100 Park Avenue
Beaver Dam, WI 53916

Water Technology, Inc.

Pierre Waterpark Study

City of Pierre, South Dakota

"To improve quality of life and enhance economic development by creating a bold vision for a unique, family-friendly outdoor water park destination… On the River" ~ *Pierre Waterpark Committee Vision Statement*

August 17, 2009

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Pierre Waterpark Study

… On the River

Introduction

In April of 2009, the City of Pierre (City) established a waterpark committee and contracted with Water Technology, Inc. (WTI) to evaluate the suitability of and master plan for a proposed "waterpark" on the river. Included in this charge was a Site Analysis and Evaluation, a Programming and Needs Assessment and the development of a Conceptual Design for the proposed facility. This report was funded, in part, by a large contribution from the Rotary International Club of Pierre-Ft. Pierre who also volunteered services as part of the committee.

As part of the **Site Analysis and Evaluation**, WTI worked with the City to analyze and evaluate both Griffin and Steamboat Parks to determine if the sites present the best opportunity for development of such a facility. As part of this analysis, the team collected and evaluated data that included:

- Vehicular and pedestrian access
- Parking requirements
- Adjacent land use
- Topographical suitability
- Solar orientation
- Utility access and availability
- Drainage and flood plain issues

The **Programming and Needs Assessment** entailed working with the appointed Waterpark Committee to identify intended uses for the facility and spaces required to support such programs. The goal of this document is to serve as a guide during the development process. During this phase, the team worked to identify the interests and needs of the community against current aquatic program opportunities and developed a list of prioritized program goals and identified design objectives.

In the **Conceptual Design** phase, WTI translated this program into graphical format to demonstrate the orientation, adjacencies and relationships between elements both within and contiguous to the proposed facility. This document also served to assist in developing preliminary, conceptual costs estimates to assist the City in continued development of the project. This report is a compilation of these tasks and is submitted to the City for its consideration in development of the project.

The following are those members of the community that have provided time and resources for the study.

Water Park Committee

Water Park Committee

- Commissioner of Parks and Recreation **Jeanne Goodman**
- Chairman of the Park and Recreation Board **Brad Urbach**
- Rotary Spray Park Committee **Chuck Quinn**
- Rotary Spray Park Committee **Bev Lewis**
- Executive Director South Dakota Discovery Center **Kristi Maher**
- Pierre Swim Team Coach **Kent Huckins**
- Manager of the Outdoor Pool **Paula Weeldreyer**
- Outdoor Pool Task Force member **Judy Wegner**
- Executive Director of the Chamber of Commerce **Laura Schoen Carbonneau**
- Executive Director of the YMCA **DeWayne Donaldson**

Staff assistance

- Leon Schochenmaier, City Administrator
- Tom Farnsworth, Director Parks and Recreation
- Mindy Cheap, Recreation Superintendent
- John Childs, City Engineer
- Tracy Painter, Engineer

History / Background Information

The Cities of Pierre and Fort Pierre both have outdoor swimming pools. While useful to the community, each pool is aging and showing signs of deterioration common to pools of their era. Below is a brief timeline of events for the City of Pierre Aquatics that have led to this report.

1924 ~ The City of Pierre pool was constructed in Griffin Park.

1950's ~ A gunite layer (concrete application) was applied to repair the deteriorating pool shell. No major renovation or maintenance projects would occur until the pool filtration system and portions of the deck are replaced in 2003.

2002 ~ The City of Pierre hired the firm of Hahn Engineering (Pierre, SD) to inspect and evaluate the pool for the purpose of determining its remaining useful life and recommend as to whether the pool could be repaired or if replacement is necessary. The report, delivered to the City Commission in December of 2002, listed eight opinions / recommendations. The primary findings indicated that the pool in Griffin Park had far exceeded its functional life and that current policy of deferred maintenance would lead to continuing deterioration and increased maintenance costs for the immediate future.

2003 ~ The City of Pierre acts on two of the recommendations; replace some of the decking that had either settled or heaved and to renovate the pool filtration system. No other major repairs have been made to the pool since this time.

2008 ~ A staff report to the City Commission implies concern about the absence of a plan to address issues at Griffin Park Pool. Maintenance costs for the facility had begun to show a substantial increase as per the 2002 Pool Evaluation Report. It was noted that other 'Class I' cities in South Dakota; Brookings, Mitchell, Watertown, Aberdeen, Sioux Falls and Spearfish to name a few, had begun the process of replacing their aging pools and/or had opened new, modern water park facilities.

Mayor of Pierre, Dennis Eisnach and the Mayor of Fort Pierre, Sam Tidball, create a joint Outdoor Pool Task Force consisting of four citizens from each city with the intent to assess the current conditions of their facilities and gauge demand for an outdoor pool facility within the Cities of Fort Pierre/Pierre. The Task Force advises both Cities on options for future outdoor pools and specifically recommends that the communities combine resources to develop and operate one common pool facility.

Summer 2008 ~ The Cities engaged the University of South Dakota Government Research Bureau to conduct a citizen survey of the communities that included the public's opinion of the need for an outdoor pool.

Fall 2008 ~ The Pool Task Force delivers the final report to the Commission's of each City. The report recommends a three year plan approach that would have the Cities develop and jointly operate a new outdoor pool/water park in Steamboat Park. The plan summary is as follows:

- **2009** – Continue to operate the current outdoor pools in Fort Pierre and Pierre as long as they are safe and it is financially reasonable to do so. Request funds from the 2009

contingency budget for assistance in developing a site plan for a new pool/water park to be located in Steamboat Park. Features of the new pool/water park should compliment existing and future private recreation venues.

- **2010** – Continue to operate the current outdoor pools in Fort Pierre and Pierre as long as they are safe and it is financially reasonable to do so. Funds should be appropriated in the 2010 budget to assist Fort Pierre and Pierre with preparing detailed pool/water park model(s) to determine community reaction/acceptance to the model(s). Review and finalize financing and management agreements for one shared outdoor pool facility.

- **2011**- Final year of operating the current outdoor pools in Fort Pierre and Pierre as long as they are safe and it is financially reasonable to do so. Funds should be appropriated in the Fort Pierre and Pierre 2011 budgets for construction of a new pool/water park in 2011.

No official action was taken on the recommendations of the report by either City Commission.

Winter 2008/2009 ~ The City of Pierre holds discussions with the Pierre/Fort Pierre Rotary Club regarding the club's offer of a gift to the City of a spray park. Questions arose about the feasibility of a spray park being a part of a new outdoor pool/water park. The South Dakota Discovery Center unveils a new Strategic Plan for their facility located near West Steamboat Park. The plan proposes new outdoor science exhibits for children. Officials representing the Discovery Center and Rotary approach City officials and propose a partnership to master plan the various proposed activities at Steamboat Park.

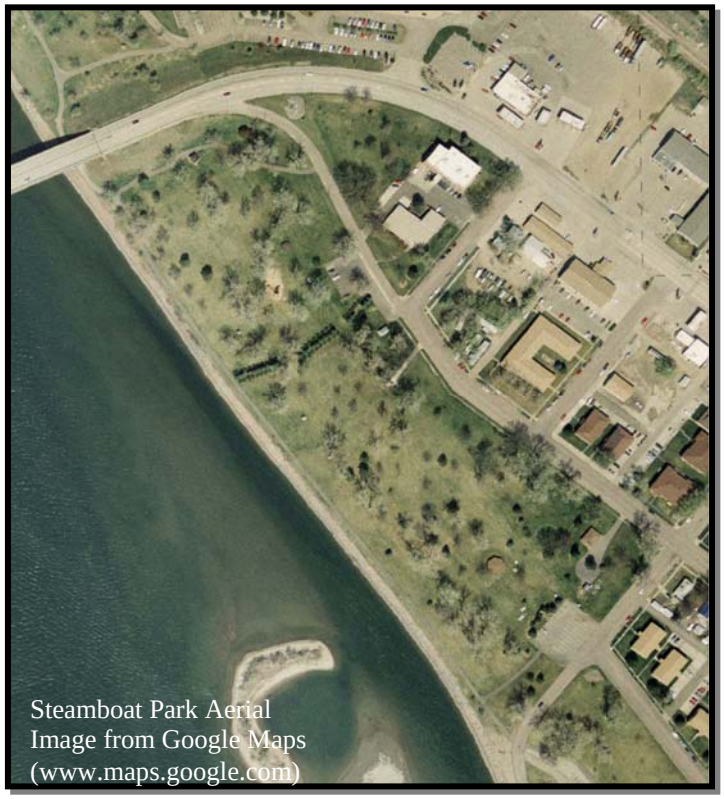
Winter 2008/2009 ~ The City of Pierre initiates a strategic planning exercise to evaluate the feasibility of using West Steamboat Park for a new outdoor pool, a Rotary sponsored Spray Park and expansion plans of the South Dakota Discovery Center.

Spring 2009 ~ Rotary Club provides a grant to the City of Pierre for $6,300.00 and an offer of partnership in the feasibility study of West Steamboat Park for a proposed waterpark facility. An opportunity to join the study was extended to the Fort Pierre City Commission. The City of Fort Pierre declines the offer. The City later added Griffin Park site to the study for consideration.

Site Analysis and Evaluation

An evaluation was performed for both sites. First for review was Steamboat Park. Steamboat Park is located along the river on the West end of the City of Pierre. The park itself is comprised of over 25 acres and is divided into different program use areas by natural and built features. Facilities of the park includes restrooms, picnic shelters, playgrounds, hiking and walking trails, boating ramps, fishing pier and an amphitheatre. The park is also home to historical elements including the first school house as well as purportedly, a buried anchor from the Lewis and Clark expedition buried somewhere either within the park or in the river.

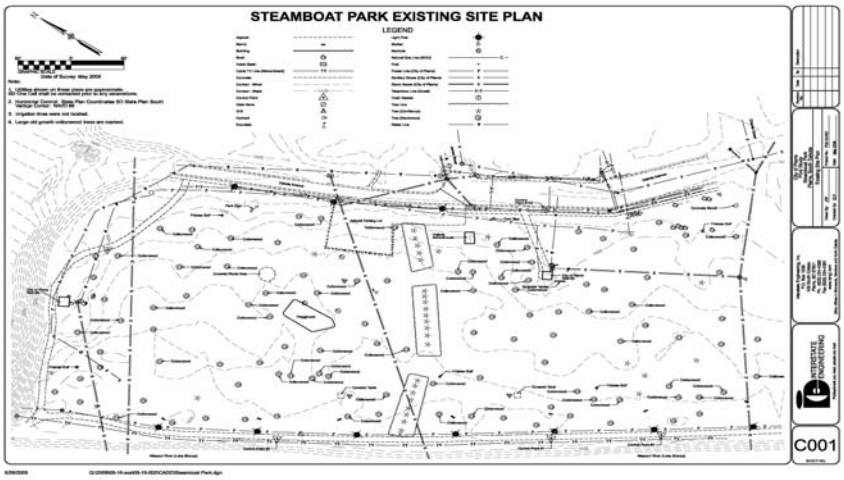
The area initially indicated by the Outdoor Pool Task Force incorporated the parcel of the park bounded by West Sioux Ave (and bridge) n the North, West Dakota Ave on the East, a pine windbreak on the South and the river / walk on the West. This space is comprised of 7 acres and includes a number of old-growth Cottonwood trees, a playground, picnic shelter and parking facilities.



Steamboat Park Aerial
Image from Google Maps
(www.maps.google.com)

During the process of identifying program needs for a pool facility, it was concluded that many constraints for the original site selection were present as well as concerns by members of the community regarding use of the site. It was therefore determined that it would be appropriate for the team to expand the site analysis and evaluation to encompass the study area extending to South Poplar Ave., to overcome these constraints. This additional area included park open space, a Frisbee 'disc-golf' course, picnic shelter, historical school house, well pump stations and parking.

To assist in performing the evaluation of the site, the City retained the services of Interstate Engineering to perform a survey of the park that identified built elements, existing trees, topography, utilities and other site data. This survey was then converted into digital format to allow for exploration of design using computer-aided design software. The information included in the survey identified a number of underground utility services that may be impacted by development. It also assisted the team in placing into context importance of different built elements within the study area.



Steamboat Park Survey
Interstate Engineering;
Pierre, SD

Steamboat Park
Entry looking from intersection of W. Dakota and James

Steamboat Park
Looking North from car park off of W. Dakota

Steamboat Park
Looking West from
W. Dakota

Steamboat Park
Looking Southwest from
W. Dakota

Steamboat Park
Looking North from bike
path

Steamboat Park
Well Station on North side along bike path

Steamboat Park
Looking North from bike path along river

Steamboat Park
Historical schoolhouse

Steamboat Park
Well Station

Steamboat Park
Looking East from river towards Schoolhouse

Steamboat Park
Looking South from Schoolhouse

The second site for consideration is that of the existing pool facility; Griffin Park. Griffin, as with Steamboat, is a large park located on the river. And like Steamboat, it is a park that is heavily developed and contains quite a bit of program elements including the existing pool, horseshoe and tennis courts, bike trail (continuation), a skate park, playgrounds, beach area, a ball field, shelters and picnic areas and a campground. Unlike Steamboat, the park is more congested due to its heavily programmed spaces and demand on parking and, in part, due to the adjacency of the site. A detailed survey of the site was not completed as it was identified that a majority of the infrastructure and built elements relate to the pool and/or skate park and would be demolished or displaced. For the purpose of the evaluation an aerial image of the site was procured and a detailed site evaluation was performed.

The area under review at Griffin Park is defined by E. Dakota Avenue on the North, the park stream on the East, E. Missouri Avenue on the South and Crow Street on the West. The area is heavily developed with the existing swimming pool, Skate Park, playground and horse-shoe courts taking up a majority of the area. All said the study area encompasses approximately 5.60 acres.

Griffin Park Aerial
Image from Google Maps
(www.maps.google.com)

Other factors that assist in determining the appropriateness of a site for development include items such as:

- Visibility
- Solar Orientation
- Prevailing Winds
- Circulation / Site Access
- Cultural Significance
- Existing Use & Displacement Potential
- Needs & Requirements of the New Development

Visibility. Visibility plays an important role in the financial success of facilities such as that proposed for Pierre. In today's economy, there is strong competition for limited entertainment dollars. Facilities need to compete with other entertainment venues such as movie theatres, arcades, and video games. By establishing a strong visual connection with the community, facilities can increase their marketing reach and increase attendance.

Steamboat Park is an ideal site in regards to visibility. Situated at the main entrance to the city via SD34 from Fort Pierre, visitors have an impressive panorama of the park as they cross the bridge. In addition, the facility will be readily visible to recreational visitors to the river, park, and amphitheatre as well as visitors to the Discovery Center and the Chamber of Commerce.

Griffin Park does offer some visibility from the river as well as from guests to the park. However, the park is slightly removed from the main traffic corridor for the City and, as such, will not have as much exposure for visitors and the general public.

Solar Orientation. Solar orientation is important not only from a perspective of "sun-bathing" opportunities but also as it relates to development and operational costs. There are also health concerns regarding extended exposure to UV rays. Operations of outdoor facilities are also subject to unpredictable weather conditions. Facilities such as these are developing a design that is responsive to how the sun is positioned during operation and how guests use the site help the designers understand where and how to orient seating spaces, buildings and shade components. Improper planning will lead to additional costs to reposition features and may impact guest satisfaction and, thereby, use of the facility.

Both facilities respond well to this factor regarding layout and placement of the facility.

Prevailing Winds. As with solar orientation, the prevailing wind of an area is one of those weather conditions that have an affect on the success of an outdoor facility. Strong winds blowing across a site can impact temperatures by decreasing air and water temps and increasing heating costs as well as impacting guest comfort levels.

Being that both parks are situated on the river, each presents some concern regarding prevailing winds and will require implementation of windbreaks and or other methods to reduce the impact of this on the facility.

Circulation / Site Accessibility. Any potential site needs to consider the ease in which it can be reached. Good locations will have multiple approach points for guests/users as well as efficient access points for maintenance, deliveries and operation.

Steamboat Park provides outstanding access potential for guests whether through vehicular or pedestrian modes of transportation. Also being that it is centrally located within the two primary market zones (Pierre and Fort Pierre) and near other recreation and entertainment venues lends itself to hosting a water park facility.

Griffin Park, as noted in the evaluation for 'Visibility' is slightly removed from the primary traffic corridor and, as such, is slightly less accessible from a vehicular regards. However, this is a minor consideration that is overweighed by the strong, established identity as home to the pool, location on the established bike trail and current traffic already traveling to the park.

Cultural Significance. The importance of place is often overlooked. Many times the character of a place can be enhanced or reduced by development. In looking at how a place is

perceived, and used (see below) and the role it plays in the community provides direction as to how that space can be further enhanced.

Steamboat Park has played a strong role in the history and on-going development of the community. From its earliest days as a way point for Lewis and Clark to its current status as a focal point of recreational use in the community, it is critical that any development enhance its status. Cottonwoods, although considered a nuisance during the flowering stage and a maintenance issue due to limb loss and old age, are strongly identified as part of the character of the site. Excessive removal of these trees would be a detriment. However, selective removal based upon quality and impact on neighboring trees will enhance the character of the space. The North portion of the study site has a dense growth of these specimens and development in this area would have a negative impact on the character. The southern portion has a more diverse mix of trees, less of a concentration of specimen Cottonwoods and some that are of questionable quality. Development in this zone would have less of an impact on the character of the park.

Griffin Park has an established history in its own right and maintains a very active place in the programming and use of Pierre Parks. Culturally, it is a Park very well known for its active use including the pool and a new facility would enhance that image. However, this enhancement may come at the expense of the other program elements for which the park is well known.

Existing Use. The existing use is strongly intertwined with the cultural significance of a place. It is important to understand what uses are provided and identify complimentary services that can enhance its value to the community.

At **Steamboat**, the area on the North end of the site is an active uses zone for parties, picnics and dry play. This area is limited in development potential due to its size and established vegetative barriers. To the South, the primary land-use is for disc golf. Though popular, displacement costs are minimal. Also, course layouts can be modified and flexed to conform to different site constraints. It may be possible to include a portion of this course in the development zone, thereby minimizing disruption to existing use. The adjacency of the South Dakota Discovery Center in unison with the Centers master plan to engage Steamboat Park with outdoor expansion of science exhibits would provide an excellent synergistic relationship. The Rotary Club also has expressed a strong interest in the steamboat site due to the sites significance of place and strong relationship to both communities.

For **Griffin**, as suggested above, there are a number of program elements currently established at the proposed site. The existing uses most impacted by a new development include the skate park and horseshoe pits. There is also a pit of open, passive space as well as playground equipment immediately adjacent to the site that would be impacted by proposed improvements. Displacement of these program elements is certain and/or highly probable dependent on the type of facility developed. Unlike Steamboat, however, there are no immediate development partnerships/relationships that present themselves such as the Rotary Spray Park or Discovery Center expansion.

A major disadvantage to the site, in addition to the displacement of existing activities, is the intensity of patronage for the park. On any given day, Griffin Park has quite a few programming events occurring including sports, picnics and general park use. The additional influx of park users for the site would the stress the infrastructure of the park and create a very congested atmosphere.

Development Requirements. The intended program of the development weighs heavily on the appropriateness of a site for development. The physical requirements of amenities and features influence placement and site selection. Prior to determination of a final program, the team reviewed different venue types to evaluate the suitability of the site for development.

At **Steamboat** the area originally identified as a potential development site is constrained by physical barriers (vegetative and built). In reviewing different facility requirements it was determined that this site can not contain development of a size more than a small, single pool facility. The South portion is able to meet area requirements for a more diverse program type.

Likewise, **Griffin Park** is also constrained in the proposed, initial development area. Unlike Steamboat, opportunities for better placement in the park do not present themselves. The physical barriers are of greater substance (such as the stream and road boundaries) and displacement of other amenities is of greater cost and impact to the community.

Site Evaluation Summary. The results of this phase identified that, at **Steamboat**, the area bordered on the North by a row of pine trees and historical schoolhouse and on the South by Popular Ave. retained the most favorable area for development of a new pool facility. If the facility is to be located at **Griffin**, the most favorable area for development would constitute the pre-defined area identified above known as the existing pool site. The next phase would be to review and determine the program intent for the new water park…

Programming and Needs Assessment

Before the committee embarked on the programming and needs assessment phase, it was determined that a vision statement was necessary to assist in maintaining focus on the goals and objectives of the project. The goals and objectives were identified as:

- Enhance Economic Development
- Preserve The Quality Of Life
- Maintain A Bold Vision ~ Dream Big
- Retain Economic Affordability
- Provide For Multi-Generational Use
- Family Friendly
- Iconic
- City-Driven Process

Utilizing these guiding principles, the committee drafted the following vision statement for the task at hand:

"To improve quality of life and enhance economic development by creating a bold vision for a unique, family-friendly outdoor water park destination … On the River"

The first portion of the programming phase was a presentation of concepts and trends in the municipal water park industry. The committee reviewed comparable facilities around the state as well as across the country. The committee then discussed value of and desire for the different amenities and programs associated with facilities developed regionally within the last 10 years.

PROGRAM COMPONENTS. Based upon this discussion it was determined by the committee that the community should be included in the process to help determine the direction of the program. A series of public participatory meetings was advertised to the community with the goal of obtaining input as to the direction and nature of a new water park facility. During these meetings, participants were presented with the same concepts and trends and asked to provide their thoughts and opinions for the facility and what program elements are desired.

Zero-Depth Pool	Multi-Generational
Fun	Competitive Facilities
Springboard or High-Dive	Layout Spaces
River	Basketball
Water Polo	Exercise Facility
Waterslides	Water walks

Floatation Toys	Speed Slide
Shade	Turf Seating

Other, non program comments included

- Concern Over Proposed Site
- Joint Effort Between The Communities
- Prioritization Of Community Projects

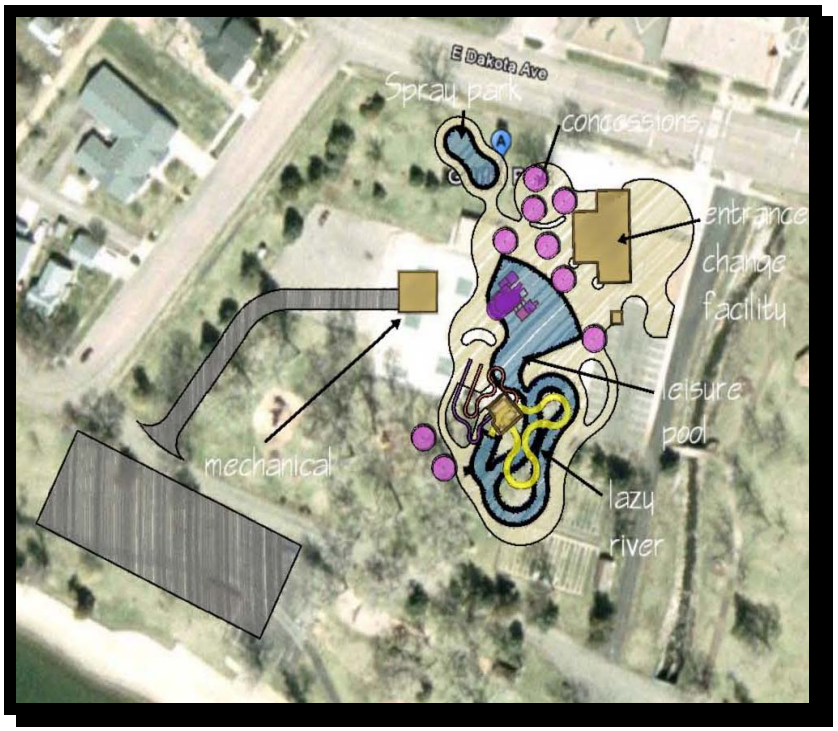
Two primary program elements quickly elevated to the top. The first was that the proposed facility include a warm water leisure component that is oriented to as broad a range of users as possible, including young children and mature adults. The second, and almost as equally represented program element was for a competitive swim venue represented by a 50m pool facility that would enhance the swim team training event and opportunities as well as injecting tourism and retail revenue to the community by hosting regional and state competitive events.

PRELIMINARY CONCEPTS. Based upon the diverse program desires and conscious of both committee goals and municipal obligations, the committee determined that it would be in the best interest of the process to explore how distinctly different facility program types would work at each proposed site. These concepts would then be presented to the community to solicit response that could be used in further defining the design direction of the process.

The concepts were labeled to identify the "level" of programming intensity and vision desired. These are defined as Entry (the base, or minimum program required as part of a new facility), Mid (a comfortable, standard program that would be comparable with other facilities in the region but nothing that would cause Pierre's facility to differentiate or stand-out on a regional level), and Bold (an enterprising and creative approach that would make this facility a stand-out in the region and help enhance the image and position of Pierre as leading community in the State and surrounding States).

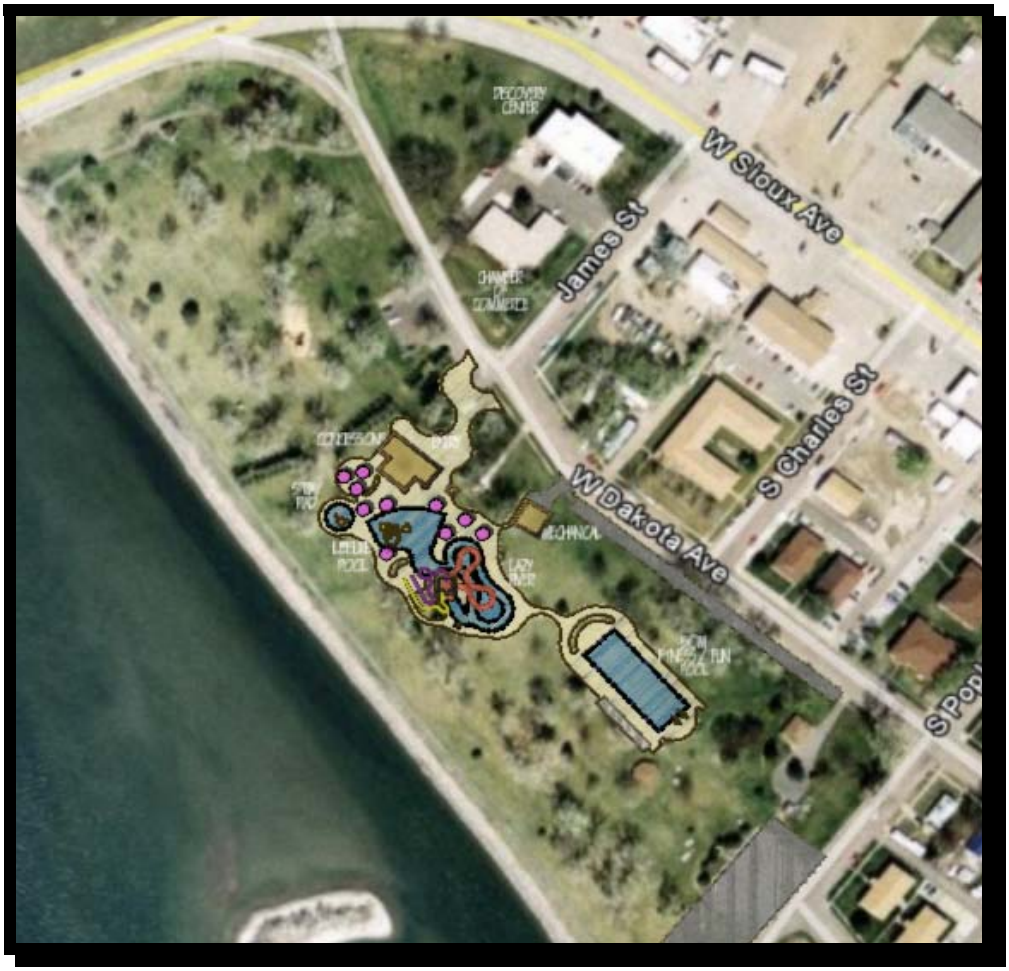
The Entry concept represents that of a 50m pool on the Steamboat Park site with a very small zero depth entry, spray pad and a few waterslides that terminate into run-outs. As can be seen in the aerial graphic plan, the design disrupts only a small portion of the park. Leisure opportunities typically found in other facilities is limited in this plan. There is an emphasis in development of a 50m "Family Fun" competitive tank. The Griffin Park presents a Leisure pool facility as a comparison.


W Sioux Ave
James St
S Charles St
W Dakota Ave


E Dakota Ave
Spray park
concessions
entrance
change
facility
leisure
pool
lazy
river
mechanical

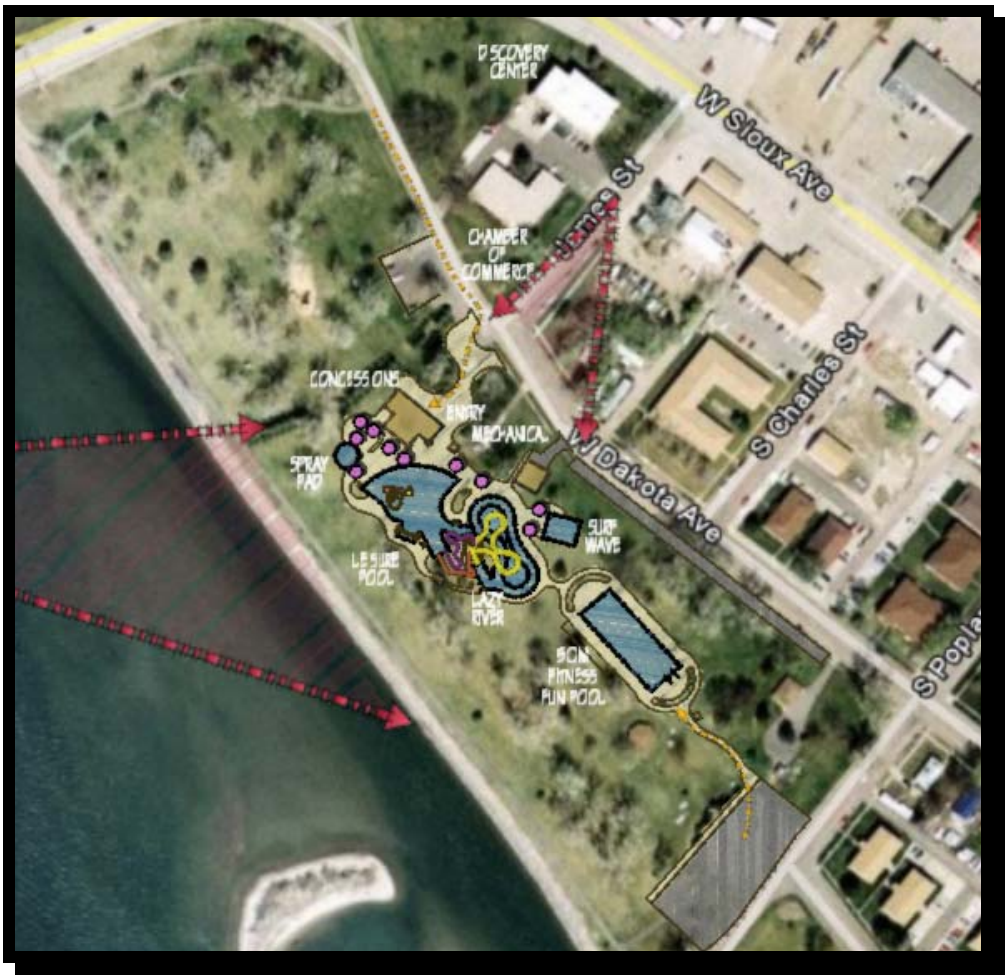
The Mid level concept separates the leisure from the competitive component allowing a greater flexibility in programming and operating considerations. The facility of this magnitude begins to represent a balanced approach to programming that meets the desire for multi-generational appeal with a larger beach-style entry, multi-level play feature, water slides and river. This leisure-style pool, being separated from the competitive pool allows the operator to maintain a warmer temperature which appeals to recreational users. The river can be used for 'fun' as well as an exercise opportunity. There are a diversity of attractions that will maintain guest interest and their desire to remain at the facility.

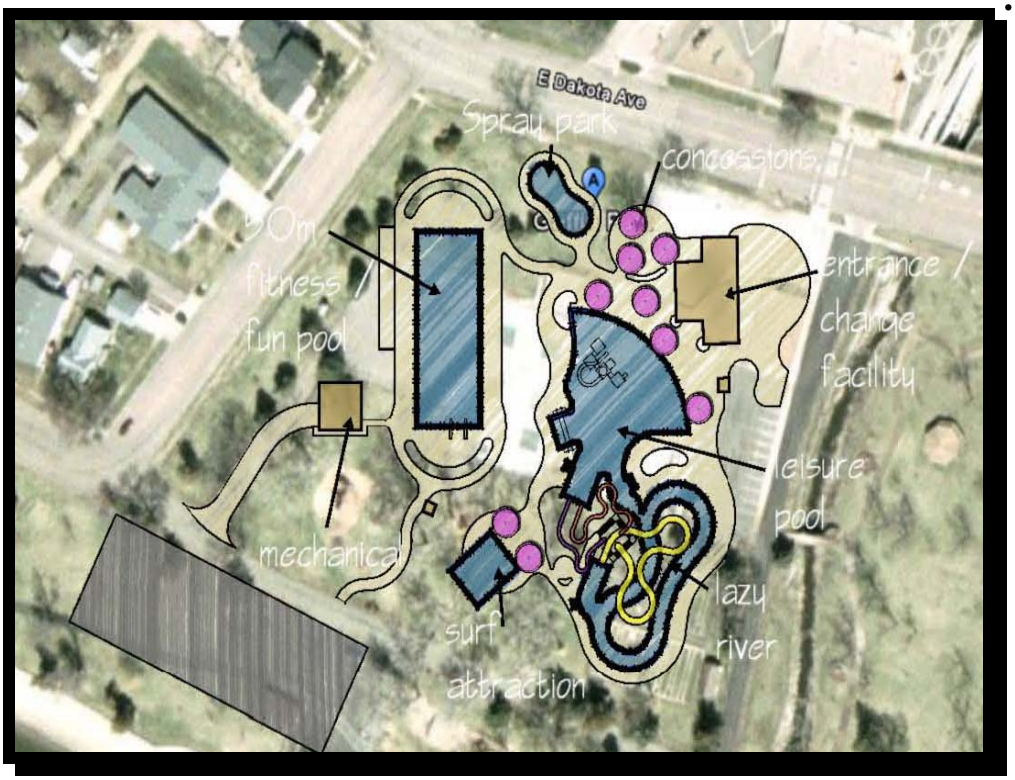
An additional benefit to this concept is the separation of program types. During competitive events and meets, the leisure pool can remain open for general use; thereby increasing revenue opportunities. Also, during lower attendance times, one pool can be closed and operational cost conserved. A preliminary concept of this type was not initially prepared for Griffin Park, but is represented in the final concepts.



The Bold level concept embodies the various program elements brought forth by the community. It is understood that all components may not be achievable in the initial

development but that, keeping in mind the potential for growth and, the facility can be enhanced over the years. This vision calls for a larger leisure pool with river, waterslides, and separated 50m competitive venue. In addition, a surf attraction would be added. This attraction would be the only type within the state and be a large draw for visitors as well as from the community. All told, the proposed development would be less than 4 acres and would maintain the open space character of the park by integrating the features and amenities into the landscape.





DOTOCRACY. A third public meeting again solicited feedback from the community on a possible program of the water park. This time, the desires of the community were tabulated in a process referred to as "Dotocracy". In this User Group exercise, photo boards of potential program elements were pinned to the walls of the community room. Each participant was provided with 4 'sticker dots' and asked to vote for the components they most desire to see in the new facility. The following is a tabulation of the vote:

Feature/Amenity	Tally	Rank
Waterslides	50	1
50m Pool	44	2
Rivers	38	3
Play Structures	22	4
Spray Pad	17	5
Beach Entry	16	6
Play Features	3	7
25yd Pool	0	8

Intergenerational Aquatic Use

Play /pleɪ/ :to engage in *(a game, pastime, etc.)*

Play is a dynamic process that develops and changes as humans grow and evolve. The simple act of play actually becomes increasingly more varied and complex. It is an essential and integral part of a child's development and physical growth. The demands on today's children are much different from previous generations and consequently there is less play time in their lives. It is our responsibility as "professionals of fun" to understand this important lifelong skill and how to integrate play into our designs, facilities, and programming.

Youth at Risk

Watch the news. "Studies show early signs of heart disease found in US children. One in seven school aged children has three or more risk factors predisposing them to deadly cardiovascular conditions. 65% of all children 10 to 18 years cannot pass a minimum standard of fitness. One out of every four teenagers is dangerously overweight!" Additionally, drowning remains the second-leading cause of unintentional injury-related death for children ages 1 to 14 years, according to the U.S. Centers for Disease Control and Prevention. This is largely due to a lack of access to recreational water activities.

We continuously preach exercise, but how do we "force" children to exercise? Perhaps we simply make it more fun. Humans have a natural affinity to water and it is associated with fun in many instances; bubble baths, open fire hydrants on a hot day, running through the sprinkler, and spending time at the lake or the ocean. This may account for census results that have proven swimming is only second to walking over all other recreation activities.

In order to understand what aquatic trends will become popular and how to design for multi-generational programming we must first look at the fundamentals and benefits of play, what motivates an individual to participate, and how each age group plays in the water.

Physical development

Swimming can improve strength, balance and improve flexibility. It provides an aerobic benefit that is relatively injury free in comparison to other sports. "The water's unique properties allow the pool to provide an environment for people of all abilities" states the Aquatic Exercise Association. "Buoyancy creates a reduced impact exercise alternative that is easy on the joints, while the water's resistance challenges all the muscles. Water lends itself to a well-balanced workout that improves all major components of physical fitness- aerobic training, muscular strength and endurance, flexibility and body composition." It is also a sport that can be a lifetime activity; participants may be 1 or 101 years old.

Social development

Through social play children, and adults, learn to cooperate and appreciate the importance of taking others' needs and feelings into account. Playing together fosters awareness and understanding of a variety of values and attitudes. These great strides in development all happen while the person is laughing and establishing friendships; while they are having fun. Water is a safe sport for children of all ages and proficiency levels. Learn to swim and aqua classes can be socially enjoyable while at the same time provide fitness benefits.

Psychological and emotional development

A water sport promotes fitness and cultivates a positive attitude. An accomplishment of finally mastering the back float or competing in a swim meet can help to increase self esteem. Spend some time at a pool and count the times you hear *"Watch me mom!"* Playing in the water promotes increased energy levels and promotes children to strive for physical achievement.

Water is iconic to stress relief; soothing waterfalls, gentle rains, calm waters. Swimming forces you to regulate breathing and allows more oxygen to flow into muscles. The warm water of a wellness pool or whirlpool can help to calm nerves, stimulate cardiovascular circulation, and soothe the mind and body.

Age Groups – How They Play

Each age group plays and responds differently to areas of the pool and its amenities. An accomplished aquatic designer understands the "play needs" of each generation and translates this into their pool designs. This ensures that there are multiple options for everyone to engage users at the pool.

Understanding the needs for multiple programming spaces is another design consideration often overlooked by an inexperienced team. Knowing what areas can double as teaching spaces, training areas and recreational swim/buy outs and rentals, while still meeting guest's needs is an acquired skill. For example, current channels or lazy rivers can be used for resistance or assistive walking classes during one time of the day and can then be used as a recreational river to serve another group. Warm water wellness pools provide a place for therapy and rehabilitation but also present adequate and appropriate depth and temperature for learn-to-swim lessons.

Ultimately, it is important to provide a safe environment for any type of play, especially in the water. Supervision is imperative in any type of design. Understanding how these facilities operate help the design team to properly place offices, observation and seating areas for easy maintenance and safety.

0 to 3 Years

Concentrating on their own needs, infants play alone while toddlers will play side by side. They engage in activities that stimulate their senses. Playing involves physical activity and it is closely related to the development and refinement of a child's motor skills and coordination process. Infants intuitively prefer high contrast edges and patterns and respond best to primary colors. The interactive play structures available today address to this theory and are popular within this age group. Modest sized water spray features initiate the quest for interacting with water in motion and stimulates rudimentary fantasy play. Infants respond visually and smaller toddlers will approach and interact.

Many babies learn to swim before they walk because of the buoyancy they encounter in the water. Infant and toddler swim classes are also often the first social experience outside of the home. The

zero depth edge of the pool presents a gradual, non-threatening entrance into warm water. Aquatic classes in the leisure and shallow water pools such as splash time and parent and tot classes are popular amongst this age group.

3 to 5 Years

This age group plays in small groups, uses props, pretend plays and does it passionately with no absolute goals in mind. Blissful. Individually they are building confidence and socially they are learning to share and cooperate. In the water they respond to interactive play including small dumping buckets, floatables and children's slides. Slides that accommodate several children at once are timeless. The 3-year-old initially rides with the assistance of a parent, as they become more daring they go down in pairs holding hands, and eventually they are racing their peers down the same slide.

Aquatic lessons should be fun and kept to smaller numbers, say five children per class. In the pre-school level skills will range from kicking their feet at the edge of the pool to swimming up to 25 yards on their front and back.

5 to 8 Years

At this age kids begin to play formal and informal games with their peers. There may be a winner, per se, or just the common goal of accomplishing a task (e.g. hopscotch). This play helps them to refine their social skills and understand cooperation, teamwork and competition. Role playing is popular amongst this age group and imitating their role models is a popular pastime (playing house). Providing a multi-level play structures with props such as ropes, ladders, cubby spaces, and interactive play will encourage their imagination.

It is imperative to a child of this age to be challenged and be provided the opportunity to demonstrate their talents and abilities *("Watch me dad!").* The leisure, activity pools and lazy rivers facilitate this type of play. It takes courage to ride the flume slide for the first time, engage in a game of water basketball, or hold your best friend's hand down the adventure channel and navigate an inflatable obstacle course.

Aquatic programming begins to take the form of children's masters and diving classes. Students begin to build upon their learned abilities moving onto the next level in their swimming abilities. It is still important to continue to offer learn-to-swim classes, especially in underserved populations where children have not had the benefit of aquatic recreation.

8 to 13 Years

At this age we become more organized and structured. Achievement becomes more important and we are starting to set goals and milestones for ourselves. The activity pool, with deeper water, provides the challenging environment. Flume slides, mat racer slides, activity pools, floatables, net walks, water basketball, aqua climbing walls, surf simulators, rope swings, etc. The more exciting and challenging the more appealing the activity becomes. Studies also show that playing can enhance the learning process - the more physical the play– moving, stretching, and resistive – the better.

Programming includes junior lifeguarding, advanced swimming and diving. These help to build endurance, strength, speed and increase overall fitness levels. An activity night or designated swim night with peers is attractive as this age group is beginning to thrive socially outside the family unit.

Teens

It is common knowledge that during our teenage years our socialization moves from our families to our peer groups. We channel our energy (fun) into specialized clubs, youth groups, volunteer activities, and team sports. The complexity has moved from blissful play to that of self awareness and social standing.

In addition to the entertainment value of the challenging environments of their previous peer group, teenagers desire separate social spaces. This often difficult-to-please demographic does not want to always hang out with mom and dad. An aquatic craze among those participants is the "Teen Zone". This is a separate, yet very visible, section of the deck or grass area that is programmed for this specific group. Within their "own space" they can socialize, enjoy popular music, engage in social interactive activities like 'rock and roll band, guitar hero or others" and just hang out to be social.

Aquatic programming for this age group could include lifeguard and instructor training, and competitive swim groups.

Adults

We have a big lesson to relearn here. Play. Some where along the way we concluded that grown up play is viewed as a weakness and the successful people just work; we need permission to play again. We have just agreed that play is a mind and body integration and social necessity. Play is a relaxed spontaneity that should be embraced, even into adulthood.

Adults should revisit what fun was for them as a child. Many adults that were involved in competitive swim groups are seeking out adult swim master programs. Water exercise, aerobics, water polo, aqua jog and resistance walk programs translate into fun adult programming. ***Shhhhhh***… adults have fun on waterslides too.

Parents

The pool is an ideal opportunity for parents of young children to meet like minded people who share common interests. Take a quick scan over the pool area and you will find moms and dads congregating in the zero depth area with their tots. It is also common to find parents floating down the lazy river with a baby or sleeping child strewn across their lap. It is also pretty cool to be able to tell your friends that you beat your dad down the mat racer slide.

Aquatic programming to support the parent network is important; parent/infant, parent/toddler and adult swim classes.

Active Senior Adults

Swimming is one of the best exercise and social environments available to seniors. It is safe and easy on the body, allowing people to move their bodies without bearing their weight. It is an ideal way for seniors to get in shape and improve their overall well being. For some disabled and seniors, water gives them a sense of freedom as they freely move around in the water.

An aquatic fitness class is a great social outlet for seniors. Warm water lap lanes and wellness pools provide popular warm water activities such as silver sneakers, aqua restore (stay young with water) low impact aqua fitness, aqua walking, and underwater bikes. Vortex and lazy rivers offer assistive walking opportunities and whirlpools and social benches offer social spaces enjoyed by this age group.

Do not forget about the non-aquatic amenities in any age group, let alone seniors. Areas that promote socialization outside of class, a café or comfortable deck seating are ideal. This is an attractive amenity that promotes return guests.

How People Play Together

Multi-generational recreation and fitness provide something for everyone under one roof; swimming is ageless. It is often said that families that play together, stay together. For example, recreational swimming provides seniors occasion to frequent the aquatic facility with their children and grandchildren. Teenagers can challenge their younger siblings or parents to a game of basketball in the water. Or we can just relax together floating down the lazy river.

It is interesting to watch the interaction between age groups; best friends, rivals, siblings, parents, and grandparents. This is where a cross over into each area of the pool occurs and where we find a social interaction between generations. Water brings together generations and allows everyone an opportunity to benefit individually and together.

Conceptual Design

Upon receiving the responses, opinions and advice presented by the community and the Committee, the design team commenced refining the concepts and budgets for presentation to the Committee, Community and Council. These refined concepts are to be presented as options for selection by the Council based upon the information presented in the report and from commentary by there constituents. For the purposes of the report, a copy of each concept plan is included in the appendix. A thumbnail image of each concept follows with a description and preliminary estimate of probable cost.

Entry Level Design – Family Fun Pool

This plan represents the program elements desired in a "base" water park facility as conveyed to the Waterpark Committee through the public involvement meetings and workshops. The aquatic amenity list includes a 'Family Fun' pool with beach entry area, a large water playground or "spray deck" and a waterslide complex. Other support facilities and amenities that are represented include a primary facility building that would house men's and women's restrooms/change facilities, four (4) accessible, family change units, administrative facilities (guard/manager office, control room and first-aid station) and a concessions facility that can serve the pool and/or the main park; secondary building for pool mechanical systems and maintenance/storage; spectator seating for competitive events; and ample deck and turf-grass seating areas with shade features.

The Family Fun Pool is to be a multi-programmable pool that can serve dual purpose for competitive and training events as well as un-programmed play activities. A very small beach-style entry with water sprays is included that extends to a depth of 24 inches prior to

transitioning into the main pool body via underwater stairs that can be utilized for learn-to-swim classes. A water crossing area is also included as an appendage and other play activities will include water floats, basketball goals, and the opportunity for other court sports such as water polo. Two (2) diving boards are included and the pool would be constructed so as to allow for competitive swim meets with an 8-lane x 50 meter course.

The Spray Deck is to incorporate those concepts and ideas as proposed by the Rotary and enhanced with their gift to the project. It is intended that the Spray Deck feature incorporate a historical or educational theme to enhance and extend the educational component of the Steamboat Park campus that includes the proposed Discovery Center expansion, historical schoolhouse and other historical features of the area. It is also proposed that the design of the Spray Deck may be such that it can be isolated from the main facility and its operational use can be extended beyond that of the pool facility. This is a recurring concept that can be integrated into each of the design solutions. Features are to include individual spray components and a multi-level play feature with small slides, sprays and bucket feature so as to appeal to as diverse a segment of users as possible.

The Water Slide Complex would be composed of a tower structure, covered for shade that would be home to two (2) body-flume style waterslides. These slides would have a height of 24-30ft. and terminate into deceleration lanes generally referred to as 'run-outs'. The run-outs function to decrease pool complexity and area that would be required to integrate with the Family Fun pool; thereby saving construction cost. This design would also have the added benefit of the waterslides being available during times when the Family Fun pool is being used for programs other than recreation and increases rider capacity by allowing guests that are shorter than 48" and/or have difficulty swimming to participate in the ride.

Strength of this design is the simplified program offerings of the facility and lower cost for development. By integrating a 50m course into the design, the layout addresses the desire for a competitive venue to compete with other cities in the state that are home to meets. The addition of this component is favored for the potential impact it will have on the local economy by attracting visitors.

Disadvantage to the design is that there is limited recreational components standard in new community waterpark facilities. This has the prospect of not realizing the full potential of the recreational use by the general public which will also have the effect of dramatically reducing revenue potential of the facility. By having a wider, more varied recreational component, there would be greater general interest and use of the facility on a daily basis during operation.

Entry Level Design – Recreation Pool

Although a family fun pool as represented in the first concept does provide a base level of program elements, it does not provide for the recreational variety that will be necessary to maintain interest and attendance on a daily level. For consideration, this plan is presented that entails development of a modern leisure pool with all of the accoutrements and provisions for future pool additions as demand and finances allow. The aquatic amenity list includes a recreational 'Leisure' pool with beach entry area and river, a water playground or "spray deck" and a waterslide complex.

The Leisure Pool is to be a multi-purpose pool that will appeal to a broad generational segment of the community. A large, zero-depth, beach-style entry provides for a welcoming, friendly entrance and includes both passive and active recreational areas. Children of all ages will be able to interact with features that range from small geysers and sprays to a play structure with slides, sprays and a bucket that dumps hundreds of gallons of water on patrons below. A passive area will allow those that may be timid or those looking to relax, a quite place to sit and enjoy the facility. The pool will continue its gradual transition to three and four foot of water depths where guests can swim and play. In addition, a water crossing activity is included as well as additional spray features and a plunge area for body-flume waterslides. The pool continues into a "river-like" channel, longer than that of the previous concept with more spray features and attractions. The river not only provides recreational amusement and fun for children and adults but can also be used for therapeutic and exercise programs.

The Spray Deck, as under the first concept, is to incorporate the ideas as proposed by the Rotary and enhanced with their gift to the project. It is intended that the Spray Deck feature incorporate a historical or educational theme to enhance and extend the educational component of the Steamboat Park campus that includes the proposed Discovery Center expansion, historical schoolhouse and other historical features of the area. It is also proposed that the design of the Spray Deck may be such that it can be isolated from the main facility and its operational use can be extended beyond that of the pool facility. This is a recurring concept that can be integrated into each of the design solutions. The spray deck is slightly smaller with some of the features include in the original design being incorporated into the Leisure Pool.

The Water Slide Complex in this concept the waterslide complex is modified so at to exit the body-flume waterslides into the leisure pool. This adds additional programmable water area (good for exercise and swim classes) to the pool and adds a different experience for the guests. Also included is room on the tower for the addition of another waterslide, or two, in the future which would terminate into run-outs.

Strength of this design is diverse and substantial recreational program elements included in the initial development. Increased public use and revenue will be realized with the program and, with the opportunity to add additional program elements such as a 50m pool and/or a surf feature, the facility can grow to meet future demand.

Disadvantage to the design is that a competitive venue is not in the initial development. There will be some initial regional attraction and revenue sacrificed; however this is only temporary until such a time as finance and community interest allow for expansion.

Mid Level Design

This concept integrates the family, recreational model, discussed above, into the program. The facility is anchored by a small leisure pool and integrates components familiar to other, community facilities found across the state. With the leisure pool, the facility includes a 'Family Fun' pool, a spray deck and a waterslide complex. The support facilities remain the same except for small adjustments for changes in the capacity of the facility. These are a primary facility building that would house men's and women's restrooms/change facilities, four (4) accessible, family change units, administrative facilities (guard/manager office, control room and first-aid station) and a concessions facility that can serve the pool and/or the main park; secondary building for pool mechanical systems and maintenance/storage; spectator seating for competitive events; and ample deck and turf-grass seating areas with shade features.

The Leisure Pool is to be a multi-purpose pool to appeal to a broad generational segment of the community. A zero-depth, beach-style entry provides for a welcoming, friendly entrance and includes both passive and active recreational areas. Children of all ages will be able to interact with features that range from small geysers and sprays to a play structure with slides, sprays and a bucket that dumps hundreds of gallons of water on patrons below. A passive area will allow those that may be timid or those looking to relax, a quite place to sit and enjoy the facility. The pool will continue its gradual transition to three feet of water depth where guests can swim and play. The pool will then transition into a "river-like" channel that provides not only amusement and fun for children but can also be used for therapeutic and exercise programs.

The Family Fun Pool is to be a multi-programmable pool that can serve dual purpose for competitive and training events as well as un-programmed play activities. Removed from the pool is the zero-depth entry and water crossing areas. This simplifies the pool shape and

complexity of design & construction. Play activities will include water floats, basketball goals, and the opportunity for other court sports such as water polo. Two (2) diving boards are included and the pool is suited for competitive swim meets with an 8-lane x 50 meter course.

The Spray Deck, as under the original concept, is to incorporate those concepts and ideas as proposed by the Rotary and enhanced with their gift to the project. It is intended that the Spray Deck feature incorporate a historical or educational theme to enhance and extend the educational component of the Steamboat Park campus that includes the proposed Discovery Center expansion, historical schoolhouse and other historical features of the area. It is also proposed that the design of the Spray Deck may be such that it can be isolated from the main facility and its operational use can be extended beyond that of the pool facility. This is a recurring concept that can be integrated into each of the design solutions. The spray deck is slightly smaller with some of the features include in the original design being incorporated into the Leisure Pool.

The Water Slide Complex in this concept the waterslide complex is amended to add an inner-tube flume waterslide. This slide allows riders to go down individually or in pairs. By exiting into a pool connected to the river, riders can elect to exit the ride or continue the experience by circulating around the river channel. The addition of this ride to the two (2) body-flume style waterslides increases the options for guests and improves on their overall experience. The inner-tube slide would have a height of 40-45ft and the body-flume slides would have a height of 24-30ft. and terminate into deceleration lanes generally referred to as 'run-outs'.

Strength of this design is the addition of the popular leisure pool concept and river which increases the overall opportunities of the guests and leads to greater lengths of stay and a significantly improved mental picture of the facility. A separation of the leisure and competitive components allows for greater flexibility in staffing and programming thereby saving money and increasing revenue opportunities.

Disadvantage to the design is that although increased substantially due to the addition of the leisure pool, the recreational components may not be sufficient to make this facility stand out against its peers in the state.

Bold Level Design

PIERRE WATER PARK STUDY
Bold Vision Concept Plan
PIERRE, SD

PIERRE WATER PARK STUDY
Griffin Park - Bold Vision Concept Plan
PIERRE, SD

This concept expands on the family, recreational model, discussed in the previous two concepts. The facility is anchored by a large leisure pool and integrates components familiar to other, community facilities found across the state. With the leisure pool, the facility includes a 'Family Fun' pool, a spray deck and a waterslide complex. Another addition is that of the Surf Feature to increase market attraction and inject additional revenue opportunities. The support facilities remain the same except for small adjustments for changes in the capacity of the facility. These are a primary facility building that would house men's and women's restrooms/change facilities, four (4) accessible, family change units, administrative facilities (guard/manager office, control room and first-aid station) and a concessions facility that can serve the pool and/or the main park; secondary building for pool mechanical systems and maintenance/storage; spectator seating for competitive events; and ample deck and turf-grass seating areas with shade features.

The Leisure Pool, as in the Mid Level concept, is to be a multi-purpose pool to appeal to a broad generational segment of the community. A large, zero-depth, beach-style entry provides for a welcoming, friendly entrance and includes both passive and active recreational areas. Children of all ages will be able to interact with features that range from small geysers and sprays to a play structure with slides, sprays and a bucket that dumps hundreds of gallons of water on patrons below. A passive area will allow those that may be timid or those looking to relax, a quite place to sit and enjoy the facility. The pool will continue its gradual transition to three and four foot of water depths where guests can swim and play. In addition, a water crossing activity is included as well as additional spray features and a plunge area for body-flume waterslides. The pool continues into a "river-like" channel, longer than that of the previous concept with more spray features and attractions. As with the Mid Level concept, this river not only provides recreational amusement and fun for children and adults but can also be used for therapeutic and exercise programs.

The Family Fun Pool is to be a multi-programmable pool that can serve dual purpose for competitive and training events as well as un-programmed play activities. Removed from the pool is the zero-depth entry and water crossing areas. This simplifies the pool shape and complexity of design & construction. Play activities will include water floats, basketball goals, and the opportunity for other court sports such as water polo. Two (2) diving boards are included and the pool is suited for competitive swim meets with an 8-lane x 50 meter course. A secondary entrance is incorporated into the design that will serve as a means of isolating competitive events; allowing the main facility to be used for general aquatic recreation.

The Spray Deck, as under the original concept, is to incorporate those concepts and ideas as proposed by the Rotary and enhanced with their gift to the project. It is intended that the Spray Deck feature incorporate a historical or educational theme to enhance and extend the educational component of the Steamboat Park campus that includes the proposed Discovery Center expansion, historical schoolhouse and other historical features of the area. It is also proposed that the design of the Spray Deck may be such that it can be isolated from the main facility and its operational use can be extended beyond that of the pool facility. This is a recurring concept that can be integrated into each of the design solutions. The spray deck is slightly smaller with some of the features include in the original design being incorporated into the Leisure Pool.

The Water Slide Complex in this concept the waterslide complex is modified so at to exit the body-flume waterslides into the leisure pool. This adds additional programmable water area (good for exercise and swim classes) to the pool and adds a different experience for the guests.

Also included is room on the tower for the addition of another waterslide, or two, in the future which would terminate into run-outs.

Strength of this design is a larger leisure pool/recreation component and strong draw potential of the surf attraction (including increased revenue opportunities). A separation of the leisure and competitive components allows for greater flexibility in staffing and programming thereby saving money and increasing revenue opportunities.

Disadvantage to the design is that although "Bold" in vision and likely to increase attendance and regional draw, the facility has a higher than anticipated capital cost and increased operating cost potential because of staffing issues.

Concept Opinions of Probable Construction Costs

The following information is Water Technology Inc.'s option of probable construction cost determined from developing the concepts and incorporating expenses from similar projects from our construction cost data base. These costs are updated periodically and reflect trends of construction expenses based on local construction projects. Due to the extreme volatility of construction costs, these opinions represent the **anticipated market conditions,** however true construction expense cannot be determined until designs are complete and the entire project is bid. Inflation, contingency, and exact geotechnical designs are not included in these figures and will need to be accounted for in the future budgeting for a new facility.

WATER TECHNOLOGY, INC.
AQUATIC PLANNERS, DESIGNERS & ENGINEERS

ESTIMATE OF PROBABLE COST

Pierre, South Dakota - Estimate of Probable Cost

Steamboat Park Entry Vision Concept Plan (Family Fun Pool)

12-Aug-2009

ELEMENT	QUANTITY		COST
Site Development			
Demolition/Earthwork	Allowance	x $75,000.00	$75,000
Site Utilities (Excavation & Backfill)	Allowance	x $100,000.00	$100,000
Site Improvements	Allowance	x $75,000.00	$75,000
Site Parking	100 EA	x $2,000.00	$200,000
Shade Structures	21 EA	x $3,000.00	$63,000
Decks and Walkways	38,000 SF	x $6.50	$247,000
Deck Drainage	38,000 SF	x $1.00	$38,000
Turf & Irrigation	5,000 SF	x $2.50	$12,500
Landscape	Allowance	x $75,000.00	$75,000
Security Lighting/PA	Allowance	x $35,000.00	$25,000
Lighting for Night Use	Allowance	x $0.00	$0
Fence- Perimeter	1,000 LF	x $28.50	$28,500
Fence- Barrier	300 LF	x $35.00	$10,500
Site Signage	Allowance	x $20,000.00	$20,000
Subtotal			***$969,500***
Architecture			
Change Facility/Admin. Building	4,000 SF	x $200.00	$800,000
Aquatics Mechanical Building/Room Update and Utilities	1,000 SF	x $180.00	$180,000
Concessions Building	400 SF	x $200.00	$80,000
Subtotal			***$1,060,000***
Aquatics			
Splash Pad	1 LS	x $225,000.00	$225,000
Body Flume Waterslides & Tower	Allowance	x $200,000.00	$200,000
Water Play Structure	1 LS	x $225,000.00	$225,000
Water Play Amenities	Allowance	x $17,500.00	$17,500
Floatables	Allowance	x $25,000.00	$25,000
Family Fun Pool (50m x 8 Lane)	11,750 SF	x $130.00	$1,527,500
Competition Equipment	Allowance	x $35,000.00	$35,000
Diving Boards (1m)	2 EA	x $12,500.00	$25,000
Subtotal			***$2,280,000***
Subtotal - Estimated Construction Cost			**$4,309,500**
Contractor Markup (Overhead & Profit)	8%	x $4,309,500.00	$344,760
Contingency	5%	x $4,309,500.00	$215,475
TOTAL ESTIMATED CONSTRUCTION COST			***$4,869,735***
Owner Expenses & Project Fees			
Project Fees (A&E, Permits, Testing, Surveys)	8%	x $4,869,735.00	$389,579
Owner's F.F.& E. (Furniture, Fixtures & Equipment)	Allowance	x $170,000.00	$170,000
Subtotal Estimated Owner Expenses & Project Fees			**$559,579**
TOTAL ESTIMATED PROJECT COST (2009 Dollars)			***$5,429,314***

Notes:

1. Estimate includes pool excavation and structure, pool gutter, pool finishes, deck equipment, safety ropes, pool mechanical systems, waterslide (installed) with tower and stair, waterslide mechanical system and piping and water activities with mechanical systems and piping.

2. Estimate assumes all utilities & infrastructure to be brought within 5 feet of the facility and does not include additional contingencies for unusual soil conditions or unknown development risk items.

WATER TECHNOLOGY, INC.
AQUATIC PLANNERS, DESIGNERS & ENGINEERS

ESTIMATE OF PROBABLE COST

Pierre, South Dakota - Estimate of Probable Cost

Steamboat Park Entry Vision Concept Plan (Recreation Pool)

12-Aug-2009

ELEMENT	QUANTITY		COST
Site Development			
Demolition/Earthwork	Allowance	x $75,000.00	$75,000
Site Utilities (Excavation & Backfill)	Allowance	x $100,000.00	$100,000
Site Improvements	Allowance	x $75,000.00	$75,000
Site Parking	125 EA	x $2,000.00	$250,000
Shade Structures	23 EA	x $3,000.00	$69,000
Shade Structures Reservable	1 EA	x $30,000.00	$30,000
Decks and Walkways	35,000 SF	x $6.50	$227,500
Deck Drainage	35,000 SF	x $1.00	$35,000
Turf & Irrigation	10,000 SF	x $2.50	$25,000
Landscape	Allowance	x $100,000.00	$100,000
Security Lighting/PA	Allowance	x $45,000.00	$25,000
Lighting for Night Use	Allowance	x $0.00	$0
Fence- Perimeter	1,300 LF	x $28.50	$37,050
Fence- Barrier	300 LF	x $35.00	$10,500
Site Signage	Allowance	x $20,000.00	$20,000
Subtotal			***$1,079,050***
Architecture			
Change Facility/Admin. Building	4,500 SF	x $200.00	$900,000
Aquatics Mechanical Building/Room Update and Utilities	1,200 SF	x $180.00	$216,000
Concessions Building	500 SF	x $200.00	$100,000
Subtotal			***$1,216,000***
Aquatics			
Outdoor Leisure Pool	12,375 SF	x $130.00	$1,608,750
Splash Pad	1 LS	x $175,000.00	$175,000
Lazy River	7,200 SF	x $130.00	$936,000
Inner-tube Waterslide	Allowance	x $200,000.00	$200,000
Body Flume Waterslides & Tower	Allowance	x $200,000.00	$200,000
Water Play Structure	1 LS	x $300,000.00	$300,000
Water Play Amenities	Allowance	x $25,000.00	$25,000
Floatables	Allowance	x $25,000.00	$25,000
Subtotal			***$3,469,750***
Subtotal - Estimated Construction Cost			**$5,764,800**
Contractor Markup (Overhead & Profit)	8%	x $5,764,800.00	$461,184
Contingency	5%	x $5,764,800.00	$288,240
TOTAL ESTIMATED CONSTRUCTION COST			***$6,514,224***
Owner Expenses & Project Fees			
Project Fees (A&E, Permits, Testing, Surveys)	8%	x $6,514,224.00	$521,138
Owner's F.F.& E. (Furniture, Fixtures & Equipment)	Allowance	x $170,000.00	$170,000
Subtotal Estimated Owner Expenses & Project Fees			**$691,138**
TOTAL ESTIMATED PROJECT COST (2009 Dollars)			***$7,205,362***

Notes:

1. Estimate includes pool excavation and structure, pool gutter, pool finishes, deck equipment, safety ropes, pool mechanical systems, waterslide (installed) with tower and stair, waterslide mechanical system and piping and water activities with mechanical systems and piping.

2. Estimate assumes all utilities & infrastructure to be brought within 5 feet of the facility and does not include additional contingencies for unusual soil conditions or unknown development risk items.

WATER TECHNOLOGY, INC.
AQUATIC PLANNERS, DESIGNERS & ENGINEERS

ESTIMATE OF PROBABLE COST

Pierre, South Dakota - Estimate of Probable Cost

Griffin Park Entry Leisure Vision Concept Plan

12-Aug-2009

ELEMENT	QUANTITY		COST
Site Development			
Demolition/Earthwork	Allowance	x $125,000.00	$125,000
Site Utilities (Excavation & Backfill)	Allowance	x $100,000.00	$100,000
Site Improvements	Allowance	x $75,000.00	$75,000
Site Parking	100 EA	x $2,000.00	$200,000
Shade Structures	21 EA	x $3,000.00	$63,000
Shade Structures Reservable	1 EA	x $30,000.00	$30,000
Decks and Walkways	35,000 SF	x $6.50	$227,500
Deck Drainage	35,000 SF	x $1.00	$35,000
Turf & Irrigation	10,000 SF	x $2.50	$25,000
Landscape	Allowance	x $100,000.00	$100,000
Security Lighting/PA	Allowance	x $45,000.00	$25,000
Lighting for Night Use	Allowance	x $0.00	$0
Fence- Perimeter	1,100 LF	x $28.50	$31,350
Fence- Barrier	400 LF	x $35.00	$14,000
Site Signage	Allowance	x $20,000.00	$20,000
Subtotal			***$1,070,850***
Architecture			
Change Facility/Admin. Building	4,250 SF	x $200.00	$850,000
Aquatics Mechanical Building/Room Update and Utilities	1,200 SF	x $180.00	$216,000
Concessions Building	400 SF	x $200.00	$80,000
Subtotal			***$1,146,000***
Aquatics			
Outdoor Leisure Pool	8,500 SF	x $130.00	$1,105,000
Splash Pad	1 LS	x $175,000.00	$175,000
Lazy River	6,800 SF	x $130.00	$884,000
Inner-tube Waterslide	Allowance	x $200,000.00	$200,000
Body Flume Waterslides & Tower	Allowance	x $200,000.00	$200,000
Water Play Structure	1 LS	x $225,000.00	$225,000
Water Play Amenities	Allowance	x $25,000.00	$25,000
Floatables	Allowance	x $25,000.00	$25,000
Subtotal			***$2,839,000***
Subtotal - Estimated Construction Cost			**$5,055,850**
Contractor Markup (Overhead & Profit)	8%	x $5,055,850.00	$404,468
Contingency	5%	x $5,055,850.00	$252,793
TOTAL ESTIMATED CONSTRUCTION COST			***$5,713,111***
Owner Expenses & Project Fees			
Project Fees (A&E, Permits, Testing, Surveys)	8%	x $5,713,110.50	$457,049
Owner's F.F.& E. (Furniture, Fixtures & Equipment)	Allowance	x $170,000.00	$170,000
Subtotal Estimated Owner Expenses & Project Fees			**$627,049**
TOTAL ESTIMATED PROJECT COST (2009 Dollars)			***$6,340,159***

Notes:

1. Estimate includes pool excavation and structure, pool gutter, pool finishes, deck equipment, safety ropes, pool mechanical systems, waterslide (installed) with tower and stair, waterslide mechanical system and piping and water activities with mechanical systems and piping.

2. Estimate assumes all utilities & infrastructure to be brought within 5 feet of the facility and does not include additional contingencies for unusual soil conditions or unknown development risk items.

WATER TECHNOLOGY, INC.
AQUATIC PLANNERS, DESIGNERS & ENGINEERS

ESTIMATE OF PROBABLE COST

Pierre, South Dakota - Estimate of Probable Cost

Steamboat Park Mid Vision Concept Plan

12-Aug-2009

ELEMENT	QUANTITY		COST
Site Development			
Demolition/Earthwork	Allowance	x $75,000.00	$75,000
Site Utilities (Excavation & Backfill)	Allowance	x $100,000.00	$100,000
Site Improvements	Allowance	x $75,000.00	$75,000
Site Parking	125 EA	x $2,000.00	$250,000
Shade Structures	23 EA	x $3,000.00	$69,000
Decks and Walkways	50,000 SF	x $6.50	$325,000
Deck Drainage	50,000 SF	x $1.00	$50,000
Turf & Irrigation	8,000 SF	x $2.50	$20,000
Landscape	Allowance	x $80,000.00	$80,000
Security Lighting/PA	Allowance	x $45,000.00	$25,000
Lighting for Night Use	Allowance	x $0.00	$0
Fence- Perimeter	1,650 LF	x $28.50	$47,025
Fence- Barrier	400 LF	x $35.00	$14,000
Site Signage	Allowance	x $20,000.00	$20,000
Subtotal			***$1,150,025***
Architecture			
Change Facility/Admin. Building	4,250 SF	x $200.00	$850,000
Aquatics Mechanical Building/Room Update and Utilities	1,200 SF	x $180.00	$216,000
Concessions Building	400 SF	x $200.00	$80,000
Subtotal			***$1,146,000***
Aquatics			
Outdoor Leisure Pool	8,500 SF	x $130.00	$1,105,000
Splash Pad	1 LS	x $175,000.00	$175,000
Lazy River	6,800 SF	x $130.00	$884,000
Inner-tube Waterslide	Allowance	x $200,000.00	$200,000
Body Flume Waterslides & Tower	Allowance	x $200,000.00	$200,000
Water Play Structure	1 LS	x $225,000.00	$225,000
Water Play Amenities	Allowance	x $25,000.00	$25,000
Floatables	Allowance	x $25,000.00	$25,000
Family Fun Pool (50m x 8 Lane)	9,840 SF	x $120.00	$1,180,800
Competition Equipment	Allowance	x $35,000.00	$35,000
Diving Boards (1m)	2 EA	x $12,500.00	$25,000
Subtotal			***$4,079,800***
Subtotal - Estimated Construction Cost			**$6,375,825**
Contractor Markup (Overhead & Profit)	8%	x $6,375,825.00	$510,066
Contingency	5%	x $6,375,825.00	$318,791
TOTAL ESTIMATED CONSTRUCTION COST			***$7,204,682***
Owner Expenses & Project Fees			
Project Fees (A&E, Permits, Testing, Surveys)	8%	x $7,204,682.25	$576,375
Owner's F.F.& E. (Furniture, Fixtures & Equipment)	Allowance	x $170,000.00	$170,000
Subtotal Estimated Owner Expenses & Project Fees			**$746,375**
TOTAL ESTIMATED PROJECT COST (2009 Dollars)			***$7,951,057***

Notes:

1. Estimate includes pool excavation and structure, pool gutter, pool finishes, deck equipment, safety ropes, pool mechanical systems, waterslide (installed) with tower and stair, waterslide mechanical system and piping and water activities with mechanical systems and piping.

2. Estimate assumes all utilities & infrastructure to be brought within 5 feet of the facility and does not include additional contingencies for unusual soil conditions or unknown development risk items.

WATER TECHNOLOGY, INC.
AQUATIC PLANNERS, DESIGNERS & ENGINEERS

ESTIMATE OF PROBABLE COST

Pierre, South Dakota - Estimate of Probable Cost
Steamboat Park Bold Vision Concept Plan
12-Aug-2009

ELEMENT	QUANTITY		COST
Site Development			
Demolition/Earthwork	Allowance	x $75,000.00	$75,000
Site Utilities (Excavation & Backfill)	Allowance	x $100,000.00	$100,000
Site Improvements	Allowance	x $75,000.00	$75,000
Site Parking	200 EA	x $2,000.00	$400,000
Shade Structures	33 EA	x $3,000.00	$99,000
Shade Structures Reservable	1 EA	x $30,000.00	$30,000
Decks and Walkways	55,000 SF	x $6.50	$357,500
Deck Drainage	55,000 SF	x $1.00	$55,000
Turf & Irrigation	10,000 SF	x $2.50	$25,000
Landscape	Allowance	x $100,000.00	$100,000
Security Lighting/PA	Allowance	x $45,000.00	$25,000
Lighting for Night Use	Allowance	x $0.00	$0
Fence- Perimeter	1,750 LF	x $28.50	$49,875
Fence- Barrier	300 LF	x $35.00	$10,500
Site Signage	Allowance	x $20,000.00	$20,000
Subtotal			***$1,421,875***
Architecture			
Change Facility/Admin. Building	4,500 SF	x $200.00	$900,000
Aquatics Mechanical Building/Room Update and Utilities	1,200 SF	x $180.00	$216,000
Concessions Building	500 SF	x $200.00	$100,000
Subtotal			***$1,216,000***
Aquatics			
Outdoor Leisure Pool	12,375 SF	x $130.00	$1,608,750
Splash Pad	1 LS	x $175,000.00	$175,000
Lazy River	7,200 SF	x $130.00	$936,000
Inner-tube Waterslide	Allowance	x $200,000.00	$200,000
Body Flume Waterslides & Tower	Allowance	x $200,000.00	$200,000
Water Play Structure	1 LS	x $300,000.00	$300,000
Water Play Amenities	Allowance	x $25,000.00	$25,000
Floatables	Allowance	x $25,000.00	$25,000
Family Fun Pool (50m x 8 Lane)	9,840 SF	x $120.00	$1,180,800
Competition Equipment	Allowance	x $35,000.00	$35,000
Drop Slide & Tower	1 LS	x $35,000.00	$35,000
Diving Boards (1m)	2 EA	x $12,500.00	$25,000
Surf Feature	1 LS	x $1,000,000.00	$1,000,000
Subtotal			***$5,745,550***
Subtotal - Estimated Construction Cost			**$8,383,425**
Contractor Markup (Overhead & Profit)	8%	x $8,383,425.00	$670,674
Contingency	5%	x $8,383,425.00	$419,171
TOTAL ESTIMATED CONSTRUCTION COST			***$9,473,270***
Owner Expenses & Project Fees			
Project Fees (A&E, Permits, Testing, Surveys)	8%	x $9,473,270.25	$757,862
Owner's F.F.& E. (Furniture, Fixtures & Equipment)	Allowance	x $170,000.00	$170,000
Subtotal Estimated Owner Expenses & Project Fees			**$927,862**
TOTAL ESTIMATED PROJECT COST (2009 Dollars)			***$10,401,132***

Notes:

1. Estimate includes pool excavation and structure, pool gutter, pool finishes, deck equipment, safety ropes, pool mechanical systems, waterslide (installed) with tower and stair, waterslide mechanical system and piping and water activities with mechanical systems and piping.

2. Estimate assumes all utilities & infrastructure to be brought within 5 feet of the facility and does not include additional contingencies for unusual soil conditions or unknown development risk items.

WATER TECHNOLOGY, INC.
AQUATIC PLANNERS, DESIGNERS & ENGINEERS

ESTIMATE OF PROBABLE COST

Pierre, South Dakota - Estimate of Probable Cost
Griffin Park Bold Vision Concept Plan
12-Aug-2009

ELEMENT	QUANTITY		COST
Site Development			
Demolition/Earthwork	Allowance	x $125,000.00	$125,000
Site Utilities (Excavation & Backfill)	Allowance	x $100,000.00	$100,000
Site Improvements	Allowance	x $75,000.00	$75,000
Site Parking	100 EA	x $2,000.00	$200,000
Shade Structures	33 EA	x $3,000.00	$99,000
Shade Structures Reservable	1 EA	x $30,000.00	$30,000
Decks and Walkways	65,000 SF	x $6.50	$422,500
Deck Drainage	65,000 SF	x $1.00	$65,000
Turf & Irrigation	15,000 SF	x $2.50	$37,500
Landscape	Allowance	x $125,000.00	$125,000
Security Lighting/PA	Allowance	x $45,000.00	$25,000
Lighting for Night Use	Allowance	x $0.00	$0
Fence- Perimeter	1,750 LF	x $28.50	$49,875
Fence- Barrier	300 LF	x $35.00	$10,500
Site Signage	Allowance	x $20,000.00	$20,000
Subtotal			***$1,384,375***
Architecture			
Change Facility/Admin. Building	4,500 SF	x $200.00	$900,000
Aquatics Mechanical Building/Room Update and Utilities	1,200 SF	x $180.00	$216,000
Concessions Building	500 SF	x $200.00	$100,000
Subtotal			***$1,216,000***
Aquatics			
Outdoor Leisure Pool	12,375 SF	x $130.00	$1,608,750
Splash Pad	1 LS	x $175,000.00	$175,000
Lazy River	7,200 SF	x $130.00	$936,000
Inner-tube Waterslide	Allowance	x $200,000.00	$200,000
Body Flume Waterslides & Tower	Allowance	x $200,000.00	$200,000
Water Play Structure	1 LS	x $300,000.00	$300,000
Water Play Amenities	Allowance	x $25,000.00	$25,000
Floatables	Allowance	x $25,000.00	$25,000
Family Fun Pool (50m x 8 Lane)	9,840 SF	x $120.00	$1,180,800
Competition Equipment	Allowance	x $35,000.00	$35,000
Drop Slide & Tower	1 LS	x $35,000.00	$35,000
Diving Boards (1m)	2 EA	x $12,500.00	$25,000
Surf Feature	1 LS	x $1,000,000.00	$1,000,000
Subtotal			***$5,745,550***
Subtotal - Estimated Construction Cost			**$8,345,925**
Contractor Markup (Overhead & Profit)	8%	x $8,345,925.00	$667,674
Contingency	5%	x $8,345,925.00	$417,296
TOTAL ESTIMATED CONSTRUCTION COST			***$9,430,895***
Owner Expenses & Project Fees			
Project Fees (A&E, Permits, Testing, Surveys)	8%	x $9,430,895.25	$754,472
Owner's F.F.& E. (Furniture, Fixtures & Equipment)	Allowance	x $170,000.00	$170,000
Subtotal Estimated Owner Expenses & Project Fees			**$924,472**
TOTAL ESTIMATED PROJECT COST (2009 Dollars)			***$10,355,367***

Notes:

1. Estimate includes pool excavation and structure, pool gutter, pool finishes, deck equipment, safety ropes, pool mechanical systems, waterslide (installed) with tower and stair, waterslide mechanical system and piping and water activities with mechanical systems and piping.

2. Estimate assumes all utilities & infrastructure to be brought within 5 feet of the facility and does not include additional contingencies for unusual soil conditions or unknown development risk items.

Operational Data Comparisons

The following table illustrates a selection of regional aquatic facilities and how they perform financially on an annual basis. All of these facilities are either new or have been significantly renovated to demonstrate how updated aquatic facilities will financially operate compared to older traditional pools that have diminished in their market appeal. Revenue is generated from admissions, rentals and other facility related income opportunities. Expenses are determined by operating expenses such as items including staff salaries, operational communities and maintenance expenses. The cost recovery rate is the difference of these two categories and determines if the facility operates with a subsidy or generates a gain to the operational fund.

There are a variety of factors that influence the annual cost recovery rate such as weather, unscheduled maintenance and operational efficiencies. Small variations can have a significant impact of the annual recovery gain or loss.

To determine how any facility will function requires a complete detailed market analysis and feasibility study, integrated with operational Pro Forma for the final design of the facility.

	2006	2007	2008
Aberdeen (Attendance)			68,881
Revenue			$343,378.94
Expense			$328,193.25
Operating Gain (Loss)			**$15,185.69**
Brookings (Attendance)*	21,143	19,129	16,886
Revenue	$170,359.03	$166,901.64	$181,770.10
Expense	$235,646.47	$245,459.81	$281,448.26
Operating Gain (Loss)	**($65,287.44)**	**($78,558.17)**	**($99,678.16)**
Mitchell (Attendance)		54,340	46,472
Revenue		$172,162.98	$162,183.06
Expense			$206,715.47
Operating Gain (Loss)			**($44,532.41)**

*Attendance numbers did not count individual visits for pass holders

REVENUE VS EXPENSE TABLE

FACILITY COMPARISON ~ FEE STRUCTURE & PROGRAM OPTIONS

CITY	FACILITIES DESCRIPTION	FEES Daily Pass	FEES Individual Pass	FEES Family Pass	PROGRAMMING OPTIONS / ALTERNATE AMENITIES	SPECIAL NOTES
Aberdeen	**Leisure Pool** (with zero depth entry, water playground & structure, frog slide, buckets, water tunnel, bell spray) **350 foot Lazy River** (with wall sprays) **Lap Pool** (50m x 8 lane; One and three meter diving; floatables; water basketball & polo) **Five slides**: Open Flume Body, Enclosed Flume Body, Inner-Tube, and Two 'Drop'	$4.50 (2-17) $6.50 (18-61) $5.00 (62+) Free (Under 2)	$50.00 (2-17) $80.00 (18-61) $65.00 (62 +)	$145.00	Shelter Rentals Wet Sand Area Concessions Picnic Shelter Swim Lessons Water Exercise Programs Water Polo & Basketball	Group discount rate of 20% for groups of 20+ M-F
Brookings	**Lap Pool** (50m; One and Three meter diving) **Multi-purpose Pool** (with zero depth entry, small slide, water walls, water sprays) **Wading Pool** (with water umbrella) **Plunge Pool** (for waterslides) **Three Slides**: Open Flume Body & Inner-Tube and 'Drop'	$4.00 all ages	$35.00 All Ages	$90.00 (Family of 3) $110.00 (Family of 4) +$15.00 per additional	Party Pad Rental (2 pads) Wet Sand Area	Offers 10 Daily Passes for $25.00
Rapid City	**Three Outdoor Pool Facilities** (with varied activities / features) **One Indoor Facility**	$4.00 (2-17) $5.00 (17-59) $3.50 (60+)	$43.00 (2-17) $54.00 (18-59) $36.00 (60+)	$108.00 (Family of 4) +$22.00 per additional	Water Exercise Programs Private Pool Parties Swim Lessons Dive Lessons Triatholon Events Kids Nights	Offers 10 & 20 Punch Passes Offers Combination Passes for Indoor/Outdoor Pools Offers Passes for Indoor Pool
Sioux Falls	**Three Aquatic Centers** **Three Additional Pool Facilities** **One Wading Pool Facility** **One Spray Park**	$1.00-$2.00 (2-15) $3.00 (16-54) $2.00 (55+) Free (Under 2)	$10.00 (2-15) $30.00 (16-54) $20.00 (55+) Free (Under 2)	$50.00	Swim Lessons	Reduced Income Passes Family $25.00 Adult $15.00 Free Passes for families with Dakota EBT Card
Watertown	**Multi-purpose pool** (with zero depth entry, lap area, floatables, a basketball goal, ¾ meter diving board, drop slide, water walk, frog slide, in-water playground, four additional interactive play features) **550 foot Lazy River** (with Tumble-Buckets and the River Falls feature) **Zero-depth; 18" chidren's pool** **Three slides**:Open Flume Body, Enclosed Flume Body, and Inner-Tube	$4.50 all ages	$60.00	$175.00 (Family of 5) +$25.00 per additional	Full Facility Rentals Shelter Reservations Birthday Parties Open Swim Adventure Open Swim Small Group Rentals Swim Lessons Wet Sand Area	Adventure Swim is additional fee Reduced fees for pre-season purchases Pro-rated discounts for groups

Web Sources:
http://www.aberdeen.sd.us/parks/parks.html
http://www.cityofbrookings.org/departments/park_rec/aquaticcenter.php
http://www.rcgov.org/parks_recreation/aquatics/information/general_information.htm
http://www.siouxfallsparks.org/
http://www.watertownsd.us/FamilyAquaticCenter.aspx