Existing Conditions Analysis and Recommendations

Mountainside Community Pool

July 29, 2022

Prepared for:

Borough of Mountainside
1385 US Highway 22 East
Mountainside, NJ 07092

Prepared by:

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Executive Summary

History

The Mountainside Community Pool opened for operation in the summer of 1967. Since then, there have been some improvements, but the facility operates today much like it did upon first opening. The pool facility provides a cool summertime social and recreational venue but also has served the community with important programs such as swimming instruction and summer swim & dive teams. The facility operates as a member's only facility and is financially self-supporting.

The facility has three bodies of water – a 50-meter "Olympic" pool, a diving pool, and a wading pool. The original wading pool was replaced in 1994 with a new wading pool having a zero "beach" entry and some water spray elements. The diving pool originally had two 1-meter and two 3-meter springboards on steel pedestals. In 2005, one 1-meter and one 3-meter boards were replaced by a pair of waterslides. The bathhouse includes most of the aquatic support spaces. It is functional and thoughtfully configured. Other facility amenities include an elevated deck seating area, a shaded picnic area, and pair of full basketball courts.

The three pools, surrounding deck, bathhouse, and grounds are all maintained at a high level. The pool's circulation and water treatment systems are simple and operating as designed. The certified and professional staff are proactive and have made intelligent and timely upgrades to the systems to increase patron safety and maintain exceptional water quality.

While the 50-meter pool has six lanes, 50-meter swimming is no longer a major priority. In fact, shorter lanes (25-yards or 25-meters) would be preferred for many of the pool's programs such as lessons and summer swim team. The springboards are competition-style boards that have been used significantly for competitive diving but are currently used mostly recreationally. The two fiberglass waterslides terminate in deep water and are commonly called drop slides. Because they terminate in deep water, their use is limited to patrons who have passed a deep-water swim test.

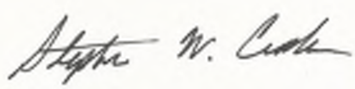
The wading pool provides an attractive and safe amenity for the facility's youngest users. With a beach entry and all-shallow water, it allows very young children an opportunity to explore the water with little risk. The spray jets and palm tree feature provide some visual interest but minimal interaction.

While the facility has strong membership there are opportunities to attract new members. More modern facilities are designed to maximize use by offering more programs, better social/gathering opportunities, and more recreational activities for every age group.

While the facility has a few short-term needs to improve safety and modernize operations, the pools are in excellent condition for their age and require little investment to continue to operate for many more years. But, there are moderate investments that could be made to the existing pools to enhance the current facility with new features and amenities to improve functionality, attract new users and improve the overall experience. Finally, consideration could be given to significantly modify the pools with modern features to allow them to be used even more enthusiastically by patrons. Such a project may include replacing one, two, or three of the existing pools with new pools. Alternatively, reconfiguration of the pools while maintaining some portion of the existing pool's concrete shells could be considered.

Water Technology thanks Frank Masella for their help and assistance in the preparation of this report.

Respectfully Submitted,



Stephen W. Crocker, P.E.
Water Technology, Inc.

Introduction

The purpose of this facility evaluation is to review the present condition of the Mountainside Community Pool facility. Investigation consisted of visual examination of the pool shell, pool finishes, deck, deck equipment, skimmers, exposed piping, circulation, filtration, and chemical treatment systems. The pool was operational at the time of the site visit.

This report summarizes the present condition of the pools and addresses immediate concerns. Recommendations are provided; and each recommendation is given a level of priority and an estimated cost range.

Following completion of this report, with understanding of the condition of the pools, WTI will begin Part 2 of the project. In Part 2, WTI will meet (virtually) with the Borough of Mountainside to discuss aquatic trends and possibilities for improving the facility for its members. Following this meeting, project goals will be established and WTI will develop up to three facility concepts. Concepts may include a combination of adding amenities, modifying existing pool(s), and pool replacement. The three concepts will include rough order of magnitude cost. One example of how the 50-meter pool could be reconfigured (as two pools) is included on the final page of this report.

Methodology

In addition to the on-site visual inspection, the report includes information obtained on site and by analysis of the available construction drawings for the pool facility. Photos of pool construction drawings were forwarded and analyzed prior to the field review, and consisted of the following:

Drawing	Title	Author	Year
A2	Bath House Floor Plan	Keller	1994
A5	Skimmer Line Reconstruction	-	1992
-	Waterslide Addition	-	2006
-	Slide Layout	-	2006
-	Wading Pool Details & Schematic	Disko	1994
WP-5	Wading Pool Filtration Piping	Disko	1994
-	Filter House and Details	Eggers, etc.	1966
-	Filter House Mech & Elec.	Eggers, etc.	1966
-	Reinforced Concrete Wall Sections	Eggers, etc.	1966
4	Wall Sections of Pool	Eggers, etc.	1966
3	Pool Details	Eggers, etc.	1966
2	Wading, Dive, & Main Pool	Eggers, etc.	1966
1	Site Plan	Eggers, etc.	1966

The on-site review was conducted on June 28th, 2022 by Stephen Crocker, P.E., of Water Technology, Inc.

Facts

The Mountainside Pool is located at 1005 Mountainside Ave, Mountainside, NJ. The facility supports a local swim team, offers swimming lessons, and provides family recreation. There are three bodies of water: a 50-meter pool “Olympic” pool, a diving pool, and a small fan-shaped wading pool. The 50-meter pool and the diving pool share a water treatment system while the wading pool has its own system.

The 50-meter pool has dimensions of 164’ x 50’ and a water depth from 3.5’ to 5’. It has 8,280 SF of water surface and a volume of 263,000 gallons. There are six lanes (each 7’ wide) and two large stair entries. The course length is 50-meters which is a standard competition distance and desirable for summer training for club swimmers. Six starting blocks are located at the deeper end and are used for competition, training, and instruction. The pool is also equipped with lane dividers and backstroke flags.

The diving pool has dimensions of approximately 50’ x 37.25’ and a depth ranging from 12.5’ to 16’. It has 1,790 SF of water surface and a volume of 149,000 gallons. It was originally designed and constructed with two 1-meter and two 3-meter springboards mounted on steel pedestals. As part of a 2006 project, one of each was replaced by addition of two “drop” waterslides. A dimensional analysis of diving pool (construction drawings and field measurements) has determined that the pool does not meet current USA Diving/FINA requirements for a 3-meter springboard. This distance from the tip of the 3-meter board to the pool wall ahead is required to be 10.25 meters (33’-7 ½”).

While the 50-meter pool and the diving pool function as two separate pools they are connected with equalizer piping and share a single water treatment system.

The wading pool is fan-shaped with a surface are of approximately 620 SF and a water volume estimated at 2,200 gallons. It has a wide zero-depth entry and slopes to a maximum depth of 1.5’. There are several water features including a palm tree and spray jets that are flush with the pool floor.

The pools are surrounded by a deck and a 6’ tall chain link fence. The wading pool deck is a paver surface while the 50-meter and diving pool have a concrete perimeter deck. A 4’ tall chain link fence and gate separate the wading pool from the deeper pools. The gate is self-closing and self-latching.

Underwater lights are provided in the 50-meter pool and the diving pool. A small amount of overhead lighting was observed at three pool perimeter locations.

Observations

Conditions provided are divided into five condition categories.

Excellent – Item, system or product observed is in new, or like new condition. Item’s expected life is that of a new, recently installed item and is anticipated to be 80% to 90% of the original’s service life.

Very Good – Item, system or product observed is in good condition for its age and does not appear to require abnormal service or attention. Item's expected life is anticipated to be 60% to 80% of the original's service life.

Good – Item, system or product observed is in average condition for its age and does not appear to require abnormal service or attention. Item's expected life is anticipated to be 40% to 60% of the original's service life.

Fair – Item, system or product observed is showing its age and may require abnormal service or attention to maintain usefulness. Item's expected life is limited. Restoration or replacement should be considered in a 2-to-5-year timeframe.

Poor – Item, system or product observed is at the end of its useful life and may present conditions or dilapidations which are a safety hazard or could result in imminent failure. Item's expected life is exhausted. Restoration or replacement should be considered immediately.

Bathhouse

The bathhouse facility is functional and well configured for the usage of the facility. It was renovated in 1995 and includes a check-in station, office, breezeway, men's and women's locker rooms, accessible shower/toilet room/changing room, lifeguard room, first aid room, mechanical/work room, wading pool equipment room, storage space, and a generous snack bar/kitchen. Adjacent to the snack bar is a large, covered seating area.

Pool Programming:

The pools are used primarily for swimming lessons, swim team training, lap swimming and recreation. The 50-meter pool supports active swim teams for training and low-level competition. Swimming lesson programs are conducted primarily in the 50-meter pool. All three pools are used for general recreational and social activities. The facility is used periodically for evening events.

Pool Structure & Finish:

The three pool shells are constructed of steel reinforced concrete. The 50-meter pool and the diving pool have paint finish while the wading pool has a pebble/aggregate finish. The finishes appeared to be in good condition. The concrete shells also appear to be in good condition and shown no signs of cracking, movement, or leaking. All pools have a concrete perimeter coping. The 50-meter and diving pool have original pre-cast coping in fair condition and the wading pool coping has the same pebble finish as the pool which is discolored but in good condition.

All pools have vertical waterline tile, and the 50-meter pool has tile competitive floor and wall markings. The rectangular wall targets in the 50-meter pool do not conform the current competition standards which require crosses. The 50-meter and diving pools have vertical tile depth markings and painted horizontal depth markings on the coping. The painted depth markings are extremely faded and mostly illegible. There is no "No Diving" or universal no diving symbol signage where shallow water (less than 5') exists.

The main pool system has had leaks successfully repaired. The wading pool was reported to currently leak. The leak has not been located or quantified.

Skimmers and Inlets:
All three pools have a skimmer-type overflow system. The skimmers all appear to be operational and in good condition. Some of the 50-meter pool skimmers have been replaced. All pools use floor inlets to return filtered/treated water back to the pool. The wading pool water features also deliver filtered water and are functionally part of the pool's recirculation return/inlet system.

Main Drains:
Each pool has a single submerged suction outlet (main drain). The 50-meter and the diving pool are 18" x 36" gravity flow drains to the filter tank while the wading pool has a small circular drain (about 9" diameter) under direct suction by the recirculation pump. The 50-meter and diving pools are on a shared recirculation system so functionally there are two main drains on the system (minimizing entrapment potential). It was reported that the drain sumps and covers have been determined to comply with State requirements and Virginia Grahame Baker Act Pool and Spa Safety Act (VGB). The plastic drain covers have been replaced once as required. Because the wading pool has a single main drain, a Vac-Alert safety vacuum relief system is present as required by code and compliance with VGB. An exception to the facility's compliance is that the suction point of the waterslide pump is considered a suction outlet fitting assembly (SOFA) and therefore must also comply with current requirements.

Pool Underwater Lighting:
The 50-meter pool has 9 underwater lights spanning one long side of the pool. The diving well has eight underwater lights. Due to its minimal depth, the wading pool cannot accommodate underwater lights. The lighting levels could not be measured to confirm if adequate or compliant with code. Data regarding the fixtures was not available. Assuming the lights are 500 watts each, the underwater lights can meet the minimum standards.

Pool Area Deck and Deck Equipment:
The perimeter concrete decking around the pools is in fair to poor condition, with several open/uneven joints, patches, and cracks. The paver deck surrounding the wading pool is in very good condition. Drainage of the deck is accomplished by sloping to landscape areas or to area drains. No areas of standing water were observed, and it was reported that drainage during rain events is adequate.

Deck equipment includes portable pool lifts, lifeguard chairs, grab rails, starting blocks, and diving boards. The painted, steel, fixed guard chairs and diving stands show signs of rust but are in good condition. The 1-meter diving stand has rear step and rails while the 3-meter stand has a circular stair system. The springboards are Duraflex competition boards and in are good condition. The three portable lifeguard chairs are in very good condition.

The starting blocks are outdated with small, undersized fiberglass tops having poor slip resistance. The water depth at the starting blocks exceeds the minimum depth required for competition (NCAA, National Federation of State High Schools, USA Swimming) but do not meet the USA Swimming requirement for teaching starts (6'-7"). It is recommended that starts not be taught from these blocks. Adding one or more starting blocks to the diving well could be considered if teaching starts is a priority.

The 50-meter pool has six sets of stainless-steel ladders located around the perimeter and two sets of stairs located near the shallow end of the pool. The diving pool has two sets of ladders. Both large pools have a portable ADA pool lift. The lifts were not fixed in place for usage as required for ADA compliance. All railings and ladders are in good condition, but the ladders have slippery treads. A portable set of accessible stairs is also available for use in the 50-meter pool.

A mixture of strap-type chairs, benches, and tables and provided around the pools. Shade on the deck is provided with a few umbrellas and a wood shade structure near the wading pool. Generous shade is provided with seating and tables at the covered snack bar. Southeast of the diving pool, a large grassy area with picnic tables and shade trees is also available for use.

The pool facility is used for a few nighttime events. While there is some area lighting the lighting levels could not be measured to confirm if adequate or compliant with code.

Waterslides

There are two open-flume fiberglass waterslides which originate from a 14' tall tower which is accessed by a stair system. Both slides terminate in the diving pool. The yellow slide terminates at approximately 4.5' above the water and blue slide terminates at about 6" above the water. The fiberglass flumes have been resurfaced one time since installation. Slides appear to be in good condition.

Circulation and Mechanical Equipment

The pool's mechanical systems generally consist of circulation pumps, piping, and valves. The main pool mechanical/chemical equipment space is located on southeast side of the facility. This subterranean vault houses the pumps, filter, and chemical treatments systems for the two large pools. There is stair access to the vault. A second small equipment room within the bathhouse building houses the equipment associated with the wading pool. A separate, exterior, fenced storage area is used for bulk storage of the liquid chlorine and CO_2 used for the large pools. With the addition of the waterslides, a pump with associated piping was added to provide the required water to the waterslides. The pump is located below the waterslide in a fenced/inaccessible zone.

While much of the original metallic underground piping has been replaced, some of the original piping remains. The condition of the underground piping is unknown. This unknown represents a weakness of the system which could jeopardize operation for an extended period while damaged piping is repaired/replaced.

Main Mechanical Room (50-meter and Diving)

- Exposed piping is a mixture of Schedule 40 PVC and Schedule 80 PVC and is in good condition.
- Some of the underground piping is assumed to be metallic with condition unknown
- Piping support in mechanical room appeared adequate.
- The circulation pump is a 20 HP close-coupled, flooded-suction pump and the pump's current

operating flowrate was stated to be 800 GPM for a combined turnover rate of 515 minutes.

- Current code requires a more substantial turnover rate of 360 minutes for the 50-meter (730 GPM) and diving pool (414 GPM) - a combined circulation rate of 1,145 GPM. The original design turnover was 360 minutes (730 GPM) for the 50-meter pool and 480 minutes (310 GPM) for diving pool - a combined circulation rate of 1,040 GPM.
- The circulation pump is equipped with a variable frequency drive.
- A single flow meter is in place but not operational. A single flow meter does not provide individual flow rates for the separate pools.
- The pump and pump motor appear to be in good condition and operating as intended.
- A second 5 HP close-coupled, flooded-suction pump is provided to increase the percentage of water taken from the skimmers. It has a non-metallic hair and lint strainer. This was reportedly added to improve water quality as the original design had skimmer flow by gravity which was inadequate. Pump is in very good condition.
- Valves are primarily butterfly valves with combination of gear and lever operation.
- Valves condition is a mixture of good, fair, and poor.
- Piping was partially labeled, and valves were tagged.
- A piping schematic was not posted but is simple to understand.
- A powered fan/vent is provided in the roof of the space.

<u>Wading Pool Mechanical Room</u>

- Exposed piping is a mixture of Schedule 40 PVC and is in good condition.
- Underground piping is likely Schedule 40 PVC.
- Piping support in mechanical room appeared adequate.
- A flow meter is in place but not operational.
- The filtration pump is a 1.5 HP close-coupled, self-priming plastic pump with unknown operating conditions. It has integrated, non-metallic, hair and lint strainer.
- The pump, strainer, and motor appear to be in good condition and operating as intended.
- Code-required turnover is 60 minutes which corresponds to a circulation rate of approximately 37 GPM. Assumed circulation rate is 50 – 70 GPM.
- Valves are plastic ball valves and are in good condition.
- Piping was not labeled, and valves were not tagged.
- A piping schematic was not posted but is simple to understand.
- The original automatic water level controller has been abandoned. Water is added to pool system manually.
- The equipment room has a small window providing the only ventilation of the mechanical room.

<u>Waterslide Pump Space</u>

- The slide pump is a 10 HP close-coupled, self-priming plastic pump with unknown operating conditions. The pump appears to be original which would have had a flowrate dictated by the slide manufacturer. It has integrated, non-metallic, hair and lint strainer. Pump, motor, strainer appear to be in fair to good condition.
- The pump takes water from the diving pool via 6” Schedule 40 pipe. This pipe has a 90 degree elbow facing down into the pool which is somewhat accessible from behind the fiberglass end section of the waterslide. This is a submerged suction outlet and should be modified to comply with current Suction Outlet Fitting Assembly requirements.

- Piping is schedule 40 PVC in good condition.

Filtration and Chemical Treatment

The main pool system uses the original vacuum diatomaceous earth (D.E.) filter system. The wading pool utilizes a cartridge filter system. Both systems utilize liquid chlorine (sodium hypochlorite) for sanitization and CO_2 for balancing the pH. Water clarity in the main pool and diving pool was excellent at the time of observation. Clarity of the wading pool appeared satisfactory but was difficult to quantify due to the water depth and finish color.

Main Mechanical Room (50-meter and Diving)

- Vacuum diatomaceous earth filter located in the west portion of the mechanical room with access provided through a Bilco aluminum hatch.
- The filter area is unknown but assumed to be sized to match the design circulation rate.
- The pool's chemical treatment is controlled by a Link Automation modern chemical controller, which was observed to be fully operational.
- The liquid chlorine feeder is a SureWater Technologies system which appears to be in good condition.
- Both containers for liquid chlorine have secondary containment.
- A CO_2 system is used to regulate the pool pH. The large bulk storage tank is located outside the vault, but the regulator and injection location are in the vault. Because CO_2 is denser than air, a CO_2 leak could displace oxygen in the vault and lead to a hazardous condition.
- The pool equipment space has an emergency eyewash.

Wading Pool Mechanical Room

- The pool uses a single cartridge filter (Pentair CCP420) with a design flow rate of up to 150 GPM.
- The pool's chemical treatment is controlled by an older Link Automation chemical controller, which was observed to be fully operational.
- The liquid chlorine feeder consists of a plastic storage tank (with secondary containment) and a metering pump. All appear to be in good condition.
- A CO_2 system is used to regulate the pool pH. Two 50# cylinders were located within the mechanical room.
- The pool equipment space has an emergency eyewash just outside the door.

Safety and Code

Related Codes and Standards:

- Americans with Disabilities Act (ADA) Requirements
- Safety and Code-Related Issues (New Jersey Sanitary Code, Chapter IX, Public Recreational Bathing, N.J.A.C. 8.26 2018-2025
- USA Diving

- USA Swimming
- Model Aquatic Health Code
- Industry Standards and Best Practices
- American National Standard for Suction Outlet Fitting Assemblies (SOFA), ANSI/APSP/ICC 16

Facts and Recommendations

- The 50-meter pool's perimeter exceeds 300', requiring two accessible means of entry. The accessible means are required to be available for use whenever the pool is being used by the public. With less than 300' of perimeter, the diving pool is required to have one accessible means of access. The 50-meter pool and the diving pool each have one compliant primary means of access (the portable lifts). For ADA compliance though, the lifts must be always in place allowing users to access the lift without requesting assistance. For compliance the PAL lift must be secured to the deck using a securing kit which is available from the manufacturer (SR Smith). For the 50-meter pool, the portable stair when in place meets the required secondary means of access. Water Technology, Inc.'s ADA evaluation was limited to the pool area only, and did not include parking, bathhouse, etc.
- The fixed stairs of the 50-meter pool can be readily made to be a secondary accessible route with the addition of ADA compliant railings.
- Horizontal Depth Markings are not provided to meet code requirements.
- "No Diving" signage is not provided to meet code requirements.
- Diving pool is dimensionally not adequate for 3-meter diving. The 10.25 minimum clearance to the wall forward from the tip of the board is not met.
- Waterslide pump suction does not meet VGB/SOFA requirements.
- Minimum circulation rate for the 50-meter and diving pool may not be met.
- Ladder treads are not slip resistant.
- Starting blocks are not slip resistant.
- Deck has multiple cracks and hazards.
- Mechanical and chemical storage areas and not properly ventilated. Exhaust duct should be routed low in the room as CO_2 is denser than air.
- CO_2 alarm should be provided in vault.
- Flow meters should be provided/made operational for all three pools.
- Add an ultraviolet treatment system for the wading pool. Such a secondary disinfection system kills organisms that are resistant to chlorine. This is especially important for a wading pool, and any pool with sprayed/aerated water

Recommended Improvements

Proposed improvements are assigned a priority level, which determines the importance of the repair/improvement. The priority level is assigned to an improvement based on the following: priority, time frame, and assessment criteria. Proposed improvement options are subdivided by pool for clarity.

<u>Priority One</u>
Time Frame: immediate to one year.
Assessment Criteria: deterioration of structures; health and human safety deficiencies; Code compliance; maintenance items that will reduce future maintenance; maintenance improvements that can be performed by maintenance staff.

<u>Priority Two</u>
Time Frame: one to two years.
Assessment Criteria: repairs that will be required soon; improvements that will reduce or eliminate future maintenance; Code compliance; maintenance improvements that can be performed by staff.

<u>Priority Three</u>
Time Frame: one to four years.
Assessment Criteria: improvements that will improve the efficiency/performance of the facility.

<u>Priority Four</u>
Time Frame: one to six years.
Assessment Criteria: Improvements that provide greater enjoyment to the patrons.

The following are recommended options. Associated with each recommendation is a budget opinion of probable cost, which includes project development cost, such as fees, testing, contingencies and reimbursables.

Recommendations

		Priority	Probable Cost Range	
	50-meter and Diving Pools		Low	High
1	Add slip resistant surface to starting blocks or replace blocks	1	$600.00	$30,000.00
2	Make one of the 50-meter pool stair systems ADA compliant -new railings	4	$3,000.00	$5,000.00
3	Replace underwater lights with LED fixtures	3	$36,000.00	$40,000.00
4	Replace degraded valves	3	$6,000.00	$10,000.00
5	Attach pool lifts to deck using manufacturer's kit	1	$500.00	$800.00
6	Make ladder treads slip resistant	1	$200.00	$400.00
7	Repair deck cracks and eliminate trip hazards	1	$5,000.00	$7,500.00
8	Add slip-resistant deck surface topping (over concrete)	4	$75,000.00	$110,000.00
9	Add horizontal depth markings and NO DIVING (paint or adhesive)	1	$2,000.00	$3,500.00
10	Scope the drain & inlet piping to assess condition (when pool is drained)	1	$2,000.00	$4,000.00
11	Make slide pump suction compliant as a SOFA	1	$1,500.00	$4,000.00
12	Add instructional starting blocks (2) at diving pool (or cease instruction)	1	$0.00	$10,000.00
13	Add additional overhard lighting			
	Wading Pool			
14	Locate leak (https://www.americanleakdetection.com/)	1	$2,500.00	$4,000.00
15	Repair leak in pool and/or piping	1	$2,000.00	$6,000.00
	Mechanical and Water Treatment Systems			
16	Add new flow meters for 50-meter pool, diving pool and wading pool	1	$6,000.00	$9,000.00
17	Confirm/maximize/set flowrate to cuode minimum or design turnover	1	$0.00	$0.00
18	Add ventilation in both pool mech spaces - low	2	$2,000.00	$6,000.00
19	Add CO2 alarm to main pool mechanical space/vault	1	$200.00	$800.00
20	Add CO2 alarm to wading pool mechanical space	2	$200.00	$800.00
21	Add U.V. treatment to wading pool system	1	$4,000.00	$7,000.00
22	Add automatic water level controller - main system	3	$2,000.00	$2,500.00

Photos and Exhibits

50-Meter Pool Overview

Diving Pool Overview

Diving Pool Coping and Vertical Tile Depth Markings

50-Meter Pool Coping and Illegible Horizontal Depth Markings

Non-standard Competition Wall Targets

50-Meter Pool Skimmer Lid and Deck/Coping Interface Hazard

Pool Deck Repairs and Hazard

Precast Pool Coping with Missing Grout

1-Meter Diving Stand

3-Meter Springboard & Pool Wall Ahead

Starting Block


Portable Aquatic Lift in Stored Location


Wading Pool Overview

50-Meter & Diving Pool Equipment Vault

50-Meter & Diving Pool – Diatomaceous Earth Filter

50-Meter and Diving Pool Filter Pump

50-Meter & Diving Pool Skimmer/Booster Pump

50-Meter & Diving Pool – Typical Valve

50-Meter & Diving Pool Chlorine Delivery System "Day Tank"

50-Meter & Diving Pool CO2 Tank

50-Meter & Diving Pool – Bulk Chlorine Storage with Secondary Containment

50-Meter & Diving Pool – Overhead Exhaust Fan in Vault

50-Meter & Diving Pool Automatic Chemical Controller

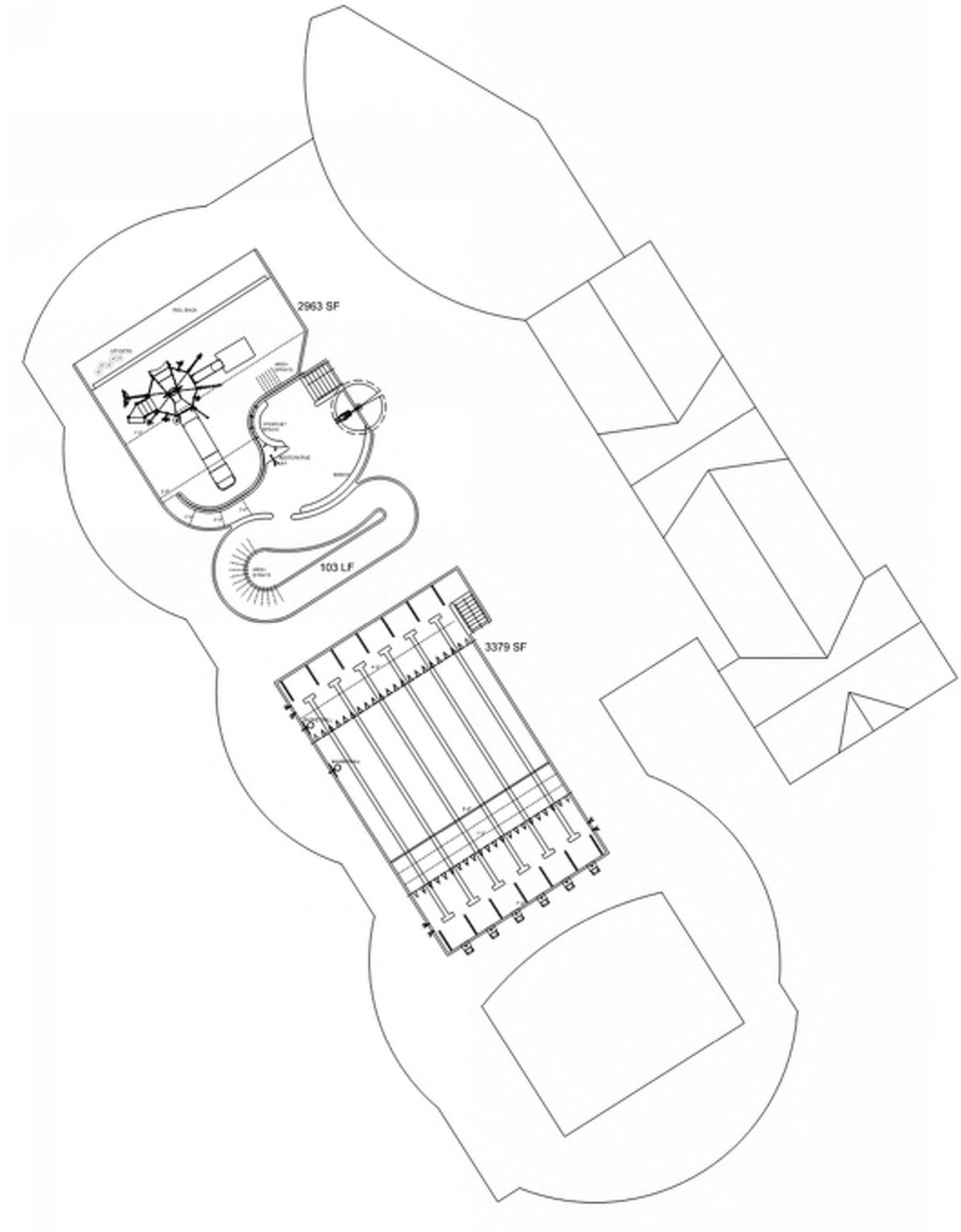

Waterslide Pump and Piping

Wading Pool Filter Pump and Safety Vacuum Relief System

Wading Pool Cartridge Filter

Wading Pool Chlorine and CO2 Delivery Systems

Wading Pool Chemical Controller



Example of How the 50-Meter Pool Might be Reconfigured