

GRIDLEY SWIMMING POOL
Gridley, California

**REHABILITATION / RENOVATION
FEASIBILITY REPORT**

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I. INTRODUCTION / EXECUTIVE SUMMARY

This feasibility study was requested by the Butte County General Services office to present analysis and preliminary estimates of construction costs for four alternate approaches to the rehabilitation, renovation or removal of the Gridley Swimming Pool. The County has defined the alternate approaches as follows:

- Scenario 1: repair the existing facility in its current configuration while bringing the facility into compliance with current building, environmental health, and accessibility codes;
- Scenario 2: replace the existing facility with a new pool in the same configuration, in compliance with current codes;
- Scenario 3: replace the existing facility with a new contemporary facility at this site;
- Scenario 4: demolish the existing facility, fill in.

Siegfried and its consultant team performed a site observation visit on December 10, 2015 with Erin Borzage of Butte County General Services to document existing conditions as a basis to evaluate the feasibility of each of the County's four identified approaches.

Siegfried's team members include the following:

James McClelland, AIA Architect, Project Lead McClelland Architecture + Planning	Paul J. Schneider, PE Civil Engineer Siegfried Engineering
Matthew Reynolds, PE Aquatic Consultant Terracon	Wilson Lee, PE MEP Engineer Acies Engineering

This report provides an overview of the present condition of the facility, general descriptions of each of the four approaches, and preliminary estimates of expected construction costs. No conceptual designs or construction documents are provided, as such would be appropriate subsequent to the County's election of one of the four approaches.

Siegfried's analysis of the County's four defined scenarios indicates that attempts to rehabilitate the existing pool, bathhouse and pump house as outlined in Scenarios 1 or 2 would provide for a less successful aquatic facility compared to Scenario 3, at essentially the same magnitude of capital investment.

The Siegfried team is pleased to have had the opportunity to provide this feasibility study to the Butte County General Services office.

II. DEFINITIONS

For the purposes of this study, the following terms and definitions will apply:

- Code: Applicable jurisdictional codes current at the time of design, permit issuance, and construction.
- Bathhouse: That portion of the building which houses reception, changing rooms, toilets, showers, and storage rooms.
- Pump House: The building which houses the pool pump and filtration equipment.

III. BACKGROUND

The Gridley Swimming Pool was designed and built in 1967. The existing pool is configured in a tee shape to provide six (6) 50 meter lanes and six (6) 25 yard lanes. The pool is approximately 8,274 square feet of water area. The existing bathhouse area is approximately 1,220 covered square feet. The existing pump house is approximately 1,022 square feet. The pool went through an attempted repair of the shell in 2011 with the addition of a fiberglass liner to repair a leak. That repair has failed.

The pool is presently used for competitive events and as a recreational “plunge” during the summer season.

IV. PROJECT OBJECTIVE

It is the County’s objective to determine an appropriate approach to repair, renovate or remove the facility. The County intends to select one of the four stated options described above.

V. FACILITY ANALYSIS

A. As Built Description

The Gridley Swimming Pool was constructed in 1967 to the construction standards and regulations in place at that time.

1. Site Observations:
 - a. The facility is located on an approximately 0.91 acre (305' x 130'), mostly level, fenced site at 251 East Hazel Street. The site is raised above adjacent grades due to a high water table.
 - b. The pool is centrally located within the site.
 - c. The bathhouse building is located at the southeast corner of the site and serves as the facility entrance.
 - d. The pool equipment building is located on the north side of the pool toward the northeast corner of the site.
 - e. Large cantilevered steel shade structures are on the south and west sides of the pool decks. Picnic tables are provided under the south side shade structure.
 - f. The site is fenced on all sides. The existing fencing is not code compliant.
2. Bathhouse:
 - a. Architectural Layout and Features:
 - 1) The bathhouse was constructed in 1970 of masonry walls, wood framed flat roof, and concrete floors. The bathhouse is essentially two separate dressing and toilet areas for each sex separated 18 feet to provide the open air entrance to the facility. *(See photo 01.)*
 - 2) User check-in is provided within a chain link enclosed attendant station. *(See photo 02.)*
 - 3) Natural light and ventilation are provided by large openings between the top of the perimeter walls and the roof structure above, as well as corrugated translucent panels which comprise the roof deck. *(See photo 03.)*
 - 4) Each changing area provides a continuous bench along the perimeter walls. Lockers are not provided. *(See photo 04.)*
 - 5) Toilet Room fixtures provided:
 - Women:

Water closets:	3
Lavatories:	2
 - Men:

Water closets:	2
Urinals:	2
Lavatories:	2
 - Showers are provided for both sexes on the exterior side of the north wall of the bathhouse. *(See photo X.)*
 - 6) A water heater for the showers is provided.

3. Swimming Pool:

- a. The swimming pool was designed as typical in-ground reinforced concrete construction, 50 meters (164 feet) long, six (6) lanes by 42 feet wide, with a six (6) lane by 42 feet by 25 yard (75 feet) course at one end. The pool ranges in water depth from 3'-6" to 6'-6". The perimeter of the pool is 478 feet. Its surface area is 8,274 square feet and its volume is approximately 280,000 gallons. *(See photos 05, 06.)*
- b. The swimming pool shell is reinforced concrete with a white plaster finish. There is a continuous construction joint across the pool floor and up each poolside wall at the 5'-0" depth. There is a 6" contrasting paint band at the 4'-6" depth transition. There are six (6) 8" lane markers and lane targets painted in both the 50 meter and 25 yard directions. *(See photos 05, 06.)*
- c. The shallow end water depth is marked as 3'-6" deep, the opposite end is marked as 4'-0". The pool floor consistently slopes to 6'-6" in the middle of the pool from both ends.
- d. The recirculation system is comprised of wall inlets, two 18" x 18" floor drains, and a perimeter scum gutter skimming system. The scum gutter is approximately 1.5" deep. *(See photo 07.)*

A scum gutter is an unprotected shallow gutter with drop outs at periodic intervals, usually between 8 and 12 feet spacing. The gutter poses a safety risk by being a slippery surface that prevents sure footing when entering or exiting the pool from points other than the ladders provided. Scum gutters are designed with a limited capacity for swimmer surge.
- e. The concrete coping partially hangs over the scum gutter and is 11.5" above the current water level. *(See photo 07.)*
- f. There are twenty cup-style lane line anchors, ten for the 50 meter course and ten for the 25 yard course. Two full reels were stored on the pool deck under a tarp.
- g. There are four (4) sets of ladders and grab rails, two (2) at the shallow end of the pool (located near each corner of the pool), and two (2) near the pool's deepest locations.
- h. No entry steps are provided.
- i. No underwater lights are provided in the pool.

4. Pool Deck:

- a. The pool deck is constructed of reinforced cast-in-place concrete. The existing expansion joints are approximately 10 to 15 feet apart.
- b. There are four (4) stanchion poles at approximately the 5 yard marker on the 25 yard course. There are abandoned stanchion anchors at the shallow end of the 50 meter course. *(See photo 08.)*
- c. Six (6) starting blocks are anchored on the shallow end of the 25 yard course. There is electrical wiring hanging over the starting blocks and over the pool. *(See photo 09.)*
- d. There is one anchored lifeguard chair at the 6'-6" portion of the pool. *(See photo 10.)*

- e. The pool deck showed evidence of the pool having a pool slide on the north side of the pool. The slide has been removed. *(See photo 11.)*
 - f. Mosaic tile depth markers are located around the pool's perimeter on the back of the coping. *(See photo 12.)*
 - g. There are two (2) overhead area lights provided to serve the entire pool site. *(See photos 13, 14.)*
5. Pool Equipment Building Shell:
- The pool equipment building was constructed with the construction of the pool in 1967. Masonry walls, wood framed roof and concrete floors make up the building shell. *(See photo 15.)*
6. Swimming Pool Sanitation Equipment:
- a. Suction Piping: Original cast iron piping from main drain and scum gutter suction lines. *(See photo 16.)*
 - b. Return Piping: 6" PVC throughout mechanical room. Original cast iron return lines to pool. *(See photo 17.)*
 - c. Pump: PACO 15HP, 625 gallons per minute (gpm), 1750 revolutions per minute (rpm), 230/460 volt, 40-20 amp, with a strainer; plug flow reducer on suction side of pump. *(See photo 18.)*
 - d. Filters: Two (2) Neptune Benson high rate sand filters. 48" diameter, 72" length. 55.4 sq ft filtration area each, 11.3 gpm per sq ft and 813 gpm backwash rate. *(See photo 19.)*
 - e. Chemical Storage: Three (3) 53 gallon sodium hypochlorite containers; one (1) 30 gallon muriatic acid container.
 - f. Chemical Controller: Chemtrol 250 oxidation-reduction potential (orp)/pH controller with sensors, injectors. *(See photos 20, 21.)*
 - g. Chemical Feeders: Rola-Chem pneumatic pumps, 38 gallons per day (gpd) liquid sodium hypochlorite and acid. *(See photos 20, 21.)*
 - h. Flow meter: Blue-White F series.

B. Current Condition Analysis

The following information is compiled from Siegfried's December 10 site observation visit:

- 1. General:
 - a. The facility shows its age in terms of wear and tear, substandard maintenance and housekeeping, and what appears to be the minimum in repairs.
 - b. The roof of the bathhouse, pool equipment building, or shade structures were not inspected.
 - c. The structural designs of the existing shade structures have not been analyzed for code compliance. *(See photos 22, 23.)*
 - d. The existing facility is non-compliant with accessibility requirements.

2. Bathhouse:
 - a. No electrical light fixtures are provided in the bathhouse. Natural light is provided with the use of corrugated translucent fiberglass panels as the roof deck. *(See photo 03.)*
 - b. All observable plumbing fixtures appear to be in adequate condition. None of the fixtures was tested for performance.
 - c. The facility is, by current code, non-compliant with the quantity of sanitary fixtures required for the calculated occupant load of the pool.
 - d. The toilet rooms are non-compliant with accessibility standards.
 - e. Neither changing room provides privacy protection desired by present day users.
3. Swimming Pool:
 - a. The swimming pool shell is likely past its useful life. There are signs of repairs in two locations near the main drains. The swimming pools plaster finish appears to be past its useful life. There are multiple areas with signs of corrosion and staining. There are two locations near the main drains where the shell has been repaired and re-plastered.
 - b. The scum gutter is flooded, not allowing for proper skimming effect that is necessary for proper circulation. The scum gutter system does not comply with the current CBC code. The overflow system does not meet the required surge capacity. The overflow channel is not deep enough in some locations. *(See photo 07.)*
 - c. There are not enough return inlets into the pool. All inlets are wall inlets, no floor inlets exist, which are required by current code.
 - d. There are not enough means of ingress/egress into the pool to comply with the current CBC. There is no means of ingress/egress for the 25 yard course. There is no accessible means of entry.
4. Pool Decks and Drainage:
 - a. The existing pool deck appears to be past its useful life. There are locations where the deck and coping is significantly uneven. There is significant cracking and erosion throughout the pool deck. *(See photos 24, 25.)*
 - b. There are no drains or deck drainage system in place. There are visual areas of water ponding throughout the pool deck. *(See photo 26.)*
 - c. The starting blocks are located at the southwest corner of the pool, where water depths vary from 4 feet to 5 feet, significantly too shallow for diving starts. Industry standard requires a minimum of 6'-6" of water depth for starting blocks.
 - d. There are many abandoned anchors from previous starting blocks, diving boards, and stanchions, creating hazardous conditions. Some anchors have been anchored in new concrete, causing uneven deck surfaces.
 - e. There are no "No Diving" warning signs around the perimeter of the shallow areas of the pool.
 - f. The lifeguard chair is in a state of disrepair. *(See photo 10.)*
 - g. A portable accessible lift for access is stored in the equipment room.

5. Pool Equipment Building:
 - a. There is inadequate lighting and ventilation for the pool equipment room. (*See photo 27.*)
 - b. There is only one floor drain in the equipment room which appears to be clogged. There is visible water ponding and erosion of the concrete floor.
 - c. The existing cast iron suction piping and return piping is displaying signs of corrosion and may be contributing to water loss.
 - d. The PVC piping in the mechanical room is improperly supported and shows signs of leaks. There are no flow directional arrows, color coding, or piping schematic displayed. Valves are not tagged and labeled. (*See photo 28.*)
 - e. There is no knife disconnect within eyesight of the circulation pump. There are no pump gauges, isolation valves, or check valves at the pump. The pump strainer appears to be past its useful life.
 - f. The balance tank is flooded. There is no access to the valves inside the balance tank. (*See photo 29.*)
 - g. The fill system is not properly operating and needs repair.
 - h. The backwash piping is not sized properly for the rated backwash rate of 813 gpm. There is no air gap to the backwash pit.
 - i. The flow meter is not functioning and needs replacement.
 - j. The chemical injectors are not properly installed and show signs of leaking. Conduit is not properly supported. (*See photo 30.*)
 - k. The pool chemicals are improperly stored on top of filter tanks. Acid is stored in the same room as sodium hypochlorite. The rooms have improper hazmat signage. Required signage is missing.
 - l. The chemical storage room is not properly ventilated.

VI. CODE ANALYSIS

For the purposes of this report, it is assumed that the original project was designed to conform to the 1967 edition of the Uniform Building Code in effect at that time. Should the project be redesigned today, the applicable codes would include the following:

- 2013 California Building Code (CBC)
- 2013 California Fire Code (CFC)
- 2013 California Electrical Code (CEC)
- 2013 California Mechanical Code (CMC)
- 2013 California Plumbing Code (CPC)
- 2013 California Green Building Standard Code (CalGreen)
- 2013 California Energy Code
- Butte County Municipal Code
- Butte County Environmental Health Code

A. Bathhouse

The existing bathhouse does not meet current requirements of CBC Chapter 24, Title 31B for Public Swimming Pool Operations. Code issues of note include:

1. Dressing, Shower, and Toilet Facilities: Shower and dressing facilities shall be provided for users of a public pool. One bather shall be considered for every 15 square feet of pool water surface area.
 - a. Showers: One shower shall be provided for every 50 bathers.
 - b. Toilets: Separate toilet facilities shall be provided for each sex. One toilet shall be provided for every 60 women; one toilet plus one urinal shall be provided for every 75 men.
 - c. One lavatory shall be provided for every 80 bathers.
 - d. For a facility with a 8,274 square foot pool, the sanitary fixtures required would be as follows:

8,274 sf Pool = 552 bathers

Men	276	Women	276
Men Showers	6	Women Showers	6
Men Toilets	4	Women Toilets	5
Men Urinals	4	Women Lavatories	4
Men Lavatories	4		

- e. Family changing rooms are considered a community asset in a new or renovated facility, but are not a specific code requirement. A portion of the required sanitary facilities may be provided in the family changing rooms.
2. Structural Design:
 - a. Future use of this structure, based on structural performance, is currently governed by the 2013 California Building Code (CBC). Chapter 34 of the CBC describes the structural performance requirements when evaluating the modification, expansion or repair of existing structures. Given the degree of expansion required to bring the bathhouse in compliance with the number of plumbing fixtures required and accessibility compliance, CBC Section 3405 requires the building be "evaluated by a registered design professional" using current code

prescribed wind loads and 75% of earthquake loads. Based on this criteria and our preliminary evaluation, this building is “noncompliant.” Therefore, all repairs and modifications must meet current building code criteria as described and amended in CBC Section 3405.2.3.

- b. Given the order of magnitude of the expansion required, this criterion will render the existing bathhouse unusable. *Essentially, it will be easier and more economical to construct a new bathhouse than try to salvage the existing structure.*
3. Mechanical / Electrical / Plumbing:
- Any remodel or new development will be subject to current codes and CalGreen requirements.
- a. The recently implemented State of California energy code (Title 24, July 1, 2014) will dictate all new lighting, with LED and dimmable fixtures.
 - b. All plumbing fixtures shall meet CalGreen water saving requirements.
 - c. All interior spaces intended for human occupancy will be required to be heated and ventilated.

B. Swimming Pool

The existing swimming pool presently does not meet regulation depths for NFHS (National Federation of High Schools), USA Swimming or USA Water Polo, and does not meet current requirements of CBC Chapter 24, Title 31B for Public Swimming Pool Operations. Code issues of note include:

- 1. Entry and Exit: Where the width of the pool exceeds 30 feet, such means of entry and exit shall be provided at each side, not more than 100 feet apart.
- 2. Perimeter Overflow System Channel: The overflow channel shall not be less than 3 inches deep
- 3. Surge Storage Capacity: A perimeter overflow system shall be provided with a minimum surge storage capacity of not less than 1 gallon per square foot of pool water surface area.
- 4. Return Inlets: Each pool shall be provided with not less than two recirculation system inlets for the first 10,000 gallon capacity and one additional inlet for each additional 10,000 gallon or less capacity. Pools that are greater than 40 feet in width or 3,000 square feet in surface area shall have floor mounted return inlets.
- 5. Water Depth: Minimum water depth for racing starts from starting blocks in any setting from any height of starting blocks or the deck shall be 6’-6”.
- 6. Occupant Loads: The occupant load of a renovated facility (respective pool and room sizes unchanged) would be approximately 559* compiled as follows:

Area	Occupant Load Factor	Occupant Load
Pool	(1 occ / 15 sf)	552
Entrance Cage	(1 occ/100 sf)	1
Changing Areas **	(1 occ/ 50 sf)	6
Total		559

*** The occupant load approximated for the locker room is included in calculations of exiting requirements, but is not included in the calculation of the quantity of sanitary fixtures required.*

C. Pool Deck

The existing swimming pool deck does not meet current requirements of CBC Chapter 24, Title 31B for Public Swimming Pool Operations. Code issues of note are:

1. General: A minimum continuous and unobstructed 4-foot wide slip resistant, cleanable, nonabrasive deck area of concrete or like material shall be provided flush with the top of the pool coping extending completely around the pool.
2. Deck Slope: The pool's deck surface shall have a slope of no less than 1 percent but no more than 2 percent away from the pool to a deck drainage system and shall be constructed and finished to prevent standing water.
3. Water Depth Markers: Water depth markers shall be clearly marked along the perimeter of the pool at intervals not to exceed 25 feet. Depth markers shall be located on the vertical pool walls at each end and side of the pool at or above the water level.
4. No Diving Markers: For pool water depths 6 feet and shallower, "No Diving" markers with the universal symbol of no diving shall be installed on the deck directly adjacent to the depth markers.
5. Deck Area Lighting: When the pool is to be used in non-daylight hours, pool deck areas and emergency egress areas shall be provided with lighting so that persons walking on the deck can identify hazards. Lighting fixtures shall be aimed towards the deck area and away from the pool surface.
6. Hose Bibbs: Hose bibbs shall be provided so that all portions of the pool deck area may be reached with a 75 foot length of hose attached to the hose bibbs.

D. Pool Equipment Building

The existing pool equipment building does not meet current requirements of CBC Chapter 24, Title 31B for Public Swimming Pool Operations. Code issues of note are:

1. Piping Line Size: Pipes shall be sized so flow velocity of piping systems including all pipes and fittings shall not exceed 8 feet per second in any portion of the system.
2. Gauges: A pressure and vacuum gauge shall be provided for each pump system.
3. Flow Meter: A flow meter shall be provided on each recirculation system, accurate to within 10% of flow and installed according to the manufacturer's written instructions.
4. Valves: Valves shall be installed on all recirculation, backwashing, and drain system lines which require shutoff isolation, adjustment, or control of the rate of flow. Each valve shall be installed in the equipment area and labeled as to its purpose.
5. Chemical Storage: The pool chemicals (acid, sodium hypochlorite) shall be stored in separate rooms with proper ventilation, hazmat signage, and eyewash stations.
6. Chemical Feeders: Chemical feeders and associated components shall be constructed and installed to prevent uncontrolled discharge or siphoning of chemicals and fumes directly to the pool, its recirculation system, the pool area or ancillary facilities.
7. Mechanical / Electrical / Plumbing:
 - a. The project will be subject to current codes and CalGreen requirements.
 - b. The recently implemented State of California energy code (Title 24, July 1, 2014) will dictate all new lighting, with LED and dimmable fixtures.

E. Accessibility Compliance:

1. The pool design predates the Americans with Disabilities Act by over 20 years. There is little evidence of attempts to comply with ADA requirements between its enactment in 1990 and subsequent ADA updates. The ADA was amended in 2009; the California Building Code (CBC) accessibility requirements were updated in its 2013 edition.
2. Siegfried's site observation visit performed on December 10 did not include a detailed or exhaustive review of accessibility compliance, or lack of compliance thereof, but a cursory observation of barriers to accessibility assumed to be the major items needing correction and included in the scopes of Scenarios 1, 2, or 3.

- a. Site:

At the time of our site observation visit on December 10, we observed an inadequate number of accessible parking stalls, a non-compliant path of travel; a lack of the required accessibility signage. The site appeared relatively level, although the pool deck and bathhouse floor elevation is approximately 30 inches above the adjacent areas outside the perimeter fence. This grade elevation difference will need to be addressed in order to provide an accessible path of travel to the facility.

- b. Bathhouse:

Virtually no accessibility features are in place. Examples of design corrections and features needed for accessibility compliance include: required accessibility signage; detectable warnings; required door and landing widths and clearances; door hardware; required dressing area and toilet room features and accessories; accessible workspaces (built in desks and counters); assistive listening systems; lighting and equipment controls; fire alarm equipment.

- c. Pool Equipment Building:

Similar to the bathhouse, virtually no accessibility features are in place. Examples of design corrections and features needed for accessibility compliance include: required accessibility signage; required door and landing widths and clearances; door hardware; accessible workspaces; lighting and equipment controls; fire alarm equipment.

- d. Pool:

The pool would require chair-type lifts or a ramp for persons with disabilities to be able to enter and exit the pool.

VII. ALTERNATIVE APPROACHES

A. Scenario 1

Repair the existing facility in its current configuration while bringing the facility into compliance with current building, environmental health, and accessibility codes.

Note: This report interprets "current configuration" to include additional building area needed to satisfy applicable code required dimensional clearances for ingress, egress, quantity of sanitary fixture requirements, accessibility requirements, pool and HVAC equipment, etc.

1. Description:

Siegfried's building renovation and aquatic center experience allows it to anticipate the project scope of Scenario 1 to include the following:

- a. Demolish existing bathhouse, pool decks, shade structures, pool perimeter scum gutter, and pool equipment building.
- b. Demolish existing perimeter fencing.
- c. Demolish existing site improvements sufficient to provide code compliant parking and an accessible path of travel to both the facility entrance as well as from required pool area secondary exits.
- d. Reconstruct the bathhouse in a layout that is more efficient as well as in compliance with all current codes. We estimate the new bathhouse will be approximately 4,500 square feet in area, inclusive of pool equipment and storage rooms.
 - 1) In the case of an extensive expansion (approximate 4x) and renovation of a small building, that retention of the existing building actually creates additional construction costs vs. its complete replacement.
 - Structural reinforcing upgrade/augmentation of the existing building, as well as replacement of existing plumbing supply and waste lines will require further demolition of existing building walls and floors.
 - retention of a portion of the existing building will hinder efficient construction processes (aka, be "in the way").
 - 2) The need to replace the existing piping and add inlet piping under the pool shell presents a cost saving opportunity to include pool equipment and storage rooms in the construction of the expanded bathhouse (saving the costs of a separate pool equipment building).
- e. Re-use the existing pool structure: We suggest making alterations to the existing pool shell to meet all current code and programming requirements of NFHS swimming, including overflow channel replacement to meet code requirements and all new sanitation system equipment.
 - 3) Retain existing footprint of the existing pool. The existing 42'-0" widths of the 25 yard course and the 50 meter course are the very minimum in order to provide six (6) swimming lanes. (Such lane width would be in compliance with NFHS dimensional requirements, but not with USA Swimming requirements, for which minimum lane width is 8'-2.5".)
 - 4) Replace the suspect cast iron suction piping and return piping.

- 5) Add the required water inlets (pool walls and floor).
 - 6) Raise the elevation of the pool decks in order to comply with current water depth requirements.
 - a) Construct additional height to existing pool shell walls.
 - b) Incorporate deck level perimeter overflow system.
 - c) New perimeter decks to slope away from the pool, with new deck drainage system.
 - 7) Provide ingress/egress (steps, ladders) per code.
 - 8) Consider new underwater lighting.
 - 9) Provide new deck equipment (lane lines, starting blocks, backstroke flags, water polo goal anchors, lifeguard stands and equipment, deck furniture).
 - f. Replace all pool sanitation equipment.
 - g. Site Improvements:
 - 1) Provide accessible path of travel to, into, and throughout the facility.
 - 2) Adjust finish grade of areas adjacent to new, higher elevation, decks. This work may require site retaining walls to address the grade elevation differential between the pool site and adjacent property and Hazel Street.
 - 3) Replace perimeter fencing and gates with code compliant system.
 - 4) Add exterior safety and security lighting.
2. Scenario 1 Advantages:
- a. Swimming Pool Shell:
 - 1) Some cost savings compared to Scenarios 2 or 3.
 - 2) Code compliance, providing safer and healthier facility v. existing.
 - 3) Code compliant water depth allows inclusion of water polo.
 - b. Bathhouse:
 - 1) Code compliance, providing safer and healthier facility v. existing.
 - 2) Cost savings of incorporating the equipment and storage rooms in the construction of the expanded bathhouse (saving the costs of a separate pool equipment building).
3. Scenario 1 Disadvantages:
- a. Swimming Pool:
 - 1) Cost compared to Scenario 4.
 - 2) Significant modifications to existing 50 year old structure to incorporate code compliant water depths and water circulation piping.
 - 3) Hidden conditions of pool shell until exposed during construction.
 - 4) Retaining one larger body of water prevents the opportunity to set two different water temperatures for competitive and recreational use at the same time.

B. Scenario 2

Replace the existing facility with a new pool in the same configuration, in compliance with current codes.

1. Description:

Siegfried's building renovation and aquatic center experience allows it to anticipate the Project scope of Scenario 2 to include the following:

- a. Demolish existing bathhouse, pool decks, shade structures, pool shell, and pool equipment building.
- b. Demolish existing perimeter fencing.
- c. Demolish existing site improvements sufficient to provide code compliant parking and an accessible path of travel to both the facility entrance as well as from required pool area exits.
- d. Reconstruct the bathhouse in a layout that is more efficient as well as in compliance with all current codes. We estimate that the new bathhouse will be approximately 4,500 square feet in area, inclusive of pool equipment* and storage rooms.

** The need to replace the existing piping and add inlet piping under the pool shell presents a cost saving opportunity to include pool equipment and storage rooms in the construction of the expanded bathhouse (saving the costs of a separate pool equipment building).*

- 1) Construct a new pool shell in the same (but slightly larger) configuration. Allow for wider swimming lanes and adequate course width for water polo.
- 2) Closely replicate the footprint of the existing pool. Widen the pool in the 25 yard course and the 50 meter course from 42'-0" to 52'-0" to meet both NFHS and USA Swimming requirements.
- 3) Install all new water circulation piping.
- 4) Raise the elevation of the pool decks in order to comply with current water depth requirements.
 - a) Incorporate deck level perimeter overflow system.
 - b) New pool decks to slope away from the pool, with new deck drainage system. Consider wider decks.
 - c) Renovate the areas outside the pool decks to provide enhanced picnic areas, etc. appropriate to enhanced family recreational use.
- 5) Provide ingress/egress (steps, ladders) per code.
- 6) Add new underwater lighting.
- 7) Provide new deck equipment (accessibility lift, lane lines, starting blocks, backstroke flags, lifeguard stands, lifesaving equipment, etc.)
- e. Provide site improvements modifications and upgrades as described in Scenario 1.

2. Scenario 2 Advantages:

- a. Swimming Pool:
 - 1) Code compliance, providing safer and healthier facility v. existing.

- 2) Compliance with NFHS, USA Swimming and USA Water Polo standards.
- b. Bathhouse:
 - 1) Code compliance.
 - 2) Cost savings of incorporating the equipment and storage rooms in the construction of the expanded bathhouse (saving the costs of a separate pool equipment building).
3. Scenario 2 Disadvantages:
 - a. Swimming Pool:
 - 1) Highest cost of the four approaches.
 - 2) Significant modifications to existing 50 year old structure to incorporate code compliant water depths and water circulation piping.
 - 3) Hidden conditions of pool shell until exposed during construction.
 - 4) Retaining one larger body of water prevents the opportunity to set two different water temperatures for competitive and recreational use at the same time.

C. Scenario 3

Replace the existing facility with a new contemporary facility at this site.

1. Description:

Siegfried proposes for consideration the scope of Scenario 3 to include the following:

 - a. Demolish and remove the entire existing facility.
 - b. Construct a new bathhouse as described in Scenarios 1 and 2.
 - c. Construct two new bodies of water:
 - a new 10 lane (86'-0") x 25 yard pool.
 - a new, zero depth entry play area with interactive water features and water slide.
 - d. Renovate the site to provide larger deck areas, picnic areas, etc. appropriate to enhance family recreational use.
2. Scenario 3 Advantages:
 - a. General: Provides opportunities for improved site layout, access, recreation activities complementing the 10 lane pool.
 - b. Swimming Pools: Provides opportunity for an all new multi-use community swimming pool facility designed with multiple programming opportunities, including competition, lap swimming, lesson programming; would also provide recreation value and greater potential for cost recovery.
 - c. Bathhouse:
 - 1) All new bathhouse building with appropriate user and operator facilities and features to support the swimming pools' recreational uses and align with current user demands.

- 2) Cost savings of incorporating the equipment and storage rooms in the construction of the expanded bathhouse (saving the costs of a separate pool equipment building).
3. Scenario 3 Disadvantages:
 - a. General: Higher cost vs. Scenarios 1 or 4.
 - b. Swimming Pool: Lose 50 meter course.

D. Scenario 4

Demolish the existing facility; no replacement.

1. Description:

Siegfried proposes, for consideration, the scope of Scenario 4 to include the following:

 - a. Demolish and remove the entire existing facility (buildings, pool shell, decks, shade structures, fencing).
 - b. Abandon underground utilities.
 - c. Fill pool cavity and surge tank cavity. Utilize existing on-site soils to fill.
 - d. Grade site to be compatible with adjacent property and Hazel Street elevations.
2. Scenario 4 Advantages:
 - a. Lowest cost approach.
 - b. Eliminates ongoing facility maintenance and repair costs.
 - c. Returns site to a position of availability for other community uses needed by the County.
3. Scenario 4 Disadvantages:
 - a. Loss of community asset.
 - b. Loss of potential to improve community asset.

VIII. YEAR ROUND CONSIDERATIONS

A. Water Heating:

1. Scenario 3 above considers the inclusion of water heating equipment in order to provide an extended summer season (April through October) or year round use, as demand for use of the pool might justify. The estimated cost of such equipment is itemized in the body of the preliminary estimate for Scenario 3.
2. Should the County wish to consider the inclusion of water heating equipment in Scenarios 1 or 2, preliminary cost estimates of such equipment are shown as optional at the bottom of each scenario's preliminary estimate in the following section.

3. Water Heating Cost Estimates:

• Scenario 1:	
Year-Round:	120,000
Extended Season (April thru September):	45,000
Summer Only (June thru August):	18,000
• Scenario 2:	
Year-Round:	150,000
Extended Season (April thru September):	56,000
Summer Only (June thru August):	23,000
• Scenario 3:	
Competition Pool:	
Year-Round:	90,000
Extended Season (April thru September):	33,000
Summer Only (June thru August):	13,000
Recreation Pool:	
Year-Round:	30,000
Extended Season (April thru September):	10,000
Summer Only (June thru August):	4,000

B. Winterization:

It is understood that the pool is presently used seasonally. Scenarios 2 and 3, both which include the addition of water heating equipment, provide opportunities to extend the pool use season via earlier Spring opening dates and extension into Fall.

With limited seasonal use and pool closure, additional maintenance and winterization activities may include:

1. If drained of water:
 - a. All equipment requires draining and winterizing;
 - b. All pool plumbing requires flushing and winterizing;
 - c. Pool requires acid wash each season and repaint prior to opening;
 - d. Pool shell prone to winter damage from severe temperature changes causing expansion and contraction of the concrete.
2. If kept full of water:
 - e. Continual circulation and monitoring for breach of fences.

IX. PRELIMINARY ESTIMATES OF CONSTRUCTION COSTS

The preliminary construction cost estimates provided below are provided as a comparative order of magnitude of the four project approaches, for the convenience of Butte County in its effort to determine an appropriate course of action for the Gridley Swimming Pool.

As noted in the Executive Summary of this report, the following estimates are preliminary, intending to serve as comparative information for each of the County’s four defined scenarios. It is understood that the County will seek to acquire community input from the stakeholders of the facility. As stakeholder input further defines a preferred scenario and specific features desired for the facility, the estimates will be further refined accordingly.

A. Estimate Considerations

- 1. Bathhouse Size: The estimate size of a new bathhouse of 4,500 square feet is based on recent community and high school swimming pool facility experience, tailored to the Gridley pool water area of 8,274 square feet.
- 2. Construction Cost Basis: The per square foot cost factor of \$400.00 for the bathhouse is based on 1) a recent similar prevailing wage project bid during the first quarter 2014, of which building costs bid at \$350.00 per square foot, and 2) allowing an increase of approximately 15% for an estimated bid period of first quarter 2017. The \$400.00 is estimated to be comprised as follows:

Description	PSF Estimate	Percentage
Concrete	\$ 35.00	8.8%
Exterior Wall Systems	35.00	8.8%
Interior Wall Systems	15.00	3.8%
Structural Framing	32.00	8.0%
Roof Systems	28.00	7.0%
Ceilings	9.00	2.3%
Doors & Windows	16.00	4.0%
Finishes	12.00	3.0%
Specialties	8.00	2.0%
Pool Specialties	28.00	7.0%
Plumbing	16.00	4.0%
Fire Sprinklers	15.00	3.8%
Pool Hydraulics	75.00	18.8%
HVAC	38.00	9.5%
Electrical	38.00	9.5%
Total Estimate	\$ 400.00	100.0%

continued

B. Scenario Cost Comparisons

Given the conceptual nature of the four approaches being considered by the County, and that no designs have been prepared to provide preliminary material quantities, the comparative breakdowns provided below assume generally equivalent site improvements and bathhouse costs, allowing the reviewer to differentiate the cost of each approach to the pool itself.

1. Scenario 1 - Repair Existing Pool / New Bathhouse

Hazardous Materials Abatement: (ls)	\$ 50,000
Demolition: (ls)	200,000
Earthwork/Raise Grade: (1,500 cy x \$400/cy)	60,000
Pool Deck: (14,000 sf x \$30/sf)	420,000
Pool Deck Drainage: (700 lf x \$60/lf)	42,000
Swimming Pool Repair/Modifications: (ls)	1,750,000
Bathhouse: (4,500 sf x \$400/sf)	1,800,000
Landscaping: (16,500 sf x \$25/sf)	412,500
Site Lighting: (ls)	100,000
Fencing: (870 lf x \$50/lf)	43,500
<u>Deck Equipment: (ls)</u>	<u>150,000</u>
Subtotal:	5,028,000
Contingency (5%)	251,400
<u>Soft Costs (15%):</u>	<u>754,200</u>
Total	\$ 6,033,600

Pool Heating Equipment: (two 2M BTU Heaters) 65,000 additional

2. Scenario 2 - New Pool (similar configuration) / New Bathhouse

Hazardous Materials Abatement: (ls)	\$ 50,000
Demolition: (ls)	200,000
Earthwork/Raise Grade: (1,500 cy x \$400/cy)	60,000
Pool Deck: (14,000 sf x \$30/sf)	420,000
Pool Deck Drainage: (700 lf x \$60/lf)	42,000
Swimming Pool: (9,724 sf x \$225)	2,393,550
Bathhouse: (4,500 sf x \$400/sf)	1,800,000
Landscaping: (16,500 sf x \$25/sf)	412,500
Site Lighting: (ls)	100,000
Fencing: (870 lf x \$50/lf)	43,500
<u>Deck Equipment: (ls)</u>	<u>150,000</u>
Subtotal:	5,671,550
Contingency (5%)	283,600
<u>Soft Costs (15%):</u>	<u>850,750</u>
Total	\$ 6,805,900

Pool Heating Equipment: (four 1.5M BTU Heaters) 100,000 additional

3. Scenario 3 - New Contemporary Facility with Two Pools / New Bathhouse

Hazardous Materials Abatement: (ls)	\$ 50,000
Demolition: (ls)	250,000
Earthwork/Raise Grade: (1,500 cy x \$400/cy)	60,000
Pool Deck: (14,000 sf x \$30/sf)	420,000
Pool Deck Drainage: (550 lf x \$60/lf)	31,800
Competition Pool: (6,450 sf x \$225)	1,406,250
Water Heating Equip. (two 1.5M BTU Heaters)	45,000
Recreation Pool: (2,000 sf x \$185)	370,000
Zero Depth Entry:	Included
Vertical Spray Features:	15,000
Water Slide: (20 ft)	100,000
Water Heating Equip. (two 1.5M BTU Heaters)	15,000
Bathhouse: (4,500 sf x \$400/sf)	1,800,000
Landscaping: (16,500 sf x \$25/sf)	412,500
Site Lighting: (ls)	100,000
Fencing: (870 lf x \$50/lf)	43,500
Deck Equipment: (ls)	150,000
Subtotal:	5,269,050
Contingency (5%)	263,450
Soft Costs (15%):	790,350
Total:	\$ 6,232,850

4. Scenario 4 – Complete Demolition / Restore Site

Hazardous Materials Abatement: (ls)	\$ 50,000
Demolition: (ls)	250,000
Grading: (ls)	100,000
Subtotal:	400,000
Soft Costs (15%):	60,000
Total:	\$ 460,000

Disclaimer: It is understood that neither the County nor Siegfried has control over the costs of labor, equipment or materials, or over a Contractor's methods of determining prices or bidding. This estimate is based on Siegfried's reasonable professional judgment and experience and does not constitute a warranty, expressed or implied, that a Contractor's bids or the negotiated price of the Work will not vary from the County's budget or these preliminary estimates.



Photo 01
Bathhouse



Photo 02
Check In Cage



Photo 03
Bathhouse Light and Ventilation



Photo 04
Changing Area Bench (typ.)



Photo 05
50 m Course



Photo 06
25 yd Course



Photo 07
Scum Gutter



Photo 08
Stanchion



Photo 09
Starting Blocks



Photo 10
Lifeguard Stand



Photo 11
Slide Removed



Photo 12
Depth Marker



Photo 13
Area Lighting - South Side



Photo 14
Area Lighting - North Side



Photo 15
Pool Equipment Building



Photo 16
Suction Lines and Strainer

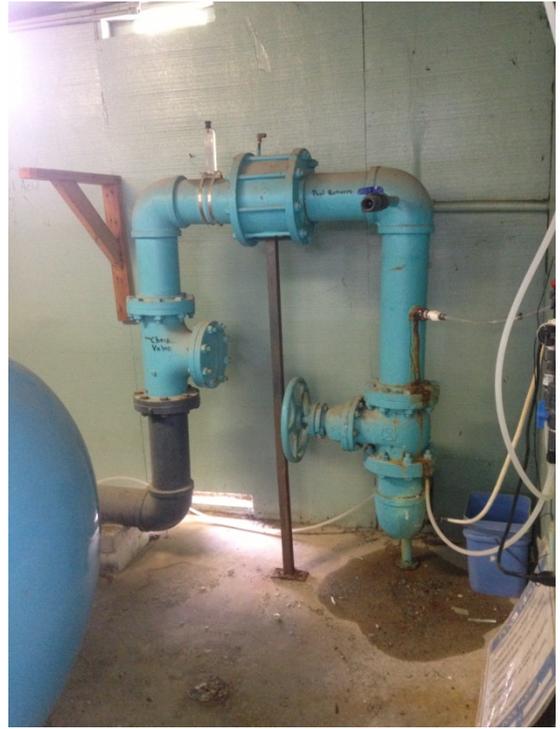


Photo 17
Return Piping



Photo 18
Pump



Photo 19
Sand Filters



Photo 20
Chemical Controller and Feeders



Photo 21
Chemical Sensors and Conduit



Photo 22
Shade Structure - South Side



Photo 23
Shade Structure - West Side



Photo 24
Deck Wear



Photo 25
Deck Wear



Photo 26
Deck Ponding



Photo 27
Equipment Room Lighting



Photo 28
PVC Piping



Photo 29
Balance Tank



Photo 30
Chemical Injectors

Disclaimer:

Inasmuch as the physical review of an existing building for the purpose of developing alternative project programs and respective preliminary estimates of probable construction costs requires that certain assumptions be made regarding existing conditions, and because some of these assumptions may not be verifiable without expending additional sums of money, or destroying otherwise adequate or serviceable portions of the existing improvements, the Authority agrees that except for negligence on the part of the Consultant, Butte County will hold harmless and indemnify the Consultant from and against claims, damages, awards and costs of defense arising out of the information provided in this report.

END OF REPORT