, we have obtained costs from the two benchmark projects in the region and updated and reduced these prices based on reduction in project scope of the Memorial Project as well as cost savings based on the construction elements not included in the Memorial project. All costing is inclusive of hard and soft costs plus all fees.

Option #1 - Renovation

- BAI estimate of renovation of current design: \$3,924,000
- ISG estimate of renovation with 14% reduction of pool scope: \$3,053,700
 - Includes an additional \$60,000 (hard and soft costs) included for recreational and competitive equipment indicated in the Design and Programming sections of this report
- With the same equipment budget as the BAI projections, total cost of Option #1 - Renovation is \$2,993,000

Cost Process and Assumptions

Just a straight renovation of a pool reduced in size by 14% would result in estimates of \$3,354,000 based on BAI costing assumptions, although this percent pro-ration is just a rough comparison since the reduction is not a direct ratio. ISG used some slightly lower soft cost percentages based on input from the pool designers, engineers, and contractors consulted. The BAI projections utilize a total soft cost of 38% of hard construction costs. Based on our discussions, we used a 34.5% soft cost factor. Based on industry norms for pool renovation projects it is likely that the soft costs, including contingency can be reduce to 30% as design details are further developed.

The key elements of the savings include the reduction of art deco marble costs and concrete pool work, the reduction in cost of mechanical systems based on capacity, and the cost savings with the Renovation system. These costs are based on an averaged cost of sand and regenerative media filters. The next more detailed design phase will provide more detailed return on investment analysis and financial impact of mechanical system technology options.

More accurate cost estimates can be developed in the ISG next phase.

The detailed line item renovation cost comparison follows:

La Crosse Memorial Pool				
COMPARISON OF RENOVATION PRICING (8/23/16)				
COMPONENT	BAI Costing	ISG Option	BAI Review	ISG Comments
POOL ELEMENTS				
Pool Vessel	\$ 540,000	\$780,000	Burbach does not recommend for 25 year design life.	Complete Renovation of vessel & new gutters/bottom. Myrtha process guaranteed for 15 yrs, well over 25 yr lifespan
Pool Finish	\$ 25,000	\$0		Included in Myrtha renovation
Pool Enclosure (fencing)	\$ 41,000	\$41,000		Using BAI estimate-seems reasonable in cost per linear ft
Pool Covers	\$ -			
Vacuum System	\$ -			
Pool Deck Replacement	\$ 93,000	\$93,000		Using BAI estimate-seems reasonable in cost per sq ft.
Deck Drain System	\$ 36,000	\$36,000		Using BAI estimate-seems reasonable in cost per sq ft.
Deck Equipment	\$ 104,000	\$120,000	Need clarification of what is included. Can be lane lines, rec equipment, additional safety equipment, ADA Lift, new diving boards?	Assume comparable, but think estimate may be high depending on what is included. Includes recreational equipment and amenities. Added some buffer. Can be phased depending on budget or some equipment purchased by outside private funding.
Competition Equipment	\$ -	\$30,000		Starting blocks, lane lines, backstroke flags.
Surge Tanks and MH#1	\$ 116,000	\$50,000	Very high for surge tank	Pump & systems included in filtration package
Main Pool Piping	\$ 215,000	\$ 215,000		Using BAI estimate-have not validated yet
Pool Filtration and Backwash System	\$ 170,000	\$140,000		Pricing assumes high rate sand filters-Regen media filters would cost additional \$60,000. Includes quote plus 40% installation. mark-up included in contractor profit. Pricing assumes reduction in size and capacity based on reduced volume & 6 hour turnover required by code. Can reduce cost if pool is sized down or in new pool. Specific system costing received from Neptune Benson.
Recirculation Pump	\$ 72,000	\$0		Included in Filter system pricing.
Pool Disinfectant System	\$ 18,000	\$ 18,000		Using BAI estimate-have not validated yet
Chemical Controller	\$ 5,000	\$ 7,500		Updated the chemical controller
Pool Heater	\$ 31,000	\$ 40,000		Upgraded the heater and related materials and installation
Mechanical Building	\$ 166,000	\$ 166,000	Size of Building can be reduced with regenerative media filters. Plan approx \$ per \$166/sq ft.	Estimated cost of building @ \$150-175/sq ft. Estimated size = 1,000 ft including chemical storage at \$166/sq ft.
POOL SUBTOTAL	\$ 1,632,000	\$ 1,736,500		
BATHHOUSE ELEMENTS				
Bathhouse Structure-Renovation	\$ 250,000	\$443,950		Plan renovation for 3,415 current footprint with no basement for mechanicals. New would be approx. \$160-\$200/sq ft with open air structure. Assume renovation is 75% of cost of new bathhouse-using \$130 for total renovation all elements combined.
Bathhouse Roof Assembly	\$ 86,000	\$0		Included in overall structure costing

COMPONENT	BAI Costing	ISG Option	BAI Review	ISG Comments
Bathroom Doors/Windows	\$ 62,000	\$0		Included in overall structure costing
Bathroom Plumbing	\$ 160,000	\$0	Number of toilets, etc can be reduced slightly with the smaller square footage of water surface area which impacts code capacity calculations.	Included in overall structure costing
Potable Water Heater	\$ 4,000	\$0		Included in overall structure costing
HVAC Systems	\$ -			Not needed-open air circulation with just some fans included in overall cost.
Electrical Systems	\$ 150,000	\$40,000	Much of this is related to mechanical building-take care not double counting these costs.	Some included in cost of new mechanical building
Utilities	\$ 85,000	\$30,000		Most included in cost of new mechanical building
BATHHOUSE SUBTOTAL	\$ 797,000	\$ 513,950		New Bathhouse could be built for \$600,000 range at \$175 a sq ft (comparable to new project examples)
OTHER ELEMENTS				
Pool Area Lighting System	\$ -			
Safety Equipment	\$ -			
PA System	\$ -			
Site Amenities				
Pool Art Marble Walls	\$ 360,000	\$0	Not sure why this is included in addition to the pool vessel rebuild.	Not necessary in renovation-not sure why in BAI cost since repair/renovation of vessel is costed.
Water Features				
Demolition and Excavation	\$ 80,000	\$40,000		For Pool Deck-pool wall/gutter demolition is included in Myrtha Renovation price.
OTHER ELEMENT SUBTOTAL	\$ 440,000	\$ 40,000		
HARD COST SUBTOTAL	\$ 2,869,000	\$ 2,290,450		
ADDITIONAL SOFT COSTS & CONSTRUCTION				
Contractor Costs & Bonding	\$ 144,000	\$110,650	BAI = 5.0% of Hard Costs	Using 5%
Contractor Profit/Overhead	\$ 230,000	\$177,000	BAI = 8.12% of Hard Costs	Using 8%
A/E Fees	\$ 308,000	\$155,000	BAI = 10.7% of Hard Costs	Using 7% a little lower since Myrtha does much of engineering included in pricing above.
Permit/Site Survey/Borings	\$ -	\$55,000	BAI lumped in with A/E Fees	Using 2.5%
Construction Re: Services	\$ 178,000	\$110,600	BAI = 6.2 % of Hard Costs	Using 5%
Contingency	\$ 195,000	\$155,000	BAI = 6.8% of Hard Costs	Using 7%
ADDITIONAL COST SUBTOTAL	\$ 1,055,000	\$ 763,250	BAI total = 36.7%. This total % seems high for a renovation project	Total Contractor and Soft Costs = 34.5%. More likely to be 30% when all in after bidding, etc.
GRAND TOTAL	\$ 3,924,000	\$ 3,053,700	BAI estimate is 25% higher than ISG, with close comparables	Opportunities for private funding, using existing equipment, further lowering initial costs/features & phasing to get at or below \$2.5million feasible

Potential Cost Reductions of Option #1-Renovation

There are several potential opportunities to reduce the projected renovation costs. These potential savings include the following (hard costs plus soft costs and contingency):

- Phasing of elements:
 - Recreation and Competitive Equipment: Cost Savings: \$100,000
 - Phasing of Bathhouse renovation-initial repair only: Cost Savings: \$200,000
NOTE: May result in added cost when bathhouse fully renovated
- Direct cost savings:
 - Reduction of Bathhouse space by 15%: Cost Savings: \$ 88,700
 - Reduction of Mechanical Room space by 10% Cost Savings: \$ 22,300

<u>TOTAL SAVINGS IN FIRST PHASE:</u>	<u>\$411,000</u>
UPDATED OPTION #1-RENOVATION PHASE ONE:	\$2,582,000

Additional Savings can be achieved through direct purchase of some of the recreational, deck, and competitive equipment by community groups or private donations to be supplied by owner in project, eliminating or reducing pool contractor mark-up, soft costs, and other contingency calculations. This also allows for purchase of this equipment closer to actual opening of the pool. Cost savings on direct equipment purchase can save an additional \$30,000 to \$40,000, whether phased or not.

Option #2 - Replacement Option

The cost estimates of an entirely new pool as a replacement is more difficult to project without at least some conceptual or schematic designs. The next ISG Phase would include some specific conceptual designs allowing a more detailed line item costing worksheet that can be directly compared to the BAI costing worksheet.

With total new replacement, the percentage decrease of costing based on the reduction in size of pool is a somewhat more accurate comparison tool. The BAI estimate of a new pool replacement based on the same 9,925 square feet of the current Memorial Pool is \$4,435,000. The ISG new design uses 7,000 square feet as its new value, a 30% decrease. Based on an estimated 30% decrease in the BAI estimates, this would result in an estimated cost of \$3,105,000. Based on the two benchmark projects and eliminating the elements not included or not needed in the Memorial project (see highlighted features in section on benchmark designs) ISG estimates the cost of a replacement pool, bathhouse, and mechanical building at \$3,000,000 to \$3,500,000. These cost estimates include the recreational, leisure, and competitive elements included in this report. Several of these features can be purchased separately without the inclusion of soft costs or through private donor or program funding, resulting in additional savings that could be as high as \$100,000. This equipment can also be phased (See timeline in Next Steps section).

Next Steps in Costing Analysis

The next phase of the ISG study for GENA would include a more detailed costing estimates based on more specific conceptual designs and detailed equipment and feature elements. ISG would include actual costing estimates from pool designers and contractors.

Revenue Projections

Attendance and swim lesson revenue have fallen off significantly over the last decade as the pool continued to deteriorate, amenities were removed from the pool, and the pool had increased periods of closure. Both the renovated and replacement designs offer significant upgraded amenities, program potential, and warmer water which will all drive a significant increase in attendance and swim lesson growth. The reconfiguration and new features will also allow the development of new programs, not only providing more options and benefits for the community, but further growing attendance and program revenue. Revenue projections are based on most recent 2015 numbers provided by City. ISG and GENA have requested more revenue and user history for Memorial and the other La Crosse pools to provide a more detailed analysis in the next phase of the ISG scope. Specific areas of increase revenue include:

- Attendance Revenue Projections
 - Option #1-Renovated Pool: 233% (\$14,000) increase in attendance revenue
 - Option #2-New Pool: 400% (\$24,000) increase in attendance revenue
 - These attendance figures still do not approach historic highs at Memorial Pool
- Swim Lessons
 - Option #1-Renovated Pool: 360% (\$3,200) increase in attendance revenue
 - Option #2-New Pool: 478% (\$4,135) increase in attendance revenue
- New programs, including: summer swim team, aquatic fitness, adult lap swimming
 - Option #1-Renovated Pool: \$7,500 increase
 - Option #2-New Pool: \$10,000 increase

Overall, estimates of annual pool revenue increase from just under \$7,000 in 2015 to over \$30,000 with a renovation and to \$40,000 with a new replacement pool. As these programs evolve, the upside with active aquatic and facility programming and management can be even higher.

Annual Operational Net

2015 Memorial operating deficit based on maintenance, operations, staffing, and revenue was approximately \$84,000. With the reduced operating and maintenance costs plus the significantly increased revenue result in the following net deficit reductions:

- Option #1 Renovated Pool: \$27,600 operational deficit-an improvement of 67%
- Option #2 New Pool: \$15,500 operational deficit-an improvement of 82%

Long Term Replacement and Maintenance Costs

The Myrtha Renovation system in a renovation option and the potential use of Myrtha and other new technology in a replacement option significantly reduce the long term maintenance of Memorial pool with a repair or replacement option using traditional building technology and systems. Projected savings in long term maintenance:

- Option #1 Renovated Pool: \$400,000 Savings over 25 years
- Option #2 New Pool: \$450,000 Savings over 25 years

Combined Cost Savings Over 25 Years

Combining the long term 25 year savings in replacement and maintenance costs plus the reduction of the annual net operating deficit generate significant overall cost savings through the first 25 years of operation

- o Option #1 Renovated Pool: \$1,817,250 Savings over 25 years
- o Option #2 New Pool: \$2,167,250 Savings over 25 years

The biggest element of these long term cost savings are driven by the reduced annual operating deficit through reduced operating expenses and enhanced facility use and revenue.

The detailed breakdown of the Memorial Pool operating budget follows.

MEMORIAL POOL BUDGET ANALYSIS

September 12, 2016

NOTE: Existing Memorial Pool expenses are pulled limited information available

Item	2015 Actuals	Renovation Estimate	Variance (+/-)	New Pool Estimate	Variance (+/-)	Comments
POOL EXPENSES						
Chemicals	\$ 10,000	\$ 6,000	\$ (4,000)	\$ 5,000	\$ (5,000)	Significant savings on much lower water loss and retreatment.
Paint	\$ 2,000	\$ 2,000	\$ -	\$ 2,000	\$ -	Bathroom touchups-likely to still be needed.
Electrical	\$ 5,000	\$ 4,000	\$ (1,000)	\$ 3,000	\$ (2,000)	Significant savings with downsize water volume and new
Water and Storm Water	\$ 7,600	\$ 500	\$ (7,100)	\$ 500	\$ (7,100)	Scum gutter water to storm sewer that will be eliminated with new gutter system to filters.
Gas-Pool Heating	\$ -	\$ 3,500	\$ 3,500	\$ 3,000	\$ 3,000	Renovated pool is slightly larger
Pool and Park Staff	\$ 36,400	\$ 42,000	\$ 5,600	\$ 46,000	\$ 9,600	Assume additional staff based on greater attendance and additional features in new pool.
Maintenance for Pool Opening repairs	\$ 30,000	\$ 1,000	\$ (29,000)	\$ 1,000	\$ (29,000)	Average pool tank touch up, patching, and repair each year. Renovation and new pool assume Myrtha technology with only cleaning needed for pool surface each year.
ANNUAL OPERATING COST TOTALS	\$ 91,000	\$ 59,000	\$ (32,000)	\$ 60,500	\$ (30,500)	
POOL REVENUE						
Daily Admissions	\$ 5,945	\$ 20,000	\$ 14,055	\$ 30,000	\$ 24,055	NOTE: In 2015 Memorial lost two Warm-water will drive a significant increase in lesson and other programs
Swim Lessons	\$ 865	\$ 4,000	\$ 3,135	\$ 5,000	\$ 4,135	
49 swimmers in 2015			\$ -		\$ -	
New Programs	\$ -	\$ 7,500	\$ 7,500	\$ 10,000	\$ 10,000	
Summer Rec Swim Team			\$ -		\$ -	
Aquatic Fitness			\$ -		\$ -	
Adult lap Swimming			\$ -		\$ -	
ANNUAL REVENUE ESTIMATES	\$ 6,810	\$ 31,500	\$ 24,690	\$ 45,000	\$ 38,190	
TOTAL ANNUAL OPERATING NET (DEFICIT)	\$ (84,190)	\$ (27,500)	\$ 56,690	\$ (15,500)	\$ 68,690	Significant reduction in operating deficits for pool
LONG TERM MAINTENANCE (Projections over 25 years)						
Pool Resurfacing	\$ 450,000	\$ 75,000	\$ (375,000)	\$ 50,000	\$ (400,000)	Current Pool and concrete renovation would still require resurfacing every 7-8 years at a cost of approximately \$150,000. Calculate 3 resurfacings over 25 years. New technology requires minimal surface maintenance.
Maintenance of existing systems	\$ 100,000	\$ 75,000	\$ (25,000)	\$ 50,000	\$ (50,000)	
TOTAL OVER 25 YEARS	\$ 550,000	\$ 150,000	\$ (400,000)	\$ 100,000	\$ (450,000)	
TOTAL OF ALL OPERATING COSTS OVER 25 YEARS	\$ 2,654,750	\$ 837,500	\$ (1,817,250)	\$ 487,500	\$ (2,167,250)	Annual deficit over 25 years plus long term maintenance costs

TOTAL SAVINGS OVER 25 YEARS WITH NEW POOL	\$ 2,167,250
TOTAL SAVINGS OVER 25 YEARS WITH RENOVATED POOL	\$ 1,817,250

COMMUNITY INVOLVEMENT AND FINANCIAL INVOLVEMENT

The renovated and replacement options with enhanced programming also provide significant new opportunities for community involvement and partnerships. These can be developed with support from GENA and by the City and the Parks and Recreation aquatic management. These programs can also be expanded to the other La Crosse outdoor pools in an overall effort to build even more comprehensive community partnerships critical to the viability of any future La Crosse indoor aquatic center. Examples of potential community programs and partnerships include the following:

- Programming partnership with private organizations
 - Outdoor training space at Memorial pool opening up additional space for private teams and programs
 - Addition of summer outdoor water space for private organizations' youth, camp, and fitness programs
 - Potential to bring water safety, special needs, and adult aquatic fitness programs outdoors in the summer
 - Provide outdoor training space in morning and evening for growing local Masters swimming program
- School District programming
 - Provide an outdoor recreation program for any summer school programs
- Partnership with local neighborhood health care facilities for health and wellness programs
- Morning senior program opportunities with local senior living facilities or programs

An important ongoing role of GENA will be working with the City and neighborhood organizations to identify, develop, and support these potential program partnerships.

NEXT STEPS

ISG Scope of Services

The ISG scope of services includes the option to continue to develop and analyze options. Next steps can include the following:

- Further development of a conceptual design for Option #1- Renovation and Option #2 New Replacement pool
- Further research as needed of best practice comparable facilities
- Refinement of renovation and replacement costing based on further refined design and amenities
 - Include professional support from aquatic design-engineers and direct costing estimates from pool contractors and industry suppliers
 - Better analyze return on investment, cost recovery, and payback cycles on design and technology options
- Based on City progress and budgeting, work with pool industry to help develop a more detailed project time line that can minimize the overall project timeline based on budget flow over the next fiscal year and future funding phasing
- Work closely with City Parks and Rec Department to refine analysis of budget, maintenance, and attendance history to refine financial impact of renovation or replacement pool options
- Potential to communicate with BAI and the Mayor's Pool Committee to provide ISG and GENA input as part of the process of analysis and development in the next stages of the BAI study, the Mayor's Pool Committee work, and the ongoing activities of the GENA Memorial Pool Committee
- Continue to engage with GENA to provide information, analysis, and materials as needed in the campaign to preserve and enhance an aquatic facility at Memorial Pool
- Provide information and consulting to support GENA efforts to raise private funding and support for the Memorial Pool Project
- Provide information and consulting to support GENA efforts to engage veterans groups while raising the profile, significance, and relevance of Memorial Pool as a Veteran's Memorial.

City and GENA Next Steps

These potential next steps closely align with important next steps for the City and the Mayor's Pool Committee in moving the project forward in a timely fashion. The three most important next steps in the overall project include the following:

- 1) Continued funding to move to the next phase of design development
 - Support analysis and decision making process on design concepts and renovation and replacement options
- 2) Maximize any funding in 2017 that can initiate site work and other necessary initial construction to complete construction in 2018, hopefully in time for the 2018 summer season

- 3) Continue dialog with GENA Memorial Pool Committee, Mayor's Pool Committee and City to integrate Memorial Pool plans into long range La Crosse aquatic program and facility development

Project Development Steps

The project development involves the following phases and stages. Key phases include the following:

- Mayor's Pool Committee deliberation and recommendations
- Development and Design funds allocated
- Design Development
- Refinement of renovation and replacement costing based on further refined design and amenities
- Funding for project: Phased or in total
- Any additional community funding necessary for project
- Initial site demolition and preparation
- Pool construction

Project Timeline

The project timeline is dependent on the phased funding. In a best case scenario the project timeline can look like this:

Funding requirement: 2017 budget funds for design development and initial demolition and site preparation.

October-December, 2016

- Completion of Mayor's Pool Committee deliberation and recommendations
- 2017 budget funding for design development, bid, and initial demolition and site prep

January-July, 2017

- Design and Development
- Updated cost projections
- Permitting

August-September, 2017

- Bid process and selection of contractors

October-November, 2017

- Site demolition and prep for pool construction in early 2018 when weather allows

Late Winter-early Spring, 2018

- Pool construction when weather allows

Summer 2018

- Targeted opening of the pool

If funding only for further design and development is approved in the 2017 City budget demolition and site prep will not be able to be begun in fall of 2017. Moving demolition and site prep to late winter/early spring 2018 would likely not result in the pool being ready to open in the summer of 2018.