REPORT OF THE TECHNICAL EVALUATION
OF THE
WILLIAM GRADY SWIMMING POOL
BELVIDERE PARK DISTRICT
BELVIDERE, ILLINOIS
APRIL 6, 2017
(PRELIMINARY)
I hereby certify that this document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Illinois.

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My license renewal date is November 30, 2017

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My license renewal date is November 30, 2018

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This report contains 48 pages.
INTRODUCTION

Burbach Aquatics, Inc., (BAI) respectfully submits this Report regarding the technical evaluation of the William Grady Swimming Pool located in Belvidere, Illinois. This document is the final work product and report for professional services performed by BAI as per the Professional Services Agreement between BAI and the Belvidere Park District for Phase I-Step #1 Service.

The purpose of this 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 Illinois 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 Probable Construction Costs and present a summary with recommendations.

This Report contains two chapters. The first chapter, "Existing Facilities", inventories the physical plant observed during BAI on-site observations, which were conducted on September 2 and November 9, 2016 and March 21, 2017. This chapter contains comments regarding each of the facility's 32 categories.

The second chapter, "Data And Probable Construction Costs" provides a quick reference to data of the facility such as area of the pool vessel, official pool capacities and other pertinent statistics. The second component in this chapter is the Opinion of Probable Construction Cost to maintain the facility for 12.5 to 25 years, while, meeting significant requirements of the Code and ADA.

Please bear in mind that the impetus of this Report is to maintain the status quo of the facility with a preference for renovation in lieu of complete replacement. The anticipated project life for renovation is 12.5 to 25 years. Project categories, which in BAI's opinion, cannot be renovated to achieve a high probability of 12.5 to 25 year life will be replaced with new. This is an important parameter since the Opinion of Probable Construction Cost can be substantially affected due to higher cost of renovation versus new construction. As an example of this, re-plumbing of the bathhouse may be more expensive than a completely new system in a completely new bathhouse. Bear in mind that replacement recommendations will be presented for each category only when renovation does not result in a 12.5 to 25 year project life or has of cost comparable to new
construction. Expansion or conversion of the facility into a more recreational orientated center is the subject of the next Step of the Feasibility Study service.

I would like to thank the Belvidere Park District staff for their assistance with explanations of the facility, providing plans, and assisting with communications between the Park District and consultant. It has been a pleasure to work with such personable and dedicated staff.

Sincerely,
BURBACH AQUATICS, INC.

David F. Burbach, P.E.
Director of Aquatic Services
DFB:clt
CHAPTER I. EXISTING FACILITIES

1a. General Comments

The Belvidere Park District is dedicated to maintaining and improving the quality of life in Belvidere and recognizes the importance of recreational facilities in attracting new residents while retaining their present residents. The Park District has decided to study the condition of the complete swimming pool facility and develop a facility improvement plan with a high probability of achieving a 12.5 and 25 year project life, as opposed to short-term band-aid type repairs. These facilities were originally intended to improve the quality of life in the community and offer opportunities for recreational enrichment. BAI believes that mission has not changed through the years.

The William Grady Swimming Pool is located at 916 W. Lincoln Ave., in the City of Belvidere, in Boone County, Illinois. William Grady Swimming Pool is located within Belvidere Park and includes a 25-meter pool with lap lanes, a pool slide, shade structures, diving boards and a wading pool. William Grady Swimming Pool offers swim lessons, special events and is available for rental.

At this time, the Park District staff reported that the facility loses a fluctuating amount of water. The Park District of Belvidere felt that the development of a comprehensive action plan was needed and a determination should be made as to the extent of construction work and associated costs to renovate the complete facility. This report is the first step in the process of strategic planning for long term solutions to provide aquatic opportunities to the residents of the Belvidere Park District.

The aquatic center, which is the focus of this report, serves as a major component of the natant system for the community. The aquatic center is used for the typical recreational and educational programs, although the facility is not well suited for recreation, as evidenced by eroding attendance.
EXISTING SWIMMING POOL FACILITY EVALUATION FORM

Owner: Belvidere Park District, Belvidere, Illinois  Project # 2,617
Date: September 2 and November 11, 2016 and March 21, 2017
Facility Name: William Grady Swimming Pool
Facility Address: 916 W Lincoln Avenue  County: Boone
Personnel at Site: David Burbach, Andrew Pennekamp and Josh Leyer
Plans received: Y ☑ N ☐ Project Manual received: Y ☑ N ☐ Pictures received: Y ☑ N ☐
Other Documents received: ______________________

History:
Pool: Vessel #1 Description: Main pool  #2 Description: Wading pool.
Building: #1 Description: Bathhouse  #2 Description: ______________________
Do Pools Leak Water: Y ☑ N ☐ Amount: Undetermined
Reported Location of Leaks: Through expansion contraction joints
Subsurface Conditions: Open Water in close proximity: ☑ High Ground water observed: ☐
Ratings throughout the report are 1 through 5 with 1 being Least, Worst or Lowest and 5 being the Most, Best or Highest

Background Comments:
1. Year 1939 - The original William Grady Swimming Pool Facility was constructed.
   Consisting of a large bathhouse, fence enclosed concrete main pool on the north side of the
   bathhouse, with a wading pool with open access located on the south side of the bathhouse;

2. Year 1980 - The old wading pool was removed from the front of the bathhouse and a new
   wading pool was constructed inside the fence, located west of the main pool. A concession
   room addition was added to the west side of the old bathhouse;

3. Year 1986 - The main pool was removed and replaced with the present main pool. The
   mechanical system was also replaced as part of this project;

4. Year 1993 - The existing bathhouse was significantly reconstructed and brought up to the
   new ADA standards implemented in 1992, this was a project designed by BAI;

5. Year 2005 - The 1980 wading pool was renovated and a separate recirculation system was
   installed in the former concession room, this was a project designed by BAI;
6. The Filterex pressure DE filter has failing valves and has passed significant amounts of DE into the pool vessel, the Park District repaired the valves in the fall of 2016;

7. The main pool vessel stainless steel gutter lip is approximately 1/4" higher in elevation than the gutter lip in the diving hopper;

8. BAI recommends that the Park District Staff conduct a Static Leak Test on the main pool vessel for a minimum 7 days, beginning 9/2/2016.

1-1. Pool #1 Vessel

Indoor □ Outdoor ☑
Pool Vessel Type: Combination ☑ Recreation Only □ Wellness Only □ Diving Only □
Shape: L-Shape ☑ Free Form □ Trapezoidal □
Pool Uses: Recreation ☑ Wellness ☑ Education ☑ Competition □
Area: 10,023 Square Feet  Volume: 516,683 Gallons Recirculation Rate: 1,436 gpm
Minimum Depth: 3.5'  Maximum Depth: 13.5'  Calculated Patron Capacity: 650
Perimeter Length: 498
Pool Vessel Features:
25-Yard Lanes ☑  25-Meter Lanes □ Water Depth Less than 3' □ Zero Depth □
50-Yard Lanes □  50-M Lanes □ Waterslide receiving Area □ Lazy River □ Other □
Existing Floor: Observed ☑ None □
Constructed Of: Concrete ☑ Aluminum □ Steel □ Fiberglass □
Random Cracking In:
Shallow Area 1 □ 2 □ 3 ☑ 4 □ 5 □
Medium Area 1 □ 2 □ 3 ☑ 4 □ 5 □
Diving hopper 1 □ 2 □ 3 ☑ 4 □ 5 □
Is Floor Repairable Y ☑ N □
Diving Hopper: Observed ☑ None □
Endwall Fillet Length 5'  Sidewall Fillet Width 5'
Floor Length 13'10"  Floor Width 39'6"  transition Panel: Length 25'  Rise 8'4"
Constructed Of: Cast Concrete ☑ Gunite □ Aluminum □ Fiberglass □ Masonry □
Hopper Condition Report:
Rebar Exposed Y□ N□ Disjointed Walls Y□ N□ Walls Straight Y□ N□
Evidence of Structural Failure Y□ N□ Structural Cracks Y□ N□
Wall & Fillet Separate Y□ N□ Are Fillets Repairable Y□ N□
Are Hopper Walls Repairable Y□ N□ Are Hopper Floors Repairable Y□ N□
Walls: Observed x None□
Constructed Of: Cast Concrete□ Gunite□ Aluminum□ Fiberglass□ Masonry□
Wall Condition Report:
Rebar Exposed Y□ N□ Disjointed Walls Y□ N□ Walls Straight Y□ N□
Evidence of Structural Failure Y□ N□ Structural Cracks Y□ N□
Wall & Floor Separate Y□ N□ Wall & Fillet Separate Y□ N□
Random Cracking In:
Shallow Area 1□ 2□ 3□ 4□ 5□
Medium Area 1□ 2□ 3□ 4□ 5□
Diving hopper 1□ 2□ 3□ 4□ 5□
Are Walls Repairable Y□ N□
Expansion-contraction Joints: Observed□ None□
Location: In Floor□ Vertical Walls□ Intersection of Walls and Floors□ Breakline□ DH□
Joint Condition: 1□ 2□ 3□ 4□ 5□ N/A□
Type of Original Joint Waterproofing: Sealant□ PVC Waterstop□ Unknown□
Waterstop Location: Present in Joints□ Unknown□ Shown on Plans Y□ N□
Construction Joints: Observed□ None□
Recirculation System:
Recirculation Type: Conventional□ Reverse□ Mixed□
Outlet System Type: Skimmer Pool□ Gutter Pool□
For Gutter Pool:
Type: Roll Out□ Amityville□ Curb with gutter□
Manufactured gutter inserted into Cast/Gunite Pool Wall□
Constructed Of: Gunite/Ceramic Tile Gutter□ Cast Concrete□ Masonry Units□
Stainless Steel Assembly□ Pre-cast Concrete□ Aluminum Pool Gutter□
Field Comments:
1. The main pool is the original construction and is constructed of cast-in-place concrete;
2. The stainless steel gutter was added as a renovation project. Stainless steel gutter is in poor
condition. Caulking present in many areas to keep gutter water tight, presents high probability of water loss in the area;

3. The pool is structurally sound;
4. There are multiple expansion/contraction joints in the pool floor. The pool floor joints are in good condition;
5. The original waterstop of the floor joints is likely deteriorated;
6. Park District staff reported that the expansion/contraction joints are repaired yearly and that the pool does leak slightly through the joints;

7. The pool floor is placed inside of the pool walls with an expansion/contraction joints installed at the floor to wall joint;

8. The design and number of the expansion/contraction joints is a strength of the pool design as they provide sufficient stress relief within the pool;

9. The pool structure is in good condition. There are several areas in the pool walls that the concrete has cracked and has been repaired. The structure will last another 12.5 years with
typical yearly maintenance that is currently performed by the Park District. BAI would estimate that after 12.5 years the pool will have some additional cracking and concrete deterioration that may require a PVC pool liner to be installed.

Recommendations:
12.5 years: No Work required
25 years: Add Pool liner - $135,000

### 1-2. Pool Finish

**Pool #1 Finish Type:** Pool Finish: Paint X Plaster □ Ceramic Tile □ Unfinished □
**Finish Condition:** 1 □ 2 □ 3 □ 4 X 5 □
For Paint: Heavy Build Up Y □ N X Abrasion Blasting Required Y □ N □
**Pool #2 Finish Type:** Pool Finish: Paint X Plaster □ Ceramic Tile □ Unfinished □
**Finish Condition:** 1 □ 2 □ 3 □ 4 X 5 □
For Paint: Heavy Build Up Y □ N X Abrasion Blasting Required Y □ N □
**Signage on Deck Y X N □ Type:** Paint □ Tile □
Depth Marking Y X N □ Size of numbers 8" Meet Code Distance Y X N □
In Corners Y X N □ Changes in Pool Floor Depth Y X N □
No Diving Y X N □ Size of letters 4" Meet Code Distance Y X N □
**Signage in Pool Y X N □ Type:** Paint □ Tile □ Sticker □
Depth Marking Y X N □ Size of numbers 4" Meet Code Distance Y X N □
In Corners Y X N □ Changes in Pool Floor Depth Y X N □
**Finish Details:**
Contrasting Color Line at Breakline Y □ N □ At Step Threads Y X N □
Competition Lane Lines Y X N □ Paint □ Tile □ Meet Standards Y □ N □
**Field Comments:**
1. Pool finish is in good condition, regular maintenance will be required for the life of the pool.

### 1-3. Pool Enclosure (fence)

**Exterior Perimeter Enclosure:** Height 8' Gaps Under Enclosure Y X N □
4" Gaps at Ends Y □ N □ Type: Chain Link X Ornamental □ Other □
For Chain Link: Safety Woven Y □ N □ Partial □ Top Bar Y □ N □ Barb Wire Y □ N □
For Ornamental: Gap Width between bars or pickets
Gate(s) Y N # Gates 4" Gaps in Gates Y N Emergency Exits Y N
Interior: Height 4' 4" Gaps Under Enclosure Y N 4" Gaps at Ends Y N
Type: Chain Link ☐ Ornamental ☒ Other ☐
For Ornamental: Gap Width between bars or pickets > 4"
Gate(s) Y N # Gates 4" Gaps in Gates Y N Emergency Exits Y N
Are Interior Gates Self Closing Y N Self Latching Y N
Field Comments:
1. Gaps were observed under enclosure at the gates;
2. 90% of the chain link fence was safety woven;
3. Pool enclosure is in good to fair condition;
4. The wading pool fence is not a compliant fence due to gaps greater than 4"

Wading Pool Fence
Recommendations:
12.5 years:
   a) Repair gaps - $1,000
   b) Install emergency gates for egress from the pool - $5,000
25 years:
   a) Replace 30% of exterior fence - $20,000
   b) Replace wading pool fence with Code compliant fencing - $20,000
1-4. Pool Covers
Winter Cover Y □ N ☑ Brand _____ Model #_____ Quantity_____  
Field Comments:  
1. No pool cover was observed.  

Recommendations:  
1. BAI does not recommend the use of water covers or solar covers due to a low return on investment. No Work required.  

1-5. Pool Vacuum System  
Pool Vacuum Observed Y ☑ N □ Brand_____ Model #_____  
Type: Central w/Wall Fittings □ Skimmer Type □ Portable☐ Robot☐  
For Portable: Discharge Type: W/Filter Back To Pool ☑ W/O/Filter to Gutter System ☐  
Powered By: Gas Engine ☑ Electric Motor □ GFIC Protection ☐  
For Robot: Air Sensor □ Remote Control ☐  
Field Comments:  
1. A vacuum system will be required within the next 12.5 years.  

Recommendations:  
1. 12.5 years, replace vacuum - $8,000
1-6. Decking

Type: Unfinished Concrete □ Decorative Concrete □ Other □
Slope Away From Pool □ Slope to Deck Drains □ Slope to Grade □ Slope to Pool □
Min Width 6' Obstructions within 5' of Pool □
Cracking: 1 □ 2 □ 3 □ 4 □ 5 □ Ramps □ Meet ADA □

Field Comments:

1. Deck is in fair condition;
2. Cracking present around main pool vessel and most deck drains.
Recommendations:
12.5 years: No work required.
25 years: Replacement of 30% of deck will be necessary - $40,000

1-7. Deck Drain System
Deck Drains Y☒ N☐ Air Gap Y☐ N☐
Discharge To: Storm Sewer☒ Sanitary Sewer☐ Combined Sewer (Storm & Sanitary) ☐
6" air gap on discharge Y☐ N☐ Elevation difference to Storm Sewer
Maximum Distance between Drains 20' Water flow more than 15' in one direction Y☐ N☒
Location of Drains Around the entire main pool.

Field Comments:
1. Deck drains are in good condition.

Recommendations:
1. No Work required.
1-8. Deck Equipment

Number of Units:

3-meter Tower 1  Portable Lifeguard Chair 4  Stair Case into Pool 1
1-meter Tower 1  Stationary Lifeguard Chair 6  Deck Pool Slide 1
Deck Level Tower 6  Pool Ladder 6  ADA Lifts 2

Diving Towers:

Diving Tower #1 and #2: 1-meter diving tower
Style: Single Pedestal 4 Leg Site Built Broken Fittings Y N
Brand Paragon Overall Condition 1 2 3 4 5
Appear To Have Concrete Footings Y N Length of Board: 14' 16' Other
Handrails present Y N Handrails to inside pool wall Y N Replace Y N

Diving Tower #3: 3-meter diving tower
Style: Single Pedestal 4 Leg Site Built Broken Fittings Y N
Brand Paragon Overall Condition 1 2 3 4 5
Appear To Have Concrete Footings Y N Length of Board: 14' 16' Other
Handrails present Y N Handrails to inside pool wall Y N Replace Y N

3-Meter Diving Tower 1-Meter Diving Towers
Lifeguard Chairs:
Style: Single Pedestal ☑ 4 Leg ☐ Site Built ☐
Broken Fittings Y ☑ N ☐
Brand Paragon Overall Condition 1 ☐ 2 ☐ 3 ☑ 4 ☐ 5 ☐
Umbrellas Y ☑ N ☐ Fiberglass seats ☐ Wood seats ☐
Meet OSHA Y ☑ N ☐
All appear to have concrete footings Y ☐ N ☑
Replace Y ☑ N ☑

Pool Ladders:
Style: Stainless steel ☑ Other ☐ Type: Overhang ☑
Flush ☐ Cross braced Y ☑ N ☐
Broken fittings Y ☑ N ☐
Overall Condition 1 ☐ 2 ☐ 3 ☑ 4 ☐ 5 ☐
Brand Unknown Replace Y ☑ N ☑
Distance Between Ladder and Walls _______

Stairs:
Tread Width: 12" Tread Length ______ Rise ______ Are all rises Uniform Y ☑ N ☐
Recessed Stairs ☐ Stairs Extend into pool ☑ Stairs Constructed of Concrete.
Minimum two Handrail Present Y ☑ N ☑ Handrails constructed of: Stainless Steel Y ☑ N ☑
ADA Access:
1. ADA Accessible Y  N
   Accessible Method: Lift  Ramp  Staircase  Transfer Wall  Transfer Systems
   Broken fittings Y  N  Overall Condition 1  2  3  4  5
   Brand Aqua Creek  Model F-12PPL-HD-AT1 Replace Y  N

2. ADA Accessible Y  N
   Accessible Method: Lift  Ramp  Staircase  Transfer Wall  Transfer Systems
   Broken fittings Y  N  Overall Condition 1  2  3  4  5
   Brand Aqua Creek  Model unknown  Replace Y  N

Pool Slide:
   Water source: Pool Water  Potable Water  None  Tower Height 8'
   Overhang distance beyond pool wall: 2'  Water Depth at end of overhang: 5'
   Overhang height above water elevation 1.5'
   Overall Condition 1  2  3  4  5

18
Brand Paragon  Replace Y □ N □ X
Field Comments:

1. The equipment is all in good condition, for a 12.5 year project;
2. BAI anticipates replacement of all equipment for a 25 years.

Recommendations:
12.5 year: No work needed.
25 year:
   a) Replace ADA Lifts - $24,000
   b) Replace Pool Slide - $30,000
   c) Replace Guard Stands - $36,000
   d) Replace Ladder and all deck equipment - $15,000

1-9. Surge Capacity
Surge capacity present Y □ N □ X Type: Tank □ In Gutter □ Other □
Field Comments:

1. Surge capacity is not required with DE Filter;
2. Vessel #2 has 1,000 gallon tank for backwash of sand filters.

1-10. Piping System - Pool #1

Conventional Flow □ Reverse Flow □ Combination □ Original System Y □ N □
Main Drain System: Main Drain: Number 1 Size: 3 x 24
VGBA Compliant Y □ N □

Return System:
Inlet Type: Individual Inlets □ Floor Trench Inlet □ Part of Manufactured Gutter □
For Individual Inlets: In Wall □ In Floor □ Spacing Per Code □ Directional □ Adjustable □
PVC □ Metallic □ Number of Inlets □
Return Pipe Diameter 12" □ Constructed Of: PVC □ Metal □

Outlet System: Gutter Y □ N □ Skimmer Y □ N □
For Gutter Pool: Type of Outlet: Continuous Grate □ Individual Grates □
Outlet Pipe Diameter □ □ Constructed of: PVC □ Metal □

Code Comments:
1. The main pool vessel water must be recirculated on a continuous basis with a theoretical turnover rate. The Code specifies minimum turnover rates varying from 0.5 hours up to 6.0 hours. The minimum Code recirculation rates are determined by dividing the volume of water contained in the pool vessel by the Code turnover rate required for each pool vessel. The recirculation rate of the main pool vessel is 1,436 gpm, which is based on a 6 hour turnover rate. The chart below shows the compliance of the various piping systems of the pool vessel.

<table>
<thead>
<tr>
<th>Pipe System</th>
<th>Pipe Size</th>
<th>Max Pipe Flow</th>
<th>Code Required Flow</th>
<th>Code Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet Return</td>
<td>12&quot;</td>
<td>3,500</td>
<td>1,436</td>
<td>Yes</td>
</tr>
<tr>
<td>Main Drain</td>
<td>12&quot;</td>
<td>1,760</td>
<td>1,436</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Pool #1- Piping System

Recommendations:
1. The piping is 32 year old and the majority of the piping is PVC.
2. For a 12.5 year life there will be maintenance of the piping - $10,000
3. For a 25 year the piping system will need to be replaced - $120,000

1-11. Filtration Assembly

Brand  Filtrex  Model # EC-2100  # Units 1
Type:  Pressure Sand  Vacuum Sand  Gravity Sand  Other
Pressure DE  Vacuum DE  Bump DE  Cartridge  Other
NSF Listed  
Tank Material:  Steel  Fiberglass  S.S.  Aluminum  Concrete  Other
Serves Pool #1  Serves Pool #2  Reuse Filter Y  N
For DE: Number of Septums  Diameter  or L  W  = Area  s.f.
Hydraulic Capacity: From Data Plate: Loading of 2,490  gpm/sf Flow of  gpm
Manifold Piping: D.I.  PVC  Valves: Gate  Butterfly
Field Comments:

1. 12.5 year: Replace filter system within 3 years;
2. 25 year: Maintenance of filter, replaced by 12.5 year, no additional work needed.

Filtrex DE Filter

Recommendations:

There are three options for replacing the filter, as follows:

Option 1 – Refurbish existing: This option will require the filter to be removed by cutting the roof out, removing the filter, crating and shipping the filter to the manufacturer for repair. The cost will be $100,000.

Option 2 – Replace the filter with new DE Filter. This option will require the same work as Option 1, however, the cost of crane will be incurred only once as the new filter can be onsite and installed the same day as the existing filter is removed. A new filter cost is $110,000.

Option 3 – Is to replace the DE Filter with new pressure sand filters. There are numerous challenges to overcome with sand filters. The primary issue is space for the filters and backwash tank. A 12,000 gallon backwash tank, would need to be installed, if both filter and backwash are
installed at the same time. The cost to install new sand filter is $196,000.

1-12. Recirculation Pump Assembly #1

Pump Brand Bell & Gossett Model # ______ # Units 2 Size 5 hp
Type: End Suction Centrifugal Split Case Centrifugal Vertical Turbine
Long Coupled Short Coupled Serves Pool #1 Serves Pool #2 Capacity:
From Data Plate gpm @ ft.TDH
From Plans gpm @ ft.TDH
Pump Housing Suction Size 4" Pump Housing Discharge Size 6"
Pump Reusable: Y N Data Plate Located Y N

Pump Suction:
Pump Suction Pipe Commences: At Surge Tank Direct From Main Drains at Filter
Suction Pipe Size 12" Pipe Type: D.I. PVC Valve in Suction Line Y N
Flooded Suction Y N Existing Foot Valve Y N Foot Valve Required Y N
Hair & Lint Strainer Y N Brand ______ Size 12" Model # DD17986
Reuse Strainer Y N Isolation Valve(s) For Strainer Y N

Pump Discharge:
Discharge Pipe Size 6" Pipe Type: D.I. PVC
Flow Meter Y N Brand ______ Model # ______
Distance between Pump Discharge Flange and: Valve ______ Check Valve ______
Elbow _____ pipe diameter ______

Pump Motor:
Brand US Electric Model # Uni Mount 125 HP 5
Phase 3 Voltage ______ Amps ______ RPM ______ Type ______ Frame ______
Starter Provided Y N Within Site of Motor Y N Model # ______
Safety Switch Y N ______

Field Comments:
1. Both pumps are in good condition, however, the pumps will need to be replaced within the next 12.5 years.

Recommendations:
1. 12.5 year project - replace both pumps - $35,000
2. 25 year project - replace both pumps, maintenance will be required - $35,000
Recirculation Pumps

1-13. **Disinfectant System #1**

Form of Disinfectant: Gas [ ] Liquid [X] Solid [ ] Type: Chlorine [X] Bromine [ ]
Specific Type Chemical Used: Sodium Hypochlorite
Chlorinator Brand Pulsation Model #: CPH7SA # Units: 1
Maximum Output: 240 in gpd _____ in ppm Location _____
Serves Pool #1 [X] Serves Pool #2 [ ]
Method of Inducing Flow Through Chlorinator:
Internal Pump [X] Valve in Return [ ] Public Water [ ] Booster Pump [X]
For Booster Pump: Brand: Davon Model #: PP2LTAD23TCG Hp: 1 Volt: 208 Phase: 3
Does Method of Inducing Flow Result In Direct Cross Connection Y [X] N [ ]
Where Chemicals Stored: Muratic Acid in mechanical room, Chlorine in wading pool mechanical room.

pH Balancing System: Y [X] N [ ] if Yes, Then Manual Control [ ] Automatic Control [X]
Brand Pulsation Model #: _____ # Units: _____
Maximum Output: 60 in gpd _____ in ppm Location: _____
Serves Pool #1 ☑ Serves Pool #2 ☐

pH Form: Gas ☐ Liquid ☑ Slurry ☐ Type: Soda Ash ☐ Co2 ☐ Muratic Acid ☑
Specific Type Chemical Used ______

Chemical Equipment/Storage Space:
Type: Dedicated Rooms Y ☐ N ☐ Number ___
In Open Space with Other Equipment Y ☑ N ☐ Location of Space: Mechanical Room
Dedicated Rooms: Room Sealed Y ☐ N ☐ Closed Ceiling Y ☐ N ☐ Open Ceiling Y ☑ N ☐
Walls Constructed of: Masonry ☐ Wood Frame ☐ Concrete ☑
Ceiling Constructed of: Concrete ☑ Wood Frame ☑
Rooms Have: Out Swing Door Y ☑ N ☐ Mechanical Ventilation Y ☐ N ☐ Window Y ☐ N ☐
Alarm Y ☐ N ☐ Outside Light Switch Y ☑ N ☐ Outside Ventilation Switch Y ☐ N ☐
Light Operational Y ☑ N ☐ Ventilator Operational Y ☑ N ☐ None ☐ Safety Mask Y ☐ N ☐
Chemical Storage: Tanks Y ☐ N ☐ Double Containment Y ☐ N ☐
For Gas: Cylinder Chain Y ☐ N ☐ Cylinder Scales Y ☐ N ☐
Field Comments:
1. For 12.5 years replace of pH & Chlorine pumps once $5,000;
2. For 25 years the pumps will be likely replaced; however, only the first replacement cost is included.
1-14. Chemical Controller #1 and Sampling Pump

Chemical Controller Y[ ] N[ ] Serves Pool #1[ ] Serves Pool #2[ ]
W/recorder Y[ ] N[ ] W/Sampling Pump Y[ ] N[ ]
Controller Brand [ ] Stantrol  Model # [ ] System 3 [ ] # of Units [ ] Serial # [ ]

Field Comments:
1. Older model chlorinator, should be replaced.

Recommendations:
1. 12.5 year reuse - $0;
2. 25 year replace - $7,000.
1-15. Pool Heater #1

Pool Heater Y □ N □
Serves Pool #1 ☑ Serves Pool #2 ☐ Type: Standard Pool Heater Y □ N □
Central Boiler w/Heat Exchanger Y □ N □ Standard Pool Heater Brand Raypak
Model # 1631 # of Unit 2 □ Input 1631 BTU/Hr Output □ BTU/Hr
General: Energy Type: Electric ☑ Gas □ If Gas Then: Natural Gas ☑ LPG ☑
Vent Size 18" Forced Draft Y □ N □ Common Chimney Y □ N □ Size 36"
Combustion Air Source Y □ N □ 50% High Y □ N □ 50% Low Y □ N □ Motorized ☑
Method of Inducing Flow: Recirculate Pump Y □ N □ Bypass Valve Y □ N □
From Data Plate on Unit Y □ N □ Gas Feed 2" Regulator before Appliance Y □ N □
Temp/Pressure Relief Valve Y □ N □ 6" Air Gap on Blow off Y □ N □
Thermometer Y □ N □ Location: Influent Lateral ☑ Effluent Lateral ☑ Main Return Line □
Water Supply 3" Water Return 3" Metal Pipe Y □ N □
Expansion Tank Y □ N □
Field Comments:

1. There are two heaters for the main pool, one is newer. Both will need to be replaced over
   the life of a 12.5 year project;
2. BAI estimates 3 heaters will be required over the next 10 years at a cost of $38,000;
3. For a 25 year project there will be a need for 2 additional heaters at a cost of $24,000;
4. The initial replacement cost is included for the Opinion of Probable Construction Cost.
1-16. Pool Vessel #2

Indoor ☐ Outdoor ☒

Pool Vessel Type: Combination ☐ Recreation Only ☒ Wellness Only ☐ Diving Only ☐
Shape: Rectangular ☐ W ______ L ______ Free Form ☐ Trapezoidal ☐
Pool Uses: Recreation ☐ Wellness ☐ Education ☐ Competition ☐
ADA Accessible Y ☒ N ☐
Area: 1,500 Square Feet Volume: 19,700 Gallons Recirculation Rate: 164.2 gpm
Minimum Depth: _1_ Maximum Depth: _3_ Calculated Patron Capacity: _100_

Pool Vessel Features:
25-Yard Lanes ☐ 25-Meter Lanes ☐ Water Depth Less than 3 ☒ Zero Depth ☐
50-Yard Lanes ☐ 50-M Lanes ☐ Waterslide receiving Area ☐ Lazy River ☐ Other ☐

Existing Floor: Observed ☒ None ☐
Constructed Of: Concrete ☒ Aluminum ☐ Steel ☐ Fiberglass ☐
Random Cracking In: 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐
Is Floor Repairable Y ☒ N ☐

Walls: Observed ☒ None ☐
Constructed Of: Cast Concrete ☒ Gunite ☐ Aluminum ☐ Fiberglass ☐ Masonry ☐
Wall Condition Report:
Rebar Exposed Y N Disjointed Walls Y N Walls Straight Y N
Evidence of Structural Failure Y N Structural Cracks Y N
Wall & Floor Separate Y N Wall & Fillet Separate Y N
Are Walls Repairable Y N
Expansion-contraction Joints: Observed None
Recirculation System:
Recirculation Type: Conventional Reverse Mixed
Outlet System Type: Skimmer Pool Gutter Pool
Field Comments:
1. Wading pool does not have expansion joints;
2. The pool is in good condition;
3. The construction joints located by the water feature installation are in need of patching.
Recommendations:

1. The Wading Pool has significant cracking in the floors, with one longitudinal crack running the entire length of the pool. The walls are less cracked. While Park District staff did not report the pool to be leaking, it is BAI’s estimation that some leakage is occurring through said cracks. Unfortunately, the crack is acting as an expansion joint so patching the said crack will result in future cracks development along the current crack location.
2. The pool could be maintained for 25 years by continual patching and sealing the pool. A pool liner should be considered for long term operation, as the maintenance would likely be less than the continued patching.

Recommendations:
1. 12.5 year occupancy would require $10,000 in labor and materials.
2. 25 year occupancy would require $30,000 in labor and materials to maintain water tightness.

1-17. Pool Piping System #2
Conventional Flow✓ Reverse Flow☐ Combination☐ Original System Y☐ N☐
Main Drain System: Main Drain: Number 2. Size: 18 x 18
VGBA Compliant Y☐ N☐ Maximum Opening Y☐ N☐
Main Drain Pipe Diameter____. Constructed Of: PVC☐ Metal☐
Return System:
Inlet Type: Individual Inlets☒ Floor Trench Inlet☐ Part of Manufactured Gutter☐
For Individual Inlets: In Wall ☑ In Floor ☐ Spacing Per Code ☑ Directional ☑ Adjustable ☐ PVC ☑ Metallic ☐ Number of Inlets ______

Return Pipe Diameter 6” Constructed Of: PVC ☑ Metal ☐

Outlet System: Gutter ☐ N ☑ Skimmer ☑ Y ☑ N ☐

Outlet Pipe Diameter ______ Constructed of: PVC ☑ Metal ☐

For Skimmer Pool: Number Skimmers 4 ______ Constructed of: PVC ☑ Metal ☐

Outlet Pipe Diameter 8” Constructed of: PVC ☑ Metal ☐

Field Comments:

1. The Wading Pool piping was replaced, in 2009.

Code Comments:

1. The recirculation rate of the wading pool vessel is 200 gpm, which is based on a 1 hour turnover rate. The chart below shows the compliance of the various piping systems of the pool vessel.

<table>
<thead>
<tr>
<th>Pipe System</th>
<th>Pipe Size</th>
<th>Max Pipe Flow</th>
<th>Code Required Flow</th>
<th>Code Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet Return</td>
<td>6”</td>
<td>705</td>
<td>164</td>
<td>Yes</td>
</tr>
<tr>
<td>Main Drain</td>
<td>4”</td>
<td>196</td>
<td>164</td>
<td>Yes</td>
</tr>
<tr>
<td>Gutter Outlet</td>
<td>6”</td>
<td>440</td>
<td>164</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Pool #2- Piping System
Recommendations:

1. No work is anticipated for a 12.5 or 25 year life.

**1-18. Filtration Assembly #2**

Brand: Pentair  Model: TRJ40C  # Units: 2  
Type: Pressure Sand  Vacuum Sand  Gravity Sand  NSF Listed  
Tank Material: Steel  Fiberglass  S.S.  Aluminum  Concrete  Other  
Serves Pool #1  Serves Pool #2  Reuse Filter Y  N  
From Calculations: Loading of _____ gpm/sf x area _____ sf = Flow of _____ gpm  
Loading of _____ gpm/sf x area _____ sf = Flow of _____ gpm  
Supply Piping: Manifold 4"  Each Filter Lateral 3"  Independently Valved Y  N  
Manifold Piping: D.I.  PVC  Valves: Gate  Butterfly  
Backwash: Individually  Group  Backwash Pipe Size  Air Gap  Sight Glass  
Backwash Flow To: Storm  Sanitary  To Grade  
Field Comments:  
1. The filters were replaced in 2009, no work is anticipated for a 12.5 or 25 year occupancy;  
2. The pipe system and filter systems are Code compliant.
1-19. Recirculation Pump Assembly #2

Pump Brand: _Pentair_  Model # _EQ-750-3PH_  # Units _1_  Size _7.5 hp_
Type: End Suction Centrifugal  Split Case Centrifugal  Vertical Turbine
Long Coupled  Short Coupled  Serves Pool #1  Serves Pool #2
Capacity: From Plans _200 gpm_ @ _75 ft.TDH_
Pump Housing Suction Size _6"_  Pump Housing Discharge Size _4"_
Pump Reusable: Y N  Data Plate Located Y N

Pump Suction:
Pump Suction Pipe Commences: At Surge Tank  Direct From Main Drains  at Filter
Suction Pipe Size _6"_  Pipe Type: D.I.  PVC
Flooded Suction Y N  Existing Foot Valve Y N  Foot Valve Required Y N
Hair & Lint Strainer Y N  Reuse Strainer Y N
Isolation Valve(s) For Strainer Y N - Integral with pump

Pump Discharge:
Discharge Pipe Size _4"_  Pipe Type: D.I.  PVC  Flow Meter Y N  Brand _Blue-White_
Pump Motor:
Brand _Nema Premium_  Model # _BU83_  HP _7.5_  Phase _3_  Voltage _208_  Amps _21_  RPM _3490_
Type _DE4_  Frame _184JMZ_  Starter Provided Y N  Within Site of Motor Y N

Field Comments:
1. All pumps new in 2009;
2. For a 12.5 year occupancy, BA1 would expect routine maintenance only $10,000;
3. For a 25 years life, the pump will need to be replaced, as a pump lifespan is close to 15 years. No work is required at this time;
4. The pumps could be reused for a new facility.
1-20. Disinfectant System #2
Chlorinator Brand Stenner Model # 85M5  # Units 1
Maximum Output 85 in gpd
Serves Pool #1  Serves Pool #2
Form of Disinfectant: Gas□ Liquid☒ Solid□ Type: Chlorine☒ Bromine□
Specific Type Chemical Used Sodium Hypochlorite
Method of Operation: Vacuum□ Pressure□ Manual Control□ Automatic Control☒
Point Of Injection Downstream Of: Pump Y☒ N□ Heater Y☒ N□ Filter Y☒ N□
Method of Inducing Flow through Chlorinator:
Internal Pump☒ Bypass Valve In Return□ Public Water□ Booster Pump□
pH Balancing System: Y☒ N□ if Yes, Then Manual Control□ Automatic Control☒
Brand Stenner Model # 45M5 # Units 1
Maximum Output 45 in gpd □ in ppd Location
Serves Pool #1□ Serves Pool #2☒ Serves Pool #3□ Serves Pool #4□
pH Form: Gas□ Liquid☒ Slurry□ Type: Soda Ash□ Co2□ Muriatic Acid☒
Separate Chemical Room Y□ N☒ Number____
Serves Pool #1□ Serves Pool #2☒
Room Sealed Y☒ N□ Closed Ceiling Y□ N□ Open Ceiling Y□ N□
Constructed of: Masonry Walls□ Wood Frame Walls□
Chlorine Room Has: Out Swing Door Y☒ N□ Vent Y□ N□ Window Y□ N□
Chlorine Alarm Y□ N☒ Outside Light Switch Y□ N☒ Safety Mask Y□ N□
Outside Ventilation Switch Y□ N□
Light Operational Y□ N☒ Ventilator Operational Y☒ N□ None□
Describe Any Chemicals Present Muriatic Acid and Sodium Hypochlorite
Field Comments:
1. The Chlorine and Acid pumps are in good condition. Standard maintenance will be required for the life of the pool.

1-21. Chemical Controller #2 and Sampling Pump
Chemical Controller Y☒ N□ Serves Pool #1□ Serves Pool #2☒
W/recorder Y□ N□ W/Sampling Pump Y□ N□
Controller Brand Chemtrol Model # 250  # of Units 2  Serial # -
Field Comments:
1. Chemical Controller was installed in 2009 and can be reused.

Recommendations:

1. No Work for 12.5 or 25 year project.

I-22. Mechanical Building

Separate Mechanical Building Y □ N □ Dimensions L _____ W _____ H _____
Plans Available Y □ N □ Basement Y □ N □
Foundation Y □ N □ Wall Type: Masonry □ Wood Frame □ Cast Concrete □
Roof Type: Flat □ Single Pitch □ Double Pitch □ Roofing Type: Shingles □ Membrane □
Roof Structure: Wood Truss □ Wood Rafters □ Precast Concrete □ Bar Joists □
Evidence of Roof Leakage Y □ N □ Fire Resistive Roof Y □ N □
Fire Resistive Structure Y □ N □ Utilities: Electric □ Water □ Sanitary □ Gas □
Telephone □ Telemetry □ Comb Air Y □ N □

Field Comments:

1. There are two mechanical rooms, one for the main pool and a secondary for the wading pool. The secondary room, also contains the chlorine tank for both pools;
2. Mechanical Building is in good condition needs no work for 12.5 or 25 year project;
3. The main mechanical room will need to have the roof removed to install and remove the filter system. The cost will be $8,000.

1-23. Bathhouse Structure

Separate Building Y ☑ N ☐ or Part of Larger Building Y ☑ N ☐ 1 Story ☑ 2 Story ☐
Plans Available Y ☑ N ☐ Basement Y ☑ N ☐
Foundation Y ☑ N ☐ Foundation Wall Type: Masonry ☐ Wood Frame ☐ Cast Concrete ☑
Main Wall Type: Masonry ☐ Wood Frame ☐ Cast Concrete ☑
Rooms: Entry ☐ Single Entry Y ☑ N ☐ Office ☐ First Aid ☐ Guard ☑ Chlorine ☑
Janitorial ☐ Control ☐ Manager ☐ Combination Guard/Basket Room ☐
Family Toilet Room ☐
Male: Shower ☑ Toilet Room ☑ Indoor Change Room ☑ Outdoor Change Area ☐
Female: Shower ☑ Toilet Room ☑ Indoor Change Room ☑ Outdoor Change Area ☐
Lockers: Central Y ☑ N ☐ in Each Change Area Y ☑ N ☐
Requires Male/Female Guard Y ☑ N ☐

Floor Treatment: Painted Concrete ☐ Natural Concrete ☑ Ceramic Tile ☐ Other ☐
Floor Condition: Interior 1 ☑ 2 ☐ 3 ☐ 4 ☑ 5 ☐ Exterior Condition: 1 ☑ 2 ☐ 3 ☐ 4 ☑ 5 ☐
Well Lighted Y ☑ N ☐ Vandal Resistive Lighting Y ☐ N ☐
Mechanical Ventilation Y ☑ N ☐ Rooftop Y ☑ N ☐ Wall Type Y ☑ N ☐
Natural Ventilation Y ☑ N ☐ Type ☐
Utilities: Electric ☑ Water ☑ Sanitary ☑ Gas ☑ Telephone ☑ Telemetry ☐
Combustion Makeup Air Y ☑ N ☐
ADA Compliant: Entrance Y ☑ N ☐ Entrance Counter Y ☑ N ☐ Hallways Y ☑ N ☐
Shower Rooms Y ☑ N ☐ Toilet Rooms Y ☑ N ☐ Door Widths Y ☑ N ☐
Plumbing Stalls Y ☑ N ☐ Plumbing Fixtures Y ☑ N ☐ Door Hardware Y ☑ N ☐
Mirrors Y ☑ N ☐ Drinking Fountain Y ☑ N ☐

Recommendations:

1. The existing building was built in the 1930's and was remodeled in 1993. The building is in good condition and does not require any work for a 12.5 or 25 year occupancy, except for standard maintenance.
1-24. Bathhouse Roof

Roof Type: Flat ☒ Single Pitch ☐ Double Pitch ☐ Roofing Type: Shingles ☐ Membrane ☐
Roof Structure: Wood Truss ☒ Wood Rafters ☐ Concrete ☐ Bar Joists ☐
Evidence of Roof Leakage Y ☐ N ☒ Fire Resistive Roof Y ☐ N ☒
Fire Resistive Structure Y ☐ N ☒
Interior Ceiling: Cathedral Y ☐ N ☒ Flat Y ☐ N ☒ Ceiling Finish Open

Recommendations:
1. The flat roof will need repairs over the course of a 25 year life, no work is included at this time.

1-25. Bathhouse Doors and Windows

Door Frames: Metal ☒ Wooden ☐ Fiberglass ☐ Aluminum ☐ Replace Y ☐ N ☒
Doors: Metal ☒ Wooden ☐ Fiberglass ☐ Aluminum ☐ Replace Y ☐ N ☒
Heavy Duty Hardware Y ☒ N ☐ Operating Condition: 1 ☐ 2 ☐ 3 ☐ 4 ☒ 5 ☐
Windows Y ☒ N ☒ Type: Fixed ☐ Operable ☒ Frame: Metal ☒ Wooden ☐ Fiberglass ☐
Aluminum ☒ Sky Lights Y ☒ N ☐ Window Replacement Required Y ☐ N ☒
Overhead Door Y ☐ N ☒
Standard Exit Openings Y ☒ N ☐ Sufficient Exit Openings Y ☒ N ☐

Recommendations:
1. Doors and windows are in good condition for a 12.5 year life, no work is required;
2. The doors and windows will need to be replaced for a 25 year life. The cost is $50,000.
1-26. Bathhouse Sanitary Facilities

<table>
<thead>
<tr>
<th>Fixture Type</th>
<th>Existing Quantity</th>
<th>Code Required Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Urinals</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Water Closet</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Shower</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Lavatory</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Baby Changing</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Water Closet Type: Tank□ Flush Valve□ Open Seats Y□ N□
Urinal Type: Flush Tank□ Flush Valve□ Floor Mounted□ Wall Mounted □
Shower Type: Individual□ Econo Wall Type□ Column Shower□
Touch Control Flow Y□ N□ Individual Shower Floor Drains□
Tempering Valve Y□ N□
ADA Compliant Stalls Y□ N□ ADA Compliant Fixtures Y□ N□

Recommendations:
1. The existing quantity of sanitary fixtures are grandfathered into the facility;
2. No additional work is required unless the pool vessels are modified.

1-27. Bathhouse Water Heater

Water Heater Y□ N□ Energy Type: Natural Gas□ LPG□ Electric□
Appliance Type: Standard Tank Type□ Boiler W/ Separate Tank□
Central Boiler W/Exchanger□ Storage Tank Capacity 600 gallons
Heater Brand□□ Model □ Serial □
Temp & Pressure Relief Y□ N□ Balancing Valve Y□ N□ □ Units □
Balancing Valve Brand□□ Model □ Serial □
Input□□BTU/Hr Output□□BTU/Hr Wattage □ Phase□
Recharge Rate□□gph From Data Plate Y□ N□
Vent Type: Power□ Direct□ Standard□ Power-Direct□

Recommendations:
1. The existing water heater needs to be replaced;
2. The 12.5 year cost to replace with a similar unit is $12,000;
3. The unit could be replaced with a smaller heater, but the smaller heater may not keep up with the hot water demand.
1-28. HVAC Systems

Mechanical Building/Room: Power Ventilation Y N Heating System Y N
Rooftop Ventilator Y N Wall Ventilator Y N Combustion Air Ventilator Y N

Bathhouse: Power Ventilation Y N Heating System Y N Air Condtg Y N
Rooftop Ventilator Y N Wall Ventilator Y N Combustion Air Ventilator Y N
Natural Ventilation Y N

Recommendations:

1. HVAC in the existing building is adequate for a 12.5 and 25 year occupancy. No work required.
1-29. Electrical System

Recommendations:
1. For a 12.5 and 25 year project, the electrical panels and equipment should be replaced;
2. The light fixtures should also be considered as replacement;
3. The total cost is $90,000.

1-30. Utilities

Site Utilities: Electric☒ Water☒ Sanitary☒ Gas☒ Telephone☒ Telemetry☐ Storm☐
Bathhouse Utilities: Electric☐ Water☐ Sanitary☐ Gas☐ Telephone☐ Telemetry☐ Storm☐
Mechanical Building Utilities: Electric☒ Water☒ Sanitary☐ Gas☒ Telephone☒
Telemetry☐ Storm☐
Potable Water Source: Municipal☐ Private Well☐
High Iron Y☐ N☐ High Hardness Y☐ N☐ High Alkalinity Y☐ N☐
Point of Water Service #1: Site☐ Bathhouse☐ Mechanical Building☒ Size____
Water Service #1 Meter: Size_____ Location_____ Brand_____  
If Meter 2" And Larger = Manual Valve Bypass Y☐ N☐
Exempt Meter For: Site☐ Pool☐
Point of N Gas Service #1: Site☐ Bathhouse☐ Mechanical Building☐ Size_____
Regulator In Front Of Appliances Y N Name of Utility
Storm Sewer to Site Flow Direction South/West Gravity Y N
Storm Sewer Receives: Filter Backwash Y N Surge Tank Y N
Pool Drainage Y N Deck Drain Y N Roof Drainage Y N
Air Gaps: Filter Backwash Y N Surge Tank Y N Pool Drain Y N
Deck Drain Y N
Storm System: Lift Station Y N Location: Duplex Simplex
Sanitary Treatment Source: Municipal Private Septic Tank
Sanitary Sewer to Site Flow Direction West Gravity Y N
Sanitary Sewer into BH Flow Direction West Gravity Y N
Sanitary Sewer into MB Flow Direction West Gravity Y N
Sanitary Sewer Receives: Filter Backwash Y N Surge Tank Y N
Pool Drainage Y N Deck Drain Y N Roof Drainage Y N
Sanitary System: Lift Station Y N Location: Mechanical Room Duplex Simplex
Discharge Size Submersible Y N Shaft Driven Y N

Recommendations:
1. Utilities services can remain with minor upgrades for a 12.5 and 25 year project life;
2. 12.5 year - $2,000;
3. 25 year - $10,000

Natural Gas
Sanitary Sewer
1-31. Pool Area Lighting System

Pool Area Lighting Y□ N□ Security Lighting Y□ N□
Pole Type: Steel□ Aluminum□ Wood□ Concrete□ # Poles 4□ Height of Poles 30' □
Condition Of Poles 1□ 2□ 3□ 4□ 5□ Condition Of Fixtures 1□ 2□ 3□ 4□ 5□
Underwater Lighting Y□ N□

Recommendations:
1. The light poles are for security only;
2. The poles are in fair condition;
3. Repairs for the poles will be required over a 12.5 and 25 year occupancy;
4. Replacement should be considered and recommended for a 25 year occupancy;
5. 12.5 year – No Work needed;
6. 25 year – Replacement needed $30,000.

1-32. Safety Equipment

Ring Buoys□ Spine Board□ Blankets□ Telephone□ Emergency #’s □
Fire Extinguisher□ First Aid Kit□ Eye Wash□ Chlorine Mask□
Separate First Aid Water Closet□ Separate First Aid Lavatory□

Recommendations:
Continued maintenance and upgrade of safety equipment is required.
CHAPTER II. DATA AND PROBABLE CONSTRUCTION COSTS INFORMATION

2a. Data For Existing Facility
(Data for study purposes only)

TOTAL WATER SURFACE AREA = 11,523 square feet

TOTAL FACILITY PATRON CAPACITY = 750 patrons, does not include decking

1. Existing main pool surface area: 10,023 square feet
2. Existing main pool water volume: 516,683 gallons
3. Existing main pool patron capacity: 650 patrons
4. Existing main pool recirculation rate: 1,436 gpm
5. Existing wading pool surface area: 1,500 square feet
6. Existing wading pool water volume: 19,700 gallons
7. Existing wading pool patron capacity: 100 patrons
8. Existing wading pool recirculation rate: 164.2 gpm

9. Number of existing and required sanitary facilities:

<table>
<thead>
<tr>
<th>Fixture Type</th>
<th>Existing Quantity</th>
<th>Code Required Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
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<td>7</td>
</tr>
<tr>
<td>Lavatory</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

10. Existing Surge capacity: 0 gallons

11. Required Surge capacity: 0 gallons
Belvidere Park District  
Opinion of Probable Construction Costs  
P1-S1 Technical Evaluation

<table>
<thead>
<tr>
<th>Line Items</th>
<th>12.5 Year Life</th>
<th>25 Year Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pool Vessel</td>
<td>$0</td>
<td>$135,000</td>
</tr>
<tr>
<td>2 Pool Finish</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>3 Pool Enclosure (Fence)</td>
<td>$6,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>4 Pool Covers</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>5 Vacuum System</td>
<td>$8,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>6 Decking</td>
<td>$0</td>
<td>$40,000</td>
</tr>
<tr>
<td>7 Deck Drain System</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>8 Deck Equipment</td>
<td>$0</td>
<td>$105,000</td>
</tr>
<tr>
<td>9 Surge Tanks &amp; MF #1</td>
<td>$0</td>
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<td>10 Main Pool Piping</td>
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<tr>
<td>11 Pool Filtration and Backwash System</td>
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<td>12 Recirculation Pump Assembly</td>
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<td>13 Pool Disinfectant System</td>
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<td>15 Pool Heater</td>
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<tr>
<td>16 Wading Pool Vessel</td>
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<td>18 Wading Pool Filtration Assembly</td>
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<td>19 Wading Pool Recr. Pump Assembly</td>
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<td>23 Bathhouse Structure</td>
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<tr>
<td>24 Bathhouse Roof Assembly</td>
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<td>26 Bathhouse and Site Plumbing</td>
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<td>27 Potable Water Heater</td>
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<td>31 Pool Area Lighting System</td>
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<td>32 Safety Equipment</td>
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<td>33 Additional Line Items</td>
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<td>a Demolition &amp; Excavation</td>
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<tr>
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<td>c Contractor Profits &amp; Overhead</td>
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<td>d Design Fees, Permits, Soil Borings, Site Survey, Reimbursables, etc.</td>
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<td>e Construction Related Services &amp; Reimbursables</td>
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<tr>
<td>f Contingency Fund</td>
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Opinion of Probable Construction Cost: $446,000, $1,184,480
On the following pages there are several pictures and renderings of new facilities that are arranged in an order of magnitude and range, in project costs from $4.5m to $10 m. The Park District can customize and consider multiple options in Phase I, Step #2 of our Professional Service Agreement.