

Feasibility Study for the Future of Rosemary Pool

APPENDIX A

as of 9/13
updated by
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Recommendations

Site

done

Recent attempts have been made to stabilize the slopes on the hill including the planting of tiger lilies. However, in order to stabilize the hillside and create an environment that will support the operation of the pool, an extensive amount of work is required. The site must be regraded in order to create flat tiers that when rained upon will allow water to soak downward into the tier rather than flow down the hill causing erosion.

done

At the same time, a system of underground drainage piping should be installed to manage the water that does flow onto the hill. This drainage system should run laterally, be collected into a common system, and piped away from the pool area.

done -
getting tired

After the drainage has been installed, the tiers must be covered with new loam and seeded. The lawn should be grown in order to create a lush green lawn that will absorb water. It will also provide a more attractive recreational spot for residents and increase the usable area of the current site.

added
trees to
site

Over the years, several large trees have died in the tiered area. This has likely had an effect on the erosion problem. Planting new trees is important to retain the site construction planned. Active root systems will further stabilize the area and create shade for bathers.

original
fences

The area of the site bordering the street should be addressed in order to create a physical barrier from run off from the street. This can be accomplished by low retaining walls.

done

Finally, an automatic irrigation system should be installed to water the new lawn and maintain the landscaping investment.

done

The stone walls between tiers require repair. During the installation of the drainage, on the hillside, perforated pipes should be installed in a gravel bed behind each stone wall. Additional weep holes should also be installed behind the walls. If budget allows, a drainage mat should be applied to reduce the water pressure on the walls.

done

All the benches along the stone walls should be replaced. The current brackets are rusted and the wood has failed.

done

The pool is wheelchair accessible by a series of ramps from the pool house. Those ramps while appearing to satisfy the grade requirements of the code do not satisfy the code regarding railings. New railings should be planned for each side of each ramp continuously.



done

The wood on each bench should be replaced and coated. Metal brackets should be sand blasted and painted or replaced by galvanized material. Additional brackets should be installed to reduce the span of the wood planks.

done

The stone walls require minimal repairs and pointing. This should be done do stop the deterioration.

did 2009 study
- not done

The parking lot should be regraded and resurfaced. Striping should be installed to control the parking layout. The layout of parking should be reviewed in order to determine if additional parking is available. If, for example, additional paving is required on one side it should be performed to maximize the parking in this area as there is currently a shortage of parking.

new trees
planted 2012

The sloped area between the high and the low parking areas should be treated to promote the growth of the grass and shrubs that will reduce erosion and increase the aesthetics of the area. An irrigation system could be extended to this area as well.

Architectural

done

The existing roof of the pool facility should be completely removed and disposed of. We recommend that a single ply felt backed PVC roof membrane with weldable seams be installed, glued directly to the concrete deck. Both existing drain bowls should be replaced at the same time and the existing drain leader should be routed for a distance of 100' minimum.

done

The windows and doors of the facility require painting.

done

Minor areas of masonry repairs are required.

not done

The shower on the exterior of the building should be modified to become handicap accessible. This involves moving shower controls, installing a hand spray and fold down bench, and regrading the floor in and adjacent to the showers.

Minor upgrades

The two handicap toilets adjacent to the entrance of the locker room should be demolished and combined into one single accessible toilet room which would accommodate wheelchairs and family functions such as baby changing.

done
new coating
in some areas

The floors of the building should be completely striped of the existing coating. The concrete can be left natural and clear sealed or a true concrete deck coating, most often seen in parking garages, can be installed with an abrasive finish to assist in traction.

not done

The entrances to each locker room should be modified to produce some degree of privacy and maximize the use of the locker facilities. This can be accomplished through a series of screens and/or doors. CBI to provide a sketch an the final report.



2012 new hot water heaters

Coating on floors

The showers in each locker room should be modified to raise the shower head location. Each drainage trough should be eliminated by filling in and eliminating the ceramic tile which has become a problematic maintenance element. New drains should be installed with tamper proof covers.

not done - investigated

The Bradley sinks should be eliminated and new wall mounted sinks installed to accommodate hand washing. These should be heavy duty, able to withstand 300 lbs weight for HCP accessibility.

not done

The women's showers should be reduced in number so the stalls can be expanded to promote use. Waste receptacles should be installed in each shower area. The free standing changing cubicles should be eliminated and benches installed adjacent to new lockers.

done

New lighting should be installed throughout the facility to create a brighter more inviting atmosphere. To assist, the walls should be painted a brighter color.

done roof drains repaired

Investigation of the paint peeling is out of the scope of this report. We recommend that this issue be solved in order to reduce maintenance costs and improve the look of the facility.

sections replaced annually

The wood decking around the perimeter of the pool should be replaced. New material such as red wood or cedar should be installed and coated for protection. A non-slip surface should be applied to the tops of all planks. The coating should be reapplied every year along with the other maintenance of the pool.

Structural

done

CBI recommends that the exterior of the existing sheet pile enclosure to the pool be repaired, this year. In the fall, after the pool season is over, the metal should be sandblasted, the joints between sheet piles caulked, and the entire surface coated with a high tech paint system designed to be submerged. This should be maintained on a yearly basis along with the interior surface of the pool.

reviewed during sandblasting - Town Engineer determined not needed at time

The steel angle supports for the wood deck have corroded and require replacement at this time. Galvanized material would be preferable as it is very difficult to maintain the angles under the deck.

Pool

The Rosemary Pool is a unique hybrid design configuration combining the features of a structured swimming pool and a natural bathing beach. As such, conventional system design is not always practical, and specific design requirements were probably waived upon condition of achieving intended performance.



Pool depth profile, bottom slopes, and diving area dimensions are in conformance with minimum requirements of current state regulations for pools with "deck level" diving boards.

The pool recirculation system does not conform to current design requirements for "inlets," "outlets," and "skimming facilities."

Inlets -- Regulations require one inlet for each 300 square feet of water surface and not more than 20 feet apart around the perimeter (70 required). The intended performance is to achieve uniform distribution of chlorine to all areas of the pool.

The original design, although theoretically sound, apparently did not perform as intended because it was revised several years later. (See drawings by John D. Marr, March 1975.) Apparently the revision achieved the intended result because it remains to the present, and daily operation logs for the 1997 season indicate satisfactory chlorine distribution to all areas of the pool.

During discussions with pool staff, there was a comment about currents in some areas of the pool generated by high velocity flow from filtered water return inlets. With only 5 functioning, average flow will be 250 GPM each. Even with all 8 functioning, average flow would be 156 GPM, which could induce currents. If the currents are a significant problem, I can suggest a relatively simple design which will eliminate currents and should distribute treated water at least as effectively as the existing system; but it should be noted that conventional theory doesn't always apply in unique pools such as Rosemary, and chlorine distribution might not be as uniform as it is with the existing system.

Bottom Drain Outlet -- Regulations require two outlets with minimum grate open area not less than 200 square inches. The intended design function is to achieve low velocity outflow so as not to draw bathers to "suction lock" entrapment on the outlets. Outflow velocity on the existing outlet could go as high as 2.2 feet per second, 10 percent higher than permitted by regulations. The chance of "suction lock" is extremely remote because the grate is larger than can be completely covered by a single bather, and velocity is not high enough to induce a current toward the outlet. It is theoretically possible, however, and could be a liability issue. A second outlet 18 inches square should be installed at least 8 feet from the existing.

Skimming and Overflow -- Regulations require one skimmer for each 500 square feet of water surface (42 required), or a continuous overflow channel around the entire pool perimeter, and overflow capacity at least 50 percent of recirculation rate (625 GPM).

The intended function is to recirculate water from the pool surface, and to remove floating contaminants by skimming action. Hydraulic capacity of the existing overflow channel is adequate for 50 percent recirculation if water level is maintained 1/4 over the lip of the channel and bottom drain pipe is restricted to achieve balanced flow from the bottom drain and the overflow channel. A readily operable valve will be required on the bottom drain pipe to adjust the system for best overflow performance.

Reviewed when
exterior piping
replaced

replaced to
meet new
federal
requirements



The overflow channel is not long enough to provide effective skimming from the entire surface, and is probably poorly situated to get the best advantage of wind skimming across the surface. As a practical matter there is not a cost effective solution to improve skimming performance.

The condition and remaining service life of existing cast iron perimeter piping is uncertain. The fact that some branch piping to inlets has failed suggests that all piping might have to be replaced sooner rather than later, but an accurate assessment will require excavation for visual inspection and possibly ultrasonic testing.

The filter is in good condition and can reasonably be expected to provide satisfactory service and performance for at least 10 more seasons. Diatomaceous earth filters are acknowledged by experienced water treatment specialists to provide superior filtration efficiency; and despite the fact that they are difficult to operate and are labor intensive, they are the most practical and cost effective method of filtration for large seasonal pools. To achieve comparable performance with sand filters would require a battery of three 8 foot diameter filter tanks. We recommend the existing filter as the most practical and cost effective solution for continued operation.

*Pumps replaced
2010
2013*

The recirculation pumps are probably not performing to original design capacity because of worn impellers, but the only accurate test is observation of accurate pressure gauges and flow meters while the pumps are running. We recommend installation of new gauges for suction and discharge ports of both pumps and a new electronic flow meter for the filtered water return pipe.

Regarding pool water level control, I believe the most important issue is effective overflow and skimming performance.

It is clearly implied on original design drawings (Sheet #4, level control valve detail) that the pool walls were designed to withstand pressure from water level differential up to two feet difference between lake and pool.

Mr. Quilty reports that lake water level remains constant for most of the season at the crest of the spillway gate (elevation 206.05) and might drop 6 to 12 inches toward the end of the season after an extended drought. He reports that most adjustments are to lower pool water level after heavy rain.

The automatic level control check valves do not function precisely enough to maintain pool water at the critical level to assure optimum skimming performance (1/4 inch over the crest of the overflow channel). A manually operable valve on the overflow drain pipe opening to the lake would permit precise adjustment of pool water level as often as required to achieve optimum skimming.



2009 - Health Dept requires disconnect from lake during season - must re-fill w/ hydrant water

We recommend installation of a 6" PVC "butterfly" valve on the overflow drain pipe and opening to the lake. The valve should be fitted with a stainless steel extension to an operating handle at the pool deck.

Summary of Pool Recommendations

Safety and Liability Issues

not needed under code

1. Install a second bottom drain outlet.

Code Issues

done

1. Install a flow meter and new pressure gauges.

Operational Issues

done

1. Replace cast iron gate valves with PVC wafer valves.
2. Install a new PVC wafer valve to facilitate easier adjustment of pool water level for most effective skimming.

Long Term Maintenance Issues

done

1. Replace cast iron perimeter piping with new PVC piping.

Mechanical

2012 filter room fan replaced

The existing fans for the toilet and shower rooms should be replaced with fans of larger capacity to provide some token of summer cooling as well as improve upon the minimum ventilation requirements. We recommend two speed fans be utilized. The low speed would maintain minimum ventilation requirements by code and operate on a time switch when the building is occupied. The high speed of the exhaust fan would be controlled by a thermostat to operate at the higher capacity when the space temperature exceeds the setting.

not done

The Lobby, Guards, Service Booth and First Aid rooms should also have a ventilation system installed. These rooms do not require ventilation by code but a system to exchange outside air as well as provide ventilation cooling is desirable. A central exhaust fan and duct system with grilles in each area could be installed to accomplish this. Control would be by means of an on/off, manual switch.

not done

The two exterior handicap toilet rooms could be improved by installing exhaust fans, interlocked with the light switch. Although not required by code (these rooms have gravity ventilation), the use of powered exhaust fans would greatly improve conditions.



not done

The lower level Equipment Storage room has no exhaust system and the area has a musty order. We recommend that an exhaust fan and air intake be installed to introduce an air exchange, based on a timed control sequence during the day time hours. An air intake opening would be installed on the opposite wall from the present garage door in order to provide cross ventilation.

now use vending machines - upstairs

The Concession area should have a dedicated exhaust and intake air system installed and the portable room type circulating fan removed. The new system would be controlled by a manual on/off switch.

major improvements not done

The Filter/Chemical Room at the lower level appears to have less than desirable capacity. As indicated in the electrical and plumbing sections of this survey, the conduits, fixtures, piping and pipe hangers have corrosion evident. This fan should be replaced with one of larger capacity to improve this condition. The new fan should operate on a continuous basis for the time period that chemicals are used or stored in the room.

not done

The combustion air for the domestic hot water heater should be modified to include a high exhaust and low intake air arrangement. This can be accomplished by modifying the present combustion air louver.

Plumbing

not done

Domestic Water: In time the operating parts, such as the stem and gates, in gate valves erode. This condition negates the intended use of the valve. All gate valves should be replaced with ball valves. Ball valve are not susceptible to the problems of gate valves since the water flows through a rotating ball, typically stainless steel.

Damaged pipe insulation should be replaced. Where insulation is susceptible to damage due to its location relative to the operation of the facility the insulation should be covered with a PVC or stainless steel covering.

not done

Sanitary Drainage System: All existing sanitary piping, as well as hangers and assemblies supporting this piping, located in the over the filtering equipment and chemical areas should be replaced with new.

repaired

Rainwater Drainage System: It has been reported that the rainwater piping located over the locker rooms had cracked one year in the winter. The cause was trapped water that froze. The installation of heat trace set on thermostat set to turn on at 35 degrees and keep the piping warm will overcome the freezing condition.

Natural Gas System: No recommendations can be offered for this system.



*Partially done
including
most shower
needs*

Plumbing Fixtures: All plumbing fixtures should be removed and replaced with low water consumption type plumbing fixtures. This includes water closets, urinals, lavatories and showers.

Vacuum breakers should be installed on all hose-end valves. This includes wall hydrants, hose bibs, draw-off valves, etc.

Electrical

General: Electrical recommendations are described, below.

OK Electric Service: requires no upgrading beyond normal maintenance such as cleaning and tightening connections and securing all covers.

done Interior Lighting Systems: should be upgraded. It is recommended that all the first level Incandescent Fixtures be replaced, on a one for one basis, with a ceiling, surface two lamp four foot enclosed and gasketed industrial Fluorescent Fixture, equal to Lithuania DMS series with 2 F32T12 Fluorescent Lamps and electronic ballasts.

In the Basement level the Fluorescent Fixtures could be replaced with more efficient Units using a two lamp 8' Industrial Fluorescent having 4 F32T12 Lamps similar to Lithuania Series L.

done Exit Signage and Emergency Lighting: should be added to the Men and Women's Locker and Shower Areas, and the two existing Exit Signs should be replaced.

The women and Men's Shower and Locker Rooms should be equipped with Emergency Lighting as well as the Electric Service Equipment location.

not used Exterior Lighting Systems should really be studied in the evening to ascertain what if any upgrading is necessary. However, it would appear that the exterior stairs would require more illumination possibly by means of a Residential style 10' pole with a 75 watt Mercury lamp at the head of the stairs. It is also recommended that similar poles be utilized on the walkways to the Parking Area.

In the interest of Safety it is recommended that at least three poles be installed along the lake side of the pool to even out the illumination in the water.

An alternate to this would be the installation of in-wall fixture in the side wall of the Lake side of the pool. This option would have to be done when the pool is empty.

Partially done 120 volt convince receptacles on the first level and in Maintenance and storage areas should be replaced with ground fault interrupting receptacles. Also two new receptacles should be installed in the Basement Maintenance and Service Area.



Management should decide if receptacles should be installed at the Pool.

Power for Mechanical systems will require no upgrade except in the case where exhaust fans to be added.

Not done

1. If a two zone automatic, supervised, ADA designed Fire Alarm System is installed with provisions to connect to a Central Station is installed
2. If a Anti-intrusion System is installed with alarm initiating devices at each of the exterior doors and wall penetration with the control panel connected to a Central Station via a leased telephone.
3. No estimate is included for miscellaneous alarms or signals at this time.
4. A paging system is required for the interior of the facility with the mike and amplifier to be located in the Ticket Office.

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